



शरीरमाद्यं खलु धर्मसाधनम्

# 64th Annual Report 2019-2020



**All India Institute of Medical Sciences  
New Delhi - 110029**

# 64th AIIMS ANNUAL REPORT 2019–2020



शरीरमाद्यं खलु धर्मसाधनम्

ALL INDIA INSTITUTE OF MEDICAL SCIENCES

NEW DELHI - 110029

**Edited jointly by:**

Dr Sandeep Agarwala, Department of Paediatric Surgery

Dr Nasreen Akhtar, Department of Physiology

Dr Dalim Baidya, Department of Anaesthesiology, Pain Medicine and Critical Care

Dr Neetu Bhari, Department of Dermatology and Venereology

Dr Anjan Dhua, Department of Paediatric Surgery

Dr Rakesh Garg, Department of Oncoanaesthesia, Dr B.R. Ambedkar IRCH

Dr Vivek Gupta, Dr R.P. Centre for Ophthalmic Sciences

Dr Tony George Jacob, Department of Anatomy

Dr Sidharth Jain, Department of Urology, JPNA Trauma Centre

Dr Rajeev Kumar, Associate Dean (Academics) and Department of Urology

Dr Vipin Kumar, Department of Paediatric Surgery

Dr Rakesh Lodha, Department of Paediatrics

Dr R. Lakshmi, Department of Cardiac Biochemistry

Dr Sanjeev Lalwani, Registrar and Department of Forensic Medicine, JPNA Trauma Centre

Dr Kalpana Luthra, Department of Biochemistry

Dr Purva Mathur, Department of Laboratory Medicine, JPNA Trauma Centre

Dr Rashmi Ramachandran, Department of Anaesthesiology, Pain Medicine and Critical Care

Dr Peush Sahni, Department of Gastrointestinal Surgery and Liver Transplantation

Dr Siddharth Sarkar, National Drug Dependence Treatment Centre

Dr Pratap Sharan, Department of Psychiatry

Dr Alpana Sharma, Department of Biochemistry

Dr Deepti Vibha, Department of Neurology, Neurosciences Centre

Ms Neetu Priya, Librarian

The Hindi translation was done and supervised by the AIIMS Hindi Section led by Mr P.S. Tomar

## **All India Institute of Medical Sciences**

The All India Institute of Medical Sciences (AIIMS) was established in 1956 as an institution of national importance by an Act of Parliament to develop patterns of teaching in undergraduate and postgraduate medical education in all its branches so as to demonstrate a high standard of medical education to all medical colleges and other allied institutions in India; to bring together in one place educational facilities of the highest order for the training of personnel in all important branches of health activity and to attain self-sufficiency in postgraduate medical education.

The Institute has comprehensive facilities for teaching, research and patient care. AIIMS conducts teaching programs in medical and para-medical courses both at the undergraduate and postgraduate levels and awards its own degrees. Teaching and research is conducted in nearly 100 disciplines. AIIMS is a leader in the field of medical research with over Rs 100 crores in extramural grants received by its researchers in a year. AIIMS also runs a College of Nursing.

Various departments and centres manage practically all types of disease conditions with support from para-clinical departments. AIIMS also runs a 50-bedded hospital and the Comprehensive Rural Health Centre at Ballabgarh in Haryana and provides health cover to nearly 8 lakh people through the Centre for Community Medicine.

# AIIMS AT A GLANCE 2019–2020

Year of establishment 1956

Teaching Departments and Centres	42+7	Medical graduates	3275
Faculty members (Sanctioned 1095)	759	Postgraduates	10915
Non-faculty staff (Sanctioned 12,318)	10,189	Nursing/paramedical graduates	3454
Undergraduate students	940	Publications in journals/abstracts	2764
Postgraduate students	1966	Chapters in books/books	340

## Hospital Services

Hospital/Centre	Outpatients (including casualty)	Admission	Surgery (Operations/ procedures)	Beds		
				General	Private	Total
Main Hospital	20,43,602	1,20,110	93,661	997	165	1,162
Dr RP Centre	5,71,170	48,283	50,510	288	22	310
Dr BRA IRCH	1,78,700	45,725	11,660	167	15	182
Cardiothoracic Centre	2,08,183	10,939	3,625	226	33	464
Neurosciences Centre	1,48,566	9,188	3,137	174	31	
NDDTC*	3,02,416	3,356	–	50	–	50
CCM†	4,36,383	12,115	2,394	50	–	50
JPNATC	1,18,786	7,532	7,458	256	22	278
CDER**	2,36,873	1,948	22,835	17	–	17
NCI, Jhajjar	35,556	8,948	4,907	279	–	279
Outreach outpatients, Badsa, Jhajjar	1,34,255	–	1,520	–	–	–
<b>Total</b>	<b>44,14,490</b>	<b>2,68,144</b>	<b>2,01,707</b>	<b>2,487</b>	<b>288</b>	<b>2,792</b>

\*inclusive of Trilokpuri, Sunder Nagri & Kotla Mubarakpur

\*\* Including 30 Triage beds

†inclusive of PHC Dayal Pur

## Hospital performance indices

Parameters	Main Hospital		Cardiothoracic and Neurosciences Centre		Jai Prakash Narain Apex Trauma Centre	
	2019–20	2018–19	2019–20	2018–19	2019-20	2018-19
Average length of stay (days)	9.9	9.5	10.5	10.2	10	10
Average bed occupancy rate (%)	85.9	86.8	83.8	84.9	84	80
Net death rate (%)	1.7	1.7	2.6	2.9	5	6
Combined crude infection rate (%)	5.6%	5.8%	–	–	–	–

CCM: Centre for Community Medicine

Dr BRAIRCH: Dr B.R. Ambedkar Institute Rotary Cancer Hospital

Dr RP Centre: Dr Rajendra Prasad Centre for Ophthalmic Sciences

JPNATC: Jai Prakash Narain Apex Trauma Centre

NDDTC: National Drug Dependence Treatment Centre

CDER: Centre for Dental Education and Research

NCI: National Cancer Institute

# CONTENT

## Annual Report 2019–20

1	Director's Review.....	1
2.	The Institute and Its Committees.....	7
3.	Academic Section.....	13
4.	Examination Section.....	32
5.	General Administration.....	37
6.	Hospital.....	39
7.	College of Nursing.....	69
8.	Research Section.....	81

## Departments

9.1	Anaesthesiology, Pain Medicine and Critical Care.....	95
9.2	Anatomy.....	111
9.3	Biomedical Engineering.....	121
9.4	Biomedical Engineering.....	131
9.5	Biophysics.....	135
9.6	Biostatistics.....	141
9.7	Biotechnology.....	149
9.8	Centre for Community Medicine.....	155
9.9	Dermatology and Venereology.....	171
9.10	Emergency Medicine.....	177
9.11	Endocrinology and Metabolism.....	183
9.12	Forensic Medicine and Toxicology.....	191
9.13	Gastroenterology and Human Nutrition.....	195
9.14	Gastrointestinal Surgery and Liver Transplantation.....	203
9.15	Geriatric Medicine.....	207
9.16	Haematology.....	211
9.17	Hospital Administration.....	217
9.18	Laboratory Medicine.....	223
9.19	Medicine.....	231
9.20	Microbiology.....	237
9.21	Nephrology.....	255
9.22	Nuclear Magnetic Resonance.....	261
9.23	Nuclear Medicine.....	265
9.24	Obstetrics and Gynaecology.....	271
9.25	Orthopaedics.....	289
9.26	Otorhinolaryngology.....	295
9.27	Paediatrics.....	303
9.28	Paediatric Surgery.....	327
9.29	Pathology.....	333
9.30	Pharmacology.....	345

9.31	Physical Medicine and Rehabilitation.....	351
9.32	Physiology.....	357
9.33	Plastic, Reconstructive and Burns Surgery.....	371
9.34	Psychiatry.....	375
9.35	Pulmonary Medicine and Sleep Disorders.....	387
9.36	Radiodiagnosis.....	393
9.37	Reproductive Biology.....	401
9.38	Rheumatology.....	409
9.39	Surgical Disciplines.....	413
9.40	Transfusion Medicine.....	421
9.41	Transplant Immunology and Immunogenetics.....	425
9.42	Urology.....	431

### **Centres**

10.1	Cardiothoracic Centre.....	437
10.2	Centre for Dental Education and Research.....	463
10.3	Dr BR Ambedkar Institute Rotary Cancer Hospital.....	475
10.4	Dr Rajendra Prasad Centre for Ophthalmic Sciences.....	511
10.5	Jai Prakash Narayan Apex Trauma Centre.....	539
10.6	National Drug Dependence Treatment Centre.....	559
10.7	Neurosciences Centre.....	571

### **Central facilities**

11.1	BB Dikshit Library.....	603
11.2	Cafeteria.....	607
11.3	Central Animal Facility.....	609
11.4	Central Workshop.....	611
11.5	Computer Facility.....	615
11.6	Electron Microscope Facility.....	627
11.7	Hostel Section.....	629
11.8	Ethics Committee.....	635
11.9	KL Wig Centre for Medical Education, Technology and Innovation.....	637
11.10	Media and Protocol Division.....	643
12	Publications.....	667
13.1	Budget and Finance.....	797
13.2	Audit Report.....	997

## 1. Director's Review

I feel privileged to present the Sixty-fourth Annual Report and audited statement of accounts for the year 2019–2020.

All India Institute of Medical Sciences (AIIMS), New Delhi was established in 1956 by an Act of the Indian Parliament to serve as the nucleus for nurturing excellence in medical education and all aspects of health care. It is recognized globally as India's best medical institution that combines purposeful medical education, innovative biomedical research and humane healthcare. The Institute's excellence is a collective effort of thousands of faculty members, nursing personnel, scientists, engineering staff, technicians, sanitation and health attendants and above all the energy of the youth represented by students. I am privileged to lead and serve this exceptional institution and to highlight some of its extraordinary work in this report.

### **Integrated Infrastructure: 'One-AIIMS'**

To stay relevant in a changing world, institutions must continuously reinvent themselves. AIIMS, New Delhi has initiated work on its redevelopment plan to emerge as a world class university and state-of-the-art healthcare facility. The Rs 10,345 crore plan will more than double the capacity of the hospital from the existing 2,084 beds to about 5,000 beds. The integrated 'one campus' will answer to all the investigative, therapeutic, operative, rehabilitative, and vocational needs of the patients and academic and research needs of scholars and students.

The outpatient department (OPD) at AIIMS, New Delhi was shifted to a new facility in Masjid Moth to decongest the existing outpatient services. The new spacious (93,000 square metre) eight-storey OPD building can cater to more than 10,000 patients daily. It is disability friendly with provision of lifts and ramps, and dedicated registration counters, cubicles and toilet facilities. The Department of Laboratory Medicine has developed an integrated automated robotic laboratory—'SMART Lab'—in the new OPD block. This laboratory is equipped with state-of-the-art automated analysers, which are integrated with a pre-analytical system to minimize the human interface and a post-analytical archival system for systematic sample storage and retrieval. The core laboratory facility is automated and will handle more than 2 lakh tests every day.

A new emergency section was added to the Jai Prakash Narayan Apex Trauma Centre (JPNATC) to cater to more patients. This new section has the provision for an operation theatre and a seminar hall for academic activities.

An Interventional Bronchoscopy and Pulmonology Laboratory has been set up in the Department of Pulmonary Medicine and Sleep Disorders. This is equipped with advanced bronchoscopic sampling techniques, therapeutics in pulmonology, and medical thoracoscopy.

The Department of Microbiology obtained a National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation.

### **Education**

The continued emphasis on a unique organizational culture, intense academic training and exposure to world class research has helped AIIMS, New Delhi in becoming a premier teaching institution. For the third time in a row, it has topped in the medical category in the National Institutional Ranking Framework (NIRF 2019) of the Ministry of Human Resource Development.

To prepare for the challenges and opportunities that lie ahead, we continue to creatively build foundations for the future by nurturing a diverse community of leaders committed to alleviating human suffering and promotion of health. With its 7 centres comprising of various teaching departments and facilities and 42 stand-alone Departments, and a manpower of over 10,000 including over 700 faculty members, AIIMS, New Delhi produces a large number of medical graduates, specialists (MD/MS), super-specialists (DM/MCh), PhD scholars and allied health and basic sciences experts, including nurses and paramedical professionals. During the year, we enrolled 748 scholars in various postgraduate courses. The Institute also provided postgraduate training to 467 short-term trainees. AIIMS, New Delhi continued to play a mentorship role for the other AIIMS.

AIIMS, New Delhi exposes clinician and science leaders working in healthcare fields to the real-world settings of medicine and to new trends in science and health care delivery. The institute offered Continuing Medical Education to thousands of physicians and healthcare professionals to help improve skills, knowledge and performance. We



organized/hosted over 180 workshops, symposia, conferences and training programmes in collaboration with various national and international agencies. The Centre for Medical Education and Technology (CMET) at AIIMS, New Delhi organized 53 in-house training programmes for different staff members.

Pursuit of excellence requires immersion in collaborative cultures. AIIMS, New Delhi has MoUs with the Harvard University, Stanford University, and University of Michigan in the USA; University College, London; Australia's Deakin University, Monash University, and George Institute of Global Health; Cologne University, Germany; Erasmus University, the Netherlands; and IIT-Kharagpur and IIT-Delhi.

AIIMS, New Delhi is investing in educational infrastructure development to be future ready. The BB Dixit Library has gradually developed into a predominantly e-resources (80%) facility, which provides 24x7 access to scholarly literature both on and off campus. This year, the library launched its Electronic Thesis and Dissertation facility through an online platform. The Cadaveric Surgical Skills Centre is training more than 500 doctors every year. A fully equipped state-of-the-art undergraduate practical hall has become operational in the Department of Microbiology. The Department of Anatomy has started conducting postgraduate seminars in a collaborative Wiki format. In addition, it has set up a digital histology laboratory.

New courses were also added to an already glittering inventory. The Department of Gastroenterology and Human Nutrition initiated an Advanced Fellowship Program in the field of Gastrointestinal Endoscopy, Pancreatic Diseases, Liver Diseases, and Inflammatory Bowel Diseases.

## **Research and innovation**

Research is an integral part of the trinity of mission of AIIMS, New Delhi. One of the primary mandates of AIIMS, New Delhi is to encourage research and build up the science infrastructure for conducting high quality research. AIIMS, New Delhi has always been the leader of basic, clinical and translational medical research and was the winner of India Research Excellence-Citation Award for the year 2019 for Medical and Health Sciences under Web of Science Group (Clarivate Analytics).

The Research Section serves as a catalyst for research at AIIMS, New Delhi. In 2019-20, it handled 885 extramurally funded research projects from leading national and international funding agencies as well as 160 intramural research grants amounting to Rs. 1600 crores and employing about 1700 project staff in various research positions. The funding agencies included ICMR, DBT, DST, INSA, CSIR, DRDO, Ministry of Health and Family Welfare, WHO, UNICEF, Wellcome Trust, etc. AIIMS, New Delhi has also obtained research funding for collaborative research and has created the AIIMS Endowment Fund with two Infosys chairs in the Obstetrics and Gynaecology, and Oncology departments.

India and Sweden signed a Memorandum of Intent to launch a Healthcare Innovation Centre at AIIMS, New Delhi. The announcement was made at the India-Sweden Business Summit in the presence of Swedish King Carl XVI Gustaf, Union Finance Minister Shrimati Nirmala Sitharaman, and her Swedish counterpart Mr Ibrahim Baylan, and Union Health Minister Shri Harsh Vardhan and his Swedish counterpart Mr Maja Fjaestad. The centre will mainstream digital, scalable, and affordable healthcare solutions for early diagnosis and digital intervention in the management of Non-Communicable Diseases (NCDs) such as diabetes and cancer.

Impetus to infrastructure and capacity building exercise was provided through operationalization of twin research facilities at AIIMS, New Delhi, viz. the Centralized Core Research Facility (CCRF) and the Clinical Research Unit (CRU). The CCRF has been setup to enable access to high-end research facilities and promote capacity building in AIIMS, New Delhi. The facility is an integrated hub of contemporary technologies and laboratories in the advanced areas of BSL-2/3, Genomics, Proteomics, Bioanalytics, Bioinformatics, Microscopic imaging, Flow cytometry and General facility. The Clinical Research Unit (CRU) has been set up to provide assistance in the development, application, and implementation of investigator-initiated research in compliance with global best practices. The institute has also started an innovation facilitation division and the Centre for Integrated Medical Research (CIMR).

The efforts to better understand, treat and prevent disease are supported and enhanced by our extraordinary biomedical research enterprise. In 2019–2020, the research community at AIIMS, New Delhi contributed significantly to scholarship through its leadership in innovations and publications. During the year the faculty and scientists of the Institute were involved in over 800 research projects and published over 2200 research papers in national and international journals and over 300 monographs, books and chapters in books.

Examples of some research that may affect the health of the nation include work on dietary therapies for children with drug resistant epilepsy, efforts to address the diagnostic challenges in the management of tuberculosis, burden estimates of neuropsychiatric disorders, and innovative surgical techniques, besides others. A diet trial in children with drug resistant epilepsy (published in the *Journal of the American Medical Association*) found that the seizure burden reduced significantly in children on ketogenic diet, modified Atkins diet as well as low glycaemic index therapy diet; however, low glycaemic diet had fewer side effects; while families found it difficult to comply with the Ketogenic diet. A multi-institutional team comprising of AIIMS, New Delhi and the Translational Health Science and Technology Institute (THSTI) developed three cost-effective kits that improve the sensitivity of smear microscopy, enable transport of sputum samples at ambient temperature without using bio-safe containers, and extract DNA for diagnosing drug-resistant TB. The ‘Indo-Dutch Cohort Study’ established under the leadership of AIIMS, New Delhi and Erasmus University, Rotterdam to investigate the factors responsible for stroke, dementia and cognitive dysfunction has suggested that 70% of the elderly suffer from hypertension, 40% from diabetes, 30% from high cholesterol, and 22% from anxiety and stress disorder. An analyses of India’s State-Level Disease Burden estimates by AIIMS, New Delhi and Public Health Foundation of India, showed that one in seven Indians suffer from mental disorders of varying severity, including depression, anxiety disorders, schizophrenia and bipolar disorders. The Department of Surgical Oncology has developed a new technique for performing hysterectomies (a procedure to remove the uterus) that prevents damage to the pelvic nerves and injuries to the ureter and bladder, reduces blood loss; besides improving quality of life.

### Service

The AIIMS, New Delhi hospital has been able to maintain high quality standards while providing cost effective services to a large number of patients. The AIIMS, New Delhi main hospital and its centres—Cardiothoracic and Neurosciences Centre (CN Centre), Jai Prakash Narain Apex Trauma Centre (JPNATC), Dr BR Ambedkar Institute Rotary Cancer Hospital (BRAIRCH), Dr Rajendra Prasad Centre for Ophthalmic Sciences (RPCOS), Centre for Dental Education and Research (CDER), National Drug Dependence Treatment Centre (NDDTC)—have a total bed strength of 2792. During the year 2019–2020, AIIMS, New Delhi attended to about 44.14 lakh outpatients and 2.68 lakh inpatients and performed over 2.01 lakh surgical procedures at optimal patient care service parameters with bed occupancy of about 85%, hospital stay of 9.5 days; and a low net death rate of about 2%. AIIMS, New Delhi continues to advance the delivery of healthcare within and outside India, particularly in South and Southeast Asia.

The Central Collection Facility of Laboratory Medicine has extended its blood collection timings for more efficient health care delivery and patients’ convenience. Poor patients (living below the poverty line) in need of expensive treatment not covered by packages under the Ayushman Bharat insurance scheme can now get financial assistance of up to Rs 15 lakhs under the Rashtriya Arogya Nidhi (RAN) scheme and Health Minister’s Cancer Patient Fund at various central government hospitals, including AIIMS, New Delhi.

AIIMS, New Delhi has launched a pilot project—Mission DELHI (Delhi Emergency Life Heart-Attack Initiative)—in a range of 5 km around AIIMS, New Delhi wherein people can call toll free numbers for a motorbike-borne emergency medical assistance unit in the eventuality of heart attack or chest pain. The project has institutional support from the Departments of Cardiology and Emergency Medicine of AIIMS, New Delhi and funding from the Indian Council of Medical Research (ICMR). Under the project, a pair of motorcycle-borne trained paramedic and nursing officer would be the first responders for treating heart attack patients. They would establish a virtual connect with the cardiologists at AIIMS, New Delhi, and deliver medical advice and treatment. While the emergency treatment is being provided, a CATS ambulance will arrive and take the patient for further treatment if required. Even as the patient is on way to the hospital, qualified doctors posted round the clock at the control centre at AIIMS, New Delhi will evaluate the data received from the first responders to establish the further course of treatment as soon as the patient reaches the hospital.

AIIMS, New Delhi and ICMR are working on virtual (without incising/dissecting the body) postmortem. This project will help in the dignified management of the dead body. AIIMS, New Delhi would provide training in this technique to other centres.

The Department of Psychiatry and National Drug Dependence Treatment Centre (NDDTC) have initiated ‘Consultation Liaison Addiction Psychiatry’ services to improve services for addictive disorders in medically ill patients. In addition, in a first-of-its-kind initiative, the NDDTC has launched mobile methadone vans to provide treatment to persons with opioid dependence in the inner-city neighbourhoods in East Delhi.

AIIMS, New Delhi has started a dedicated facility for assessing the risk of falls and providing preventive intervention to elderly persons most at risk. The facility named SATHI (Save the Hip Initiative) will screen those above 65 years of age who visit the orthopaedic and geriatric outpatient departments. The Department of Orthopaedics has also set up an advanced Gait laboratory and 3D printing laboratory.

A Clinical Ecotoxicology (Diagnostic and Research) Facility has been set up in the Department of Anatomy for the detection of heavy metal/other element toxicity and for estimation of micronutrient minerals in blood.

AIIMS, New Delhi retrieved 2,234 corneas last year which was the highest in the past 50 years. The institute also transplanted at least 1,426 cornea tissues with 65% utilisation rate which is much higher than the national average.

### **Public Health**

AIIMS, New Delhi faculty is often consulted by national and international bodies for development of public policies designed to improve the healthcare system. Based on the report 'Magnitude of Substance Use in India,' prepared by the NDDTC, the Ministry of Health and Family Welfare has prepared a National Action Plan for Drug Demand Reduction for 2018-2023. Outreach and drop-in centres (ODIC) will be established in 127 vulnerable districts under this plan.

The Airports Authority of India and AIIMS, New Delhi signed an MoU for the project MATE (Mind Activation Through Education), a school wellness programme on mental health. The project aims to reach 2,000 students of both private and government schools. It will sensitise them on issues like relationship with oneself, sex education, coping with stress, respect for self and others, problematic substance and internet use, and balance between mind and body.

To keep a check on mental and behavioural disorders among more than 16,000 inmates lodged in the 16 jails of Tihar Prison Complex, the Delhi Prison Administration in collaboration with the Department of Psychiatry, AIIMS, New Delhi has initiated a project to provide counselling to the inmates. About 7000 inmates have been assessed and counselled under the 'Project Samarthan', and this has led to a significant reduction in the rates of suicide and various forms of violence in Delhi prisons.

The National Blindness Visually Impaired Survey (2019) commissioned by the Ministry of Health and Family Welfare and conducted by the Division of Community Ophthalmology of the Dr R.P. Centre for Ophthalmic Sciences in 24 states and Union Territories and covering about 1.11 lakh people showed that the prevalence of blindness in the country has declined by at least 30%. The survey showed that cataract remains the number one cause of blindness in India.

AIIMS, New Delhi in collaboration with the Ministry of Health and Family Welfare launched a website and mobile application on oral health awareness, named 'e-DantSeva.' The digital platform contains information about the National Oral Health Programme, a list of dental facilities and colleges (along with GPRS route and satellite images of the facility for easier access), and Information, Education and Communication (IEC) material for timely advise on management of dental emergencies or oral health problems. In addition, the CDER has started training teachers of Kendriya Vidyalayas across the country on oral health so that they can sensitise students about the significance of dental hygiene and healthy eating.

### **Clean AIIMS**

The Union Home Minister Shri Amit Shah and Shri JP Nadda, the previous Health Minister mopped the floor at AIIMS, New Delhi and met sanitation workers to launch the "seva saptah" (week of service) to celebrate Prime Minister Shri Narendra Modi ji's birthday. In this context, on the 150th birth anniversary of Mahatma Gandhi, AIIMS, New Delhi conducted an awareness campaign to sensitise people against single-use plastic. In addition, the hospital started segregating plastic waste from biomedical waste to enable the sterilisation and recycling of plastic waste.

AIIMS, New Delhi bagged the first prize under the Kayakalp award scheme for all Central government health facilities for the third year in a row. The award felicitates hospitals with the highest standards of sanitation and hygiene and is given annually by the Ministry of Health and Family Welfare, Government of India.

### **COVID Response**

In the face of the daunting health crisis, AIIMS, New Delhi demonstrated its commitment to the people by working to alleviate suffering and improve health and well-being for all through service, discovery, scholarship, and leadership. AIIMS, New Delhi initiated work to provide quality care to those affected by COVID-19 while simultaneously launching efforts to understand the nature of SARS-CoV-2 and develop containment and management strategies.

AIIMS, New Delhi faculty with extensive experience in combating infectious disease outbreaks, identified the need for broader testing capabilities, more personal protective equipment for health care providers and greater hospital capacity. AIIMS, New Delhi also set up a task force to develop a management protocol for COVID-19 and constituted several committees to respond to various challenges posed by the pandemic. The institute also partnered with other institutions to help guide containment efforts through screening, rapid testing and prevention. AIIMS, New Delhi produced COVID-19 informational resources for the public in multiple languages.

In a very short span of time, AIIMS, New Delhi faculty successfully helped design, staff and lead the COVID clinical response in India by converting the JPN Apex Trauma Centre and the National Cancer Institute (NCI), Jhajjar, which house more than 1000 beds (more than 100 Intensive Care/High Dependency Unit beds) into COVID-19 hospitals. The Ministry of Health and Family Welfare also set up a 24x7 call centre at AIIMS, New Delhi to offer guidance on treatment protocols to be followed by health care workers and institutions all over the country to ensure uniformity and quality control in treatment across India.

AIIMS, New Delhi education programs were rapidly calibrated to provide the best learning experiences possible under the circumstances while protecting the health of the entire community. Faculty, students and staff moved swiftly to remote learning and off-site work using new pedagogical approaches.

An AIIMS, New Delhi doctor's placard with the poignant message, "I stayed at work for you... You stay at home for us" on fighting coronavirus won praise from none other than the Prime Minister Shri Narendra Modi. In a tweet, Shri Modi lauded the doctor for his message ("Well said, Doctor!") and appreciated the many medical professionals in the frontline during the war against coronavirus.

### **Nostalgia and Recognition**

Rajkumari Amrit Kaur, freedom-fighter, Mahatma Gandhi's secretary and India's first lady cabinet minister and health minister, whose stewardship led to creation of AIIMS, New Delhi, was named in the TIME magazine's list of the 100 most powerful women who defined the last century. Rajkumari Amrit Kaur had worked on a number of women-centered social and political issues such as the purdah system, child marriage and the Devadasi system. She was jailed during the Quit India movement.

Her Majesty, Queen Silvia of Sweden visited the Memory and Dementia service of the Department of Geriatric Medicine on 3rd December 2019 to familiarize herself with the care provided in India as a part of her interest in dementia care.

The institute houses many WHO Collaborating Centres (WHO CC), viz. the WHO CC for Research and Capacity Building on Community-based Non-Communicable Diseases (NCD) Prevention and Control (Centre for Community Medicine), WHO CC on Substance Abuse (National Drug Dependence Treatment Centre), WHO CC for Prevention of Blindness (Dr Rajendra Prasad Centre for Ophthalmic Sciences), WHO CC for Oral Health Promotion (Centre for Dental Education and Research), WHO CC for Newborn Training and Research in Newborn Care and WHO CC on Training in Clinical and laboratory Genetics (Department of Paediatrics), and WHO CC for Training and Research in Tuberculosis (Department of Medicine). The institute also supports many Indian Council of Medical Research's 'Centre for Advanced Research and Excellence (CARE),' viz. CARE in Virtual Autopsy (Department of Forensic Medicine), CARE in Pancreatic Disease and CARE in Intestinal diseases (Department of Gastroenterology and Human Nutrition), CARE in Neuromodulation (Department of Psychiatry), CARE in Nephrology, CARE in Pulmonology, and CARE in Childhood Neurodevelopmental Disorders (Department of Paediatrics).

The Centre for Community Medicine was designated the National Centre of Excellence and Advanced Research on Anaemia control (NCEAR-A) and the National Institute for HIV surveillance. The Centre for Dental Education and Research was designated the National Centre of Excellence for Implementation of the National Oral Health Program for Ministry of Health and Family Welfare, Government of India.

AIIMS, New Delhi has made a genuine effort to meet its mandate of assisting the government in its endeavour to provide superior healthcare to the Indian people through quality education, cost effective service provision, and innovative biomedical research. As we enter the year that will test our resolve, I do so with the calm assurance that the AIIMS, New Delhi community will be steadfast in its commitment to the people of India. It has been a rare privilege to serve this great institution and to work with so many dynamic people. I extend my humble gratitude to every person at AIIMS, New Delhi whose commitment has made it a unique institution!

**Randeep Guleria**  
**Director**



## 2. The Institute and Its Committees

### INSTITUTE BODY

1. **Dr Harsh Vardhan** President (from 3 July 2019)  
Minister of Health and Family Welfare  
Nirman Bhawan, New Delhi 110011
- Shri Jagat Prakash Nadda** President (up to 2 July 2019)
2. **Shri Ramesh Bidhuri, MP (Lok Sabha)** Member  
H.No.179, Sunpath House, Village Tughlakabad  
New Delhi 110044
3. **Shri Manoj Kumar Tiwari, MP (Lok Sabha)** Member (from 23 August 2019)  
24 Mother Teresa Crescent Marg, New Delhi 110001
- Shri Parvesh Sahib Singh Verma, MP (Lok Sabha)** Member (up to 22 August 2019)
4. **Professor Ram Gopal Yadav, MP (Rajya Sabha)** Member  
8-A, Lodhi Estate, New Delhi 110003
5. **Shri Amit Khare** Member (from 16 December 2019)  
Secretary, Department of Higher Education  
Ministry of Human Resource Development  
Government of India, Shastri Bhavan, New Delhi 110001
- Shri R Subrahmanyam** Member (up to 15 December 2019)
6. **Dr MK Bhan** Member (up to 26 January 2020)  
Former Secretary, Department of Biotechnology  
Ministry of Science and Technology  
Government of India, New Delhi
7. **Shrimati Preeti Sudan** Member  
Secretary (Health and Family Welfare),  
Ministry of Health and Family Welfare  
Government of India, Nirman Bhavan, New Delhi 110001
8. **Professor Yogesh Kumar Tyagi** Member ((Ex-Officio)  
Vice Chancellor, University of Delhi, Delhi 110007
9. **Dr Rajiv Garg** Member (Ex-Officio)  
Director General of Health Services  
Government of India, Nirman Bhavan, New Delhi 110001  
(from 1 January 2020)
- Dr S Venkatesh** Member (Ex-Officio)  
Director General of Health Services  
Government of India, Nirman Bhavan, New Delhi 110001  
(up to 31 December 2019)
10. **Dr DS Rana** Member  
Chairman, Board of Management,  
Sir Ganga Ram Hospital, New Delhi.

- |     |  |                  |
|-----|--|------------------|
| 11. | <b>Dr (Shrimati) Vijay Laxmi Saxena</b><br>Former General Secretary, Indian Science Congress Association,<br>(ISCA), Kolkata, West Bengal,<br><br>Coordinator Bioinformatics<br>Infrastructure Facility Centre of DBT, (Government of India),<br>Head, Department of Zoology, Dayanand Girls P.G. College,<br>Kanpur, Uttar Pradesh<br>7/182, Swarup Nagar, Kanpur 208002, Uttar Pradesh | Member           |
| 12. | <b>Dr Mahesh B Patel</b><br>F-001, Shilalekh Tower, Opposite Police Stadium,<br>Shahi Baug, Ahmedabad 380004, Gujarat  | Member           |
| 13. | <b>Dr DG Mhaisekar</b><br>Vice Chancellor, Maharashtra University of Health Sciences,<br>Dindori Road, Mhasrul, Nashik 422004, Maharashtra   | Member           |
| 14. | <b>Dr N Gopalakrishnan</b><br>Professor (Nephrology), Madras Medical College,<br>Chennai 600003, Tamil Nadu  | Member           |
| 15. | <b>Dr DS Gangwar</b><br>Additional Secretary and Financial Adviser<br>Ministry of Health and Family Welfare<br>Government of India, Nirman Bhavan, New Delhi 110001  | Member           |
| 16. | <b>Professor Randeep Guleria</b><br>Director, AIIMS  | Member Secretary |
| 17. | <b>Shri Sudhansh Pant</b><br>Joint Secretary<br>Ministry of Health and Family Welfare<br>Government of India, Nirman Bhavan, New Delhi 110001  | Special Invitee  |
| 18. | <b>Professor VK Bahl</b><br>Dean, AIIMS  | Special Invitee  |
| 19. | <b>Dr DK Sharma,</b><br>Medical Superintendent, AIIMS  | Special Invitee  |

#### GOVERNING BODY

- |    |   |   |
|----|---|---|
| 1. | <b>Dr Harsh Vardhan</b>                             | President (from 3 July 2019)                                      |
|    | <b>Shri Jagat Prakash Nadda</b>                     | President (up to 2 July 2019)                                     |
| 2. | <b>Professor Ram Gopal Yadav, MP (Rajya Sabha)</b>  | Member  |
| 3. | <b>Shri Ramesh Bidhuri, MP (Lok Sabha)</b>          | Member  |
| 4. | <b>Shrimati Preeti Sudan</b>                        | Member  |
| 5. | <b>Shri Amit Khare</b><br><b>Shri R Subramanyam</b> | Member (from 16 December 2019)<br>Member (up to 15 December 2019) |
| 6. | <b>Dr DS Rana</b>                                   | Member  |

- |     |  |   |
|-----|--|---|
| 7.  | <b>Dr Rajiv Garg</b>                                 | Member (Ex-Officio)<br>(from 1 January 2020)    |
|     | <b>Dr S Venkatesh</b>                                | Member (Ex-Officio)<br>(up to 31 December 2019) |
| 8.  | <b>Dr Mahesh B Patel</b>                             | Member  |
| 9.  | <b>Dr DG Mhaisekar</b>                               | Member  |
| 10. | <b>Dr DS Gangwar</b>                                 | Member  |
| 11. | <b>Professor Randeep Guleria</b><br>Director, AIIMS  | Member Secretary                                |
| 12. | <b>Professor VK Bahl</b><br>Dean, AIIMS              | Special Invitee                                 |
| 13. | <b>Dr DK Sharma</b><br>Medical Superintendent, AIIMS | Special Invitee                                 |

#### **FINANCE COMMITTEE**

- |    |  |   |
|----|--|---|
| 1. | <b>Shrimati Preeti Sudan</b>                           | Chairperson   |
| 2. | <b>Shri Parvesh Sahib Singh Verma. M.P (Lok Sabha)</b> | Member (up to 22 August 2019)                                     |
| 3. | <b>Dr Rajiv Garg</b>                                   | Member (Ex-Officio)<br>(from 1 January 2020)                      |
|    | <b>Dr S Venkatesh</b>                                  | Member (Ex-Officio)<br>(up to 31 December 2019)                   |
| 4. | <b>Shri Amit Khare</b><br><b>Shri R Subramanyam</b>    | Member (from 16 December 2019)<br>Member (up to 15 December 2019) |
| 5. | <b>Dr MK Bhan</b>                                      | Member (up to 26 January 2020)                                    |
| 6. | <b>Dr DG Mhaisekar</b>                                 | Member  |
| 7. | <b>Dr DS Gangwar</b>                                   | Member  |
| 8. | <b>Professor Randeep Guleria</b><br>Director, AIIMS    | Member Secretary  |

#### **STANDING ACADEMIC COMMITTEE**

- |    |                          |   |
|----|--------------------------|---|
| 1. | <b>Dr Mahesh B Patel</b> | Chairperson                                     |
| 2. | <b>Dr Rajiv Garg</b>     | Member (Ex-Officio)<br>(from 1 January 2020)    |
|    | <b>Dr S Venkatesh</b>    | Member (Ex-Officio)<br>(up to 31 December 2019) |
| 3. | <b>Dr MK Bhan</b>        | Member (up to 26 January 2020)                  |



- |    |   |   |
|----|---|---|
| 4. | <b>Shri Amit Khare</b><br><b>Shri R Subramanyam</b> | Member (from 16 December 2019)<br>Member (up to 15 December 2019) |
| 5. | <b>Dr DG Mhaisekar</b>                              | Member  |
| 6. | <b>Dr DS Rana</b>                                   | Member  |
| 7. | <b>Dr (Shrimati) Vijay Laxmi Saxena</b>             | Member  |
| 8. | <b>Professor Randeep Guleria</b><br>Director, AIIMS | Member Secretary  |

#### STANDING ESTATE COMMITTEE

- |    |   |   |
|----|---|---|
| 1. | <b>Professor Ram Gopal Yadav, MP (Rajya Sabha)</b>    | Chairperson                                     |
| 2. | <b>Shri Parvesh Sahib Singh Verma, MP (Lok Sabha)</b> | Member (up to 22 August 2019)                   |
| 3. | <b>Dr DS Rana</b>                                     | Member  |
| 4. | <b>Dr Rajiv Garg</b>                                  | Member (Ex-Officio)<br>(from 1 January 2020)    |
|    | <b>Dr S Venkatesh</b>                                 | Member (Ex-Officio)<br>(up to 31 December 2019) |
| 5. | <b>Professor Yogesh Kumar Tyagi</b>                   | Member (Ex-Officio)                             |
| 6. | <b>Dr DS Gangwar</b>                                  | Member  |
| 7. | <b>Dr N Gopalakrishnan</b>                            | Member  |
| 8. | <b>Professor Randeep Guleria</b><br>Director, AIIMS   | Member Secretary                                |

#### STANDING HOSPITAL AFFAIRS COMMITTEE

- |    |   |                                       |
|----|---|---------------------------------------|
| 1. | <b>Shri Parvesh Sahib Singh Verma, MP (Lok Sabha)</b> | Chairperson<br>(up to 22 August 2019) |
| 2. | <b>Shri Ramesh Bidhuri, MP (Lok Sabha)</b>            | Member                                |
| 3. | <b>Dr DS Rana</b>                                     | Member                                |
| 4. | <b>Dr (Shrimati) Vijay Laxmi Saxena</b>               | Member                                |
| 5. | <b>Dr MK Bhan</b>                                     | Member (up to 26 January 2020)        |
| 6. | <b>Dr DG Mhaisekar</b>                                | Member                                |
| 7. | <b>Dr N Gopalakrishnan</b>                            | Member                                |
| 8. | <b>Professor Randeep Guleria</b><br>Director, AIIMS   | Member Secretary                      |

## STANDING SELECTION COMMITTEE

- |    |   |   |
|----|---|---|
| 1. | <b>Dr DS Rana</b>                                   | Chairperson   |
| 2. | <b>Dr Rajiv Garg</b>                                | Member (Ex-Officio)<br>(from 1 January 2020)                      |
|    | <b>Dr S Venkatesh</b>                               | Member (Ex-Officio)<br>(up to 31 December 2019)                   |
| 3. | <b>Dr DG Mhaisekar</b>                              | Member  |
| 4. | <b>Dr MK Bhan</b>                                   | Member (up to 26 January 2020)                                    |
| 5. | <b>Dr Mahesh B Patel</b>                            | Member  |
| 6. | <b>Shri Amit Khare</b><br><b>Shri R Subramanyam</b> | Member (from 16 December 2019)<br>Member (up to 15 December 2019) |
| 7. | <b>Dr N Gopalakrishnan</b>                          | Member  |
| 8. | <b>Professor Randeep Guleria</b><br>Director, AIIMS | Member Secretary  |



### 3. Academic Section

**Dean**

VK Bahl

**Associate Dean**

Rajeev Kumar

**Registrar**

Sanjeev Lalwani

The Academic Section develops policy and plans, and executes academic activities. These activities encompass the undergraduate, postgraduate and doctoral programmes for medical, nursing and paramedical courses. These activities are conducted by the undergraduate, postgraduate and paramedical cells.

#### UNDERGRADUATE EDUCATION

The section handles post-admission formalities for new students, develops and revises curricula and administers teaching programmes including internal assessment of undergraduate students admitted to various courses. The courses include MBBS, BSc (Hons) Medical Technology in Radiography, Ophthalmic Techniques, Operation Theatre Technology, BSc Dental Hygiene, BSc Dental Operating Room Assistant (DORA), BSc Nursing (Post-certificate) and BSc (Hons) Nursing courses.

#### Bachelor of Medicine and Bachelor of Surgery (MBBS)

The pattern of education in MBBS course was reviewed and re-structured in July 2004. The MBBS course is of 5½ years duration and comprises of 3 phases and internship. The details are as follows:

Phase	Duration (years)	Training
First	One	Pre-clinical
Second	One-and-a-half	Para-clinical
Third	Two	Clinical
Internship	One	Compulsory rotation in various departments

At present, 100 Indian students are admitted every year to the MBBS course (50 General Category, 15 Scheduled Caste, 8 Scheduled Tribe and 27 Other Backward Classes). These admissions were made based on merit through an All-India Entrance Examination. For persons with disabilities (PWD), 5% reservation was provided on a horizontal basis. For these 100 seats, 3,89,923 applications were received and 3,38,457 candidates appeared in the entrance examination held on 25 and 26 May 2019. As on 31 March 2020, 467 MBBS students including 73 interns were on rolls. There is a provision for admitting 7 foreign nationals on the recommendations of the Ministry of External Affairs, Government of India and 7 foreign nationals were recommended for admission.

Nine meritorious MBBS students were awarded scholarships for securing first, second and third positions in the first, second and final phase of professional examinations.

In 2019, the Academic Section, with the approval of the Academic Committee, initiated skills training as a part of the undergraduate curriculum. The faculty identified and developed training modules for skills considered essential for undergraduate MBBS students. These modules were developed with the SET facility (details below) and administered by various departments engaged in undergraduate teaching.

In continuation of its push for skills training, the Academic Section arranged for 15 MBBS undergraduate students, along with 3 faculty members, to visit the Cologne Inter-professional Skills Lab of the University of Cologne, Germany under a German Academic Exchange Service (DAAD) sponsorship for training in skills and learning how to develop a skills mentorship programme.



Five MBBS students were sponsored for a visit to University College, London at the Institute of Health Engineering to participate in the UCL Global Healthcare Engineering Symposium in July 2019. They were accompanied by three faculty members.

In addition, summer workshops were organized at IIT-Delhi, IGIB-Delhi and THSTI-Faridabad where undergraduate students spent time in developing research interests and made prototype devices for further development.

### **Paramedical and Nursing Education**

In 2019–2020, 77 students (39 General Category, 11 Scheduled Caste, 6 Scheduled Tribe and 21 Other Backward Classes, 2 Foreign Nationals) were admitted in BSc (Hons) Nursing course. For BSc Nursing (Post-certificate) course, 34 students

(20 General Category, 6 Scheduled Caste, 2 Scheduled Tribe, 6 Other Backward Classes and 1 Foreign National candidates) were admitted. Students admitted to various BSc (Hons) courses were as below:

Course	Total	General	Scheduled caste	Scheduled tribe	Other backward classes	Foreign
Ophthalmic Techniques	19	10	3	1	5	1
Medical Technology in Radiography	10	5	2	0	2	1
Operation Theatre Technology	5	3	1	0	1	0
Dental Hygiene	3	1	0	1	1	0
Dental Operating Room Assistant	8	5	1	0	2	0

The number of students on rolls in these courses as on 31 March 2020 were as below:

Course	Number of students
<b><i>Nursing</i></b>	
BSc Nursing (Post-basic)	51
BSc (Hons) Nursing	284
<b><i>Paramedical</i></b>	
BSc (Hons) Ophthalmic Techniques	65
BSc (Hons) Medical Technology in Radiography	29
BSc Operation Theatre Technology	25
BSc Dental Hygiene	5
BSc Dental Operating Room Assistant (DORA)	14

## POSTGRADUATE EDUCATION

The Academic Section looks after all activities pertaining to admission and training of postgraduate students including junior and senior residents. It handles all activities related to Fellowship, PhD, DM, MCh, MD, MS, MDS, MCh/DM (Direct 6 years course), M Biotechnology (MBiotech) and MSc courses in different disciplines.

Admissions to all postgraduate courses for Indian nationals as well as sponsored candidates are made through an All-India Entrance Examination held twice a year for all postgraduate courses except MSc, MSc Nursing and MBiotechnology courses, for which the examination is held once a year. Under sponsored category, foreign nationals are admitted through the same entrance examination. In 2019-20, 748 students were admitted in various courses. The number of postgraduate and doctoral students on roll as on 31 March 2020 was 1966.

### Admissions in various courses

Course	July 2019	January 2020	Total
MSc/MBiotech/MSc Nursing (August)*	94	–	94
MD/MS/MDS/MCh/DM (Direct 6 years)	173	188	361
DM/MCh	74	102	176
PhD	45	45	90
Fellowship	12	15	27
<b>Total</b>	<b>398</b>	<b>350</b>	<b>748</b>

\*Admissions are done once in a year.

**Postgraduate students on rolls**

Name of course	Number of students on roll
PhD	268
DM	379
MCh	183
Fellowship programme	45
MD	739
MS	105
MDS	65
MSc/MBiotech/MSc Nursing	182
<b>Total</b>	<b>1966</b>

**Subject-wise distribution of PhD students on rolls**

Subject	Open	Sponsored
Onco-anaesthesiology and Palliative Medicine (Dr BRA IRCH)	0	1
Anaesthesiology, Pain Medicine and Critical Care	0	1
Anaesthesiology, Pain Medicine and Critical Care (JPNATC)	1	0
Anatomy	23	0
Biochemistry	42	0
Biophysics	22	0
Biotechnology	5	0
Cardiac Anaesthesiology	0	1
Dermatology and Venereology	3	0
Cardiac Biochemistry	1	0
Cardiothoracic Centre (Stem Cell)	2	0
Community Medicine	3	1
Clinical Neuro-psychology	1	0
Community Ophthalmology (Dr RP Centre)	2	0
Forensic Pathology and Molecular DNA (JPNATC)	1	0
Cardiology	1	0
Endocrinology and Metabolism	4	0
Forensic Medicine	1	0
Gastroenterology and Human Nutrition Unit	5	0
Laboratory Medicine	3	0
Laboratory Medicine (JPNATC)	1	0
Laboratory Oncology	10	0
Medical Oncology (Dr BRA IRCH)	7	0
Medical Physics (Dr BRA IRCH)	1	1
Microbiology	5	1

Neuro-anaesthesiology	0	1
Neuroradiology	1	0
Neurology	17	0
Neurosurgery	2	0
Nuclear Magnetic Resonance	5	1
Obstetrics and Gynaecology	1	0
Ocular Biochemistry (Dr RP Centre)	1	0
Ocular Pathology (Dr RP Centre)	2	0
Ocular Pharmacology (Dr RP Centre)	1	0
Paediatrics (Genetic)	1	0
Paediatrics	2	1
Pathology	10	0
Pharmacology	14	0
Physiology	22	0
Psychiatry (Addiction Psychiatry)	1	0
Psychiatry (Clinical Psychology)	4	0
Psychiatry	2	0
Pulmonary Medicine and Sleep Disorders	4	0
Radiodiagnosis	0	1
Radiotherapy	0	1
Reproductive Biology	11	0
Stem Cell	1	0
Surgery	2	0
Surgery (JPNATC)	1	1
Transplant Immunology and Immunogenetics	5	2
<b>Total</b>	<b>254</b>	<b>14</b>

#### Subject-wise distribution of DM students on rolls

Subject	Open	Sponsored
Addiction Psychiatry (NDDTC)	12	2
Cardiac Surgical Intensive Care	4	0
Cardiac Anaesthesiology	14	1
Cardiology	22	4
Clinical Haematology	8	3
Clinical Pharmacology	3	2
Anaesthesiology and Critical Care	18	1
Endocrinology	8	3
Gastroenterology	21	4
Haemato-pathology	8	3
Infectious Diseases	12	1



Medical Genetics	7	0
Medical Oncology	25	3
Neonatology	9	3
Nephrology	8	5
Neuro-Anaesthesiology and Critical Care	18	3
Neurology	35	2
Neuroimaging and Interventional Neuroradiology	6	2
Onco-Anaesthesia (Dr BRA IRCH)	16	0
Paediatric Cardiology	6	2
Paediatric Nephrology	3	3
Paediatric Neurology	9	1
Paediatric Pulmonology and Intensive Care	3	2
Paediatric Oncology	5	2
Pulmonary, Critical Care and Sleep Medicine	12	3
Reproductive Medicine	4	3
Therapeutic Medicine	4	0
Cardiovascular Radiology and Endovascular Interventions	12	0
<b>Total</b>	<b>312</b>	<b>58</b>

#### Subject-wise distribution of DM (6 years course) on rolls

Subject	Open	Sponsored
Infectious Diseases	9	0
<b>Total</b>	<b>9</b>	<b>0</b>

#### Subject-wise distribution of MCh students on rolls

Subject	Open	Sponsored
Breast, Endocrine and General Surgery	8	2
Cardiothoracic and Vascular Surgery	25	2
Gastrointestinal Surgery	12	2
Gynaecologic Oncology	5	3
Head-Neck Surgery and Oncology	4	2
Minimal Access Surgery and General Surgery	10	2
Neurosurgery	17	2
Paediatric Surgery	5	2
Plastic and Reconstructive Surgery	15	0
Surgical Oncology	14	2
Trauma Surgery and Critical Care	15	6
Urology	8	2
<b>Total</b>	<b>138</b>	<b>27</b>

**Subject-wise distribution of MCh (6 years course) on rolls**

<b>Subject</b>	<b>Open</b>	<b>Sponsored</b>
Neurosurgery	12	0
Paediatric Surgery	6	0
<b>Total</b>	<b>18</b>	<b>0</b>

**Subject-wise distribution of Fellowship Students on rolls**

<b>Subject</b>	<b>Open</b>	<b>Sponsored</b>
Bariatric and Metabolic Surgery	2	0
Renal Transplant Surgery	1	0
Anaesthesiology–Pain Medicine	4	0
Epilepsy Surgery and Functional Neurosurgery	2	0
Spine Surgery	4	0
Skull Base and Cerebrovascular Surgery (NS)	1	0
Advanced Gastrointestinal Endoscopy	1	0
Uro-Oncology	1	0
Minimal Invasive Urology (Laparoscopic and Robotics)	1	0
Genitourinary Reconstructive Surgery (Adult)	1	0
GI Radiology	2	0
Thoracic Radiology	1	0
Paediatric Radiology	2	0
Minimally Invasive Gynaecological Surgery	1	1
Uro-Gynaecology	2	1
Gastroenterology-Pancreatology	1	0
Gastroenterology-Inflammatory Bowel Diseases	1	0
Cleft and Craniofacial Orthodontics	1	0
Neuro-critical Care	1	0
Aortic Surgery	2	0
Maternal Foetal Medicine (MFM) in Department of Obstetrics and Gynaecology	1	0
Clinical Research Methodology and Evidence Based Medicine	3	0
Arthroscopy	2	0
Joint Replacement	2	0
Musculoskeletal Oncology	2	0
Pelvic–Acetabular Trauma	1	0
<b>Total</b>	<b>43</b>	<b>2</b>

**Subject-wise distribution of MD/MS/MDS students on roll**

<b>Subject</b>	<b>Open</b>	<b>Sponsored</b>
Anaesthesiology	57	3
Anatomy	15	0
Biochemistry	15	0
Biophysics	14	0
Community Medicine	22	2
Conservative Dentistry and Endodontics	10	1
Dermatology and Venereology	19	3
Emergency Medicine	37	3
Forensic Medicine	9	1
Geriatric Medicine	18	3
Hospital Administration	7	3
Infectious Disease-DM (Direct 6-year course)	17	0
Laboratory Medicine	8	1
Medicine	57	3
Microbiology	15	0
Neurosurgery-MCh (Direct 6-year course)	11	0
Nuclear Medicine	18	3
Obstetrics and Gynaecology	43	3
Ophthalmology	115	3
Oral and Maxillofacial Surgery	12	3
Orthodontics	13	3
Orthopaedics	19	3
Otorhinolaryngology (ENT)	18	3
Paediatric Surgery-MCh (Direct 6-year course)	5	0
Paediatrics	34	3
Palliative Medicine	12	1
Pathology	28	3
Pedodontics and Preventive Dentistry	13	1
Pharmacology	13	0
Physical Medicine and Rehabilitation	9	2
Physiology	18	0
Prosthodontics	8	1
Psychiatry	30	3
Radiodiagnosis	26	0
Radiotherapy	10	3
Surgery	59	3
Transfusion Medicine	9	2
<b>Total</b>	<b>843</b>	<b>66</b>

### Subject-wise distribution of MSc students on rolls

Subject	Open	Sponsored
Anatomy	10	–
Biochemistry	10	2 (Foreign National)
Biophysics	9	–
Pharmacology	10	–
Physiology	10	–
Perfusion Technology	6	–
Biotechnology	28	–
Nuclear Medicine Technology	20	–
Reproductive Biology	10	1 (Foreign National)
Cardio Vascular Imaging and Endovascular Technology	6	–
<b>Total</b>	<b>119</b>	<b>3</b>

### Subject-wise distribution of MSc (Nursing) students on rolls

Subject	Open	In-service candidate/Foreign National
Cardiological/CTVS Nursing	8	1
Neurosciences Nursing	8	0
Paediatric Nursing	9	0
Psychiatric Nursing	9	0
Oncological Nursing	8	0
Nephrological Nursing	8	0
Critical Care Nursing	8	1
<b>Total</b>	<b>58</b>	<b>2</b>

### TRAINING PROGRAMMES

There is a provision for short term, long term and elective training for students and employees of various organizations in India as well as abroad. During 2019–20, 518 persons underwent training as listed below:

S. No.	Training	Number of trainees
1	Short Term training: Indian nationals	426
2	Short Term training: Foreign nationals	41
3	Long Term training: Indian nationals	9
4	Elective Training: Foreign nationals (UG students)	40
5	WHO Fellows: Indian nationals	2
6	WHO Fellows: Foreign nationals	–
7	Permission for organizing Conferences/Workshops	188

### COMMITTEE MEETINGS

The Academic Section organized meetings of the Academic Committee, Staff Council, Dean's Committee, Faculty and Research Presentations as per details given below:

S. No.	Committee	Number of Meetings
1	Academic Committee	2
2	Staff Council	1
3	Dean's Committee	2
4	Faculty (General Discussions)	6
5.	Oration	7
6.	Research Presentations	9

### ***SARAL* System for Online Learning and Student Management**

The Academic Section, All India Institute of Medical Sciences, New Delhi along with M/s Ballistic Learning Limited, has developed a system for online learning and student management. The system *SARAL* has two components: an online learning platform where educational material is uploaded by the faculty and accessed by students based on their academic course, and a student life-cycle management part where all aspects of student interactions with the academic section are made possible. The objective of creating the *SARAL* platform was to allow blended learning, online delivery of educational content and streamline administrative management.

The system was formally launched by Professor Randeep Guleria, Director, AIIMS, New Delhi on 24 October 2019.

Users from various academic courses were enrolled into the system beginning with January 2020 batch. With the COVID-19 pandemic starting in March 2020, physical classes for undergraduate students were suspended and online teaching using the *SARAL* platform and web-streaming became widely used.

Using this platform, faculty members can upload lectures/videos/notes/content on their scheduled teaching activity and can engage students in discussions and evaluations. By 31st March 2020, 2189 users had been registered and 198 courses had been created on the platform.

### **SET (Skills, E-learning and Telemedicine) FACILITY**

Professor AK Deorari, Chairman, Skills (Dry and Wet Lab) Facility

Professor MK Singh, Chairman, E-Learning Facility

Professor A Shariff, Chairman, Telemedicine Facility

Professor Ambuj Roy, Facility Coordinator in-charge



**Faculty and Staff at SET facility activities**

#### **Objectives:**

- Establish skills facility: Dry lab, wet lab, simulation-based learning
- Establish e-platform for online learning
- Telemedicine facility to collaborate between Institutes all over India

## Skill lab

### *Undergraduate students*

- Skill-based learning for undergraduate students which is integrated in the curriculum and spread over all nine semesters.
- The program starts in 4th semester using blended online and hands-on teaching methodology
  - Number of skill training sessions: 47
  - Number of students attending the various sessions: 550
- Visit by MBBS students for designing ideas
  - Total number conducted: 1
  - Total residents attending: 4

### *Nursing students*

- Skill training program for students of College of Nursing: 7
- Number of students attended: 320

### *Postgraduate students*

- **Skill training program for residents**
  - Total number conducted: 7
  - Total residents enrolled: 145
- **Orientation to high fidelity manikin**
  - Total number conducted: 1
  - Total residents enrolled: 20
- **Ultrasound course**
  - Total number conducted: 3
  - Total residents enrolled: 117
- **Acute critical care course**
  - Total number conducted: 1
  - Total residents enrolled: 23
- **Suturing workshop**
  - Total number conducted: 1
  - Total residents enrolled: 50



**Acute Critical Care Course**



**Suturing Workshop**

### *MCh/DM/Superspeciality training courses*

1. **IAP Advanced life support course**
  - Total number conducted: 2
  - Total residents enrolled: 83
2. **Difficult Airway workshop**
  - Total number conducted: 2
  - Total residents enrolled: 58



**IAP Advanced Life Support Course**



**Difficult Airway Workshop**

*Faculty training programs (Training of trainers)*

- **Simulation based learning for improving pre-term baby care**  
—Total number conducted: 8                      —Total faculty enrolled: 290
- Workshop on unicompartamental knee replacement  
—Total number conducted: 1                      —Total faculty enrolled: 27
- WHO SEARO consultation of ICOPE demonstration  
—Total number conducted: 1                      —Total faculty enrolled: 30
- **3SET Workshop for in-house faculty training**  
—Total number conducted: 2                      —Total faculty enrolled: 60



Content Development Workshop for Faculty



Simulation based learning for improving pre-term baby care

**Wet lab**

*Cadaveric Training Workshops (for MCh students/fellowship students/faculty)*

<b>Workshop</b>	<b>Total conducted</b>	<b>Total delegates enrolled</b>
Thoracic surgery	2	73
Head and neck surgery	1	23
Multiple organ retrieval	2	56
Bariatric and colorectal surgery	3	46
Laposcopic training	2	36
Lung Transplantation	2	40
Colorectal cancer-minimal invasive procedure	1	70



*Other training sessions and Workshops (Non-cadaveric)*

Session/workshop	Total conducted	Total delegates enrolled
Suturing/Intravascular anastomosis workshop	6	216
Difficult airway workshop, percutaneous tracheostomy training	1	28
Nerve and tendon repair workshop	2	40
Indo-US symposium on allergy and asthma	1	50
MD Residents skill training program	1	18
AIIMS Breast Course	1	45
Simulation based training for improving Pre term care and Quality Improvement approach	6	223
IAP Advanced Life support Course	1	43
Workshop on Reconstruction of Aortic Valve	1	26
Animal model for per oral endoscopic myotomy (Academics teaching on POEM)	1	8
International conference on bariatric surgery	1	15
Brainstorming meeting on DSD	1	35



#### Resuscitation training courses

Course	Total conducted	Total delegates enrolled
AHA accredited BLS and ACLS provider	5	120
AHA accredited BLS and ACLS instructor	1	10
AIIMS CRTP- BLS training programme	43	938
Code blue training	1	21
BLS and ACLS for resident doctors	2	16
INCPT BCLS workshop for physiotherapists	1	40
Workshop on CPR for optometrist	1	36
BLS course for AYUSH doctors	1	24





CRTP Program

### SET facility faculty involved in Resuscitation and Simulation courses outside Institute

1. Drills were conducted by Faculty of SET facility as a part of the 41st Annual Conference of Association of Obstetricians and Gynaecologists of Delhi for more than 100 Gynaecologists from Delhi on 28.09.2019  
—Shoulder Dystocia —Basic Life Support



2. Academic programme was conducted in MAMC for postgraduates by faculty of SET facility where the following drills were conducted:
  - PPH drills: Using high fidelity scenarios using low fidelity mannikin
  - Shoulder dystocia drills

### E-learning modules

The faculty involved with SET facility have created learning modules for skill learning. Each module which is hosted online consists of standard operating procedures for the skill, audio-video file and multiple-choice questions to learn about the skill.  
**Number of modules created: 34**

Distribution of skill modules for undergraduate skill learning:

**4th and 5th Semester**

Hand washing  
IM injection  
PV examination  
Pap smear  
IV cannulation  
Pulse oximeter use

**6th Semester**

Bag and mask  
Chest compression  
–Adult  
–Paediatric  
Neonatal intubation  
Basic suturing  
Cu-T insertion  
Endometrial aspiration

**7th Semester**

LMA insertion  
Arterial blood sampling  
Endotracheal intubation  
Glucometer use  
Gloving and gowning  
Fracture stabilization

---

**8th Semester**

Adult NG tube insertion  
Diagnostic LP  
Ascitic tap  
Cervical collar application  
Tru-cut biopsy  
Normal vaginal delivery  
Episiotomy repair  
Neonatal OG feeding  
Neonatal LP

**Internship**

ICD insertion  
Urinary catheterisation  
Needle thoracocentesis  
CVC insertion  
PICC insertion  
BLS and ACLS

**Telemedicine Services**

- Tele-evidence: 21
- Tele-CME: 199
- Tele-conference: 13
- Tele-consultation: 64
- Seminar: 22
- Live transmitting: 3

**Extra activities in March 2020 due to COVID-19 pandemic**

- Live UG and PG classes
- Regular online classes: 94
- WEBINAR recording: 12
- Guest lecture: 14
- Lecture on Yoga & Yoga Therapy: The Biomedical Science & Research Evidence
- MILAP Conservation (Multi Institutional Learning & Practice Platform) by Surgery (TRAUMA)

**RESEARCH**

***Ongoing projects***

1. Effectiveness and perceived usefulness of a consolidated skill-based learning program amongst medical interns: A mixed methods study
2. Comparison of King **vision** video laryngoscope **channelled and non-channelled** blades with direct laryngoscope for intubation in mannequin by medical students: A randomized mannequin study
3. Resuscitation practices in in-patient areas at All India Institute of Medical Sciences: A checklist based prospective, observational data collection study

***Completed projects***

1. Randomized trial to study the impact of simulation based learning over conventional training on knowledge and self-efficacy of nursing students in pediatric medicine and surgery wards
2. Comparing the effect of traditional versus simulation teaching methods on neonatal resuscitation in terms of knowledge, skills and self-confidence of nurses: A randomized controlled trial
3. Role of low fidelity simulation in acquisition of midwifery skills among nursing students: A mixed method approach

**Award of certificate of appreciation for contribution to various academic activities at the SET Facility by Director, AIIMS.**

<b>S. No.</b>	<b>Faculty Name</b>	<b>Department</b>
01	Dr Rashmi Ramachandran	Anaesthesiology, Pain medicine and Critical care
02	Dr Thilaka Muthiah	Anaesthesiology, Pain medicine and Critical care
03	Dr Manpreet Kaur	Anaesthesiology, Pain medicine and Critical care
04	Dr Devalina Goswami	Anaesthesiology, Pain medicine and Critical care
05	Dr Nishkarsh Gupta	Onco-anaesthesiology
06	Dr Rakesh Garg	Onco-anaesthesiology
07	Dr Gyanendra Pal Singh	Neuro-anaesthesiology
08	Dr Prabhjot Singh	Urology
09	Dr Prabudh Goel	Paediatric Surgery
10	Dr Anu Sachdeva	Paediatrics
11	Dr K Aparna Sharma	Obstetrics and Gynaecology
12	Dr Jhuma Sankar	Paediatrics
13	Dr Juhi Bharti	Obstetrics and Gynaecology
14	Dr Jyoti Meena	Obstetrics and Gynaecology
15	Dr Vidushi Sinha	Obstetrics and Gynaecology
16	Dr Ravneet Kaur	Centre for Community Medicine
17	Dr Harshal Salve	Centre for Community Medicine
18	Dr Suhani	Surgical Disciplines
19	Dr Mohit Joshi	Surgical Disciplines
20	Dr Kamlesh Kumari Sharma	College of Nursing
21	Dr Smita Das	College of Nursing
22	Dr Arvind Kumar	Medicine
23	Dr Ranveer Singh Jadon	Medicine
24	Dr Upendra Raj	Medicine
25	Dr Akshay Kumar	Emergency Medicine
26	Dr Rishi Nayyar	Urology
27	Dr Brusabhanu Nayak	Urology
28	Dr Hemanga K. Bhattacharjee	Surgical Disciplines
29	Dr. Rajni Sharma	Paediatrics
30	Dr. Narendra Bagri	Paediatrics

## Students' Wellness Centre

### Professor-in-Charge

Pratap Sharan, Department of Psychiatry

### Clinical Psychologists

Dr Anamika Sahu

Ms Aishwarya Raj (Contractual)

Ms Kalpana

Ms Divyani Khurana (Contractual)

Ms Akanksha Gupta (Contractual)

### HIGHLIGHTS

Student Wellness Centre (SWC) is dedicated to the wellness of all undergraduate students, postgraduate students, research scholars, and tenured researchers and residents at AIIMS, Delhi. This year the services were expanded to Ladies Hostel (Hostel 19) and Trauma Centre. SWC conducted various workshops on topics related to mental health and wellness to enable participants to cope better and become resilient. SWC also conducted focus group discussions with residents in various departments of AIIMS to get an understanding of issues faced by the students and residents and help solve them. The SWC has also started a Wellness Volunteer Program to develop a more approachable peer-cadre.

### EDUCATION

- Various lectures were delivered to Nursing students (1st year) by the SWC team during the year.
- Various lectures related to wellness were delivered to PG trainees by the SWC Team during Wellness workshops.
- Various lectures on 'communication with patients with chronic and terminal illness' for nursing staff

### CMEs/Workshops/Symposia/National and International Conferences

- CREST Workshop for 1st year MBBS students, 'Bringing Wellness to AIIMS Undergraduate Community', 15 July 2019, AIIMS, New Delhi
- Resident Wellness Workshops: 'Issues of Mental Health and Counselling' (8 August, 2019; 5 September; 24 October 2019; 7 March 2020), AIIMS, New Delhi
- Focus Groups on mental stress in Departments of Anatomy (15 October 2019), Biochemistry (7 May 2019; 30 July 2019, Obstetrics & Gynecology (29 October 2019; 19 November 2019) and Otolaryngology (19 November 2019; 13 December 2019), AIIMS, New Delhi
- Workshop on Communication Skills for Nurses (21 February 2020), AIIMS, New Delhi

### Lectures delivered

#### Dr Anamika Sahu

1. Suicide and safety nets, Resident Wellness Workshops titled "Issues of Mental Health and Counselling", 24 October 2019, AIIMS, New Delhi
2. School in the realm of positive mental health of children and adolescents (Symposium school mental health in India: what we have achieved?), 15th Biennial Conference of Indian Association of Child and Adolescent Mental Health (IACAM), 9 November 2019, Chandigarh
3. Dealing with patients in crisis, Workshop on Communication Skills for Nurses, 21 February 2020, AIIMS, New Delhi
4. Evidence based intervention: relevance to Indian context (symposium somatic symptom disorder: A flag bearer of consultation liaison perspective), 46th national annual conference of Indian Association of Clinical Psychologists, 22 February 2019, Chandigarh
5. Suicide and safety nets, Resident Wellness Workshops titled "Issues of Mental Health and Counselling", 7 March 2020, AIIMS, New Delhi
6. 'Determinants: Form, Movement, Colour', National Level Workshop on 'Rorschach: Exner's Comprehensive System', 16 March 2020, Ranchi, Jharkhand

#### Ms Kalpana Singh

1. Life work balance, Resident Wellness Workshops titled "Issues of Mental Health and Counselling", 24 October 2019, AIIMS, New Delhi
2. Life work balance, Resident Wellness Workshops titled "Issues of Mental Health and Counselling", 7 March 2020, AIIMS, New Delhi

3. Dealing with conflict, Workshop on Communication Skills for Nurses, 21 February 2020, AIIMS, New Delhi

#### **Ms Aishwarya Raj**

1. Prevention of Sexual Harassment, Students Union Panel Discussion on “Prevention of Sexual Harassment”, 16 April 2019, AIIMS, New Delhi
2. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 8 August 2019, AIIMS, New Delhi
3. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 5 September 2019, AIIMS, New Delhi
4. Say NO to Suicide, Emotional well-being of Doctors in India, 10 October 2019, IMA Hall, Delhi
5. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 24 October 2019, AIIMS, New Delhi
6. Communication with patients with chronic & terminal illness, Workshop on Communication Skills for Nurses, 21 February 2020, AIIMS, New Delhi
7. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 7 March 2020, AIIMS, New Delhi

#### **Ms Divyani Khurana**

1. Prevention of Sexual Harassment, Students Union Panel Discussion on “Prevention of Sexual Harassment”, 16 April 2019, AIIMS, New Delhi
2. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 8 August 2019, AIIMS, New Delhi
3. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 5 September 2019, AIIMS, New Delhi
4. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 24 October 2019, AIIMS, New Delhi
5. Communication with patients with chronic & terminal illness, Workshop on Communication Skills for Nurses, 21 February 2020, AIIMS, New Delhi
6. Say no to Harassment, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 7 March 2020, AIIMS, New Delhi

#### **Ms Akanksha Gupta**

1. Time Management, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 8 August 2019, AIIMS, New Delhi
2. Life work Balance, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 5 September 2019, AIIMS, New Delhi
3. 3, Life work Balance, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 24 October 2019, AIIMS, New Delhi
4. 4, Relationships and distortions, Workshop on Communication Skills for Nurses, 21 February 2020, AIIMS, New Delhi
5. 5, Life work Balance, Resident Wellness Workshops titled “Issues of Mental Health and Counselling”, 7 March 2020, AIIMS, New Delhi

#### **Oral papers/posters presented**

1. Gupta P, Jahan M, Sahu A, Prasad S, Shukla A. Coping styles and ability to function in tension type headache: An action research with stress inoculation training, 46th Annual National Conference of Indian Association of Clinical Psychologists, 23 February 2020, Chandigarh

## **PUBLICATIONS**

**Journals: 1**

**Abstracts: 1**

## **CARE FOR SCHOLARS**

### **Services**

#### ***Face to face counselling***

Existing Students Wellness Centres: Gents Hostel (Opposite Hostel 7) and Ladies Hostel (Hostel 10)

New Students Wellness Centres added: Hostel Number 19, Masjid Modh; Jai Prakash Narayan Apex Trauma Centre (JP-NATC)

**E-helpline:** wellness@aiims.edu; wellness@aiims.ac.in

**M-helpline (24\*7):** 9999865729, 999965730

### **Caseload:**

- More than 120 cases are registered with SWC during the year.
- The student wellness centre provided counselling and field support (e.g. helping students approach their guides, coordinate research meetings).

### **Booklets/Pamphlets**

- Hello AIIMS (Divyani Khurana, Pratap Sharan)
- Prevention of Substance Addictions and Behavioural Addictions (Aishwarya Raj, Siddharth Sarkar)

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Dr Anamika Sahu** was nominated for *Child and Adolescent award (previously known as Asha Nigam Award) 2021* for work in child and adolescent mental health in 46th National Annual Conference of Indian Association of Clinical Psychologists, 21-23 February 2020, Chandigarh.

## 4. Examination Section

### Dean (Examinations)

Siddharth Duttgupta (up to 29 February 2020)

Subrata Sinha (from 1 March 2020)

### Associate Dean (Examinations)

Ashok Kumar Jaryal

### Assistant Controller of Examinations

MK Singh

### Finance and Chief Accounts Officer (F & CAO)

Padam Singh (from 2 July 2019)

During the period under review (2019-2020), the Examination Section conducted the following Professional and Entrance Examinations:

### Postgraduate and Undergraduate Professional Examinations

S. No.	Month and year	Examination	Number of Students			
			Intended to appear	Absent	Passed	Failed
1	May 2019	DM	55	-	51	4
2	-do-	MCh	22	-	22	-
3	-do-	MD	94	01	86	7
4	-do-	MS	20	-	18	2
5	-do-	MDS	06	-	06	-
6	-do-	Fellowship programme	13	-	13	-
7	-do-	MSc courses	45	-	45	-
8	-do-	M Biotechnology	14	-	14	-
9	-do-	MSc (Nursing) Phase-I	27	-	26	1
10	-do-	MSc (Nursing) Phase-II	21	-	20	1
11	-do-	Second MBBS (Supplementary)	10	03	05	2
12	-do-	Final MBBS (Supplementary)	07	01	04	2
13	-do-	BSc Nursing (Post-Basic) Phase-I	26	01 NE	22	3
14	-do-	BSc Nursing (Post-Basic) Phase-II	24	-	21	3
15	-do-	BSc (Hons) Nursing Phase-I	76	-	67	8 1 NE
16	-do-	BSc (Hons) Nursing Phase-II	74	-	73	1
17	-do-	BSc (Hons) Nursing Phase-III	60	-	60	-
18	-do-	BSc (Hons) Nursing Phase-IV	77	-	76	1 NE
19	July 2019	First Professional MBBS	113	-	88	10 15 NE
20	-do-	BSc OT Technology Phase-I	17	-	11	6
21	-do-	BSc in Dental Hygiene Phase-I	02	-	02	-
22	-do-	BSc in Dental Operating Room Assistant	04	-	04	-
23	-do-	Bachelor of Optometry Phase-I	16	-	11	5
24	-do-	Bachelor of Optometry Phase-II	15	-	08	7
25	-do-	Bachelor of Optometry Phase-III	13	-	11	2

26	-do-	BSc (Hons) Medical Tech. in Radiography Phase-I	12	-	09	3
27	-do-	BSc (Hons) Medical Tech. in Radiography Phase-II	10	-	08	02
28	-do-	BSc (Hons) Medical Tech. in Radiography Phase-III	08	-	08	-
29	August 2019	First MBBS Professional (Supplementary)	22	08	08	06
30	November 2019	BSc (Hons) Ophthalmic Techniques Phase-I (Supplementary)	08	-	05	03
31	-do-	BSc (Hons) Ophthalmic Techniques Phase-II (Supplementary)	09	-	08	01
32	-do-	BSc. (Hons) Ophthalmic Techniques Phase-III (Supplementary)	04	-	03	01
33	-do-	BSc (Hons) Medical Techniques in Radiography Phase-I (Supplementary)	03	-	01	02
34	-do-	BSc OT Technology Phase-I (Supplementary)	09	-	06	03
35	-do-	BSc (Hons) Medical Techniques in Radiography Phase-II (Supplementary)	03	-	02	01
36	December 2019	Second MBBS	110	03 13NE	83	11
37	-do-	Final MBBS	76	01	70	05
38	-do-	BSc (Post-Basic) Nursing Phase-I (Supplementary)	03	-	03	-
39	-do-	BSc (Post-Basic) Nursing Phase-II (Supplementary)	03	-	-	03
40	-do-	BSc (Hons) Nursing Phase-I (Supplementary)	06	-	01	05
41	-do-	BSc (Hons) Nursing Phase-II (Supplementary)	07	-	05	02
42	-do-	BSc (Hons) Nursing Phase-III (Supplementary)	03	01NE	01	01
43	-do-	BSc (Hons) Nursing Phase-IV (Supplementary)	02	-	02	-
44	-do-	DM	75	-	75	-
45	-do-	MCh	34	-	34	-
46	-do-	MD	99	01	95	03
47	-do-	MS	19		18	01
48	-do-	MDS	08	-	08	-
49	-do-	Fellowship Programme	19	-	19	-
50	-do-	MSc courses	02	-	02	-
51	-do-	MSc Nursing Phase-I	02	-	02	-
52	-do-	MSc Nursing Phase-II	01	-	01	-
53	January 2020	Final MBBS (Compartmental Examination)	01	-	01	-
54		<b>Grand Total</b>	1409	18+15	1242	99+17

**Entrance Examinations for Undergraduate and Postgraduate courses:**

S. No.	Courses	Date of Examination	Candidates	
			Applied	Appeared
1.	MD/MS/MDS (AIIMS) July 2019	5 May and 14 June 2019	31340	26428
2.	DM/MCh/Fellowship Programme/MD (Hospital Administration); July 2019	6 April 2019	3739	3244



3.	Fellowship Programme July 2019	13 April 2019	91	64
4.	MBBS (AIIMS) August 2019	25 and 26 May 2019	389923	338457
5.	Online BSc (Hons) Nursing 2019	23 June 2019	8061	5178
6.	Online BSc Nursing (Post-Basic) 2019	1 June 2019	243	183
7.	Online BSc (Hons) Paramedical courses 2019	15 June 2019	4357	2220
8.	Online MSc Courses 2019	29 June 2019	608	432
9.	Online MSc Nursing 2019	1 June 2019	1650	1319
10.	Online M Biotechnology Entrance Examination 2019	29 June 2019	394	274
11.	Senior Residents Recruitment Examination, July 2019	9 June 2019	1922	1474
12.	PhD July 2019	21 May 2019	508	418
13.	Senior Residents Recruitment Examination January 2020	24 November 2019	1081	732
14.	MD/MS/MDS (AIIMS) January 2020	17 November 2019	58692	54238
15.	DM/MCh/MD (Hospital Administration) January 2020	3 November 2019	3352	2636
16.	PhD January 2020	4 January 2020	525	390
17.	Fellowship Programme January 2020	9 November 2019	160	99
		<b>Grand Total</b>	<b>506646</b>	<b>437786</b>

Candidates who passed PhD viva-voce examination: 93

#### Examinations for Recruitment

S.No.	Name of Examination	Online CBT* Exam	Candidates	
			Applied	Appeared
1	Nursing officers 2019 AIIMS, New Delhi and 4 Central Government Hospitals (RML, Safdarjung, LHMC, KSCH)	15 September 2019	57099	45946
2	Nursing Officers 2018, 4 AIIMS (Bhopal, Jodhpur, Patna, Raipur)	7 February 2020	62137	33664
3	Screening/Qualifying test of MRT	31 August 2019	354	228
4	Screening/Qualifying test of PA	9 August 2019	44	28
5	Screening/Qualifying test of PS	9 August 2019	07	07
6	Screening/Qualifying test of Steno	9 August 2019	15	04
7	Screening/Qualifying test of Junior AO	18 January 2020	30	07
	<b>Total</b>		<b>119686</b>	<b>79884</b>

\* Computer based test

#### Details of interviews conducted

S.No.	Name of Post (Interview)	Date	Called for Interview
1	Tutor in Nursing	4 April 2019	43
2	Scientist – I (Biostatistics)	16 April 2019	06
3	Clinical Psychologist	16 April 2019	15
	<b>Total</b>		<b>64</b>

### **Entrance Examinations conducted**

1. AIIMS PG Entrance Examination for admission to MD/MS/MDS courses was conducted on 5 May 2019 and 14 June 2019 for July 2019 session at 76 centres (Delhi 6, Outstation 70) and 17 November 2019 for January 2020 session at 138 centres (Delhi 4, Outstation 134), respectively. The results were declared on 19 June 2019 and 22 November 2019, respectively.
2. Selections for various Post-Doctoral (super-specialty) courses, viz. DM/MCh/MD (Hospital Administration) for July 2019 and January 2020 sessions and Departmental Assessment were done from 24 to 26 April 2019 for the July 2019 session and from 18 to 20 November 2019 for the January 2020 session.
3. The Examination section also conducted the online test for Senior Residents/Senior Demonstrators on 9 June 2019 for the July 2019 session and on 24 November 2019 for the January 2020 session.
4. Selections of candidates for registration to PhD programme for January 2019 and July 2019 and the Departmental Assessment was done on 14 and 15 June 2019.
5. The Entrance Examination for admission to MBBS course of AIIMS including fourteen new AIIMS-like institutes for August 2019 session was held in 239 (local 14 and outstation 225) centres in 151 (One hundred and fifty-one) cities of India on 25 and 26 May 2019 (2 shifts on each day).
6. BSc (Hons) Nursing Entrance Examination was held in Delhi & 6 AIIMS (Bhopal, Bhubaneswar, Jodhpur, Patna, Raipur and Rishikesh) on 23 June 2019 in CBT online mode.
7. The Entrance Examination for admission to MSc and M Biotechnology courses, August 2019 session, was held in Delhi on 29 June 2019 in online mode.
8. The Entrance Examination for admission to MSc Nursing course was held on 1 June 2019 in Delhi only in CBT online mode. The admission was made by allotment of seats on merit basis through counseling.
9. BSc Nursing (Post-Basic) Entrance Examination was held in Delhi in CBT online mode on 1 June 2019 followed by personal assessment of candidates on 26 June 2019.
10. The Entrance Examination for admission to Para-Medical courses, viz. BSc (Hons) in Bachelor of Optometry and BSc (Hons) Medical Technology in Radiography, BSc Course in Dental Operating Room Assistant (DORA), BSc course in Dental Hygiene, BSc course in Operation Theatre Technology (OTT), Medical Laboratory Technology (MLT), BSc in Operation Theatre and Anesthesiology Technology (OTAT), BSc in Medical Technology and Imaging Therapy for August 2019 session were held in Delhi in CBT online mode on 15 June 2019.
11. The Entrance Examination for fellowship programme for July 2019 session and January 2020 session were conducted in Delhi on 13 April 2019 and 9 November 2019, respectively.

### **Participation in other events**

1. The Examination Section introduced online counseling for admission to AIIMS-PG, MBBS, BSc (Hons) Para-Medical, MSc (Nursing) courses with the participation of Faculty and Staff of the Academic Section. Examination Section also actively participated in the personal assessment for BSc (Nursing) Post-Certificate course.
2. Examination Section is also providing technical expertise to various universities and institutions in India for conduct of their entrance examinations.



## 5. General Administration

### Deputy Director (Administration)

Subhasish Panda

### Deputy Secretary

Dhirendra Verma

The General Administration, including Personnel and Establishment, Security, Estate, Engineering Services Department, Stores, Coordination, Parliamentary matters, Grievances, etc. of the Institute are controlled and supervised by the Deputy Director (Administration). There are various branches looking after the above mentioned areas. Each branch is headed by a Senior Officer with supportive officers and staff members. A brief description of the Officers/Staff looking after various branches is given below.

### Chief Administrative Officer

Dr Sanjay Kumar Arya (up to 31 December 2019)

Deo Nath Sah (from 31 December 2019)

### Superintending Engineer

AIIMS Main Campus  
Manjul Rastogi

AIIMS Jhajjar Campus  
Hridayesh Kumar

### Chief Security Officer

Satyendra Kumar

### Deputy Chief Security Officer

RS Rawat

Deepak Kumar

### Executive Engineers

Vidya Bhushan  
Harpal Singh  
Vinod Kumar Sharma

Joginder Malhotra  
Ashok Kumar (from 10 February 2020)  
D Vijay Raghwan (from 1 February 2020)

### Senior Administrative Officers

Narendra Kumar (up to 31 December 2019)

Deo Nath Sah (up to 31 December 2019)

Lalit Oraon (from 1 January 2020)

BS Gill (from 1 January 2020)

Renu Bhardwaj

### Administrative Officer

SL Chamoli  
Lalit Oraon (up to 31 December 2019)  
Satish Kumar Singh (up to 1 July 2019)  
Raj Kumar  
Anita Tete  
BK Singh  
Ealias PI (up to 31 May 2019)  
Saroj Pant (from 10 December 2019)

Pallav Kumar Chitej (up to 25 November 2019)  
Chakravarthy EVS (up to 30 December 2019)  
BS Gill (up to 30 December 2019)  
Rajendran Pillai G  
Nikhil Bhatnagar  
Kushal Kumar  
Vipin Kumar (from 30 July 2019)  
Sasidharan Nair KG (10 December 2019 to 31 January 2020)  
Vipin Kumar (from 30 July 2019)

Narender Kumar Gupta (from 10 December 2019)

### Assistant Administrative Officers

Bhoop Singh  
Sasidharan Nair KG (up to 10 December 2019)  
Saroj Pant (up to 19 September 2019)  
Santhosh Kumar (from 1 July 2019)  
Uttam Chand (from 27 July 2019)  
Vimal Thakral (from 27 July 2019)  
Joginder Kumar (from 27 July 2019)  
Kishan Lal (from 27 July 2019)  
Kamal Chandra Bhatt (from 27 July 2019)

Narender Kumar Gupta (up to 9 December 2019)  
Mohanan PS (up to 31 July 2019)  
RK Sharma  
Nirmala Jacinta Kujur (from 1 July 2019)  
CP Sadana (from 27 July 2019)  
Latha Paulose (from 27 July 2019)  
Asha Dogra (from 27 July 2019)  
Vidya Sagar (from 27 July 2019)  
Saroj Kumar Lal (from 27 July 2019)

Rajesh Kumar (from 27 July 2019)	Surjit Singh (from 27 July 2019)
Sanjay Nandhi (from 27 July 2019)	Suresh Kumar (from 27 July 2019)
Renu Bhasin (from 27 July 2019)	Ishwar Dutt Sharma (from 27 July 2019)
Naresh Nangia (from 8 November 2019)	Shakuntala Rawat (from 8 November 2019)
Santosh Manocha (Khosla) (from 8 November 2019)	Sudesh Soni (from 8 November 2019)
Sohanbir (from 13 December 2019)	

**Senior Stores Officer**

Rakesh Kumar (from 1 August 2018)

**Store Officers**

Narender Kumar	Bhawani Ram
Arvind Kumar Sharma (up to 31 December 2019)	
Manohar Arya	Kamal Singh
	Archana Sharma

Responsibilities of Establishment Section and General Administration include recruitment, service matters, conducting meetings of statutory committees, management of estate and property, purchase of equipment, materials and consumables, security arrangements, employees' welfare, etc.

The total sanctioned staff strength of the Institute is **13413**. Positions filled up to 31 March 2020 were **10948** and include staffs of all Centres/Main Hospital/DO. The number of group-wise sanctioned strength and staff in-position is mentioned below.

S. No.	Category/Group	Sanctioned strength	In-position
1.	Faculty	1095	759
2.	A (Non-Faculty)	650	489
3.	B	7359	6215
4.	C and erstwhile D	4309	3485
		<b>13413</b>	<b>10948</b>

**Composition of SC/ST Cell at AIIMS, New Delhi**

**Liaison Officers**

**For SC/ST/PWD employees**

Dr Rajpal, Professor of Ophthalmology  
Dr RP Centre, AIIMS, New Delhi

**For OBC employees**

Dr Rakesh Yadav, Professor of Cardiology  
Cardio Neuro Centre, AIIMS, New Delhi

**Administrative Officer**

Anita Tete

During 2019-2020 the complaints/representations from SC/ST/OBC employees received in the section were as under:

Total representations received:	10
Total cases resolved/disposed:	7
Total cases under consideration:	3

## 6. Hospital

**Medical Superintendent**  
DK Sharma

**Department of Hospital Administration**

**Professor and Head**  
Sidhartha Satpathy

**Professors**

IB Singh

Sanjay Kumar Arya

**Additional Professors**

Nirupum Madaan  
Amit Lathwal

Anoop Daga  
Mahesh R

**Associate Professors**

Angel Rajan Singh

Parmeshwar Kumar

Vijaydeep Siddharth

**Assistant Professors**

Jitender Sodhi      Abdul Hakim

Vikas H

Laxmi Tej Wundavalli

Sheetal Singh

### Bed Complement

Bed Category	Main Hospital	Centre for Dental Education and Research (CDER)	Cardiothoracic and Neurosciences Centre (CNC)
General	836	17	317
ICU	92	-	74
Observation	69	-	09
Private Ward	165	-	64
<b>Total</b>	<b>1162</b>	<b>17</b>	<b>464</b>

### Hospital Performance Indices

Parameters	Main Hospital		CNC		CDER		Inference
	2019-20	2018-19	2019-20	2018-19	2019-20	2018-19	
Average length of stay (days)	9.9	9.5	10.5	10.2	5.0	5.6	Effective utilization of beds of regular admissions
Average bed occupancy rate (%)	85.9	86.8	83.8	84.9	69.6	73.6	Fair occupancy
Net death rate (%)	1.7	1.7	2.6	2.9	0.05	-	Low mortality rate despite a large number of critically ill patients are admitted to hospital
Combined crude infection rate (%)	5.6	5.8	-	-	-	-	

## 6.1 Medical Records Department

### Officer Incharge

Maresh R

### Chief Medical Officer (Acting)

**Ashok Kumar**  
(up to 24 June 2019)

**Sandeep M Singh**  
(from 25 June 2019)

### Junior Medical Record Officers

Roshan Lal-II

### EDUCATION

1. A group of nine Medical Record Technology (IInd year) students visited Medical Record Section, Main Hospital and a brief lecture was delivered on Medical Record Management at AIIMS by the Medical Record Officer/Junior Medical Record Officer on 4 April 2019.

### TRAININGS

1. Mrs Neelam Baria and Mr Vijay Kumar, Medical Record Technician have been nominated for 6 months Medical Records Technology Training Programme w.e.f. 1 July 2019 to 31 December 2019 conducted at Safdarjung Hospital, New Delhi organized by CBHI, Ministry of Health and Family Welfare, Government of India.
2. Mr Sandeep M Singh, MRO, and Mr Roshan Lal, MRO attended 1-day training programme on Medical Certification of Cause of Death and assigning of ICD-10 in the Main Auditorium, Delhi Secretariat organized by the Office of the Chief Registrar (Births and Deaths) on 4 December 2019 during 10.00 am to 5.00 pm

### COURT ATTENDANCE

1. A total of 338 summons/notices were received in the Medical Record Section (Main hospital) from various Courts of Delhi and outside Delhi. The concerned doctors/ consultants (as per case) and staffs from the Medical Record Department have been deputed to attend the court on behalf of AIIMS Hospital to depose/settle the case.

### Aid in Medical Education and Research

1. Approximately 6255 Medical Case Records (Case Sheets) have been retrieved and issued to Residents authorized by the concerned Consultants for research, education and other official purposes.

### Computerization and Digitization of Medical Records

1. Digitization of in-patient medical records of main hospital was started from 2014 for easy retrieval of records. Over 1.25 crore images of case records of patients have been scanned for future reference.

### In-patient services

1. The yearly statistical health bulletin at a glance of Main Hospital, CDER and CN Centre of AIIMS are given at Table I.
2. The AIIMS hospital has maintained its tradition of services and quality of patient care in spite of increasing number of patients who visited the hospital from all over India as well as from abroad. A total number of 142185 patients were admitted during the year in various clinical units of Main Hospital, CN Centre and CDER. The details of patient load as per Department-wise, State-wise and Gender-wise, Admissions, Discharges and Average Length of Stay are given at Tables II, III and IV, respectively. The department-wise deaths and related indices are given in Table V.
3. A total number of 123258 Surgical Procedures (Major and Minor) were performed during the year in various Surgical Disciplines of Main Hospital, CN Centre and Centre for Dental & Education Research (CDER) is given at Table VI.
4. Medical Records of indoor patients are systematically classified and categorized for easy retrievals for the purposes of Education, Research/Thesis, Presentation, Insurance, Court Cases etc. These records are stored in the Compactors according to CR Numbers. All the in-patient records of Main Hospital, CN Centre and Centre for Dental & Education Research (CDER) are maintained separately by Medical Record Section of the Main Hospital.
5. In addition to the above activities, the Neurology department has commissioned its special clinic in OPD and in-patient admissions to facilitate the care of health services during this year:

S. No.	Name of Department/Special Clinics	Location
1.	Comprehensive Stroke Clinic under Neurology Department.	On working Saturday, CNC OPD, Room No. 19, 20 & 21.

### Central Admission Office and Hospital Enquiry

1. The Central Admission Office & Enquiry (CAO&E) of AIIMS functions round the clock for 365 days without break.
2. All admissions to the in-patient areas of Main Hospital, CN Centre and CDER are made through this office. It functions like the heart of the Institute and performing important functions like patient registration for initiation of Admission Slip (Face-Sheet) and issuing of attendant passes etc.
3. The Admission Office also gives information to several ministries as well as to the higher authorities of AIIMS about the hospitalization of VIPs/VVIPs.
4. In addition, the office also functions as a general enquiry providing prompt and accurate information regarding the patients and the Institute. The staffs working there are on shift duties and are manned by Receptionists, Jr. Medical Record Officer and Medical Record Technicians etc.

### Outpatient Department and Specialty Clinics

1. A total number of **20,43,602** patients attended various General Out-Patients Department (OPD), Specialty Clinics and Emergency Department of the Main Hospital, AIIMS. The details of the outpatients load profile are given at Appendix-VII.

### Other Activities

S. No.	Name of activity	Total Numbers
1.	Amendments made in Inpatients Records during the year	977
2.	Amendments made in Birth Records during the year	365
3.	Amendments made in Death Records during the year	491
4.	Admission and other charges exempted for Indigent patients and patients admitted under JSSK Scheme in Main Hospital and CDER	21115
5.	Admission and other charges exempted for Indigent patients and patients admitted under JSSK Scheme in CN Centre	1111

The statistical data for the year 2019-20 (Annual Report) has been prepared/compiled by Mr Rajbir Singh, Medical Record Technician under the supervision of Medical Record Officer.

**Table I. Yearly Statistical Health Bulletin**

S. No.	Item	Main Hospital		CT and NS Centres		CDER	
		2019-20	2018-19	2019-20	2018-19	2019-20	2018-19
1.	Total patients admitted	120110	117169	20127	21278	1948	1189
	a. Adults and Children	117621	114721	–	–	–	–
	—Regular	33555	34116	12489	13290	864	840
	—Short	84066	80605	7638	7988	1084	349
	b. Newborn infants	2489	2448	–	–	–	–
	Regular	2489	2448	–	–	–	–
	Short	00	00	–	–	–	–
2.	Patients discharged (including LAMA, absconded, discharge on request and deaths)	116565	113630	19662	20704	1933	1163
	a. Adults and Children	114023	111236	–	–	–	–
	—Regular	32894	33027	12247	12972	868	818
	—Short	81129	78209	7415	7732	1065	345
	b. Newborn infants	2542	2394	–	–	–	–
	—Regular	2542	2394	–	–	–	–
	—Short	00	00	–	–	–	–



3.	Total days of care	431711	413040	136559	139560	5405	4918
	a. Adults and Children	410275	396071	–	–	–	–
	—Regular	329146	317862	129144	131828	4340	1573
	—Short	81129	78209	7415	7732	1065	345
	b. Newborn infants	21436	16969	–	–	–	–
	—Regular	21436	16969	–	–	–	–
	—Short	00	00	–	–	–	–
4.	Average length of stay of regular patients	9.9	9.5	10.5	10.2	5.0	5.6
	a. Adults and Children	10.0	9.6	–	–	–	–
	b. Newborn infants	8.4	7.1	–	–	–	–
5.	Total patient care days (as per daily census)	342644	346150	139190	140986	4318	4564
	a. Adults and Children	339382	343418	–	–	–	–
	b. Newborn infants	3262	2732	–	–	–	–
6.	Daily average number of patients (as per daily census)	939	948	381	386	12	13
	a. Adults and Children	930	941	–	–	–	–
	b. Newborn infants	09	07	–	–	–	–
7.	Average bed occupancy	85.9	86.8	83.8	84.9	69.6	73.6
	a. Adults and Children	85.1	86.7	–	–	–	–
	b. Newborn infants	0.8	0.1	–	–	–	–
8.	Births in hospital	2489	2448	–	–	–	–
	a. Male	1296	1286	–	–	–	–
	b. Female	1189	1159	–	–	–	–
	c. Intersex	04	03	–	–	–	–
9.	Total inpatient deaths (including newborns)	3073	3179	697	858	01	00
	a. Deaths under 48 hours	1148	1300	191	255	00	00
	b. Deaths over 48 hours	1929	1879	506	603	01	00
	c. Gross death rate (%)	2.6	2.8	3.5	4.1	0.05	0.0
	d. Net death rate (%)	1.7	1.7	2.6	2.9	0.05	0.0
10.	Total attendance in casualty	149550	149538	–	–	–	–
	Deaths	1835	1586	–	–	–	–
	Brought dead	1271	1238	–	–	–	–
11.	OPD attendance including special clinics (Main hospital)	1894052	1506791	–	–	–	–
	New cases	687314	771491	–	–	–	–
	Old cases	1206738	735300	–	–	–	–

**Table II. Department-wise admissions (Main Hospital and CN Centre and CDER)**

Department	Admission		Discharges (including LAMA, absconded, OR, deaths)		Total days of care		Average length of stay of regular admissions
	Regular	Short	Regular	Short	Regular	Short	
Anaesthesiology (Pain Clinic)	00	647	00	625	00	625	0.0
Dermatology and Venereology	777	2132	777	2089	9443	2089	12.2
Endocrinology and Metabolism	430	184	458	185	8032	185	17.5
Gastroenterology and Human Nutrition	1983	4429	1993	4350	25623	4350	12.9
Gastrointestinal Surgery and Liver Transplantation	792	356	828	337	13818	337	16.7
Geriatric medicine	888	782	924	758	9480	758	10.3
Haematology	1002	14328	993	14113	17501	14113	17.6
Medicine I	929	460	922	414	10012	414	10.9
Medicine II	1135	710	1024	723	11859	723	11.6
Medicine III	827	526	917	444	10567	444	11.5
Nephrology	944	11172	924	10856	15474	10856	16.7
Newborn	2489	00	2542	00	21436	00	8.4
Neonatal ICU (NICU)	165	09	114	05	863	05	7.6
Nuclear Medicine	438	237	411	223	802	223	2.0
Obstetrics and Gynaecology I	2139	1779	2114	1681	15704	1681	7.4
Obstetrics and Gynaecology II	2198	2093	2120	2016	16485	2016	7.8
Obstetrics and Gynaecology III	2150	2043	1940	1936	14224	1936	7.3
Oncology (Main)	318	00	325	00	1857	00	5.7
Orthopaedics I	1467	2083	1588	1855	11762	1855	7.4
Orthopaedics II	1461	2958	1326	2712	11103	2712	8.4
Otorhinolaryngology I	497	1342	528	1246	4135	1246	7.8
Otorhinolaryngology II	512	1239	496	1170	4809	1170	9.7
Otorhinolaryngology III	460	1248	495	1189	4009	1189	8.1
Paediatrics I	1056	4423	1027	4310	7494	4310	7.3
Paediatrics II	598	1344	576	1292	6899	1292	12.0
Paediatrics III	1207	10833	1056	10675	10159	10675	9.6
Paediatric Surgery	1390	1770	1308	1667	16206	1667	12.4
Physical Medicine and Rehabilitation	33	00	38	00	1535	00	40.4
Psychiatry	306	00	295	00	10032	00	34.0
Pulmonary Medicine and Sleep Disorders	767	5074	791	4972	8119	4972	10.3
Plastic and Reconstructive Surgery	336	203	307	184	2411	184	4.9
Radiotherapy	07	00	07	00	23	00	3.3
Rheumatology	14	1667	08	1645	55	1645	6.9

Surgical Disciplines I	837	671	880	589	9703	589	11.0
Surgical Disciplines II	1267	714	1269	613	8618	613	6.8
Surgical Disciplines III	845	460	923	392	8554	392	9.3
Surgical Disciplines IV	1613	873	1472	788	8733	788	5.9
Urology	1767	5277	1720	5075	13043	5075	7.6
<b>Total (Main)</b>	<b>36044</b>	<b>84066</b>	<b>35436</b>	<b>81129</b>	<b>350582</b>	<b>81129</b>	<b>9.9</b>
Cardiology	4112	3763	4034	3733	29229	3733	7.2
Cardiothoracic and Vascular Surgery	3041	23	3029	20	34637	20	11.4
Neurology I	928	997	916	975	9445	975	10.3
Neurology II	829	497	821	464	9534	464	11.6
Neurology III	775	858	745	842	8255	842	11.1
Neurosurgery I	1239	771	1162	731	19647	731	16.9
Neurosurgery II	1387	487	1362	430	17291	430	12.7
Neuroradiology	178	242	178	220	1106	220	6.2
<b>Total (CNC)</b>	<b>12489</b>	<b>7638</b>	<b>12247</b>	<b>7415</b>	<b>129144</b>	<b>7415</b>	<b>10.5</b>
<b>CDER</b>	<b>864</b>	<b>1084</b>	<b>868</b>	<b>1065</b>	<b>4540</b>	<b>1065</b>	<b>5.0</b>

Fig 1. Department-wise average length of stay

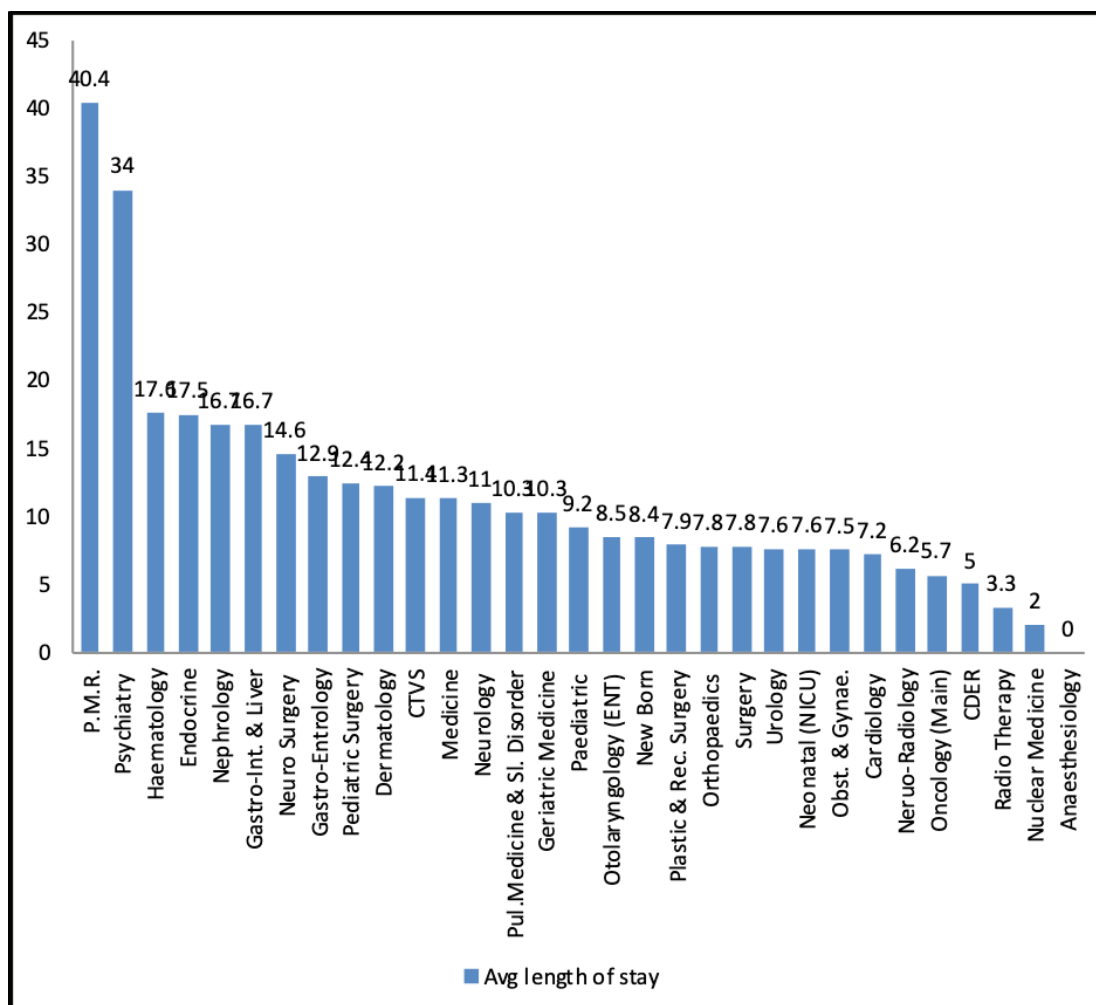
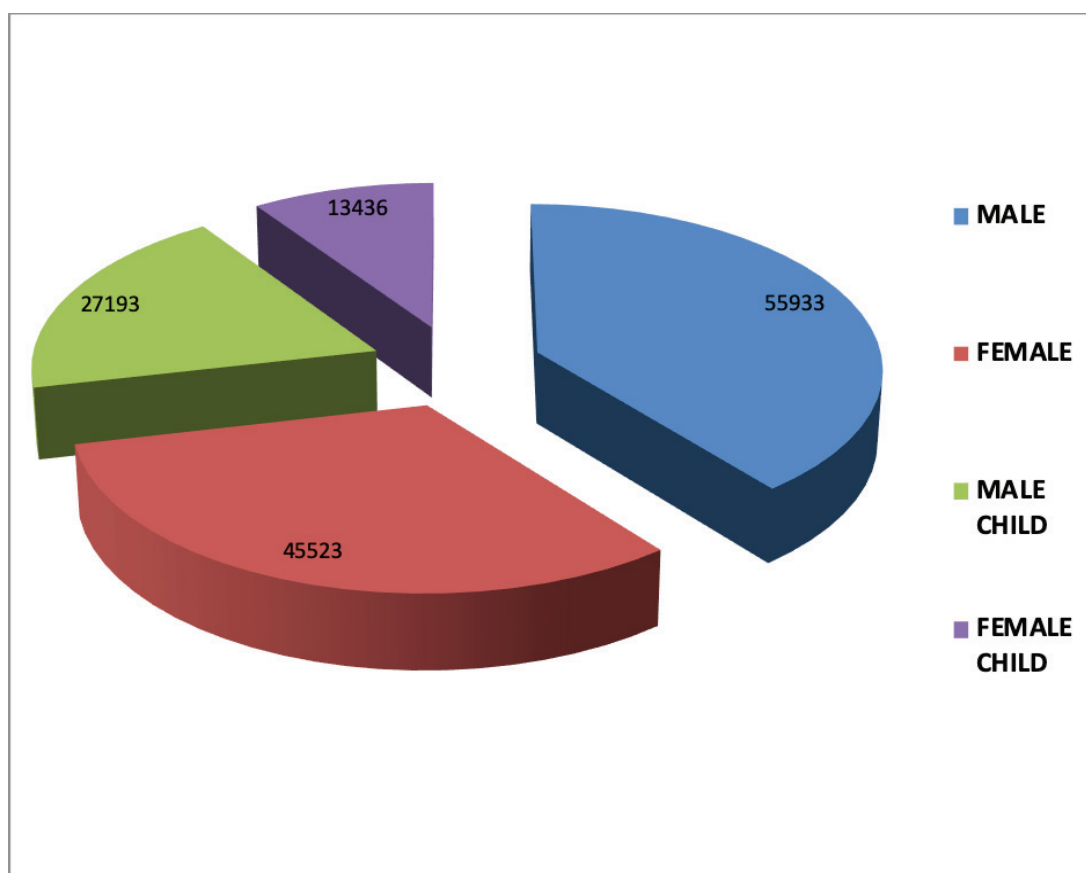


Fig 2. Gender-wise inpatients in Main Hospital, CN Centre and CDER



**Table III. Department-wise deaths in Main Hospital and CN Centre**

Department	Discharges	Total Deaths	Deaths under 48 hours	Deaths over 48 hours	Gross death rate (%)	Net death rate (%)
Anesthesiology (Pain Clinic)	625	00	00	00	0.0	0.0
Dermatology and Venereology	2866	00	00	00	0.0	0.0
Endocrinology and Metabolism	643	02	01	01	0.3	0.2
Gastroenterology and Human Nutrition	6343	585	244	341	9.2	5.6
Gastrointestinal Surgery and Liver Transplantation	1165	82	15	67	7.0	5.8
Geriatric medicine	1682	173	53	120	10.3	7.4
Haematology	15106	324	118	206	2.1	1.4
Medicine I	1336	310	137	173	23.2	14.4
Medicine II	1747	334	116	218	19.1	13.4
Medicine III	1361	301	129	172	22.1	14.0
Nephrology	11780	117	28	89	1.0	0.8
Newborn	2542	39	14	25	1.5	1.0
Neonatal ICU (NICU)	119	25	05	20	21.0	17.5
Nuclear Medicine	634	00	00	00	0.0	0.0
Obstetrics and Gynaecology I	3795	04	00	04	0.1	0.1
Obstetrics and Gynaecology II	4136	08	00	08	0.2	0.2
Obstetrics and Gynaecology III	3876	06	00	06	0.2	0.2

Oncology (Main)	325	158	91	67	48.6	28.6
Orthopaedics I	3443	04	00	04	0.1	0.1
Orthopaedics II	4038	09	01	08	0.2	0.2
Otorhinolaryngology I	1774	02	02	00	0.1	0.0
Otorhinolaryngology II	1666	06	02	04	0.4	0.2
Otorhinolaryngology III	1684	01	01	00	0.05	0.0
Paediatrics I	5337	76	20	56	1.4	1.1
Paediatrics II	1868	67	22	45	3.6	2.4
Paediatrics III	11731	93	31	62	0.8	0.5
Paediatric Surgery	2975	62	21	41	2.1	1.4
Physical Medicine and Rehabilitation	38	00	00	00	0.0	0.0
Psychiatry	295	00	00	00	0.0	0.0
Pulmonary Medicine and Sleep Disorders	5763	164	52	112	2.8	2.0
Plastic and Reconstructive Surgery	491	01	00	01	0.2	0.2
Radiotherapy	07	03	03	00	30.0	0.0
Rheumatology	1653	00	00	00	0.0	0.0
Surgical Disciplines I	1469	30	09	21	2.0	1.4
Surgical Disciplines II	1882	30	09	21	1.6	1.1
Surgical Disciplines III	1315	20	09	11	1.5	0.8
Surgical Disciplines IV	2260	29	10	19	1.3	0.8
Urology	6795	12	05	07	0.2	0.1
<b>Total (Main hospital)</b>	<b>116565</b>	<b>3077</b>	<b>1148</b>	<b>1929</b>	<b>2.6</b>	<b>1.7</b>
Cardiology	7767	207	92	115	2.7	1.5
Cardiothoracic and Vascular Surgery	3049	205	38	167	6.7	5.5
Neurology I	1891	40	04	36	2.1	1.9
Neurology II	1285	52	10	42	4.0	3.3
Neurology III	1587	41	09	32	2.6	2.0
Neurosurgery I	1893	85	17	68	4.5	3.6
Neurosurgery II	1792	64	20	44	3.6	2.5
Neuroradiology	398	03	01	02	0.8	0.5
<b>Total (CNC)</b>	<b>19662</b>	<b>697</b>	<b>191</b>	<b>506</b>	<b>3.5</b>	<b>2.6</b>
<b>CDER</b>	<b>1933</b>	<b>01</b>	<b>00</b>	<b>01</b>	<b>0.05</b>	<b>0.05</b>

Fig 3. Geographical distribution of inpatients (Main Hospital, CN Centre and CDER)

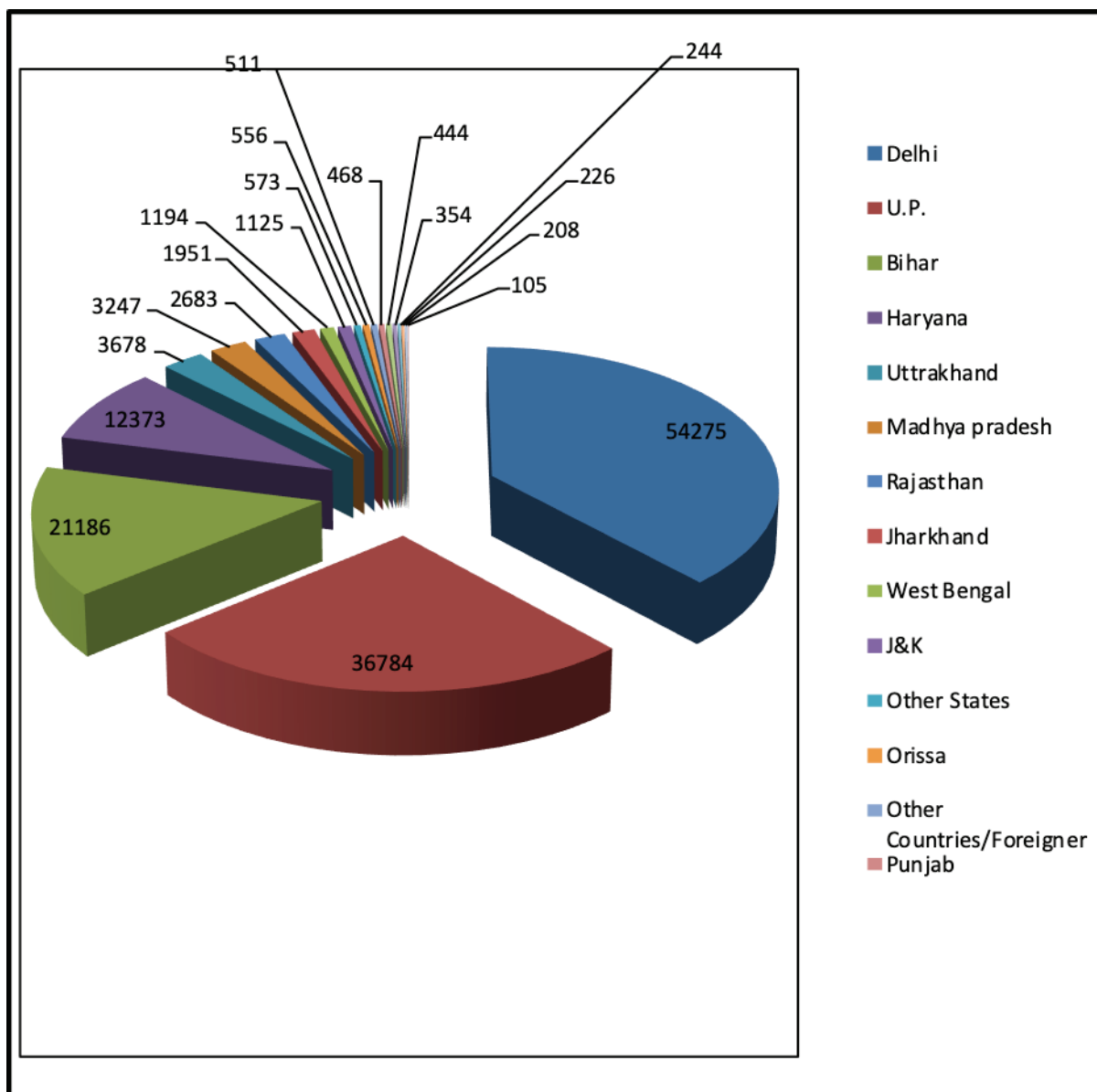


Table IV. Surgical procedures done in the Main Hospital, CDER and CN Centre

DEPARTMENT	Major	Minor		TOTAL
		Inpatient cases	Outpatient cases	
Surgical Disciplines I	797	271	3732	4800
Surgical Disciplines II	1134	381	3087	4602
Surgical Disciplines III	812	198	2626	3636
Surgical Disciplines IV	1277	617	3832	5726
Gastrointestinal Surgery and Liver Transplantation	612	0	0	612
Urology	1586	635	14424	16645
Obstetrics	1339	1099	00	2438
In vitro fertilization	00	1641	00	1641
Gynaecology I	644	656	00	1300

Gynaecology II	690	916	00	1606
Gynaecology III	733	872	00	1605
Foetal Medicine	00	850	00	850
Otorhinolaryngology I	944	697	5696	7337
Otorhinolaryngology II	895	627	5374	6896
Otorhinolaryngology III	851	614	5826	7291
Orthopaedics I	1871	805	00	2676
Orthopaedics II	1969	1938	00	3907
Paediatric Surgery	1545	253	00	1798
Casualty	00	192	00	192
Plastic and Reconstructive Surgery	298	147	2393	2838
Pulmonary Medicine and Sleep Disorders	13	671	00	684
Anaesthesiology (Pain Clinic)	04	00	00	04
Haematology	00	00	5010	5010
Physical Medicine and Rehabilitation	00	00	9567	9567
Dermatology and Venereology	18014	14080	61567	93661
<b>Total (Main hospital)</b>	<b>18014</b>	<b>14080</b>	<b>61567</b>	<b>93661</b>
Cardiothoracic and Vascular Surgery	3625	00	00	3625
Neurosurgery I	1456	89	00	1545
Neurosurgery II	1530	62	00	1592
<b>Total (CNC)</b>	<b>6611</b>	<b>151</b>	<b>00</b>	<b>6762</b>
<b>Dental Surgery/CDER</b>	<b>697</b>	<b>852</b>	<b>21286</b>	<b>22835</b>

**Table V. Attendance in outpatients and specialty clinics**

Medical Discipline		New Cases	Old Cases	Total
Medicine	General OPD	57200	100467	157667
	a) Obesity and metabolic disorders	431	971	1402
	b) Infectious disease clinic	1096	2718	3814
Rheumatology	General OPD	6124	20894	27018
	a) Rheumatology clinic	39	4639	4678
Geriatric Medicine		16891	13833	37373
Pulmonary Medicine and Sleep Disorders	General OPD	10213	24411	34624
	a) Sleep disorder	177	248	425
	b) Lung cancer	410	1859	2269
	c) ILD-PAH	278	1650	1928
	d) Combined pulmonary surgery	230	515	745
Nuclear Medicine		2769	2828	10478
Endocrinology and Metabolism		16417	13104	36796

Nephrology	General OPD	11903	44912	56815
	a) Transplant clinic	176	10969	11145
	a) RTCC	407	1400	1807
Haematology		3415	7009	14786
Gastroenterology		29975	28460	51901
Paediatrics	General OPD	32994	81124	114118
	a) Well baby	512	08	520
	b) Follow up TB	186	1174	1360
	c) Renal clinic	264	1617	1881
	d) Paediatric neurology	888	4829	5717
	e) Paediatric chest clinic	400	3422	3822
	f) High risk neonatal	315	1723	2038
	g) Genetic and birth defects clinic	3317	1214	4531
	h) Oncology clinic	317	2341	2658
	i) Child development clinic	1107	2480	3587
	j) Endocrinology clinic	141	1053	1194
	k) Neurocysticercosis clinic	194	1067	1261
	l) PCSC	177	1318	1495
	m) Rheumatology clinic	452	2981	3433
	n) Myopathy clinic	461	1871	2332
	o) Paediatric gastroenterology clinic	244	1862	2106
p) Autism	392	995	1387	
Dermatology and Venereology	General OPD	30263	55857	86120
	a) STD (Dermatology surgery)	1377	2727	4104
	b) Allergy clinic	454	1762	2216
	c) Leprosy	283	2743	3026
	d) Psoriasis	275	2091	2366
	e) Dermo-Surgery	1003	1411	2414
	f) Vitiligo	226	1543	1769
	g) Photo Therapy	103	416	519
	h) Photo Dermatology	33	207	240
	i) Paediatric Dermatology	130	297	427
Psychiatry	General OPD	15615	63829	79444
	a) Child guidance	781	688	1469
<b>Surgical Discipline</b>		<b>New cases</b>	<b>Old cases</b>	<b>Total</b>
Surgery		55067	48826	103893
Plastic Surgery		2770	4454	7224
Urology		15293	40293	55586
Gastrointestinal Surgery and Liver Transplantation		3489	7319	10808



<b>Paediatric Surgery</b>	<b>General OPD</b>	8143	17858	26001
	a) Hydrocephalus	03	34	37
	b) Paediatric Urology	444	2192	2636
	c) PSTC	24	498	522
<b>Anaesthesiology</b>	a) Pain Clinic	802	2758	3560
	b) Pre-Anaesthesia Clinic	12230	2471	14701
<b>Orthopaedics</b>	<b>General OPD</b>	60382	111982	172364
	a) Physiotherapy	25379	21962	47341
	b) Occupational Therapy	859	3382	4241
	c) Hydrotherapy	962	5522	6484
	e) Tuberculosis	40	176	216
	f) Scoliosis	642	1435	2077
	g) Hand Clinic	480	747	1227
	h) CTEV	216	2968	3184
	i) Sports Clinics	01	03	04
	j) Fragility Fracture Clinic and Liaison Services	76	227	303
	k) Bone and Soft Tissue Sarcoma Clinic	26	13	39
	<b>Otorhino-laryngology</b>	<b>General OPD</b>	45337	64403
a) Audiology		122	35	157
b) Speech		2758	2279	5037
c) Hearing		238	557	795
d) Voice		292	246	538
e) Vertigo		131	266	397
f) Rhinology		206	87	293
g) HN & R		76	87	163
<b>Obstetrics and Gynaecology</b>	<b>General OPD</b>	36035	80683	116718
	a) IVF	702	4221	4923
	b) Family Welfare	4267	4053	8320
	c) Antenatal	749	3859	4608
	d) Endo-Gynecology	73	145	218
	e) High Risk Pregnancy	146	10280	10426
<b>Radiotherapy</b>		277	816	1093
<b>Physical Medicine and Rehabilitation</b>	<b>General OPD</b>	10990	25249	36239
	a) Prosthetics & Orthotics	2805	5513	8318
	b) Disability Evaluation Clinic	00	92	92
	c) OPD (PT Section)	00	15924	15924
	d) OPD (OT Section)	00	9318	9318
	e) OPD (MSSO)	1559	1671	3230
<b>Others</b>	1. Emergency/Casualty	101861	47689	149550
	2. Employees Health Scheme	135296	90197	225493
	3. Nutrition	11105	00	11105
<b>Grand Total</b>		<b>789175</b>	<b>1254427</b>	<b>2043602</b>

## 6.2 Dietetics

### Officer In-Charge

Dr Mahesh R  
Additional Professor, Department of Hospital Administration

### Chief Dietician

Dr (Mrs) Parmeet Kaur

### Dieticians

Ms Swapana Chaturvedi

Ms Gurdeep Kaur

### Assistant Dieticians

Ms Vasundhara Singh

Ms Monita Gahlot

Ms Anjali Bhola

Ms Rekha Pal

Posted from Burns and Plastic Surgery Block

Ms Aparna Pareek Ms Ghazala Rahman

Department of Dietetics takes care of the therapeutic dietary needs of approximately 2300 indoor patients everyday. There are various kinds of diets provided to the patients based on the disease and dietary requirements calculated on the basis of nutritional screening and nutritional assessment done by the Dieticians in their respective wards. The approximate yearly data of different kinds of diets sent to the indoor patients of main hospital and centres, comprising around three major meals and two minor meals in a day are as follows:

### Total number of indoor patients served hospital diet per annum (Main Hospital and Centres)

S. No.	Type of Diet	Number of patients
1.	Normal	4,18,418
2.	Private ward	88,065
3.	Semisolid	70,722
4.	Therapeutic	1,51,991
5.	Enteral feeds	59,965
	<b>Total</b>	<b>2319</b>

In addition nutrition counseling OPD and clinics are also run in the Main Hospital. The approximate number of indoor and outdoor patients counseled by the department are:

### Total number of patients given outdoor and indoor nutrition counseling (Main Hospital)

Gender	Outdoor	Indoor	Total
Male	5206	4000	9206
Female	4561	3524	8085
<b>Total</b>	<b>9767</b>	<b>7524</b>	<b>17291</b>

### EDUCATION

- Short term observership for MSc Foods and Nutrition students
- Nutrition classes for BSc (Hons) Nursing and Post Basic BSc Nursing students of AIIMS College of Nursing

### Departmental CMEs/Workshops/Symposia/conferences

- 6 April 2019: World Health Day was celebrated as per theme given by WHO (Universal Health Coverage: Everyone, Everywhere) at Shishu Mandir, AIIMS campus. Children were educated about healthy eating practices and also a poster entitled "Healthy Eating" for children was displayed.

- 9 April 2019: Poster display on focus of Water, Sanitation and Hygiene (WASH) was done for the kitchen staff.
- 22 May 2019: Surgical Nutrition Updates in collaboration with IAPEN at AIIMS, New Delhi.
- 15 Oct 2019: Global hand washing day with the theme—Clean hands for all
- 16 Oct 2019: World Food Day with the theme—Healthy Diets for a Zero Hunger World

### **Lectures delivered**

#### **Dr Parmeet Kaur**

1. MNT in Gestational Diabetes-Time to move forward, Indian Dietetic Association, Delhi Chapter, 6 April 2019, New Delhi
2. Fundamentals of Nutrition for Adult Solid Organ Transplant, IAPEN Symposium Series on Surgical Nutrition, 22 May 2019, New Delhi
3. Food, Nutrition and Dietetics Education in Schools, Teacher Training Programme, CBSE, 19-20 August 2019, New Delhi
4. Importance of Nutrition during Antenatal care, Post-natal care and for the optimal growth of children (Special Invited Guest Lecture), Ayush Poshan Mah Celebration, Central Council for Research in Unani Medicine, 27 September 2019, New Delhi
5. Sports Nutrition, Board of Studies MYAS-GNDU Sports Sciences and Medicine, 30 September 2019, Amritsar
6. Nutrition in Surgical Oncology, IAPEN International conference on Surgical Nutrition, 22 and 23 November 2019, Bangalore
7. Nutrition for a healthy life, Swasth Bharat initiative by Govt. of India at Nirman Bhawan, 16 November 2019, New Delhi
8. Global Burden of obesity, IAPEN clinical Nutrition congress, 8 February 2020, Puducherry
9. Dietary recommendations for mother and child, International conference on Unani Medicine, 12 February 2020, New Delhi
10. Nutrition in Chyle leak, AIIMS Pulmocrit 2020, 8 March 2020, New Delhi

### **RESEARCH**

#### **Departmental Projects**

1. A clinical nutrition approach to improve professional dietetic practice in the surgical wards of All India Institute of Medical Sciences, New Delhi, India. A pilot study.

### **PUBLICATIONS**

**Journals: 5**

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Dr Parmeet Kaur** received Lifetime Achievement Award in the field of Holistic Health at the National Ayush Conference, January 2020; Certificate of Commendation by Ministry of Health and Family Welfare, Directorate General of Health Services, Government of India for Guest Lecture on Healthy Lifestyle, July 2019; Launch of IAPEN Malnutrition Week app (mobile phone based) consisting of Nutrition Screening and Assessment Tools on 22 May 2019; Expert Panel/Consultant to the Honorable Vice President of India w.e.f. 7 September 2019; Advisor, Bachelor of Vocation (B.Voc.), Health Care Management, MYAS-GNDU Sports Sciences & Medicine, Guru Nanak Dev University Campus, Amritsar. Session: 2019-20; Resource Person, Central Board of Secondary Education (CBSE), Class XI and Class XII content writing for Food, Nutrition and Dietetics Course; Resource Person of Scientific Session entitled – Unani Medicine—Towards Achieving the Sustainable Development Goal (SDG -3) of Good Health and Well Being in February 2020; Member, Healthy Eating Task Force for Monograph entitled—Eating Right for a Healthy You published by ILSI, India & South Asia Region

## 6.3 Hospital Billing Section

The donations received and payments made to patients during financial year 2019-2020 are:

Donations received from donors (Bank interest+Donations including online+Poor Fund boxes): Rs 46,57,325

Payment made to 452 patients: Rs 13,54,550

(The amount disbursed to poor patients is from donations received from donors during the year as well as from the previous balance lying in the 'AIIMS POOR FUND ACCOUNT').

## 6.4 Nursing Services

**Chief Nursing Officer (Acting)**

Ms Kamlesh Chandelia

Nursing service is an integral part of AIIMS, which aims at high quality nursing care to the patients and community. The professional nurses work in an environment that encourages professionalism and expertise in providing comprehensive patient care with the members of allied disciplines in the hospital.

### Staff strength

The main stratum of workforce in AIIMS is constituted by the well trained professional nurses from different departments. Staffing in nursing service is based on SIU (Staff Inspection Unit) norms in AIIMS.

Staff Strength in Hospital/Centers	
Chief Nursing Officer	1 (Acting)
Nursing Superintendent	5
DNS	39
ANS	200
Senior Nursing Officer	1019
Nursing Officer	3365
<b>Total</b>	<b>4629</b>

### Continuing Nursing Education

Nursing staff education is carried out throughout the year by in-service and continuing education programs to update the clinical knowledge of practicing nurses thereby aiming at improving standard of nursing care at AIIMS.

### Nursing in-service education program

A well-structured in-service education program has been initiated since January 2011. Initially it started with twice a week classes of one hour each, which was later on increased to thrice in a week. Two classes in a week are conducted for the bedside nurses (Nursing Officer and Senior Nursing Officer), whereas one class in a week is for senior nurses (Sister In-charges and above).

Facilitator	Ms Kamlesh Chandelia
Mentor	Ms Hanumati Devi
Educator	Ms Rebecca J Herald Ms Srinithya Raghavan Ms J Subbulakshmi

### Clinical Teaching

Clinical teaching was initiated in AB, C and D wings of the main hospital with an objective of upgrading standard of nursing care and solving practical issues in the area itself. This initiative was started on 1 January 2015, with active participation of bedside nurses and supervisory nursing personnel of the clinical areas. From August 2018 onwards clinical teaching was handed over to ANS In-Charge of the respective wards.

### **In-Service Education Weekly Classes**

A total of 106 lectures were taken on the listed topics in different batches. The number of nursing personnel who attended the in-service education classes was 2758.

Classes for Senior nursing Personnel/CNO/NS/DNS/ANS/SNO HR

1. Safe Staffing
2. Hepatic Disorder
3. Stroke
4. Cardiac Emergencies I
5. Cardiac Emergencies II
6. Acute Kidney Injuries
7. Respiratory Emergencies
8. SIU & Staffing
9. Corona Virus
10. Overview of Malignancies Patient Safety
11. Management of patients on ventilator
12. Hepatic Disorder
13. Stroke
14. Cardiac Emergencies I
15. Cardiac Emergencies II
16. Acute Kidney Injuries
17. Respiratory Emergencies
18. SIU & Staffing
19. Corona Virus
20. Overview of Malignancies

### **Module**

Developed a protocol for Admission/Discharge/Transfer/LAMA/Death, as there had been no such document available at AIIMS and this endeavour has been both challenging and rewarding. Hours of studying AIIMS protocols and Admission/Discharge policy circulars issued from time to time has given a final shape to this document.

### **Conferences and workshops conducted by NIE**

One day Critical care Nursing Update for bedside nursing personnel at AIIMS, New Delhi

<b>Date/Month/Year</b>	<b>Total Participants</b>
25 July 2019	37
1 August 2019	37
3 October 2019	37

### **Mental Health at Workplace for Senior Nursing Officers**

Eight full day workshops were conducted for Senior Nursing Officers of Main hospital in collaboration with College of Nursing, AIIMS.

### **Soft Skills**

A workshop to enhance Soft Skills among nurses was planned with Department of Psychiatry and one such workshop was organized on 21st February which was attended by 40 nursing officers. Monthly such workshops have been planned all through the year 2020.

### **Workshops/conferences attended**

1. Workshop on Recent Advances in Hepatology Nursing, 10 April 2019, ILBS, Vasant Kunj, Participants: 2
2. Quality Improvement: Striving towards Nursing Excellence, 15 April 2019, Participants: 2

3. A Nurse “Voice to Lead: Health For All”, 6 May 2019, Participants: 126
4. Workshop on RTI, 6 May 2019, CMET, Participants: 6
5. Training programme in Nutrition and Health Education, 10-14 June 2019, CFNEU, D2/183, Kidwai Nagar West, Participants: 4
6. ELNEC-Train the Trainers Programme, 5-7 June 2019, Participants: 9
7. Yoga Workshop, 17 June 2019, CIMR, Participants: 11
8. Advanced Nursing Care Administration and Quality Management Programme, 15-22 July 2019, AHA House, Noida, Participant: 1
9. AHA Accredited BLS and ACLS Provider Course, 5-7 August 2019, Participant: 1
10. EMINDIA 2019 Pre conference Workshop, 2 August 2019, Participants: 10
11. Orientation programme to Retiring Staff, 19-20 August 2019, Participants: 4
12. Paediatric Critical Care, 17 October 2019, Participants: 20
13. Stoma Care Hands on Workshop, 12 October 2019, Participants: 5
14. Strengthening Midwifery Practices, 14-22 October 2019, Participants: 4
15. Advanced Nursing Care Administration and Quality Management Programme, 16-20 September 2019, Participants: 2
16. Advanced Nursing Care Administration and Quality Management Programme, 21-26 October 2019, Participants: 2
17. Hematocon, Pre Conference 2019, 7 November 2019, Participants: 55
18. Hematocon, Main Conference 2019, 8 and 9 November 2019, Participants: 10
19. Care of Spinal Disorder Patients, 21 October 2019, Participants: 10
20. Congress of Asian Society of Transplant, 29 October 2019 to 2 November 2019, New Delhi, Participant: 1
21. NURSICON 2019, 1 and 2 November 2019, Participant: 1
22. HISICON 2019, 12-15 September 2019, Participants: 8
23. 1st International Nursing CME and Module Development in Child Care, 1 and 2 November 2019, Participants: 10
24. Exploring New Dimensions: Updated Care and Practices in Nursing, 14 November 2019, Participants: 20
25. Exploring New Dimensions; Updated Care and Practices in Nursing, 16 November 2019, Participants: 20
26. Changing Tides in Quality Care-Riding the Waves Together, 28-30 November 2019, Participants: 2
27. Public Lecture/CNE/CME on Child Abuse, 12 November 2019, Participants: 18
28. Research Methodology for Nursing Professionals, 2-10 December 2019, Participants: 2
29. QI Workshop in Obs & Gyne Dept, 14 December 2019, Participants: 17
30. Assertiveness in Nursing; Need of the Hour, 17 January 2020, Participants: 25
31. Simulation in Nursing, 4 February 2020, Participants: 15
32. Enhancing Soft Skills Among Nursing Personnel, 10 February 2020, Participants: 10
33. Training Programme in Nutrition and Health Education, 27-31 January 2020, CFNEU, D2/183, Kidwai Nagar West, Participants: 5
34. Emergency Nursing—An Upcoming Change, 3-7 February 2020, Participants: 2
35. Nursing Symposium—ISBMT Meet 2020, 13 March 2020, Participants: 2
36. 8th IANN Conference, 9-11 February 2020, Participants: 4
37. Nurse Led Heart Failure Management Programme, 11 February 2020, Participants: 10
38. AHA Accredited BLS & ACLS Provider Course, 10-12 February 2020, Participant: 1
39. Role of Nurse in Management of Addictive Behaviour Disorders, 9 March 2020, Participants: 12
40. Workshops on ‘Good Bedside transfusion practices,’ 16 October 2019, Participants: 15

—Three training sessions of Nurses on Deceased Organ and Tissue Donation, CMET, AIIMS.

—Five sessions for training 99 Nurses on Deceased Organ and Tissue Donation, ORBO, AIIMS.

—Wound Care and Pressure Sore Prevention Workshop at CMET, AIIMS, Participants: 30

—Workshop on, CRTP & ECG Course, AIIMS, Participants: 206

A total of 1479 nursing personnel attended 80 Workshop/Conferences during the year excluding Consultancy and participation as experts.

### Community Health Programme

NIE Team along with Chief Nursing Officer and DNS Incharge visited and delivered Health Talks in NP Co-Ed Model Senior Secondary School, Ansari Nagar West.

1. Good Touch; Bad Touch, 10–10.30 am KG to I standard, 49 students
2. Good Touch; Bad Touch, 10.30–11 am, II to V standard, 100 students
3. Breast self-examination and menstrual hygiene, 12 noon-1 pm, IX to XII, 47 students

### Deputation of Nursing Personnel for Higher studies

Nursing services at AIIMS focus on improving the nursing care by facilitating abundant opportunities for higher studies. After 5 years of regular services, nurses are eligible for pursuing higher studies with full pay. Nine nurses were pursuing Post-basic BSc nursing program and ten MSc nursing program during the year from main Hospital.

### Coordination and Organization of Educational Visits for various nursing educational institutions

Nursing educators in AIIMS conducted orientation for groups from different educational institutions across India as listed below:

Name of the College	Date	Number of Students	No. of Faculty
Government School of Nursing, Tumakuru, Karnataka	18 April 2019	GNM: 33	3
IGNOU/RAK College of Nursing	18 July 2019	Pc BSc III year: 11	-
Government College of Nursing, Mysore, Karnataka	31 October 2019	IV Year BSc: 35	2
PIMS College of Nursing, Pondicherry	7 November 2019	IV Year BSc & MSc: 35	2
DY Patel College of Nursing, Mumbai	21 November 2019	BSc & MSc: 35	2
Ramaiah College of Nursing, Bengaluru, Karnataka	6 February 2020	BSc: 35	2
CMC College of Nursing, Imphal	5 March 2020	BSc: 35	2

### Issuing credit hours certification

A total of 8 nurses were issued certificates of credit hours for registration in Nursing Council.

### Contribution as Organizers in Collaboration with Other Departments

NIE team organized various educational activities inside and outside AIIMS such as:

Conference	Collaboration With	Date	Attendance
HEMATOCON 2019	Dept of Hematology	7 November 2019	55
NURSICON 2019	Dept of Hospital Administration	10-11 December 2019	100 per day

### Coordination with KL Wig CMETi

Coordinated with KL Wig CMET in selecting and designating candidates for attending workshops organized by CMET.

### INFECTION CONTROL NURSES ACTIVITIES

#### MAIN HOSPITAL 2019-20

##### Infection Control Core Committee

Dr DK Sharma	Medical Superintendent, AIIMS, Chairman
Dr Arti Kapil	Professor, Department of Microbiology
Dr Rakesh Lodha	Professor, Department of Paediatrics
Dr Rashmi Ramachandran	Professor, Department of Anaesthesia
Dr Anoop Daga	Associate Professor, Hospital Administration
Dr Karan Madan	Assistant Professor, Department of Pulmonary Medicine

Dr Gagandeep Singh	Assistant Professor, Department of Microbiology
Dr Jhuma Sankar	Assistant Professor, Department of Paediatrics
Ms Nandayshri George	Nursing Superintendent, Infection Control
Ms Elpreda M Victor	Senior Nursing Officer, Incharge Infection Control Nurse
Ms MRE Vasanth	Senior Nursing Officer, Infection Control Nurse
Ms Betty Maria Binu	Senior Nursing Officer, Infection Control Nurse
Mr Dhawal Dwivedi	Nursing Officer, Infection Control Nurse
Mr Kunj Bihari Gauttam	Nursing Officer, Infection Control Nurse

HICCOM core committee meets periodically to discuss day-to-day activities and interventions. HICCOM administrative rounds conducted periodically with infection control core committee, identified problems discussed and rectified.

#### Activities of HICCOM

1. HICCOM (Hospital Infection Control Committee) conducted monthly half day training programme for nurses, total **307** nursing officers attended. Pre- and Post-test conducted and analysis done.
2. Sensitization on hand hygiene, PPE and BMW management for various health care workers organized and total **98** workers attended.
3. The ICN took a session on Role of infection control nurse in “Clinical Nursing Update” organized by College of Nursing, AIIMS for a group of **30** in-service nursing personnel.
4. Involved in the teaching program for nursing students of college of Nursing, AIIMS related to infection control prevention and practices.
5. ICNs conducted classes for Main Kitchen staff for a group of **83** employees on hand hygiene practices, use of PPE and importance of immunization. During Kaya-Kalp rounds same topics were emphasized by infection control nurses.
6. ICN participated as resource person at hand hygiene station organized by hospital administration for SASH 2020.
7. All ICNs took active participation in organizing and conducting Kaya-Kalp-2019-20 rounds.
8. Sensitization on hand hygiene, PPE, spill management and needle stick injury protocols were emphasized to sanitary attendants and hospital attendants.
9. Sessions were conducted for Biotic workers on hand hygiene, PPE, immunization, spill management and needle stick injury protocols, personal hygiene, loading of BMW trolleys according to the BMW rules.
10. The ICNs contributed in content and finalization of revised edition of Infection control manual.
11. SOPs on Needle stick injury and Spill management protocols in the form of charts were prepared, distributed and displayed in all clinical areas of AIIMS.
12. Sensitization on infection control practices and BMW management for resident doctors, department of medicine on request of HOD medicine.
13. ICNs conducted session on hand hygiene, personal hygiene, PPE and BMW management at Laundry facility staff and Mortuary staff.

#### COVID-19 Teaching and Demonstration Activities

1. ICNs are actively involved during COVID pandemic to contain the COVID-19 cases.
2. ICNs under the guidance of HICCOM AIIMS are organizing and conducting training on infection control and prevention on standard precautions for all health care workers since 1st week of February 2020.
3. HICC AIIMS is developing dynamic guidelines time to time and ICNs are emphasizing them in all clinical areas.
4. ICNs conducted training classes on standard precautions, Respiratory etiquettes and PPE donning and doffing for all health care workers from 8th floor to ground floor of main hospital. All wards of AB, C and D wings including ICUs, HDUs, day care units, private wards, New Private ward block all three floors, Emergency services, OPD block and New RAK OPD areas are covered.
5. Upon request from IRCH faculty–ICNs of main hospital demonstrated PPE donning and doffing with check list at IRCH seminar room, around 60 doctors, nurses and other health care workers attended the session.
6. ICNs of Main Hospital trained health care personnel at NCI Jhajjar in donning and doffing PPEs. ICNs conducted training program for 50 health care workers.
7. ICNs involved in training of OT technicians, security guards, ambulance drivers and maintained the attendance of all training schedules till date.
8. ICNs along with HICCOM team involved to give inputs while setting up the COVID-19 facilities in C6 ward, D6 ward and New Private ward ground floor. ICNs re-emphasized on Donning and Doffing of PPE and disinfection of goggles & face shields in 0.5% Sodium Hypochlorite Solution for 20 minutes and keep them for reuse.



9. ICNs along with ID residents were part of video shooting on Donning and Doffing of PPE for training purpose. This video is now available in AIIMS website both in English and Hindi.
10. ICNs are attending HICCOM meeting whenever required by HICCOM core group members and involved in sensitizing the dynamic guidelines on Environmental cleaning increase the frequency including all surfaces, bed rails, door knobs, lockers and high touch areas, disinfection of items, correct dilution of disinfectant solutions, terminal disinfection of COVID facility, proper fogging guidelines, transportation of samples from COVID facility, handling of linen used for patients in COVID facility, cleaning of lift each time patient transported and management of Bio Medical Waste in COVID facility & maintain the record of number of bags handed over to Biotic team and its proper transportation.
11. On request of HICCOM team ICNs are emphasizing on use of 1% Sodium Hypochlorite Solution for mopping, damp dusting of all surfaces in all Non COVID wards and to keep extra 10 Face Shield, 10 Goggles and extra PPE.
12. Special attention given in COVID facilities for educating and re-emphasizing on donning and doffing for nurses, HA and SAs as they keep changing time to time and use of PPE judiciously when and where required.

#### COVID training programme for health care workers at glance:

A total of 438 doctors, 1205 nursing officers, 44 sanitary supervisors, 684 hospital/sanitary attendants, 95 technicians, 25 ambulance drivers, 22 PCC/ PCM and 72 guards attended the HICC class on standard precautions and respiratory etiquette on COVID 19.

#### Activities of Infection Control Nurses

Collection of data on total HAIs in ICUs/ HDUs, Surgical areas on BSI, RTI (VAP), SSI, UTI, CSF/others infections, etc. Data analysis carried out month-wise for all surgical units and all ICUs and the data analysis was shared with all concerned professor in-charges of surgical units and ICUs.

#### Annual Health Care Associated Infection (HCAI) Rate

Area	Total Major Surgeries/Admissions	HCAI	%
Surgical Units	15081	553	3.6
ICUs	4869	570	11.7

$$\text{Combined HCAI Rate: } \frac{(553 + 570) \cdot 100}{19950} = 5.6\%$$

Monthly surveillance and data for surgical units and ICUs calculated and submitted to MRD section for monthly newsletter.

1. Annual combined data analysis of surgical units and ICUs calculated and the same is distributed to Dr Arti Kapil Professor in-charge Microbiology Hospital infection Control, Professor DK Sharma Medical superintendent, Ms Kamlesh Chandelia, Chief Nursing Officer, Dr Anoop Daga office in-charge infection control from hospital administration and to Medical Record section.
2. Individual area rounds conducted by Infection Control Nurses on daily basis by using Checklist and whenever need arises, onsite training programme were conducted in the clinical areas and problems are rectified after discussing with the infection control core committee. (HICCOM).
3. Surveillance activities: Surveillance of environmental culture and sterility samples taken monthly basis and reports recorded and distributed to all respective areas and discussed to reinforce proper protocols to follow as per the hospital policy.

#### Surveillance Samples collected from Main Hospital during the year

Total Surveillance Samples	Total Environmental and Sterility Samples	Total In-use Solutions Samples	Total Sterile Samples		Total Unsterile Samples	
			Environmental and Sterility Samples	In-use solutions Samples	Environmental and Sterility Samples	In-use solutions Samples
3003	2174	825	1822	724	352	101

Management of outbreaks monitored and educated the HCWs about the precautions. Maintaining the Report Book for daily basis reporting and also a dedicated register for reporting Incident and intervention.

Ministry of health and family welfare has launched “**Kaya-Kalp**” -Clean hospital campaign under Swachh Bharat Abhiyan. Clean and Green AIIMS campaign guidelines have been formulated. AIIMS is uniquely poised to lead this movement of Kaya-Kalp transformation by being the agent of change and adopting these guidelines.

WHO Hand Hygiene Day observed and ICNs conducted public awareness on hand hygiene demonstrated at RAK OPD and PRC **3 times** and with active public participation.

## 6.5 Medical Social Welfare Unit

### Officer In-Charge

Dr Jitender Sodhi

Asst. Professor, Department of Hospital Administration

### Chief Medical Social Service Officer

BR Shekhar

### Supervising Medical Social Service Officer

Pankaj Kumar

## INTRODUCTION

The foundation of Medical Social Welfare Unit in AIIMS was laid in 1960 when the first Medical Social Worker was appointed in the main hospital. The Medical Social Welfare Unit is working under the supervision of Medical Superintendent. The integration of Medical Social Services has yielded positive results as it provides social, psychological and financial support for patients and alleviated distress while receiving treatment. The Medical Social Welfare Unit, Main Hospital has 12 Medical Social Service Officers (MSSOs) taking care of OPDs and Wards of 20 important departments in the main hospital. In addition to a team of MSSOs, there are 18 part-time social guides (PTSG) and one hospital attendant working under the Unit for patient care and guidance.

**Our motto: “Committed to patients, committed to AIIMS”**

### Our Objectives:

1. To create a Therapeutic-Network among the doctor, paramedical staff, the patient, the family and the community.
2. To facilitate a Holistic-Healing leading towards a complete physical, psychological, social and vocational rehabilitation.
3. To ensure the protection of the basic human rights of the patients.
4. To facilitate the various services for the poor and indigent patients.
5. To coordinate with the Hospital Administration and treating faculties to facilitate the basic patient welfare services.
6. To impart Training & Orientation of Medical Social Work to the Social Work Students.
7. To conduct & coordinate the Research studies initiated by our unit and other departments of AIIMS.

Designation	Number of staff
Medical Social Service Officer Gr. I	1
Medical Social Service Officer Gr. II	9

## HIGHLIGHTS

### *Coordination and implementation of AB-PMJAY scheme in AIIMS*

Ayushman Bharat Prime Minister Jan Arogya Yojna (AB- PMJAY), a programme of Government of India was launched on 23 September 2018 by Hon’ble Prime Minister. AIIMS is a signatory and participant in the implementation of this programme and a dedicated office for the same has been created near gate no. 1 (opposite RAK OPD) in AIIMS.



**A team of AB-PMJAY with AIIMS Director in Arogya Manthan**

The Medical Social Welfare Unit is coordinating the implementation of this scheme in AIIMS with a team of Pradhan Mantri Arogya Mitra (PMAM) & PCM under the leadership of Medical Superintendent. The MSSO is the key person to implement this scheme and the team of Medical Social Welfare Unit, under the supervision of Chief MSSO has ensured that this pioneer programme reaches maximum beneficiaries smoothly.

This dynamic centre facilitates Beneficiary Identification, Golden Card generation, Treatment package selection, Pre-authorization of the package, Surgical & Medical treatment, Claim initiation, reporting, networking and Grievance redressal. A consolidated data of patients benefitted under AB-PMJAY is depicted in the table below:

Total Walk-in	10,133
BIS request raised	4,052
Total Surgical case	2,728
Total Medical case	950
<b>Total cases</b>	<b>3,678</b>



**Team of Ayushman Bharat – AIIMS New Delhi**

#### **Financial Assistance to poor and indigent patients for treatment**

1. Received Rs 46,57,325 in AIIMS Poor Fund.
2. Helped 452 poor patients for Rs 13,54,550 through AIIMS MS Poor Fund.
3. Facilitated the assistance of Rs 1,00,000 to poor and indigent patients through MSSO Poor Fund
4. Rs 19,23,14,906 availed from National Illness Assistance Fund (NIAF) for BPL patients to get treatment of life threatening diseases.
5. Rs 4,94,50,000 availed from Rashtriya Arogya Nidhi (RAN) Umbrella Scheme of MoHFW for 660 BPL patients (340 patients from Central Committee for grant above Rs 5 lakhs and 320 from Sub-committee for grant below Rs 5 lakhs) to get treatment for life threatening diseases.

6. Arranged financial assistance through Corporate Social Responsibility (CSR)/Trust/NGOs:

Fiem Foundation	Rs 62,79,391 for 32 patients
Relaxo Footwears	Rs 9,56,681 for 14 patients
Roshni Foundation	Rs 9,38,462 for 20 patients
Baij Nath Bhandari Trust	Rs 1,48,300 for 7 patients
Jawahar Bhawan Trust	Rs 1,78,100 for 9 patients
Sahu Jain Trust	Rs 67,000 for 5 patients
Sewa Prakalp Mahila Mandal Trust	Rs 1,59,000 for 6 patients
Yuvraj Singh Foundation	Rs 5,00,000 for 1 patient
Dwarka Prasad Trust	Rs 3,00,000
Gopal Foundation	Medicines for Cancer patients



Medical Social Welfare Unit, Room No. 9, RAK OPD

**Free medicines and other donations for poor and indigent patients**

1. Free medicines worth Rs 13,00,000 to 12000 OPD patients through voluntary donation at MSWU.
2. Free medicines/surgical items through poor patient proforma to approximately 1000 admitted patients in AIIMS.

**Exemption of hospital charges and Railway Concession**

1. Exemption of different hospital charges including CT, MRI, PET, HLA etc. for about 15,000 BPL/poor patients.
2. Exemption on recommendation of treating/concerned faculty for approximately 5000 patients.
3. Railway Concession facility provided to approximately 10,050 outstation patients.

**Counseling and guidance:**

1. Counseled and guided approximately 42,000 patients for referrals services, healthcare schemes like AB PMJAY, RAN, financial assistance, Dialysis centres, etc.
2. Counseling and targeted therapeutic interventions of 60,000 patients were addressed related to adjustment to diagnosis, trauma, possible role changes, emotional/social responses to illness and treatment aimed at helping patients/families/care providers seeking treatment in hospital.

**Rehabilitation and referral through casualty**

1. Rehabilitated approximately 102 patients: Medico-legal cases (MLC) and Non-MLC Unknown/Unattended/ Destitute/Orphan.
2. Facilitated shifting of approximately 10,220 patients to Safdarjung and other government hospitals for admission through Casualty MSSO due to non-availability of beds.

3. Facilitated referral of patients to private hospitals for free treatment under EWS category as per the Hon'able High Court Order.

#### **Authorization of Organ Transplant under Transplantation of Human Organs Act:**

Twenty-three cases of Unrelated Kidney Donors were scrutinized, assessed, documented and presented before the Renal Transplant Authorization Committee as per the Transplantation of Human Organs Act (THOA), 1994.

#### **Training and orientation:**

Imparted Social Work training (Short Term Observership Training) through academic section, Field Work throughout the year and Orientation Sessions on 'Medical Social Services in hospital setting' for Social Work students of different colleges.

#### **Special Celebrations:**

Diwali Celebration and Magic show in AB-5 ward on 26 October 2019: The Medical Social Welfare Unit organized a Magic Show and Diwali Celebration in the presence of the Director, DDA, Medical Superintendent, Senior Financial Advisor, and Head, Department of Paediatric Surgery.



**Celebration of Diwali in AB-5 ward**

#### **Other Activities**

1. Displayed a comprehensive poster of Medical Social Welfare Unit title on 'Universal Health Coverage' in the 64th Institute Day Celebration and exhibition on 25 September 2020.
2. Celebrated World Social Work Day on 17 March 2020 with the Director, Medical Superintendent, Deputy Director (Administration), Faculty members and staff. A brochure about the Medical Social Services was also released by the Director, AIIMS.



**Release of Brochure by the Director, AIIMS on the World Social Work Day**

## Mega Blood Donation Drive



**Chief MSSO interacting with media during Mega Blood Donation Drive**

The event was a big success with approximately 3000 units of blood donation on 27 February 2020. Medical Social Welfare unit created awareness and motivated people to come forward and participate in the event on a large scale.

### **Other contributions:**

1. Non-MLC to MLC conversion 179 in Casualty.
2. Continued digitalization process for social services and Online-exemption through e-hospital.
3. The Chief MSSO gave his contributions to the Hospital Health and Hygiene promotion Sub-committee (KAYAKALP).

## **EDUCATION**

### **Teaching activities**

1. Mr BR Shekhar, Chief MSSO chaired the paper presentation session and gave Presidential address in 7th National Conference of AIAMSWP on “Social Research in Health care” organized by All India Association of Medical Social Work Professionals (AIAMSWP) North-East Zone.



**Presidential address by Mr B.R Shekhar in AIAMSWP Conference**

2. Mr BR Shekhar and Mr Vivek Kumar Singh took one day session on “Role of MSSO as Public Health Worker” in Jamia Millia Islamia, New Delhi with postgraduate students of Department of Social Work on 5 August 2019.



**Mr BR Shekhar, Chief MSSO and Mr Vivek Kumar Singh, MSSO with Faculty & students of Public Health in Jamia Milia Islamia, New Delhi**

3. Sessions were conducted by Mr BR Shekhar, Chief MSSO and Mr Vivek Kumar Singh, MSSO for Nursing Officers during their induction program in CMET, AIIMS on 'Social Welfare Schemes for patients in AIIMS'.
4. PhD degree was awarded to Dr Kirti Arya on 29 October 2019 from University of Delhi on "Rehabilitation of Drug Users: A study of District Rehabilitation Centres in the state of Punjab".



#### **Training activities by Medical Social Welfare Unit:**

1. **Social Work Training—Block Placement:** Imparted Social Work training (Short Term Observership Training) through academic section to 46 students of Social Work who came from following colleges across the country:
  - a. MJPRU, Bareilly, UP (12 students)
  - b. IGNOU, New Delhi (14 students)
  - c. IIT, Delhi (1 student)
  - d. Sri Shankaracharya University, Kerala (2 students)
  - e. Rajiv Gandhi University, Arunachal Pradesh (6 students)
  - f. Puducherry University (1 student)
  - g. MGKVP, Varanasi (6 students)
  - h. BHU, Varanasi (1 student)
  - i. ISS, B R Ambedkar College, Agra (2 students)
  - j. CUHP, Himachal Pradesh (1 student)



**Social Work Training-Concurrent Field Work:** Imparted Concurrent Field Work throughout the year to 4 students of from Delhi School of Social Work (DSSW) and Jamia Milia Islamia University.



2. **Social Work Orientation Session:** Five Orientation Sessions on ‘Medical Social Services in hospital setting’ were given by Mr BR Shekhar (Chief MSSO), Mr Pankaj Kumar (Supervising MSSO), Ms Leema Maiti (MSSO), Mr Vivek Kumar Singh (MSSO) & Dr Kirti Arya (MSSO) to following Social Work Student groups to Social Work students from following colleges:
  - Vorhees College, Vellore, Tamilnadu
  - Loyola College, Chennai
  - GEMS College, Mallapuram
  - Shantigiri College, Kerala
  - Bosco College, Assam
3. Training and orientation given to Mr Saurabh Kumar, MSSO Gr-I, AIIMS–Raipur, about role of MSSO in AIIMS which was organized officially through Medical Superintendent.

#### **CMEs/Workshops/Symposia/National and International Conferences**

1. **Workshop:** Ayushman Bharat: Arogya Manthan, National Health Authority, 30 September–1 October 2019, Vigyan Bhawan, New Delhi
2. **Conference:** Strengthening AB-PMJAY services in Medical College, National Health Authority, 4 March 2020, Hotel Shangri-La, New Delhi
3. **Conference:** 7th Annual National Conference of All India Association of Medical Social Work Professionals (AIAMSWP)-2020, All India Association of Medical Social Work Professionals (AIAMSWP) North-East Zone, 6 and 7 February 2020, Community Medicine Department, RIMS & JNIMS, Imphal, Manipur.



Sessions Chaired by Mr BR Shekhar, Ms Neerja Sapra, Mr Aftab Alam Shah

4. **Poster presented:** AB-PMJAY: Accelerating India's progress towards achievement of Universal Health Coverage by Md Shahid, Mr Vivek Kumar Singh and Mr BR Shekhar

#### Papers presented:

1. Maiti L, Shekhar BR. Extent and Intensity of Incest as a silent family conspiracy: The way forward
2. Arya K Re-Imagining Medical Social Work in India: Evidence from Established Global Practices for Ensuring A Patient Centric Health Care
1. **Seminar:** Women and gender equality in higher education in India: Issues and Challenges, Mahatma Gandhi Kashi Vidyapith, Varanasi, 11 January 2020, Mahatma Gandhi Kashi Vidyapith, Varanasi  
**Title:** Increasing girl child enrolment rate in primary and secondary education through NGO support
2. **CME:** Brain Death and Organ Donation, Organ Retrieval Banking Organization, AIIMS, 5 July 2019, CMET, AIIMS, New Delhi
3. **Workshop:** Right to Information, 16 May 2019, CMET, AIIMS, New Delhi
4. **Workshop:** FACE (First Aid in Common Emergency), Department of Surgery, 20 May 2020, CMET, AIIMS, New Delhi
5. **Workshop:** SAKSHAM (Empowering organizations), 21-23 September 2019 & 17-19 January 2020, SPJIMR, Mumbai



#### SIGNIFICANT EVENTS

1. Mr BR Shekhar was a panelist along with co-panelist Deputy CEO, AB-PMJAY, Farmer leader and another senior doctor in “*Vaad-Sambaad*” talk show organized by DD Kisan aired on 13 December 2019 related to AB PMJAY. The motive of the show was to cater to maximum number of beneficiaries through this platform.

**Mr B R Shekhar, Chief MSSO during the program VAAD-SAMVAAD at DD Kisan**



2. A friendly cricket match between MSSO and Resident Doctor's Association (RDA) was organized on 6 April 2019 in Doctor's hostel AIIMS. It was aimed at developing a more cordial relation and network.



**Mr B R Shekhar, Chief MSSO with Sh Ram Gopal Yadav, Chairman,  
Parliamentary Standing Committee**

3. The Department related Parliamentary Standing Committee on Health and Family Welfare examined “**The Allied and Healthcare Professions Bill, 2018.**” The committee interacted with various stakeholders. The committee invited Mr BR Shekhar, Chief MSSO to appear before the committee in the Rajya Sabha on 11 October 2019. He submitted representation to include Medical Social Work Profession in the bill and provided valuable suggestions/inputs before committee. Later on, the committee accepted all the recommendations.
4. On the challenging situation of COVID-19 pandemic MSW unit under the leadership of Chief MSSO actively participated and created awareness about COVID-19 and its prevention. The unit also mobilized support through various non-governmental organizations for arranging surgical masks, soaps, sanitizer, etc.

## **PUBLICATIONS**

**Journals: 1      Chapters in Books: 2**



## 7. College of Nursing

### Professor cum Principal

Dr Manju Vatsa (up to 30 June 2019)

Dr Sandhya Gupta (Acting) (from 1 July 2019)

### Associate Professor

Dr Deepika C Khakha  
Dr Poonam Joshi  
Ms Aditi P Sinha  
Ms Rimple Sharma  
Ms Levis Murry  
Mr Ajesh Kumar TK

Dr Kamlesh K Sharma  
Dr L Gopichandran  
Dr Pragya Pathak  
Ms Cecilia MS  
Ms Y Surbala Devi  
Ms Milan Tirwa

Dr Shashi Mawar  
Ms Sibi Riju  
Ms Ujjwal Dahiya  
Ms Manju AK Rajora  
Ms Smita Das  
Dr M Srinivasan (from October 2019)

### Assistant Professor

Ms Gita Razdan

### Nursing Tutor

Ms Kiran Singh Simak  
Ms Babita Sahoo  
Dr Seema Sachdeva  
Ms Nemkholam  
Ms Mamta Choudhary (from October 2019)  
Ms Suman Dabas (from October 2019)

Ms Gayatri Batra  
Dr Philomina Thomas  
Ms Anubha Devagaourau  
Mr Hansaram

Ms Sucheta  
Ms Meena Ara  
Ms Neelima Raaj  
Ms Monika Sabharwal  
Ms Manita Dalal (from September 2019)  
Ms Savita (from September 2019)

## EDUCATION

### Undergraduate

- BSc (Hons) Nursing: **76** students graduated from the 4-year course.
- BSc Nursing (Post Basic): **21** students graduated from the 2-year course.

### Postgraduate

- MSc Nursing: **21** students graduated from the 2-year course

### New Students

- 77 students joined BSc (Hons) Nursing 1st year and 34 students joined BSc Nursing (Post-Basic) 1st year
- 25 students have joined MSc nursing program this year in the following specialties:
  - a. Oncological Nursing (3)
  - b. Critical Care Nursing (4)
  - c. Paediatric Nursing (3)
  - d. Neurosciences Nursing (4)
  - e. Nephrological Nursing (3)
  - f. Cardiological/CTVS Nursing (4)
  - g. Psychiatric Nursing (4)

The College of Nursing conducted orientation sessions:

- Two groups of delegates from Ministry of Health of Japan and Korea.
- One group of visitors from College of Nursing, DY Patil University, Pune, India
- Initiated integration of Mid-Level Health Provider (MLHP) course in UG nursing programme as per Indian Nursing Council Requirements.

### CMEs/Workshops/Symposia/National and International Conferences

1. Coordinated Eight Clinical updates for nursing officers of AIIMS
  - A. Organized by MSc Nursing 2nd year students under supervision of faculty of the college

- a) A step towards safe and sustainable critical care in children (October 2019)
  - b) Exploring new dimensions: Updated care and practices in nursing (November 2019)
  - c) Management of Addictive Behaviour Disorders (March 2020)
  - d) Exploring new dimensions: Updated care and practices in nursing (November 2019)
  - e) Assertiveness in nursing (January 2020)
- B. Organized by BSc Nursing (Post Basic) 2nd year students under supervision of faculty of the college
- f) Transforming the workplace through simulation (February 2020)
  - g) Enhancing soft skills: Moving forward towards quality care (February 2020), and
  - h) Mental health nursing update on “Management of Addictive Behaviour Disorders”, 9 March 2020
2. Coordinated Education and Training Programme for MSc Nursing Students and BSc Nursing students on Deceased Organ & Tissue Donation in collaboration with ORBO, AIIMS, New Delhi.
  3. Organized and conducted first series of nine lectures for webinars for training in care of COVID-19 patients for nursing officers and nursing students of the country as per the instructions from Ministry of Health and Family Welfare, GOI which is streaming on YouTube in March 2020.

#### Lectures delivered

**Dr Deepika C Khakha: 24**

**Dr L Gopichandran: 10**

**Ms Cecilia MS: 5**

**Mr Ajesh Kumar TK: 1**

**Dr Kamlesh Sharma: 15**

**Dr Pragya Pathak: 2**

**Ms Levis Murry: 14**

**Ms Milan Tirwa: 3**

**Dr Poonam Joshi: 28**

**Ms Ujjwal Dahiya: 1**

**Ms Y Surbala Devi: 7**

#### Dr Deepika C Khakha

1. Overview of Qualitative Research, National Conference on Research Methodology, 1 April 2019, Gurugram, Haryana
2. Burnout and its Management, CNE, 10 April 2019, New Delhi
3. Ethical practice in Clinical settings, Workshop on ‘Building innovation through Clinical practice’, 5 June 2019, New Delhi
4. Evidence Based Practice in Clinical settings, Workshop on ‘Building innovation through Clinical practice’, 5 June 2019, New Delhi
5. Stress Management at Infection Control and Prevention strategies, Peri-operative Neuro-nursing Conference, 25 June 2019, Cardio-Neuro Centre, AIIMS, New Delhi
6. Evidence Based Practice in Clinical settings, Workshop on Building innovation through Clinical practice, 3 July 2019, New Delhi
7. Ethical practice in Clinical settings, Workshop on Building innovation through Clinical practice, 3 July 2019, New Delhi
8. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 7 August 2019, New Delhi
9. Self-exploration, Induction, 29 August 2019, New Delhi
10. Guest Lecture series, Mental Health Nursing, 2-6 September 2019, Ranchi, Jharkhand
11. Quality Assurance in Nursing, Training Course in Management for Senior Nursing Administrators, 18 September 2019, Munirka, New Delhi
12. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 18 September 2019, New Delhi
13. Workforce and Patient safety, Workshop on Infection prevention and control strategies on Quality care and Patient safety, 24 September 2019, New Delhi
14. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 9 October 2019, New Delhi
15. Inter-Personal Communication between Nurse and Patient, Workshop on Neuro Anaesthesia Update 2019, 18 October 2019, New Delhi
16. Communication in Neuro-nursing, International Spine Congress & Live Operative Workshop AIIMS SPINECON, 21 October 2019, New Delhi
17. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 13 November 2019, New Delhi
18. Publishing a paper, Workshop on Introduction to Research for Clinical Nurses, 14 November 2019, New Delhi.
19. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 27 November 2019, New Delhi
20. Nature and scope of Research, Workshop on Research Methodology, 2 December 2019, New Delhi

21. Evidence Based Practice, Developing experimental design and analysis skills in Nurse Researcher, 18 December 2019, New Delhi
22. Significance of assertiveness in nursing, Workshop on Assertiveness in Nursing: Need of the hour, 17 January 2020, New Delhi
23. Prevention and Management of Burnout, Workshop on Mental Health at Workplace, 28 October 2019, New Delhi
24. Prevention and Management of Burnout, Workshop on Soft Skills, 10 February 2020, New Delhi

#### **Dr Kamlesh K Sharma**

1. NRP using simulation vs conventional method, Nursing update on “NRP”, College of Nursing, AIIMS, 12 October 2019, New Delhi
2. Trends and scope of nursing, Orientation Programme for GNM and BSc Nursing Fresher’s batch 2019-20, Narayan Nursing College, Gopal Narayan Singh University, 23 September 2019, Rohtas, Bihar
3. Complications-Identification & management in community, 9th International Nursing Conference on ‘Collaborative approach for Holistic Health Care’, Akal College of Nursing, Eternal University, 11 October 2019, Sirmour, Himachal Pradesh
4. How to write a research report, Workshop on ‘Introduction to research for clinical nurses’, In service education department of CNC, AIIMS, New Delhi, 14 November 2019, AIIMS, New Delhi
5. Resource person/trainer in Training (series of sessions), Training of State Trainers in Induction Module for Community Health Officers, National Health Systems Resource Centre, NHSRC, 20–22 November 2019, NIHF, Delhi
6. Resource person, Content Development Workshop for faculty, 5 December 2019, AIIMS, New Delhi
7. Advancements in Community Health Practices, National Seminar on ‘New Horizons in Community and Mental Health Practice’, Kalinga Institute of Nursing Sciences, KIIT University, 6 December 2019, Bhubaneswar
8. Resource person/trainer in Training (series of sessions), Training of State Trainers in Induction Module for Community Health Officers, National Health Systems Resource Centre, NHSRC, 17–19 December 2019, NIHF, Delhi
9. Conflict management, Assertiveness in nursing, 17 January 2020, New Delhi
10. Overview of Simulation, Workshop on ‘Transforming the Workplace through Simulation’, 4 February 2020, New Delhi
11. Hands on session: Simulation scenarios, Workshop on ‘Transforming the Workplace through Simulation’, 4 February 2020, New Delhi
12. ‘Faculty development workshop’, 5th Annual National Conference of PediSTARS on medical simulation: SIMULUS 5, 10 and 11 February 2020, Chennai, Tamil Nadu
13. Resource person/trainer in Training (series of sessions), Training of State Trainers in Induction Module for Community Health Officers conducted by the National Health Systems Resource Centre, NHSRC, 24–26 February 2020, NIHF, Delhi
14. Integrating Nightingale theory into nursing process, 6th National Conference on Integration of Theories in Clinical Practice and Research at college of nursing, KGMU, 28 February 2020, Lucknow, Uttar Pradesh
15. Epidemiology, clinical features and diagnosis of COVID 19, Webinar on Training nursing officers in care of patients suspected of /or having COVID 19, 30 March 2020, New Delhi

#### **Dr Poonam Joshi**

1. Paediatric Dose Calculation, Nursing CNE, 2 May 2019, New Delhi
2. QI Methodology, Striving towards Nursing Excellence at AIIMS, 15 April 2019, New Delhi
3. BLS and CCLS, BLS and CCLS training program, 29–30 April 2019, New Delhi
4. Skill Learning, Educational Technology in Nursing, 26 May 2019, New Delhi
5. Simulation (Hands on session), Quality improvement training for improving healthy survival of preterm infants in AIIMS, 13 July 2019, New Delhi
6. Prevalence of breast feeding and knowledge of mothers related to breast feeding, Empower parents and enable breast feeding, 2 August 2019, New Delhi
7. Fast track in Emergencies, EM India 2019, 3 August 2019, New Delhi
8. Expert for round table meeting on promulgation of Emergency Nursing in India, EM India 2019, 2 August 2019, New Delhi
9. Paediatric BLS, Paediatric BLS–IAP, 18 August 2019, New Delhi

10. Paediatric CPR, IGNOU (Tele-conferencing), 30 August 2019, New Delhi
11. Immunization, IGNOU (Tele-conferencing), 25 July 2020, New Delhi
12. Nursing research process, IGNOU (Tele-conferencing), 14 September 2020, New Delhi
13. QI workshop, CNE, 9 September 2019, New Delhi
14. Review of literature, Research Methodology, 18 September 2019, New Delhi
15. Simulation (Hands on session), Quality improvement training for improving healthy survival of preterm infants in AIIMS, 11-13 July 2019, New Delhi
16. Neonatal resuscitation program, Neonatal Resuscitation Skills and Simulation, 11 October 2019, Ludhiana
17. Neonatal resuscitation program, Neonatal Resuscitation Program, CNE, 12 October 2019, New Delhi
18. Neonatal resuscitation program, Preconference workshop, First National Conference of PNNFICON 2019, 20-22 November 2019, Ludhiana
19. Paediatric emergencies, Exploring advancement and innovations in Neonatal and Paediatric Care, First National Conference of PNNFICON 2019, 20-22 November 2019, Ludhiana
20. Simulation (Hands on session), Quality improvement training for improving healthy survival of preterm infants in AIIMS, 11-13 November 2019, New Delhi
21. Public lecture, Prevention of child abuse, 12 September 2019, New Delhi
22. Quantitative research, Research Methodology, CNE, Cardiology, 14 November 2019, AIIMS
23. Basic Life support, Emergency and Trauma Nursing, 21 January 2020, Gurugram
24. Neonatal resuscitation program, In-service education program for nurses, 18 February 2020, Ballabgarh, CRHSP
25. Patient safety, Infection control, Ward management and administration Course for Nurse administrators, 10 February 2020, NOIDA, UP
26. ACLS, AHA program, 11 April 2020, New Delhi
27. Research Methodology, Introductory course on Research methodology and Biostatistics for Nursing professionals, 7-8 February 2020, Ludhiana
28. Care at birth, On top e-learning, 8 December 2019, New Delhi
29. Triaging, transport and IV fluid therapy, On top e-learning, 27 February 2020, New Delhi

#### **Dr L Gopichadran**

1. ECG Basics for nurses, TNAI workshop, 12 June 2019 and 10 July 2019, New Delhi
2. Nurse led Heart failure management, Workshop, 14 August 2019, Bhubaneswar
3. Role of nurse administrators in planning and policy making, NIHFW Workshop, 19 September 2019, New Delhi
4. Evidence based Nursing, TNAI EBN workshop, 11 September 2019, New Delhi
5. Heart failure basic, Pan India Nurse Led Heart failure management program, 1 October 2019, Bangalore
6. Spinal cord injury management, SPINECON, 21 October 2019, New Delhi
7. Nursing service administration and quality management, AHAININDIA Workshop, 26 October 2019, NEW DELHI
8. Nurse led Heart failure management, Pan India Nurse led Heart failure program, 5 November 2019, Chennai
9. Critical decisions in cardiac emergency, Workshop on cardiac emergency, 14 December 2019, New Delhi
10. Nurse led heart failure management, Pan India Nurse led Heart failure program, 18 December 2019, Raipur

#### **Dr Pragya Pathak**

1. Care of patients on dialysis, Exploring New Dimensions: Updated care and practices in Nursing, 16 November 2019, New Delhi
2. Simulation session on BLS, Transforming workplace through Simulation, 4 February 2020, New Delhi

#### **Ms Ujjwal Dahiya**

1. Human well-being in Health care, Nursing Update on Updated care and practices in nursing, 16 November 2019, Delhi

#### **Ms Cecilia MS**

1. Exploring and illuminating advancements – vision in paediatric nursing, International conference Saveetha university, 28 June 2019, Chennai
2. Principles of adult learning, Transforming workplace through simulation, 4 February 2020, Delhi

3. Simulation on basic life support with AED, Transforming workplace through simulation, 4 February 2020, New Delhi
4. Resource faculty, Faculty development in simulation, 10 and 11 February 2020, Chennai
5. Bag and mask ventilation, Neonatal resuscitation, 18 February 2020, Ballabgarh

#### **Ms Levis Murry**

1. Problem analysis and tools of QI, Quality improvement workshop for nurses, 30 August 2019, New Delhi
2. Identifying a problem and forming an aim statement, Facilitator- Quality improvement group work Facilitator - simulation on PPV at birth, 'Quality Improvement training for improving healthy survival of preterm infants', 11-13 September 2019, New Delhi
3. Quality improvement for nurses, Infection prevention and control strategies on QoC and patient safety, 24 September 2019, New Delhi
4. Neonatal resuscitation, Simulation workshop, 11 October 2019, Punjab
5. Oxygenation in neonates, Paediatric Critical Care, 17 October 2019, Delhi
6. QI initiative and efficient discharge counselling, 1st International nursing CME, 1 November 2019, New Delhi
7. Writing research protocol, In-service workshop for nurses, 14 November 2019, Delhi
8. Testing change Ideas-Onsite mentoring, Laqshya QI Mentoring for medical college, 15-16 November 2019, Cuttack, Odisha
9. QI group work, Workshop on QI: How to fix problems?, 14 December 2019, Delhi
10. Communication skills related to assertiveness, Workshop on Assertiveness in Nursing: Need of the hour for nurse managers, 17 January 2020, Delhi
11. Feeding of normal and preterm babies, ONTOP Essential Newborn Care Course, 24 January 2020, Delhi
12. Basic Life Support Hands On session, Workshop on Transforming the workplace through simulation, 4 February 2020, Delhi
13. Septic shock scenario facilitator, role play and Transport of sick neonate, Simulation for Nurses in Acute Paediatrics (SNAP), 7 February 2020, Chennai
14. Sim Roles- Prebrief, confederates and role of technician, SIMULUS 5: Faculty Development Program, 11 February 2020, Chennai

#### **Ms Y Surbala Devi**

1. Refusal skills/How to Say NO/ADS, One Day Training Programme for Delhi University Nursing Students, 16 October 2019, Ghaziabad
2. Role of Nurse Professionals in treatment of SUD, XXI Annual Conference of the International Society of Addiction Medicine. Theme-Addiction in A Rapidly Changing World, 15 November 2019, New Delhi
3. Moderator in oral paper presentation session, XXI Annual Conference of the International Society of Addiction Medicine. Theme-Addiction in A Rapidly Changing World, 15 November 2019, New Delhi
4. Assessment of Nicotine Dependence Syndrome, TOT workshop on Role of Nurse in Management of Substance Use Disorder, MOHFW,GOI, 30 November 2019, New Delhi
5. 5 "A" & 5 "R" Models of quitting tobacco including role play, Trainer for Tobacco cessation programme for Nursing officers in Government Hospitals of Delhi under MOHFW, GOI, 16 December 2019, New Delhi
6. 5 "A" & 5 "R" Models of quitting tobacco including role play, Tobacco cessation programme for Nursing officers in Government Hospitals of Delhi under MOHFW, GOI, 21 January 2020, New Delhi
7. Substance Use Disorders-Myth Vs facts, Assessment of NDS- 5 "A" Model, 13th CNE Training Workshop for Nursing Officers on "Management of Substance Use Disorders" CNE cell KSCH, LHMC, 20-27 January 2020, New Delhi

#### **Mr Ajesh Kumar TK**

1. Integration of Rogers theory in Nursing Process, National Conference on: Theme: Integation of Theories in Clinical Practice and Research, 28 February 2020, Lucknow, UP

#### **Ms Milan Tirwa**

1. Nutritional aspects ,Schemes & facilities for elderly, Health Promotion on Elderly, 6 and 7 February 2020, Manipur
2. Triage in Trauma Emergency, Exploring New Dimension; Updated care and practices in Nursing, 14 November 2019, New Delhi



3. Organization of Emergency Department, National Emergency Medicine Conference, 3 and 4 August 2019, New Delhi

#### Oral papers/posters presented

1. Sudha Lama, Sandhya Gupta, Sujata Satpathy. A study to assess Parenting Stress and Psychological Health of Women having single parenting experience in Delhi-NCR, World Summit on Psychiatry, Mental Health Nursing and Healthcare, 24 and 25 July 2019, Richmond, Vancouver, Canada
2. Sandhya Gupta, Nurse-led clinics: A new approach to substance use treatment services, XXI Annual Conference of the International Society of Addiction Medicine, 15 November 2019, New Delhi
3. Sandhya Gupta. Impact of Educational video Regarding Ill Effects of Tobacco Use on tobacco users, XXI Annual Conference of the International Society of Addiction Medicine, 16 November 2019, New Delhi
4. Sandhya Gupta, Suicide - Risk Assessment and Psychopathology, 19th Annual conference of Indian society of psychiatric nurses ISPNC-2020, Theme: Role of nurse in suicide prevention, 7 February 2020, Moradabad, UP
5. Laxmi Kumari, Sandhya Gupta, Effect of anti-tobacco health messages create favourable vs. unfavourable response among the users and non-users, Review from Indian studies: A Kaleidoscope, XXI Annual Conference of the International Society of Addiction Medicine, 16 November 2019, New Delhi
6. Khakha DC, Merin Thomas, Anita, Bobby Syiemelieh, Need of the hour: To reduce workplace stress and improve wellness among Nursing personnel at National capital of India, 19th World Congress of Psychiatry, 21 August 2019, Lisbon, Portugal
7. Khakha DC, Anita, Thomas M, Reality bites of parenting: Methods and styles adopted by parents of school-aged children, 19th World Congress of Psychiatry, 21 August 2019, Lisbon, Portugal
8. Sharma KK, Vatsa M. Domestic violence during pregnancy and women's health status: A community based study in India, 5th International Conference on Global Public Health 2019, 17 and 18 October 2019, Kathmandu, Nepal
9. Sharma KK, Hansaram, Joseph J, Laxmi, Dhindsa H, Vatsa M, Poster: Opportunistic screening for Cardiovascular Disease Risk Factors in a Tertiary Care Medical Institute, India, 64th Annual National Conference of Indian Public Health Association (IPHACON 2020), 29 February 2020, New Delhi
10. Gopichandran L, Achal Srivatasava. Effectiveness of PMR and deep breathing exercise on pain, disability and sleep among patients of chronic tension type headache, International council for Nurses (ICN) Congress-2019, 27 June-1 July 2019, Singapore
11. Anu Varghese, Cecilia, Levis, Ramesh Menon, Knowledge and practice of food related triggers for Asthma attack among parents of children with Asthma attending paediatric OPD, 1st international CNE on paediatric surgery, Delhi
12. Cecilia Mary Susaimuthu, Helen M Perdita, Effectiveness of skill training on knowledge and attitude regarding neonatal resuscitation, Neocore 2019, 31 March 2019, Puducherry
13. Devi Surbala Yumnam, Singh Jitenkumar Kh. Smokeless Tobacco use among Women in North Eastern States, India: A Geo-Spatial Analysis, XXI Annual Conference of the International Society of Addiction Medicine. Theme-Addiction in A Rapidly Changing World, 15 November 2019, New Delhi.
14. Gudiya, Cecilia, Sujata Satpathy, Ramam. Image disturbance, self-esteem, acne quality of life among young adults with acne, 1st International CNE on Paediatric Surgery, Delhi
15. Levis M, Surbala Y, Joshi P. Postpartum depression and risk factors among women in India, 39th Annual International Nursing and midwifery research and education, 26 and 27 February 2020, Dublin, Ireland
16. Levis M, Joshi P Using simulation as a teaching strategy in nursing education, Simulus 5, 5th Annual Conference of Pedistars, 6-11 February 2020, Chennai, Tamil Nadu
17. Priyanka Bhatti. A study to assess effectiveness of an educational intervention for primary caregivers on knowledge regarding immunization and immunization status of children who are undergoing cardiac surgery at AIIMS, New Delhi, 1st International Nursing CME, 1 and 2 November 2019, New Delhi
18. Tiwari S, Joshi P, Kabra S, Sharma R, A study to assess depression, coping strategies and treatment adherence in patients with Cystic Fibrosis, 31st Annual Conference of IAP, Respiratory Chapter, Respicon, 2019, 12 and 13 October 2019, Pune
19. Sheela A, Sharma R, Sinha A, Joshi P, A cross-sectional study to assess the prevalence of renal dysfunction in children with solitary kidney, 1st International Nursing CME, 1 and 2 November 2019, New Delhi
20. Tiwari S, Joshi P, Kabra S, Sharma R, A study to assess depression, coping strategies and treatment adherence in patients with Cystic Fibrosis, 1st International Nursing CME, 1-2 November 2019, New Delhi
21. Thuleiphy, Cecilia, Ramanjit Sihota, Dewang Angmo, Effectiveness of IEC package on compliance to glaucoma

medication among caregivers of children with Glaucoma, 1st International CNE on paediatric surgery, 1 and 2 November, 2019, Delhi

22. Ujjwal Dahiya, Anurag Srivastava, Prevention and Early detection of Breast and Cervical Cancer in Women, International Conference on Science and Art of Holistic Health 2019, 28 September 2019, Delhi

## **RESEARCH**

### **Funded projects**

#### *Ongoing*

1. A randomized controlled trial to compare the efficacy of mobile app vs conventional prescription of analgesics and adjuvants' adherence on selected variables among cancer patients receiving palliative care at a tertiary care centre. Gopichandran L, ICMR, 2 years, 2019-21, Rs 7.78 lakhs

#### *Completed*

1. A study to assess knowledge and skills of nurses related to BCLS and CCLS and to evaluate the impact of training on real time assessment of resuscitation and its outcome in a tertiary care facility, Smita Das, AIIMS, 2 years, 2017-19, Rs 3.7 lakhs

### **Departmental projects**

#### *Ongoing*

1. A comparative study of status of mood, resilience and confidence of athletes and non-athletes students (between 14-18 years) of higher secondary school in Delhi NCR
2. A comparative study to assess the breast feeding behaviour of partially paladai feed with exclusively breast fed late preterm and term neonates
3. A cross sectional study to assess the anxiety of patients with cardiac disorders related to COVID 19 pandemic
4. A cross sectional study to assess the Financial Toxicity and its impact on therapeutic compliance among cancer patients undergoing chemotherapy at DR BRA IRCH, AIIMS, New Delhi
5. A descriptive study to assess the effect of physical activity on glycemic control in children with Diabetes Mellitus Type I
6. A exploratory study of factors associated with integration of patients recovering from alcohol dependence syndrome with their family
7. A feasibility study to examine the effect of yoga based interventions on pain perception, fatigue, and quality of life in children with planned chemotherapy
8. A hermeneutic phenomenological study to assess the lived-in experiences and coping strategies of COVID positive patients at AIIMS, Delhi
9. A qualitative study to assess the experience of living kidney donors while undergoing evaluation for transplant
10. A quasi experimental study to assess the effectiveness of structured discharge counselling on selected outcome among caregiver of heart failure patient
11. A quasi-experimental study to assess the effectiveness of educational package on SBAR approach on the knowledge, attitude and practice among nurses working in neurosurgery ICU, AIIMS, New Delhi
12. A randomised controlled trial to assess the effect of Maternal audio taped voice on selected clinical parameters of sedated children in PICU of AIIMS, New Delhi
13. A study to assess stress, anxiety, depression and psychological distress during COVID 19 pandemic among employees working in corporate sector- a web based cross sectional survey.
14. A study on effectiveness of nurse led intervention on self-care behaviour, psychological symptoms and quality of life among kidney transplant recipients in a selected tertiary care hospital of New Delhi.
15. A study to assess anxiety, depression and quality of life among patients with lupus nephritis reporting at AIIMS, New Delhi
16. A study to assess impact of COVID 19 on care of heart failure patients
17. A study to assess the effect of an educational intervention for the nurses on the adherence to the bundle for prevention of Ventilator associated Pneumonia (VAP) in ICU, AIIMS, New Delhi

18. A study to assess the effectiveness of educational package on Situation-Background-Assessment-Recommendation approach on the knowledge, attitude and practice among nurses working in neuroscience ICU units, AIIMS
19. A study to assess the effectiveness of video assisted teaching on home care management with Parkinson's disease attending neurology OPD at AIIMS, New Delhi
20. A study to assess the psychological distress among security guards during COVID 19, AIIMS Delhi
21. A study to compare anxiety, depression and quality of life among caregivers of children with cerebral palsy and those with typically developing children attending paediatric neuro OPD at AIIMS, New Delhi
22. A study to develop haemodialysis patient's safety care protocol (SOP) for the patients undergoing haemodialysis at AIIMS, New Delhi and assess its feasibility, acceptability and patient satisfaction.
23. An exploratory study to assess the problems experienced by the relatives of patient admitted in critical care areas with a view to develop an ICU practice protocol for relatives and health workers at AIIMS, New Delhi
24. Association of oral health and ventilator associated pneumonia among patients admitted in intensive care unit, AIIMS, New Delhi
25. Awareness and practice among two-wheeler riders in Delhi
26. Happiness and Its determinants among Nursing Students
27. Hermeneutic phenomenological study on experience of patients Post-Heart Transplantation at AIIMS, New Delhi
28. Impact of COVID 19 pandemic on nursing education: A cross sectional survey
29. Impact of virtual interactive epilepsy education versus digital educational material in people with epilepsy and their caregivers: A randomized controlled trial
30. Perception of social support and prevalence of depression among head and neck cancer patients
31. Randomized Trial to Study the Impact of Simulation-based-Learning over Conventional Training on Knowledge and Self-Efficacy of Nursing Students in Paediatric Medicine and Paediatric Surgery Wards

#### **Completed**

1. A Case Control Study to Assess the Musculoskeletal Pain, Depression and Quality of Life in Patients With Parkinson's Disease
2. A comparative study of social support on perceived needs by patients with opioid dependence syndrome and their caregivers, at NDDTC, Ghaziabad.
3. A cross-sectional study to assess the prevalence of renal dysfunction in children with solitary kidney
4. A descriptive cross sectional study to assess the knowledge and adherence behaviour to treatment regimen among chronic kidney disease patients at AIIMS hospital, New Delhi with a view to develop an informational booklet
5. A randomized controlled trial to compare the effect of traditional versus simulation teaching methods on neonatal resuscitation in terms of knowledge, skills and self-confidence of nurses
6. A study of perception regarding organ donation and scope of practice of nurses as transplant coordinators and to explore the status and position of potential donor referrals from the hospital, AIIMS before and after placement of nurse as transplant Coordinators.
7. A study to assess depression, coping strategies and treatment adherence in patients with cystic
8. A study to assess effectiveness of an educational intervention for primary caregivers on knowledge regarding immunization and immunization status of children who are undergoing cardiac surgery at AIIMS, New Delhi
9. A study to assess psychosocial, physical problems and coping strategies of patients having long term/permanent tracheostomy with a view to develop an information booklet
10. A study to assess the effectiveness of caregiver-training program on knowledge in managing aggressive patients at home
11. A study to assess the effectiveness of nurse driven mobile application (app) based discharge teaching for home healthcare practices among postoperative neurosurgical patients or caregivers in a tertiary care hospital, New Delhi, India.
12. A study to assess the effectiveness of structured educational package on knowledge and practices of caregivers of patient with spinal cord injury at Jai Prakash Narayan Apex Trauma Centre, AIIMS, New Delhi
13. A study to assess the knowledge and practice of food related triggers for asthma attack among parents of children with asthma attending paediatric OPD AIIMS, New Delhi.
14. A study to assess the knowledge regarding peritoneal dialysis home care and quality of life of patients on peritoneal dialysis at AIIMS, New Delhi with a view to develop an information booklet.
15. A study to assess the severity, risk factors and quality of life of patients associated with chemotherapy induced

- peripheral neuropathy with a view to formulate information booklet for self-management
16. A study to assess thirst intensity and thirst distress among heart failure patients admitted at CN Centre AIIMS
  17. A study to compare the perception regarding diagnosis and treatment in patients with SUD-dual diagnosis and their family caregivers and its relationship with therapeutic adherence at NDDTC, Ghaziabad
  18. Awareness, Utilization, and Determinants of using financial aid and resources by cancer patients in a tertiary hospital.
  19. Comparing the effect of traditional versus simulation teaching methods on neonatal resuscitation in terms of knowledge, skills and self-confidence of nurses: A randomized controlled trial
  20. Knowledge and attitude of nurses working in AIIMS regarding basic life support
  21. Knowledge, attitude and utilization rate of family planning methods among postpartum women in a selected tertiary care facility in India
  22. Myths and facts about COVID 19: Knowledge assessment among General Public
  23. Pathways to Severe mental illness care: A retrospective study of patients seeking psychiatric care at Department of Psychiatry AIIMS, Delhi
  24. Perception of workplace violence in emergency department
  25. Postpartum Depression and its risk factors among Indian Women in a tertiary care hospital
  26. Randomized Trial to Study the Impact of Simulation-based-Learning over Conventional Training on Knowledge and Self -Efficacy of Nursing Students in Paediatric Medicine and Paediatric Surgery Wards.
  27. Role of low fidelity simulation in acquisition of midwifery skills among nursing students: A mixed method approach
  28. Use of Force Sensitive Resistor in gauging pressure applied by a mechanical compression device over femoral sheath removal site and its association with patient level of site discomfort and post procedure complications among patient of transfemoral coronary interventions in a tertiary care hospital.
  29. Use of piezoelectric pressure sensor in gauging pressure applied by a mechanical compression device over the femoral sheath site and its application with patient's level of site discomfort and post procedure complications among patients of transfemoral coronary interventions in a tertiary care hospital

## PUBLICATIONS

**Journals: 25**

**Chapters in books: 13**

**Books: 2**

## PATIENT CARE

1. Organized Public Health Awareness Campaigns through 27 exhibitions/role plays in 2019-20 on important National/ International health days/health issues, on topics like Mental Health, Prevention of Air Pollution, Breast Feeding, Breast cancer, Tuberculosis, Epilepsy, Blood donation, Food Safety, Oral Cancer and World AIDS Day etc.
2. Coordinated and supervised 14 health surveys in 2019-20 in urban community (Ambedkar Nagar) on topics like Awareness of HIV AIDS among the general public in the resettled colony in Delhi, knowledge, practices of breastfeeding among lactating mothers, Assessment of Knowledge, Attitude and Practice of diabetic patients regarding diabetes mellitus etc.
3. Participated in and co coordinated student participation in “Swasthya Chetna and Jan Sampark Abhiyan”; NCD, Screening and awareness camps at Pragati Maidan, Delhi from 14 to 27 November 2019 at 39th India International Trade Fair organised by Ministry of health and family welfare
4. On the occasion of 64th Foundation Day, 2019, co-organized departmental activities like
  - a) Poster exhibition
  - b) Organized Health Screening for general public and AIIMS employees, measuring Blood Pressure, Ht/ Wt./ BMI, Blood Sugar and Hemoglobin.
5. Provided direct patient care including health education through BSc (Hons) Nursing, BSc (Post Basic) Nursing & MSc Nursing students posted in various clinical areas throughout the year supervised by college faculty.
6.
  - A. Faculty and students participated in blood donation camp on 27 February 2020 organized by Blood Bank-AIIMS
  - B. Organized community **Awareness Campaigns** on prevention of Substance use through lectures, Role plays, film shows in Trilok Puri Centre and promotion of Mental Health, Prevention of domestic violence on World Mental Health Day.
  - C. Coordinated and supervised 14 **health surveys** in 2019-20 in urban community (Ambedkar Nagar) on topics like Awareness of HIV AIDS among the general public in the resettled colony in Delhi, knowledge, practices of breastfeeding among lactating mothers, Assessment of Knowledge, Attitude and Practice of diabetic patients

regarding diabetes mellitus etc.

- D.** Organized community survey in Trilokpuri in the area of treatment of Mental disorders, Substance use disorders, Tobacco Control Programs and Care of Elderly

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

### **Participation & awards/prizes won:**

- Second Prize (Poster) was awarded to college of nursing for Poster exhibition on: “Universal Healthcare” on the Annual day by Director AIIMS, New Delhi.
- BSc (Hons) nursing students received 2nd prize in extempore and a 3rd prize in Hindi essay writing competition in state competition of Student nurses association (SNA events)
- Seven students were awarded to college of nursing for Poster exhibition on: “Universal Healthcare” on the Annual day by Director AIIMS, New Delhi.
- BSc (Hons) nursing students received 2nd prize in extempore and a 3rd prize in Hindi essay writing competition in state Student nurses association, SNA events

**Dr Sandhya Gupta**, Professor cum Principal (Actg) was appointed chairperson for preparing Proposal for upgrading existing nursing college of all seven AIIMSs into centre of excellence in nursing sciences at AIIMS, New Delhi. The proposal was prepared along with Principals of college of nursing from six new AIIMS, CMC Vellore and St John’s College of Nursing, Bengaluru and submitted to Member Secretary, Central Institute Body in March 2019.. She organized Symposium for XXI Annual Conference of the International Society of Addiction Medicine Theme – “Addiction in a Rapidly Changing World” 13-16 November 2019, New Delhi, India on theme of ‘Role of Nurse Professionals in treatment of Substance Use Disorders’; Prepared the parity for Nursing Professional in India as per ISCO classification for Ministry of Health & Family Welfare, GOI; Presentation on gerontological nursing in India WHO, SEARO, expert group consultation 12 December 2019; Drafted curriculum and courses for Certificate course in geriatric care assistance (GCA) for IGNOU; Organized and conducted first series of Nine Webinars for nurses to manage Covid-19 which is streaming on YouTube; Delivered a lecture in Webinars for nurses to manage Covid-19, organized by WHO, SEARO office, New Delhi; Participated as expert for first series of Webinars for nurses of Punjab state on to manage infection control during Covid-19 pandemic for State of Punjab; Guide for two PhD scholars of National Consortium-Indian Nursing Council and one for AIIMS, New Delhi; Member Doctoral Committee College of Nursing, AIIMS, Delhi; Member Doctoral Committee Department of Psychiatry, AIIMS, Delhi; Expert on various academic activities and committees of MOH&FW and INC; Participated as expert Trainer for Two TOT workshop of seven days for nurse-educators and senior nurses of Delhi & NCR on Management of substance use disorders Organized by Department of psychiatry and NDDTC, AIIMS, New Delhi in October and December 2019; Invited as Chief Guest for Oath taking and Lamp Lighting Ceremony of JIPMER Pondicherry on 7 January 2020; Chairperson for undergraduate and post graduate exams for College of Nursing, AIIMS, DELHI; Participated in expert Group: for preparing draft of National Nurses & Midwifery Commission, for MOH&FW; for developing draft for Nursing Practice Act for Indian Nursing Council; for curriculum planning and Course material for HIV/AIDS for NACO - Blended learning course; for revising BSc Nursing Syllabus for Indian Nursing Council; for developing contents for four courses or New BSc Nursing Syllabus for Indian Nursing Council; for developing EHR for Nurses in India for BIS, GOI; for UGC Inspection of Various Universities of various states of India; for preparing the draft for parity for Nursing Professional in India as per ISCO classification for Ministry of Health & Family Welfare, GOI; for WHO-SEARO consultation meeting in integrated care for older people (ICOPE)- for finalising a manual for nurses in old age care scheduled on 12 and 13 December 2019; for Selection Committee for two institutes; Organized three sensitization workshop in the area of treatment of drug dependence for tobacco division MOH&FW for batches of 200 nursing personnel for each of three Hospitals of Delhi, on 30 July 2019 at LHMC, New Delhi, 14 December 2020 at VMHC, Safdarjung Hospital and 30 January 2020 at RML Hospital, New Delhi. Dr. Gupta has been Chief Editor for Indian Journal of Psychiatric Nursing; Reviewer for four indexed journals: J Mental Health Human Behaviour, Current Medicine Research and Practice, Indian Journal of Social Psychiatry, Archives of Psychiatric Nursing. She has been in Editorial board of the following Journals: Journal of Nursing Education and Practice (JNEP), International Journal of Nursing Education (IJONE).

**Dr Deepika C Khakha** has been in Editorial board of the following Journals: Journal of Nursing Science and Practice, Scholar Report, Indian Journal of Advanced Nursing, Journal of Comprehensive Nursing Research and Care, Journal of Community Health Management. She has been Reviewer for the following journals: International Journal of Health & Allied Sciences, Baba Farid University Nursing journal, Advanced Research in Nursing Science, Annals of Nursing and Practice, Journal of Community Medicine & Public Health Care, *Current Psychiatry Reviews*, Journal of Affective Disorders, Journal of Education Technology in Health Sciences, Asian Journal of Psychiatry. Total no. of Citations – 17 (in National and International Journal, of published work); PhD Guide of four students; Member of the World Health Organization’s (WHO) Global Clinical Practice Network(GCPN). An international community of mental health and primary care professionals committed to furthering research and practice in global mental health. Co-Chair of Ethics committee of Institute of Liver and Biliary Sciences, Vasant Kunj, New Delhi; Member of Doctoral Research committee of two PhD scholars

of Department of Psychiatry, AIIMS, New Delhi; Member of Doctoral Research committee of Baba Farid University of Health Sciences; Member of Doctoral Research committee of PhD scholar at College of Nursing, AIIMS, New Delhi; Expert for Moderation committee for IGNOU Entrance exam on 4 October 2019; Moderator for seminar for PhD students on 20 December 2019 at Indian Nursing Council; Attended Public Defense of Shiv Shankari of PhD - A study to study concept of professionalism in nursing, its correlates and prepare a model framework of curriculum in professionalism for nursing education; At Selection committee in Research Project on National Programme for Health Care of the elderly on 23 October 2019 ;At Selection committee in Research Project on Study of Sarcopenia: Establishment of Indian norms for diagnosis prevalence and risk factors in ageing population and development of preventive strategies on 23October 2019; Judge for Award paper presentation for Evidence based practice for a conference on Developing experimental design and analysis skills in nurse researcher on 18 December 2019 at Institute of Liver and Biliary Sciences, Vasant Kunj, Delhi; A Chief Guest for Valedictory function for Evidence based practice for a conference on Developing experimental design and analysis skills in nurse researcher on 18 December 2019 at Institute of Liver and Biliary Sciences, Vasant Kunj, New Delhi; Judge for Award paper presentation at Research Methodology Conference on 18.12.19. Institute of Liver and Biliary Sciences, Vasant Kunj, New Delhi; Examiner/Paper setter for eight universities; Chairperson for Moderation committee for Entrance AIIMS, DELHI; Programme Co-Ordinator for Post Basic Nursing course; Thesis Adjunctor For MSc Thesis-7; PhD Adjudicator-2; Conferences/Workshops attended: 02

**Dr Kamlesh K. Sharma** received 'AIIMSONIANS OF AMERICA Book Prize Award-2018 for best Nurse in Research Work' on 25 September 2019, AIIMS, New Delhi; External Consultant Trainer Community Processes- Comprehensive Primary Health Care (CP/CPHC) with NHSRC, NIHFWS, Delhi; Fellowship Programme in "Clinical Research Methodology and Evidence Based Medicine" at the AIIMS, Delhi.(May 2019); Chief guest in the Orientation Programme for Nursing Fresher's batch 2019-20 at Narayan nursing college, Gopal Narayan Singh University on 23 September 2019, Jamuhar, distt Rohtas, Bihar; 'Chairperson' for the Nursing workshop on 21 October 2019 on the topic 'Care of spinal disorders patients in SPINECON, the 3rd International Spine Congress with Live Operative Workshop" organized by Department of Neurosurgery, AIIMS, New Delhi from 21 October and 22 October 2019; Certified AHA accredited BLS and ACLS provider on attending the course from 5 August to 7 August 2019 at AIIMS, New Delhi; Resource person/trainer in 3 batches of (over 90 doctors and nurses) 'Training of State Trainers in Induction Module for Community Health Officers' conducted by the National Health Systems Resource Centre, NHSRC scheduled in November and December 2019 and February 2020 at NIHFWS, Delhi; Resource person in 'Content Development Workshop' for faculty, at convergence block, SeT facility, AIIMS, New Delhi (5 December 2019); As faculty for 'Faculty development workshop' in 5th Annual National Conference of PediSTARS on medical simulation: SIMULUS 5 held in Chennai, Tamil Nadu on 10 and 11 February 2020; Editorial Board member for Phab Linx Journal of Community Medicine; Reviewer for 'Women's Studies International Forum' and 'International Journal of Nursing & Midwifery Research, IJoNMR', Violence and Gender; PhD Guide for three candidates of National Consortium for PH.D Nursing by Indian Nursing Council in collaboration with RGUHS; Ph.D examiner for National consortium for Ph.D in nursing, under RGUHS , Bangalore; and Dr MGR Medical University, Chennai; Ad-hoc inspector of Indian nursing council (INC); Deputy Hostel superintendent since 8 December 2014; Central Assistant Public Information Officer, CAPIO for college of nursing since July 2010. Participated in various committees of AIIMS: Chairperson for withdrawal of books from the stock of College of nursing, letter dtd 15 October 2019. Report submitted to principal dtd 25 October 2019; Condemnation committee of college of nursing and also of AIIMS hostels; Member Doctoral Committee (since 26 November 2016), Department Of College of Nursing, AIIMS, New Delhi; Nodal officer for fire at College of nursing, AIIMS, New Delhi. (letter dtd. 6 September 2019). Dr. Sharma organized Public Health Awareness Campaigns( 10) on important National/International health days; and Six health surveys in urban community; Co -Coordinated student participation in "Swasthya Chetna and Jan Sampark Abhiyan"; NCD, Screening and awareness camps at Pragati Maidan, Delhi organised by MoHFW; On the occasion of 64th Foundation Day'2019, co-organized departmental activities like Poster exhibition; and Health Screening for general public and AIIMS employees; Programme Co-Ordinator for M.Sc Nursing(2nd) year course.

**Dr Shashi Mawar** organised COLS training in urban community on World Heart Day funded by Director AIIMS; Coordinated workshop on assertiveness in Nursing 17 January 2020; Organised eight surveys in urban community and conducted 17 exhibitions and role plays on preventive and promotive aspects of health; Conducted a nukad natak in collaboration with CCM Dept on blood donation on blood donation day in front of JLN auditorium.

**Dr Poonam Joshi** completed Level three certification with Honors PediSTARS an intensive Simulation Faculty Development Program; Fellowship in Clinical Emergency Nursing, India; Completed one year Fellowship in Research Methodology and Evidence based medicine from AIIMS, New Delhi; Visiting Faculty: IGNOU, New Delhi.

**Dr L Gopichandran** has been in WHO-SEARO expert group consultation meeting in integrated care for older people (ICOPE)- finalising a manual for nurses in old age care scheduled on 12 and 13 December 2019; Expert committee member in MOHFW-GOI project -preparation of manual for National Emergency Life support for nurses (16 to 18 March 2020); Member to Adjudicate the PhD thesis of Dr MGR Medical University, Chennai; Member in screening committee

in faculty recruitment at AIIMS (2019); Co-coordinator of Medical surgical nursing update 2019-2020 organised, AIIMS; Appointed as a university inspector for Bsc nursing course affiliated by Dr Rammanohar Lohia Avadh University on 13 January 2020; Deputed as a faculty of ACLS & BCLC at AIIMS ITC, AIIMS, New Delhi by Registrar, AIIMS, New Delhi. (10 to 12 February 2020); Completed training course on Curriculum Design and Evaluation for health professional at NIHF, MOH, GOI. From 22 -26 July 2019; Appointed as Internal and External examiner and question paper setter at AIIMS New Delhi Rishikesh, AIIMS Jodhpur, AIIMS Bhopal, ILBS CON Delhi, Baba Farid University, Tata Memorial Institute, Mumbai, PGIMER, Chandigarh; Appointed as a faculty in charge for conducting various AIIMS PG, UG and Nurses recruitment examination at many cities across India in 2019-2020.

**Ms Ujjwal Dahiya** is Coordinator and Resource person for Education and Training Programme for M.Sc. Nursing Students and B.Sc Nursing students on Deceased Organ & Tissue Donation in collaboration with ORBO, AIIMS New Delhi.

**Ms Cecilia Mary S** got level 3 certification with honours in simulation from PEDISTARS, India; has developed online learning content with video on paediatric anthropometry measurements; has conducted various simulation training programme for students; was one of the coordinator for CNE on 'Transforming workplace through simulation'.

**Ms L Levis Murry** was Faculty at ONTOP online learning platform for the Essential Newborn Care Course; National Quality Improvement Mentor for Laqshya Program to improve quality of labour room and delivery services in India; Enrolled in Ph.D. in nursing program under Indian Nursing Council consortium

**Dr Seema Sachdeva** was Pursuing Clinical research methodology and evidence based medicine fellowship course from AIIMS, New Delhi

**Ms Mamta Choudhary** was Member of Society of cardiac Nurses (India) on 26/3/2020

**Ms Savita** organized Public Health Awareness Campaigns through 4 exhibitions/ role plays on important National/International health days.

## 8. Research Section

### Dean (Research)

Chitra Sarkar

### Associate Dean (Research)

Vineet Ahuja

### HIGHLIGHTS

The Research Section initiated several research funding proposals calls, held workshops and created infrastructure to stimulate research milieu amongst the faculty, scientists and students at the Institute. Earlier the focus of intramural funding support had been on single investigators from AIIMS. With the objective of creating a more vibrant research environment and to lay down lines for future long-term collaborations, the funding call proposals now have shifted their vision on catalyzing the synergic 'cross-research activity' by having collaborative projects with other institutions such as IIT and THSTI. For the first time at AIIMS, faculty could compete for intramural collaborative funding opportunity with an international university. With the objective of enhancing interdisciplinary and collaborative research interest between University College, London (UCL) and AIIMS, New Delhi, a joint research seed fund has been established and it funded joint project proposals from faculty members from both institutions. Impetus to infrastructure and capacity building exercise was through operationalization of twin facilities of Centralized Core Research Facilities (CCRF) and Clinical Research Unit (CRU). AIIMS received India Research Excellence-Citation Awards 2019 for Medical and Health Sciences under Web of Science Group (Clarivate Analytics).

### EXTRAMURAL PROJECTS

Funding agency	Number of Projects	Grant received (Rs)
DST	151	15,30,80,253
DBT	111	18,36,54,558
ICMR	317	61,29,30,048
OTHERS	306	58,89,82,408
<b>TOTAL</b>	<b>885</b>	<b>1,53,86,47,267</b>

### INTRAMURAL PROJECTS

An online submission system for intramural grants has been created.

#### Early Career Intramural research grants for Assistant Professors and Associate Professors at AIIMS

1. Single Principal investigator (PI) with co-investigators
2. Funding: Rs 5 lakhs/year, extendable to two years
3. Monitored by Internal Project Review Committee

#### Intramural inter-disciplinary collaborative research projects for all levels of faculty at AIIMS

1. Two PIs from two different departments/disciplines with complementary expertise
2. Funding: Rs 5 lakhs/year per PI for two years (Total Rs 20 lakhs)
3. Monitored by External Project Review Committee

#### Undergraduate Research Mentorship Scheme for students of AIIMS, 3rd Semester onwards

1. Group of two or three MBBS students under the guidance of a faculty member (designated as Mentor)
2. Funding: Rs 2 lakhs per project for one year
3. Monitored by Internal Project Review Committee

#### Inter-Institutional collaborative research projects with:

- IIT-Delhi
  - IIT-Kharagpur
  - THSTI, Faridabad
  - University College, London
1. Two PIs from two different institutes with complementary expertise
  2. Funding (intramural from both institutions): Rs 5 lakhs/year per PI for two years (Total Rs 20 lakhs)
  3. Monitored by External Project Review Committee



### Intramural funding during the year

S. No.	Scheme	Projects awarded	Amount awarded (Rs)
1.	Early Career Intramural Research Project	89	4,07,31,700
2.	AIIMS-Collaborative	04	40,00,000
3.	AIIMS – IITD Collaborative Projects	38	3,13,70,568
4.	AIIMS-THSTI Collaborative Projects	07	34,69,000
5.	AIIMS-UCL, London	04	20,00,000
6.	Undergraduate Mentorship Scheme	22	41,72,800
	<b>Total</b>	<b>160</b>	<b>8,57,44,068</b>

### LECTURES/EVENTS ORGANIZED

1. **DBT-BIRAC Leadership Dialogue series lecture:** ‘DBT-BIRAC Leadership Dialogue series lecture’ by Prof. Trevor Mundel, President of Global Health, Bill & Melinda Gates Foundation at JL Auditorium, AIIMS, New Delhi on 29 July 2019.
2. Lectures by Sir Andy Haines, former Director and current faculty at London School of Tropical Medicine and Hygiene on “Effect of Pollution on Health”, 12 March 2019.
3. Fulbright Outreach Program on 15 April 2019 to provide information on Fulbright-Nehru, other Fulbright and Fulbright-Kalam fellowship opportunities for study, research, teaching and professionals in the US.
4. Lecture by Professor AK Sood, President, INSA and Honorary Professor, Department of Physics, Indian Institute of Science, Bangalore on 24 July 2019 for faculty, scientists and PhD students. The title of the lecture was “A Physicist’s Talk on Life”.
5. Summer workshop with IIT-D/THSTI/IGIB for UG students. Arranged a program where all students and mentors participated to present the results of workshop.
6. Review meeting for AIIMS-IITD collaborative project on 20 February 2020 at IIT-Delhi and 25 projects were reviewed and progress found to be satisfactory.

### AWARDS AND HONOURS

AIIMS received India Research Excellence-Citation Awards 2019 for Medical and Health Sciences under Web of Science Group (Clarivate Analytics).



### ESTABLISHMENT OF THE CLINICAL RESEARCH UNIT

AIIMS has started a new research facility viz. Clinical Research Unit (CRU). This facility will work as a specialized biomedical research unit to provide high quality technical expertise and assistance in planning, designing, implementation and analysis of investigator-initiated clinical research, in compliance with the global best practices. The proposal for establishment of Clinical

Research Unit at AIIMS was approved by the Academic Committee (117th Meeting held on 20 November 2018) as well as the Governing Body (157th meeting held on 24 January 2019). The CRU functions under the supervision of the Dean (Research) and Associate Dean (Research).

**Faculty (working committee):**

1. Dr Rakesh Lodha
2. Dr Sameer Bakhshi
3. Dr Vijay Prakash Mathur
4. Dr Saurabh Kedia
5. Dr Sumit Malhotra
6. Dr Jeeva Shankar
7. Dr M. Kalaivani
8. Dr Pooja Gupta

**Grantsmanship Workshop Series for Wellcome Trust/DBT India Alliance Clinical and Public Health Fellowships**

A series of mentoring workshops were conducted for faculty members and scientists of AIIMS, New Delhi who wanted to apply for Wellcome Trust/DBT India Alliance Clinical and Public Health Fellowships.

First sensitization workshop was conducted on 6 November 2019 from 2 pm to 4 pm at Dr Ramalingaswami Board Room. The workshop was chaired by Dr Randeep Guleria, Director, AIIMS Delhi and Dr Shahid Jameel, CEO of Wellcome Trust/DBT India alliance and Professor Usha Menon from Clinical Trials Unit, Medical Research Council, UCL London joined as speakers. It was attended by nearly 200 participants ranging from faculty, scientists, research staff and PhD and postgraduate students from various disciplines.

Second Grantsmanship Workshop was planned for aspirants for concept proposal for the Wellcome Trust/ DBT India Alliance Clinical and Public Health Fellowships. A total of 38 faculty members and two senior residents submitted the concept notes to the research section and all these concept notes were reviewed by three of the lead mentors. Of these, 23 were selected for a mentoring workshop which was held on 15 and 16 January 2020. There were four lead mentors (Dr Usha Menon, UCL, London; Dr Shinjini Bhatnagar, THSTI, Faridabad; Dr Madhulika Kabra, AIIMS and Dr V Sreenivas, AIIMS) and 2-3 in-house subject experts for each proposal.

The 3rd workshop of the Grantsmanship Workshop series was held online (Zoom) on 27 and 28 April 2020 for the 17 proposals that cleared Stage-I and were invited for full/detailed proposal submission by India Alliance. Of the 17 final proposals submitted, 11 were reviewed by the lead mentors and subject experts besides online mentoring and remaining took help from the mentors by electronic methods.

Of the 18 concept notes submitted, 17 cleared Stage-I and all the 17 candidates submitted full/detailed proposal for stage-II evaluation of the India Alliance for Clinical and Public health Fellowship in April 2020.

In the first Grantsmanship workshop held on 6 November 2019, the following lectures were delivered by the faculty:

Time	Topic	Speaker
2.00–2.15 pm	Welcome CRU Introduction	Dr Chitra Sarkar, <i>Dean (Research)</i> Dr Randeep Guleria, <i>Director</i>
2.15–2.30 pm	Scheme Background (Eligibility, timelines, benefits)	Dr Pooja Gupta Dr Mani Kalaivani
2.30–2.45 pm	What do I see in the proposal?	Dr Shahid Jameel, <i>CEO, India Alliance</i>
2.45–3.00 pm	Overview of mentoring workshop series at AIIMS	Dr Usha Menon, <i>MRC-CTU, UCL, UK</i>
3.00–3.20 pm	How we prepared—challenges and experiences?	AIIMS Welcome Fellows - Dr Deepak Gautam - Dr Aparna Mukherjee
3.20–3.45 pm	Open house (Moderator: Dr Usha Menon, Dr Vineet Ahuja)	

**Other activities**

1. In the wake of Covid-19 pandemic, fast track intramural grants were announced and over 80 proposals were received. The proposals were reviewed and the shortlisted proposals were approved for funding.

Of these, 9 clinical observational studies were similar, hence it was decided to develop a common Case Record Form (CRF) for investigators for the multiple sites where Covid-19 patients were being admitted. The data of common CRF could be stored on AIIMS server and different components for each patient could be filled at different time points and from multiple locations as required.

CRU prepared the common informed consent documents and developed the online case record form in collaboration with the PIs of the 9 observational studies. These studies also required a common consent form, so that in each area the first team in patient care could take consent for all components of the data related to the patients.

The Common CRF and a common Consent Form was designed and ethical approval was obtained for the nine PIs.

The software for the common CRF has been developed, pre-tested and been made functional for all teams working for Covid-19 related research.

2. The webpage of the CRU is being prepared and would be hosted under the research section website.
3. The required standard operating procedures (SOPs) were listed and detailed SOPs are being prepared.



Inaugural session of the Welcome Trust/DBT India Alliance Workshop, 6 November 2019.



Visit of Dignitaries to the BSL3 laboratory of CCRF during the inauguration. Dr Vikram Saini explains the design, features and proposed activities of the facility.

## **ESTABLISHMENT OF CCRF**

### **Introduction**

In an effort to boost innovation and research at AIIMS, New Delhi, the idea of establishment of a centralized core research facility (CCRF) was envisaged by the Research Advisory Council of the Institute held on 7 August 2014. This was approved in the 152nd meeting of the Governing Body meeting held on 15 April 2015 and the 211th Standing Finance Committee held on 7 and 19 April 2016.

The 9th floor of the Convergence Block was allotted for this facility. During 2018–20, the facility was designed, constructed, equipment procured and manpower hired. The Central Core committee along with various sub-committees worked under the Dean and Associate Dean, Research to plan this entire facility. It was inaugurated on 24 January 2020.

Professor Venki Ramakrishnan, the recipient of the 2009 Nobel Prize in Chemistry and the 62nd President of The Royal Society was the Chief Guest on the occasion and Prof. Krishnaswamy Vijay Raghavan, Principal Scientific Adviser, Government of India was the Guest of Honour.

### **Components**

The CCRF is located on the 9th floor of the Convergence Block at AIIMS, and functions under the Research Section (Dean, Research). It comprises of the following eight sub-facilities:

1. Biosafety laboratory 2/3 (BSL 2/3)
2. Genomics
3. Proteomics
4. Bioanalytics
5. Bioinformatics
6. Flow Cytometry
7. Microscopy
8. General Facility

### Objectives

1. To impart a quantum thrust to basic, clinical and translational research in the high priority areas of genomics, proteomics, bioanalytics, bioinformatics, immunology, cell and infection biology using state-of-the-art platform technologies.
2. To develop a pool of trained human resources (faculty, scientists, technicians) with capacity for conducting high-end biomedical research.
3. To build capacity for and to extend technical expertise to other institutions of excellence in such research areas.

The creation of this special facility is expected to help place AIIMS at par with the world's best institutions in these highly competitive and promising fields in the near future.

### Core committee

Dr Chitra Sarkar  
 Dr Vineet Ahuja  
 Dr Subrata Sinha  
 Dr TS Roy  
 Dr Jaya Tyagi  
 Dr Madhulika Kabra  
 Dr Lalit Dar  
 Dr Pramod Garg

Dr R Goswami  
 Dr DK Mitra  
 Dr Punit Kaur  
 Dr Kalpana Luthra  
 Dr Gurvinder Kaur  
 Dr Ritu Gupta  
 Dr T Velpandian  
 Dr Sanjeev Sinha

### Logo of the facility



The logo for the CCRF facility was selected through a competition. The final logo was a composite image from the top two selected logos. The first prize for the logo was won by Ms Kiran Kumari (Department of Biotechnology) and second prize was won by Dr Hari Prasad (Department of Biophysics) and Dr Madhumita (Department of Paediatrics).

### Website

The website was designed by Dr Punit Kaur, Professor and Head, Department of Biophysics in conjunction with Computer Facility, AIIMS and AIIMS-ICMR Computational Genomics Centre. All information related to the facilities, SOPs of each sub-facility and online booking details are available on the CCRF Website: [ccrf.aiims.edu](http://ccrf.aiims.edu).

### Functioning

1. This facility would be accessible to all Faculty, Scientists, Students and Research scholars of all departments
2. Will mainly be a central high-end instrumentation unit (will not provide facility for sample storing, sample preparations, etc.)
3. Only research work will be handled, no routine diagnostic work
4. Will provide regular training programs/workshops, SOPs and resource learning materials in order to enhance capacity building and knowledge sharing
5. Running of each facility will be by faculty groups, scientists and technical staff
6. All tests/procedures will be chargeable at subsidized rates
7. Every facility can be accessed by advance booking through website in consultation with the respective facility team
  - i. Each user will need to be registered for the facility one intends to use. The users will be required to fill in and submit a booking form as available on the website
  - ii. On registration and following confirmation of payment, users will be able to consult facility for technical support and run their samples in instrument(s) followed by analysis on the core workstations.

## Activities carried out in 2019-2020

Date	Topic	Faculty involved
<i>Faculty Research Presentations</i>		
18 February 2020	Introduction to the Genomics facility	Dr Ritu Gupta
	Introduction to the Proteomics facility	Dr Hariprasad G
<i>Faculty interactive sessions</i>		
21 February 2020	Possible workflows to be followed by users, Qualitative and Quantitative Proteomics, 2D-Gel, DIGE vs. MS based Proteomics and Differential protein expression	Dr Hariprasad G Dr Punit Kaur
6 March 2020	Genomics: Next generation seq Dr M Kabra Dr R Gupta Dr M Chaudhary	
28 February 2020	Targeted and quantitative Proteomics, Environmental pollutants, Drugs of forensic importance, Targeted Metabolomics and Lipidomics, High-throughput bioanalysis, Drug pharmacokinetics, Quantitative analysis of biomarkers in large volume of samples	Dr T Velpandian Dr N Haldhar
13 March 2020	BSL 2/3: Essentials of Biosafety	Dr Vikram Saini
<i>Hands-on Workshop</i>		
29 February 2020	Hands-on Training in Polymerase Chain Reaction (PCR), RT-PCR & Real- Time PCR Technique: Application in Diagnostics & Research	Faculty and Scientists' team of General facility

- The Hands-on workshop was organized with an objective to introduce students, researchers and clinicians at AIIMS to the theoretical as well as practical (Hands-on) training for various molecular techniques like DNA, RNA isolation from various biological samples, gel runs, Primer making, PCR, cDNA synthesis and Real-Time PCR.
- There was an overwhelming response with request from 145 applicants for participation in the first workshop, of which only 21 were short-listed for hands-on training which included faculty, research students, scientists and residents from both basic and clinical departments. The remaining applicants were allowed to attend the informative and interactive lecture series on both the days of this workshop,
- The two-day workshop included four sessions (two sessions per day). The forenoon sessions included a lecture series by faculty with expertise in the area, which provided all participants about the basic knowledge of each technique to be done in the afternoon sessions of both days, including principle, procedure, research and clinical applications and troubleshooting.
- The afternoon session of the day was dedicated to hands-on training where participants were allowed to learn by performing all steps of the experiment by themselves. The wet lab work was coordinated by the Scientists and Faculty of the genomics facility.
- The overall workshop was rated very successful as per the feedback provided by the participants. The suggestions were noted to improve the workshops in the future.

### 1. BIOSAFETY LEVEL (BSL)-3 LABORATORY

#### Overview and objectives:

The BSL facility spread over about 3500 sq.ft. has design and operational features in compliance with national and international regulatory guidelines for the safe handling of pathogenic organisms. It includes the following components:

#### **TB Technology Laboratory**

Three independent dedicated BSC units for:

- Clinical Diagnostics TB
- Basic Mycobacteriology and Infection biology
- Aerobic Class III Microbes other than *M. tuberculosis*.

One dedicated BSC unit for Class III anaerobic bacteria along with anaerobic glove box

#### **Virology Laboratory**

Four independent dedicated BSC with necessary instrumentation:

- a. Clinical Diagnostics Virology
- b. Basic Virology culture and Infection biology

#### ***Negative pressure BSL-2 Lab***

- a. Simulator for BSL-3 negative pressure environment to be used for training researchers.
- b. Will act as Auxiliary support to main BSL-3 areas
- c. Has 2 independent dedicated BSC with necessary instrumentation

#### **Major Equipments installed**

- NuAire B2 Type class 2 Biosafety cabinets
- Cold Cabinets (4°C to 8°C)
- Upright Freezer (-20°C)
- Digital Colony Counter
- Heat Block
- Vortex
- Real Time PCR machine
- Incubators (BOD)
- Mini Centrifuge (picofuge)
- Bacterial Loop Incinerators
- Magnetic Stirrer with heating options
- Autoclave Vertical Double Jacketed
- pH meter
- Refrigerated Bench top Microfuge
- CO<sub>2</sub> Incubator
- Vertical double jacketed autoclave
- Multimode reader
- Hydrogen Peroxide Vaporizer Machine

#### **Services to be provided**

##### ***Users of BSL-3***

BSL-3 facility at AIIMS is open to faculty, scientists, residents, staff and students who are working or plan to work on risk group-3 infectious agents. All users must have successfully undergone BSL-3 training, certification and a medical health examination to avail service.

##### ***Organisms handled in BSL-3***

The facility is designed for and is compatible to work with the risk group-3 viruses and bacterial strains including clinical strains. Based on the existing expertise and requirement for diagnostic and culture work, the major microbial strains manipulated in this facility are:

**Bacteria:** *Mycobacterium tuberculosis lab and clinical strains including MDR and XDR tuberculosis, Rickettsia prowazekii, Rickettsia rickettsia, Legionella pneumophila, Bacillus anthracis*

**Viruses:** Hantavirus, HIV, Influenza A/H5N1 (HPAI) / Untypable influenza virus, West Nile, Chikungunya, Japanese encephalitis, SARS-CoV, MERS-CoV

#### **Activities of the facility**

##### ***Covid-19 diagnosis at BSL-3***

The facility is truly central to the ramped up diagnostic capacity at AIIMS. The *BSL-3 simulator laboratory* is being used for processing of samples of Covid19 suspects/ cases. Further, as the pandemic has surged, BSL-3 Virology laboratory has been activated to be used as diagnostic area, both for RT PCR and CBNAAT based diagnostics.

##### ***COVID-19 related training activities of BSL-3***

BSL-3 team has led from the front in providing training and guidance to hospital workers and sanitary attendants deployed at the PPE disinfection facility of AIIMS. Dr Vikram Saini has conducted several sessions on biosafety aspects of working with Covid-19. Dr Atul Vashisht (Scientist II, BSL-3) is deployed at the PPE disinfection site AIIMS to provide and oversee training efforts of healthcare workers.

### **Members of the BSL-3 Facility**

1. Dr Subrata Sinha, Professor and Head, Department of Biochemistry (Coordinator)
2. Dr Rama Choudhary, Professor, Department of Microbiology
3. Dr S.S. Chauhan, Professor, Department of Biochemistry
4. Dr Lalit Dar, Professor, Department of Microbiology
5. Dr Kalpana Luthra, Professor, Department of Biochemistry
6. Dr Sanjeev Sinha, Professor, Department of Medicine
7. Dr Urvashi B. Singh, Professor, Department of Microbiology
8. Dr Aashish Chaudhary, Associate Professor, Department of Microbiology
9. Dr Vikram Saini, Assistant Professor, Department of Biotechnology
10. Dr Kiran Bala, Assistant Professor, Department of Microbiology
11. Dr Jaya Tyagi, NASI Senior Scientist Platinum Jubilee Fellow (Special Invitee)
12. Dr Sunita Kanswal, Scientist II (Contract)
13. Dr Atul Vashisht, Scientist II (Contract)

## **2. GENOMICS FACILITY**

### **Overview and objectives**

Recent technological developments such as high throughput Next Generation Sequencing methods and robust bioinformatics approaches have led to elucidation of potential genomic biomarkers with diagnostic, prognostic and therapeutic value in the clinics and to exponential advances in research. Generation of clinically relevant high throughput data in a resource-efficient manner in terms of time and cost on advanced instrumentation platforms available in the facility will open new opportunities for researchers of AIIMS in the field of genomics and ultimately pave the way forward to the era of personalized medicine.

### **The main objectives include:**

1. To create and provide an academically stimulating and collaborative environment for researchers to access high end state-of-the-art technology platforms which will be maintained centrally with optimal quality control and calibrations for efficient functioning.
2. To enhance capacity building and knowledge sharing via regular training activities. Such activities will include lecture series and workshops for the investigators on experiment designing and assays. These activities will also include formulation of guidelines and development of standard operating procedures and resource learning materials for the users.
3. To evaluate and implement cutting-edge genomic technologies
4. To facilitate the development of novel experimental methods for the researchers in response to specific needs from the investigators.

### **Major Instruments installed**

1. Next Generation Sequencers  
—Novaseq 6000 (Illumina)  
—Miseq (Illumina)
2. 48 capillary Genetic Analyser 3730 (Applied Biosystems)
3. nCounter Sprint Profiler (nanosttring Technologies)
4. Focussed Ultrasonicator ME220 (COVARIS)
5. Fragment Analyser (Agilent Technologies)

### **Services to be provided**

#### ***Next Generation Sequencing:***

*A. Experiment Design:* Guidance will be provided for the designing of experiments which will include

- Guidance regarding availability and suitability of the kits as per requirement of the user
- Requirement of funds
- SOPs for library preparation
- Sequencing depth and coverage required for the experiment
- Multiplexing for required coverage

*B. Quality and Quantity Assessment of Nucleic acid/NGS Libraries:* Using Fragment Analyser and/or Qubit available in the facility

*C. DNA/RNA Shearing:* Using Covaris-ME220 Focused-ultrasonicator

*D. Sample Preparation:* User training and support will be provided for sample preparation for various applications that can be done on the instruments available in the facility through regular hands-on workshops.

*E. Library Preparation:* User training and support in library preparation using various protocols: WES, WGS, transcriptome, small RNA sequencing, chiPSeq, metagenomics, PGS, etc.

*F. Sequencing:* Depending upon the requirement of the experiment, sequencing will be carried out on any of the following instruments (i) Novaseq6000 (Illumina) or (ii) Miseq (Illumina)

*G. Provision of raw data for bioinformatic analysis with maintenance of confidentiality:* Provision of these sequencing services would be for targeted analysis or for confirmation of variants detected on NGS

#### **Sanger sequencing on 48 capillary Genetic Analyser 3730 (Applied Biosystems)**

- A. Experiment designing for various applications such as fragment analysis, MLPA, SNP genotyping etc.
- B. Running the samples on the Genetic Analyser
- C. Data analysis

#### **Nanostring Assay on nCounter Sprint Profiler**

- Guidance will be provided for availability and suitability of the multi gene panels/kits as per the requirement of the user
- Guidance will also be provided for RNA, DNA, protein profiling and other applications on nCounter Sprint Profiler through regular trainings and workshops.

#### **Members of the Genomics Facility**

1. Dr Madhulika Kabra, Professor, Department of Paediatrics (Coordinator)
2. Dr Kunzang Chosdol, Professor, Department of Biochemistry
3. Dr Vaishali Suri, Professor, Department of Pathology
4. Dr Ritu Gupta, Professor, Laboratory Oncology Unit, Dr BRA IRCH
5. Dr Sudip Kumar Datta, Assistant Professor, Department of Laboratory Medicine
6. Dr Gurvinder Kaur, Senior Scientist, Laboratory Oncology Unit, Dr BRA IRCH
7. Dr Madhumita Roy Chowdhury, Senior Scientist, Genetic Unit
8. Dr Lata Rani, Scientist II (Contract)

### **3. PROTEOMICS FACILITY**

#### **Overview and objectives**

The proteomics facility will enable researchers and clinicians learn and conduct proteomic experiments for protein identification, protein profiling and protein quantitation.

#### **Major Instruments installed**

- EttanPHOR IPG (GE)
- Amersham Typhoon Scanner (GE)
- Amersham Imager 680 (GE)
- Dionex Ultimate 3000 UHPLC (Thermo Scientific)
- EASY-nLC™ 1200 System (Thermo Scientific)
- Orbitrap Fusion Tribrid Mass Spectrometer (Thermo Scientific)

#### **Services to be provided**

1. Iso-Electric Focusing (IEF)
2. 2D Gel Electrophoresis
3. Gel Staining
4. Difference Gel Electrophoresis (DIGE)
5. Gel spot quantification
6. Trypsin Digestion
7. Protein Identification
8. Qualitative Proteomics: Isobaric tag based & Label free protein quantification

#### **Members of Proteomics facility**

1. Dr Punit Kaur, Professor and Head, Department of Biophysics (Coordinator)
2. Dr T Velpandian, Professor, Department of Ocular Pharmacology
3. Dr Savita Yadav, Professor, Department of Biophysics
4. Dr Pragyan Acharya, Associate Professor, Department of Biochemistry
5. Dr Hariprasad G, Assistant Professor, Department of Biophysics
6. Dr Sabyasachi Bandyopadhyay, Scientist II (Contract)



## 4. BIOANALYTICS FACILITY

### Overview and objectives

Bioanalytics facility will enable access to cutting-edge technology required for the isolation of compounds from biological sources (plants, animals, micro-organisms and human). The facility will provide the opportunity for the purification, identification, and quantification of the isolated compounds. This facility is expected to support the development of new methods for the quantification for targeted proteomics, lipidomics and metabolomics. The research facility will further enable to carry out drug metabolism, drug degradation and impurity analysis studies. Apart from the above, the facility is expected to support pharmacokinetics of drug and biological analytes, information dependent unknown compound identification.

### Major Instruments installed

1. High Precision Mass Spectrometer
2. Analytical HPLC
3. Preparative HPLC

### Services to be provided

- Quantitation of organic compounds from biological fluids
- Isolation of bioactive compound from biological matrices
- Developing newer methods for compound analysis
- Drug metabolism, pharmacokinetics and drug degradation studies
- Identification of drugs of forensic importance in biological tissues
- Quantitation needs in Targeted Proteomics, Lipidomics and Metabolomics in large number of bio-samples

### Members of the Bioanalytics Committee

1. Dr T. Velpandian, Professor, Department of Ocular Pharmacology, Dr RP Centre (Coordinator)
2. Dr Kunzang Chosdol, Professor, Department of Biochemistry
3. Dr Sharmistha Dey, Additional Professor, Department of Biophysics
4. Dr Nabanita Halder, Associate Professor, Department of Ocular Pharmacology
5. Dr Hanuman Prasad Sharma, Scientist-II (Contract)

## 5. BIOINFORMATICS FACILITY

### Overview and objectives

The Bioinformatics Facility comprises high end computer servers with GPU card. It has terminals for users and aims to provide a continuously maintained infrastructure to augment interdisciplinary and collaborative environment to researchers coupled with bioinformatics consultation and data analysis. It will operate in close collaboration with other core facilities like proteomics, bioanalytics, genomics, flow cytometry and the AIIMS-ICMR computational Genomics Centre. Overall, the facility aims to facilitate an integrative bioinformatics approach to data analysis and integration.

1. To develop a user-centered system to support faculty research efforts to use and develop bioinformatics tools and techniques
2. To strengthen the multidisciplinary research through training in bioinformatics tools
3. To maintain a technical infrastructure that supports fast and efficient computational analysis, modeling, visualization, and retrieval of data.

### Major Instruments (to be installed later this year)

#### i. HPC cluster GPU based

1. Master Node
2. Compute Node

#### ii. Analytics cluster CPU-based

Analytics compute cluster with HDFS OR similar file system with 100 TB usable storage in redundancy for analytics data

1. Name/Edge/Master Node
2. Analytics node
3. Network connectivity over 10 G

### **iii. Centralized Physical storage**

1 PB (Petabyte) centralized storage

### **iv. Peripherals**

1. All-in-One PCs
2. Workstation
3. Network Laser Printer

### **Services**

1. NGS/Genomics Data Analysis in conjunction with ICMR-AIIMS Computational Genomics Centre
2. Proteomics data analysis
3. Protein structure analysis
4. Rational Drug Design
5. Pathway and Network Analysis of Genes and Proteins.

### **Members of Bioinformatics Committee**

1. Dr Punit Kaur, Professor and Head, Department of Biophysics (Coordinator)
2. Dr Sudip Sen, Additional Professor, Department of Biochemistry
3. Dr AS Ethayathulla, Associate Professor, Department of Biophysics
4. Dr Sidhartha Kundu, Assistant Professor, Department of Biochemistry
5. Dr Manoj Kumar, Scientist-II, Department of Biophysics
6. Dr Hari Shanker, Senior Programmer, Computer Facility

## **6. FLOW CYTOMETRY FACILITY**

### **Overview and objectives**

The mission of the FACS Core Facility is to facilitate cutting-edge research by providing state of the art instrumentation and resources for fluorescent analysis of cells at the single cell level, including high-speed fluorescence-activated cell sorting.

The facility aims to provide expertise in flow cytometry including latest advances in the areas of experimental design, instrument knowledge and training, data analysis and cell sorting.

### **Major Instruments Installed**

1. Fluorescence activated cell sorter (BD FACS Aria Fusion).
2. Flow Cytometer (will be installed later in the year)

### **Services to be provided**

1. Cell Proliferation
2. Intracellular & secreted cytokine
3. Cell phenotyping
4. Apoptosis & cell cycle studies
5. Signal Transduction
6. Biomarker detection
7. DNA analysis

### **Members of the Flow Cytometry facility**

1. Dr DK Mitra, Professor and Head, Department of Transplantation Immunology and Immunogenetics (Coordinator)
2. Dr Kalpana Luthra, Professor. Department of Biochemistry
3. Dr Vineet Ahuja, Professor, Department of Gastroenterology
4. Dr Ritu Gupta, Professor, Laboratory Oncology Unit, Dr BRA IRCH
5. Dr Jayanth, Associate Professor, Department of Biochemistry
6. Dr Rupesh Srivastava, Assistant Professor, Department of Biotechnology
7. Dr Sanjeev Goswami, Scientist, Department of Transplantation Immunology and Immunogenetics
8. Dr Naseem Akhtar Ansari, Scientist-II (Contract)

## 7. MICROSCOPY FACILITY

### Overview and objectives

Microscopy facility aims to provide the use of high-end laser confocal microscopy with live cell imaging. The facility will also help in image analysis and quantitation of markers. This is a highly sophisticated microscope to facilitate the researchers towards addressing their research questions related to biomarker discovery, clinicopathology, drug assay, molecular diagnosis etc.

### Major Instruments (to be installed soon)

LASER Confocal Microscopy with Live-cell Imaging (LSM 980, Zeiss)

### Services to be provided

- Confocal Imaging
- Live-cell imaging

### Members of the Confocal Imaging facility

1. Dr TS Roy, Professor and Head, Department of Anatomy (Coordinator)
2. Dr Parthoprasad Chattopadhyay, Professor, Department of Biochemistry
3. Dr Vaishali Suri, Professor, Department of Pathology
4. Dr Sandeep Mathur, Professor, Department of Pathology
5. Dr Sarita Mohapatra, Associate Professor, Department of Microbiology
6. Dr Tony Jacob George, Associate Professor, Department of Anatomy
7. Dr Swarnendu Bag, Scientist-II (Contract)

## 8. GENERAL FACILITY

### Overview and objectives

The General Facility (GF) is set up with the major aim to provide basic and advanced molecular instrumentation services to facilitate research work. In addition, the GF will support the functioning of other sub-facilities of CCRF (including Proteomics/Genomics/Bio-analytics and Confocal microscopy facility).

The GF is established in two labs (GF1 and GF2). The GF1 lab is dedicated to provide training and services in molecular techniques for isolation, purification, quantitation and amplification of genomic material from different biological tissues. The GF2 houses equipment for protein related work (Western blotting), electroporator and microscopy.

### Major instruments installed

1. Real-time PCR machines
2. PCR machine
3. Multimode-Microplate Reader (1 to 3 in GF1)
4. Electroporation system
5. Ultracentrifuges
6. Refrigerated-Centrifuges
7. Homogenizers
8. Western Blot apparatus
9. Rapid semi Dry system
10. Agarose Gel system with power pack (4 to 10 in GF2)

### Services provided

General facility at CCRF has started providing its services to AIIMS faculty/scientists/research students since February 2020. Nearly all installed machines have been made available to the users. Some of the instruments like Real-time PCR, Homogenizer, PCR, Multimode microplate reader have already been accessed by multiple users. Various research groups from the institute have discussed with the scientists of the GF about their requirement to avail the use of these equipment for their specific research purposes in ongoing projects and/or in forthcoming projects. The use of instrumentation in this facility is free and the user has to only bring the processed samples and/or requisite consumables.

### Members of the General Facility

1. Dr Kalpana Luthra, Professor, Department of Biochemistry (Coordinator)
2. Dr Ravinder Goswami, Professor, Department of Endocrinology
3. Dr Parthoprasad Chattopadhyay, Professor, Department of Biochemistry
4. Dr Lakshmi R, Professor, Department of Cardiac Biochemistry
5. Dr Deepali Jain, Additional Professor, Department of Pathology

6. Dr Archana Singh-1, Associate Professor, Department of Biochemistry
7. Dr Jayanth Kumar, Associate Professor, Department of Biochemistry
8. Dr Vikas Sharma, Scientist-II (Contract)
9. Dr Amit Singh, Scientist-II, (Contract)



**Snapshots of CCRF Workshop-series I**

## ENDOWMENT FUND

1. Provides travel fellowships for students, residents, PhD scholars and research staff to participate in international conferences
2. Meeting being held every two months for selection of candidates for award of travel grant.
3. Introduction of funding for international fellowships for faculty (4 per year).

Month	Approved Applications	Amount Sanctioned (Rs.)
April 2019	5	360000
May-June 2019	13	920000
July-August 2019	10	620000
September-October 2019	10	580000
November-December 2019	10	700000
January-February 2020	7	440000
<b>Total</b>	<b>55</b>	<b>3620000</b>

## Miscellaneous/Other activities

1. **E-research newsletter** is being published quarterly.
2. **E-grants update** are being provided to the faculty on regular basis.
3. MoU was signed with UCL on 4 November 2019 for starting collaborative research projects with seed funding of 20,000 Pounds to UCL PI and equivalent support funding to AIIMS PI. There will be four project grants, each receiving grant of 5000 Pounds from each institution.
4. Revision of RRs, revision of overhead charges and rules regarding purchase of research store items through GeM being streamlined. Research Manual under preparation.
5. Ongoing computerization of Research Section.
6. Drafting of patent policy of AIIMS ongoing.
7. Research integrity/misconduct committee: Drafting of guidelines ongoing.
8. IRMI (Research Management Initiative) with DBT/India Alliance being initiated.
9. Issuing of pre-paid cards (EZ- pay card) to PIs for research projects to avoid cash advance transaction on daily expenditure.
10. Online submission system for intramural grants created

## 9.1 Anaesthesiology, Pain Medicine and Critical Care

**Professor and Head**  
Rajeshwari Subramaniam

Anjan Trikha  
Lokesh Kashyap  
Vimi Rewari  
Jyotsna Punj  
Anjolie Chhabra

**Professors**  
Maya Dehran  
Ganga Prasad  
Vanlal Darlong  
Babita Gupta (JPNA TC)  
Chhavi Sawhney (JPNA TC)

Dilip R Shende  
Virender Kumar Mohan  
Renu Sinha (Dr RP Centre)  
Ravindra Kumar Pandey  
Rashmi Ramachandran

Dalim Kumar Baidya (CDER)

**Additional Professors**

Devalina Goswami (CDER)

Puneet Khanna  
Debesh Bhoi

**Associate Professors**  
Bikash Ranjan Ray

Rahul Kumar Anand  
Shailendra Kumar (IVF)

Manpreet Kaur  
Akhil Kant Singh  
Nishant Patel  
Abhishek Kumar  
Vineeta Venkateswaran  
Kelika Prakash  
Sulagna Bhattacharjee

**Assistant Professors**  
Souvik Maitra  
Kanil Ranjith Kumar (Dr RP Centre)  
Arshad Ayub (Dr RP Centre)  
Christopher Dass  
Venkata Ganesh  
Mritunjay Kumar

Thilaka Muthiah  
Rakesh Kumar  
Yudhayavir Singh (JPNA TC)  
Ajisha Aravindan  
Anju Gupta  
Parin Chellani  
Shreya Bharat Shah

### HIGHLIGHTS

The faculty members are doing clinical work, teaching and research with zest, interest and enthusiasm. The department was able to complete 80 research projects (non-funded), and 133 non-funded projects are continuing. Of these, the department continued to work on 17 interdepartmental research projects and completed seven such projects. With financial support from AIIMS as well as ICMR the department has completed one funded project and has eight ongoing (funded) projects. The department organized four conferences/workshops/CME involving multiple internationally well-known speakers/academicians. Many of the departmental faculty received recognition/awards at national level from various government agencies for their contribution towards Anaesthesia, Pain Medicine and Critical Care. Faculty members delivered more than 200 talks (226) on challenging topics at various national and international platforms. The department published 69 papers in well-reputed national and international journals as well as seven chapters in different books. In addition, many faculty members were elected/reappointed into the editorial boards of various reputed national/international journals. Apart from the academic sphere, the residents and faculty members participated in several cultural and sports events and have also bagged a few such events. The present year marked the path of progress in all fields of anaesthesia keeping in mind high standards targeted by our institute.



Honourable Director, Prof Randeep Guleria, inaugurating CUSA 2019, 6 December 2019



Cadaveric skills workshop, ISPCCON 2019



**A session in AAPGA 2019**



**Team "Ketamine" winning the Residents Cricket League, June 2019**



## **CME/Workshop/Symposium/National-International Conference**

1. AIIMS Anaesthesia PG Assembly (AAPGA 2019), 29 September to 3 October 2019
2. Indian Society of Pain Clinicians Conference (ISPCCON 2019), 8 to 10 November 2019
3. Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA), 6 to 8 December 2019
4. Ninth National Conference for OT Technologists (NCOTT), 6 April 2019

### **Lectures delivered**

<b>S Rajeshwari: 5</b>	<b>Anjan Trikha: 14</b>	<b>Maya Dehran: 1</b>
<b>D Shende: 6</b>	<b>Lokesh Kashyap: 2</b>	<b>VK Mohan: 5</b>
<b>Vimi Rewari: 6</b>	<b>V Darlong: 9</b>	<b>Jyotsna Punj: 11</b>
<b>Renu Sinha: 3</b>	<b>Ravinder K Pandey: 15</b>	<b>Anjolie Chhabra: 11</b>
<b>Babita Gupta: 2</b>	<b>Chhavi Sawhney: 5</b>	<b>Rashmi Ramachandran: 6</b>
<b>Dalim Kumar Baidya: 24</b>	<b>Devalina Goswami: 2</b>	<b>Puneet Khanna: 8</b>
<b>Bikash Ranjan Ray: 8</b>	<b>Rahul Kumar Anand: 8</b>	<b>Debesh Bhoi: 9</b>
<b>Manpreet Kaur: 10</b>	<b>Souvik Maitra: 4</b>	<b>Thilaka Muthiah: 10</b>
<b>Kanil Ranjith Kumar: 3</b>	<b>Nishant Patel: 5</b>	<b>Rakesh Kumar: 4</b>
<b>Arshad Ayub: 5</b>	<b>Yudhyavir Singh: 2</b>	<b>Abhishek N: 1</b>
<b>Anju Gupta: 3</b>	<b>Sulagna Bhattacharjee: 1</b>	<b>Venkata Ganesh: 3</b>

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. Enhancing the success and safety of endotracheal intubation by development of an innovative intubation system: A pilot project, Babita Gupta, ICMR, 2 years, 2020-2022, Rs 55 lakhs
2. Assessment of IJV valve incompetence and its association with POCD in patients undergoing laparoscopic pelvic surgeries in Trendelenburg position, Akhil, AIIMS, 1 year, 2019, Rs 4 lakhs
3. Randomised comparison of costoclavicular vs lateral sagittal approach for ultrasound guided continuous infraclavicular block for postoperative analgesia, Thilaka, AIIMS, 1 year, 2019, Rs 4 lakhs
4. Impact of simulation based teaching on knowledge of performer, actual conduct of aerosol generating procedures and self-confidence while handling patients with COVID-19, Thilaka, AIIMS, 1 year, 2019, Rs 4 lakhs
5. Comparison of ultrasound guided dorsal radial artery cannulation and conventional radial artery cannulation at the volar aspect of wrist: A pilot randomized controlled trial, Souvik, AIIMS, 1 year, 2019, Rs 4 lakhs
6. Comparative evaluation of C-MAC D-Blade and Airtraq Video laryngoscope for endotracheal intubation in simulated cervical spine immobilization using cervical collar, Manpreet, AIIMS, 1 year
7. Comparison of dexmedetomidine as an adjuvant with ropivacaine alone for continuous wound infiltration in patients undergoing proximal splenorenal shunt (PSRS) surgery: A randomized control trial, Rakesh, AIIMS, 1 year, 2019, Rs 4 lakhs
8. Comparison of Anxiety scores with or without parental presence and its correlation with stress biomarkers during induction of anaesthesia in children undergoing ophthalmic procedures - A Randomized Controlled Trial, Nishant, AIIMS, 1 year, 2019, Rs 4.9 lakhs

#### ***Completed***

1. Intraoperative lung protective ventilation in peritonitis patients undergoing emergency laparotomy: Randomized controlled trial, Dalim K Baidya, AIIMS, 3 years, 2015-2018, Rs 1.8 lakhs

### **Departmental projects**

#### ***Ongoing***

1. Safety, economic and environmental impact of desflurane in minimal flow anaesthesia (0.5 l/min) with or without nitrous oxide, compared to isoflurane- air-oxygen used with low flow (1 l/min)-a randomized, open labelled, single blinded study.
2. Safety and efficacy of low dose intrathecal anaesthesia in outpatient tubal ligation
3. To evaluate effects of a preoperative carbohydrate drink on postoperative vomiting in paediatric strabismus surgery: a randomised, controlled, observer- blinded trial
4. Analgesic efficacy and LA sparing effect of intrathecal morphine as adjunct for labour analgesia-a double-blinded

- randomized controlled trial
5. Prognostic significance of preoperative blood lactate and lactate clearance in patients undergoing emergency laparotomy for perforation peritonitis: A prospective observational study
  6. Prognostic significance of red blood cell transfusion trigger in critically ill patients with sepsis and septic shock: prospective observational study
  7. Ultrasonographic assessment of brachial artery reactivity as predictor of adverse outcome in patients undergoing emergency laparotomy for perforation peritonitis: prospective observational study
  8. Early administration of Vitamin D to reduce ICU length of stay in critically ill sepsis patients: randomized controlled trial
  9. Evaluation of deep learning algorithm for identification of brachial plexus in ultrasound images – an explorative study
  10. Epigenetic regulations of pro-inflammatory and anti-inflammatory cytokine genes in posttraumatic sepsis and septic shock-defined by sepsis-3 classification. An exploratory study in major trauma patients.
  11. Gastric residual volume measured by ultrasound to correlate with feed intolerance in ICU patients – an observational study
  12. Comparison of ultrasound guided gastric emptying between breast feed and formula milk feed below six month old children – an observational study
  13. Effect of addition of dexamethasone to ropivacaine for extra oral mandibular block in patients undergoing mandibular surgeries under general anaesthesia.
  14. Compliance of novice users in performing endotracheal intubation using either C-Mac Video laryngoscope or MacIntosh laryngoscope after manikin skill based learning using either of the devices: a prospective randomized high fidelity simulator based study
  15. Effectiveness of enteral ivabradine for heart rate control in septic shock – A randomized controlled trial.
  16. The effect of levosimendan infusion on diaphragm contractility assessed by ultrasonography: a single centre randomized placebo- controlled trial
  17. Analgesic efficacy and safety of Clonidine as an additive to 0.25% Ropivacaine in Stellate Ganglion Block for the treatment of Complex Regional Pain Syndrome. A prospective randomized single blind study
  18. Prediction of Difficult Laryngoscopy and Orotracheal Intubation Using Lateral Neck X-ray: A Prospective Observational Double Blind Study
  19. Urine albumin creatinine ratio as a marker for predicting acute kidney injury and patient outcome in critically ill sepsis patients – A prospective observational study
  20. Erector spinae block versus intrathecal morphine in patients undergoing percutaneous nephrolithotomy surgery: A prospective randomised comparative pilot study
  21. Renal doppler ultrasound to predict acute kidney injury in patients with acute circulatory failure in ICU: A prospective observational study
  22. Comparison of positive pressure extubation with traditional extubation in critically ill patients: A randomised control study
  23. Comparing the efficacy and safety of ketamine and dexmedetomidine in bariatric surgery without the use of opioids; A randomized clinical trial.
  24. Intra-operative monitoring of cerebral oxygen saturation using Near Infra Red Spectroscopy (NIRS) and Assessment of risk factors for Low cerebral oxygen saturation in preterm and very preterm infants with Retinopathy of prematurity during Vitreo retinal surgeries: An observational prospective study.
  25. Pulmonary arterial velocity time integral and effect of sigh breaths in predicting fluid responsiveness in acute circulatory failure
  26. To determine the association between altered cerebral blood flow in the frontal cortex during sevoflurane anaesthesia and incidence of postoperative emergence delirium in children: An fNIRS based observational study.
  27. Comparison of analgesic efficacy and safety of erector spinae plane block versus local infiltration in video-assisted thoracoscopic surgery in adult patients comparison of analgesic efficacy and safety of erector spinae plane block versus local infiltration in video-assisted thoracoscopic surgery in adult patients comparison of analgesic efficacy and safety of erector spinae plane block versus local infiltration in video assisted thoracoscopic surgery in adult patients
  28. Comparison between lactate clearance and neutrophil lymphocyte count ratio as a predictor of mortality in patients with sepsis
  29. Incidence of Postoperative Cognitive Decline in elderly patients undergoing open surgery under general anaesthesia

- using Isoflurane or Desflurane: A Prospective Observational Study.
30. Efficacy of hetastarch with ropivacaine in prolongation of duration of ilioinguinal and iliohypogastric nerve blocks in paediatric inguinal hernia repair- a preliminary study
  31. Efficacy of Erector Spinae Plane Block and Quadrates Lumborum Block for Perioperative Analgesia In Patients Scheduled for Renal Transplantation – A Single Blinded Randomized Controlled Study
  32. Effect of Low Dose Ketamine On Inflammatory Markers and on Perioperative Analgesia In Patients Undergoing Laparoscopic hernia surgery—A prospective, randomized, comparative study
  33. To study the outcomes of immediate sequential bilateral vitreo retinal surgery (ISBVS) in advanced ROP
  34. Ultrasound Guided Erector Spinae Plane Block for Postoperative Analgesia in Patients undergoing Percutaneous Nephrolithotomy – A double-blinded, randomized controlled trial
  35. Incidence and prognostic impact of myocardial dysfunction in septic shock—An observational cohort study
  36. Comparison of analgesic efficacy of ropivacaine and levobupivacaine in labor analgesia by dural puncture epidural technique—a prospective double-blinded randomized trial
  37. Preoperative intravascular volume status measured by inferior vena cava collapsibility index in patients with pheochromocytoma / paraganglioma undergoing surgical tumour removal- a prospective cohort study
  38. Analgesic efficacy of ultrasound guided erector spinae block versus intrathecal morphine in patients undergoing Percutaneous Nephrolithotomy (PCNL) surgery: A prospective randomized comparative pilot study
  39. Comparison of safety and efficacy of Air SP Vs. conventional Air-Q intubating laryngeal airway in children: A prospective, randomized comparative study.
  40. Comparison of Glide scope and C-Mac Video laryngoscope for intubation in pediatric patients: A prospective, comparative & randomized study
  41. To evaluate the safety and efficacy of different doses of Clonidine in Pectoral nerve blocks (PECS I, II) for pain relief in different Oncological Breast Surgeries: A prospective, comparative, randomized controlled trial.
  42. Comparative efficacy and safety of I-gel supraglottic airway and self-pressurizing Air-Q intubating laryngeal airway during general anesthesia in infants: A prospective randomized
  43. Effects of regional anesthesia on perioperative inflammatory cytokines alteration and clinical complications
  44. Bilateral Ultrasound guided erector spinae plane block for postoperative pain relief in traumatic spine surgery: A randomised controlled trial
  45. To compare analgesic efficacy and safety of ultrasound guided bilateral intermediate cervical plexus block with bilateral superficial cervical plexus block in patients undergoing thyroid surgeries under general anaesthesia
  46. A study to find minimum effective volume of 0.5% ropivacaine for ultrasound guided costoclavicular block
  47. Effect of different dose regimens of Tranexamic acid in pelviacetabular fracture surgery: randomized clinical trial
  48. To compare the efficacy of Air-Q versus proseal in children (1-18 years) undergoing elective ophthalmic procedures – a randomized clinical trial
  49. Role of Microdialysis in accurate and early detection of a compromised free flap
  50. To evaluate the role of age-adjusted Charlson Comorbidity index in predicting 30 day postoperative outcome in patients undergoing surgery under general and regional anaesthesia
  51. Ultrasound guided suprainguinal fascia iliaca block in acetabular fracture surgery—randomized controlled pilot study
  52. Effectiveness of Retrolaminar block as perioperative analgesia in lumbosacral spine surgeries: Randomized controlled pilot study.
  53. Comparison of Percutaneous Radiofrequency Thermocoagulation and Percutaneous Microballoon Compression of Gasserian ganglion in Treatment of Trigeminal neuralgia—A randomized controlled trial
  54. Comparative Evaluation of Continuous Versus Intermittent Bolus Techniques In Ultrasound Guided Erector Spinae Block In Modified Radical Mastectomy Surgery– A Prospective Randomized Controlled Trial
  55. Pectointercostal fascial block as a novel technique for postoperative pain management in patients undergoing cardiac surgery
  56. To compare ultrasound guided bilateral intermediate cervical plexus block with bilateral superficial cervical plexus block in patients undergoing thyroid surgeries under general anaesthesia
  57. To assess the role of carotid artery corrected flow time (FTc), carotid artery peak velocity variation (CAPVV) and carotid artery velocity time integral (CAVTI) in prediction of post spinal anaesthesia hypotension in spontaneously breathing patients
  58. Comparison of clinical efficacy of intrathecal 0.75% isobaric ropivacaine with fentanyl vs clonidine as adjuvants

- in cesarean section: a prospective randomised controlled trial
59. A Prospective study to evaluate improvement in pharyngeal airway volume and lengthening of mandible in simultaneous release of ankylosis and mandibular distraction.
  60. To evaluate and compare bite force and chewing efficiency in patients of TMJ ankylosis treated by alloplastic total joint replacement, gap arthroplasty with normal individuals.
  61. Correlation between Doppler derived carotid artery corrected flow time, pressure transducer derived radial artery flow time and pulse pressure variation: A prospective observational study
  62. Comparison of 5 factor modified frailty index and ASA classification to predict morbidity and mortality in patients undergoing arthroplasty – A prospective observational study
  63. Association of intraoperative blood glucose variability with postoperative outcomes in emergency laparotomy
  64. Role of spot urine sodium in furosemide stress test in volume overloaded critically ill patients with acute kidney injury—a prospective study
  65. Comparison of opioid based anesthesia technique and opioid free anesthesia technique in patients undergoing laparotomy for gynaecological malignancy: randomized controlled trial
  66. Assessment of inferior vena cava collapsibility index (IVCCI) and variation of carotid artery peak velocity (CAPV) as predictor of post-spinal hypotension
  67. Effect of addition of dexamethasone to ropivacaine for extraoral mandibular nerve block in patients undergoing mandibular surgeries under general anaesthesia
  68. Ultrasonographic assessment of brachial artery reactivity as predictor of adverse outcome in patients undergoing emergency laparotomy for perforation peritonitis: Prospective observational study
  69. Predictors of Intensive Care Unit Admission and Mortality In Acute Febrile Illness: A Prospective Observational Study
  70. Effect of incremental PEEP titration on postoperative lung atelectasis in adult patients undergoing elective major abdominal surgery: A randomized controlled trial
  71. Feasibility of anterior temporalis muscle ultrasound as a method to assess muscle wasting in ICU
  72. Comparison of Recovery Characteristics With Desflurane And Sevoflurane In Preterm And Ex-Preterm Infants Undergoing Retinopathy Of Prematurity Surgery: A Prospective Randomized Study
  73. Ultrasound guided costoclavicular block in paediatric population: A prospective observational study
  74. Effect of video distraction on preoperative anxiety scores in paediatric patients undergoing general anaesthesia in ophthalmic day care procedures: A Randomized Controlled trial.
  75. Sonographic Assessment of Epidural Space Depth and Orientation in Paediatric Patients at Various Vertebral Levels: An Observational Cross-Sectional Study
  76. A comparative study of optimum versus fixed positive end expiratory pressure on incidence of postoperative lung atelectasis in patients undergoing laparoscopic gynaecological surgery: A double blinded randomised control trial.
  77. Association between perioperative acid-base abnormalities and kidney dysfunction in patients with peritonitis: A prospective cohort study
  78. Velocity- time integral and stroke volume measured in the ascending aorta for prediction of volume responsiveness in spontaneously breathing patients
  79. Association between intraoperative colloid administration & postoperative kidney dysfunction in patients undergoing major gastro-intestinal surgery: A retrospective study
  80. Effect of intraoperative oxygen use on cerebral blood flow in adult patients under general anaesthesia: A randomized controlled trial
  81. Comparison of two anaesthetic techniques in children undergoing vitreo-retinal surgery: inhalational vs TCI (Target controlled infusion) – A Randomised pilot clinical trial
  82. Comparison between medial and lateral approaches of costoclavicular brachial plexus block for upper limb surgeries- A Pilot interventional Randomised control trial
  83. Effect of High Protein Normocaloric Nutrition on Skeletal Muscle Wasting in Critically Ill Mechanical Ventilated Patients: A Randomized Double-Blind
  84. Association of malnutrition with sevoflurane requirement and awakening during day care procedures
  85. Association between pulmonary function tests and difficult airway in morbidly obese patients.
  86. Ultrasound Assessment of Gastric Emptying of Clear Fluids with Different Energy Content in Children: A Crossover Pilot Study
  87. Effect of wrist angulations on ease of radial artery cannulation in pediatric population: ultrasound-guided anatomical

assessment

88. Effect of dexamethasone on postoperative cognitive decline in elderly population: a randomized controlled triple blind trial
89. Ultrasonographic Assessment of Tonsillar Volume in Children undergoing tonsillectomy; a predictor of post-operative morbidity
90. Dura to spinal cord distance at different vertebral levels in children and its implications on epidural and spinal anesthesia and analgesia in Indian Population: A retrospective CT Scan - based study
91. A randomised control trial comparing the effects of lignocaine and dexmedetomidine on the incidence of postoperative cognitive decline in elderly: a pilot study
92. Correlation of oxygenation Index and oxygen saturation index in patients undergoing emergency laparotomy under general anesthesia: A prospective observational study
93. A double blind randomized controlled trail – Effect of intravenous dexamethasone on the onset time and recovery profiles of atracurium in children.
94. Effect of nicotine replacement therapy on peri-operative opioid requirement in abstinent tobacco smokers undergoing spinal fusion: a double blind randomized controlled trial.
95. Epidemiology and clinical characteristics of COVID-19 patients requiring critical care in a tertiary care teaching hospital
96. Comparison of Posterior tibial artery cannulation under USG guidance versus palpation technique.
97. Association Between Perioperative Hypertension, Length of Hospital Stay and Perioperative Cardiovascular Complications: A Prospective Observational Study From Tertiary Care Centre
98. The Study of Feasibility of Ultrasound Guided Catheterization of Right Brachiocephalic Vein in Adult Patients
99. Predicting increased length of stay and adverse outcome in Indian Geriatric patients coming for surgery: A prospective case control study.
100. Frailty as a predictor of adverse discharge outcomes in geriatric trauma patients undergoing surgery: A prospective Case Control Study
101. Postural Impact on Gastric Ultrasound assessment in pregnancy: An observational study
102. Effect of Different Dose Regimens of Tranexamic Acid on blood loss in Pelvic acetabular Fracture Surgery: A Randomized Clinical Trial
103. Evaluation of effect of early use of Cryoprecipitate on blood components usage in trauma patients with haemorrhagic shock
104. Comparison of standard introducer tool guided vs. suction catheter guided techniques of Proseal laryngeal mask airway (PLMA) insertion in patients undergoing elective laparoscopic gynaecological surgery: a randomized controlled trial.
105. Liberal versus Restrictive Fluid Management in Ambulatory Laparoscopic Gynaecological Surgeries: A Randomized Controlled Trial
106. Impact of Simulation-based Training in Intravascular Access (STIVA) for medical students on composite learner outcomes—A Randomized Controlled Trial
107. Comparison of blind tracheal intubation through Air-Q and LMA Blockbuster: A Randomised control trial
108. Comparison of analgesic efficacy of levobupivacaine and ropivacaine in labour analgesia by dural puncture epidural technique.
109. Comparative evaluation of C-MAC D-Blade and Airtraq Video laryngoscope for endotracheal intubation in simulated cervical spine immobilization using cervical collar.
110. Assessment of Pain Score After Administration of Injection Lidocaine Versus Lidocaine- Prilocaine Cream In Patients Undergoing Prenatal Invasive Testing
111. Association between intra-operative starch use and post-operative serum creatinine level in patients undergoing elective major gastrointestinal surgery: Interim analysis of a retrospective study.
112. Impact of simulation based teaching on knowledge of performer, actual conduct of aerosol generating procedures and self-confidence while handling patients with COVID-19
113. Fascia Iliaca block above or below the Inguinal ligament? Evaluation of Efficacy in Total Hip Arthroplasty. A Randomized Prospective study
114. Effect of Airway Pressure on Cuff Pressure of Proseal Laryngeal Mask Airway in Patients Undergoing Gynaecological Laparoscopic Procedures.
115. Effective Dose of Cis-atracurium in Patients Undergoing Short Gynaecological Laparoscopic surgeries—A

Prospective Double blinded Randomized trial

116. Ultrasound guided Suprainguinal Fascia Iliaca Block for Analgesia in Acetabular Fracture Repair

### Completed

1. Integrated ultrasound protocol in predicting weaning success and extubation failure
2. To determine whether implementation of a new ICU delirium prevention bundle will reduce the incidence of delirium compared to standard of care protocol in mechanically ventilated patients
3. Epidemiology and prognostic utility of cellular components of hematological system in sepsis
4. A comparison of efficacy of prophylactic infusion of phenylephrine versus norepinephrine for the prevention of post spinal hypotension in parturients undergoing elective Cesarean section—a randomized controlled trial
5. To compare postoperative analgesia between ultrasound guided continuous quadratus lumborum block with ultrasound guided continuous psoas compartment block in patients undergoing total hip arthroplasty under general anaesthesia
6. Efficacy of Left ventricular outflow tract velocity time integral (LVOT VTI) and carotid artery VTI as predictor of volume responsiveness to passive leg raising (PLR) in sepsis and septic shock patients by correlation with Echocardiography guided stroke volume change ( $\Delta$ SV%) to PLR
7. Carotid artery corrected flow time & respiratory variations of peak blood flow velocity for prediction of hypotension after induction of general anaesthesia in adult patients undergoing emergency laparotomy for peritonitis: A prospective observational study
8. Correlation between Doppler derived carotid artery corrected flow time and pressure transducer derived radial artery corrected flow time: A prospective observational study
9. Carotid artery corrected flow time and respiratory variations of peak blood flow velocity for prediction of hypotension after induction of general anaesthesia in adult patients undergoing elective surgery: A prospective observational study
10. Comparison of dexmedetomidine with a combination of ketamine and midazolam for sedation during awake fiberoptic nasal intubation, a randomized double blind comparative trial
11. Hemodynamic profile in the perioperative period in patients undergoing pheochromocytoma and paraganglioma surgery with and without low dose diltiazem infusion
12. Anaesthetic management for ophthalmic surgical procedures in children with congenital Rubella Syndrome: A retrospective analysis
13. Correlation between duration of preoperative fasting and emergence delirium in paediatric patient undergoing ophthalmic examination under anaesthesia as day care procedure-observational study
14. Knee-chest position and Subarachnoid block Onset times in Obstetric parturient: A RCT
15. Impact of preoperative anxiety on propofol induced hypotension in female patients of elective surgery under general anaesthesia
16. Impact of preoperative anxiety on propofol induced hypotension in children undergoing elective surgery under general anaesthesia: a prospective observational study
17. Perioperative outcome of patients undergoing major pelvic surgeries in a tertiary health centre in India: A retrospective analysis
18. Clinical outcome, microbiological spectrum and antibiotic susceptibility of clinical isolates from adult intensive care unit in a tertiary care hospital in INDIA
19. Effect of dexmedetomidine on serum cortisol level and perioperative haemodynamics in children undergoing elective ophthalmic surgery—A prospective, randomized, comparative study
20. Lung Ultrasound for diagnosis of Ventilator associated pneumonia in critically ill
21. Ultrasound assessment of airway for prediction of difficult laryngoscopy in obese patient. Observational pilot study
22. Comparison between lactate clearance and neutrophil lymphocyte count ratio as a predictor of mortality in patients with sepsis
23. Comparison of serum nucleosomes and tissue inhibitor of metalloproteinase1 (TIMP1) in predicting mortality in adult critically ill patients in sepsis
24. A comparative pilot study of manual weaning versus automated weaning in critically ill patients
25. Accuracy of Predictive equations in guiding Tracheal intubation depth in children: A prospective observational study
26. Comparison of Ultrasound guided femoro-sciatic nerve block versus epidural analgesia for post-operative analgesia following excision of knee tumours- A randomized control study

27. Serum Procalcitonin, Interleukin-6 and sTREM-1 as diagnostic and prognostic markers in sepsis in Intensive Care unit
28. Air Q ILA as a conduit for orotracheal intubation in children: A comparison between supine and lateral position
29. Effect of different patient positions on post induction hypotension caused by Propofol– A randomized comparative trial
30. Effect of Dexmedetomidine on Emergence Delirium and recovery parameters after Desflurane or Sevoflurane Anaesthesia in children: A prospective Observational Randomized Study
31. Effect of positive end expiratory pressure on atelectasis in patients undergoing major upper abdominal surgery under general anaesthesia – A lung ultrasonography study
32. Effect of change in body weight on clinical outcomes in critically ill patients
33. Comparison of time to intubate and intubation conditions with CMAC Miller blade size1 and CMAC Macintosh blade size 2 in paediatric patients– A Prospective randomized controlled study
34. Role of spot urine sodium in furosemide stress test in volume overloaded critically ill patients with acute kidney injury
35. To assess the technical feasibility of ultrasound guided out of plane lumbar sympathetic block and its confirmation by fluoroscopy in patients with peripheral arterial disease: A prospective interventional study
36. To assess the technical feasibility of ultrasound guided out plane lumbar sympathectomy block and its confirmation by fluoroscopy in patients with peripheral arterial disease: a prospective observational study
37. Analgesic efficacy and safety profile of Glossopharyngeal nerve block using Extraoral Anatomical landmark technique vs Ultrasound Guided technique in patients with Eagles Syndrome
38. The use of Ultrasound as a reliable tool for endotracheal intubation when performed by novice Anaesthesia Residents—A Prospective Observational study
39. Molecular detection of legionella pneumophila by real time PCR and characterization of isolates by sequence-based typing
40. Evaluation of the effects of a preoperative carbohydrate drink on postoperative vomiting in paediatric strabismus surgery: a randomized controlled, observer blinded trial
41. Transforaminal Epidural Injection of Local anaesthetic and Dorsal Root Ganglion Pulsed Radiofrequency Treatment in Lumbosacral Radicular Pain- A Randomized, Triple-Blind, Active-Control Trial
42. Perioperative Analgesic Efficacy of Continuous Quadratus Lumborum Block or Continuous Transversus Abdominis Plane Block in Patients Undergoing Renal Transplant Surgery: A Randomized Double-Blind Controlled Study
43. To study the efficacy of serratus anterior plane block in patients undergoing trunk-based flap surgeries—a pilot study
44. Comparison between opioid based anaesthesia technique and opioid free anaesthesia technique in patients undergoing laparotomy for gynaecological malignancy: a randomized controlled trial
45. Bilateral Quadratus Lumborum Block vs bilateral transversus abdominis plane block for postoperative pain relief in TAPP laparoscopic hernia surgery: a randomised control trial
46. Diagnostic ultrasound guided lumbar medial branch block of dorsal ramus in facet joint arthropathy: Technical feasibility and validity by fluoroscopy
47. Comparison of three dimensional (3D) endovision system versus Ultra-High Definition (HD) (4K) endovision system in minimally invasive surgical procedures. An Open labelled Randomized Study
48. The effect of ultrasound guided quadratus lumborum block on postoperative analgesia and neuroendocrine stress response in paediatric patients undergoing elective open pyeloplasty—A randomized controlled trial
49. To assess the technical feasibility of ultrasound guided out of plane lumbar sympathectomy and its confirmation by fluoroscopy in patients with peripheral arterial disease: a prospective interventional study
50. Fentanyl versus Dexmedetomidine infusion in head and neck free flap surgery for comparison of haemodynamics and anaesthetic requirements
51. Comparison of efficacy of dexmedetomidine and clonidine infusions to produce hypotensive anaesthesia in patients undergoing orthognathic surgery: a randomized controlled trial
52. Incidence of postoperative cognitive decline in elderly undergoing open surgeries under general anaesthesia using isoflurane or desflurane: a prospective observational pilot study
53. Safety and efficacy of ketamine-dexmedetomidine combination versus ketamine-propofol combination for sedation during ERCP: an open-label randomized controlled trial
54. Ultrasound Guided Regional Blocks for Breast Surgery; A Comparison of Erector Spinae Plane (ESP), Thoracic Paravertebral (TPVB) and Serratus Anterior Plane (SAP) Blocks in Randomized Controlled Pilot Study

55. Ultrasound guided continuous erector spinae plane block in major hepatobiliary and lienorenal shunt surgery: a retrospective study
56. Efficacy of Left ventricular outflow tract velocity time integral (LVOT VTI) and carotid artery VTI as predictor of volume responsiveness to passive leg raising (PLR) in sepsis and septic shock patients by correlation with Echocardiography guided stroke volume change (delta SV%) to PLR
57. To study the efficacy of clonidine as an adjuvant to ropivacaine in ultrasound guided transversus abdominis plane block in adult renal transplant recipients – a double blinded randomised controlled trial
58. To assess the efficacy of local anaesthetic wound infiltration in temporomandibular joint ankylosis surgery for control of postoperative pain: Randomized controlled trial
59. To determine whether implementation of a new ICU delirium prevention bundle will reduce the incidence of delirium compared to standard of care protocol in mechanically ventilated patients
60. Evaluation of diaphragmatic muscle mass in patients receiving pressure regulated volume controlled ventilation and synchronized intermittent mandatory ventilation for acute respiratory failure: A randomized controlled trial
61. Integrated Ultrasound Protocol in predicting Weaning Success and extubation Failure: A Prospective Observational Study
62. Epidemiology and prognostic utility of cellular components of haematological system in sepsis
63. Comparison of intraocular pressure change with facemask vs laryngeal mask airway in anaesthetised children
64. Efficacy of decremental PEEP trial on postoperative oxygenation status in adult patients undergoing emergency laparotomy: A pilot randomized controlled trial
65. Carotid artery corrected flow time & respiratory variations of peak blood flow velocity for prediction of hypotension after induction of general anaesthesia in adult patients undergoing elective surgery: A prospective observational study
66. Effect of addition of dexamethasone to ropivacaine for extraoral mandibular nerve block in patients undergoing mandibular surgeries under general anaesthesia
67. Effect of dexmedetomidine on emergence delirium and recovery parameters after desflurane or sevoflurane anaesthesia in children: A prospective double randomized study
68. Comparison of analgesic efficacy of ultrasound guided quadratus lumborum block (QL) versus erector spinae plane (ESP) block in children undergoing open pyeloplasty—Randomized double blinded controlled trial
69. Diagnostic Ultrasound guided medial branch block of dorsal ramus in facet arthropathy: Technical evaluation and validation by fluoroscopy
70. The association between pulmonary function tests and difficult airway in morbidly obese patients
71. Pilot Study: Double Blind Randomized Controlled Trial for Comparison of Effect on Neuromuscular Blockade Recovery Between Calcium Gluconate Coadministered With Neostigmine and Neostigmine Only in paediatric Patients
72. The effect of ultrasound guided quadratus lumborum block on postoperative analgesia and neuroendocrine stress response in paediatric patients undergoing elective open pyeloplasty. a randomised controlled study
73. Focused airway sonography (FAS) for evaluation of laryngeal mask airway placement: an observational study

### **Collaborative projects**

#### ***Ongoing***

1. A quantitative assessment of changes in inflammatory cytokines in patients undergoing cardiac surgeries with allogenic and autologous blood transfusion, All India Institute of Medical Sciences, Jodhpur
2. Real-Time, In-plane Ultrasound-Assisted Thoracic Epidural Placement in paediatric patients, All India Institute of Medical Sciences, Jodhpur
3. Evaluation of predictive performance of sonographic airway assessment parameters and comparison of their efficacy to predict difficult airway with clinical airway predictors: A Cross sectional, Prospective, Observational study, All India Institute of Medical Sciences, Jodhpur
4. Evaluation of sonographic difficult airway predictors in patients undergoing caesarean section and their comparison with that of non-pregnant women: An observational cohort study, All India Institute of Medical Sciences, Jodhpur
5. Comparison of postoperative analgesia by two different technique of paravertebral block: Conventional v/s Mid transverse process to pleura in Video assisted thoracic surgeries, All India Institute of Medical Sciences, Jodhpur
6. Effect of intraoperative low dose ketamine infusion on postoperative analgesia in laparoscopic cholecystectomy in adults under isoflurane anaesthesia, All India Institute of Medical Sciences, Jodhpur
7. Comparison of Landmark guided technique Vs Real-Time Ultrasound-Assisted Thoracic and Lumbar Epidural



- Placement in paediatric patients, All India Institute of Medical Sciences, Jodhpur
8. Effect of pneumoperitonium on oropharyngeal seal pressure of Proseal LMA, and Baska mask in patients undergoing laparoscopic cholecystectomy: A Randomized controlled trial, All India Institute of Medical Sciences, Jodhpur
  9. Comparison of cadaver-based simulations with phantom models for teaching ultrasound guided regional anaesthesia, All India Institute of Medical Sciences, Jodhpur
  10. Perioperative Music Therapy in Addition to standard treatment for the Improvement of Quality of Recovery after Anaesthesia Following Maxillofacial Surgeries: A Randomized Controlled Study, Maxillo-facial surgery
  11. Incidence and risk factors of back pain after caesarean section: A prospective observational study, Obstetrics and Gynaecology
  12. Evaluation of a single pre-operative pre-emptive dose of Etoricoxib for postoperative pain relief in dental surgeries under general anaesthesia: A randomized prospective double blinded placebo controlled trial, Maxillo-facial surgery
  13. Use of pulsed electro-magnetic fields (PEMF) as an adjunct for treatment of chronic back pain: a prospective randomized study, Orthopaedics
  14. Assessment of vaginal vault infiltration by Bupivacaine for postoperative pain after Total Laparoscopic Hysterectomy: A Randomized Controlled Trial, Obstetrics And Gynaecology
  15. A Randomised Trial Of Peri-Operative Low Dose Vs Standard Dose Steroid Regimen In Patients Of Ulcerative Colitis, Gastrointestinal surgery
  16. Effect of integrated Yoga on ART outcomes and Psychological stress in patients undergoing In-Vitro- Fertilization (IVF) cycles: A Prospective Randomized Controlled Trial, Obstetrics and Gynaecology, Psychiatry and CIMR
  17. To study the causes/reasons of cancellation of scheduled patients for elective surgery, Surgery

### **Completed**

1. Comparison of Sevoflurane, Propofol and Propofol with Dexmedetomidine on intracranial pressure during laparoscopic surgeries in Trendelenburg position, All India Institute of Medical Sciences, Jodhpur
2. A study to assess the effectiveness of a planned simulation teaching on the knowledge and skill of nurses working in critical care unit of AIIMS, College of Nursing
3. UV radiation to decontamination of mobile phones of Health care workers at a tertiary care hospital, Microbiology
4. Determination of duration of vecuronium and isoflurane in type 2 diabetic patients with diabetes with and without cardiac autonomic neuropathy, Physiology
5. Comparison of analgesic efficacy of ropivacaine and levobupivacaine in labor analgesia by dural puncture epidural technique-a prospective double-blinded randomized trial, Obstetrics & Gynaecology
6. Molecular detection of legionella pneumophila by real time PCR and characterization of isolates by sequence based typing, Microbiology
7. Analgesic efficacy and safety profile of Glossopharyngeal nerve block using Extraoral Anatomical landmark technique VS Ultrasound Guided technique in patients with Eagles Syndrome, Radiology

### **PUBLICATIONS**

**Journals: 54**

**Abstracts: 4**

**Chapters in Books: 7**

**Books: 1**

### **PATIENT CARE**

Anaesthesia services were provided for elective and emergency surgeries. Apart from this, services were also provided at many peripheral areas including endoscopy, radiology, MECT, etc. The detailed list of number of patients handled is as follows

GI Surgery:	419
Surgery:	3,027
Dental surgery (CDER):	681
Plastic surgery :	298
Urology:	1416
ENT:	1154
Gynaecology:	1254
Paediatric surgery:	1568
Orthopaedics:	3835
Maternity:	2849
IVF:	663

## Ophthalmic

a)	Routine+ EUA	6144
b)	Emergency	1459
c)	RPC USG	2567
d)	MAC	536
Total		10,706

## Emergency

a)	Cases	4,369
b)	Calls	1,924

## ICU

a)	Total	733
b)	Carried forward by last month	95
c)	New Admission	638
d)	Discharged	520
e)	Expired	118

## Peripheral services

1.	MRI	316
2.	MECT	642
3.	CT Scan	623
4.	Other radiological services (DSA, RFA, Lithotripsy)	232
5.	GI endoscopy	1,360

Pain OT 552

## Pain Clinic (NEW)

a)	M	418
b)	F	366
c)	Child (M)	2
d)	Child (F)	1
e)	Ward	12
Total		799

## Pain Clinic (OLD)

a)	M	1335
b)	F	1400
c)	Child (M)	11
d)	Child (F)	9
e)	Ward (M)	60
f)	Ward (F)	30
g)	Ward	23
Total		2862

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Dr Vishnu**, Junior resident, received first place in e-poster presentation, at AORA 2019.

**Dr Reshma**, Junior resident, received second place in e-poster presentation, at AORA 2019.

**Dr Ridhima Bhatia**, Senior resident, received ICMR grants for Annual Congress, Glasgow 2019 for a poster presentation.

**Dr Alka**, Senior resident, was awarded Best of meeting abstract in the 44th Annual Regional Anesthesiology and acute pain medicine meeting in Las Vegas Nevada, April 2019. The Anaesthesia team won the Resident Cricket League tournament held in June 2019.

**Professor Rajeshwari Subramaniam**, Chairperson of Pediatric Anesthesia session, ISNACC 2019, 16 February 2019, Gurgaon

**Professor Anjan Trikha** invited to deliver the prestigious Dr Pritam Singh Oration on 15 February 2020 during the 18th Indian Society of Anaesthesiologists (North Zone) conference held in Government Medical College Amritsar, Punjab. Nominated member of academic committee of Indian College of Anaesthesiologist. Nominated Chief Editor of Journal of Obstetric Anaesthesiologists and Critical Care.

**Professor Maya Dehran** provided Anaesthesia services in Anaesthesia department of MSSCH (Maharaj Sawan Singh Charitable Hospital), Beas (Punjab) for 10 days from last week of June to 1st week of July during Summer Vacation, 2019. Provided Anaesthesia services for adults and paediatric surgery patients for 7 days from 7 to 14 July in Sikanderpur Hospital (Haryana), Radha Soami Satsang, Beas. Provided voluntary General OPD services for 3 days from 30 December 2019 to 1 January 2020 during a big gathering of Radha Soami Satsang in Jaipur. Provided General OPD services and first aid for critically ill patients in Ajmer for a big gathering of Radha Soami Satsang for 4 days from 9 to 12 February 2020. Provided General OPD services in the Bhatti Dispensary at Radha Soami Satsang, Delhi, Bhatti Centre on all Sundays of the year except on my weekend duties in the hospital. Provided General OPD services and first aid care of critically ill patients during big Radha Soami Satsang gathering in Bhatti Centre, Delhi for 12 days in 2019.

**Professor Dilip R Shende**, part of the ROP care programme for premature infants coming for retinopathy of prematurity. Developed HDU facility with help of pediatrics faculty and residents to look after this premature population in RPC. Chaired the Symposium/Workshops “Intensive Care and Emergency Medicine” 7th Annual International “BEST OF BRUSSELS” Symposium on Intensive Care & Emergency Medicine (ISCCM) 3-7 July 2019 (during Summer Vacation) The Hyatt Regency Hotel, Pune, Maharashtra. Chaired the session, ICRA-PAIN 2019 (International Conference on Recent Advances in Pain) 14 September 2019, Nagpur, Maharashtra. Chaired the sessions (i) “Pain Education—the felt but unmet need!” (ii) “Current Controversies in Pain Management”. The 8th International Conference on Pain Management (ICPM 2019), 14-15 October 2019, Chandigarh, India. Chaired the session on 8 November 2019, 34th Annual Conference of Indian Society for Study of Pain (ISSPCON 2019). Chaired the session on— “Medical issues in Bariatric patients”, 2nd International Meeting on Bariatric and Metabolic Surgery (AIIMS BARICON 2019 13-16 November 2019) Aerocity, New Delhi. Chaired session in Session of Ophthalmic anaesthesia, Judge for poster session, World Congress of Ophthalmic anaesthesia (5th WCOA 2020-8 February 2020), 7 February 2020-8 February 2020, Pullman Jakarta, Jakarta (Indonesia).

**Professor Ganga Prasad** was Member of specification committee of anaesthesia equipments for Post Graduate Institute of Medical Education and Research in New Delhi & Dr Ram Manohar Lohia Hospital, New Delhi. Member of bureau of Indian standard (BIS) for anaesthesia equipment, New Delhi. Member of committee for specification of anaesthesia equipments in Government e- marketing (GeM). BSc (OT technology) course at AIIMS. Reviewer of Indian Journal of Medical Research. Teaching Subject expert for selection of Assistant professor interview of north MCD Medical college, New Delhi. Technical expert for anaesthesia & ICU equipments for AIIMS, Raebareli (UP). Chair session and judge for poster presentation in 12th annual conference of Indian association of paediatrics anaesthesiologists from 7 to 9 February 2020 at Varanasi.

**Professor Vimi Rewari** delivered “Ultrasound guided Chest wall blocks” in the Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA) Regional Anaesthesia Workshop held on the 7 December 2019. Chaired a session on ‘CLD with Coronary Artery Disease’ in the 1st LTSIMid term meeting held on August 10 2019 at Hotel Crowne Plaza, Gurgaon. Chaired a session on ‘Coagulation – Balancing the imbalance’ in the 1st LTSI Mid-term meeting held on 11 August 2019 at Gurgaon. Panelist in the panel discussion titled “End of life care: Issues” in the 1st Rajasthan Critical Care Conference on 31 August 2019 held at AIIMS, Jodhpur. Panelist in the panel discussion titled “Practical endocrine problems” at 11th National and 1st International Conference of the Indian College of Anaesthesiologists, ICACON 2019 on 7 September 2019 in New Delhi, India. Chaired a session on ‘Transplantation in ALF’ in TRANCRIT-2019 on 15 September 2019 at the Institute of Liver and Biliary Sciences, New Delhi. Chaired a session comprising of five lectures in the 12th National Conference of Association of Obstetric Anaesthesiologists (AOA 2019) on 28 September 2019 at Sri Ramachandra Institute of Higher Education and Research Chennai. Chaired a session on “Joint Pain/Back Pain” at the 5th Annual Conference of Indian Society of Pain Clinicians (ISPCON 2019) held from 8 to 10 November 2019 at the All India Institute of Medical Sciences, New Delhi.

**Professor Jyotsna Punj** was faculty for/conducted the following workshops. CME cum workshop on airway Management & ACLS, 25-27 April 2019, Jowai, Meghalaya; Annual Pain Sessions of Sri Lanka, October 2019; CME cum workshop on airway Management and BLS, October 2019, Tawang, Arunachal Pradesh; Emergency workshop, January 2020, Aizawl, Mizoram; USRAW conference, March 2020, New Delhi; Judge for poster session in Annual Obstetrics conference of UK, May 2020, New Castle, England; Observership in Obstetric Analgesia and Anesthesia, 25-31 May 2020, Charlotte’s Hospital, London, England.

**Professor Ravinder Kumar Pandey** was Editor-in-chief of International Journal of Perioperative Ultrasound and Applied Techniques (IJPUT) since 2014. Reviewer in Indexed Journals: Indian Journal of Anesthesia (IJA), Journal of Anesthesiology

and Clinical Pharmacology (JOACP), Journal of Clinical Anesthesia (JCA). Journal of Medical Case Report. Nominated as Examiner for South Campus, Delhi University, for evaluation of MD thesis (Anaesthesiology) and MD Anaesthesiology Examinations. Chief Co-ordinator of Ultrasound Guided Hands on workshop in International Conference of Pain Management: “Annual Academic Sessions of College of Anaesthesiologists and Intensivists of Sri Lanka and Faculty of Pain Medicine”-2019. Chief Co-ordinator of Ultrasound Guided Hands on Regional Anaesthesia Workshop, “URAW”-2019 & 2020, New Delhi. Faculty for/conducted the following workshops: URAW (Ultrasound Guided Regional Anaesthesia Workshop), 23 March 2019, New Delhi; CME cum workshop on Airway Management & ACLS, 25-27 April 2019, Jowai, Meghalaya; URAW (Ultrasound Guided Regional Anaesthesia Workshop), 18 May 2019, New Delhi; Annual Academic Sessions of College of Anaesthesiologists and Intensivists of Sri Lanka and Faculty of Pain Medicine-2019, October 2019, Colombo, Sri Lanka; CME cum workshop on airway management, BLS and other emergency situations, October-November 2019, Tawang Arunachal Pradesh; Comparative Symposium on Ultrasound for Anaesthesiologists (CUSA), 6 December 2019, New Delhi; Emergency workshop, January 2020, Aizawl, Mizoram; AIRWAY 2020: Seed to Fruit, February 2020, New Delhi.

**Professor Anjolie Chhabra** conducted the CMEs: USG Regional Anaesthesia Workshop at the 58th Annual Conference of ISA Delhi State Chapter on 12 April 2019 at Maharaja Agarsain Hospital, Punjabi Bagh, New Delhi; Anaesthesia CME cum Workshop USGRACON at Rohilkhand Medical College & Hospital, Bareilly, UP on 28 July 2019.

**Professor Rashmi Ramachandran** was judge, Oral Paper Presentations, ‘5th National Conference of Pedistars on Simulation’. Faculty for Curriculum development program, ‘5th National Conference of Pedistars on Simulation’. 12-16, August 2019-Visiting Faculty-Cologne University Skill Lab Program- “Learning Skills and Peer Teaching”. Received certification as Instructor, AHA accredited BLS and ACLS Resuscitation Courses.

**Dr Dalim Kumar Badiya**, Examiner of PDCC Critical Care Examination – at Institute of Liver and Biliary Sciences, New Delhi, June 2019. Examiner of PDF Critical Care Examination – at AIIMS Bhubaneswar, August 2019. Panelist in the panel discussion titled “End of life care: Issues” in the 1st Rajasthan Critical Care Conference on 31 August 2019 held at AIIMS, Jodhpur.

**Dr Puneet Khanna**, Grant by Korean Society of Anaesthesia to present a paper in Seoul, Korea in KOREANESTHESIA 31 October-2 November 2019; Grant by CSIR to present the paper in London UK from 8 to 10 January 2020.

**Dr Bikash Ranjan Ray**, Grant by Korean Society of Anaesthesia to present a paper in SEOUL Korea for 1000 USD in KOREANESTHESIA, 31 October to 2 November 2019. Grant from MAMS, from National Academy of Medical Sciences

**Dr Debesh Bhoi**, Faculty for AORA 2019, 7 July 2019, GEM Hospital, Coimbatore. Faculty for USGRACON, 28 July 2019, Rohilkhand Medical College and Hospital, Bareilly, UP. Faculty for AAGPA 2019, 29 September 2019, AIIMS, New Delhi. Faculty for CUSA 2019, December 2019, AIIMS, New Delhi.

**Dr Shailendra Kumar**, Poster session judge for PG Assembly, AIIMS, 30 September 2019, New Delhi. Faculty for the following workshops: Cadaveric Airway Workshop, AIIMS Neuroanaesthesia Neurocritical Care Update 2019, 18 October 2019, AIIMS, New Delhi; ISPCON 2019, 8 November 2019, AIIMS, New Delhi. CUSA 2019, 6 December 2019, AIIMS, New Delhi; National programme for trauma care, 28 January, Sardar Patel School, New Delhi.

**Dr Manpreet Kaur**, Faculty for quality improvement international collaboration “Wake up safe”, 14 September 2019, Hyderabad. 12th National Conference of the Association of Obstetric Anaesthesiologists, 27 September 2019, Chennai. CUSA 2019, 6 December 2019, AIIMS, New Delhi; Simulus 5, 9 February 2020, Chennai.

**Dr Thilaka Muthiah** was faculty in Workshop on perioperative simulation, 2 June 2019, AIIMS, New Delhi. Faculty in Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA), 6 December 2019, AIIMS, New Delhi. Faculty-training of trainers, Simulus 5, 9 February 2019, SRMC, Chennai.

**Dr Nishant Patel** was Faculty in Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA), 6 December 2019, AIIMS, New Delhi.

**Dr Arshad Ayub** passed European Diploma in Regional Anaesthesia Part I.

**Dr Mritunjay Kumar**, Nominated by National Health Systems Resource Centre, MoHFW, Government of India as expert for Lifesaving Anaesthesia Skills (LSAS) and Emergency Obstetrics Care (EMOC) training curriculum.

**Dr Yudhyavir Singh**, Faculty for CUSA 2019, 6 December 2019, AIIMS, New Delhi.

**Dr Anju Gupta**, First prize in “facts and myths in anaesthesiology” at MAMC anaesthesia update (December 2019): Paper presentation. First prize in poster presentation at Indian Association of Pediatric Anaesthesia annual conference (7-9 February 2020) held at Varanasi.

**Dr Venkata Ganesh**, Faculty in Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA), 6 December 2019, AIIMS, New Delhi.

**Dr Parin Chellani**, Faculty in (1) AIIMS Cadaveric Surgical Skills Training Airway Management 18 October 2019 (2) Comprehensive Symposium on Ultrasound for Anaesthesiologists (CUSA 2019), 6-8 December 2019 (3) Seed to Fruit, Airway 2020, 22 and 23 February 2020.

## 9.2. Anatomy

### Professor and Head

TS Roy

### Professors

A Shariff  
Rima Dada  
TC Nag (Electron Microscopy)

Pushpa Dhar  
Arundhati Sharma (Genetics)

SB Ray  
Renu Dhingra  
Ritu Sehgal

### Additional Professor

Saroj Kaler Jhajharia

### Associate Professors

Tony George Jacob  
Seema Singh

Neerja Rani  
SC Yadav (Electron Microscopy)

### Assistant Professor

Prabhakar Singh (Electron Microscopy) from 17 March 2020

## HIGHLIGHTS

The Department has been a front runner in adapting its academic curriculum to the challenges posed by the COVID-19 pandemic: Theory lectures, MCQ quiz exercises, practical demonstrations and even dissections were organized by the faculty and residents, this indigenously developed photographic/recorded material was successfully disseminated online through live, interactive social meeting platforms.

The Clinical Ecotoxicology (Diagnostic & Research) Facility, a first of its kind facility in the country was established by Dr A Shariff and inaugurated by the Director, Professor Randeep Guleria on 5 August 2019. Patients have been referred to this facility from various clinical departments for detection of heavy metal/other element toxicity and for estimation of micronutrient minerals in blood. About 2000 tests have been performed, the new tests having proved efficacious in making a significant difference in the management of affected patients.

Cadaveric workshops organized by various other departments have been facilitated by the Faculty. Logistical support was extended to several departments affected by the devastating fire in August 2019, vis-a-vis access to the state-of-the-art Digital Histology Laboratory for academic and research activities.

Faculty members have delivered invited lectures in India and abroad, actively pursued their research goals through successful extramural grant applications, presented their work at National/International conferences, published their results in peer-reviewed indexed journals, served on the editorial boards of and as reviewers for National/International journals and have also reviewed project proposals for several government funding agencies.

The department provided patient care services including embalming, diagnostic testing for metabolic and genetic disorders as also genetic counseling services.

## EDUCATION

Eight PhD students were declared successful while six MSc students and one MD student completed their tenures in 2019-20. Students from outside Delhi underwent summer training in the department in various areas like genetics and electron microscopy. Several faculty members served as adjunct faculty at Jiwaji University, Gwalior for the MSc Neuroscience course.

### Conferences/Workshops organized

1. Nineteenth Biennial Conference of Association of Gerontology (India) AGI and Multi-disciplinary workshops on Emerging Scenario of Population Aging (with Department of Biophysics), 17 and 18 August 2019, AIIMS, New Delhi.
2. Thirty Seventh Annual Meet of Indian Academy of Neurosciences (IAN 2019) "Neuron to Behavior" (with Department of Physiology), 18-21 November 2019, AIIMS, New Delhi.

### **Facilitation in the conduct of conferences/workshops organized by various departments**

1. Surgical Disciplines, Hands-on Cadaveric Workshop, 5 April 2019, New Delhi.
2. Plastic & Burn Surgery, Hands-on cadaver dissection course, Preconference workshop of ACSICON-2019, 18 April 2019, New Delhi.
3. JPNTC, Hands-on Cadaveric Workshop, 4th AIIMS-ACSST Pelvic Acetabulum Course, 28 April 2019, New Delhi.
4. Emergency Medicine JPNTC, National Quiz as preconference workshop 'EM INDIA-2019' and "The Annual National Conference of Emergency Medicine Association & Academic College of Emergency Experts in India", 31 July-2 August 2019, New Delhi.
5. Plastic, Reconstructive & Burn Surgery, Hands-on cadaver dissection course, 28 and 29 September 2019, New Delhi.
6. Pediatric Surgery, 45th Annual Conference of Indian Association of Pediatric Surgeons, 31 October and 1 November 2019, New Delhi.
7. Anesthesiology, Pain Medicine and Critical Care, Cadaveric workshop, 5th Annual Conference of Indian Society of Pain Clinicians, 10 November 2019, New Delhi.
8. Neuroradiology, Hands-on Cadaveric workshop on Spinal Intervention, 28 and 29 November 2019, New Delhi.
9. Anesthesiology, Workshop on Ultrasound-guided Regional Anesthesia, 6-8 December 2019, New Delhi.
10. Orthopedics JPNTC, Post-conference Workshop at International Conference of Physical Therapy AIIMS 2019, 23 December 2019, New Delhi.

### **Other academic activities organized**

1. AIIMS Students' Association, Medical Exhibition 'Catalyst' for school-going students, 11 and 12 April 2019, New Delhi.
2. AIIMS Students' Association, Medical Exposure Visit of 130 students of Delhi Public School, RK Puram to department laboratories, 18 October 2019, New Delhi.

### **Lectures delivered**

**TS Roy: 5**

**A Shariff: 7**

**SB Ray: 5**

**Rima Dada: 20**

**Arundhati Sharma: 1**

**Renu Dhingra: 1**

**TC Nag: 3**

**Tony George Jacob: 22**

**Neerja Rani: 4**

**Seema Singh: 1**

**Subhash Yadav: 1**

**Oral papers/posters presented: 72**

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. Age related changes in the human inferior colliculus: A morphological and neurochemical study, TS Roy, DST, 3 years, 2018-2021, Rs 43.86 lakhs
2. Assessment of biomarkers in aqueous humor (AH) of Retinoblastoma patients, Arundhati Sharma, ICMR, 3 years, 2019-2022, Fellowship
3. A study on the development of tolerance to morphine following co-administration of neuropeptide Y or somatostatin in rats, SB Ray, AIIMS, 1 year, 2019-2020, Rs 2 lakhs
4. Designing of rapid and cost-effective Nano-LAMP based detections of BK virus from serum of post-renal transplant patients, Subhash Chandra Yadav, ICMR, 3 years, 2019-2022, Rs 35.83 lakhs
5. Development of Quick and Specific Detection System of EWS-FLI-1 Fusion Protein, Subhash Chandra Yadav, DBT, 3 years, 2019-2022, Rs 79.86 lakhs
6. DST FIST, TS Roy, DST, 5 years, 2018-23, Rs 150 lakhs
7. Effect of angiotensin receptor modulation in rat middle cerebral artery occlusion: a morphological and biochemical study, TS Roy, DBT-JRF Project (Mr Ritesh Kumar), 3 years, 2017-20, Rs 3.3 lakhs/year
8. Effects of Lifestyle Interventions and Psychological Stress on Markers of Aging, Rima Dada, ICMR, 3 years, 2017-2020, Rs 40 lakhs
9. Effect of Yoga on Epigenetic profile in RA, Rima Dada, ICMR, 3 years, 2019-2022, SRF

10. Effect of Yoga on Rheumatoid Arthritis, Rima Dada, DST, 3 years, 2017-2020, Rs 54 lakhs
11. External delivery of Cisplatin using Human Papilloma Virus (HPV 16) based nano-carriers for treatment of cervical cancer, Subhash Chandra Yadav, AIIMS-IIT Delhi, 2 years, 2019-2021, Rs 10 lakhs
12. Fluoride levels in the body fluids and tissues in patients of the cervical ossified posterior longitudinal ligament, Seema Singh, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
13. Fluorosis mitigation in ... community of Bihar through intervention and counseling, A Shariff, DST, 3 years, 2020-2023, Rs 152.76 lakhs
14. Identification, Functional characterization and in-Silico Analysis of Sarcomeric Gene Mutations in hypertrophic Cardiomyopathy Patients from Indian Population, Arundhati Sharma, ICMR, 3 years, 2018-2021, Fellowship-Research Associate
15. Identification of genetic variants and their functional evaluation in the pathogenesis of inherited cardiomyopathies, Arundhati Sharma, ICMR, 3 years, 2019-2022, Rs 72.28 lakhs
16. Identification of the underlying differential expression and disease-specific signature profile in patients with epidermal necrolysis, Arundhati Sharma, ICMR, 3 years 2019-2022 Rs 40.05 lakhs
17. Impact of advanced paternal age on sperm epigenome: Possible etiology in autism spectrum disorder, Rima Dada, DBT, 3 years, 2016-2020, Fellowship- Scientist
18. Investigation of changes in Peripheral and Central Nervous System in an experimental model of Chronic Pancreatitis in Mice, Tony George Jacob, ICMR, 3 years, 2019-2022, Rs 32.23 lakhs
19. Magnetic Nanoparticles and Quantum Dots Coupled Visual Confirmation of Cervical Cancer Cells from Cytology Sample: A Cost Effective, Quick and Suitable Test for Rural Indian Setup, Subhash Chandra Yadav, SERB, 3 years, 2018-2021, Rs 38.68 lakhs
20. Mitochondrial dynamics and status of autophagy in retinal photoreceptor cells after experimental iron overload in rats, TC Nag, ICMR, 3 years, 2019-2022, Rs 30 lakhs
21. Morphological study of the developing human cochlear nucleus and spiral ganglion. TS Roy, ICMR, 3 years, 2019-22, Rs 43 lakhs
22. Role of hydrogen sulphide as a pharmacological modulator in adverse pregnancy outcomes like preeclampsia, Renu Dhingra, DST, 3 years, 2018-2021, Rs 45 lakhs
23. Role of synaptic plasticity at spinal level in persistent pain conditions in rats, Saroj Kaler, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
24. Status of hydrogen sulphide producing enzymes, matrix metalloproteinases and miR-22 in preeclampsia and their role in modulating trophoblast invasion, Renu Dhingra, CSIR, 3 years, 2019-2022, Rs 15 lakhs
25. Studying the role of RBI and MYCN in the pathogenesis of retinoblastoma, Rima Dada, CSIR, 3 years, 2018-2021, SRF
26. Unravelling the Genetic Intersections between male infertility and cancer: Role of Yoga intervention, Rima Dada, ICMR, 3 years, 2019-2022, Rs 35 lakhs
27. Unraveling the role of novel proteins in gastro-enteropancreatic and respiratory neuroendocrine tumors, Neerja Rani, DST, 3 years, 2019-22, Rs 50 lakhs
28. Utility of Artificial Intelligence in differentiating thyroid malignant lesions, Arundhati Sharma, DBT, 3 years, 2020-2023, Rs 74.16 lakhs

### **Completed**

1. Apoptosis and mitosis in developing human cochlear nucleus, TS Roy, ICMR-SRF, Project 1, 2017-2019, Rs 4.56 lakhs/year
2. Endemic fluoride induced anemia during pregnancy in Bihar...a pilot study, A Shariff, DST, 4 years, 2016-2019, Rs 39 lakhs
3. Evaluation of genetic basis of congenital hereditary endothelial dystrophy ... and clinical phenotyping of mutation positive and negative cases, Arundhati Sharma, AIIMS, 2 years, 2017-2019, Rs 10 lakhs
4. Genetic study of patients with refractory rickets and hypophosphatemia, Arundhati Sharma, ICMR, 3 years, 2015-2019, Rs 30 lakhs
5. Genome-wide association study of phenotypic extremes in primary angle closure glaucoma, Arundhati Sharma, DBT, 3 years, 2016-2019, Rs 54 lakhs
6. Simple, quick and onsite early diagnostic kit for pathogen detection during asymptomatic stage, Subhash Chandra Yadav, DBT, 3 years, 2016-2019, Rs 103 lakhs



## Departmental projects

### *Ongoing*

1. Age changes in the human inferior colliculus
2. Age changes in the human spiral ganglion
3. Age changes in the human cochlear nerve
4. A morphological study of the human temporomandibular joint
5. An association study of cystathionine beta synthase gene polymorphism in preeclampsia study title
6. Assessment of the efficacy of nanodrug delivery system for the treatment of open angle glaucoma in animal model
7. A study of dopaminergic neurons in the myenteric plexus of ulcerative colitis patients
8. A study of serum level of cystathionine beta synthase and its gene polymorphisms in preeclampsia
9. A study on the genetic association and correlation of Monoaminergic and GABAergic pathway gene polymorphisms with brain imaging (PET/SPECT) in Alcohol & Opioid Dependence
10. A study on the role of ADH and ALDH gene variants in Alcohol Dependence
11. A Study to evaluate association of Single Nucleotide Polymorphisms and Epigenetic changes in Neurotransmitter Genes in Opioid Dependence
12. Autophagy and neurogenesis in middle cerebral artery occlusion of stroke model of Wistar rats
13. Correlation of fluoride levels in body fluids and bone histology in patients of ossified posterior longitudinal ligament
14. Development of nanoparticles-based detection system for cervical cancer cells from cytology samples
15. Development of the human cochlear nucleus
16. Effect of Angiotensin Receptor Modulation in Rat Middle Cerebral Artery Occlusion: a Morphological and Biochemical Study
17. Effect of curcumin on mice basal forebrain structures following arsenic trioxide exposure
18. Effect of curcumin on murine model of mild acute pancreatitis
19. Effect of garlic (*Allium sativum* L) extract on mice models of chronic pancreatitis
20. Effect of hydrogen sulphide on migration of human trophoblast cells and its status in preeclampsia
21. Effect of Resveratrol supplementation on cognitive function and Estrogen receptor profile in hypothalamus and hippocampus of Arsenic trioxide-exposed adult female mice
22. Effects of fluoride exposure on development of enteric nervous system: an experimental study
23. Epidemiological studies in male infertility
24. Epigenetic changes during epithelial to mesenchymal transition in trophoblast cells under physiological and pathological conditions
25. Epigenetic changes of Dopaminergic pathway genes and association of GRIN2A gene polymorphism in Alcohol Dependence and opioid dependence
26. Evaluation of autofluorescence in human nervous tissue
27. Evaluation of L-arginine induced chronic pancreatitis in mouse
28. Evaluation of possible association of opioid dependence with SLC6A4 and TPH2 polymorphisms
29. Evaluation of the role of curcumin supplementation on Arsenic trioxide induced neurotoxicity in the basal ganglia of mice
30. Expression of miR-22, Specificity protein-1 and cystathionine beta synthase in preeclampsia and their role in trophoblast invasion
31. Expression of nerve growth factor in colorectal carcinoma patients
32. Expression of n-myc downstream regulated gene 4 (*ndrg4*) in enteric neurons of colonic tissue of colorectal carcinoma patients
33. Genetic and Epigenetic profiling in patients of "Anterior Pituitary Adenoma
34. Genetic and Molecular basis of retinoblastoma
35. Genetic screening of patients with Men2 syndrome
36. Genetic Study of Posterior Polar Cataract
37. Immunohistochemical and Quantitative Analysis of Cytokeratin19 and cKIT in Gastrointestinal and Respiratory Neuroendocrine Tumors
38. Immunohistochemical study of microglial activation and AMPA receptors in hippocampus of rat model of

experimental neuropathic pain

39. Impact of short-term Yoga based intervention on obesity
40. Impact of yoga and meditation on Epigenome in Rheumatoid Arthritis
41. Impact of Yoga based intervention on Quality Of Life Of Glaucoma Patients
42. Light-induced oxidative stress and endogenous neuroprotective mechanisms in post-hatch chick retina
43. Manta Ray study
44. Meditation and its impact on Primary Open Angle Glaucoma (POAG)
45. Meditation based stress reduction: is it therapeutic for Primary Open Angle Glaucoma (POAG)
46. Molecular analysis in Depression and impact of Yoga-A single blind RCT
47. Molecular Basis of idiopathic male infertility
48. Molecular studies in Fibromyalgia
49. Mutation analysis in Anti Mullerian Hormone gene in poor responders
50. Mutation analysis of candidate genes (NR5A1, DAX1, DHH, DMRT1, SOX9, SRY, WT1) in patients with Gonadal dysgenesis and 46, XY karyotype
51. Mutational studies in patients with Refractory rickets and Hypophosphatemia
52. Paternal factors in embryonic development
53. Remodeling in horizontal cells following light-induced retinal damage in rat
54. Role of autophagy in experimental acute pancreatitis with special reference to inflammation and cell death
55. Role of hydrogen sulphide as a pharmacological modulator in adverse pregnancy outcomes like preeclampsia
56. Role of micro RNA-30 in cystathionine gamma lyase mediated trophoblast cell invasion and status in preeclampsia
57. Role of miRNA in modulating trophoblast cell invasion
58. Role of miRNA in regulation of angiogenic factors in trophoblast cells
59. Study of microglia in the retina of rats exposed to bright light after selective Müller cell damage
60. Study of the association of matrix metalloproteinase-9 gene polymorphism in preeclampsia
61. Study on the association of Polymorphism, Methylation and Expression status of Monoamine Pathway genes with Alcohol Dependence
62. Study to identify the genetic basis underlying Stevens–Johnson syndrome (SJS)
63. Telomere dynamics in male infertility
64. To study phenotype genotype correlation in patients with 5alpha reductase 2 deficiency and androgen insensitivity
65. Visual, Rapid, Non-invasive and Cost-effective BK Virus Detection System

### ***Completed***

1. Age related changes in the Human Inferior Colliculus: A Morphological and Neurochemical Study
2. Age Related Morphological and Neurochemical changes in the Human Spiral Ganglion
3. An association study of cystathionine beta synthase gene polymorphisms in preeclampsia
4. Anatomical Variations of the Human Middle Cerebral Artery
5. A Translational randomized trial of YBLI for major depressive disorder (MDD) management in India and analyzing biomarkers of cellular aging associated with it
6. Effect of hydrogen sulphide on migration of human trophoblast cells and its status in preeclampsia
7. Effect of resveratrol on arsenic trioxide induced cardiac toxicity in mice
8. Epigenetic regulation of brain-derived neurotrophic factor in the central auditory pathway and hippocampus of neonatal chicks exposed to prenatal sound stimulation
9. Immunohistochemical analysis of high mobility group box 1 (HMGB1) and receptor for advanced glycation end products (RAGE) in different zones of early and late onset preeclamptic placenta
10. Morphological study of Developing Cochlear nucleus
11. Study of the Expression of Parvalbumin and Calbindin in the Aging Human Inferior Colliculus

### **Collaborative projects**

#### ***Ongoing***

1. Checking the feasibility of aortoplasty balloon catheter for endovascular occlusion of aorta, Surgical disciplines

2. Collaborative neuroengineering platform for excellence in innovation and translation research, Neurosurgery; CSE-IIT-D
3. Cytogenetic and Molecular Analysis in Infertility, Anatomy, AIIMS, Raipur
4. Decipher mechanistic basis of the intracellular trafficking of the optically active Nanoparticles using super resolution microscopy, Biotechnology, Jawaharlal Nehru University
5. Development of procedure-based Neuroendoscopic simulation modules and their integration with interactive E-learning platform for advanced neurosurgery skills training curriculum, Neurosurgery; CSE-IIT-D
6. Development and validation of electro-mechanical partial task trainers for minimally invasive ventricular, skull base and spine neurosurgery and inertial/haptic sensor-based objective evaluation of neuroendoscopic skills, Neurosurgery; CSE-IIT-D
7. Effect of transcranial magnetic stimulation on pain modulation status in fibromyalgia patients, Physiology
8. Effect of Yoga Based Intervention on Inflammatory Markers and Gene Expression Profile in Blood, Aqueous and Trabecular Meshwork of Primary Open Angle Glaucoma Patients: A Randomized Controlled Trial, RP Centre for Ophthalmic Sciences
9. Effect of yoga-based intervention of Intra Ocular Pressure, Quality of Life, Inflammatory Markers and Gene Expression Profile in Glaucoma Patients: a Randomized Controlled Trial, RP Centre for Ophthalmic Sciences
10. Electroencephalographic changes in early and advanced Glaucoma, RP Centre for Ophthalmic Sciences
11. Evaluation of the effect of mindfulness based stress reduction in patients with advanced primary open angle glaucoma, RP Centre for Ophthalmic Sciences
12. Genetics of alcohol and drug dependence, Psychiatry
13. Genetics of angle closure glaucoma, RP Centre for Ophthalmic Sciences
14. Genetics of MEN2 syndrome, Endocrinology
15. Genetic studies in fibromyalgia, Physiology
16. Genetic studies in hypophosphatemic rickets, Paediatrics
17. Genetic studies of cardiomyopathies, Cardiology
18. Genome wide analysis to explore stress, inflammation and cellular aging following short and long term yoga based intervention in obesity and DM, Physiology
19. Identification and Characterization of novel genetic variants associated with cardiovascular diseases in diverse ethnic populations of India, Cardiology
20. Impact of advanced paternal age and poor lifestyle on sperm epigenome: possible etiology in autism spectrum disorder, Paediatrics
21. Impact of preoperative steroids on trabeculectomy outcomes: A Randomized Controlled Trial, RP Centre for Ophthalmic Sciences
22. Impact of short term yoga based intervention in obesity, Physiology
23. Impact of yoga and meditation on Epigenome in Rheumatoid Arthritis, Medicine
24. Impact of YBLI on MDD-RCT, Psychiatry
25. Levels of Oxidative stress biomarkers in Follicular fluid of women with PCOs undergoing IVF and its relation to outcome, Obstetrics and Gynaecology
26. Loss of sperm DNA integrity in childhood cancers, RP Centre for Ophthalmic Sciences
27. MEN1 gene mutation in patients of primary hyperparathyroidism, pancreatic tumors and pituitary tumors and its clinical implications, Endocrinology
28. Microsurgical comparison of operative exposure of internal acoustic canal through middle fossa and retrosigmoid hearing preservation skull base approaches – a laboratory investigation, Neurosurgery
29. Mutation analysis of seven genes (NR5A1, DAX1, DHH, DMRT1, SOX9, SRY, WT1) in patients with Gonadal dysgenesis and 46, XY karyotype, Endocrinology
30. Oxidative stress evaluation in amniotic fluid of couples with normal and couples pregnant with fetus with congenital malformation, Obstetrics and Gynaecology
31. Oxidative stress in pathogenesis of PCG, RP Centre for Ophthalmic Sciences
32. Phase–III Clinical trial with intravasal injectable male contraceptive-RISUG, Biomedical engineering
33. Quantitative analysis of far lateral approaches, Neurosurgery
34. Retinoblastoma: Genetic and Molecular study, RP Centre for Ophthalmic Sciences
35. Role of ashwagandha in management of Infertility, Centre for Ayurveda, Guru Gobind Singh University

36. Support to Indian Institutes to Conduct Training Programme in the area of Operational Research Neurosurgery Skills Training, Neurosurgery, DHR, ICMR; CSE-IIT-D; Ministry of Health & Family Welfare
37. YKL40 levels in asthma, Biophysics
38. Yoga and impact on QOL in Glaucoma, RP Centre for Ophthalmic Sciences

### **Completed**

1. Development of 3D/stereoscopy based virtual reality simulation platform for endoscopic neurosurgery training and pre-operative neurosurgical planning, Neurosurgery; CSE-IIT-D
2. Genetic studies in congenital cataract, RP Centre for Ophthalmic Sciences
3. Genetic studies in LHON, RP Centre for Ophthalmic Sciences
4. Neurosurgery Skills Training Facility with 3D Endoscopic and 3D Microscopic Facility and Central Repository Server for Archival, Streaming and Teleconferencing, Neurosurgery; CSE-IIT-D

### **PUBLICATIONS**

**Journals: 33                      Abstracts: 17                      Chapters in Books: 7**

### **PATIENT CARE**

#### **Embalming of Dead Bodies**

For transportation: 605 for teaching/research: 29

#### **Genetic Diagnostic and Counselling Services**

Karyotyping/Cytogenetic analyses: 439 + 720= 1159cases

#### **Molecular screening**

Yq microskeleton analyses: 102 cases ROS estimation: 680 cases DFI: 73 cases Choroidal melanoma: 17 cases  
Miscellaneous mutation detection: 36 cases

#### **Clinical Ecotoxicology (Diagnostic & Research) Facility**

Diagnostic services for heavy metals/toxic elements/micronutrients in blood/urine: 2000 tests

#### **Fluorosis Diagnostic Laboratory: Fluoride Estimation**

Total number of patients: 30	Total number of samples: 99
Urine: 32 Blood/serum: 28	Drinking water: 39

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

The students of the department presented their research work at National and International conferences and at a variety of forums. Several students won prestigious awards. The “Professor SS Parmar Research Foundation” award from the Indian Academy of Neurosciences was presented to Ms Shubhi Saini, the ‘Gyan Scholarship’ from Scigenome Research Foundation was awarded to Ms Binata Marik, the ‘Corporate Member Council In-Training’ award by the American Society of Reproductive Medicine was received by Dr Vidhu Dhawan and the International Immunological Society award was conferred on Ms Surbhi Gautam. The American Association of Anatomists Awards were presented to Dr Sankat Mochan, Mr Sunil Kumar Gupta and Dr Pallavi Arora. Best oral and poster presentation awards were received by Ms Surbhi Gautam at the 2nd National Biomedical Research Competition (NBRCOM 2019), IAYT Symposium 2019 on Yoga Research, Annual Conference of The International Association of Yoga Therapists and ICNPHH-2020. Ms. Priyam Kumari received the Young Investigator award from the American Pancreatic Association (APA) and Dr Soumya Agrawal received the APDW student grant. Travel grants by extramural funding agencies like the Lalor Foundation & American Society of Andrology (ASA), ICMR, DST, International Pediatric Nephrology Association (IPNA), American Pancreatic Association (APA), Asia Pacific Digestive Week (APDW-2019) and Japan Digestive Disease Week (JDDW 2019) were received by Dr Vidhu Dhawan, Ms. Surbhi Gautam, Ms Binata Marik, Kumari Priyam and Mr Manish Kumar Sharma. The AIIMS, New Delhi Endowment Fund Travel Grant were awarded to Dr Pallavi Arora for the Experimental Biology conference at Orlando, USA and the AIIMS Partial Travel endowment was granted to Ms. Binata Marik for the 18<sup>th</sup> IPNA Congress at Venice, Italy. Ms Surbhi Gautam also received the ‘Excellence & Innovation in Yoga Research’ awards at the 2019 IAYT Symposium on Yoga Research held at Stockbridge in USA, Annual Conference of the International Association of Yoga Therapists at Albany, USA and ICNPHH-2020 at New Delhi.

**Professor TS Roy** is currently member of the Editorial board of the journal ‘Medicine’ and associate editor of the journals ‘Pancreas’ as well as ‘Journal of Experimental and Clinical Medicine’. He undertook lecture series as Visiting Faculty for the MSc Neuroscience Program at Jiwaji University, Gwalior, Madhya Pradesh. He served as member of the PhD Reforms Committee, Staff Council, Dean’s Committee, Centralized Core Research Facility (CCRF) and Anti-Ragging Committee of

AIIMS. He was paper setter and conducted comprehensive viva for PhD course at National Brain Research Center (NBRC), Manesar. Dr. Roy participated in the meeting of Board of Studies for Amity Institute of Neuropsychology & Neurosciences, Amity University, Noida and the symposium on “CME cum Awareness Programme on Body and Organ Donation – Live Beyond Life” at the Government Institute of Medical Sciences, Greater Noida. Dr Roy was resource person for the ‘Workshop on Social Network of Animals in Extreme Environments’ with special reference to penguins at Port Blair, Andaman & Nicobar Islands, in collaboration with the Ministry of Earth Sciences, Government of India and Zoological Society of India. He was the external examiner for MD examination conducted by Delhi University. He was also the MBBS external examiner for the following colleges/universities: North DMC Medical College & Hindu Rao Hospital, Malka Ganj, Delhi; Guru Gobind Singh Indraprastha University and Sardar Patel Medical College, Bikaner, Rajasthan Health University. Dr Roy was the co-organizer for the 37th Annual Meet of Indian Academy of Neurosciences (IAN 2019) “Neuron to Behavior” and the Nineteenth Biennial Conference of Association of Gerontology (India) AGI and Multi-disciplinary workshops on Emerging Scenario of Population Aging held at AIIMS, New Delhi. He chaired the ‘BK Bachawat Memorial Lifetime Achievement Award’ oration and was a panelist for the ‘School Children Science Interaction Meet’ sessions conducted during the IAN conference. He chaired the ‘MS Kanungo Lifetime Achievement Oration in Biogerontology’ at the 19th Biennial conference of the Association of Gerontology, India. He holds the following designations at AIIMS, New Delhi: Central Public Information officer (CPIO) of Anatomy Department for disclosure under the RTI Act, 2005; Chairperson of the Store Purchase Committee (SPC, DO); MBBS Preclinical Curriculum Committee and Chairperson of the Institute Cultural Committee. He was Chief Election Commissioner for election of the AIIMS representative for Delhi Medical Council (DMC). He has actively participated as member of various cultural, sports and welfare activities at the Institute and several events like the Institute Day and SYS day were organized with him at the helm, during the year 2019-20. He has served as member of the Faculty Selection Committee for the following institutions and universities: AIIMS New Delhi, AIIMS Jodhpur, AIIMS Bhubaneswar, AIIMS Rishikesh, AIIMS, Raipur, PGIMER Chandigarh, Research & Medical Education Department of Punjab Government and Sri Sri University, Bidyadharpur at Cuttack, Orissa

**Professor A Shariff** established the Clinical Ecotoxicology (Diagnostic & Research) Facility in August 2019, and since then patients are being referred from various clinical departments including Medicine, Anesthesiology, ICUs, Neurology, Endocrinology, Gynecology, Gastroenterology, Dermatology, ENT, Orthopedics, Urology, Orthodontics, Geriatric medicine, Paedodontics, etc. for toxin and micronutrient detection. He also inaugurated the Community-based Defluoridation units in Nawada, Bihar, under the project funded by The Department of Science & Technology (DST), Government of India. Dr Shariff was featured as a Promising Tech Guru in Indian Healthcare, “Celebrating the Champions of Digital Health Excellence” - a reference book published by the Economic Times newspaper. He currently holds the following designations and portfolios at AIIMS, New Delhi: Professor In-charge, Computer Facility; Chairman, Telemedicine Facility; Chairman of Store Purchase Committee (SPC), CDER; Member, Departmental Promotion Committees; Member, Project Monitoring Committee of the New OPD; Member of Core Committee for the Redevelopment of AIIMS; Member of Ethics Committee; Member of the Election Commission for FAIMS; Chairman of the CCTV committee and Chairman of Technical specification for CUG Mobile Telephony Service System. He has served as expert member of the Selection Committees for various AIIMS-like institutes in several states of India: AIIMS, Kalyani, Bhubaneswar; AIIMS, Jodhpur; AIIMS, Patna and AIIMS, Bhopal. Dr Shariff also served as Member of the Expert Committee for DHR-ICMR AI Cell, New Delhi and Member of Project Review & Steering Group (PRSG), Ministry of Electronics & Information Technology, Government of India. He was invited as Expert for the selection of General Manager for IT at ILBS, New Delhi in April and for Faculty selection at JIPMER, Puducherry in October 2019.

**Professor Pushpa Dhar** completed her last year as faculty member at AIIMS, New Delhi in March 2020. She was a Resource Faculty at the Pre-Conference Workshop of the 37<sup>th</sup> annual conference of Indian Academy of Neuroscience held at AIIMS, New Delhi. She served as Member of the Committee for addressing complaints of Sexual harassment at the Institute. She was a Member of the Board of Studies for MSc & MD (Anatomy) at the Hamdard Institute of Medical Sciences and Research (HIMSR), Delhi.

**Professor SB Ray** undertook a lecture series as Visiting Faculty for the M.Sc. Neuroscience Program at Jiwaji University, Gwalior, Madhya Pradesh. He was a Resource Faculty at the 37th annual conference of Indian Academy of Neuroscience held at AIIMS, New Delhi. He was the external examiner in Anatomy at the Delhi University for the following examinations: BPT Part I examination conducted in June 2019; MBBS first Professional examination conducted in July 2019.

**Professor Rima Dada** delivered the Dr Labhsetwar Oration at the 30th Annual Meeting of ISSRF and World Congress on Reproductive Health and the Dr Sukhbir Prasad Jain Memorial Oration at the 67th National Conference of Anatomical Society of India.. She and her team received 5 awards at National and 4 awards at International conferences. She chaired sessions in 12 conferences and SIG workshops. Dr Dada was appointed Expert for Program on Science and Yoga organized by Vigyan Bharti, GOI. She was nominated as expert for the NBE Accreditation Assessment Programme and invited as expert for Faculty selection at various medical colleges. She was designated Central Public Information Officer and Member Secretary for Surekha Vishram Sadan, Sai Vishram Sadan and Rajgarhia Vishram Sadan. Dr Dada is currently Member of the MCI Accreditation Council for assessment, accreditation and academic audit of various medical colleges. She was nominated as

an Editorial board member for the 'Annals of Neuroscience' journal and served as reviewer/board member for the following journals: Restorative Neurology and Neuro-restoration, In-Vitro Fertilization, Translational Genetics and Genomics Telomere and Telomerase, PLOs one, RBM online and several others. She was invited as expert by NCERT for revision of genetics curriculum in schools and colleges. She continues to be Jury member for Medical Research Council fellowships, Edinburgh and for Royal International Research awards in Reproductive Biomedicine and Stem cells, Iran. She is a member of the ICMR task force on male Infertility. She reviewed projects submitted to DBT, ICMR, Indo-US Technology Forum and the Wellcome Trust. Dr Dada also served as member of the ICMR Expert Committee meeting to establish centres for advanced research. She was invited as expert for PhD selection at IIT Delhi. She has evaluated 4 MD and 7 PhD theses in Genetics and was external examiner for PhD thesis in Genetics at the Ambedkar Centre and South Campus. She was examiner for BSc Genetics at Pandit BD Sharma University, Rohtak. She served as Member for the following committees at AIIMS, New Delhi: Core Committee for AIIMS convocation, Committee for selection of DMA medal, Anti-ragging committee, Curriculum committee, Institute Bio-safety committee on Recombinant DNA research and Institute committee for improvement of standard of research activities in autonomous institutions. She was election commissioner for the Students Union election. Dr Rima Dada is external faculty for MDNIY, HIMS, New Delhi, and Durgabhai Deshmukh College, Deshbandhu College, New Delhi. Her articles appeared in several national and international newspapers and she also appeared in a documentary produced by DST to promote Yoga as a Science. She appeared several times on TV programmes: Total health, Doordarshan, Vigyan Prasaar, Rajya Sabha TV and India Science App. Her article on paternal factors in early pregnancy loss published in the leading Andrology journal 'Andrologia', was the most downloaded article in 2019.

**Professor Arundhati Sharma** acted as a reviewer for many PhD theses and has been an external examiner for PhD thesis at GNDU, Amritsar. She has reviewed many manuscripts for possible publication in several journals and several project proposals of various extra-mural funding agencies. She is a Member of the Skill India Initiative of the Government of India.

**Professor Renu Dhingra** is currently a Member of the International Society of Plastination, Executive member of DASMOS, Member of the Academic Advisory panel for Virtual Teaching and Member of the Teaching Schedule committee at AIIMS, New Delhi. She is designated the Faculty in-charge of Departmental Stores. Dr Dhingra was invited as expert for Faculty Selection in various medical colleges. She also reviewed projects from ICMR, postgraduate theses from other medical colleges and research articles submitted to several journals. She facilitated soft embalming and dye injections for cadaver preparation and was the Resource Faculty in various cadaveric workshops at AIIMS: pre-conference workshop of ACS(I)CON (cadaveric dissection course for fillers and botox), cadaveric dissection course for skin grafts and flaps, cadaveric Ultrasound-guided Regional Anesthesia workshop and post-conference workshop at International Conference of Physical Therapy (INCPT-2019). She organized, directed and coordinated the online teaching programme in response to the COVID-19 pandemic as 2nd Semester Teaching In-charge for the MBBS 2019-20 batch.

**Professor TC Nag** was conferred the Fellowship of the Electron Microscopy Society of India, nominated for a plenary lecture (under Medical Sciences) and acted as a member of the National Advisory Committee at the 12th Asia-Pacific Microscopy Conference held in Hyderabad. He also served as an executive committee member at the 37th Annual meeting of Indian Academy of Neurosciences (IAN), held in AIIMS, New Delhi, where he conceived, organized and chaired a special symposium session on 'Plasticity in Developing Neuronal Circuits'. He chaired two sessions at the International Conference on Electron Microscopy & Allied Analytical Techniques (EMAAT), held in Himachal Pradesh University, Shimla. He reviewed a total of 14 manuscripts for the following journals: Aging and Disease, Anatomical Record, Archives for Physiology and Biochemistry, Biofactor, Experimental Eye Research, Journal of Microscopy and Ultrastructure, Biomedicine and Pharmacotherapy, Journal of Neuroscience Research, Microscopy Research and Technique, Pharmaceutical biology and Redox Biology. He also examined two PhD theses during this period. One MBBS student was awarded the ICMR STS fellowship and worked under him.

**Professor Ritu Sehgal** reviewed manuscripts for the journal 'Medicine'. She participated in the workshop-cum-meeting and is currently a member of the e-Learning Resource Material (eLRM) Expert Group for developing e-Learning resources and Competency Based Medical Education for MBBS students. She holds the designation of the Central Assistant Public Information officer (CAPIO) for Anatomy Department under the RTI Act, 2005. She served as Member of the Exhibition Committee for the 64<sup>th</sup> Institute Day organized in September 2019 and was a special invitee for the Advisory Council of the AIIMS Students' Union Elections held in February 2020. She was the external examiner and paper setter for the regular and supplementary Anatomy First Professional MBBS examination at the HIMSR, Jamia Hamdard University and the internal examiner for the regular and supplementary Anatomy First Professional examination for 1st year MBBS, BSc (MTR) and two new BSc Dental courses (Dental Operating Room Assistance and Dental Hygiene).

**Dr Saroj Kaler Jhajharia** was the chairperson in a scientific session at the 67<sup>th</sup> National Conference of the Anatomical society of India. She was awarded the Dr PC Bansal Memorial Gold Medal for published papers in the Journal of Anatomical Society of India during this conference. She served as a member for the following: International Association for Study of Pain (IASP), Indian Academy of Neurosciences and AIIMS Teaching Schedule Committee. She has reviewed research articles submitted to various journals. She acted as external examiner for the Anatomy First Professional MBBS examination at AIIMS,

Mangalagiri. She was Resource Faculty for the workshop and symposium 'Ultrasound for Anesthesiologists' CUSA. She was a member of the management committee for 37th Annual Meeting of Indian Academy of Neurosciences at AIIMS, New Delhi.

**Dr Tony George Jacob** served as a Member of the Working Committee, National Medical Journal of India. He participated in the Workshop and Consultative meeting of Expert Group for MCI Board of Governors, for developing question banks and is currently a member of the Expert Group for development of e-Learning Resource Material for MBBS students including Foreign Medical Graduates, MCI/NMC. He was a Special invitee to the Institutional Animal Ethics Committee in August 2019. He was also a Special invitee to the Advisory Council of AIIMS Students' Union Elections for the year 2020. Dr Tony served as a Member of the Experimental Animal Welfare Committee at AIIMS, New Delhi and Member Secretary of the Committee for Training, Consultation & Co-ordination of various activities related to the management of patients during the COVID-19 pandemic. He has represented AIIMS at four Pre-Medical and Postgraduate Entrance Examinations held in 2019 and one in 2020. He was involved in framing and validation of the question bank for the National Board of Examinations. He was also the External Examiner for the Anatomy First Professional Examinations conducted by the Delhi University and University College of Medical Sciences. He reviewed articles for various National (National Medical Journal of India, Journal of Anatomical Society of India) and International (Surgical and Radiological Anatomy, Medicine, Journal of Chemical Neuroanatomy, Journal of Microscopy and Ultrastructure, Pancreatology) journals.

**Dr Neerja Rani** was appointed Visiting Faculty at Jiwaji University, Gwalior for the M.Sc. Neuroscience course. She was also appointed as external examiner to assess the project work and conduct viva-voce related to the projects of the MSc Neuroscience 4<sup>th</sup> semester students at Jiwaji University, Gwalior. She evaluated PhD thesis and was the external examiner for the PhD thesis at the SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu. She acted as the External examiner and paper setter for the regular and supplementary Anatomy First Professional MBBS examination at the HIMSR, Jamia Hamdard University and the paper-setter for the BSc Nursing first year Anatomy Annual examination at PGIMS Rohtak. Dr Neerja chaired a scientific session at the 67th National Conference (NATCON) of the Anatomical Society of India. She also served as Finance Secretary for the 37th Annual Meeting of Indian Academy of Neurosciences at AIIMS, New Delhi. She was Resource Faculty for various workshops and symposia: Hands-on cadaveric workshop organized by Surgical Disciplines, AIIMS, New Delhi; Comprehensive Symposium on Ultrasound for Anesthesiologists CUSA. She has reviewed manuscripts for the Histology and Histopathology Journal.

**Dr Seema Singh** served as the Nodal officer for organizing Anatomy classes for two new BSc Dental courses (Dental Operating Room Assistance and Dental Hygiene). She was nominated for attending the pre-bid meetings for the upcoming AIIMS (HITES). Dr Seema participated and contributed in the following conferences: Thirty seventh Annual Conference of the Indian Academy of Neurosciences (IAN-2019), Comprehensive Symposium on Ultrasound for Anesthesiologists and the 8th International Conference of Physical Therapy (INCPT-2019).

**Dr Subhash Chandra Yadav** received the six-monthly "Long-Term International Research Fellowship" from the Department of Health Research, Government of India to work on Cryo-Electron Tomography at Stanford University, California. He was the moderator for a session at the International Conference on Electron Microscopy & Allied Analytical Techniques (EMAAT), held in Himachal Pradesh University, Shimla.

#### **VISITING SCIENTIST**

Keith Crutcher, Department of Neurosurgery, College of Medicine, University of Cincinnati, USA delivered a lecture on "The fruitful cycle of technology and science" on 13 February 2020.

## 9.3 Biochemistry

### Professor and Head

Subrata Sinha

### Professors

SS Chauhan  
Kalpana Luthra

MR Rajeswari  
Alpana Sharma

PP Chattopadhyay  
Kunzang Chosdol

### Additional Professors

Sudip Sen

Archana Singh-I

### Associate Professors

Archana Singh-II  
Ashok Sharma

Jayanth Kumar P

Subhradip Karmakar  
Pragyan Acharya

### Assistant Professors

Riyaz Ahmad Mir  
Pramod Kumar Gautam

Rakhee Yadav  
Siddhartha Kundu

## HIGHLIGHTS

- 51 research projects are ongoing in the department funded by various national and international agencies such as DBT, DST, ICMR, DHR, DRDO, UGC (MOOCS), Indo-Austrian, Indo-South Africa, Wellcome Trust, Ministry of AYUSH and Intramural AIIMS, amounting to Rs. 26.5 crores and 9 research projects (Rs. 3.2 Crores) were completed this year.
- 52 departmental projects and 49 collaborative projects are ongoing with different faculty of the department.
- 53 research publications and 9 abstracts published in indexed National and International Journals of repute.
- 38 Invited talks were delivered by the faculty and 47 research papers were presented by faculty/research students (oral/poster) at various national and international scientific forums.
- Faculty and students received various awards and prizes for oral presentations along with travel grant at various national and international conferences.
- 12 MSc, 13 MD, 6 SR and 40 registered Ph D students are working in the department.
- The practical for MBBS and coursework for MD & MSc students teaching curriculum was further expanded to add more advanced classes in various topics encompassing the current advances in research.
- Department organized a Symposium on World Immunology Day on 30 April 2019.
- Department is providing clinical services to the patients and performed different tests in total of 15,298 samples.

## EDUCATION

### Undergraduate

The department introduced some modifications in the UG teaching curriculum, aimed at enhancing both the skill development and to keep the knowledge at par with the current developments in biochemistry. Case discussions related to didactic lectures and demonstration practical on POCT devices for glucose monitoring and pregnancy testing were introduced to improve the theory-practical connect. Kit based practical were introduced for some of the routine biochemical analytes (uric acid and HDL cholesterol) for students to appreciate the differences between traditional and autoanalyzer based methods in use. Techniques related to current applications in molecular biology such as restriction digestion and restriction site mapping were also added to the curriculum.

### Postgraduate

These include 12 M.Sc. and 13 MD students. The department also has 40 Ph.D. students. There are three DST women scientists & three N-PDF working as postdoctoral students. The postgraduate teaching curriculum was further expanded to add more advanced classes in the Molecular Biology and Cancer Biology modules. The 'Clinical Case Discussion' has been modified to discuss complex case reports from various journals for the MD, MSc students and Senior Residents. As Course Coordinator, Professor M Rajeswari has successfully completed two SWAYM-MOOCs courses in July-December



2019 under National Mission on Education through Information & Technology (NME-ICT)-through UGC-MHRD. The two courses were: 1. Biomolecules: Structure & function in health and disease and 2. Analytical techniques in Biochemistry. The number of learners registered in each course was more than 2000 and 1500 in each.

A formal course work for PhD students is also initiated.

## **CMEs/Workshops/Symposia/National and International Conference**

### ***Conference Organized***

- A Symposium on World Immunology Day on 29th April 2019 was organized by the department (Prof Alpana Sharma) at AIIMS under the auspices of Indian Immunology Society.

### **Lectures delivered**

**Subrata Sinha: 7**

**Kalpna Luthra: 3**

**Archana Singh I: 2**

**Pragyan Acharya: 1**

**Shyam S Chauhan: 2**

**Alpana Sharma: 6**

**Subhradip Karmakar: 2**

**Riyaz Ahmad Mir: 1**

**MR Rajeswari: 4**

**Kunzang Chosdol: 1**

**Ashok Sharma: 5**

**Pramod Kumar Gautam: 1**

**Oral papers/posters presented: 47** (received following awards: Ms. Anjani awarded First Prize: Poster presentation; Mr. Nitesh Mishra awarded First Prize: Oral presentation; Mr. Nitesh Mishra awarded First Prize: Oral presentation; Dr Romsha Kumar awarded First Prize: Poster presentation; Dr Nidhi Gupta awarded First Prize: Oral presentation; Dr Shamima Akhtar awarded Second Prize: Poster presentation; Devanjan Dey received 2nd prize : Oral presentation-”Young Scientists’ Presentation”; Dr Amarpreet Kaur received an International travel award to attend and present the poster; Vadanya Shrivastava received the Suttie Nag award for Best poster presentation; Dr Archana Singh awarded Second Prize: Oral presentation

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. Rational strategies for tackling hypoxia induced adverse phenotype and therapeutic resistance in neoplasia using a glial tumor model, Subrata Sinha, DST, 5 years, 2017 –2022, Rs 98 lakhs
2. Programme Support: CRISPR-mediated technologies for the development of new therapeutics and diagnostics, Subrata Sinha, DBT, 2 years, 2020-2022 , Rs 2.89 crores
3. Cellular and Immunomodulatory Functions of Dipeptidyl peptidase III in Esophageal Cancer, SS Chauhan, ICMR, 3 years, 2019-2022, Rs 35 lakhs
4. Cysteine Cathepsins in Acute Lymphoblastic Leukemia: Implication(s) in Prognosis and Therapeutics, SS Chauhan, ICMR, 1 year, 2019-2020, Rs 5 lakhs
5. Identification of Novel Blood Based Biomarker for Early detection of Human Gallbladder Cancer, SS Chauhan, DRDO, 3 years, 2018-2021, Rs 46.16 lakhs
6. MOOCs-Swayam Biomolecules, MR Rajeswari, MHRD, 6 months, Jan-May 2020, Rs 7.2 lakhs
7. MOOCs-Swayam Analytical Techniques, MR Rajeswari, MHRD, 1 year, 2018-2020, Rs 13.5 lakhs
8. MOOCs-Swayam Re-Run Analy Tech, MR Rajeswari, MHRD, 6 months, Jan-June, 2019, Rs 1.2 Lakhs
9. Neurodegeneration with Brain Iron Accumulation: Iron-biomarker and therapeutic options MR Rajeswari PI: Austria, B Mojdehkar, International Collaboration India-Austria via DST-WTZ, 2 years, 2017-2019, Rs 18.85 lakhs
10. Assessment of Anticancer effect of Triplex Forming Oligonucleotides (TFOs) on the Expression of HMGB1 in Hepatoma Animal model system, MR Rajeswari, DST, 3 years, 2017-2020, Rs 63.14 lakhs
11. Interaction between nanoparticles and cancer cells in context of hypoxia and stemness and invasiveness characteristics, P Chattopadhyay, DST, 3 years, 2017-2020 , Rs 80 lakhs
12. Exploring the link between the RNA binding protein IGF2BP3, long non-coding RNA linc-RNA and their targets in migration and invasion of epithelial cancer cell lines, P Chattopadhyay, SERB, 3 years, 2018-2021, Rs 42 lakhs
13. Generation and characterization of HIV-1 subtype-C based trimeric immunogens from infected children, Kalpana Luthra, DBT, 3 years, 2019-2022, Rs 1.60 crores

14. Isolation and characterization of monoclonal antibodies from HIV-1 subtype C infected individuals , Kalpana Luthra, DBT, 3 years, 2017-2020, Rs 88 lakhs
15. A study of immune pathways in the pathogenesis of chronic pancreatitis, Kalpana Luthra, AIIMS, 1 year, 2019-20, Rs 5 lakhs
16. Unveiling the therapeutic potential of an Unani herbal formulation in hematological malignancy, Alpana Sharma, AYUSH, 3 years, 2017-2020, Rs 62.12 lakhs
17. Prevalence of Human Papilloma Virus (HPV) in Indian patients of Penile cancer, Alpana Sharma, DHR, 3 years, 2018-2021, Rs 25 lakhs
18. Deciphering the role of functional determinants of Dendritic cells and their immune cross talk with NK cells: Possible therapeutic target(s) in Pemphigus vulgaris, Alpana Sharma, ICMR, 3 years, 2018-2021, Rs 42.31 lakhs
19. Identifying the role of Treg cells and MDSCs in endothelial dysfunction, Alpana Sharma, ICMR, 3 years, 2019-2022, Rs 45.31 lakhs
20. Delineating the anti-cancer potential and the mechanism of action of Unani medicinal formulation Itrifal-e-aftimoon in Chronic Myelogenous Leukemia, Alpana Sharma, CCRUM AYUSH, 3 years, 2019-2022, Rs 68.66 lakhs
21. Signalling interaction between FAT1 and p53 under hypoxia: Their influence on tumor phenotype and identification of novel molecular targets in glioma, Kunzang Chosdol, DBT, 3 years, 2016-19, Rs 55.52 lakhs
22. To study the functional role of NFkB on FAT1 gene expression in Glioma, Kunzang Chosdol, ICMR, 3 years, 2017-20, Rs 33.33 lakhs
23. Molecular signature of protumorigenic inflammation in the context of the WHO 2016 classification of glioma, Kunzang Chosdol, AIIMS, 2 years, 2018-2020, Rs 20 lakhs
24. The role of FAT1 regulated miRNAs in glioblastoma (GBM) aggressiveness: Identification of potential miRNA(s) as clinical marker(s) in GBM patients, Kunzang Chosdol, SERB-DST, 3 years, 2019-22, Rs 42.33 lakhs
25. Effect of hypoxia on different neural cell types in vitro—a model to design therapeutic strategies against cerebral palsy in preterm infants, Sudip Sen, DBT, 3 years, 2018-2021, Rs 49 lakhs
26. Deciphering the osteogenic effect of Symphytum officinale using human bone marrow derived mesenchymal stem cells and rodent model, Sudip Sen, CCRH, AYUSH, 2 years, 2019-2021, Rs 45 lakhs
27. Deciphering neural plasticity of fetal neural stem cells on exposure to hypoxia, Sudip Sen, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
28. The modulation of insulin resistance and HDL quality by adipose tissue ABCA1 and metabolic status, Archana Singh, SERB-DST, 3 years, 2017-2020, Rs 40.1 lakhs
29. Role of hyperglycemia on macrophage effector function in pathophysiology of pulmonary tuberculosis, Archana Singh, SERB-DST, 3 years, 2018-2021, Rs 49 lakhs
30. Study of effect of Hyperglycemia on phenotypic and functional alteration in differentiated macrophages from THP1 cell line and monocytes from pulmonary tuberculosis patients, Archana Singh, ICMR, 3 years, 2019-2022, Rs 30 lakhs
31. Study of Mycobacterium indicus pranii and Human beta defensin-2 as adjunct and chemo-immunotherapy against Mycobacterium tuberculosis in vitro, Archana Singh, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
32. Evaluation of l-arginine levels in correlation with iNOS expression and NO levels in pulmonary tuberculosis and their household contacts in comparison with healthy controls , Archana Singh, TB Association of India (TBAI), 6 months, 2019-2020, Rs 0.25 lakhs
33. Role of IGF2BP1, an RNA binding protein in lymphomagenesis, Jayanth Kumar Palanichamy, DBT-Wellcome Trust India Alliance Early Career Fellowship for Clinicians and Public Health Researchers, 5 years, 2016-2021, Rs 187 lakhs
34. Role for RNA methyl transferase machinery in B-cell Acute Lymphoblastic Leukemia, Jayanth Kumar Palanichamy, AIIMS-THSTI Collaborative Research Grant, 2 years, 2019-21, Rs 20 lakhs
35. Placenta Organoids, Subhradip Karmakar, ICMR, 3 years, 2020-2023, Rs 60 lakhs
36. Nuclear hormone network in GBC, Subhradip Karmakar, DHR, 3 years, 2021-2024, Rs 70 lakhs
37. Artificial intelligence in Oncology: Harnessing big data and advanced computing to provide personalized diagnosis and treatment for cancer patients, Ashok Sharma, MEITY, 2 years, 2020-2022, Rs 292 lakhs
38. Interplay between Cancer Testis/ Germline POTE antigen and NOTCH Signaling and its association with Global DNA Methylation in Ovarian Cancer, Ashok Sharma, ICMR, 3 years, 2019-2022, Rs 42.5 lakhs
39. Genome-Wide DNA Methylation & Genomic Instability Profiling and Evaluating Its Potential as a Biomarker and Immunotherapeutic Target for Ovarian Cancer, Ashok Sharma, DBT-Ramalingaswami Project, 5 years, 2015-

2020, Rs 32.5 lakhs

40. Nuclear Architecture as an Epigenetic Regulator in Pericentromeric localized Cancer-Testis/Germline Antigen POTE Expression in Ovarian Cancer, Ashok Sharma, DST, 3 years, 2017-2020, Rs 55 lakhs
41. A pilot study to analyze serum levels and intra-tumour expression of cancer-testis antigen POTEE as a new biomarker for ovarian cancer, Ashok Sharma, DHR, 2 years, 2018-2020, Rs 25 lakhs
42. Molecular characterization of Endometrial Cancer and its correlation with clinicopathological Features, Ashok Sharma, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
43. Cell Free DNA as a Tool to Predict Acute Kidney Injury in Acute on Chronic Liver Failure, Pragyana Acharya, DBT, 3 years, 2017-2020, Rs 49 lakhs
44. Tumor Dynamics and Immune cell interactions in anaplastic thyroid carcinoma, Riyaz Ahmad Mir, ICMR, 3 years, 2020-2023, Rs 30 lakhs
45. Interactome Analysis of COVID-19 spike protein C terminus: identification of potential druggable target for virus entry, Riyaz Ahmad Mir, AIIMS, 2 years, 2020-2022, Rs 8 lakhs
46. Role of PAQosome/R2TP complex in the functional assembly of wild type and mutant p53, Riyaz Ahmad Mir, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
47. Extracellular Matrix Remodelling in Obesity Induced Adipose Tissue Dysfunctions and Insulin Resistance, Rakhee Yadav, ICMR, 3 years, 2019-2022, Rs 46 lakhs
48. Study of Vascular Endothelial Growth Factor (VEGF) and its Isoforms in Obesity associated Adipose Tissue dysfunctions, Rakhee Yadav, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
49. Role of Macrophages in regulation of Bone and Blood forming stem and progenitor cell migration and development, Pramod Kumar Gautam, DST, 5 years, 2017-2022, Rs 35 lakhs
50. Development of targeted drug delivery using liposomes/nanoparticles on cancer stem cell using herbal plant extract and hsp70- tumor antigen and to evaluate its anti-tumor function, Pramod Kumar Gautam, SERB-DST, 3 years, 2019-2022, Rs 49 lakhs
51. To study the role of  $\beta$ -defensin on stem cells, cancers stem cells remodeling and its associated microenvironments, AIIMS, Pramod Kumar Gautam, 2 years, 2018-2020, Rs 10 lakhs

### **Completed**

1. Study the Role and Regulation of Human Heterogeneous Ribonucleoprotein D Expression in Oral Carcinogenesis, SS Chauhan, DST, 3 years, 2016-2019, Rs 74.66 lakhs
2. Plasma circulating DNA in mitochondrial the assessment of Friedreich's Ataxia (FA), MR Rajeswari, ICMR, 2 years, 2017-2019, Rs 34.59 lakhs
3. Isolation and characterization of human monoclonal antibodies from memory B cells of HIV-1 infected children, Kalpana Luthra, DST, 3 years, 2016-2019, Rs 63 lakhs
4. Isolation and molecular characterization of colorectal cancer stem cells, Sudip Sen, DBT, 3 years, 2015-2019, Rs 25 lakhs
5. Differentiation of fetal neural stem cells to oligodendrocytes – a disease model to decipher the pathogenesis and devise therapeutic strategies for cerebral palsy, Sudip Sen, DBT, 2 years, 2018-2020, Rs 29.2 lakhs
6. Role of TET2 in AML, Subhradip Karmakar, SERB, 3 years, 2017-2020, Rs 42 lakhs
7. Estimate the Serum Levels of Cancer-Testis Antigen POTE as a Biomarker in Epithelial Ovarian Cancer, Ashok Sharma, AIIMS, 2 years, 2016-2018, Rs 10 lakhs
8. Investigation of Purine Salvage Pathway Metabolites and Enzymes and Their Association with Severe Malaria Outcomes, Pragyana Acharya, SERB, 3 years, 2017-2020, Rs 34 Lakhs
9. Endoplasmic Reticulum (ER) stress in obesity induced adipose tissue dysfunction and inflammation, Rakhee Yadav, AIIMS, 2 years, 2017-2019, Rs 8 lakhs

### **Departmental projects**

#### **Ongoing**

1. Cellular and Immunomodulatory Functions of Dipeptidyl peptidase III in Esophageal Cancer
2. Cysteine Cathepsins in Acute Lymphoblastic Leukemia: Implication(s) in Prognosis and Therapeutics
3. Role of Prothymosin alpha in Glial tumorigenesis
4. Role of Human Heterogeneous Nuclear Ribonucleoprotein D (hnRNP D) in Oral Cancer
5. Proteomics of FRDA positive, FRDA-suspected and FRDA-carriers

6. Effect of nanoparticles on stemness and migration characteristics of cancer cells under different oxygen concentration
7. Uptake of biodegradable nanoparticles by cancer cells
8. Internalization of Carbonic Anhydrase 9 in invasive subset of cancer cell
9. Effect of zeta potential on uptake of PLGA biodegradable nanoparticles by cancer cells
10. Epigenetic therapy to reverse EMT and suppress cancer metastasis
11. Generation and Characterization of anti HIV-1 human monoclonal antibody(s) from a subtype C infected pediatric elite neutralizer
12. Generation and Characterization of pseudoviruses from an adult HIV-1 infected long term non progressor (LTNP) for potential subtype C based immunogen
13. Generation and Characterization of anti HIV-1 human monoclonal antibody from subtype C infected adult long term non progressor
14. Generation and characterization of pseudoviruses from children with perinatally acquired HIV-1 infection
15. Isolation and characterization of Human anti-HIV-1 monoclonal antibodies from infected children
16. A longitudinal study of the effect of early initiation of ART on the innate immune responses in HIV-1 infected children
17. Generation and characterization of pediatric HIV-1 C trimers towards immunogen design
18. Role of Macrophage phenotypes in the regulation of Mesenchymal stem cell migration and development in Breast Cancer
19. Effect of Bio-conjugated chemotherapeutic molecules on cancer stem cell and their associated Microenvironments
20. Elucidating the functional role of exosomes in renal carcinoma
21. To Investigate the role of R2TP complex in the assembly of p53
22. Exploring the role of innate lymphoid cells in the immunopathogenesis of pemphigus vulgaris
23. Influence of different grades of hyperglycemia on innate immune response in pathophysiology of active tuberculosis
24. Epigenetic regulation and immunotherapeutic potential of human cancer testis/germline antigen POTE
25. Characterization of monocytes and macrophages in acute on chronic liver failure
26. Identification of novel blood based biomarker for early detection of human gallbladder cancer
27. Role of gamma delta T cells and scavenger receptors in vitiligo
28. Elucidating the immune escape mechanism in renal cell carcinoma
29. Study of B cell subsets and their immune regulatory functions in urothelial carcinoma of bladder
30. Study of innate lymphoid cells in the immunopathogenesis of Pemphigus vulgaris
31. Functional interaction of FAT1 and miRNA in glioma
32. To study the gene expression in GBM cell lines under different degree of hypoxia and the role of p53 in HIF1 regulation under severe hypoxic condition
33. Hypoxia and response to chemotherapy: A study in glial tumor cell lines
34. FAT1 and p53 on chemo-sensitivity of Glioma
35. Molecular Signature of Glioma in the context of WHO 2016 classification of Glioma
36. FAT1 protein: Its processing and cellular function in glioma cells
37. Study on mitochondrial metabolic reprogramming in pediatric acute lymphoblastic leukemia (ALL).
38. Exploring a unified pathway for the anti-atherogenic effects of adiponectin, sphingosine 1-phosphate (S1P) and high-density lipoprotein (HDL) on endothelial cells
39. Investigation of the involvement of plasma membrane ATP binding cassette transporter (ABCA1) in adipose tissue mediated insulin resistance
40. Role of hyperglycemia on macrophage effector function in pulmonary tuberculosis Sudhasini: Newton bhabha fellowship (4 months, 2019)
41. Influence of different grades of hyperglycemia on innate immune response in pathophysiology of active tuberculosis
42. To study the role of B cells on macrophage polarization and their effector functions in immunopathogenesis of pulmonary tuberculosis
43. Role of IGF2BP1 in of ETV6-RUNX1 positive B cell Acute Lymphoblastic Leukemia
44. Role of RNA methylation and IGF2BP expression in B-cell Acute Lymphoblastic Leukemia.
45. The interplay of RNA methylation and IGF2BP family of RNA binding proteins in regulation of gene expression in cancer

46. Functional Characterization, Expression, and Clinical Significance of Cancer-Testis/ Germline Antigen POTE<sub>B</sub> in Ovarian Cancer
47. Role of 3D Genome Architecture as Epigenetic Regulator of Pericentromeric localized Cancer-Testis/Germline Antigen POTE in Cancer
48. Innate Immune Responses in Acute on Chronic Liver Failure
49. Characterization of Monocytes and Macrophages in Acute on Chronic Liver Failure
50. Study of ECM remodeling in adipose tissue dysfunctions in obesity
51. Role of macrophage phenotypes in the regulation of mesenchymal stem cell migration and development in Breast Cancer
52. Effect of Bio-conjugated chemotherapeutic molecules on Stem cells, Cancer stem cells and their associated Microenvironment

### ***Completed***

1. Elucidation of Molecular Mechanism of Differential Expression of Cathepsin B in Breast Cancer Cells with Different Metastatic Potential
2. To assess the potential utility of Cathepsin L and Cathepsin B as universal biomarker for cancer.
3. Human Heterogenous Ribonucleoprotein D (hnRNP<sub>D</sub>) mediated post transcriptional regulation of Phosphatase and Tensin homolog (PTEN) in oral cancer
4. The Expression and Clinical Significance of Serum microRNAs in Human Gallbladder Cancer
5. Inflammatory biomarkers HMGB1 and TGF-1 in peri-miniscrew implant crevicular fluid (PMICF)
6. Exploring the role of Versican and its regulation by miRNA in Multiple Myeloma
7. Gamma delta T cells in immunopathogenesis of Pemphigus vulgaris
8. Regulation of FAT1 Gene Expression in Gliomas
9. Signaling interactions between FAT1, p53 and HIF1 $\alpha$  in glioma
10. A study on the effect of HMG-CoA Reductase inhibitors on HDL functionality in Acute Coronary Syndrome (ACS).
11. Study of Mycobacterium indicuspranii and Human Beta Defensin as adjunct in Chemo-immunotherapy against Mycobacterium tuberculosis in vitro.
12. Cloning and Functional analysis of Cancer Testis Antigen POTE<sub>E</sub> in Epithelial Ovarian Cancer
13. Effect of DNA Methylation in Expression of Cancer-Testis/Germline Gene POTE<sub>E</sub> in Ovarian Cancer
14. DNA Methylation Effect on POTE<sub>B</sub> Expression in Epithelial Ovarian Cancer
15. TNF alpha in Malaria Patients

### **Collaborative projects**

#### ***Ongoing***

1. A study of epigenetics of Breast cancer by evaluation of tissue site-specific Promoter DNA methylation profiles in Breast Cancer, Surgical Disciplines
2. Expression of Reg-4 and MUC-4 in patients with carcinoma of pancreas, Gastroenterology
3. miRNA as biomarker in chronic pancreatitis patients who are at high risk for developing pancreatic cancer, Gastroenterology
4. Role of miRNA mediated modulation of signal transduction in pancreatic cancer, Gastroenterology
5. Assessment of single versus subsequent microosteoperforation stimulated IL-1 $\beta$  levels during orthodontic tooth movement- a pilot study, Dental Surgery
6. Evaluation of RANKL in GCF and rate of tooth movement during canine retraction assisted with low level laser therapy- a Randomised controlled trial, Dental Surgery
7. N22 region of torque teno virus: Cloning, Expression and use of translational peptides in immunological assays and proteomic analysis, Laboratory Medicine
8. Rare disease modelling using induced pluripotent stem cells, Stem Cell Facility
9. Study to identify the genotype phenotype correlation in testicular biosynthetic defects and 5- $\alpha$  reductase deficiency with respect to disorders of sex development, Paediatric surgery
10. Role of Hydrogen Sulfide as a pharmacological modulator in adverse pregnancy outcomes like preeclampsia, Anatomy

11. Association of HIPEC treatment with expression of T regulatory cells (FOXP3) in epithelial ovarian cancer and its clinical significance, Dr BRA IRCH
12. Combating the challenge of antibiotic tolerance: combining conventional anti-tubercular drugs with DevR dormancy regulator targeted approaches for improving M. tuberculosis clearance, Biotechnology
13. Role of T-regulatory cells (Tregs) and their clinical correlation in epithelial ovarian cancer, Surgical Oncology
14. NF-kB expression and its relation to functional capabilities of CD4+ and other T cells among HIV infected Indian population, Microbiology
15. Human Papillomavirus status in Penile carcinoma in Indian patients and correlation with Clinico-pathological staging, Urology
16. Prospective non-randomized controlled trial to compare the efficacy of subcutaneous etanercept versus oral methotrexate in moderate to severe chronic plaque psoriasis and to correlate response with Th1, Th2, Th17 and Treg cell patterns, Dermatology
17. Study of osteogenic humoral factors on fracture healing in patients with head injury: decoding the mystery, Orthopaedics
18. Immunological evaluation in IVF failure patients, Obstetrics and Gynaecology
19. A comparative pilot study of rectus fascia pubovaginal sling surgery vs TOT in patients with urodynamically proven SUI, Obstetrics and Gynaecology
20. To study the correlation between candida and proinflammatory cytokines and chemokines in Oral Leukoplakia with antifungal therapy, Centre for Dental Education & Research
21. Molecular characterization of NFkB pathway in uveal melanoma, Dr R.P. Centre
22. Molecular Characterization of malignant lacrimal gland tumours, Dr R.P. Centre
23. Role of mitochondrial heterogeneity in the progression and prognosis of Acute Myeloid Leukemia (AML), IRCH
24. Dietary diversity and nutritive value of indigenous foods in addressing food security and nutritional status of vulnerable tribal communities of India, IIPH-Delhi, PHFI, India
25. Role of Serum CA-125 Level in Diagnosis and Monitoring of Treatment Response in Pulmonary and Extra-pulmonary Tuberculosis, Medicine
26. A randomized double blind placebo controlled pilot study evaluating the effect of topical urea as pre-treatment for preventing hand foot skin reaction in cancer patients on sunitinib therapy, Pharmacology
27. To study the influence of CYP2C19 polymorphism on bortezomib blood concentration and clinical response in myeloma patients, Pharmacology
28. Effect of vitamin D supplementation on seizure frequency in persons with drug resistant epilepsy and its correlation with biomarkers, Pharmacology
29. Anemia Research Consortium as part of National Centre of Excellence and Advanced Research on Anemia (NCEAR-A), Community medicine
30. Nutritional status of pregnant women as assessed by nutrient intake, anthropometry and selected serum biomarkers in an urban slum of Delhi-A community based prospective study, Community medicine
31. Effect of bioconjugated chemotherapeutic molecules on stem cell, cancer stem cells and their associated microenvironment, Biochemistry
32. Role of Macrophages phenotype in the regulation of mesenchymal stem cell migration and development in breast cancer, Biochemistry
33. Profile of serum hepatotrophic factors, serum ammonia levels and Quality of life in patients of EHPVO, Paediatric Surgery
34. Identification and in-vitro functional assay of novel driving tyrosine kinases in Indian BCR-ABL-like acute lymphoblastic leukemia: DBT Wellcome Trust India Alliance Intermediate Fellowship, Laboratory Oncology, IRCH
35. Role of mitochondrial heterogeneity in the progression and prognosis of Acute Myeloid Leukemia (AML): DST SERB Core Research Grant, Medical Oncology, IRCH
36. Molecular Analysis to explore resistance against RTK in mRCC, Urology
37. Role of Specific Single Nucleotide Polymorphism ... in Opioid Dependency, Psychiatry
38. Role of PARP1 and  $\gamma$ -Glutamyl cysteine Synthetase Inhibitor in Cisplatin Sensitivity & Correlation With DNA Methylation in Ovarian Cancer, IRCH
39. Impact of Yoga and Meditation on Epigenetic Profile in Rheumatoid Arthritis, Anatomy
40. The Role of Leukotriene A4 hydrolase gene Polymorphism and Clinical outcome correlate in Corticosteroids treated Tubercular Meningitis Patients, Neurology

41. One carbon metabolism and cognitive impairment in older Indians, Geriatric Medicine
42. Estimation of novel Proteins among Older Subjects as biomarker for cognitive impairment, Geriatric Medicine
43. To evaluate the effect of intralipid supplementation on implantation rate in women with two or more failed IVF/ ICSI with elevated natural killer cell levels—a pilot randomized controlled trial, AIIMS
44. Expression of Cancer Testis Antigen POTE in Ovarian Tumors and its Clinical Significance: A Pilot Study, AIIMS
45. Molecular Characterization of Endometrial Cancer and its correlation with clinicopathological Features, AIIMS, New Delhi
46. Department of Biotechnology-Consortium on Celiac Disease, Gastroenterology
47. Identification of factors predictive for weight loss after Bariatric Surgery: Building a Model for improving outcomes and maintaining weight loss, Surgical Disciplines
48. Development of single cell derived clonal spheroids as a tool for drug discovery in cancer research with focus on HNC, JNU
49. Artificial Intelligence in oncology: Harnessing big data and advanced computing to provide personalized diagnosis and treatment for cancer patient, Biochemistry

### Completed

1. Effect of hydrogen sulphide on migration of human trophoblast cells and its status in preeclampsia, Anatomy
2. Identification of Glucose related protein 78(GRP78) as a biomarker for tumor behavior in patients of renal cell carcinoma, Urology
3. Placental growth factor as a predictive and prognostic marker for development of pre-eclampsia in high risk patients, Obstetrics and Gynecology
4. Role of placental growth factor, uterine artery Doppler and 3D Doppler ultrasound of placenta for prediction of pre-eclampsia in high risk pregnancies, Obstetrics and Gynecology
5. Role of Vascular Endothelial Growth Factor – in management of Recurrent Respiratory Papillomatosis, Otorhinolaryngology (ENT)
6. Role of placental growth factor, uterine artery Doppler and 3D Doppler ultrasound of placenta for prediction of pre-eclampsia in high risk pregnancies, Obstetrics and Gynecology
7. The effect of ultrasound guided quadratus lumborum block on postoperative analgesia and neuroendocrine stress response in paediatric patients undergoing elective open pyeloplasty. a randomised control trial, Anaesthesia Pain medicine & Critical Care
8. Development of a multiplex real time PCR (qPCR) assay for simultaneous detection of hepatitis viruses (a-g) in serum, Laboratory Medicine
9. Role of peroxisome proliferator activated receptor alpha (ppar alpha) in trophoblast invasion, Biochemistry

### PUBLICATIONS

**Journals: 42                      Abstracts:                      10                      Chapters in Books: 1**

### PATIENT CARE

1. CEA 2723		6. Beta HCG	682	11. Free T3	1532
2. CA 19-9	2481	7. AFP	589	12. Free T4	1532
3. Total PSA	332	8. Serum Ferritin	772	13. TSH	2035
4. CA 125	846	9. Vitamin B12	794		
5. CA 15.3	186	10. Folate	794	<b>Total</b>	<b>15298</b>

### Quality control:

Apart from routine internal quality assurance scheme, Successful monthly participation in External quality assurance scheme (EQUAS) for last one year to deliver quality reports. Department has standardized the porphyria tests and started receiving samples from different depts. of the Institute.

Department of Biochemistry has done free genetic test for ataxia patients with FRDA and suspected FRDA coming from Neurology and Paediatric Neurology and Paediatric genetics.

### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Subrata Sinha** was **Fellow of** Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences, National Academy of Medical Sciences and Indian Academy of Neurosciences. Elected as INSA Vice President 2019, Convener INSA Delhi Chapter (since 2018); **Member, Institutional Committees (Governance)**, Institute

Body, Governing Body, Standing Selection committee and Academic Committee JIPMER Pondicherry (from 2019); Society, Institute of Life Sciences, Bhubaneswar (from 2018); Indian Association of Cultivation of Science (from 2020); **Institutional Committees (Scientific, Research, Academic)** Member of Scientific Advisory Group (SAG) - Basic Medical Sciences, ICMR; Scientific Advisory Committee (SAC) of Institute of Pathology, ICMR (2008- currently Chairman); Research Council (RC) Centre for Cellular and Molecular Biology, Hyderabad (from 2017); RC, Indian Institute of Chemical Biology, Kolkata (2014-2016; from 2017); RC, Central Drug Research Institute (Special Invitee); SAC - Rajiv Gandhi Centre of Biotechnology (from 2008); SAC Institute of Life Sciences, Bhubaneswar – Special Invitee, areas related to cancer; SAC National Institute of Biomedical genomics (from 2017); **Committees of Scientific Ministries and Departments – Department of Science and Technology (DST):** Chairman, Cognitive Science Research Initiative (from 2014) and Science and Technology of Yoga and Meditation (from 2015); Member PRC Medical Sciences (SERB) (2018-20); **Indian Council of Medical Research (ICMR):** Chairman, PRC for Biochemistry, Immunology and Allergy (from 2012); Member, PRC for Translational Neurosciences (from 2014); Member, PRC for Cell and Molecular Biology (from 2013); Member, National Committee of Stem Cell Research and Therapy (from 2017); Member, PRC Nanotechnology (from 2017); Member NAC SCRT National Apex Committee, Stem Cell Research and Therapy (from 2018); Chairman – GTAC Gene Therapy Advisory Committee (from 2018).

**Professor SS Chauhan** selected for Dr Khanolkar Oration of National Academy of Medical Sciences, Chairperson of AIIMS Biosafety Committee and Professor Incharge B.B. Dixit Library, member of SERB Young Scientist –Life Sciences Expert Committee of DST. Served as expert for evaluation of intramural research grants at AIIMS, Jodhpur and selection of faculty at AIIMS Jodhpur, AIIMS Patna, AIIMS, Bhopal, PGIMER Chandigarh, Institute of Liver and Biliary Sciences, Delhi. He served as subject expert for selection of DBT-RA, CSIR-RA and ICMR post-doctoral fellowship. Prof. Chauhan is also the member of pre Scientific Advisory Committee of National Institute of Pathology (ICMR), New Delhi, and member Expert Committee of Guru Gobind Singh Indraprastha University for recognition of medical teachers. Appointed as member of UG expert committee by Board of Governors in Suppression of Medical Council of India, member of Library Committee, Institute day Celebration Committee, Biotechnology Teaching Advisory Committee, AIIMS, Bio-Safety committee, VP Chest Institute, University of Delhi, and DBT-nominee for Bio-safety committee of Institute of Genomics and Integrative Biology, Mall Road, Delhi, member, Board of Studies of Aligarh Muslim University, Aligarh and Central university of Haryana, Mahendergarh, and Course Curriculum Committee of King George Medical University Lucknow. Member, Editorial Board of Research and Reports in Biochemistry and Indian Journal of Clinical Biochemistry as well as reviewer for various national and international scientific journals. Life member of Society of Biological Chemists (India), Association of Clinical Biochemists of India, Indian Association for Cancer Research and Indian Academy of Biomedical Sciences.

**Professor MR Rajeswari**, Vice President of Society of Neurochemistry, India, December 2016, President of “DNA Society of India”. ICMR Project Review Committee (PRC) for Neurochemistry, 2006 onwards. Research Advisory Board, Central University of Rajasthan, Ajmer, Advisory Board member- Rare Disease society of India, University Grants Commission- on various committees. Member-School of Life Sciences, Central University, Rajasthan, 2013-onwards. Member, Research Council, SV University, Tirupati; Executive Council Member of Indian biophysical Society.

**Professor Kalpana Luthra** Executive Committee Member of the Indian Immunology Society. Member secretary for Expert group for developing of e-learning resource material for MBBS students and foreign medical graduates, Appointed by Medical Council of India. Member of DBT-BIRAC, Advisory Committee for evaluation of proposals on Snakebite Envenoming. Member of Expert committee to review project proposals to Biotechnology Industry Research Assistance (BIRAC) under the National Biopharma Mission Program. Member of Expert committee to review quarterly work progress of program entitled ' Translational Research Consortium for Establishing Platform Technologies to support prophylactic and therapeutic strategies for Dengue-Discovery to Proof-of-Concept, funded by NBM, BIRAC, 2019. Member of Selection committee for the post of Scientist E (Non-Medical) at ICMR, May 2019. Member of PRC of allergy immunology & Human Genetics, ICMR & Expert Group review committee of ICMR to review proposals under Cell and Molecular Biology, Genomics and Stem Cell Research. Expert member of TARE Expert committee of SERB, August 2019. Chairperson of Local Research Committee for multidisciplinary Research Unit, MAMC, 2019. External member of the Academic Committee at THSTI, Faridabad, for 2 years. Appointed as a member of Technical Evaluation committee (TEC) of HRD Scheme of DHR-ICMR (September 2019). Reviewer to international journals: Journal of Diabetes; Therapeutic Advances in Vaccines, National Journal: NMJI Co-Chairperson for Annual Report Editing Committee, AIIMS. Member of committee for MBBS curricular Reforms at AIIMS, 2019 and of AIIMS Store Purchase committee. Member, Core Committee for CCRF; Faculty Coordinator of General Facility of CCRF; member of BSL 2/3 & Flowcytometry committees. Co-chairperson for AIIMS Cultural Committee. Nominated as First Appellate Authority under Right of Information Act for College of Nursing, AIIMS, New Delhi. Member, committee for addressing complaints of Sexual Harassment at the AIIMS, December, 2019. Ph.D student Mr. Sanjeev Kumar awarded prestigious Wellcome Trust DBT India Alliance Early Career Fellowship- (June 2019) independent grant, Dr Arun Fotedar Memorial AIIMSONIANS award for best published work by AIIMS for the year 2019 and HIV Research Trusts Scholarship, UK, under the supervision of Prof. Dennis R. Burton, NAC-IAVI, The Scripps Research Institute, San Diego, California, USA from June 2019 to August 2019.



**Professor Alpana Sharma** was awarded Fellowship of Indian Academy of Biomedical Sciences, 2019 for outstanding contribution in the field of Biomedical Science. Expert Selection Committee for faculty posts at Dr Baba Saheb Ambedkar Medical College, Delhi Government and Lady Hardinge. New Delhi. Expert, appraisal committee of Scientist C at CCRUM New Delhi. Expert award committee of AYUSH award in Unani Medicine at AYUSH, New Delhi; Organized the Symposium on International Immunology Day on 29th April 2019 at AIIMS, New Delhi. Active member of American Association for Cancer Research, USA and International Gyne Cancer Society, USA. Assessor DNB Biochemistry Exam. External examiner for PhD thesis and viva conduction at PGIMER, Chandigarh, JN Med College, Aligarh Muslim University, JIPMER, Puducherry and KGMU, Lucknow. External examiner for MD at AIIMS, Bhubaneswar, Delhi University, Swami Vivekanand University and JN Med Col AMU and MSc at IOM, Kathmandu. Reviewed Adhoc research proposals of DBT, DST, AYUSH and UPSCST submitted for financial grant. Member, Annual Report Committee, AIIMS and Teaching Schedule Committee for UG at AIIMS; Dr Nidhi Gupta, PhD student awarded First Prize in Oral presentation at Int Conference of Ethnopharmacology at Jamia Hamdard; Dr Shamima Akhtar was N-PDF under mentorship awarded Second Prize at ISARCON 2019; Ms Nidhi Gupta: Received award of appreciation for PhD work from Cancer Research Foundation, February 2020.

**Dr Sudip Sen's** PhD student (Devanjan Dey) received the 2nd prize (oral presentation) "Young Scientists' Presentation" at the 8th Annual CME of Clinical Biochemistry at Sir Ganga Ram Hospital, New Delhi, 25 April 2019; PhD student (Dr Amarpreet Kaur) received an International travel award to attend and present the poster at the the Digestive Disease Week (DDW) Annual meeting, at San Diego, California, USA from 18 to 21 May 2019; MD student (Dr Vadanya Shrivastava) received the Sutte Nag award for Best poster presentation at the 37th Annual conference of Indian academy of Neurosciences, at AIIMS, New Delhi from 19-21 November 2019; PhD student (Dr. Janvie Manhas) was awarded the "Women Overseas Student Internship Award in STEMM- WISTEMM" by the Indo-U.S. Science and Technology Forum (IUSSTF), an autonomous bilateral organization jointly funded by both the Governments to promote Science, Technology, Engineering and Innovation. Under this fellowship, Janvie is visiting the 'Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research' at the University of Southern California (USC), Los Angeles, USA, to train under Prof Leonardo Morsut in the Dept. of Stem Cell Biology and Regenerative Medicine, Keck School of Medicine, USC, for 6 months (January to June, 2020). She is working on developing synthetic biology tools to target cancer stem cells in solid tumors. The fellowship consists of a grant-in-aid budget of USD 19,000.

**Dr Jayanth Kumar**, EMBO Travel Grant to attend the 'Humanized Mice in Biomedicine' workshop held at Heidelberg, Germany. Grant provided by European Molecular Biology Organization (EMBO) November 2019. (Also won the best poster award at the same workshop)

**Dr Subhradip Karmakar**, research work on decoding Padma fish Genome showcased in Nature Asia. News Commentary on decoding Padma fish Genome covered in Indian Express. Research Work on decoding Peacock Genome covered in Indian Express 21 August 2019

**Dr Ashok Sharma** invited by Department of Biotechnology's for the Nobel Prize Series 2019. Invited by Ministry of Health & Family Welfare and DBT India Jointly for colloquial lecture in the Young Achiever's, Young Scientists' Conference (YSC), 5th India International Science Festival (IISF 2019) held at Biswa Bangla Convention Centre (BICC), Kolkata. Member committee of establishing the Indian Council of Medical Research- Indian Cancer Research Consortium (ICMR-ICRC), New Delhi

**Dr Rakhee Yadav**, my MD student Dr Astha Sachan (2nd year) won Mrs. Dwarka Prasad Trust Travel Grant for the session October 2019-March 2020 to present her work at 15th Asia Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB) Congress; Jaipur in Nov 2019.

## VISITING SCIENTISTS

1. Dr Suman Mukhopadhyay from National Cancer Institute –RAS initiative, USA has delivered talk on Uncovering the distinct impacts of oncogenic RAS on metabolism on 30<sup>th</sup> Jan 2020.
2. Dr Sunil K Tadepalli, Director, Centogene, India delivered talk on Molecular genetics on 29<sup>th</sup> Jan 2020.
3. Dr Syed Shadab Raza from USA delivered talk on ROS triggered autophagy is associated with human stem cells' impairment and survival in an aschemic brain: observations from an oxygen glucose deprivation study on 12 September 2019.
4. Prof Bhagavatula Moorthy, Director, Texas Children's Hospital, Baylor College of Medicine, Houston, USA delivered talk on Mechanistic role of cytochrome P450 (CYP1A/1B1) enzymes in hyperoxic lung injury on 9 August 2019.
5. Dr Tayla Heavican, Graduate Student Senator, Dept of Pathology and Microbiology, Univ of Nebraska Medical Centre, US delivered talk on Long term deficiency of Tet2 in CD 4+ T-cells promotes T-cell lymphoma with a Tfh cell immunophenotype on 8 May 2019.

## 9.4 Biomedical Engineering

<b>Professor and Head</b>		
Harpal Singh		
<b>Associate Professors</b>		
Neetu Singh Dinesh Kalyanasundaram		Sandeep Jha Anup Singh
<b>Assistant Professors</b>		
Deepak Joshi Amit Mehndiratta	Jayanta Bhattacharyya Arnab Chanda	SMK Rahman Biswarup Mukherjee
<b>Emeritus Professor</b>		
Veena Koul		
<b>Honorary Professor</b>		
SK Guha		

The Department of Biomedical Engineering (also known as CBME, Centre for Biomedical Engineering at IIT Delhi) now has strength of eleven permanent faculty, one emeritus professor and one honorary professor.

### HIGHLIGHTS

The department was established in 1971 as a joint venture of AIIMS, New Delhi and Indian Institute of Technology, Delhi. The department has applied engineering principles to address medical and biological problems. It has collaborative projects with major institutes and hospitals in India. The department has its vision of dissemination of knowledge and development of techniques, tools and methods for diagnosis, follow-up of treatment responses, drug delivery and help in disease treatment. The faculty of the department are dedicated towards research in the following priority areas:

- Biomaterials
- Bioinstrumentation
- Biomechanics
- Medical Imaging

In the past year, the “**Biomechatronics Lab**” was setup by Dr Arnab Chanda at the biomedical engineering department at AIIMS and the following equipment were installed for applied and clinical research

- Skid Resistant Tester from Ram Incredible Solution on 24 December 2019 for conducting Biotribology experiments
- Machining equipments (Mini CNC machine, Shear Cutting machine) from Amit Engineering Co. On 15 January 2020
- InBody 720 Analyser from InBody Inc., USA on 21 October 2020.

Ethical clearance from AIIMS was approved to launch a pilot study to understand the correlation of facial features and obesity in Indian population, by Dr Arnab Chanda (PI). 50+ subjects have already participated in this study so far.

Apart from research, the department is engaged in teaching where PG, UG and Pre-PhD courses relevant to biomedical engineering are offered at IIT Delhi.

### EDUCATION

Nine PhD students graduated in the past year.

Candidate	Thesis Title	Supervisor
M. Marieswaran	Experimentation and musculo-skeletal modelling of femur - anterior cruciate ligament - tibia complex (FATC)	Dinesh Kalyanasundaram and Sandeep Jha
Dilpreet Singh	Design, manufacturing and evaluation of customized elbow implant	Dinesh Kalyanasundaram and Pulak Pandey (Mechanical)
Vinod Parmar	Laser-material interaction studies for optoelectronics and biomedical applications	Dinesh Kalyanasundaram and GV Prakash (Physics)

Vijay Goud	Studies on carbon/polypropylene composites made through electrostatic powder coating and other methods	Dinesh Kalyanasundaram, and R. Alagirusamy and Apurva Das (Textile)
Snekha Thakran	Quantitative Analysis of Multi-Parametric MRI Data for Improving Breast Tumor Diagnosis and Grading.	Anup Singh
Ayan Debnath	Development of quantitative CEST MRI methods with clinical applications	Anup Singh
Neha Singh	Design of Robotic Hand Bases Intervention with Brain Stimulation Applications for Post-Stroke Neuro-Rehabilitation	Amit Mehndiratta
Sumit Madan	Development and evaluation of topical drug delivery system for treatment of inflammatory disorders	Veena Koul
Smita Patil	Controlling Stem Cell Differentiation for Tissue Engineering	Neetu Singh

## RESEARCH

### Patents filed: 7

1. Dinesh Kalyanasundaram, Rohan Chawla, Jayanta Bhattacharyya and Lata Kaushik, Ocular Chemoport, Indian Patent Application No: 201911043252, Filed on 24 October 2019
2. Deepak Joshi, Ashutosh Tiwari, Indian Patent Application No. 201911034729, titled Insole based foot pressure measurement system, filed in August 2019
3. Amit Mehndiratta, Neha Singh, Indian Patent Application No. 201911027688, titled Physiological Signal Guided Brain Stimulation with Adaptive Performance Feedback, filled on 10 July 2019
4. Anup Singh, Amit Mehndiratta, Sandeep Panwar Jogi, Rafeek T, Indian Patent Application No. 201911021295, titled Device for Exerting Axial Load on Load Bearing Joint of Human Being During Scanning, filed on 29 May 2019
5. Veena Koul, Indian Patent No. 330077, Application No. 2478/DEL/2013, Superparamagnetic iron oxide nanoparticle formulation as MRI negative contrast enhancing agent for cancer detection of organs of the reticuloendothelial system and process of its preparation thereof, filed in 2019
6. Singh Neetu, Kaur Tejinder, Application no. PCT201911046377, Hydrogels to improve diabetic wound healing (Applied, 2019)
7. Surender Kharbanda, James Hill, Sireesh Appajoyosyulan, Mark Rosenberg, Harpal Singh Application number PCT WO2020018778A1, Polymeric nanoparticles comprising salinomycin

### Technology Transfer to Industry: 2

1. Harpal Singh, Technology transfer to UFLEX Ltd. NOIDA for PPE Coverall for production and commercialization May 2020.
2. Harpal Singh, Technology transfer to Fibrex Construction and Chemicals Pvt. Ltd. Faridabad for breathable PPE Coverall for production and commercialization May 2020.

## RESEARCH

### Funded projects

#### Ongoing

1. Re-engineering High End Audiometric Devices for Robust and Affordable audiological testing sound, Dinesh Kalyanasundaram, Indo-German Science and Technology Centre, Rs 55 lakhs
2. Design-development-evaluation of aptamer based high sensitive-low cost kits for the detection of mycotoxins, Hariprasad, DST, Rs 36 lakhs
3. Development of methodology for quantitative multi-parametric MRI and evaluating its potential along with Machine Learning in classification of brain tumor and treatment follow up, Anup Singh, SERB-DST, Rs 30 lakhs
4. Artificial skin (Bio-inspired bi-layer polymeric hybrid Scaffold) for burn injuries and trauma care, Veena Koul, IMPRINT India, MHRD and MOH, Rs 220 lakhs

5. MUC1 pulsed DC-derived exosomes for cancer immunotherapy, Jayanta Bhattacharyya, DBT, Rs 63 lakhs
6. International Biodesign Programme, Prof. Harpal Singh, DBT, Rs 150 lakhs

## PUBLICATIONS

**Journals: 33**

**Abstracts: 23**

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

### Students

- Rupsa, PhD student, guided by Dr Anup Singh, received Magna Cum Laude in May 2019.
- Rafeek, PhD student, guided by Dr Anup Singh, received Magna Cum Laude in May 2019.
- Veena Arora, guided by Dr Neetu Singh, received young researcher award by IIT Delhi, and was the NASI-SCOPUS Young scientist awardee for the year 2019

**Dr Amit Mehndiratta** received the E.K. Zavoisky award at 27th Proceeding of International Society of Magnetic Resonance in Medicine (ISMRM) 2019, Montreal, Canada.

**Dr Arnab Chanda** was selected for the Indo China Tour organized by the Department of International cooperation, Ministry of Science and Technology of China and Indian Embassy; visited prominent universities in Singapore and Brunei as a part of the Institute of Eminence (IOE) delegation from India.

**Dr Neetu Singh** organized the AIIMS-IITD Biodesign Summer Workshop, 2019

## VISITING SCIENTISTS AND INVITED TALKS

1. **Professor Pedro Irazoqui**, Reilly Professor of Biomedical Engineering and Professor of Electrical and Computer Engineering, Purdue University, USA, 26 February 2020, **Title:** Electroceuticals
2. **Dr Manoj Kumar**, Stem cell Institute, Department of development and regeneration, KU Leuven, Belgium, 6 January 2020, **Title:** Complex in-vitro Liver models: does organoid technology hold key for disease modelling in preclinical settings?
3. **Dr Sanhita Sinharay**, Faculty Research Instructor at MD Anderson Cancer Center, Houston, Texas in the department of Cancer Systems Imaging, 19 September 2019, **Title:** Picturing the future of healthcare through molecular imaging.



## 9.5. Biophysics

### SERB Distinguished Professor

TP Singh

### Professor and Head

Punit Kaur

### Professors

Savita Yadav

Sujata Sharma

### Additional Professors

G. Hariprasad Rao

Sharmishtha Dey

### Associate Professor

Ethayathulla AS

### Assistant Professors

Krishna Kumar Inampudi

Saroj Kumar

Pradeep Sharma

### Scientists

Asha Bhushan

S. Baskar Singh

Manoj Kumar

Uddipan Das

## HIGHLIGHTS

During the period under report, the department had over 25 ongoing research projects funded by extramural grants. Research in the Department is concerned with determining the molecular basis of biological process, rational structure-based drug design and discovering new specific biomarkers. The department provides facilities for data collection on protein and small molecule crystals, medical bioinformatics, protein sequencing and peptide synthesis, proteomics and dynamic light scattering. The Department had received a Fund for Improvement of Science and Technology Infrastructure in Higher Educational Institutions (FIST) grant from Department of Science and Technology (DST), Govt. of India, which has been ongoing in the last year. In the past one year, faculty and scientists had 36 research publications in various peer reviewed journals. The Department continued providing postgraduate education and short and long term training to MSc, PhD and MD students. The faculty members and scientists were invited to deliver lectures and seminars all over the country and have delivered 46 lectures. The Department was awarded the second prize for the Best exhibit at the Institute Day on 25 September 2019.

## EDUCATION

### Postgraduate

The faculty and scientists of the Department of Biophysics continued with teaching and guiding students for PhD degree, MSc (Biophysics) and MD (Biophysics). The postgraduate teaching includes theory classes, hands-on practical classes and a dissertation project.

### Short and Long term Training

The Department also imparted long- and short-term training to MSc and MTech students from different institutes and universities.

### Lectures delivered

TP Singh: 10

Sujata Sharma: 1

Jyotirmoy Banerjee: 5

Punit Kaur: 3

Sharmistha Dey: 3

Manoj Kumar: 1

Savita Yadav: 5

Saroj Kumar: 2

## RESEARCH

### Funded projects

#### Ongoing

1. Structure and function studies of peptidoglycan recognition proteins from innate immune systems, TP Singh, SERB-DST, 5 years, 2014-2019, Rs 141 lakhs
2. Structure based In Silico Identification, Chemical Synthesis and Biological Evaluation for inhibitors against DNA Gyrase from Salmonella Typhi, Punit Kaur, ICMR, 3 years, 2019-2022, Rs 56.5 lakhs
3. AMR-Diag: A Novel Diagnostic Tool for Sequence Based Prediction of Antimicrobial Resistance, Punit Kaur, ICMR (Indo-Norway), 3 years, 2018-2021, Rs 136 lakhs
4. Characterization of silk fibroin film prepared from oak tasar (*Antheraea proylei*) cocoon for potential biomaterial applications, Punit Kaur, DBT-NER, 3 years, 2018-2021, Rs 29.67 lakhs
5. Development of novel and efficient carbohydrate enzymes for bioenergy and biovalued products, Punit Kaur, DBT-NER, 3 years, 2018-2021, Rs 23.99 lakhs
6. Effect of Non-Ionizing Electromagnetic field (EMF) on human health, Savita Yadav, ICMR, 5 years, 2017-2022, Rs 61 lakhs
7. Exploring male factors in recurrent pregnancy losses: A genomics and proteomics based approach, Savita Yadav, ICMR, 3 years, 2019-2022, Rs 49 lakhs
8. Rational Structure-based ligand design for developing the novel antibacterial agents against Peptidyl RNA-hydrolase, a drug target from the multidrug resistant bacteria, *Acinetobacter baumannii*, Sujata Sharma, ICMR, 3 years, 2017-2020, Rs 68 lakhs
9. Rational Structure-based ligand design for developing the novel antibacterial agents against the enzymes of CoA synthetic pathway in drug resistant bacteria, *Acinetobacter baumannii*, Sujata Sharma, ICMR, 3 years, 2020-2023, Rs 50 lakhs
10. Structural and functional studies on trypsin cleaved functional fragments of lactoferrin and their binding with lipopolysaccharide, Sujata Sharma, ICMR, 3 years, 2019-2022, Rs 60 lakhs
11. In silico structural and functional characterization of mycobacterium tuberculosis elongation factors, Sujata Sharma, ICMR, 3 years, 2020-2023, Rs 24 lakhs
12. Structural and Biochemical characterization of glyceraldehyde-3-phosphate dehydrogenase (GAPDH) from *A. baumannii* and design of inhibitors, Sujata Sharma, ICMR, 3 years, 2019-2022, Rs 25 lakhs
13. Therapeutic intervention of small molecule based novel activator of Sirtuin on rat model of Alzheimer's disease, Sharmistha Dey, ICMR, 3 years, 2019-2022, Rs 65 lakhs
14. Structural and biophysical characterization of bacterial cell division protein FtsZ from *Salmonella enterica*: antimicrobial drug target, AS Ethayathulla, DST, 3 years, 2016-2019, Rs 33 lakhs
15. Biophysical and structural characterization of curcumin as a potential ligand to restore p53 Y220 mutant function in human cancer, AS Ethayathulla, AIIMS, 2 years, 2017-2019, Rs 9.8 lakhs
16. Structural and functional characterization of translational rescue system by Peptidyl tRNA hydrolase by forming non-hydrolysable peptidyl tRNA complex to gain insights for drug development against tuberculosis, Krishna K Inampudi, DST, 4 years, 2017-2021, Rs 4.9 lakhs
17. Structure based design of nanobody inhibitors against EGFR: A Protein engineering approach to develop novel therapeutics for lung cancer, Krishna K Inampudi, ICMR, 3 years, 2019-2022, Rs 65 lakhs
18. Development of potent inhibitors against drug-resistant EGFR kinase for the treatment of EGFR positive tumors, Krishna K Inampudi, DST, 3 years, 2020-2023, Rs 40 lakhs
19. Development of potent inhibitors for NSP RNA polymerase and PL protease from novel corona virus for the treatment of COVID-19, Krishna K Inampudi, AIIMS, 2 years, 2020-22, Rs 8 lakhs
20. Design and development of novel imaging agents for the earlier diagnosis of Alzheimer's disease, Saroj Kumar, ICMR, 3 years, 2019-2022, Rs 37 lakhs
21. To investigate the role of dysfunctional benzodiazepine binding site on GABAA receptor in benzodiazepine-resistance associated with pharmaco-resistant epilepsy, Jyotirmoy Banerjee Office of Principal Scientific Adviser to Govt. of India under the project "Advanced Epilepsy Research: A Multidisciplinary Approach, 3 years, 2018-2021, Rs 136 lakhs
22. Investigating the role of metabolites and neurotransmitters in abnormal synaptic transmission associated with mesial temporal lobe epilepsy (MTLE) and focal cortical dysplasia (FCD): Possible biomarkers for localization of

- epileptogenic foci, Jyotirmoy Banerjee, DBT, Govt. of India under the project “Centre of Excellence for Epilepsy Research Phase-II”, 3 years, 2018-2021, Rs 168 lakhs
23. Elucidating region-specific alterations of glutamatergic excitatory neurotransmission in a rodent pilocarpine model of temporal lobe epilepsy, Jyotirmoy Banerjee, DBT, 3 years, 2018-2021, Rs 61 lakhs
  24. Effect of plasma jet on tumor tissues resected from patients with tumor linked refractory epilepsy, Jyotirmoy Banerjee, Dept of Atomic Energy (DAE), 3 years, 2018-2021, Rs 33 lakhs
  25. Role of  $\alpha 7$  and  $\alpha 4\beta 2$  subtypes of nicotinic receptors in abnormal synaptic transmission associated with hippocampal sclerosis, Jyotirmoy Banerjee, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
  26. Rational structure-based ligand design for developing the novel antibacterial agents against proteins involved in the histidine biosynthesis pathway in *Acinetobacter baumannii*, Pradeep Sharma, ICMR, 3 years, 2020-2023, Rs 60 lakhs
  27. Drug repurposing against SARS-CoV-2 main protease: Structural and functional studies, Pradeep Sharma, AIIMS, 2 years, 2020-2022, Rs 8 lakhs
  28. Structure based identification of antimicrobial compounds, Pradeep Sharma, DBT, 5 years, 2020-2025, Rs 50 lakhs
  29. Comparative proteomics analysis to identify potent biomarkers during the transformation of premalignant oral conditions to malignant oral squamous cell carcinoma, S. Baskar Singh, DST, 3 years, 2019-2021, Rs 43 lakhs

### **Completed**

1. Structural Studies of peptidoglycan recognition proteins (PRPs), Peptidyl tRNA-hydrolase, Dihydrodipicolinate synthase (DHDPS), Dihydrodipicolinate reductase (DHDPR) and phospholipase A2, TP Singh, INSA, 5 years, 2014-2019, Rs 25 lakhs
2. Structure based design and synthesis of novel antitumor heteroarene anthracenediones, Punit Kaur, DST-RFBR, 2.5 years, 2017-2020, Rs 24.4 lakhs
3. Peptidyl tRNA hydrolase (PtH): Structure and functional mechanism of PtH with Non hydrolysable peptidyl tRNA, Krishna K Inampudi, AIIMS, 2 years, 2017-2020, Rs 9.8 lakhs
4. Characterization of fibroblasts to understand the possible role in breast cancer progression by FTIR imaging, Saroj Kumar, AIIMS, 2 years, 2017-2019, Rs 9.8 lakhs
5. Structural characterization of Sulfate Activation Complex from *Mycobacterium tuberculosis*, Uddipan Das, AIIMS, 2 years, 2017-2019, Rs 8 lakhs

### **Departmental projects**

#### **Ongoing**

1. A structure based approach for understanding the role of Hsp90 in relation to Cdh1/Fzr, an activating subunit of anaphase promoting complex/cyclosome with drug targets
2. Structure determination of MurE ligase from *Salmonella Typhi* and structure based ligand design for developing new drugs
3. Design of inhibitors against MurB from *S. Typhi* to develop drugs for MDR pathogens using in silico screening and structure based approach
4. Therapeutic intervention of Alzheimer’s disease by targeting Sirtuin in in-vivo model
5. Study on circulating level of inflammatory proteins, their signalling cascade in metastatic breast cancer and therapeutic implications for the same.
6. Study of potential modulators targeting pathways involved in hyperphosphorylation of Tau
7. Analysis of Anti-neurotoxicity of Amyloid Beta ( $A\beta$ ) in Alzheimer’s disease (AD) pathology targeting Lipoygenases
8. Structural and Functional Studies of FtsZ cell division protein as a potential drug target against *Salmonella Typhi*.
9. Structural and functional reactivation of p53 mutant using natural compounds in human cancer cell lines harbouring mutation Y220C
10. Structural and functional characterization of p53
11. Structural and biophysical characterization of p73DBD with p53 natural promoter sequence
12. Structural and Functional studies of *Mycobacterium Tuberculosis* Peptidyl tRNA hydrolase - A Novel drug target of Multidrug Resistance Tuberculosis
13. Development of potent inhibitors against drug-resistant EGFR kinase for the treatment of EGFR positive tumors
14. Atherosclerotic Cardiovascular disease: unravelling the early biomarkers from biofluid exosomes by iTRAQ based quantitative proteomics



15. Structure based design of nanobody inhibitors against EGFR: A Protein engineering approach to develop novel therapeutics for lung cancer
16. Elucidate the role of Semaphorin in epileptogenesis and hyperexcitability associated with temporal lobe epilepsy.
17. Understanding age dependent dysmaturity of cerebral cortex in cortical dysplasia.
18. Understanding the mechanism of AMPA Receptor clustering in Cortical Dysplasia and non-cortical dysplasia pathologies.
19. Role of  $\alpha 7$ -nAChR and  $\alpha 4\beta 2$ -nAChR in altered synaptic transmission associated with cortical dysplasia and non-cortical dysplasia DRE pathology.
20. Elucidating the role of cytosolic phospholipase A2 in mesial temporal lobe epilepsy.

### **Completed**

1. Elucidation of circulating cell free miRNA in pathogenesis, disease progression and outcome in multiple myeloma using integrated bioinformatics and experimental approach
2. Intervention of non-classical class I Human leukocyte antigen G in HNSCC and its therapeutic implications
3. Structural and Biophysical Characterisation of p53 Wild Type and Mutant R337H
4. Peptide inhibitor designing and validation for sEGFR using computational Protein design
5. Identification of DNA Aptamers against human sEGFR to treat lung cancer
6. Biophysical characterization of the ATPase domain of SugABC transporter from Mycobacterium tuberculosis
7. Computational analysis of resistance to imatinib and related drugs in CML due to mutations in BCR-Abl kinase and design of mutation resilient inhibitors
8. Identification of DNA aptamers against human sEGFR to treat lung cancer

### **Collaborative projects**

#### ***Ongoing***

1. Genomic Analysis of S. Typhi, Microbiology
2. Synthesis of novel DNA Gyrase inhibitors, JMI, New Delhi
3. Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI), Geriatric Medicine
4. Medicine Study of Regeneration of Skeletal Muscle in Old Age, Geriatric Medicine
5. Structure-based design of nanobody inhibitors against EGFR: A Protein engineering approach to develop novel therapeutics for lung cancer, Life Sciences, Shiv Nadar University, Center for Computational Biology and Bioinformatics, Central University of Himachal Pradesh, Pulmonary Medicine and Sleep Disorders, AIIMS
6. A nanomedicine approach against drug-resistant EGFR kinase for the treatment of EGFR positive tumors, Pulmonary Medicine and Sleep Disorders, AIIMS, Chemistry, IIT Delhi, Biochemistry, Microbiology and Immunology, University of Ottawa, Canada
7. Targeting drug resistant tumor harboring mutant EGFRs: A next generation molecular approach for the treatment of Non-Small Cell Lung Cancer, Department of Chemistry, IIT Delhi, Pulmonary Medicine and Sleep Disorders, AIIMS, New Delhi
8. Role of Inhibitors of Apoptosis Proteins in Gastroenteropancreatic Neuroendocrine Tumors, Anatomy
9. Development of early detection technique for Parkinsons disease, Neurology
10. Development of early screening technique and understanding of cognitive impairment, Geriatrics and Neurology
11. Deciphering the role of casein kinase 2 in mesial temporal lobe epilepsy, Neurosurgery

#### ***Completed***

1. Elucidation of circulating cell free miRNA in pathogenesis, disease progression and outcome in multiple myeloma using integrated bioinformatics and experimental approach, Lab Oncology, IRCH
2. Evaluation of novel intracellular proteins in serum as marker of ageing, Geriatric Medicine
3. Evaluation of perimplant crevicular fluid metalloproteinase-8 (MMP-8) and cathepsin- k (CTSK) levels in immediate loaded and delayed loaded dental implants, Centre of Dental Education and Research
4. Role of kynurenic acid, a glutamate receptor inhibitor, in hyperexcitability associated with mesial temporal lobe epilepsy (MTLE), Neurosurgery

5. Deciphering the role of GABAA receptor alterations in pediatric and adult patients with focal cortical dysplasia, Neurosurgery
6. Deciphering the role of ATF3 and TGF $\beta$  signaling in Mesial Temporal lobe epilepsy (MTLE) patients, Neurology

## PUBLICATIONS

**Journals: 34            Abstracts: 2**

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor TP Singh** received SASTRA-G.N. Ramachandran Award for Excellence in Science-2020. Elected President of the Bio-informatics and Drug Design Society (BIDDS) (2020-2022). Elected President of the Biotech Research Society of India (2019-2021). Awarded SERB-DST Distinguished Fellowship (2019-2024)

**Professor Punit Kaur** was Elected President of Indian Crystallographic Association. Elected member of INSA-IUPAB Committee

**Professor Savita Yadav** received Fellowship of National Academy of Medical Sciences, New Delhi; Elected as Vice-President of Indian Academy of Biomedical Sciences, India; Received AIIMS Oncology Research Award (Third Prize)

**Professor Sujata Sharma** received the Kalpana Chawla Excellence Award for excellence in Science

**Dr Hariprasad G** received 2nd Prize for Logo Designing for Central Core Research Facility, AIIMS, New Delhi. The logo is displayed at the entrance of CCRF.

**Dr Sharmistha Dey** received the First prize in AIIMS Oncology Research award, 2019 AIIMS, New Delhi

**Dr Ethayatulla AS** organized the Indo-Italian Elettra Beamline Workshop: Application in drug discovery from 11 to 12 November 2019 in New Delhi.

**Dr Saroj Kumar** invited review in journal Acta Biomaterialia (Elsevier Publications, IF: 7.15), 2019; invited by MedTech4Health, Uppsala to participate in Indo-Swedish Health Year 2019 at the Swedish Embassy, India; Joint Secretary; 19th Biennial Conference of Association of Gerontology, 2019; Expert reviewer of "Polish National Grant Application", Poland, 2019

**Dr Jyotirmoy Banerjee** received Best platform presentation at 21st Joint conference of Indian Epilepsy Society and Indian Epilepsy Association (ECON 2020) at Ahmedabad, Gujarat jointly with Dr. Aparna Dixit; Co-Editor for the journal Neurology India; Reviewing Editor for the journal Frontiers in Neuroscience (Neuropharmacology section).

## VISITING SCIENTISTS

The following noted scientists and eminent academicians have visited the department for presenting lectures and scientific cooperation in the past year:

- Dr Rafi Ahmad, Norway
- Dr Arne Michael Taxt, Norway
- Dr Ekaterina Avershina, Norway
- Dr Sonika Bhatnagar, New Delhi



## 9.6. Biostatistics

### Professor and Head

RM Pandey

### Professors

SN Dwivedi      V Sreenivas

### Additional Professor

Maroof A Khan

### Scientist-I

M Kalaivani

Shivam Pandey

Nilima

### HIGHLIGHTS

The department conducted two hands on workshop on various aspects of biostatistics for faculty/residents and PhD students in the Institute. Department had four ongoing extramural funded research projects. Collaborative research projects with various Centers/Departments in the Institute, includes 81 ongoing and 58 completed research projects. Faculty and Scientist in the department had 155 research publications in various peer reviewed medical journals. Faculty and Scientist: Continued to be reviewer for almost all the major medical journals in the country and for several International Medical Journals from various medical specialties; Served on various administrative and scientific committees in the Institute; Invited members of various scientific committees of the ICMR, DBT, DST, AYUSH; served on Data Safety Monitoring Boards (DSMB) of several National and International Clinical Trials; delivered invited lectures in various Institutes/Universities in the country and abroad; and served as examiners of PhD thesis submitted to various universities in the country.

### EDUCATION

The department continued teaching “Biostatistics and Essentials of Research Methods” for the undergraduate, paramedical and postgraduate courses, viz. MBBS, BSc (Hons) in Medical Technology in Radiology, MBiotech, BSc and MSc Nursing, and MD Community Medicine. Department plays major role in conducting Research Methodology, Writing and Communication workshops for the residents in the Institute, a mandatory 5 days course work in four batches. On request, faculty members delivered series of lectures for the residents, PhD students and participated in departmental scientific presentations in various Centers/Departments in the Institute. Besides guiding PhD students in the department, faculty members and scientists contributed to the academic activities of other departments in the Institute as Co-Guides, DC Members of PhD, DM, MCH, MD/MS/MHA/MDS, students. Also, departmental faculty and scientists delivered 29 invited lectures in various workshops on Research Methodology and Biostatistics in various national and international workshops/conferences.

### CMEs/Workshops/Symposia/National and International Conferences

#### Lectures delivered

RM Pandey: 7

SN Dwivedi: 22

V Sreenivas: 5

Shivam Pandey: 5

#### Oral papers/posters presented: 4

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Air Pollution and It's Effect on Health: 20 City Multi-site Study, RM Pandey, Ministry of Environment, Forest and Climate Change, Govt. of India, 3 years, 2019-2021, Rs 26.40 lakhs
2. Multi-centric trial to study the effect of early active mobilization as compared to three weeks immobilization following tendon transfer procedures for claw hand (Data coordination and study monitoring), V Sreenivas, ICMR, 5 years, 2015-2020, Rs 21.22 lakhs
3. Chron's disease in India: A multi-center study from a country where intestinal tuberculosis as well as Johne's disease is endemic (Data coordination and study monitoring), V Sreenivas, DHR, 3½ years, 2016-2020, Rs 28.0 lakhs

4. The effect of geographical health inequalities on under five child mortality in India, MA Khan, DST, 3 years, 2017-2020, Rs 16.0 lakhs

## **Departmental projects**

### ***Completed***

1. Pattern and Associated Factors of Lymph Node Involvement and Local Recurrence among Oral Cancer Patients: Biostatistical Considerations

### **Collaborative Projects**

#### ***Ongoing***

1. A Population Based Prospective Cohort Study to Unravel the Causes of Stroke and Cognitive Decline: A Cross-Cultural Perspective, Neurology
2. Role of hydrogen sulphide on migration of human trophoblast cells, Anatomy
3. Comparison of Critical Care TEE vs. conventional TEE in low perfusion states in patients with Septic Shock- A double blinded observational study, Anesthesiology, Pain Medicine and Critical Care
4. Interventions of human leukocyte Antigen-G in HNSCC & its therapeutic implications, Biophysics
5. Analysis of Anti-neurotoxicity of Amyloid Beta (Ab) in Alzheimer's disease (AD) pathology targeting Lipoxygenases, Biophysics
6. Study on circulating level of inflammatory proteins, their signaling cascade in metastatic breast cancer and therapeutic implications for the same, Biophysics
7. Efficacy of yoga based cardiac rehabilitation in Post-PCI patients: A prospective randomized, open-label, blinded end-point trial, Cardiology
8. Development of a scale to measure eHealth literacy among college going students aged 18-24 years, (English Version) in Faridabad, India, Centre for Community Medicine
9. To study the role of point of care ultrasound for carotid pulse check in cardiac arrest patients, Emergency Medicine
10. To study clinic epidemiological profile of patients presenting with acute abdominal pain in emergency department, Emergency Medicine
11. Harmonized diagnostic assessment of dementia (DAD) for longitudinal aging study of India (LASI), Geriatric Medicine
12. Video-observed home-based Nordic walking training versus directly-observed Nordic walking training for pre-frail older adults, Geriatric Medicine
13. Development of Indian Frailty Registry of Older Adults, Geriatric Medicine
14. Impact of frailty and geriatric syndromes on outcome of major orthopaedic surgery in older Indian, Geriatric Medicine
15. Minimally invasive evaluation of genomic aberrations in multiple myeloma, Laboratory Oncology, IRCH
16. Weight management module for menopause women: A practical guide for gynaecologists, Medicine, University of Delhi
17. Predictors of successful weight loss outcome amongst obese adults undergoing comprehensive weight loss intervention at a tertiary care hospital Medicine, University of Delhi
18. Incidence, outcome and risk factors of paradoxical reaction in HIV negative lymph node tuberculosis, Medicine
19. Predictors of severe dengue and development of a scoring system for severity, Medicine
20. Molecular characterization of Neisseria meningitides isolated from cases of acute bacterial meningitides in Delhi and adjoining area, Microbiology
21. Phenotypic and genotypic characterization of non-typeable haemophilus influenza (NTHi) from North India, Microbiology
22. Molecular epidemiology of Mycoplasma pneumonia and Pneumocystis jirovecii in immunocompromised individuals, Microbiology
23. Study of Cognition and Quality of Life in Chronic Intractable Epilepsy using Functional Magnetic Resonance Imaging (fMRI), Neurology
24. Investigation of Role of Transcranial Magnetic Stimulation in Parkinson's Disease, Neurology
25. Prevalence and determinants of cerebral micro-bleeds in people aged 50 years and above residing in urban Delhi: A population based cross sectional study, Neurology

26. Prevalence of incidental findings on Brain MRI in adults aged 50 years and above: A population based cross-sectional study, Neurology
27. Association of Vascular Risk Factors, Brain MRI Measures, Cognition and Gait in Community Dwelling adults aged 50 years and above: A population based cross sectional study, Neurology
28. Fever, hyperglycemia, swallowing and hypertension management in acute stroke: A cluster randomized controlled trial (Indian Quality Improvement in Stroke Care Study), Neurology
29. Role of MR guided Biopsy in detection of Prostate Cancer, NMR
30. Role of Magnetic Resonance in assessing therapeutic efficacy of ayurvedic treatments, NMR
31. Study on cytogenetic toxicity of low dose 131I therapy in hyperthyroid patients by using micronuclei assay, Nuclear Medicine
32. Comparison of Alpha Emitting <sup>225</sup>Ac-DOTATATE Versus Beta Emitting <sup>177</sup>Lu-DOTATATE Therapy in Advanced End-Stage Gastroenteropancreatic Neuroendocrine Tumor (GEP-NET) Patients, Nuclear Medicine
33. Assessment of the Changes in Quality of life and symptom burden in patients with pulmonary or airway related disease requiring pulmonary interventions- Prospective study, Onco-anesthesia & Palliative medicine
34. To study the role of vascular function and pain sensitivity in micro vascular angina, Physiology
35. Psychological Trauma Resilience in Children Adolescents: development and Psychometric Properties of a Multidimensional Scale, Psychiatry
36. Biostatistical Aspects of Prognostic Factors including Molecular Parameters in Breast Cancer Patients: An Epidemiological Appraisal, Radiotherapy
37. Role of T-Regulatory cells (tregs) and their clinical correlation in epithelial ovarian cancer, Surgical Oncology
38. Expression of selective neurotransmitters and neuropeptides in the spinal cord of morphine tolerant rats, Anatomy
39. Effects of pre & postnatal exposure to fluoride on enteric nervous system, Anatomy
40. Role of TET2 protein in Myelodysplastic syndrome, Biochemistry
41. Role of TET2 proteins in pathogenesis of AML, Biochemistry
42. Strengthening/Promoting evidence based advocacy for influenza prevention and control in India, Centre for Community Medicine
43. Effect of Vitamin D supplementation on outcome in children undergoing open heart surgery: A Randomized controlled trial, CTVS
44. Early Enteral feeding with supplemented mother's milk in post-operative pediatric cardiac surgical patients – A Randomized Controlled Trial, CTVS
45. Molecular insights into the complications of Idiopathic Hypoparathyroidism, Endocrinology & Metabolism
46. Exploration of Autoimmune basis of Indian patients with Idiopathic Hypoparathyroidism, Endocrinology & Metabolism
47. Unique features of Idiopathic Hypoparathyroidism, Endocrinology & Metabolism
48. Development and validation of a tool for assessment of adherence to gluten free diet in Indian Celiac disease patients, Gastroenterology & Human Nutrition
49. Psychiatric co-morbidities in TB/HIV co-infection, Medicine
50. Quality improvement of the invasive procedures routinely done in medicine ward, Medicine
51. Efficacy of Yoga on symptom severity and quality of life of patients suffering from pain predominant medically unexplained symptoms, Medicine
52. Psychiatric co-morbidities in TB/HIV co-infection, Medicine
53. Stoppage of empirical antibiotic therapy at clinical recovery versus at neutrophil recovery, Medical Oncology
54. Analysis of triple negative breast cancer, Medical Oncology
55. Effectiveness of bundled intervention in surgical site infections among patients undergoing clean orthopedic surgery with hardware implants: A randomized control trial, Microbiology
56. Development of a diagnostic panel of blood markers in the diagnosis and prognostication of acute ischemic stroke, Neurology
57. Genetic and clinical factors associated with aspirin resistance in Indian patients with Ischemic stroke, Neurology
58. Evaluating the role of structured education to care-givers in reducing complications in hospitalized stroke patients and improving their outcomes – A clustered randomized trial, Neurology
59. Utility of 8-channel EEG in detecting generalized spike and wave discharges in generalized epilepsy – a diagnostic study, Neurology

60. Safety and Efficacy of N-Acetylcysteine (NAC) as an adjunct to standard treatment in patients with acute Ischemic stroke – A phase-II Randomized Controlled Trial, Neurology
61. Development and use of an instrument for assessing competence of trainee doctors in providing Epilepsy primary care, Neurology
62. Early outcomes in children with ano-rectal malformations following single stage abdomino-peremeal pull-through using hanging bowel technique, Pediatric Surgery
63. Study to identify the genotype phenotype correlation in testicular biosynthetic defects and 5- $\alpha$  reductase deficiency with respect to disorders of sex development, Pediatric Surgery
64. A study on differential expression of molecular markers in urine with respect to genetic propensity to congenital uropathies, Pediatric Surgery
65. Investigations of arterial wall mechanics of low flow mediated constriction in peripheral conduit arteries, Physiology
66. Genomic expression and protein profile correlates of peripheral blood mononuclear cells in obesity after Yoga-based lifestyle intervention, Physiology
67. Muscle regeneration after iron oxide nanoparticle implantation and effect of magnetic field in complete spinal cord injury rat model, Physiology
68. Psycho-social correlates of care giving experience among caregivers of patients with Schizophrenia, Psychiatry
69. Development of Psychological Intervention Manual for adolescents with dissociative conversion disorder, Psychiatry
70. Role ultrasound guided wire localization of axillary lymph nodes in increasing the accuracy of sentinel lymph node biopsy after NACT in breast cancer, Radio-diagnosis
71. Efficacy of neoadjuvant Chemotherapy in carcinoma Esophagus – Pilot study comparing Cisplatin + 5Fu with Paclitaxel + Carboplatin, Surgical Oncology
72. A study comparing contrast enhanced computer tomography abdomen vs diagnostic laparoscopy in patients with penetrating abdominal trauma – A Randomized controlled trial, JPNA Trauma Centre
73. A randomized double blind placebo controlled pilot study evaluating the effect of topical urea as pre-treatment for preventing hand foot skin reaction in cancer patients on sunitinib therapy, Pharmacology
74. Effectiveness of Cranberry Extract Mouth- Rinse compared to Sodium Fluoride Mouth Rinse on Microbial Counts in Caries Active Children- A Randomized Controlled Trial, Center for Dental Education Research
75. Depressive disorder among adolescents in Ballabgarh, Haryana, India: A Community based cross-sectional study, Center for Community Medicine
76. Mild Cognitive Impairment (MCI) and associated factors among elderly persons in an urban resettlement colony in Delhi, Center for Community Medicine
77. Effect of Resveratrol supplementation on cognitive function and Estrogen receptor profile in hypothalamus and hippocampus of arsenic trioxide-exposed adult female mice, Anatomy
78. Mapping functional and biochemical correlates in brain of Parkinson's patients with mild cognitive impairment, NMR
79. Evaluation of the blood inventory management in a hospital based blood bank and evolution of strategy to minimize shortage and outdate of blood, Biochemistry
80. Role of sperm molecular factors in recurrent pregnancy loss, Anatomy
81. Effect of regional anesthesia on perioperative inflammatory cytokines alteration and clinical complications in orthopedic trauma surgery, Anaesthesiology and intensive care (JPNATC)

### **Completed**

1. Role of Fluoride Toxicity on Renal Pathogenesis in Childhood Nephrotic Syndrome: an Ultra structural, Biochemical and Proteomic Study, Anatomy
2. The Effect of Ultrasound Guided Quadratus Lumborum Block on Postoperative Analgesia and Neuroendocrine Stress Response in Paediatric Patients undergoing Elective Open Pyeloplasty. A Randomized Control Trial, Anesthesiology, Pain Medicine and Critical Care
3. Study of potential modulator targeting pathways involved in the hyperphosphorylation of tau in Alzheimer disease, Biophysics
4. Development of serum protein marker and study of antioxidative effect using potential modulator for Alzheimer's disease, Biophysics
5. Effect of structured Yoga program on Stress and Professional Quality of Life among selected nursing staff in a tertiary care hospital of Delhi- A small scale phase-2 trial, Centre for Community Medicine
6. Comparison of post extraction bleeding complication in patients taking oral anticoagulants, with and without

- bridging therapy: a pilot study, Center for Dental Education & Research
7. Q-sofa score as a predictor of 7 & 28 days outcome in patients with suspected infection presenting to Emergency Department, Emergency Medicine
  8. Gait and balance assessment in patients attending memory clinic, Geriatric Medicine
  9. Comprehensive geriatric assessment of older adults attending fragility clinic in a tertiary health care setting in India, Geriatric Medicine
  10. A randomized control study to evaluate the efficacy of scrambler therapy in the management of oncological pain in cancer patients, Onco-anesthesia & Palliative medicine
  11. Awareness and knowledge of Indian breast cancer patients pertaining to genetic aspect of breast cancer, Surgical Oncology
  12. Efficacy of intensive dietary counseling on metabolic, anthropometric and ultrasound parameters among adult Indian Non-Alcoholic Fatty Liver Disease (NAFLD) patients: A Randomized Controlled Trial, Medicine, University of Delhi
  13. Biological and behavioral risk factors for obesity among outpatients and perceived barriers to weight loss among obese patients in a hospital based set-up, Medicine, University of Delhi
  14. Designing and validation of evidence based questionnaire in English and Hindi for a population based cohort study in India, Neurology
  15. High dose dexamethasone for primary supratentorial intracerebral hemorrhage: a pragmatic parallel group open-level randomized trial with blinded endpoint assessment (PRoBE), Neurology
  16. Identification of biomarkers in Parkinson's disease using NMR, NMR
  17. Metabolomics study of prostate cancer by using NMR spectroscopy, NMR
  18. Dosimetric Study in Children and Adults with Differentiated Thyroid Cancer Undergoing Radionuclide (<sup>131</sup>I-Na) Therapy, Nuclear Medicine
  19. Therapeutic Efficacy of Abiraterone Acetate versus Concomitant <sup>177</sup>Lu-DKFZ-PSMA-717 and Abiraterone Acetate therapy in patients with Metastatic Castration Resistant Prostate Cancer: Open Label, Two Arm, Phase II Trial, Nuclear Medicine
  20. Detection of Minimal Residual Disease (MRD) in B-cell Lineage Acute Lymphoblastic Leukemia by Flow Cytometry at end of Induction, Pediatrics
  21. A study of endothelial function and gene expression in healthy individuals, and their correlation with various somatotype classifications, Physiology
  22. Economic Burden, Prevention and Control of Pneumonia among Elderly, Centre for Community Medicine
  23. Oral Sildenafil administration in patients undergoing fontane surgery – A double blind randomized controlled trial, CTVS
  24. Comparison of Pleural Effusion in fenestrated and non-fenestrated Fontane surgeries – A Randomized Prospective Study, CTVS
  25. Comparison of Plasmalyte-A based del Nidocardioplegia solution with plain ringer based del Nidocardioplegia solution in pediatric patients undergoing open heart surgery – A prospective double blind randomized controlled trial, CTVS
  26. The impact of modified ultrafiltration on post-operative course in patients undergoing surgery for tetralogy of fallot – a double blinded Randomized control trial, CTVS
  27. A prospective split face randomized controlled study comparing injection of autologous fat alone versus autologous fat mixed with platelet rich plasma for age related facial volume deficit especially tear trough deformity; with isolation and characterization of adipose derived stem cells, Dermatology & Venereology
  28. Descriptive epidemiological study of patients with dermatophytic infections attending tertiary care centre in Northern India, Dermatology & Venereology
  29. Comparison of Efficacy of non-cultured extracted hair follicle root sheath cell suspension with noncultured epidermal cell suspension in re-pigmentation of leucotrichia in vitiligo, Dermatology & Venereology
  30. A descriptive study to classify periocular hyperpigmentation based on clinic-investigative profile, Dermatology & Venereology
  31. Estimation of epidermal ceramides in autosomal recessive congenital ichthyosis and its correlation with phenotype and genotype, Dermatology & Venereology
  32. Cross-sectional study to assess autonomic nervous system imbalance and its correlation with cutaneous manifestations in patients with systemic sclerosis, Dermatology & Venereology
  33. Biomarkers for assessment of villous abnormalities in patients with celiac disease and other enteropathies,



#### Gastroenterology & Human Nutrition

34. To Study the diagnostic performance of presepsin in sepsis – A pilot study Medicine
35. Role of N-Terminal pro-BNP and cardiac Troponin-I as a biomarker to predict mortality in patients of sepsis, Medicine
36. Clinical and Biological significance of mutations in mitochondrial DNA in AML, Medical Oncology
37. A study to determine the association of trace elements and heavy metals with lung cancer and their correlation with smoking, Medical Oncology
38. Role of hENT1, RRM1, RRM2 and ERCC1 expression in advanced carcinoma of Gallbladder treated with Gemcitabine—Platinum Doublet, Medical Oncology
39. Three arm phase II/III RCT in patients with unresectable or metastatic GBC with poor performance status by best supportive care vs Erlotiniv vs capcitabine, Medical Oncology
40. Gene expression profile and its correlation with mitochondrial energy metabolism in pediatric AML, Medical Oncology
41. Role of Bone marrow micro-environment in multiple myeloma, Medical Oncology
42. To Study the diagnostic performance of presepsin in sepsis – A pilot study, Medicine
43. Quantitative real time PCR and genotyping for Cytomegalovirus in ulcerative colitis, Microbiology
44. Magnitude of Prosthetic Joint Infections (PJI) and role of amplification based DNA analysis for identifying microbial profile of prosthetic joint infections in a Tertiary Care Hospital, Microbiology
45. Impact of early organism identification by MALDI TOF on antibiotic prescription pattern & clinical outcomes, Microbiology
46. Study on role of intensive physiotherapy and trans cranial magnetic stimulation (TMS) in stroke recovery and the correlation of growth factors with intervention and recovery, Neurology
47. Standardization of dynamic F-18 FDG PET/CT protocol and comparison of whole body F-18 FDG PET CT with whole body diffusion weighted MRI for early treatment response evaluation in non-small cell lung cancer, Nuclear Medicine
48. Understanding the BRB Transponder Functions and Evaluation of Aptamers in the Experimental Model of Uveitis, Ocular Pharmacology, RP Center of Ophthalmic Sciences
49. Developing and validating QSPR model for enhanced penetration of drugs across blood ocular barriers, Ocular Pharmacology, Dr. RP Center of Ophthalmic Sciences
50. A study on the prevalence of polymorphisms in congenital uropathies and their influence on renal functional outcomes, Pediatric Surgery
51. Pharmacological modulation of inflammation in experimental model of Ischemia reperfusion injury in rat heart, Pharmacology
52. Development and validation of a questionnaire for assessing the medication adherence of hypertensive patients in India, Pharmacology
53. Randomized controlled trial to study the efficacy of exercises in early stage Parkinson's disease, Physical Medicine and Rehabilitation
54. Effect of Angiotensin Converting Inhibitor on Autonomic, Vascular and Endothelial function in Type2 Diabetes with newly diagnosed Hypertension, Physiology
55. Role of interventional radiology in obstetric related hemorrhage, Radiodiagnosis
56. A Study of Chronic Respiratory Diseases and Associated Factors among Elderly Persons in a Rural Area of Haryana, Centre for Community Medicine
57. Effect of curcumin on mice basal forebrain structures following arsenic trioxide exposure, Anatomy
58. The effect of candida and antifungal therapy on pro inflammatory cytokines in oral leukoplakia- A pilot study, Center for Dental Education & Research

#### PUBLICATIONS

**Journals: 119**

**Abstracts: 9**

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor RM Pandey** had the following honors and significant events. **Ethics Committee:** Chairperson of Indian Institute of Public Health (Under PHFI), Delhi; Member: United Nations Regional Centre for Biotechnology, Under DBT.

**Coordinator:** Mandatory 5 days workshop on Research Methodology, Writing and Communication, for the PG Students at the AIIMS; **Member:** Scientific Advisory Committee of National Institute of Epidemiology (ICMR); Steering Committee Member of Multi-centric collaborative study of the clinical, biochemical and molecular characterization of Lysosomal storage disorders in India; Expert Committee, Task Force project on Cleft Lip and Palate Anomaly (ICMR); Technical Advisory Group on grand challenges India/Nutrition and Health funded by Bill Milanda Gates Foundation and DBT; Expert Committee to evaluate R&D proposals on the possible impact of IMF Radiation Exposure from Mobile towers and handsets on life and related R&D initiative by DST; Expert Committee on estimation of burden of Pediatric HIV cases in India (ICMR); **Member DSMB:** Community based kangaroo mother care on newborn mortality, coordinated by WHO; **Examiner:** Ph.D. thesis submitted at Delhi University, Delhi; CMC Vellore and Kerala University.

**Professor SN Dwivedi** was **Member:** UGC Nominee, Advisory Committee, Department of Statistics, Calcutta University; National Organizing Committee for the 29th International Population Conference of International Union for Scientific Study of Population(IUSSP), to be held at Hyderabad(2021); Board of Post Graduate Studies in Statistics, Assam University, Silchar; Governing Body, Institute of Applied Statistics and Development Studies, Lucknow; Selection Committee for AIIMS, Patna; Editorial Board for World Journal of Meta Analysis; Expert Committee on Gestational Diabetes Mellitus (GDM), Task Force Committee on Methods and Project Review Committees, for Indian Council of Medical Research; International Epidemiological Association, USA; Fellow, Royal Statistical Society, UK; Committee to review the “Proposal for the Creation of a School of Public Health & Epidemiology” at the AIIMS, New Delhi; Fellowship Committee regarding FSMS Award of Indian Society for Medical Statistics(ISMS); Search Committee for other ISMS awards (Prof SK Bhattacharya Oration, Smt. Ramrati Lalima Sahai Award, Life-time Achievement Award, Prof A Indrayan Travel Grant). Institute Ethics Committee for Post Graduate studies; **Chairman,** Selection Committee, Research Section, AIIMS, Delhi; Project Steering Committee (PSC) for New Task Force study on “Situational Analysis of Health Care Facility and Community Preparedness for Implementing Government of India Guidelines for Gestational Diabetes Mellitus”, of ICMR, New Delhi; Expert Committee to provide opinion to the National Institute of Health and Family Welfare, New Delhi, regarding recruitment rules for the post of Assistant Professor; Chaired an Invited Talk Session at Ramanujan College, University of Delhi, during a National Conference on Emerging Trends in Statistics and Data Sciences; Chaired a technical session on Alternative Ways to manage Cancer during 8<sup>th</sup> International Translational Cancer Research Conference in BHU, Varanasi; One of the Panelists for discussion on Consensus and Controversies of Medical Research in Clinical Practice in a Oncology Forum Academic Meeting at New Delhi; External Examiner to evaluate Ph.D. thesis for award of Ph.D. Degree in Statistics of University of Jammu, Jammu; Statistical Editor, Indian Journal of child Health; Editor, Demography India; Editorial Board Member, Biostatistics and Biometrics Open Access Journal; Reviewer for World Journal of Surgical Oncology; Reviewer, American Journal of Public Health; Reviewer, “Pediatrics, American Academy of Pediatrics”; Reviewer, International Society for Clinical Biostatistics; Systematic Reviews; International Journal of Educational Research and Reviews; Member, Editorial Board of Indian Spine Journal; Member, Reviewer, Indian Journal of Medical Research; Member, International Society for Clinical Biostatistics; Elected Member, International Statistical Institute, & International Association for Statistical Education, Netherlands; Founder Vice-President, Society for Evidence Based Health Care; Advisor for two Ph.D. students, University of Delhi.

**Professor V Sreenivas** was **Member:** Scientific Advisory Committee (SAC) of the National Institute for Cancer Prevention & Research, ICMR; Assessment Board for promoting the Scientists of the Indian Council of Medical Research; Task Force Committees of ICMR on Neurology, Studies on sleep disorders and DM with traditional medicines, Polycystic Ovarian Disease, Male contraceptive RISUG trial; Selection Committees & Screening Committees for various posts, ICMR; Project Review Committees of Neurology, Indian Council of Medical Research, Dept. of Health Research, India. Statistical Consultant to the Indian Journal of Dermatology and Venereal Diseases (IJDVL); Biostatistics Reviewer for Journal of Clinical Oncology (American Society for Clinical Oncology), Pediatrics (American Academy of Pediatrics), Indian Journal of Dermatology, Venereology and Leprology, and Indian Pediatrics; Statistical Consultant to the Journal of Indian Association of Child and Adult Mental Health (JIACAM); Expert for Reviewing the Research proposals, Medical Research Council, UK.; Institutional Ethics Committee, AIIMS; Subject Expert, Selection Committee for the selection of Biostatistics Faculty, Banaras Hindu University, Varanasi.

**Dr Maroof A Khan** was Editorial Board Member (Biostatistics)-International Journal of Scientific Reports; Scientific reviewer of Indian Journal of Medical Research, India; Scientific reviewer of Journal of Model Assisted Statistics & Applications, USA; Scientific reviewer of Journal of Obesity, UK; Scientific reviewer of Journal of Biomedical research, UK etc.

**Dr Shivam Pandey** was invited as a Resource Person for two & half days workshop on Introduction to Statistical Methods, at Anti-Doping Laboratory Qatar (ADLQ), Doha, Qatar.



## 9.7. Biotechnology

### Professor and Head

Jaya S Tyagi (up to 31 May 2019)

Shyam S Chauhan (from 1 June 2019)

### NASI Senior Scientist, Platinum Jubilee Fellow

Jaya S Tyagi (from June 2019 onwards)

### Associate Professor

Anushree Gupta

### Assistant Professors

Rupesh Kumar Srivastava  
Sirish Kumar Ippagunta

Bhupendra Kumar Verma  
Sumit Rathore  
Vineet Choudhary

Vikram Saini  
Mahendra Seervi

### Scientist

Shrabani Saugandhika

## HIGHLIGHTS



1. Professor Jaya S Tyagi, Chairperson, CCRF being felicitated by the AIIMS director.
2. Ms Kiran Kumari, PhD student, receiving first prize for CCRF logo designing from AIIMS director.
3. Osteoimmunology group of Dr Rupesh Kumar Srivastava, celebrating 25th anniversary of the journal 'Immunity', was featured on the journal cover page.
4. Dr Vikram Saini with Nobel laureate Dr Venki Ramakrishnan and other dignitaries during CCRF-BSL3 inauguration.
5. Ms. Leena Sapra, PhD student, receiving first prize for poster presentation at the FIMSA-IUIS-IIS International conference at Jaipur.
6. Dr Saurabh Sharma receiving JBC poster award at India-EMBO TB symposium 2020 at New Delhi.

The departmental faculty served as experts in several scientific committees of various institutes and universities of the Government of India. The department also started student mentorship and career awareness program, to cater the needs of students from diverse backgrounds.

## EDUCATION

### Postgraduate Teaching

- The Department conducts a 2 year postgraduate course in Biotechnology with emphasis on Medical Biotechnology leading to MBiotech degree. The teaching program covers 16 subjects, namely Cell and Developmental Biology, Genetics, Human Biochemistry, Medical Microbiology, Immunology & Immunotechnology, Molecular Biology, Infectious Disease Biology, Genetic Engineering & Genome Technology, Biophysics (Principles, Techniques & Applications in Medicine), Bioinformatics, OMICS (Genomics, Transcriptomics, Proteomics & Metabolomics), Biostatistics, Seminars in Laboratory Techniques (Principles & Instrumentation), Medical Biotechnology (Journal Club & Communication Skills), Seminars in Molecular Medicine & Biotechnology and Dissertation in frontier areas of medical research.
- The Department has introduced three five new credit courses in the course curriculum of M. Biotechnology (2019-2021) namely, Infectious Disease Biology, OMICS: Genomics, Transcriptomics, Proteomics, and Metabolomics, Intellectual Property Rights, Bioethics and Biosafety (IBB), Molecular Diagnostics and Clinical Biochemistry (MDB) and Laboratory course on Medical Microbiology and Infectious Disease Biology”.
- Students are given individual attention and extensive hands on training in Practical classes.
- Experts are invited from PGIMER, JNU, IGIB, ICGEB, NII, IIT, THSTI, RCB, BCIL, TERI, Jamia Hamdard and University of Delhi in addition to AIIMS faculty from various specialties, to deliver seminars in biotechnology, bioinformatics, molecular medicine, genomics, proteomics etc.
- The Department conducts a Ph.D. program in the area of Medical Biotechnology.
- The Department mentors and supports young Scientists having DBT and DST National Post-Doctoral and Young Scientist award.

### CMEs/Workshops/Symposia/National and International Conferences

1. One day Workshop on single-cell capture workflow using BD Rhapsody single-cell analysis platform, 30 July 2019, Drs Rupesh K Srivastava and Bhupendra K Verma
2. Two-day workshop on Imaging techniques 24-25 May 2019, Dr. Bhupendra K Verma

### Lectures delivered

**Shyam Chauhan** (please see 9.3 Biochemistry)

**Anushree Gupta: 1**

**Bhupendra Kumar Verma: 3**

**Sirish Kumar Ippagunta: 1**

**Mahendra Seervi: 1**

**Jaya S. Tyagi: 1**

**Rupesh Kumar Srivastava: 5**

**Vikram Saini: 7**

**Sumit Rathore: 2**

**Vineet Choudhary: 1**

**Oral papers/posters presented: 23** (Dr Saurabh Sharma received JBC Young Emerging Scientist Best Poster Award’ at “India-EMBO TB symposium 2020-Mycobacterial Heterogeneity and host tissue tropism”; Young Researcher Award to Dr Priya Kalra (2nd prize in poster presentation).

## RESEARCH

### Funded projects

#### *Ongoing*

1. Combating the challenge of antibiotic tolerance: Combining conventional anti-tubercular drugs with DevR dormancy regulator-targeted approaches for improving M. tuberculosis clearance. \*Vikram Saini/Jaya S. Tyagi, DBT, 3 years, 2018-2021, Rs 47.30 lakhs
2. Aptamer-based Tuberculosis Diagnostics Toolbox. \*Vikram Saini/Jaya S. Tyagi, DBT, 3 years, 2018-2021, Rs 16.52 lakhs
3. Elucidation of Cellular mechanisms involving GUT resident regulatory T cells in Probiotics mediated inhibition of Osteoporosis, Rupesh K. Srivastava, DST-SERB, 3 years, 2018-2021, Rs 65 lakhs

4. Development of novel mushroom based synbiotic food supplement for management of Osteoporosis, Rupesh K. Srivastava, AIIMS-IIT-Delhi Inter Institutional Collaborative Research Grant, 2 years, 2019-2021, Rs 20 lakhs
5. Identification and functional characterization of tRNA derived RNA fragments in DENV pathogenesis, Bhupendra K. Verma, DST-SERB, 3 years, 2019-2022, Rs 39.41 lakhs
6. HarGobind Khorana Innovative Young Biotechnologist Award (IYBA), Department of Biotechnology, Govt. of India, Vikram Saini, DBT, 3 years, 2019-2022, Rs 59.06 lakhs
7. Modulation of host bioenergetics health and redox function via Selenium supplementation as a novel approach to tuberculosis management, Vikram Saini, DST-SERB, 3 years, 2019-2022, Rs 53.85 lakhs
8. Characterization of L, D-transpeptidases from Mycobacterium abscessus: An Emerging Opportunist Pathogen, Vikram Saini (Mentor to Dr Namrata Kushwaha Woman Scientist) DHR, 3 years, 2020-2023, Rs 30.9 lakhs
9. Probing the biology of Toll-like receptor and Interleukin-1 Receptor in peripheral blood mononuclear cells of healthy donors using novel small molecule inhibitor, Sirish Kumar Ippagunta, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
10. Exploring the immunomodulatory activities of novel Toll-like receptor-signaling inhibitors in peripheral blood mononuclear cells from lupus patients: A study to identify TLRs as drug targets for lupus, Sirish Kumar Ippagunta, SERB, 3 years, 2020-2023, Rs 68.01 lakhs
11. Characterization of Parasite ligand-host receptor interactions in Plasmodium vivax infections, Sumit Rathore, ICMR, 3 years, 2019-2022, Rs 65 lakhs
12. Circulating miRNA in Plasmodium vivax severe malaria, Sumit Rathore, AIIMS, 2 years, 2019-2021, Rs 10 lakhs

\*PI since 1 June 2019 upon superannuation of Dr Jaya S. Tyagi

#### **Completed**

1. To Dissect the role of Treg-Th17 cells in Lactobacillus rhamnosus mediated inhibition of Bone loss in ovx mice, Rupesh K Srivastava, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
2. Novel gene regulatory circuits associated with Dengue Virus: Exploring therapeutic potential. Bhupendra K. Verma, AIIMS, 2 years, 2018-2020, Rs 9.9 lakhs
3. Selenium supplementation and mycobacterial infections. Vikram Saini, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
4. To understand organelle dynamics in malaria parasite-Role of Autophagy. Sumit Rathore, DST, 5 years, 2013-2018, Rs 35 lakhs
5. Mechanism of anastasis in cancer cells: Its impact in disease relapse and therapy. Mahendra Seervi, DST-SERB Young Scientist, 3 years, 2016-2019, Rs 26 lakhs
6. To study the role of High salt Diet (HSD) in male fertility: Role of bone hormone osteocalcin. Shrabani Saugandhika, AIIMS, 2 years, 2017-2019, Rs 10 lakhs

#### **Departmental projects**

##### **Ongoing**

1. Cellular and Immunomodulatory Functions of Dipeptidyl peptidase III in Esophageal Cancer
2. Cysteine Cathepsins in Acute Lymphoblastic Leukemia: Implication(s) in Prognosis and Therapeutics
3. Role of Prothymosin alpha in Glial tumorigenesis
4. Role of Human Heterogeneous Nuclear Ribonucleoprotein D (hnRNPD) in Oral Cancer
5. Adaptation of Mycobacterium tuberculosis and infected host in vitamin C dormancy model.
6. Analysis of host transcriptional response to Mycobacterium tuberculosis in vitamin C ex vivo model of infection and comparison with clinical responses in active TB and latent TB infection.
7. To study the role of Bifidobacterium longum in modulating Bone Health via regulating the host Osteo-immune system
8. To study the effect of Sodium Benzoate (NaB) in regulating Bone Health via modulating the host Immune System
9. Characterizing pre-mRNA splicing in context of Dengue virus
10. Characterization of functional interaction between minor spliceosome and polyadenylation machinery

11. Analyzing the effect of novel small molecule antagonist on cell surface toll-like receptor-induced pro-inflammatory cytokine expression in healthy peripheral blood mononuclear cells.
12. Analyzing the effect of novel small molecule antagonist on endosomal toll-like receptor-induced pro-inflammatory cytokine expression in healthy peripheral blood mononuclear cells.
13. Surface Proteomics of Reticulocytes in Plasmodium vivax severe malaria patients
14. To study the effect of physiological gases on metal homeostasis in microbes
15. Development of Strategies for an Efficient Expression and Purification of proteins of Mycobacterium indicus pranii
16. Identification of interacting proteins of Plasmodium vivax Tryptophan Rich Antigen 26.3 (PvTRAg26.3) with erythrocyte surface

### ***Completed***

1. Elucidation of Molecular Mechanism of Differential Expression of Cathepsin B in Breast Cancer Cells with Different Metastatic Potential
2. To assess the potential utility of Cathepsin L and Cathepsin B as universal biomarker for cancer
3. Human Heterogenous Ribonucleoprotein D (hnRNPD) mediated post transcriptional regulation of Phosphatase and Tensin homolog (PTEN) in oral cancer
4. The Expression and Clinical Significance of Serum microRNAs in Human Gallbladder Cancer
5. Insights into transcriptional factors that co-regulate the Mycobacterium tuberculosis adaptation response to Vitamin C
6. Theranostic Application of a Novel G-Quadruplex-Forming DNA Aptamer Targeting Malate Synthase of Mycobacterium tuberculosis
7. To study the nexus between probiotic Lactobacillus rhamnosus (LR) and T cell lineages in Ovx mice
8. To dissect the role of TH17-Treg cells in Microcystin-LR induced bone loss
9. Functional characterization of minor spliceosomal proteins
10. Role of YBX proteins in RNA splicing and stability
11. Impact of micro-nutrient supplementation of microbial infections
12. Cloning, expression and purification of putative antigenic proteins of Mycobacterium indicus pranii

### **Collaborative projects**

#### ***Ongoing***

1. A study of epigenetics of Breast cancer by evaluation of tissue site-specific Promoter DNA methylation profiles in Breast Cancer, Surgical Disciplines
2. Expression of Reg-4 and MUC-4 in patients with carcinoma of pancreas, Gastroenterology
3. miRNA as biomarker in chronic pancreatitis patients who are at high risk for developing pancreatic cancer, Gastroenterology
4. Role of miRNA mediated modulation of signal transduction in pancreatic cancer, Gastroenterology
5. Role of Th9 cells in Osteoclastogenesis, THSTI, Faridabad
6. Role of BPA on Bone health, Delhi University
7. Development of novel mushroom based synbiotic food supplement for management of Osteoporosis, IIT-Delhi
8. Role of Immune system in Pancreatitis, Gastroenterology
9. Expression profile of tRNA-derived fragments in T-lineage acute lymphoblastic leukemia, IRCH
10. Minor spliceosomal & Dengue, THSTI, Faridabad
11. YBX proteins in RNA splicing and stability, THSTI, Faridabad
12. Clinical significance of cancer stem cells markers and its proteins in different grades astrocytomas, Biotechnology and RP Centre
13. Exploring the Tryptophan metabolism via Kynurenine pathway and their correlation with clinical outcome in Keratoconus and Fuch's endothelial corneal dystrophy patients undergoing corneal transplantation, RP Centre
14. Link between mitochondrial morphology and mitochondrial biogenesis in Acute lymphoblastic leukemia, Biochemistry
15. To study the role of iPSC derived hematopoietic progenitor cells for hematopoietic failure among trauma Hemorrhagic shock using animal model, Emergency Medicine

## Completed

1. miRNA as evaluation Biomarker for tuberculosis treatment response, ICGEB New Delhi, and InStem Bangalore

## PUBLICATIONS

**Journals: 17   Abstracts: 2   Chapters in Books: 2**

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Shyam S Chauhan** (please see 9.3 Biochemistry)

**Professor Jaya S Tyagi** is recipient of NASI Senior Scientist Platinum Jubilee Fellowship. She is Honorary Visiting Professor, THSTI, Faridabad, Fellow of Indian National Science Academy, Fellow of Indian Academy of Sciences, Fellow of National Academy of Sciences (India), Member of Guha Research Conference, Vice-President and Council member of National Academy of Sciences (India), Member, Panel on Scientific Values, Indian Academy of Sciences, Bengaluru, Member of Scientific Advisory Committee of National Institute for Research in Tuberculosis, Chennai, Member of Scientific Advisory Committee of THSTI, Member of RAP-SAC of National Institute of Immunology and Centre for DNA Fingerprinting and Diagnostics, Member of DBT Expert Group on Tuberculosis, Member of DBT Steering Committee and Task Force on HRD, Member of DBT Technical Evaluation Committee for Infectious Disease Biology, Member of DBT Technical Evaluation Committee in Medical Biotechnology-II for NER, Chairperson, Institutional Human Ethics Committee of IGIB, Special invitee, Intellectual Property Management Committee, AIIMS.

**Dr Anushree Gupta** is Central public Information Officer for the Department of Biotechnology, Bioinformatics course Coordinator, Attended one-week short Faculty Development Programme on “Computational Biology and Translational Bioinformatics” at IIT Roorkee from 30 September-4 October 2019.

**Dr Rupesh Srivastava.** Coordinator of departmental M. Biotech Program, Received Certificate of Appreciation by AIIMS for contribution towards establishing CCRF-Flow Facility at AIIMS-CCRF, Inauguration on January 24th, 2020, Member of Institutional IPR committee and Institutional CCRF-FLOW Cytometry committee, Invited Editor: 24th issue of the Indian Society for the Study of Reproduction and Fertility (ISSRF) Newsletter on “Translational Research in Reproductive Health” (ISSN 2395-2806), September 2019, Member of Institutional COVID-19 literature appraisal committee, his Osteoimmunology laboratory is part of the #Immunity Community that was featured as mosaic cover on the occasion of 25th anniversary of the journal ‘Immunity’, Ms Leena Sapra, PhD Scholar from this laboratory has received travel award and also won first prize for Oral presentation at FIMSA-IUIS-IIS, International conference, 12 to 16 October 2019 at Rajasthan University of Health Sciences (RUHS), Jaipur, India, Ms Asha Bhardwaj and Mr Zaffar Azam, PhD Scholars from this laboratory have received travel award Travel Award (PhD Scholar-) to be able to attend FIMSA-IUIS-IIS, International conference, 12 to 16 October 2019 at Rajasthan University of Health Sciences (RUHS), Jaipur, India.

**Dr Bhupendra Kumar Verma.** Departmental M Biotech Program Coordinator. Member, Institute “CoViD 19 diagnostic management committee”. Member, Institute “CoViD 19 Literature appraisal committee” for “Immunology, Molecular Biology and Vaccine Development”.

**Dr Vikram Saini** is the recipient of Har Gobind Khorana Innovative Young Biotechnologist Award (IYBA), Department of Biotechnology, India (2018-19). He was invited speaker for the distinguished “Overseas Friends of ICDDR” series at the International Centre for Diarrhoeal Disease Research (ICDDR), Dhaka, Bangladesh (16-17 September 2019). He was facilitated by Govt of Haryana state for contribution in education on 73rd Independence day of India. He is involved in several initiative at AIIMS including being the Convener of PPE Decontamination and Re-use committee for Covid-19, Member Secretary of Institutional Covid-19 Diagnostic Committee, Member of Central Resource Committee, Member of Selection of PPE usage at the AIIMS, New Delhi during Covid-19, Member of Institutional Biosafety Committee (IBSC), AIIMS, Core Committee member CCRF, Expert Member of CCRF-Biosafety Lab (BSL-2 and BSL-3 laboratory) sub-committee, AIIMS, Expert Member of technical Committee for nude-mice/Transgenic mice facility and A-BSL3 facility at Central Animal Facility, AIIMS, coordinator of Career awareness program in Biotechnology at Dept. of Biotechnology, AIIMS. In addition, Dr. Saini serves as the review editor at journal Frontiers in Microbiology.

## VISITING SCIENTISTS

1. Dr Pawan K Dhar, Professor, JNU, New Delhi delivered seminar on 24 February 20.
2. Dr Sunil K Arora, Professor, PGI Chandigarh delivered seminar on 26 February 20.
3. Dr Amit Awasthi, Associate professor, THSTI, Faridabad delivered seminar on 26 February 20.
4. Dr Gobardhan Das, Professor, JNU, delivered seminar on 2 March 20.
5. Dr Rahul Pal, Scientist, NII, New Delhi delivered seminar on 4 March 20.
6. Dr Neel S Bhavesh, Scientist, ICGEB, New Delhi delivered seminar on 4 March 20.



7. Dr V Perumal, Associate professor, IIT, New Delhi delivered seminar on 5 March 20.
8. Dr Rita Singh, Professor, DU, New Delhi delivered seminar on 6 March 20.
9. Dr Sagar Sen Gupta, Scientist, NII, New Delhi delivered seminar on 11 March 20.
10. Dr Manidipa Banerjee, Associate Professor, IIT, New Delhi delivered seminar on 12 March 20.
11. Dr Debi Sarkar, Professor, DU, New Delhi delivered seminar on 13 March 20.
12. Dr Manjula Kalia, Associate Professor, RCB, Faridabad delivered seminar on 13 March 20.
13. Dr Shankar Bhattacharya, Scientist, THSTI, Faridabad delivered seminar on 14 March 20.

## 9.8 Centre for Community Medicine

### Professor and Head

Shashi Kant

### Professors

Sanjeev Kumar Gupta  
Baridalyne Nongkynrih

Kiran Goswami  
Puneet Misra  
YS Kusuma Kumari

Anand Krishnan  
Sanjay Kumar Rai

### Additional Professors

Kapil Yadav

Sumit Malhotra

Anil Kumar Goswami

### Associate Professors

Partha Halder  
Harshal Ramesh Salve

Ravneet Kaur  
Rakesh Kumar

### Assistant Professor

Mohan Lal Bairwa

### HIGHLIGHTS

Community based teaching, research and service provision has been the focus of faculty and staff housed within Centre for Community Medicine (CCM), at AIIMS, New Delhi. Strong outreach programmes and models of care are rendered through Urban Field Practice Area (at Dakshin Puri Extension, New Delhi) and Comprehensive Rural Health Services Project (CRHSP), Ballabgarh. Inputs are provided to several of national health programmes and initiatives of Government of India.

1. The department is designated as the National Centre of Excellence and Advanced Research on Anemia control (NCEAR-A) and spearheads *Anemia Mukht Bharat* in the country with support of several stakeholders.
2. The CCM serves as National Institute for HIV surveillance and supports National AIDS Control Organization (NACO), Government of India.
3. The department houses WHO Collaborating Centre for Research and Capacity Building on Community-based Non Communicable Diseases (NCD) Prevention and Control.
4. Mortality surveillance in the country is strengthened through AIIMS Technical support unit for SRS (Sample Registration System) based verbal autopsy in collaboration with RGI (Registrar General of India), Ministry of Home Affairs and network of institutions (MINERVA).
5. Support to Comprehensive Primary Health Care (CPHC), under Ayushman Bharat, is nurtured through an Innovation and Learning Centre that provides technical strengthening to Health and Wellness Centres (HWCs) in aspirational district, Nuh, Haryana.
6. Health promotion and focus on community level engagement in Yoga is supported in field practice area.
7. Collaborative international research projects are executed on influenza with CDC and air pollution with Health Effects Institute, USA.

The department organized “64th Annual National Conference of Indian Public Health Association (IPHA)” at AIIMS, New Delhi from 29 February to 2 March 2020 that was attended by more than 1100 national and international public health delegates.

### EDUCATION

#### *Undergraduate MBBS students*

MBBS students are oriented to community-based practice through several opportunities and postings. Students in 4th and 5th semesters participate in urban based structured program and Family Health Advisory Services (FHAS), wherein families are allocated to them. They also are exposed to community-based research wherein research projects are undertaken by them both in urban and rural postings. During their 7th semester they are posted at CRHSP Ballabgarh, in four batches for six weeks each. This is a residential posting wherein they are taught concepts of epidemiology, are given an orientation to community health, including social determinants of health, community aspects of child health and mental health,

health systems at various levels, and health programmes. There are special modules to train on Integrated Management of Neonatal and Childhood Illness (IMNCI) and epidemiology. The students also undertake a brief qualitative method-based research project under module Orientation of Undergraduates to Community Health (OUCH) during this posting. Postings are concluded with internal formative assessments.

### ***Interns***

The interns are posted for a total duration of three months at the CRHSP Ballabgarh. This period is divided into six weeks at SDH, and 3 weeks at each of the PHCs located at Dayalpur and Chhainsa. The entire posting is residential. At Sub District Hospital (SDH), interns are posted in OPD and Wards that help them in learning basic clinical skills, as well as in-patient management, including conducting normal deliveries. They are rotated in all the available clinical disciplines at SDH under the supervision of respective Senior Resident (SR). During PHC posting, interns participate in health care delivery at the clinics of PHC, sub-centres as well as in antenatal clinics. They are also posted at the delivery hut at each PHC under overall supervision of SR of Community Medicine. They get experience in community level activities such as supervision of health workers, follow-up of patients that have defaulted while on anti-tuberculosis treatment, supervision of sub-centres, undertaking outreach activities, immunization and other ongoing activities at the PHC. Interns are also involved in special activities at PHCs such as Kayakalp assessment, annual census, public awareness generation and school health related activities. At the end of the CRHSP posting interns submit their log-book duly signed by respective SRs under whom they were posted for end posting assessment.

### ***Postgraduate students of Community Medicine***

The postgraduate students of Community Medicine are posted at CRHSP Ballabgarh for 18 months. This posting is residential. Out of the total duration, they spend 5 months and 10 days each, at the sub-district hospital and both PHCs on a rotation. This gives them adequate opportunity to gain the necessary skills and experiences both at the SDH and PHC. They are encouraged to take active participation in decision making and administration at the PHC. The regular teaching programme includes seminars, family and clinical case presentations, problem exercises based on hospital and field-practice area. Rest of the posting is in urban field practice area.

### ***BSc Nursing and Post certificate Nursing Students***

BSc nursing students and post certificate nursing students are posted for one and half months at CRHSP Ballabgarh. This posting is residential in nature. They spend one month at SDH and two weeks in either of the two PHCs. They are provided training in antenatal care, management of ward, and immunization. They are posted both in OPD and in Ward. They provide health talks, and IEC in OPD, and ward. Training of nursing students is supervised by a Faculty Member from the College of Nursing, AIIMS, New Delhi.

### ***In-service Training***

In addition to teaching of students, periodic in-service trainings were conducted for different cadres of staff working at the CRHSP Ballabgarh. The trainings conducted during 2019-20 were as following:

1. A refresher training on Neonatal Resuscitation for nursing staff and field health workers of the intensive field practice area was conducted on February 2020, in collaboration with Faculty members of the College of Nursing.
2. A total of 50 hours of in-service training for Health Workers and ASHA workers (24\*2=48) were conducted at PHC Dayalpur and Chhainsa (figures are inclusive). These are conducted during the meetings, each month. Topics were decided based on the training needs identified during field supervision; for the reporting period, these were as following: identification of JSY beneficiaries and facilitating them to avail benefit, management of animal bite cases, management of LBW babies, family planning - methods, importance and how to improve coverage, management of biomedical waste management, Tracking of High Risk Pregnancy and management, postnatal care for mother and newborn including complication management and kangaroo mother care, IMNCI-Identification and management of sick baby, identification, care and management of malnutrition at field level, Training on cold chain management PHC to immunization site and back to PHC, Diagnosis and management of TB cases.

### ***CMEs/Workshops/Symposia/National and International Conferences***

1. Workshop for Operational Framework of Behavioral Surveillance Survey Lite (BSS Lite-2019-2020), 4-5 April 2019, AIIMS, New Delhi.
2. INSPIRE Collaborators Meeting, 25-27 April 2019, Kolkata
3. National training of trainer workshop for BSS Lite, 20-23 May 2019, Gurugram, Haryana.
4. A Training programme on the use of "Larvicide and Insecticides", 23 July 2019, AIIMS, New Delhi
5. Centralized Training for Sampling Frame Development for BSS Lite for Central team members, 17-20 August 2019, Gurugram, Haryana.
6. INSPIRE Collaborators Annual Meeting 22-23 October 2019, Delhi

7. Workshop on “Operational research” on (pre-conference workshop during 23rd Annual Conference of North Zone Indian Association of Preventive and Social Medicine-2019), 1 November 2019, Nuh, Haryana
8. MINerVA Network and Technical Advisory Group meeting, 8 and 9 November 2019, Delhi
9. International Workshop on “Priorities for Advancing Research on Health Effects of Air Pollution in India”, 2-4 December 2019, AIIMS, New Delhi
10. Centralized training of Trainers for BSS Lite (Main Survey), 9-12 December 2019 AIIMS, New Delhi.
11. Following Pre-and post-conference workshops were organized by the department as part of 64th Annual National Conference of Indian Public Health Association, (29 February-2 March 2020)
  - a. Writing a research paper (Venue: AIIMS, New Delhi)
  - b. Leadership skills for public health professionals (Venue: AIIMS, New Delhi)
  - c. From evidence (Meta-Analysis) to public health (Venue: AIIMS, New Delhi)
  - d. Disaster Management- (Venue: NIHF, Munirka)
  - e. Yoga for stress management (Venue: Morarji Desai National Institute of Yoga)
  - f. Efficient Quality-assured Mobile Based Data Capture (Venue: CRHSP, Ballabgarh)

#### Lectures delivered

<b>Shashi Kant: 1</b>	<b>Kiran Goswami: 4</b>	<b>Anand Krishnan: 11</b>
<b>Baridalyne Nongkynrih: 6</b>	<b>Puneet Misra: 6</b>	<b>Sanjay K Rai: 3</b>
<b>YS Kusuma Kumari: 1</b>	<b>Kapil Yadav: 1</b>	<b>Sumit Malhotra: 11</b>
<b>Anil Kumar Goswami: 10</b>	<b>Ravneet Kaur: 7</b>	<b>Harshal Ramesh Salve: 10</b>
<b>Rakesh Kumar: 2</b>	<b>Mohan Lal Bairwa: 2</b>	

**Oral papers/posters presented: 15 (\* Best paper award, \*\* Second best paper award)**

#### RESEARCH

##### Funded projects

##### *Ongoing*

1. National Centre of Excellence and Advanced Research on Anemia Control, Shashi Kant, UNICEF, 2 years, 2018-2020, Rs 1.8 crores
2. Strengthening/Promoting evidence-based advocacy for influenza prevention and control in India, Anand Krishnan, CDC, Atlanta, 5 years, 2018-23, Rs 8.1 crores
3. Establishing a technical support unit for Verbal Autopsy based cause of death ascertainment in the sample registration system, Anand Krishnan, Registrar General of India, 3 years, 2017-2020, Rs 2.8 crores
4. Development of training course for NCD programme managers and directors for enhancing managerial and leadership skills for NCD, multisectoral governance and coordination, Anand Krishnan, WHO-SEARO, 6 months, 2019, Rs 7 lakhs
5. Effect of structured yoga program on hypertension, diabetes, stress and wellness in a community setting, its feasibility and long-term sustainability, Puneet Misra, DST, 1 year, 2018-19, Rs 40 lakhs
6. HIV Sentinel Surveillance NI and RI, Sanjay Rai, NACO, MoHFW, GoI, 2 years, 2018-2020, Rs 234.44 lakhs
7. Improving healthcare access and quality in the context of achieving universal health coverage among scheduled tribes: An implementation research in Visakhapatnam district, Andhra Pradesh, YS Kusuma, ICMR, 2.5 years, 2020-2022, Rs 29.2 lakhs
8. Assessment of Iodine status amongst pregnant women in select district of India, Kapil Yadav, ICMR, 2.5 years, 2016-20, Rs 57.6 lakhs
9. Effectiveness of point of care testing by front line workers-ANM, AWW, and ASHA in anemia control, Kapil Yadav, ICMR, 2 years, 2020-22, Rs 98.49 lakhs
10. Human Resource Development Health Research Scheme-Operational Research, Sumit Malhotra, DHR, 7 years, 2014-2021, Rs 56 lakhs
11. Innovation Learning Centre for supporting implementation of Comprehensive Primary Health Care in a selected district of Haryana, Sumit Malhotra, National Health Systems Resource Centre (NHSRC), MoHFW, 2 years, 2018-2020, Rs 41.45 lakhs
12. Assessment of implementation and barriers related to weekly iron folic acid supplementation programme in out of school adolescents within National Territory of Delhi, Sumit Malhotra, Delhi State Health Mission, Department of Health and Family Welfare, Government of NCT of Delhi, 2 years, 2018-2020, Rs 16 lakhs

13. A study to understand the effectiveness of the tele-mentoring Extension for Community Healthcare Outcomes model in improving ASHA's knowledge, skills and practice in comprehensive health care in Nuh district, Haryana, Sumit Malhotra, ECHO India, 1 year, 2019-20, Rs 21.75 lakhs
14. Prevalence of Anemia residing in Resettlement Delhi an Urban Colony of among elderly persons, Anil K. Goswami, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
15. Nutritional status of pregnant women as assessed by nutrient intake, anthropometry and selected serum biomarkers in an urban area of Delhi – A community-based study, Ravneet Kaur, AIIMS, 2 years, 2019-21, Rs 8.25 lakhs
16. Comparative assessment of various models of Mobile Medical Units in rural, and remote areas, Ravneet Kaur, NHSRC, MoHFW, 2 years, 2019-20, Rs 25 lakhs
17. Developing Community level Climate based Early Warning System (CCEWS) for Vector
18. Borne Diseases in National Capital Region, India, Harshal Salve, Climate Change Program (SPLICE), DST, 3 years, 2017–2020, Rs 55.62 lakhs
19. Mortality burden of ambient PM 2.5 exposure in Delhi NCR, Harshal Salve, AIIMS–IIT Joint Collaborative Project Grant, 2 years, 2018-2020, Rs 8.9 lakhs
20. Pilot study on implementation of screening and management protocol for COPD/ Asthma under NPCDS in rural North India, Harshal Salve, NCDC, 6 months, 2019-2020, Rs 0.4 lakhs
21. Priorities for Advancing Research on Health Effects of Air Pollution in India, Harshal Salve, Health Effects Institute, Boston USA, 5 months, 2019-2020, Rs 19.93 lakhs
22. Effect of glycemic status on initial presentation and treatment response in newly diagnosed sputum positive pulmonary tuberculosis patients: A prospective study, Rakesh Kumar, AIIMS, 2 years, 2019-2021, Rs 9.85 lakhs

### **Completed**

1. Development implementation evaluation of social, and behaviour change communication (SBCC) strategy for the prevention and control of dengue in slums and slum like pockets in Delhi, Y Kusuma, ICMR & ICSSR, 2 years, 2017-19, Rs 17.8 lakhs
2. Development of assessment tools for review of National Programme for Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), Baridalyne N, WHO-India, 6 months, 2019, Rs 15.04 lakhs
3. Development of tool for intervention at School level using WHO advocated Health promoting School for addressing NCD Risk factors, Harshal R Salve, WHO-SEARO, 6 months, 2018–2019, Rs 6.28 lakhs

### **Departmental projects**

#### **Ongoing**

1. Prevalence of GDM among Pregnant Woman attending ANC in a secondary care health facility in Haryana, India: A hospital-based study
2. Assessment of select nutritional problems among adolescent girls in an urban resettlement colony, New Delhi- A mixed method study
3. Knowledge and self-efficacy about diabetes management and its association with diabetes control in a low Socio-economic community in urban Delhi
4. Dietary diversity and associated factors among women of reproductive age in an urban resettlement colony in Delhi
5. Consumption of High Fat, Salt, Sugar (HFSS) food among adolescents in rural Haryana, India
6. Health and nutrition behavior needs assessment of community-based youth in north India.
7. Depressive disorders among adolescents in Ballabgarh, Haryana, India: a community-based cross- sectional study.
8. Evaluation of coverage of population-based screening under National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) using Lot Quality Assessment Sampling (LQAS) technique in Faridabad District, Haryana.
9. Mild cognitive impairment and associated factors among elderly persons in an urban resettlement colony in Delhi.
10. Diabetes and hypertension among elderly persons in an urban resettlement colony of Delhi.
11. Prevalence of anemia among elderly persons in a resettlement colony of Delhi.
12. Impaired lung function among patients successfully treated for pulmonary tuberculosis at Ballabgarh Tuberculosis Unit, district Faridabad, Haryana
13. Economic burden, prevention and control of pneumonia among elderly
14. Relevance and capture of narratives in verbal autopsies for cause of death
15. Patterns and determinants of cooking fuel use and barriers to adoption of Pradhan Mantri Ujjwala Yojana in rural Ballabgarh, Haryana - A mixed method study

16. Development of a scale to measure e-Health Literacy among college going students aged 18-24 years (English version) in Faridabad, India
17. Determinants of treatment default in TB patients in a rural community of north India: A community based mixed method study
18. Feasibility of implementation of hospital based trauma registry for road traffic injuries at different level of health care setting and its effect on quality of patient care
19. Community based operational research study on involvement of ASHA in strengthening of primary eye care services for urban vulnerable population of Delhi
20. Community based operational research feasibility of introducing yoga and its effect on stress and perceived well-being on new medical undergraduate students of AIIMS, New Delhi.
21. Evaluation of anemia control programme in district Faridabad of Haryana: A mixed method study
22. Common Mental disorders and related mental health literacy among adolescents in an urban area of Delhi
23. A cross sectional study to assess the financial toxicity and non-compliance with its associated selected background variables among patients undergoing chemotherapy at IRCH, AIIMS New Delhi
24. A study to identify the risk factors and prevalence of oral cancer through screening among security personnel working at AIIMS, New Delhi.”
25. Impact of Comprehensive Nutritional Package (CNP) on Nutritional Status of Under-Five Malnourished Children at secondary care hospital in Ballabgarh, Haryana
26. A study to assess knowledge and practices of postnatal mothers on essential newborn care and evaluate competencies of trained ASHAs in home based newborn care in rural Haryana
27. Iron status of women who had received intravenous iron sucrose during pregnancy for treatment of moderate anaemia; 6 and 12 months post infusion

#### ***Completed***

1. Effect of structured Yoga program on Stress and Professional Quality of Life among selected nursing staff in a tertiary care hospital of Delhi - A small scale phase-2 trial
2. A study of chronic respiratory diseases and associated factors among elderly persons in a rural area of Haryana
3. Study of knowledge and behaviours related to salt consumption and sources of dietary sodium in women aged 20-59 years in an urban resettlement colony, New Delhi
4. Prevalence of hypertension among adolescents in rural Ballabgarh, Haryana
5. Determinants of treatment default in tuberculosis patients in a rural area of north India: a community-based mixed-method study.
6. Diabetes and hypertension among elderly persons in a rural area of Ballabgarh, Haryana.
7. Patient costs and treatment delays among newly diagnosed adult tuberculosis patients registered under Revised National Tuberculosis Control Programme in Ballabgarh block of district Faridabad, Haryana
8. Estimation of mortality burden in India due to respiratory viruses: Influenza & Respiratory Syncytial Virus,
9. Association of knowledge and self-efficacy of diabetes management with its control among patients in an urban resettlement colony in Delhi,
10. A Study of Chronic Respiratory Diseases and Associated Factors among Elderly Persons in a Rural Area of Haryana,
11. Prevalence of visual impairment and its association with vision-related quality of life among elderly persons in a resettlement colony of Delhi,
12. Cobalamin and folate status amongst children aged 6-59 months attending a secondary health care facility in district Faridabad, Haryana.

#### **Collaborative projects**

##### ***Ongoing***

1. First contact and pre-referral management and compliance to treatment in patients with uveitis., RP Centre for Ophthalmic Sciences
2. Development of longitudinal growth reference and assessment of growth velocity, cardio-metabolic measures and its correlates among children in India– a prospective study, Biostatistics
3. A Phase III, Randomized, Double-blind, Three arm Placebo controlled Trial to Evaluate the Efficacy and Safety of two vaccines VPM1002 and Immuvac (Mw) in Preventing Tuberculosis (TB) in Healthy Household Contacts of Newly Diagnosed Sputum Positive Pulmonary TB Patients, Pulmonary Medicine and Sleep Disorders

4. Efficacy of Energy Dense Nutritional Supplement (EDNS) as adjunct to standard DOTS therapy in improving treatment outcomes in malnourished newly diagnosed sputum positive pulmonary tuberculosis adult patients, Pulmonary Medicine and Sleep Disorders
5. Delhi Emergency Live Heart-Attack Initiative—"MISSION DELHI" Saving Heart Saving Lives, Cardiology
6. Capacity building plan for a Phase III, randomized, double-blind, placebo-controlled trial to evaluate the efficacy and safety of VPM1002 and Mw (MIP) vaccines in preventing tuberculosis (TB) in healthy household contacts of new pulmonary TB patients, Pulmonary Medicine and Sleep Disorders
7. Acceptability and adherence to nutritional supplement in the form of ready to use therapeutic food as adjunct to standard DOTS therapy among adult malnourished pulmonary tuberculosis patients in Ballabgarh Haryana, Pulmonary Medicine and Sleep Disorders
8. Unraveling causes of stroke and cognitive decline in general population, Neurology
9. Assessment of the prevalence and pattern of traumatic dental injuries in Kabaddi players of Delhi-NCR region, Centre for Dental Education and Research
10. Implementation of an Evaluation and Treatment Package for Uniform Stroke Care and outcomes in the Medical Colleges (IMPETUS). An Implementation Research Study, Neurology
11. Development and validation of dental trauma awareness tool for school teachers, Centre for Dental Education and Research
12. Development of a Comprehensive Electronic Integrated Road Traffic Injuries Surveillance – India (IRIS-India), IIHMR University, Jaipur
13. Public Health Perspective: Stroke Awareness: Education and Training to Community, Schools and Paramedical Staff in Himachal Pradesh, Neurology
14. Psycho-social Dynamics of Pregnancy Loss: Development of a Multidimensional Scale & Development and Efficacy (a Randomized Control Trial) of a Group Psychological Intervention Module, Psychiatry
15. Mortality burden of ambient PM 2.5 exposure in Rural Ballabgarh, Haryana, North India, IIT Delhi
16. Assessment of Quality and Best Practices under District Mental Health Programme, Psychiatry
17. Genome based antigenic diversity analysis of *P. vivax* in Indian populations to identify global vaccine candidates, Microbiology, Medicine
18. Emerging drug resistance in community-acquired urinary tract infection and molecular insights into dynamics of resistance traits in Indian isolates- A multi-centric cross-sectional study, Microbiology, Medicine
19. ICMR Task Force Centre on Rational use of drugs, Pharmacology
20. Taskforce project on prevalence of hearing impairment and etiology, ENT
21. Oral health toolkit for Pediatric Oncology Patients, CDER
22. Extent of mental health issues and addictive behavior among adolescents seeking help in adolescent friendly clinics in Delhi, NDDTC, Ghaziabad
23. Prevalence of congenital heart disease in adults residing in Ballabgarh block of Haryana, India: A population based study, Cardiology
24. Evaluation of prevalence, regional phenotypic variation, co-morbidities, risk factors and the variation in response to different therapeutic modalities among Indian women with Polycystic Ovarian Syndrome (PCOS): A multi-centric study across India, Obstetrics and Gynecology
25. Comprehensive Anemia Program and Personalized Therapy, Obstetrics and Gynecology, Pediatrics
26. Emerging drug resistance in community-acquired urinary tract infection and molecular insights into dynamics of resistance traits in Indian isolates: A multi-centric-cross-sectional study, Microbiology
27. Advanced Nodal Centre for Surveillance Network of AMR in Typhoidal Salmonella in India, Microbiology

### **Completed**

1. Prevalence of NAFLD and its association with cardio- metabolic disease risk factors in North India, Endocrinology and Metabolism
2. 'Feeding Infants and Toddlers Study' (FITS) and the 'Kids Nutrition and Health study' (KNHS) in India, IIHMR University, Jaipur
3. Association of Particulate Matter Exposure and Depression: A Systematic Review and Meta-Analysis, Psychiatry, Biostatistics

### **PUBLICATIONS**

**Journals: 47      Books: 1**

## PATIENT CARE

Patient care at Comprehensive Rural Health Services Project (CRHSP), Ballabgarh is provided through (i) One sub district hospital (SDH), and (ii) Two Primary Health Centres (PHCs) at Dayalpur, and at Chhainsa. The Intensive Field Practice area of CRHSP as of 31 March 2020 consisted of a total population of **1,03,510**.

### Healthcare provision statistics at CRHSP Ballabgarh

- OPD services: **4,36,383** patients
- In-patient services: **12,115** patients
- Emergency services: **86,592** patients
- A total of **4,080** deliveries were conducted for pregnant women
- Total number of surgeries - **2,394** (only at the SDH Ballabgarh)

### Outpatient Departments:

#### Daily, Once weekly

- General Medicine, Non Communicable Disease Clinic
- General Surgery, Physical Medicine and Rehabilitation (PMR)
- Paediatric, Paediatric Surgery
- Obstetrics and Gynaecology, Neurology
- Ophthalmology, Plastic surgery
- Psychiatry, Nutrition OPD
- Dental, **Thrice weekly**
- AYUSH(Homeopathy), Ante-natal clinic
- AYUSH (Ayurveda), **Twice weekly**
- Orthopaedics, Dermatology
- Ear, Nose and Throat

<b>Patient care services provided at SDH Ballabgarh: (2019-20)</b>	
<b>Total Outdoor Patients</b>	
Outpatient Department (OPD) Total (New+Old)	3,50,709
New OPD patients (%)	1,91,630 (54.6%)
Medicine (New+Old)	1,04,570
Paediatrics (New + Old)	73,752
Obstetrics and Gynaecology (New + Old)	26,476
Antenatal care clinic registrations, Total visits (New+Old)	22,176
Ophthalmology (New + Old)	15,302
Surgery (New + Old)	14,172
ENT (New + Old)	10,442
Dental	8,988
Physical Medicine & Rehabilitation (New + Old)	2,307
Non-Communicable Ds clinic, Total (New + Old)	8,439
Dermatology (New + Old)	13,579
AYUSH (Homeopathy + Ayurveda)	10,394
Orthopaedics (New + Old)	27004
Psychiatry	10,029
Nutrition	397
Plastic Surgery	41
Neurology	1484
Paediatric surgery	1,157



**In-patient services**

- **Total no. of beds: 50**

<b>a. Total Admissions (including births)</b>	<b>11,322</b>
• Admission through casualty	1,560
• Admission through OPD	6,489
• Admission of New Born (births)	3,273
<b>b. Disaggregation of admissions, by specialty (n=12,608)</b>	
• Obstetrics and Gynaecology	6,869
• Paediatrics	213
• Ophthalmology	696
• Surgery	157
• Medicine	64
• ENT	47
• Physical Medicine and Rehabilitation (PMR)	3
<b>c. Average Bed Occupancy Rate (%)</b>	<b>106.4%</b>
<b>d. Average duration of stay for all patients (in days)</b>	<b>1.80</b>
<b>e. Total Deliveries Conducted (including IUD)</b>	<b>3,294</b>

<b>Casualty Services: No of beds 10</b>	
• Patients registered	73,326
• Medico-legal cases	5,073
• Emergency admissions	1,581

<b>Total surgical procedures at SDH Ballabgarh</b>	
1. Ophthalmology	650
2. Obstetrics and Gynaecology	892
3. General Surgery	482
4. Paediatric Surgery	247
5. ENT	110
6. Physical Medicine and Rehabilitation	13
<b>Total</b>	<b>2,394</b>

<b>Laboratory and Diagnostic Services</b>	
a. Laboratory investigations (biochemical and haematological)	2,62,794
b. X-ray	21,507
c. Ultrasound	11,036
d. Malaria slides	5,619
• P. vivax	2
• P. falciparum	NIL
e. Counselling and testing services provided for HIV	14,338

**Revised National Tuberculosis Control Programme:**

SDH Ballabgarh is a Tuberculosis Unit (TU) under the Revised National Tuberculosis Control Programme. Three designated microscopy centres (DMCs) are attached to this unit. Total tuberculosis cases treated at Ballabgarh Hospital were as follows:

<b>Total cases started on treatment</b>	<b>1033</b>
a. New case	961
b. Previously treated case	72

**B. Community Health Services**

CRHSP, Ballabgarh provides community health services in Intensive Field Practice Area (IFPA) of 28 villages through a network of two Primary Health Centres (Dayalpur and Chhainsa), and 12 sub centres. Domiciliary, outpatient, inpatient, and referral services are provided in the IFPA. Important demographic indicators for the IFPA for year (2019-20) were as follows:

<b>Indicator</b>	<b>Value</b>
Population	1,03,510
Birth Rate per 1,000 population	19.4
Death Rate per 1,000 population	6.7
Sex ratio at Birth (females per 1,000 males)	866
Infant mortality rate per 1,000 live births	30.8
Under 5 mortality rate per 1,000 live births	35.4

- 1. OPD Services in Intensive Field Practice Area:** This includes health care services provided at OPD of the PHC, as well as the OPD of the Extended Health Clinics, that are conducted at each of the villages of IPHA

<b>PHC</b>	<b>New Cases</b>	<b>Repeat Visits</b>	<b>Total</b>
Dayalpur	23,120	21,088	44,208
Chhainsa	19,116	15893	35,009
<b>Total</b>	<b>42,236</b>	<b>36,981</b>	<b>79,217</b>

Total No. of AYUSH OPD Patients registered at PHC Dayalpur: **6457**  
(There is no AYUSH OPD at PHC Chhainsa)

- 2. Inpatient Services provided at the PHCs:**

<b>PHC</b>	<b>Total</b>
Dayalpur	415
Chhainsa	378
<b>Total</b>	<b>793</b>

- 3. Emergency Services at PHCs:**

<b>PHC</b>	<b>Total</b>
Dayalpur	9843
Chhainsa	3423
<b>Total</b>	<b>13266</b>

- 4. Family Welfare and Maternal Child Health**

The following services are provided as per the guidelines of National Health Mission

<b>Indicator</b>	<b>Value</b>
Total ante natal registration	2,634

Complete TT coverage of registered cases (%)	86.8
<b>Percentage of Institutional delivery in IFPA</b>	
PHC Chhainsa (%)	98.2%
PHC Dayalpur (%)	97.7%
<b>Total deliveries in delivery huts at the PHCs</b>	
PHC Chhainsa	378
PHC Dayalpur	415

## 5. Other National Health Programmes

**National Vector Borne Disease Control Programme:** Collection of blood slides are done as a part of passive surveillance in OPD and as active surveillance during domiciliary visits in the IFPA.

Indicator	PHC Chhainsa	PHC Dayalpur
Total number of malaria slides tested	6550	6162
Total number of positive cases	9	7
Annual Parasite Incidence (per 1,000 population)	0.17	0.132
Annual Blood Examination rate (%)	12.9%	11.63%
Slide Positivity Rate (%)	0.13%	0.11%

### Revised National Tuberculosis Control Programme:

The Revised National Tuberculosis Control Programme is carried out in the IFPA according to national guidelines. Dayalpur PHC has been designated as a Microscopy Centre and caters to all villages under the IFPA. Tuberculosis patients treated in the IFPA (category wise) is as follows:

Indicator (2019-2020)	PHC Chhainsa	PHC Dayalpur
Total number of patients started on treatment	81	72
New Cases	19	72
Previously treated cases	2	0

**6. Special services:** Out Reach Speciality OPD (ORSO) is a special activity conducted at each PHC where Senior Residents posted at SDH Ballabgarh attend the patients at PHCs on a weekly basis. The services were started in June 2013. During the past year the cases attended to at each PHC were as follows:

Services	PHC Chhainsa	PHC Dayalpur
Gynaecology	170	577
Paediatrics	280	533
Ophthalmology	408	768
Psychiatry	100	252
<b>Out-Reach Speciality OPD (ORSO)* (Total)</b>	<b>958</b>	<b>2130</b>

## 7. Animal Bite Management Clinics

Special services to pregnant women	PHC Chhainsa	PHC Dayalpur
Pregnancy received IVIS	336	370

PPIUCD	83	52
High Risk Pregnancy	446	373

Both PHC Chhainsa and Dayalpur have Animal Bite Management Clinic. A total of 907 doses of Anti-rabies vaccination was provided in PHC Chhainsa and **2048** doses in PHC Dayalpur.

**8. IEC Activities:** 28 and 55 Health Talks were conducted in PHC Chhainsa and Dayalpur respectively. Neonatal care and kangaroo mother care, Breast feeding and weaning, Antenatal care, high risk pregnancy, anaemia in pregnancy, importance of institutional delivery, Immunization, Malaria and Dengue, Tuberculosis, anaemia in children, malnutrition in children, Vitamin-A deficiency, Diabetes, Hypertension, HIV/AIDS, accidents in children, personal hygiene, family planning methods, postnatal care and diet, care of newborn, swine flu, geriatric care, Mental health programme, etc.

**9. Short film shows:** Films were screened in Child welfare centre, Ballabgarh, PHC Dayalpur, and PHC Chhainsa on important topics i.e. breast feeding, antenatal care, child care, female feticide, eye care, Vitamin A deficiency, malnutrition, and diarrhoea during OPD timings.

#### 10. Special activities during financial year 2019-20 at PHCs

- 1. Intensive Mission Indradhanush:** Both the PHCs participated in Intensive Mission Indradhanush where almost 60 pregnant women and 275 kids were immunized against seven vaccine preventable diseases.
- 2. Assessment for National Quality Assurance Standards:** Both the PHCs have been working very hard with a mission of providing quality comprehensive care to the beneficiaries. Both the PHCs were certified that they follow National Quality Assurance Standards

#### Urban Health Programme

The field practice area of the Urban Health Programme, Centre for Community Medicine is located at Dakshinpuri Extension, Dr Ambedkar Nagar in South Delhi, consisting of Blocks 1-7,14,15,19, Subhash camp, Dakshinpuri catering to a population of around 35,363. Patient care services are provided at the Urban Health Centre.

#### Clinical Services

Activities	Number
OPD: Total no of patients seen (including immunization)	20440
<i>Laboratory services</i>	
Total Lab Tests	3845
No. of Hb. Test Conducted	1371
Of which numbers having Hb <7 g/dl (General+ ANC)	36
Of which numbers having Hb <11 g/dl (General + ANC)	780
Blood sugar	2222
Urine albumin and sugar tested	73
RDT for Malaria	53
Blood group	100

#### Child Health services

Number of immunization sessions held: 99	
BCG	50
DPT 1/Pentavalent 1	227
DPT 2/pentavalent 2	196
DPT 3 /pentavalent 3	184
OPV 0 dose (Birth dose)	33
OPV1	227
OPV2	196

OPV3	185
Hepatitis-B 1	2
Hepatitis-B 2	6
Hepatitis-B 3	1
Injectable IPV Fractional 1	227
Injectable IPV Fractional 2	183
Rotavirus 1	100
Rotavirus 2	63
Rotavirus 3	47
MR 1st dose	231
MR 2nd dose	219
DPT / OPV Booster 1	208
DPT / OPV Booster 2	258
TT /DT-10 years	311
TT/DT- 16 years	101
Vitamin A -Administered between 9 months and 5 years	94
Albendazole under 5 children	241
Number of severely underweight provided health checkup (0-5 years)	58

#### Maternal Health Services

<i>Antenatal Care</i>	<i>n</i>
Total number of times pregnant women seen in the Urban Health Centre (new cases=210)	690
Number of pregnant women given TT1/DT-1	94
Number of pregnant women given TT2/DT-2=79 + TT/DT Booster=11	90
Total number of pregnant women given 180 IFA tablets	111
<i>Family Planning</i>	
No of Condoms distributed	1115
No of Oral contraceptive pill cycles distributed	2
New RTI/ STI Cases Identified	116

#### Health Education material developed, formatted and designed:

1. Developed a NSS banner, Banner, 01, English
2. Updated a booklet on “Dengue, Malaria and Chikungunya” 2nd Edition 2019, Booklet, 02, Hindi and English
3. Developed 2 posters 24x36 inches on “Corona” in Hindi and 2 posters on Corona in English, Posters, 04, Hindi & English
4. Developed 14 Short messages posters on “Corona” in Hindi and 14 short messages posters on Corona in English, Posters, 28, Hindi & English
5. Developed 2 Hoardings 6x4 feet size on “Corona” in Hindi and 2 Hoardings on Corona in English, Hoardings, 04

#### National Service Scheme (NSS) Activities at AIIMS:

- Organized a Poster Competition on “**Global Warming**” among NSS Volunteers of AIIMS in front of JLN Audi on 18 April 2019. (20 students participated)
- Organized “Pradhan Mantri Surakshit Matritva Abhiyan Campaign under Poshan Abhiyan Test & Treat programme” on 10 June 2019 at 25 sites with NSS Volunteers in Delhi

- Four Under Graduates interventions activities on “**Malnutrition among women, Nutrition among elderly, Joint pain among elderly, Birth Complications among recent mothers and their Preparedness and COVID-19**” were conducted at Urban Health Centre, Dakshinpuri Extension on 8 April 2019, 5 July 2019, 21 August 2019, 14 October 2019 and 12 February 2020 respectively.
- An “**NSS Orientation and Sensitization Programme**” for New Batch of MBBS students (2019) was organized on 9th July 2018, at CCM AIIMS (82 MBBS students participated)
- In the Family Health Advisory services Intervention Programme, Six Street Plays on “**Hypertension, Diabetes Mellitus and Anemia, Child Marriage and ANC**” were conducted on 26 August 2019 & 2 September 2019 (Round 300 Community People attended the activity)
- Conducted **two role plays** on “**Blood Donation**” one at Foyer and one at CNC entrance by CON, NSS volunteers in co-ordination with Dr Shashi Mewar
- An Exhibition was organized on “**World Leprosy Day**” at Dakshinpuri Extension on 30 January 2020, (50 Community people participated)
- Poster Competition was organized among NSS volunteers of AIIMS, New Delhi on “**Global Warming**” on 18 April 2019 (Total Participants 20)

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Kayakalp award** for Primary Health Centers: Among all the Primary Health Centers in the District Faridabad, CRHSP’s PHC Dayalpur was recognized as the best, for Kayakalp Award, while CRHSP’s second Primary Health Center, i.e. PHC Chhainsa the commendation award, for the Kayakalp programme.

**Kayakalp award** for Sub-district hospital, Ballabgarh: At the state level, CRHSP’s sub district level Ballabgarh hospital received the commendation award.

**Professor Shashi Kant** was nominated to the National Task Force on COVID-19 which was chaired by Dr. Vinod K Paul, Member of NITI Ayog. He contributed in various policy formulations that were later notified by the Ministry of Health and Family Welfare. He was also the member of High Level Committee Chaired by Hon’ble Union Health Minister, Government of India; contributed in epidemiological response to Corona pandemic as a member of Epidemiology and Surveillance Working Group constituted by Indian Council of Medical Research, New Delhi; Member, Governing Body, All India Institute of Medical Sciences, Nagpur. In that capacity he participated in selection of Faculty members for AIIMS, Nagpur. In addition, he has also facilitated selection of Faculty members of Community Medicine at AIIMS, Bhopal. He is either Chair or Member of various Project Review Committees of ICMR. He also continues to be the Member of the National Operational Research Committee under RNTCP, MoHFW; Member of National Working Group of HIV estimation in India which has been constituted by MoHFW; Member of Technical Resource Group for HIV Sentinel Surveillance in India. He attended the National consultation on global and local evidence to improve the HIV cascade in India, organized by NACO, MoHFW; Member of Technical specification committee under Anemia Mukta Bharat (AMB) programme constituted by MoHFW; delivered an oration during National Symposium on Education and Practice in Community Medicine, 11 November 2019, AIIMS, Bhubaneswar; Chairman of the Organizing Committee of 64th Annual National Conference of Indian Public Health Association. He chaired the scientific session on “Leadership in Health” at 64th Annual National Conference of Indian Public Health Association.

**Professor Sanjeev Kumar Gupta** was Member of the- Task Force to develop Operational Guidelines for Primary Care in Geriatric Care, Ministry of Health and Family Welfare, Government of India, New Delhi, Expert Committee for revision of the PGDMCH Programme at the Indira Gandhi National Open University, New Delhi, Data Safety Management Board (DSMB) for the project entitled “Determination of efficacy of 9 months, 12 months and 18 months of anti-tubercular treatment (ATT) for tuberculous meningitis (TBM): a randomized controlled, non-inferiority trial.”, Main Negotiation Committee (DO) of the AIIMS. Reviewer of many journals, e.g., The National Medical Journal of India, Indian Journal of Public Health, Indian Journal of Community Medicine. Life member of Jansankhya Sthirata Kosh of the Ministry of Health and Family Welfare, Government of India. Assisted the UPSC as an Advisor in the P.T. Board for Combined Medical Services Examination on 9-11 December 2019. Participated as an expert member of the Selection Committee for the post of Faculty at the Delhi Pharmaceutical Sciences and Research University, New Delhi on 6 November 2019; Chairman, Scientific Programme Committee of the 64th Annual National Conference of Indian Public Health Association held at the AIIMS, New Delhi on 29 February-2 March 2020.

**Professor Kiran Goswami** was Member National institution and Central Regional Institute: Expert and resource person for HIV Sentinel Surveillance BSS Lite 2019- 2020. Expert Committee Member- SEED Division, TIASN, DST, Programme Advisory Committee Meeting on SCSP, SEED Division and DST Expert Committee Paper Setting UGC-NET Exam., Nov. 2019. Chaired sessions: Community Engagement and Ethical Considerations during National Consultation Meeting on

Operational Framework for BSS Lite, 4 -5 April 2019 and Overview of BSS Lite- Methodology, Centralized training for Sampling Frame Development for BSS Lite, National Training of Trainers, 20-23 May 2019. Programme Coordinator, NSS Unit, AIIMS. Participated as external examiner for Community Medicine- MBBS Final and Supplementary Examination Delhi University, November 2019 and March 2020; MBBS 3rd Professional Supplementary Exam. at AIIMS Jodhpur, February 2020; won second prize, essay writing competition, during Rastrabhasha Pakhwara Celebration AIIMS 2019, first prize, slogan writing competition, and first prize, essay writing competition as part of AIIMS, Vigilance week celebrations 2019.

**Professor Anand Krishnan** heads WHO Collaborating Centre on Research and Capacity Building on Community-based NCD Prevention and Control, AIIMS technical Support Unit for SRS-VA and the MINErVA Network, Scientific Advisory Committee of ICMR-NIREH Bhopal, Scientific Advisory Committee of ICMR-NIOH, Ahmedabad, Non-communicable Diseases and Environment Chapter in Indian Academy of Public Health and Regional Councilor, SE Asia, World NCD Federation. Member of WHO Working Group in Influenza Burden of Disease, Project Appraisal Committee, Health Technology Assessment India, Department of Health Research, Centre for Excellence, Climate and Health for Cardio-pulmonary Disorders at AIIMS New Delhi, Monitoring cum Expert Committee” for “Next Generation Influenza Vaccine Projects” DBT Influenza Vaccine, Scientific Advisory Group for NCD Division, ICMR, Centre Committee for Centre for Social Medicine and Community Health, JNU, NCD Policy Group for the Comprehensive National Nutrition Survey (CNNS) constituted by MOHFW, Governing Body of National Health System Resource Centre, MoHFW, PG expert Committee of Medical Council of India, Task Force to review the Certificate Programme in Community Health (CPCH) curriculum and training quality and to create mentoring mechanisms for Community Health Officer (CHOs), Special Invitee Scientific Advisory Group for ICMR-National Institute of Medical Sciences, New Delhi, Project review Committee of Cardio-vascular Diseases, ICMR -Task Force Projects on Neurocognitive diseases, cardio-vascular disease, Indian Hypertension Management Initiative, ICMR Advisory Group on Health System Research, Project Review Committee for Implementation Research, India TB research Consortium and Selection Committee for Community Medicine, SCTIMST, JIPMER, AIIMS Rishikesh, NIMHANS; received SEAPHEIN Public Health Education Leadership Award November 2019, at Jaipur

**Professor Puneet Misra** was Member/ expert of program advisory committee DST, Govt. of India, SYST, AWSAR; expert committee and paper reviewer for SEED Division, DST, Govt. of India, ICMR task force member for PCOS and GDM, TEC member ICMR on Diabetes, Metabolic Disorders, Kidney and Liver Disorders, Cardiovascular diseases, Project Reviewer for ICMR, DST, DBT, member Research section AIIMS, selection committee. Participated as an expert in faculty selection, AIIMS, Gorakhpur on 1 May 19, faculty selection, AIIMS, Jodhpur, faculty selection AIIMS Bhubaneswar, NAAC assessor for Health and Medical Universities. Ph D Thesis evaluator and examiner KGMU and DU, MD Examiner AMU Aligarh, MBBS examiner – AIIMS Rishikesh, MD Thesis AIIMS Rishikesh. Member of Data Safety Monitoring Board (DSMB) for Vi- DT typhoid conjugate vaccine phase III clinical trial in Nepal. Reviewer of PLOS one, IJCM, BMJ, Lancet Public Health, Indian Journal of Public Health, Indian Journal of Pediatrics, NMJI, BMC, International Journal of Diabetes in Developing Countries, Addictive Behaviors, International Journal of Adolescent Medicine and Health, BMC Public Health, BMC Women’s Health, BMC Infectious disease, Biomedical and Environmental Sciences, Family Medicine and Community Health, NMJI, Proposals for DST, ICMR and many others. Participated as an expert on many TV channels for raising awareness on many public health issues- Lok Sabha TV – Malaria, Asthma, malnutrition; Desh Deshanter RS TV on cancer; RS TV on Corona – big picture, RS TV – Corona, Desh Deshanter, RS TV Coronavirus COVID 19 – Q and A, RS TV Corona – News Feed bytes and RS TV population control, Mirror Now- Corona, Zee TV – Corona, India TV–Corona, AVP news–Corona.

**Professor Sanjay K Rai** was Nominated by National AIDS Control Organization (NACO), Ministry of Health and Family Welfare, Government of India as a “focal person” of NACO designated National Institute for HSS at AIIMS New Delhi to provide technical assistance for HIV Sentinel Surveillance (HSS) of entire country. Made several visits to several districts of Uttar Pradesh, during October and November 2019 to provide technical support to HSS 2019 of these states. Member of the Technical Resource Group (TRG) of NACO, MoHFW, GoI on HIV Estimations in India and participated in several TRG meetings during 2019. Nominated by West Bengal University of Health Sciences, West Bengal, Delhi University, Delhi, UP University of Medical Sciences, Saifai, Etawah, and KGMU Lucknow, UP as a member of the Board of Examiners for MD Community Medicine. As an external examiner conducted MD Community Medicine examination at Burdwan Medical College, Burdwan, West Bengal (11-12 April 2019), Lady Hardinge Medical College, New Delhi (23-26 April 2019), UP University of Medical Sciences, Saifai (16-17 July 2019), and KGMU, Lucknow (29-30 November, 2019). As a member of Scientific Advisory Committee (SAC) of ICMR-NICED, participated as an expert in 47th SAC meeting of ICMR-NICED from 26-27 September 2019 at ICMR-NICED Kolkata. Deputed by AIIMS examination centre to supervise the Online CBT for MD/MS/MDS/DM/, and M.Ch, and MBBS entrance examination, Chennai, Tamil Nadu, and Aligarh, UP on 5th May 2019 and from 25-26 May, 2019 respectively. Member of the core committee of the AIIMS under the Revised National Tuberculosis Control Programme. As a member of AIIMS Engineering Advisory Committee (EAC) participated in several engineering advisory committee meetings to streamline the working of engineering services. As a Professor In-Charge of store of CCM participated in budget preparation, and procurement of various items for CCM during 2019-20. As a member of Standing Selection Committee of Directorate of Research and Medical Education, Punjab, and All India Institute of Medical Sciences, Bhopal, assisted for the selection of various faculty positions on 8 June 2019, and 17 December 2019

at National Institute of Technical Teachers Training and Research (NITTTR), Sector 26, Chandigarh, and AIIMS, Bhopal respectively. Elected “*President*” of Indian Public Health Association for the year 2019-2022.

**Dr Kapil Yadav** was Member of “Test and Treat” technical sub-group constituted for formulation operational guidelines for “Anemia Mukh Bharat” by Ministry of Health and Family Welfare, GoI and Focal Point for “National Centre of Excellence and Advanced Research on Anemia Control (NCEAR-A)”, Ministry of Health and Family Welfare, GoI.

**Dr Sumit Malhotra** was Member of working committee of Clinical Research Unit (CRU) under Research Section, AIIMS, New Delhi; focal point for “Innovation and learning Centre” for supporting implementation of comprehensive primary health care in aspirational district, Nuh, Haryana; national trainer for community health officers and part of national task force constituted by Ministry of Health and Family Welfare, Govt. of India to review the Certificate Programme in Community Health (CPCH) curriculum and training quality and to create mentoring mechanisms for Community Health Officer (CHOs), participated in regional workshop on comprehensive primary health care –Health and Wellness Centres (HWCs) at Amritsar (6 September 2019); was part of Delhi team for 13th Common Review Mission under National Health Mission (16-23 October 2019), national level expert in an multi-site Indian Association of Preventive and Social Medicine (IAPSM) study (Rapid assessment of knowledge and practices regarding MIYCN among obstetricians and pediatricians working in private health care establishments), member of AIIMS technical Support Unit for SRS-VA and the MINerVA Network and National Centre of Excellence and Advanced Research on Anemia Control (NCEAR-A), was convener for pre-conference committee and venue committee, member of scientific committee as part of organizing team of 64th Annual National Conference of the Indian Public Health Association 29 February -2 March at AIIMS New Delhi and was part of ICMR project review committee to review Ad-hoc and fellowship proposals on vector borne diseases; was conferred with fellowship award of Indian Public Health Association (IPHA), 2019-20.

**Dr Anil Kumar Goswami** was Patron of a National Body “All India Association of Medical Social Work Professionals” Chandigarh. 2016-20. Designated Nodal Officer of “Disease Prevention Outbreak Response Cell” (DPORC) AIIMS since 2008 till date. Was a member of sub-committee for “Hygiene Promotion” (KRA-7 of Clean and Green AIIMS) and “Public Feedback” (KRA-8 of Clean and Green AIIMS) under KAYA KALP (Clean Hospital Campaign). Nominated by Director AIIMS, New Delhi as a member of the “Expert Committee for Development of New Specified Health Warnings” in the Tobacco Control Division, Ministry of Health & Family Welfare, Nirman Bhawan, New Delhi. Panelist in a Technical Symposium on Dengue on “National Dengue Day-16 May 2019”, AIIMS New Delhi, Invited to Judge the “Street Play competition in PULSE, 2019” a Cultural Week of Student Union. Participated in a National Annual “Peer Assessment Kaya Kalp Monitoring & Evaluation Programme” at Lady Hardinge Medical College on 28 November 2019 and at AIIMS New Delhi on 20 January 2020. Chaired a Session “All India Association of Social Work Professionals Conference (AIAMSWPCON)” 2020 at Imphal, Manipur.

**Dr Partha Haldar** was Member of Technical Resource Group (TRG) for Hepatitis Surveillance in India, constituted by the National Center for Disease Control (NCDC), Ministry of Health and Family Welfare, Government of India. He takes the Health Economics Module for Post Graduate students of Community Medicine. He is also a member of the National Institute for HIV Surveillance in India, which is head quartered at AIIMS New Delhi. He is also a member of the National Centre of Excellence and Advanced Research on Anemia Control (NCEAR-A), AIIMS, New Delhi. Dr Partha was convener for the Environment Committee of the 64th Annual National Conference of the Indian Public Health Association, conducted from 29 February-2 March at AIIMS, New Delhi.

**Dr Ravneet Kaur** was Faculty for SET (Skill, e-learning and Telemedicine) facility, AIIMS and prepared skill modules for undergraduate teaching. Member of working group of MOHFW (Maternal Health Division) for development of operational guidelines for management of high risk pregnancies. Contributed in preparing ‘Training module for Medical Officers, Staff nurses and Auxillary Nurse Midwives for Diagnosis and Treatment of Anemia under *Anemia Mukh Bharat*’. Reviewer of journals (Global Health Research and Policy, BMJ Open, Indian Journal of Public Health, Journal of Post graduate Medicine). Member of organizing committee of the 64th Annual National Conference of Indian Public Health Association held from 29 February-2 March 2020 at New Delhi. Convener of Reception committee, and member of scientific committee, and Souvenir Committee

**Dr Harshal Ramesh Salve** was Elected as General Secretary of Faculty Association of AIIMS (FAIMS). Resource Faculty in SET Facility by AIIMS, New Delhi. Part of Expert team by MOHFW and WHO India Country Office for assessment of quality of care and best practices of District Mental Health Programme in India. Participated as faculty coordinator for AIIMS PG entrance Examination in Aurangabad, MBBS Examination in Nagpur and Online CBT based Examination for Recruitment of Nursing Officers (Grade II) for AIIMS at Nagpur. Invited Speaker THRICON 2019 Conference 25 October 2019 organized by Thrissur Medical College, Thrissur, Kerala. Part of Core team and National trainer for MINerVA Network for SRS by RGI – AIIMS New Delhi. National Trainer for Program Mangers Training under NPCDCS in India. Member of Disease Outbreak Response Cell (DPORC), AIIMS, New Delhi. Participated in meeting WHO - SEARO Expert Group for Developing Health Promotion Tools for Prevention of Non-Communicable Diseases at New Delhi (8 – 9 April, 2019).



Participated in Workshop on “Clinical Trial: Basics and Specialized Topics” organized by CEU, CMC Vellore, Tamil Nadu (17–19 October, 2019), First National Symposium on Education and Practice of Community Medicine, Bhubneshwar, (10–12 November 2019), nominated faculty in MBBS Curriculum Development Workshop at SET Facility AIIMS, New Delhi (26 November 2019), resource person in Training Program for CPCB researcher on Air Pollution organized by SPH, PGIMER, Chandigarh (6 January 2020), invited speaker on Annual day of national Centre for Diseases Control (NCDC), New Delhi on Air Pollution, symposium as Speaker in 72nd Annual National Conference of Indian Psychiatric Society (ANCIPS), Kolkata, West Bengal (25 January 2020), visited Patna for assessment of data management system of medical colleges for World bank (12 and 13 March 2020), part of organizing team (Convener of - Fund raising & Plenary Sessions Committee, Travel and accommodation committee) of 64th Annual National Conference of Indian Public Health Association.

**Dr Rakesh Kumar** was Part of the Expert Advisory Committee of project entitled “Strengthening Mechanisms for Tuberculosis Death Reporting under the Revised National Tuberculosis Control Program (RNTCP) and the Registrar General of India” and was member of the Project Review Committee of Indian Council of Medical Research for extramural adhoc research in Urology; received Travel Fellowship Award by the International Society for Influenza and other Respiratory Virus Diseases (ISIRV) for presenting an oral paper during the Options X for Control of Influenza conference at Singapore; attended the workshops “Health Technology Assessment for Vaccines” and “SPHERIC infectious disease modelling” at Singapore. Reviewer for Indian Journal of Public Health, the Journal of Obstetrics and Gynaecology of India and International Journal of Medicine and Public Health.

**Dr Mohan Lal Bairwa** was Special Invitee, Board of Management and Member, Board of Studies, IIMR University, Jaipur, India. Examiner of MPH Program, Delhi Pharmaceutical Sciences and Research University, New Delhi. Associate Editor (Global Health), BMC Public Health and Section Editor (Research Methods), Lung India. Reviewer of International Journal for Equity in Health; International Journal of Injury Control and Safety Promotion; BMJ Open; Indian Journal of Community Medicine; Human Vaccines and Immunotherapeutics; PLoS ONE; Global Health Action; BMC Public Health; Indian Journal of Community and Family Medicine: Bulletin of WHO; BioMed Research International

## 9.9. Dermatology and Venereology

### Professor and Head

Vinod K Sharma

### Professors

Neena Khanna  
Binod K Khaitan

Kaushal K. Verma  
Sujay Khandpur  
Somesh Gupta

M Ramam  
G Sethuraman

### Associate Professor

Kanika Sahni

### Assistant Professors

Neetu Bhari

Vishal Gupta

### EDUCATION

The department is training 22 junior residents, 10 senior residents and guiding four PhD candidates. A Competency based training of 2 weeks for MD (Medicine) and DM (infectious disease) residents has been started. Dermatology residents are being posted on rotation for 2 weeks in these departments also.

### CMEs/Workshops/Symposia/National and International Conferences Organized by the department

1. Ninth Annual conference of Contact and Occupational Dermatoses Forum of India (CODFICON 2019), 31 August and 1 September 2019.
2. First Annual Meeting of the Asian Society of Dermatopathology and Annual Meeting of DSI, 15-17 November 2019, New Delhi

### Lectures delivered

**Vinod K. Sharma: 7**

**Neena Khanna: 6**

**Kaushal K Verma: 10**

**M Ramam: 11**

**Sujay Khandpur: 8**

**Kanika Sahni: 4**

**Neetu Bhari: 10**

**Vishal Gupta: 3**

**Oral papers/posters presented: 6**

### RESEARCH

#### Funded projects

#### Ongoing

1. Elucidating the role TNIP1, IL2B and NFkBIA and their target micro RNA in regulating the inflammation and skin homeostasis in psoriasis, VK Sharma, ICMR, 3 years, 2019, Rs 36.62 lakhs
2. A randomized, investigator-blind, placebo-controlled, split-head pilot study to evaluate the effects of autologous platelet-rich plasma on hair growth and lesional T-helper and T-regulatory cells expression markers in alopecia areata, VK Sharma, IADVL, 2 years, 2018, Rs 5.22 lakhs
3. A Phase 3 Multicenter, Double-Blind Study to Evaluate the Long-Term Safety and Efficacy of Baricitinib in Adult Patients with Atopic Dermatitis, VK Sharma, Eli Lilly, 1 year, 2019, Rs 1 lakh
4. A multi-center, randomized, double-blind, active and placebo-controlled study to investigate the efficacy and safety of ligelizumab (QGE031) in the treatment of Chronic Spontaneous Urticaria (CSU) in adolescents and adults

- inadequately controlled with H1-antihistamines. (Funded project), Neena Khanna, Novartis, 3 years, 2019-2021, Rs 11.24 lakhs
5. A phase 2, multicenter, randomized, double blind, comparative study to evaluate the reduction in incidence of scarring in acne vulgaris subjects treated with combination of benzoyl peroxide (2.5%/5%), zinc oxide and polysiloxanes compared to benzoyl peroxide (2.5%/ 5%), Neena Khanna, Dr Reddy's Laboratories, 2 years, 2017-2019, Rs 5.20 lakhs
  6. Evaluation of effect of cyclosporine on inflammatory cytokine levels and dermatitis in patients of air-borne contact dermatitis due to plant parthenium, Kaushal Verma, DST, 3 years, 2019-2022, Rs 36 lakhs
  7. Comparison of the efficacy of Rituximab infusion and Dexamethasone cyclophosphamide pulse in moderate to severe pemphigus vulgaris, Sujay Khandpur, ICMR, 3 years 9 months, 2015-2018, Rs 29.72 lakhs
  8. Prospective non-randomized controlled trial to compare the efficacy of subcutaneous etanercept versus oral methotrexate in moderate to severe chronic plaque psoriasis and to correlate response with Th1, Th2, Th17 and Treg cell patterns, Sujay Khandpur, Pfizer Pharmaceutical, 2 years, 2016-2018, Rs 11.61 lakhs
  9. A double-blind randomized trial of transplantation of cultured melanocytes from outer root sheath of plucked hair follicles vs. cultured melanocytes from epidermis, Somesh Gupta, DBT, 2017-2020, Rs 60 lakhs
  10. Efficacy and safety of non-cultured extracted follicular outer root sheath cell suspension and conventional epidermal cell suspension transplantation in stable vitiligo and correlation with constituent stem cell populations, Somesh Gupta, ICMR, 2016-2020, Rs 30 lakhs
  11. Analysis of the diagnostic and/or predictive potential of metabolomics in bacterial vaginosis, its treatment failure, relapse and susceptibilities to other sexually transmitted infections, Somesh Gupta, AIIMS, 2018-2020, Rs 16 lakhs
  12. Th2/Th17 inflammatory cytokines modulating filaggrin expression and disease severity in children with atopic dermatitis, Neetu Bhari, IADVL, 2 years, 2019-2021, Rs 7.45 lakhs

#### ***Completed***

1. Defining the role of genetic, epigenetic and immunological components involved in the pathogenesis of alopecia areata., VK Sharma, ICMR, 4 years, 2015-2019, Rs 56 lakhs
2. A phase 3 Multicenter double –blind study to evaluate the long-term safety and efficacy of baricitinib in adult patient with atopic Dermatitis, VK Sharma, Eli Lilly and company, 1 years, 2019-2020, Rs 12 lakhs
3. Measurement of quality-of-life in patients with lichen planus pigmentosus and its comparison with vitiligo and melasma, VK Sharma, IADVL, 2 years, 2017-2019, Rs 0.6 lakhs
4. Comparison of the efficacy of Rituximab infusion and Dexamethasone cyclophosphamide pulse in moderate to severe pemphigus vulgaris, Sujay Khandpur, ICMR, 3 years 9 months, 2015-2018, Rs 29.72 lakhs
5. Prospective non-randomized controlled trial to compare the efficacy of subcutaneous etanercept versus oral methotrexate in moderate to severe chronic plaque psoriasis and to correlate response with Th1, Th2, Th17 and Treg cell patterns, Sujay Khandpur, Pfizer Pharmaceutical, 2 years, 2016-2018, Rs 11.61 lakhs

#### **Departmental projects**

##### ***Ongoing***

1. A cross sectional descriptive study to categorize the etiology in patients with self-reported excessive facial hair
2. A cross sectional study to assess autonomic nervous system imbalance and its correlation with cutaneous manifestations in patients with systemic sclerosis
3. A prospective randomized controlled trial to compare the efficacy of Rituximab infusion versus intravenous Dexamethasone Pulse therapy in Pemphigus vulgaris and its correlation with phenotypic and functional determinants of B and T cells
4. An open label non-randomized preliminary study comparing handheld NB-UVB device with standard whole body NB- UVB therapy in treatment of localized vitiligo.
5. An open label non-randomized preliminary study comparing two targeted phototherapy devices i.e. daily use of home-based hand-held Narrow Band UVB comb device versus biweekly hospital-based excimer light therapy in treatment of localized vitiligo

6. Benefit of yoga in systemic sclerosis as compared to standard therapy alone: A pilot randomized control trial.
7. Comparison of patch test positivity after 24 and 48 hours of occlusion time in patients of allergic contact dermatitis.
8. Efficacy of adding PRP to 5-FU ointment and microneedling in the treatment of Acral Vitiligo
9. Evaluation of a paraffin based moisturizer as compared to a ceramide based moisturizer in children with atopic dermatitis: A double blinded, two group equivalence randomized controlled trial
10. Prospective randomized trial to compare efficacy and cost-effectiveness between rituximab therapy and dexamethasone pulse in pemphigus vulgaris
11. Quality of Life on Pruritus- Comparison of different scales
12. Study of epidemiological factors contributing to treatment failure in patients with dermatophytic infection attending tertiary care hospital in Northern
13. Study of Single Nucleotide polymorphism in TNF.α, TNFAIP3, TNIP1, TRAF3IP2, IL-17, IL-23R, IL-12 B & HLA-C genes in Indian Psoriasis patients and their association with clinical characteristics.
14. Study of vaginal microbiome and metabolome in women with bacterial vaginosis (BV) and apparently healthy controls and their correlation with diagnostic criteria, treatment failure and relapse
15. To evaluate the effectiveness and safety of topical triple therapy formulation with fractional CO2 laser and triple therapy alone in the treatment of melasma in split face randomized control study.

### **Completed**

1. Elucidating role of micro RNA in the pathogenesis of active generalized vitiligo & in pigmentation.
2. Patch testing with mercapto mix with a high content of 2-mercaptobenzothiazole
3. Evaluation of effectiveness of combination of isotretinoin with terbinafine and terbinafine alone in the treatment of recurrent dermatophytosis
4. Patch testing with a Methylchloroisothiazoline/methylisothiazolinone mix with a higher concentration of methylisothiazoline
5. Efficacy of topical Rituximab encapsulated in nanoparticle in patients of oral pemphigus vulgaris - a randomised double blind placebo controlled trial

### **Collaborative projects**

#### **Ongoing**

1. Th2/Th17 inflammatory cytokines modulating filaggrin expression and disease severity in children with atopic dermatitis, Genetics, Cardiac Biochemistry
2. Deciphering the mechanism of alarmins induce necroptosis and its role in immune homeostasis and inflammation in athero - sclerosis, Cardiac Biochemistry
3. Defining the role of Neutrophil Extracellular Traps (NETs) in immune regulation and inflammation, Cardiac Biochemistry
4. Evaluation of prevalence, regional phenotypic variation, co morbidities, risk factors and the variations in response to different therapeutic modalities among Indian women with polycystic ovary syndrome (PCOS): A multicenter study across India (ICMR-PCOS task force), Multicentric national study
5. Development of a population based leprosy Registry (PBLR) & new case detection strategies (NCDS) to eradicate leprosy in urban areas, TLM Shahdara
6. Radioactive Skin Patches for Treatment of Basal Cell Carcinoma, Nuclear Medicine
7. Radiocative Skin Patches for Treatment of Basal Cell Keloids, Nuclear Medicine
8. Exploring the role of innate immunity in immunopathogenesis of pemphigus vulgaris, Biochemistry
9. Autologous fat transfer for correction of cicatricial ectropion, Ophthalmology

## **Completed**

1. Exploring the role of gamma-delta T-cells in immunopathogenesis of pemphigus vulgaris, Biochemistry

## **PUBLICATIONS**

**Journals: 37**

**Chapters in Books: 9**

**Books: 3**

## **PATIENT CARE**

The department has 29 bedded ward including two isolation rooms. The total number of long admissions from April 2019 to March 2020 was 771 and total short admission was 2132. The OPD caters to both general dermatology patients (in first half) and special clinics (STD, leprosy, dermatosurgery, Pigmentation, Allergy) and lasers (Diode, Carbon dioxide, NdYAG laser, Pulse Dye laser) in afternoon. Side lab procedures and dermatosurgery procedures are conducted in both morning and afternoon. According to census, 30263 new cases were attended in Out Patient department and total number of old patients was 55857. One Senior Resident is visiting Ballabgarh for skin OPD twice a week and the department has started community dermatology OPD services in Jhajjar twice a week.

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor VK Sharma** was Editorial Board-International Journal of Dermatology, Dermatitis, British Journal Dermatology; Member, Executive Committee, International Society of Dermatology; Member, Research Committee, AIIMS, Rishikesh; Organizing chairperson, 9th Annual conference contact and occupation dermatoses forum of India, 31 August and 1 September 2019, All India Institute of Medical Sciences, New Delhi; Chaired Plenary session, 4th Pigmentarycon, 15-17 November 2019, Kolkata; Chairperson, Management of Hand Dermatitis, MID -CUTICON, 2nd June, Delhi; Chairperson, PEDDERMA-CON 2019, 27 and 28 July, Telangana.

**Professor Kaushal Verma** was awarded FAMS-2019 by the national Academy of Medical Sciences, New Delhi; Nominated Inspiring Physicians for 2019 by the Royal College of Physicians of Edinburgh, UK; Visiting faculty Michigan University Department of Dermatology, 19-25 July 2019 Ann Arbor, Michigan, USA; Chaired a symposium on "Occupational Dermatoses" along with Prof. Swen M. John and Prof. Hiro Yokozeki from Japan at 24th World Congress of Dermatology, 10-15 June 2019 Milan, Italy; Chaired a symposium on "Regional responses to global HIV/STI trends-IUSTI Special Symposium" at STI & HIV-2019 World Congress (IUSTI- World Conference) 13-17 July 2019 at Vancouver, Canada; Represented the Asia Pacific region as Regional Chair of the IUSTI- AP region and participated in the World Executive meeting of the IUSTI-World, 13 July 2019 Vancouver, Canada; Represented the Asia Pacific region as Regional Chair of the IUSTI- AP region in the General Assembly 15 July 2019, Vancouver, Canada; Co-Chair, Scientific Committee (Clinical Track) of the IUSTI- World Congress 2020 to be held at Bangkok, Thailand; Participated in the Scientific Committee meeting of the IUSTI- World Congress 2020 to be held at Bangkok, Thailand on 15 July 2019 at Vancouver, Canada; Participated and represented the country in the International Contact Dermatitis Research Group (ICDRG) Board meeting on 13 September 2019, Kaula Lumpur, Malaysia; Participated in the APEODS Board meeting representing India on 13 September 2019 at Kaula Lumpur, Malaysia; Chaired a Scientific session at Face Aesthetics Dermatologists Society (FADS) Annual Conference, 9 and 10 November 2019, Gurugram, Delhi NCR; Contributed to Community service health care program at Ladakh from 29 September–6 October 2019; Participated as an Expert in live phone-in Show Skin health and Skin care in Summers on DD National, Prasar Bharati on 2 May 2019; Expert for Faculty Selection, to AIIMS Jodhpur, 8 September 2019 Jodhpur, Rajasthan; External Examiner, MD (Dermatology & Venereology) Examination, BPKIHS, Dharan Nepal, 15 and 16 August 2019.

**Professor Sujay Khandpur** was President of IADVL Delhi Branch 2020; Associate Editor of IADVL Textbook of Dermatopathology; Secretary, Dermatopathology Society of India, 2019-20; Member, Special Interest Group of Dermatopathology, IADVL

**Dr Kanika Sahni** won First prize in International Case Presentation Competition at DIAD-DIAL conference in Dubai, UAE, February 2020

**Dr Neetu Bhari** was awarded Best letter to editor, IJDVL, year 2019. Patra S, Bhari N, Mohta P, Singh S, Ramam M, Agarwal S. Adult-onset Still's disease presenting as blotchy and flagellate pigmentation. *Indian J Dermatol Venereol Leprol.* 2019; 85(6):626–8; Organizing secretary, 9th Annual conference contact and occupation dermatoses forum of India, 31 August and 1 September 2019, All India Institute of Medical Sciences, New Delhi; Clinical image competition IJMR, 2019 award



## 9.10. Emergency Medicine

	<b>Professor and Head</b> Praveen Aggarwal	
	<b>Professors</b>	
LR Murmu		Sanjeev Kumar Bhoi
	<b>Associate Professor</b>	
Nayer Jamshed		Tej Prakash Sinha
	<b>Assistant Professors</b>	
Meera Ekka	Akshay Kumar	Prakash Ranjan Mishra

### HIGHLIGHTS

The department has been in the forefront of providing round-the-clock, holistic and world-class emergency care to patients with all types of medical, paediatric and non-traumatic surgical, as well as some of the traumatic emergencies. Nearly 1,49,443 patients visited the department in the year 2019-2020. The department has been providing training to its post-graduates in the specialty of Emergency Medicine since July 2012. In addition, the departmental faculty is involved in teaching and training of postgraduates from other departments (including Medicine, Surgery, Geriatric Medicine, Critical Care Medicine, Dermatology, Psychiatry and several others), undergraduate students, nursing students and paramedics in the field of emergency medicine including life support courses. The department is also involved in training the existing and future faculty from other colleges and hospitals in the specialty of Emergency Medicine.

Under the aegis of the Ministry of Health and Family Welfare, the department is involved in developing guidelines for comprehensive primary healthcare for burns and trauma as well as for Emergency Department at District Hospitals under the Ministry. In collaboration with South East Asia Region, WHO, the department is involved in formulating guidelines on road safety, injury prevention, as well as integration of emergency and trauma care in India. Under the AIIMS Quality Improvement Programme, Emergency Medicine Department has started several projects to further improve patient care and outcome. This has also resulted in shorter stay of patients. At international level, the department has been actively collaborating with several universities from the USA with the aim of training doctors, nurses and paramedics. Some of these Universities include University of South Florida and SUNY Downstate, New York.

### EDUCATION

The faculty organized life support courses for undergraduates, postgraduates and nurses posted in the department. It has conducted AIIMS Emergency ECG and rapid sequence intubation courses for the postgraduates of Institute as well as other colleges. The department runs a schedule of academic activities for the residents of Emergency Medicine (seminars, journal clubs, case discussions) twice a week for 9 hours. Education and skills are imparted to residents on the use of ultrasound in emergency care of patients. Simulation-based teaching (both table-top and on high-fidelity simulator) is imparted to the residents. In addition, the Faculty of the department are involved in didactic teaching of undergraduates, postgraduates and nursing students through lectures and seminars.

The department imparted short term training to Mr Yann Le Lay (France), Mr Matthieu Perin (France), Ms Fatma Azim Khan (Riyadh), Ms Karen Borges (Belgium) and Mr Ketan Singh (UK) from other countries.

### Continuing Medical Education

#### Conferences/seminars/workshops organized

1. Tactical combat course for CRPF on 5 April 2019 at JPNATC, AIIMS, New Delhi
2. CME on Trauma Update and AUTLS workshop from 9 to 10 April 2019 at AIIMS, Jodhpur
3. Emergency Sonography Workshop from 6 to 7 May 2019 at AIIMS, Rishikesh
4. EM-INDIA, National Conference on Emergency Medicine, at AIIMS, New Delhi from 31 July to 4 August 2019
5. AUTLS (Advanced Ultrasound and Trauma life support) Workshop from 6 to 7 September 2019, Pune
6. AIIMS EM-SONO Workshop on Emergency and Point of care Ultrasonography held from 14 to 15 September 2019 at LHMC, New Delhi
7. Compressive life support course for CRPF from 20 to 21 November 2019, JPNATC, AIIMS, New Delhi
8. HEMS-INDIA, Workshop on helicopter-based emergency medical services, at AIIMS, New Delhi from 26 to 28 November 2019



9. Advanced point of care ultrasound course held from 5 to 6 December 2019 at Texas, USA
10. WACEM ULTRAMAC Workshop (World Academic Council of Emergency Medicine's Ultrasound in Mass Casualties Workshop) at Tel Aviv, Israel on 12 January 2020
11. 5th National Emergency Medicine Board Review of India Course (NEMBRIC), at National Board of Examinations from 8 to 12 February 2020, New Delhi

#### **Lectures delivered**

**Praveen Aggarwal: 11**

**Sanjeev Bhoi: 14**

**Nayer Jamshed: 5**

**Tej Prakash Sinha: 14**

**Meera Ekka: 8**

**Akshay Kumar: 13**

**Prakash Ranjan Mishra: 8**

#### **Oral papers/Posters presented 3**

### **RESEARCH**

#### **Funded Projects**

##### **Ongoing**

1. Delhi Emergency Life Heart Attach Initiative: Mission Delhi, Praveen Aggarwal, ICMR, 3 years, 2017-2020, Rs 4.9 crores
2. Evaluation of a health system-based intervention on change in thrombolysis rate in ST-segment elevated myocardial infarction (STEMI) across selected districts of the country – A health implementation research project, Praveen Aggarwal, ICMR, 3 years, 2020-2022, Rs 87.93 lakhs
3. To study the gene expression, activation of cellular signalling pathway and its correlation with clinical outcome among trauma hemorrhagic shock THS. Sanjeev Bhoi, ICMR, 3 years, 2019-2022, Rs 58 lakhs
4. Current status of facility-based emergency and injury care in tertiary care, Sanjeev Bhoi, Niti Aayog, 1 year, 2019-2020, Rs 37 lakhs
5. Current status of facility-based emergency and injury care in secondary care. Sanjeev Bhoi, Niti Aayog, 1 year, 2019-2020, Rs 34 lakhs

#### **Departmental projects**

##### **Ongoing**

1. Accuracy of AIIMS sepsis triage protocol in early identification of sepsis in Emergency Department
2. Assessing accuracy of smartphone ECG - Sanketlife in diagnosing arrhythmias
3. Assessing accuracy of smartphone ECG - Sanketlife in diagnosing STEMI
4. Assessing the serum chymase levels an early predictor of Dengue severity
5. Assessment of internal jugular vein and femoral vein collapsibility in the determination of intravascular volume status as compared to inferior vena cava collapsibility
6. Biochemical markers for the prediction of outcome in patients of cardiac arrest
7. Clinical epidemiological profile of patients with AKI in CLD
8. Clinical epidemiological study of acute abdominal pain in ED
9. Clinical profile of patients requiring emergency airway management in the Department of Emergency Medicine
10. Clinico-epidemiological profile of patients with corrosive poisoning presenting to emergency department
11. Comparative efficacy of low vs high dose Terlipressin in the management of upper Gastrointestinal bleeding: An Open label Randomized Control Trial
12. Comparison of the full outline of unresponsiveness (FOUR) score and the Glasgow Coma Scale in predicting clinical outcome of patients with altered sensorium in the Emergency Department
13. Diagnostic accuracy of transcranial ultrasound to detect clinically significant conditions in post-craniectomy patients
14. Efficacy of intra-lipid emulsion therapy in organo-phosphorus poisoning – an exploratory study
15. Epidemiology of Emergency Department Visits – An International Multicentric Study
16. Evaluation and appraisal of Triage protocol of AIIMS in terms of mortality

17. Evaluation of diagnostic characteristic of Neutrophil-Lymphocyte ratio in comparison to commonly used score (APACHE II, CTSI and BISAP) in Acute pancreatitis
18. Incidence of hypoglycemia in hyperkalemic patients following treatment with insulin and dextrose
19. Integration of point-of-care ultrasound during rapid sequence intubation in trauma resuscitation: A multicentric randomized study
20. Nebulised vs intravenous tranexamic acid in patients with haemoptysis presenting to emergency department: A randomized controlled study
21. Outcome of patients receiving cardiopulmonary resuscitation in the Department of Emergency Medicine, AIIMS, New Delhi
22. Outcome of patients with upper gastrointestinal haemorrhage presenting to Emergency Department
23. Platelet-lymphocyte ratio as a predictor of infarct related artery patency in patients with ST-elevation myocardial infarction
24. Profile of Acute Poisoning in Emergency Department: A retrospective study
25. q-SOFA scores as a predictor of 7 & 30 days mortality in patients with suspected infection presenting to the Emergency Department
26. Reducing time to antibiotics and ensuring blood culture collection in patients with Sepsis in Emergency Department
27. Role of high dose NTG bolus for patients presenting with Sympathetic Crashing Acute Pulmonary Edema to the Emergency Department – A Prospective Observational Study
28. Role of Methylprednisolone in Corrosive Esophageal Injury: A randomised Controlled Open Label Study
29. To determine by ultrasound the optic nerve sheath diameter in paediatric patient with increased intracranial pressure compared with control group
30. To determine the improvement in outcome of management of acute exacerbation of COPD in ED by implementation of COPD care bundle
31. To study clinico-epidemiological profile of patients with sympathetic crashing acute pulmonary edema (SCAPE)
32. To study the diagnostic characteristics of point of care ultrasound in patients of blunt trauma of chest

### ***Completed***

1. Comparison of three scoring systems (AIMS 65, pre-endoscopic Rockall, Glasgow Blatchford) to predict 1 week outcome in patients presenting to Emergency Department with acute upper gastrointestinal bleeding
2. Water-bath ultrasound technique in the evaluation of distal hand and foot injuries in the emergency department
3. To study the risk of major cardiac events in chest pain patient after 30 days of presentation to ED in patients with acute onset chest pain categorized as low risk group based on HEART pathway
4. To study the clinical profile and pattern of complications related to chronic kidney disease among patients visiting Emergency Department
5. Role of triple rule out dual energy CT in patient presenting with acute chest pain in an Emergency setting
6. Clinical profile of patients with rheumatic heart disease presenting to Emergency Department
7. CISNE vs. MASCC score: Identifying low-risk febrile neutropenic patients in emergency department
8. Serum lactate and shock index as clinical metrics in predicting adverse outcomes in patient with STEMI
9. To study the clinical profile of patients of CLD presenting to the emergency department

### **Collaborative Projects**

#### ***Ongoing***

1. Global One Day in Emergency Study–Global Multicentric Period Prevalence Study University of Michigan, Ann Arbor, USA
2. Epidemiology of Emergency Department Visits–An International Multicentric Study University of Michigan, Ann Arbor, USA

#### ***Completed***

1. Development of Self-assessment tool for resident doctor's communication skills in India, Medicine
2. Utility of Metabolic Imaging in patients with obscure abdominal pain, Surgery

3. A Survey of Electronic Health Records in the Academic Emergency Departments across India. Twelve Academic Emergency Departments within India

## PUBLICATIONS

**Journals: 21**

**Chapters in Books: 3**

## PATIENT CARE

**Number of patients attended Emergency services**

Total new patients	Total revisit patients	Total patients
1,01,786	47,657	1,49,443

### Medico-legal cases

Wing of Emergency	Total e-MLCs
New Emergency	782
Surgical Emergency	11,892
Paediatric Emergency	554
Total	13,228

### Point of Care Testing Laboratory (POCT) data

Test type	Total test done	Grand total
Complete blood count	1,08,000	2,18,555
Quantitative Troponin I	10,672	
Blood gas analysis	93,569	
BNP and NT pro-BNP	2048	
D Dimer	729	
Urine Tox screen	420	
PT/INR	3042	
Procalcitonin	75	

### Procedures done in Emergency OT

Name of procedure	Total number
Tracheostomy	178
Other Procedures	17
Total minor procedures	195

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Praveen Aggarwal** continues to be the Chief Editor of the Journal of Emergencies, Trauma and Shock, an international journal indexed in PubMed. He also continues to be a member of Signal Review Panel of the Central Drugs Standard Control Organization and the Indian Pharmacopoeia Commission for the Pharmaco-vigilance Programme of India, Member of Scientific Body, Indian Pharmacopoeia Commission, Ministry of Health and Family Welfare, Government of India. He is the Vice-President of the Academic College of Emergency Experts in India and Joint Secretary of Organized Medicine Academic Guild of India which is a Guild of major medical associations and societies in India with the aim to formulate national policies in term of patient care, education and research. He chaired sessions on echocardiography & ultrasound for emergency physicians, heart failure registry and STEMI during Emergency Cardiology Conference (EMCARD).

**Professor Sanjeev Bhoi's** team is currently assessing the status of facility-based emergency and injury care system in secondary and tertiary care in India and providing technical advice to the Niti Aayog in building emergency care system. He served as a

member secretary to the newly created specialist board of Emergency Medicine to make guidelines for academic emergency medicine in India. He has created one idea of thesis with multiple universities getting involved with same methodology to evolve a multi-centric work with optimum sample size for quality research output. He is serving as the head of WHO-collaborating centre for Emergency and Trauma in the region and has been working collaboratively with various states of India and member countries of SEARO as well as world academic council for emergency medicine in building systems of integrated emergency and trauma care in India and globally.

**Dr Nayer Jamshed** is the in-charge of MD teaching program which includes weekly Seminars, Journal Club, Tintinalli's textbook-based topical discussion, evidence-based medicine and clinical case discussions. He is the in-charge of simulation-based training program of the department. He has also started the Departmental panel discussion on various topics pertaining to Emergency department. He has published 11 papers in reputed journals, a chapter in books and also is the reviewer of three journals in one year. He has organized symposium and delivered lectures on various topics. He is also a member of Institute COVID task force and was instrumental in writing for AIIMS guidelines on COVID-19. He is also one of the nodal officers for infection control program of AIIMS and COVID. He is one of the nodal officers for curriculum revision program of AIIMS. He is one teaching faculty for SET Facility and has developed modules for them. He is also the teaching faculty for AIIMS ECG and Emergency Life Support courses run by the department. Dr Jamshed is a part of departmental quality improvement program to improve quality of patient care, and the in-charge of mortality and morbidity meeting of the department. He is one of the teaching faculty for the proposed Toxicology Fellowship Program.

**Dr Tej Prakash Sinha** has focused his area of work in emergency and trauma care system building. He is involved in assessing the status of facility-based emergency and injury care system in secondary and tertiary care in India and providing technical advice to NITI Aayog in building emergency care system. Presently, his major focus area is use of point of care ultrasound for emergency & trauma. He is conducting training programs on using point of care ultrasound in Medical education by training undergraduate students for learning anatomy and physiology and training postgraduate students for using point of care ultrasound in acute/emergency care including its use in disaster scenarios. Presently, he is serving as Educational Sub-committee Co-Chair of global emergency medicine research network "Emergency Medicine Education & Research by Global Experts (EMERGE)" with a vision to transform lives globally through emergency care research. He is serving as an officer of WHO-collaborating centre for Emergency and Trauma in the region and has been working collaboratively with various states of India and member countries of SEARO for emergency medicine in building systems of integrated emergency and trauma care in India and SEAR region.

**Dr Meera Ekka** continued to be Reviewer of various international journals and is on editorial board of Annals of Clinical Case Studies. She is member of Asia Pacific Association of Medical Toxicology. She demonstrated as a course faculty of the skill module for skill learning on "Needle Decompression in pneumothorax" for interns in skill lab, SET facility, and is the in-charge of teaching and assessment of MBBS students. She is the Faculty In-charge, store and nodal officer for fire safety for the Department of Emergency Medicine. She is involved in initiation of Triage and Screening OPD in the department. She is part of quality improvement projects for pain free Emergency Department. She is one teaching faculty for SET Facility and has developed modules for them. She is also the teaching faculty for AIIMS Emergency ECG and comprehensive Emergency and trauma care training of medical/paramedical CAPFS course run by the department. She is chief guide of four Emergency Medicine postgraduate students and moderate post graduate students for various seminars and journal clubs in seminars conducted in the department. She is one of the teaching faculties for the proposed Toxicology Fellowship Program.

**Dr Akshay** has led several evidence-based discussions in the Department. He was involved in developing content and training of Faculty and Students at the SET Facility. He has conducted several critical care workshops for competency building among PG students and Interns. In December 2019, he was recognized by the Academic Section for his contribution to the SET Facility. He has conducted qualitative research in medical education through training workshops on acute and critical care. He has completed qualitative research in communication skill training and submitted for publication. One collaborative project on National Survey of Emergency Electronic Health Records has been completed and is being written for publication. He has led several Quality Improvement Programs to improve processes of patient care including door to antibiotic time, door to first medical contact time and improving the airway management in the Department.

**Dr Prakash Ranjan Mishra** who joined as a regular faculty in the department on 18 September 2019 continued his services towards creating a robust emergency medicine department. He continues to hold AIIMS Emergency ECG Course for postgraduates which trains them in interpreting ECGs in emergency settings. He was the Organizing secretary of HEMS-India (Helicopter based emergency medical services) which will be a milestone in improving emergency medical services in the country. He was active as a faculty and moderator during EM-India (the national Emergency Medicine conference) held at AIIMS. He has developed new e-skill module for skill learning on "Pelvic binders" for MBBS students in skill lab, SET facility, AIIMS. He is actively involved in training postgraduates in Trauma care, sonography in emergencies as well as skill development using cadavers. He was a moderator for postgraduate students for various sessions of seminars and journal clubs conducted in the department and had also participated in several panel discussions as a panellist. He is a part of departmental

quality improvement program to improve patient care and develop communication skills among Emergency Medicine team. He was also involved in training doctors and paramedics during workshops, as, CAPFS Course and programme for GDMOs of Coal India limited, held at AIIMS. He continues his services during the COVID-19 pandemic; is a member of COVID task force 'clinical managerial group' at AIIMS and has contributed to creation of screening areas for influenza-like and severe acute respiratory illness in the department of Emergency medicine.

## 9.11. Endocrinology and Metabolism

### Professor and Head

Nikhil Tandon

### Professors

Nandita Gupta (till 31 December 2019)  
Rajesh Khadgawat

Ravinder Goswami  
Viveka P Jyotsna

### Associate Professor

Yashdeep Gupta

### Assistant Professor

Alpesh Goyal

### HIGHLIGHTS

The department is engaged in many academic activities such as Endocrine-Pathology Conference every alternate week, Endocrinology-Surgery-Nuclear Medicine (Wednesday) and Endocrinology-Radiodiagnosis (Friday) meet every week. There are Seminars (Wednesday), Journal Clubs (Friday) and Clinical classes (Thursday) every week. During these academic events, topics of clinical importance and recent high impact articles are discussed. The department runs daily outpatient facilities, has state of the art laboratory services for hormone assays, metabolic studies and bone density measurement.

### EDUCATION

#### Undergraduate, Postgraduate, Paramedical Training

The department was actively involved in teaching undergraduate medical students and nursing students. Postgraduate students (MD) from Internal Medicine and Geriatric Medicine come for one and two month postings to the department. In addition, postgraduate fellows enrolled in MCh Breast and Endocrine Surgery, DM Nuclear Medicine and MSc Reproductive Biology also rotated for a period of 2-4 weeks in the department.

#### Long and Short Term Training

- Six candidates joined the DM course (Five General, One Sponsored).
- Two candidates permitted for short term training.

#### CMEs/Workshops/Symposia/National and International Conferences

#### Lectures delivered

Nikhil Tandon: 18

Ravinder Goswami: 7

Rajesh Khadgawat: 16

Yashdeep Gupta: 3

Alpesh Goyal: 9

#### Oral papers/posters presented: 5

### RESEARCH

#### Funded projects

##### Ongoing

1. Registry of people with diabetes in India with young age at the onset phase II, Nikhil Tandon, ICMR, 8 years, 2012-2020, Rs 246.99 lakhs
2. Changing diabetes in children, Nikhil Tandon, Novo Nordisk India Pvt Ltd., 8 years, 2012-2020, Rs 21 lakhs
3. A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus, Nikhil Tandon, ICMR, 5 years, 2015-2020, Rs 72.77 lakhs
4. Development of Phase II Clinical Trial for an Investigational New Drug, Nikhil Tandon, Torrent Pharma, 7 years, 2014-2021, Rs 84.53 lakhs

5. To develop a strategy for postpartum follow up of woman with history of gestational diabetes mellitus by using the right test and frequency of testing and developing patient centric approach after incorporating their views, Nikhil Tandon, LUPIN, 3 years, 2018-2021, Rs 40.41 lakhs
6. Effect of intervention for lifestyle modification on improvement in sleep quality, depression score and optimal breastfeeding duration in women with history of GDM: Sub study of LIVING, Nikhil Tandon, USV, 3 years, 2018-2021, Rs 53.42 lakhs
7. Integrated Tracking Referral, and Algorithmic Management (I-TREC) System for Hypertension and Diabetes Institution, Nikhil Tandon, NIH, USA, 5 years, 2017-2022, US\$ 6.49 lakhs
8. Centre for Advanced Research and Excellence (CARE) in Young Diabetes, Nikhil Tandon, ICMR, 5 years, 2019-2024, Rs 104.95 lakhs
9. SOUL - Semaglutide cardiovascular outcomes trial in patients with type 2 diabetes, Nikhil Tandon, Novo Nordisk India Pvt Ltd., 5 years, 2019-2024, Rs 30 lakhs
10. Long - term effects of semaglutide on diabetic retinopathy in subjects with type 2 diabetes (FOCUS), Nikhil Tandon, Novo Nordisk India Pvt Ltd., 5 years, 2019-2024, Rs 27.50 lakhs
11. Bone mineral density and chronic alcoholism and changes following disulfiram deaddiction therapy, Ravinder Goswami , DBT, 3 years, 2017-2020, Rs 45 lakhs
12. Vitamin D deficiency and bone microarchitecture in asymptomatic healthy Indians: Exploring the functional significance of low serum 25(OH)D and high PTH, Ravinder Goswami, DBT, 4 years, 2019-2023, Rs 76 lakhs
13. A Randomized Placebo Controlled Prospective Phase II Clinical Study of an Ayurvedic Coded Drug ‘AYUSH-D’ on Glycemic control in Pre-Diabetic Subjects”, Rajesh Khadgawat, Central Council for Research in Ayurvedic Sciences, Ministry of AYUSH, Govt of India, 3 years, 2017-2020, Rs 35 lakhs
14. A Randomized Placebo Controlled Phase 2 Clinical Study of an Ayurvedic Coded Drug ‘AYUSH D’ in the Management of Type 2 Diabetes Mellitus as add on Therapy to Metformin, Rajesh Khadgawat, Central Council for Research in Ayurvedic Sciences, Ministry of AYUSH, Govt of India, 3 years, 2017-2020, Rs 35 lakhs
15. Efficacy and safety of Liraglutide in combination with metformin versus metformin monotherapy on glycemic control in children and adolescents with type 2 diabetes: A 26 weeks double blind randomized, parallel group, placebo controlled multi-centre trial followed by a 26-week open label extension, Rajesh Khadgawat, Novo Nordisk, 5 years, 2014–2019, Rs 30 lakhs
16. A randomised, multinational, active-controlled,(open-labelled), dose finding, (double-blinded), parallel group trial investigating efficacy and safety of once-weekly NNC0195-0092 treatment compared to daily growth hormone treatment in growth hormone treatment naïve pre-pubertal children with growth hormone deficiency, Rajesh Khadgawat, Novo Nordisk, 3 years, 2017-2020, Rs 30 lakhs
17. Development of A Standardized Formulation of Trigonella foenum-graecum Seeds For Preventing or Delaying the Development of Type-2 Diabetes in Subjects with Pre-Diabetes, Rajesh Khadgawat, ICMR, 5 years, 2017–2021, Rs 35 lakhs
18. Effect and safety of semaglutide and 2.4 mg once-weekly in subject with overweight or obesity and type 2 diabetes., Rajesh Khadgawat, Novo Nordisk, 5 years, 2017–2021, Rs 30 lakhs
19. A phase 3, open-label, randomized, multicenter, 12 months, efficacy and safety study of weekly MOD-4023 compared to daily Genotropin- therapy in pre-pubertal children with growth hormone deficiency, Rajesh Khadgawat, Opko Biologicals, 3 years, 2017-2020, Rs 25 lakhs
20. A Phase IIb, Open-label, Randomized, Comparative Study to Evaluate the Safety and Efficacy of USVCAP Formulation in Type 2 Diabetes Mellitus Subjects Uncontrolled with Metformin Hydrochloride Treatment, Rajesh Khadgawat, USV Ltd, 3 years, 2019-2021, Rs 10 lakhs
21. A trial comparing the effect and safety of once weekly dosing of somapacitan with daily Norditropin® in children with growth hormone deficiency, Rajesh Khadgawat, Novo Nordisk, 5 years, 2018-2023, Rs 20 lakhs
22. A Randomized, Double-blind, Placebo-controlled, Parallel-group, Multicenter Study to Evaluate the Effect of Efglenatide on Cardiovascular Outcomes in Type 2 Diabetes Patients at High Cardiovascular Risk, Rajesh Khadgawat, Sanofi Aventis, 5 years, 2018-2023, Rs 25 lakhs
23. A randomized, 24-week, controlled, open label, parallel arm, multicenter study comparing the efficacy and safety of the insulin glargine/lixisenatide fixed ratio combination to insulin glargine in type 2 diabetes patients, inadequately controlled on Basal Insulin with or without Metformin, Rajesh Khadgawat, Sanofi Aventis, 3 years, 2017-2020, Rs 5 lakhs
24. A Phase II trial to assess the efficacy and safety of Pasireotides.c. alone or in combination with cabergoline in patients with Cushing’s disease, Viveka P Jyotsna, Novartis, 6 years, 2015-2021, Rs 10 lakhs
25. A Phase III, multi-center, double-blind, randomized withdrawal study of LCI699 following a 24 week, single-arm,

- open-label dose titration and treatment period to evaluate the safety and efficacy of LCI699 for the treatment of patients with Cushing's disease, Viveka P Jyotsna, Novartis, 5 years, 2016-2021, Rs 29.53 lakhs
26. An open-label, multi-center, roll-over study to assess long term safety in patients with endogenous Cushing's syndrome who have completed a prior Novartis-sponsored osilodrostat (LCI699) study and are judged by the investigator to benefit from continued treatment with osilodrostat, Viveka P Jyotsna, Novartis, 5 years, 2019-2024, Rs 20 lakhs
  27. A multicentre open label parallel arm RCT evaluating whether yoga can prevent worsening of glycaemic control in patients with type 2 diabetes mellitus on oral anti-hyperglycemic drugs, Yashdeep Gupta, ICMR, 3 years, 2017-2020, Rs 75 lakhs
  28. Effect of Yoga on psychological, cognitive and glycemic control in patients with T2DM and Depression: Two arm parallel Randomized controlled trial, Yashdeep Gupta, DST, 3 years, 2017-2020, Rs 36.54 lakhs
  29. Assessment of Cognitive, Neuroanatomical and Neurofunctional abnormalities in adults with Type 1 Diabetes, Yashdeep Gupta, DST, 3 years, 2017-2020, Rs 34.81 lakhs
  30. To evaluate the effectiveness of lifestyle intervention program in overweight/obese women [within 2 years of last child birth] when delivered to them along with their spouse as compared to them alone: Two arm parallel Randomized Control Trial, Yashdeep Gupta, ICMR, 3 years, 2019-2022, Rs 47 lakhs

### **Completed**

1. Integrated care for co-morbid diabetes and depression, Nikhil Tandon, National Institute of Mental Health, NIH, USA, 5 years, 2014 –2019, Rs 88.22 lakhs
2. CARRS Translation Trial: Implementing Quality Improvement Strategies in Diabetes, Nikhil Tandon, ICMR-Emory University, 5 years, 2014-2019, US\$ 17.55 lakhs
3. A 52 week multicentre, multinational, open-label, active - controlled, two armed, parallel group, randomized trial in subjects with type 2 diabetes, Nikhil Tandon, Novo Nordisk India Pvt Ltd., 1 year, 2019-2019, Rs 13.75 lakhs
4. Harmonization of existing registries of diabetes in youth: a US-India Collaborative Research Partnership, Nikhil Tandon, ICMR, 4 years, 2016-2020, Rs 84.13 lakhs
5. NN1218 - 4131, Efficacy and Safety of Faster - acting Insulin Aspart compared to NovoRapid both in combination with Insulin Degludec in Adults with Type 1 Diabetes, Nikhil Tandon, Nova Nordisk India Pvt. Ltd., 4 years, 2016-2020, Rs 9.02 lakhs
6. Prevalence of Non-Alcoholic Fatty Liver Disease (NAFLD) and its association with cardio-metabolic disease risk factors in North India, Nikhil Tandon, ICMR, 3 years, 2017-2020, Rs 172.53 lakhs
7. NN924-4221 Pioneer 6-Cardiovascular outcomes: A trial investigating the cardiovascular safety of oral Semaglutide in subjects with type 2 diabetes, Nikhil Tandon, Nova Nordisk India Pvt. Ltd., 3 years, 2017-2020, Rs 21.57 lakhs
8. Functional significance of calcium sensing receptor autoantibodies in patients with idiopathic hypoparathyroidism, Ravinder Goswami, DBT, 3 years, 2016-2019, Rs 44 lakhs
9. STEP -1 Effect and safety of semaglutide 2.4 mg once-weekly in subjects with overweight or obesity, Yashdeep Gupta, Novo Nordisk Pvt Ltd, 2 years, 2018-2020, Rs 23 lakhs
10. The impact of yoga on stress, metabolic parameters and cognition (Attention and Concentration) of Indian adolescents , Yashdeep Gupta, ICMR, 3 years, 2017-2020, Rs 64.64 lakhs
11. Validation of indigenously developed glucose sensing devices, Yashdeep Gupta, ICMR , 1 year, 2018-2019, Rs 2.40 lakhs

### **Departmental projects**

#### **Ongoing**

1. Vitamin D status and its functional significance
2. Reversibility of Bony microarchitecture abnormalities in Hyperparathyroidism
3. Molecular aspects in the pathogenesis of Basal ganglia calcification in hypoparathyroidism
4. Characterization of Neuroendocrine Tumors with Ga68-DOTANOC PET/CT and F18- FDG PET/CT and compare results with histopathology
5. Assessing Indian vegetarian diets with respect to their “potential protective impact” on cardio-metabolic health of urban adults in Delhi
6. To study the effect of personality on diet quality & academic performance among adolescents: a comparison between boys & girls



7. Determinants of bone mass in Asian Indian newborns - Nutritional perspective
8. Association of clinical, hormonal, radiological and immunohistochemical characteristics with surgical outcome among Acromegaly patients
9. To generate normative data using continuous glucose monitoring system for glycemia in pregnancy at early (< 15 weeks) and late (24 to 28 weeks) periods of gestation in women defined as normal by IADPSG criteria

### **Completed**

1. A study on distribution of glucose tolerance among women with history of gestational diabetes mellitus by IADPSG criteria/overt diabetes in pregnancy and their spouses
2. Vitamin D status of outdoor workers
3. TREC and KREC as marker of Thymic and bone-marrow T and B cell emigrant in idiopathic hypoparathyroidism
4. To study the prevalence of vitamin D deficiency in pregnant women at first and third trimester during the routine care
5. Correlation between first trimester glucose screening & serum insulin levels with development of gestational diabetes mellitus in pregnancy
6. Prevalence of thyroid peroxidase antibody positivity in pregnant Asian-Indian subjects
7. To assess the prevalence of vitamin D deficiency in patients with non-traumatic fracture of hip
8. To study the clinical, biochemical and radiological features of primary hyperparathyroidism: impact of vitamin D nutrition and histopathology
9. To Study Carotid Intima Media Thickness (CIMT) As A Marker Of Atherosclerosis And Its Correlation To Insulin Resistance In Children With Obesity In The Age Group Of 4-18 Years
10. To study the correlation of serum vitamin D level with insulin resistance and beta cell function in subjects with obesity in the age group of 6-18 years
11. Assessment of arterial stiffness in obese children and adolescents in the age group of 6-18 years
12. To study the impact of adiposity on serum androgen parameters in apparently healthy male subjects
13. To study determinants of insulin resistance in children and adolescents with obesity
14. Study of mitochondrial defects and VDR polymorphisms in Type 2 Diabetes
15. A Randomized Double Blind Controlled Trial to Investigate the Effects of Vitamin D supplementation on Insulin Resistance and Beta cell function in obese Asian-Indian Subjects, aged 11-17 years.
16. To study the variability in content strength of commercially available cholecalciferol preparations in India
17. To study determinants of insulin resistance in children and adolescents with obesity
18. Phenotype and radiological correlation in children with growth hormone deficiency
19. To study the impact of adiposity on serum androgen parameters in apparently healthy male subjects
20. To study pituitary morphometry across different age groups
21. To study the determinants of insulin resistance in Asian Indian children with obesity aged 11-17 years
22. Effect of Vitamin D supplementation on pancreatic  $\beta$  cell functions in obese Indian subjects: A randomized controlled trial.
23. To compare the efficacy of 90,000 and 1,80,000 IU oral single dose vitamin D for treatment of rickets in 6 month to 5 years of age
24. To study the effect of parental origin of X chromosome on clinical features and biochemical profile in patients with Turner syndrome
25. To study the prevalence of primary aldosteronism in subjects with hypertension
26. Evaluation of eating disorders and dietary patterns and their association with metabolic parameters and glycemic control in adult patients with diabetes mellitus type 2
27. Pre and Post-operative Dysglycemia in cases of Pheochromocytoma/ Paraganglioma - a tertiary care centre study in Northern India
28. To evaluate the prevalence of non-alcoholic fatty liver (NAFLD) in patients with and without previous history of gestational diabetes mellitus :A cross- sectional study [chief guide]

## Collaborative projects

### Ongoing

1. Pathogenesis of primary parathyroid adenoma, Pathology, Forensic Medicine and Anatomy
2. In vivo assessment of somatostatin receptor expression with Ga DOTANOC PET/CT in patients with autoimmune and immune related orbitopathy, Nuclear Medicine
3. Evaluation of chromatin remodeling, mTOR Pathway and SSTR expression in pancreatic neuroendocrine neoplasm, Pathology
4. A Randomised control trial to compare the safety and outcome of trans-oral vestibular and axillo breast approach for endoscopic hemithyroidectomy in patients with benign thyroid swellings, Surgical Disciplines

### Completed

1. To study relation between components of Renin angiotensin aldosterone system & vascular functions following Angiotensin converting enzyme inhibition in type 2 diabetes patients with newly diagnosed hypertension., Physiology
2. Outcome implications of ADA/ACC guidelines based insulin protocol in the management of hyperglycemia in hospitalized patients at AIIMS, Medicine
3. Assesment of nutritional status/parameters in acute leukemia patients undergoing induction chemotherapy, Haematology

## PUBLICATIONS

Journals: 77

Chapters in books: 2

## PATIENT CARE

### OPD attendance from 1 April, 2019 to 31 March, 2020

Month	New Patient	Old Patient	PAEC Clinic	DOY Clinic	Total
April 2019	1053	3657	200	152	5062
May 2019	1020	3514	125	121	4780
June 2019	838	2787	65	259	3949
July 2019	1157	3772	205	170	5304
August 2019	935	3125	107	158	4325
September 2019	1037	3502	153	170	4862
October 2019	984	3007	102	138	4231
November 2019	1000	3165	137	182	4484
December 2019	955	3265	141	482	4843
January 2020	1057	3318	161	128	4664
February 2020	932	3296	109	162	4499
March 2020	633	1998	74	83	2788
<b>Total</b>	<b>11601</b>	<b>38406</b>	<b>1579</b>	<b>2205</b>	<b>53791</b>

## Laboratory Services

### Hormones investigations

No	Hormone	Tube assays done	No	Hormone	Tube assays done
1	T4	11580	14	INSULIN	4213
2	TSH	18505	15	C PEPTIDE	655
3	TPO	1604	16	GH	1334
4	LH	1746	17	GAD	7
5	FSH	1739	18	F T4	5638
6	PRL	2384	19	T3	1420
7	CORTISOL	4548	20	F T3	2442
8	TESTOTERONE	1857	21	IGF 1	1496
9	DHEA	431	22	E2	615
10	17 OHP	2	23	ALDOSTERONE	519
11	ACTH	1611	24	RENIN	409
12	PTH	3639	25	FGF 23	172
13	VITAMIN D	6683	<b>GRAND TOTAL</b>		<b>75249</b>

The HPLC- Tandem Mass Spectrophotometer system for measuring Steroid hormones in patients samples was installed and is working satisfactorily in the RIA laboratory of the Department of Endocrinology & Metabolism.

Several validated reagent method protocols for quantitation of steroid hormones (including 25 (OH) Vitamin D) have been applied, tested & finally selected and standardized on this system by early 2019.

Currently, we are in the process of doing trial measurements of steroid hormones in patient's samples using both methods, namely HPLC-MS/MS using our validated reagent method protocols and conventional RIA for comparison of results.

### Biochemical investigations

No	INVESTIGATION	NUMBER OF SAMPLES
1	Blood glucose	14819
2	Glycated hemoglobin (HbA1c)	14612
3	Urine pH	324
4	Osmolality (urine and serum)	1040
5	Lipid Profile	5285
<b>Total tests</b>		<b>36080</b>

#### Specialty Clinics:

- Diabetes of Young (DOY) Clinic on Saturdays
- Paediatric and Adolescent Endocrine Clinic (PAEC) on Monday afternoons.
- Gestational Diabetes Mellitus (GDM) Clinic on Friday mornings
- Community services/camps.

The department regularly hold camps especially awareness and screening programs on obesity, PCOS, diabetes, and thyroid disorders.

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Nikhil Tandon** was nominated by Director-General, WHO to serve on 13th General programme of Work (GPW 13) Measurement and Impact Framework Committee, Geneva, Switzerland; Member, Medical Council of India's

Board of Governors, New Delhi; Member of the Global Health Trials Committee of The Wellcome Trust; Chairman, Scientific Advisory Committee of NIN, Hyderabad; Associate Editor for the scientific journal *Global Health, Epidemiology and Genomics*; Member of the KDIGO Management of Diabetes & CKD Guideline: Work Group; Nominated as Global Panel Member of the FOCUS study; Member, Governing Body, Institute of Medical Sciences, Banaras Hindu University, Varanasi; Nominated by Ministry of Earth Sciences, Government of India as Member, National Coordination Committee for Polar Science Programme (NCP), Antarctica; Member, Governing Body, National Institute of Health and Family Welfare (NIHFW), Ministry of Health and Family Welfare, Munirka, New Delhi; Chairman, Selection Committee for the selection of Medical Officers for the 38-Indian Scientific Expedition to Antarctica (ISEA), Goa; Vice President, National Board of Examination (NBE), New Delhi; Member, Institute Body (IB), Governing Body (GB), Standing Finance Committee (SFC) and Standing Selection Committee (SSC) of AIIMS, Jodhpur, Rajasthan; FOCUS (Diabetic Retinopathy Outcome study) - Investigator Meeting as Principal Investigator and Member, Global Expert Panel held on January 25, 2020 at Mumbai; District Launch of research project entitled, “**I**ntegrated Tracking, **R**eferral, **E**lectronic Decision Support and **C**are Coordination (**I-TREC**)”, along with Mission Director, National Health Mission, (Punjab), Program Officer, National Programme for Prevention and Control of Cancer, Diabetes, CVD and Stroke (Punjab) and District Health officials at District Hospital, Shaheed Bhagat Singh Nagar, Punjab; Co-Supervisor of PhD student, University of Delhi; Public Health Foundation of India (PHFI) as a National Expert in Certificate Course in Evidence Based Diabetes Management (CCEBDM), Cycle-VI. The PHFI has undertaken to launch the above program developed and implemented by PHFI and Dr. Mohan’s Diabetes Education Academy (DMDEA) from May 2019 as a joint certification programme; Chair, Scientific and Program Advisory Committee, Centre for Health Research and Development, Society for Applied Studies, New Delhi; Invited to South East Asia NCD Regional Technical Advisory Group (NCD-RTAG) by WHO-SEARO; External Examiner, DM (Endocrinology) Practical Examination, PGIMER, Chandigarh; Member, Council of the Indian Academy of Science (IASc); *Member, International Expert Committee to review applications for Medical Research Council (MRC), London, UK*; Conducted a Panel Discussion in the 8th International Chef’s Conference on “Freedom from Transfat”; Faculty in the Osteoporosis Essential Course, 2019, organized by ICMR at Mumbai, 18 and 19 May, 2019; Member, ICMR delegation to National Institutes of Health (NIH), Bethesda, USA and Member, Indo-US Diabetes Research Joint Steering Committee; Queen Elizabeth Diamond Jubilee Trust’s Pilot project on prevention of avoidable blindness due to Diabetic Retinopathy and Retinopathy of Prematurity in India Dissemination Summit; Expert Member, Fellowship Scrutiny Committee meeting, NASI, Prayagraj (Allahabad).

**Professor Ravinder Goswami** was Expert for the Standing Selection Committee of the AIIMS, Jodhpur for the Department of Endocrinology and Metabolism (2 May 2019); External examiner for conducting PhD Viva at, PhD Role of beta-cell released alarmin molecules in the activation of plasmacytoid dendritic cells and monocytes in type-1 diabetes mellitus PGI Chandigarh, (September 2019); Examiner for the DM exit practical examination in Endocrinology, Department of Endocrinology, SGPGIMS, Lucknow 226014. (9 and 10 December 2019); Expert in the panel of Standing Selection Committee constituted for recruitment of Faculty positions in the Department of Endocrinology & Metabolism at AIIMS, Bhopal (19 December 2019); Expert for selection of faculties in the Department of Endocrinology, AIIMS, Rishikesh (14 and 15 July 2019 and 4 March 2020); External Examiner for conducting PhD viva at Punjab University, Chandigarh for PhD “Evaluation of Gut microbiota and genetic predisposition to type 2 diabetes in Indian Population (6 March 2020); *Member, TEC ‘Human Genetics and Genome Analysis programme’ DBT*; Expert for Faculty Standing Selection Committee meeting of AIIMS, Jodhpur & AIIMS Gorakhpur; Member Project Review Committee for Medical Projects, CSIR since 2015 till date; Member Fellowship selection committee Indian Academy of Science, Bangalore (2018-2020); Member Core Committee of the Central Core Research Facility (CCRF); Member Dean’s Research Committee (DRC) AIIMS, New Delhi; Expert for selection of faculties in the Department of Endocrinology, Indira Gandhi Institute of Medical Sciences, Patna; Member Scientific Advisory Committee of ICMR for Institutes functioning under ICMR

**Professor Rajesh Khadgawat** received ECTS East-Meets-West Award 2019 in Recognition of outstanding work which has been accepted for presentation at the 46th Annual Congress of the ECTS held from 11-14 May 2019, Budapest, Hungary; Participated in medical camp - Leh, 29 September-6 October 2019, Ladakh; Subject Expert for faculty selection - Rajasthan Public Service Commission, UPSC, Institute of Liver & Biliary Sciences (ILBS), PGI, Rohtak, AIIMS-Jodhpur, Bhubaneswar, Raipur; Member, Scientific Council of Zandu foundation of Health Research, Kolkata; Expert, National Anti Doping Agency (NADA), Ministry of Youth Affairs and Sports, Govt of India; Endocrinology External expert, Japan Anti-Doping Agency (JADA); “Board of Members (BOM), Rajasthan University of Health Sciences (RUHS), Jaipur” for a period of 3 years; Member, SAE-Death committee, DCGI; Member, Subject Expert Committee (Endocrinology), DCGI New Delhi; Subject expert, Medical Council of India; DM examiner for NRS Medical college, Kolkata, Srimanata Sankaradeva University of health sciences, Guwahati, West Bangal University of health sciences, Sher-i-Kashmir institute of Medical Sciences, Srinagar, J & K

**Professor Viveka P Jyotsna** was Speaker in GH updates Pediatric Endocrine conference Delhi, April, 2019; Best platform paper presentation award second prize: ESICON 2019 22 November on DM thesis work of Candidate Presenter Dr Saurav

Kathiwada; Conducted a Health Camp for MPs at Parliament, 22 and 29 November 2019; DM Endocrine external examiner for Guahati Medical College, 9 December 2019; Invited speaker for RSSDI, UPCON 2 February 2020

**Dr Alpesh Goyal** was awarded the Sh. Mohan Lal Wig Medal-2018 for Clinical Research on Institute Day Celebration (25 September 2019)

#### **VISITING SCIENTIST**

1. Dr Ravinder Singh, Mayo Clinic Rochester, USA visited the Department on 15 November 2019 (Friday) and delivered a Lecture.

## 9.12. Forensic Medicine and Toxicology

	<b>Professor and Head</b> Sudhir Gupta	
	<b>Professors</b> OP Murthy	Millo Tabin
DN Bhardwaj Sanjeev Lalwani (Trauma Centre)		Adarsh Kumar (Trauma Centre)
	<b>Additional Professor</b> Chittaranjan Behera	
	<b>Associate Professors</b>	
Kulbhushan Prasad		Abhishek Yadav
	<b>Scientist-1</b> Nidhi Sharma	
	<b>Chemist</b> AK Jaiswal	

### HIGHLIGHTS

The department is the apex referral centre for complicated medico-legal problems in India. The department is providing expert opinions in referred cases from CBI, NIA, NHRC, Courts and Crime branch of different states. It is involved in medico-legal autopsy, embalming of MLC deaths, clinical forensic medicine services, teaching, training, research, expert opinion in referred medico-legal cases & court related works. The department is running three laboratory services-Toxicology, DNA Fingerprinting and Histopathology and three support services in form of Forensic Radiology, Forensic Anthropology and Forensic Biochemistry. The department conducted 2490 medicolegal autopsies and attended 532 summons from courts.

The department has facilitated the organization of cadaveric workshops and training programmes for many clinical departments. A state-of-the-art odorless mortuary, a first-of-its-kind in the country, has been established. The department has received a grant for the development of “Centre of Advanced research and excellence in Virtual Autopsy” from ICMR and work is going on for development of this facility. An ICMR funded Task Force project entitled “Development of DNA database and Identification portal for unidentified dead bodies autopsied at AIIMS, New Delhi”, by using bioinformatics tools and techniques is being implemented. A total of nine departmental research projects are continuing and four have been completed. One collaborative project was completed and seven are continuing.

### EDUCATION

There are 10 postgraduate (MD) students and one PhD student enrolled in the department. The department is also imparting training in DNA-Fingerprinting and Medical Toxicology to BSc, MSc and MD students of other universities from all over India. Five students from different universities were trained for long- and short-term training. The department organized training program for NIA Officers on “Understanding Medicolegal component of Forensic Science”.

### CMEs/Workshop/Symposium/Conferences

AIIMS-Ogilvy Symposium on the Role of Forensic DNA in Justice of Survivors of Rape and Sexual Assault, 17 July 2019

### Lectures delivered

**DN Bhardwaj: 1**

**Abhishek Yadav: 3**

**Adarsh Kumar: 11**

**AK Jaiswal: 1**

**Chittaranjan Behera: 2**

**Oral papers/posters presented: 18** (2nd Best paper Award; Best paper Award; 2 Best Faculty Oral Presentation Awards)

## RESEARCH

### Funded projects

#### *Ongoing*

1. Centre of Advanced research and excellence in virtual autopsy, Sudhir K Gupta, ICMR, 5 years, 2019-2024, Rs 5 crores
2. TASK FORCE Project—Development of DNA database and Identification portal for unidentified dead bodies autopsied at AIIMS, New Delhi, by using bioinformatics tools and techniques, Chittaranjan Behera, ICMR, 3 years, 2018-2021, Rs 1.36 crores
3. To study the significance of Mitochondrial DNA testing for maternal lineage. Nidhi Sharma, AIIMS, 1 year, 2019-2020, Rs 5 lakhs.

#### *Completed*

1. Bioinformatics identification and invitro evaluation of single nucleotide polymorphisms associated with completed suicide in Indian population, Chittaranjan Behera, ICMR, 3 years, 2017-2020, Rs 69.11 lakhs

### Departmental projects

#### *Ongoing*

1. Genetic association of cytokine gene polymorphisms with suicidal behavior in Indian population
2. Content and linguistic analysis of suicide notes collected during medico legal autopsy at AIIMS, New Delhi
3. Gross, Histological and Electron-microscopic Study of Antemortem and Postmortem Electrocution burn mark
4. Quantification and quality assessment of human DNA by RT PCR.
5. Radiological study of internal neck injuries in cases of death due to fatal pressure on the neck
6. To establish sexual dimorphism and estimate age from Hyoid Bone using Anthropological and Radiological Techniques
7. CT Scan and Digital X-ray Based Virtual Autopsy Vis A Vis Traditional Autopsy including Histopathological Examination Findings in Cases of Death due to Fatal Pressure on Neck.
8. A Comparative Study of CT Scan and Digital X-ray based on Virtual Autopsy and Traditional Autopsy Including Histopathological Examination in Various Causes of Death
9. Virtual Autopsy Findings Vis A Vis Traditional Autopsy Findings in Sudden Deaths with Cardiac Origin.

#### *Completed*

1. Study of Cardiac Markers, gross findings and Histopathological Changes in Heart in cases of suspected Cardiac Deaths
2. Age Estimation Between age 1-18 years by radiological study of Epiphyseal Union around Elbow and Wrist joints
3. Screening of alcohol and drug of abuse in road traffic accident cases reported at mortuary AIIMS New Delhi
4. Ligature and compressing material fiber detection, collection, identification and comparison in asphyxia deaths

### Collaborative projects

#### *Ongoing*

1. Development of rotary ultrasonic bone drilling machine prototype. IIT-Delhi and Pathology
2. To study the extent of variation in ridge characteristics and determining gender among twins using their fingerprint characteristics, Department of Forensic Medicine & Toxicology, KMC, Manipal
3. Morphometric and Morphoscopic Study of Ear and Nose in Brahmin and Rajput population of Mandi, Himachal Pradesh- A Forensic Anthropological Investigation, Department of Anthropology, Punjab University, Chandigarh
4. The role of neuroinflammation and glial activation in the suicidal deaths: A study in human postmortem brain, Anatomy
5. Morphological and genetic evaluation of sudden cardiac death, Pathology
6. Study of Biomechanical stability of spine fixation surgical procedures in cadaveric vertebrae, Biomedical Engineering
7. Sudden cardiac death in young: An autopsy and molecular study to identify the cause, Pathology

## **Completed**

1. Fibrillin 1 gene mutation and the role of TGF beta in thoracic aortic aneurysms with mucoid extracellular matrix accumulation (MEMA), Pathology

## **PUBLICATIONS**

**Journals: 32**

## **PATIENT CARE**

### **A. Casualty services:**

The department is providing round-the-clock medico-legal services like in cases of injury, sexual offences, poisoning etc. to the South and South-east district of Delhi.

### **B. Mortuary Services**

A total of **2490 (1623+867-JPNATC)** medico legal autopsies were conducted at mortuary.

### **C. Clinical Forensic Medicine**

Total **513** cases of potency and other medico-legal examination brought by investigating officer and referred from court were dealt by the department. A total of **37** cases from CBI were dealt by medical board of the department. A subsequent opinion in complicated cases including reference from casualty etc. was offered in total **374** cases.

### **D. Summons**

Doctors of the department attended court of law in **532** cases from Delhi and other states

### **E. Medical Toxicology**

Total **436** tests for **136** samples were performed for various poisons referred from the clinical department of AIIMS, medicolegal cases and in academic cases.

### **F. Forensic Histopathology**

The department is providing histopathology services for the samples of medico-legal autopsy cases from South and South-east district and also research purpose. Total **218** cases and **955** samples were done during this period.

### **G. Embalming facility**

The department is providing embalming facility for MLC cases (Postmortem cases). Total **226** cases of embalming were done during this period.

### **H. Organ Retrieval for Therapeutic Transplantation**

Total **100** corneas were retrieved at mortuary for transplantation by National Eye bank.

### **I. Forensic Radiology Services**

Forensic Radiology services were provided to **247** cases for various medico legal and academic purposes. (Both autopsy and live cases)

### **J. Forensic Anthropology Services**

Age estimation for **47** cases referred from Courts as well as Sports authorities

### **K. DNA Fingerprinting Laboratory**

The laboratory provides service for disputed Parentage test by using Genetic Analyser for STR profiling of DNA (05 cases and 17 samples). DNA –Profiling of unidentified bodies sample(s) processed: DNA Isolation, Quantitation of DNA and sample RUNS (136 cases). Research Samples processed for DNA Isolation and Quantitation of DNA (961-samples, Real time PCR: 84 reaction, PCR: 1740 reaction)

### **L. Forensic Biochemistry**

Total 36 samples were analyzed in nine academic cases.

### **M. Community services**

The department continues to participate in training program for CBI officials, police officers and public prosecutors from all over the country.

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Adarsh Kumar** was awarded the Medal of International Cooperation by the Government of Ukraine. He was awarded Fellowship of Indian Academy of Forensic Medicine at Apollo Medical College Hyderabad in Jan 2020. He was elected as Governing Council Member of Indo-pacific Association of Law Medicine & Science (INPALMS) for 2019-2021 at Dhaka, Bangladesh. He was nominated as the Assistant Ambassador of International Academy of Legal medicine for 2018-2021. He became a Member of Asia Pacific Medicolegal Association (APMLA) for another term of two years 2018-2020 at Japan. He is a Medicolegal Expert to National Human Rights Commission and Central Bureau of Investiga-



tion. He has also been nominated as a Member of the Expert Advisory Committee JALMA-ICMR, as an assessor by the Medical Council of India (MCI) and the National Assessment and Accreditation Council (NAAC). He is the Editor of Indian Journal of Forensic Medicine & Toxicology. He is an International Editorial Board Member for HSOA Journal of Forensic, Legal & Investigative Sciences (USA), Egyptian Journal of Forensic Sciences- Egypt, Adli Tip Bulletin- Turkey and The Egyptian Journal of Forensic Sciences & Applied Toxicology. He is the Associate Editor for Medicolegal Update and the web Editor for International Journal of Health Research & Medicolegal Practice. He is a member of Editorial Board of Journal of Indian Society of Toxicology, Journal of Karnataka Medicolegal Society, Indian Journal of Community & Family Medicine, Journal of Forensic Chemistry & Toxicology and Journal of Indian Academy of Forensic Medicine.

**Dr Chittaranjan Behera** has completed Psychological Autopsy certification training conducted by American Association of Suicidology at Baton Rouge, USA. He has received a letter of appreciation from CMET, AIIMS for Institute Day Exhibition. He is a reviewer for Pub Med Indexed Journal: Journal of Interpersonal Violence, Journal of Aggression and violent Behavior Journal of Forensic and Legal Medicine. He is the Assistant editor of International Journal of Medical Toxicology & Legal Medicine, ARC Journal of Forensic Sciences, Annals of Forensic Research and Analysis, Sci Fed Journal of Forensic and Journal of Forensic Medicine.

**Dr Abhishek Yadav** received a Certificate of Appreciation for outstanding contribution as Faculty In charge Mortuary to National Eye Bank- By Dr. RP Centre, AIIMS, on 34<sup>th</sup> National Eye Donation Fortnight-2018, 3<sup>rd</sup> September 2019. He participated in a talk show on the topic of “DNA technology in Forensic Science” which was telecasted on DD Science/India Science, Department of Science and Technology. He participated in the **Interactive Academic Knowledge Exchange Programme in Bangkok**.

**Dr AK Jaiswal** obtained Fellow membership of International Scientific Research and technology (ISROSET).

## 9.13. Gastroenterology and Human Nutrition

	<b>Professor and Head</b> Anoop Saraya	
Pramod Garg	<b>Professors</b> Vineet Ahuja	Govind K Makharia
Shalimar	<b>Additional Professors</b>	Baibaswata Nayak
Saurabh Kedia	<b>Assistant Professors</b>	Deepak Gunjan

### HIGHLIGHTS

The department organized eight CME programs and numerous national conferences and patient education activities. Awarded two Centers of Advanced Research Excellence in pancreatic disease and Intestinal diseases by Indian Council of Medical Research; published 57 scientific papers.

The department initiated Advanced Fellowship Program in the field of Gastrointestinal Endoscopy, Pancreatic Diseases, Liver Diseases and Inflammatory Bowel Diseases. The faculty, residents and PhD students of the department received many awards including BEST paper awards in national and international conferences. The faculty of the department initiated and coordinated making of national guidelines on various GI diseases.

### EDUCATION

The department continued the training program for courses on DM in Gastroenterology, and PhD in Gastroenterology and Human Nutrition. The department also participated in the training of undergraduate and postgraduate students. The department initiated Advanced Fellowship Training program

**Long term training:** Twenty five DM students; six PhD students; four Fellows in Advanced Endoscopy, Hepatology, Pancreatology and IBD

**Short-term training:** 6

### CMEs/Workshops/Symposia/National & International Conferences:

1. Public Lecture on World Hepatitis Day on 28 July 2019 at AIIMS, New Delhi.
2. 64th ECCO (European Crohn's and Colitis Organization) Educational Workshop and Mid-Term meeting of CCFI, 10 and 11 August 2019 at Hotel Pullman, Aerocity, New Delhi.
3. Current Perspective in Liver Diseases (CPLD-2019); 5 and 6 October 2019 at the AIIMS, New Delhi.
4. Eleventh Consecutive Young Clinician Program (on behalf of Indian Society of Gastroenterology) from 11-13 October 2019 in Chennai
5. FIRST "Train the Trainers program" for young faculty from all around of the country (on behalf of Indian Society of Gastroenterology), from 7-10 November 2019 at Manesar, Haryana
6. Gastroenterology Young Masters (GYM-2020); 18-20 January 2020; at AIIMS, New Delhi,
7. SPARC Grant-AIIMS-UCL Symposium; 29 January 2020 at AIIMS, New Delhi.
8. Celiac Disease Awareness Day on 15 February 2020, at AIIMS, New Delhi

### Lectures delivered

Anoop Saraya: 8

Pramod Garg: 5

Vineet Ahuja: 17

Shalimar: 12

B Nayak: 5

Saurabh Kedia: 4

Deepak Gunjan: 2

**Oral Papers/Posters presented: 26**

## RESEARCH

### Funded projects

#### Ongoing

1. Sarcopenia in chronic pancreatitis: epidemiology, diagnosis and evaluation of etiological factors and molecular mechanisms responsible for sarcopenia, Anoop Saraya, ICMR, 3 years, 2019-22, Rs 78 lakhs
2. Role of gene-regulating and immunological markers in pathogenesis of pancreatic adenocarcinoma, Anoop Saraya, ICMR, 3 years, 2018-21, Rs 41 lakhs
3. Home based blenderized formulations in acute pancreatitis: A Pilot randomised control trial (5/9/1178/2018-Nut), Anoop Saraya, ICMR, 3 years, 2018-21, Rs 39 lakhs
4. Role of miRNA mediated modulation of signal transduction in pancreatic cancer, Anoop Saraya, DST, 3 years, 2018-21, Rs 59 lakhs
5. Centre for Advanced Research and Excellence in Pancreatic Diseases, Pramod Garg, ICMR, 5 years, 2019-24, Rs 500 lakhs
6. Joint Centre on 'Reducing Cancer Mortality', Pramod Garg, Indo US Science and Technology Forum, 3 years, 2018-20, Rs 38 lakhs
7. Epigenetic reprogramming of intestinal epithelial stem cells via gut microbiota derived metabolites in ulcerative colitis. Vineet Ahuja, DST-SERB, 3 years, 2020-23, Rs 56 lakhs
8. Gut Microbiome-Regulators of the Intestinal Stem cell niche in Health and Inflammatory Bowel Disease, Vineet Ahuja, MHRD-Scheme for Promotion of Academic and Research Collaboration (SPARC), 2 years, 2019- 21, Rs 46 lakhs
9. Centre of Excellence for Intestinal Diseases, Vineet Ahuja, ICMR, 5 years, 2019-24, Rs 500 lakhs
10. Crohn's Disease in India: A multi-centric study from a country where intestinal tuberculosis as well as Johne's Disease is endemic, Vineet Ahuja, ICMR, 3 years, 2016-19, Rs 42 lakhs
11. Combined Phase 3, Double Blind , Randomized, Placebo-Controlled Studies Evaluating the Efficacy and Safety of Filgotinib in the induction and maintenance of Remission in Subjects with Moderately to Severely Active Crohn's Disease., Vineet Ahuja, Gilead Sciences, 3 years, 2018-21, Rs 16 lakhs
12. Combined Phase 2b/3, Double-Blind, Randomized, Placebo-Controlled Studies Evaluating the Efficacy and Safety of Filgotinib in the Induction and maintenance of Remission in Subjects with Moderately to Severely Active Ulcerative Colitis, Vineet Ahuja, Gilead Sciences, 3 years, 2018-21, Rs 6 lakhs
13. Entyvio (Vidolizumab IV) Extended Access Program in Ulcerative colitis and Crohn's Disease, Vineet Ahuja, Pharmaceutical product Development, 3 years, 2016-19, Rs 5 lakhs
14. Lypolytic Helicobacteri pylori enzymes and their potential role(s) in pathogenesis. Vineet Ahuja, ICMR, 3 years, 2017-20, Rs 56 lakhs
15. To study the innate inflammatory ability of macrophages in Crohn's Disease and ITB. Vineet Ahuja, DST-SERB, 3 years, 2017-20, Rs 27 lakhs
16. An open label, single arm, investigator initiated phase I/II study to assess the safety and efficacy of local administration of Stempeucel® (*Adult human Bone marrow derived, cultured, pooled, Allogeneic Mesenchymal Stromal Cells*) in patients with perianal fistulizing Crohn's disease, Vineet Ahuja, Stemtheapeutics, 1 year, 2019-20, Rs 8 lakhs
17. Department of Biotechnology-Consortium on celiac disease, Govind K Makharia, DBT, 3 years, 2017-20, Rs 359 lakhs
18. Whole gut and intestinal metagenome in patients with irritable bowel syndrome and non-celiac gluten sensitivity and effect of gluten free diet, Govind K Makharia, DST, 3 years, 2018-21, Rs 61.7 lakhs
19. Indo-US Joint Network Centre for Excellence in Celiac Disease, Govind K Makharia, Indo US Science & Technology Forum, 3 years, 2017-20, Rs 43 lakhs
20. Exploration for development of wheat with low immunogenic gluten, Govind K Makharia, ICAR, 5 years, 2015-20, Rs 46 lakhs
21. Human Microbiome Initiative of select endogamous populations of India, Govind K Makharia, DBT, 2 years, 2020-22, Rs 106 lakhs
22. To study the Resistance Associated Variants (RAVs) in Chronic Hepatitis C patients treated with Sofosbuvir-based therapy, Shalimar, DHR, 3 years, 2017-20, Rs 44 lakhs
23. Development of a low-cost diagnostics platform for the identification of viral DNA using CRISPR/Cas13a system,

- Shalimar, DBT, 3 years, 2018-21, Rs 24 lakhs
24. Genetic basis of Budd Chiari Syndrome/hepatic venous outflow tract obstruction in Indian patients, Shalimar, ICMR, 3 years, 2019-22, Rs 72 lakhs
  25. A multicentre clinical study evaluating the novel biomarkers: dimethylarginines and ischemia-modified albumin in patients with acute-on-chronic liver failure, Shalimar, SPARC, 2 years, 2019-21, Rs 74 lakhs
  26. To identify unique differential signatures for the diagnosis of stage-specific Non-alcoholic fatty liver disease using the multi-omics approach: A pilot study, Shalimar, AIIMS-THSTI, 2 years, 2019-21, Rs 10 lakhs
  27. Liquid Biopsy for Early Prediction of Hepatocarcinogenesis in Chronic Liver Disease Patients, B.Nayak, ICMR, 3 years, 2019-22, Rs 49.5 lakhs
  28. Development of reverse genetic based recombinant Newcastle disease virus model for understanding immune response in patients infected with Hepatitis C virus, B. Nayak, DBT-NER, 3 years, 2017-20, Rs 28 lakhs
  29. CD14 gene variations in Alcohol-Induced Liver Disease (ALD) and Alcoholic Pancreatitis (ALP) in Co-morbid Condition and Relationship between Associated Polymorphisms and MD2 molecule binding to the CD14-LPBS-TLR4 Complex, B Nayak, DST, 3 years, 2017-20, Rs 27 lakhs
  30. Prevalence of antibiotic resistant genes in the healthy gut flora of individuals residing in rural community setting, Saurabh Kedia, AIIMS, 2 years, 2020-22, Rs 10 lakhs
  31. Correlation between Kv1.3 potassium channel expression in intestinal biopsy and disease severity in patients with Ulcerative Colitis, Saurabh Kedia, AIIMS, 1 year, 2019-2020, Rs 2 lakhs
  32. Role of microRNA in identifying benign versus malignant variety of cystic neoplasm of pancreas, Deepak Gunjan, AIIMS, 2 years, 2019-2021, Rs 10 lakhs

### **Completed**

1. To study the gut mucosal injury in severe acute pancreatitis and their correlation with organ failure and mortality, Anoop Saraya, DBT, 3.5 years, 2015-19, Rs 56 lakhs
2. MicroRNAs as biomarkers in chronic pancreatitis patients who are at risk of developing pancreatic cancer, Anoop Saraya, DBT, 3.5 years, 2016-19, Rs 91 lakhs
3. Estimation of gluten content in unlabelled and labelled gluten-free food, products and commonly used food items used by celiac disease patients, Govind K Makharia, ICMR, 2 years, 2018-20, Rs 22.8 lakhs
4. Effect of H. pylori eradication therapy in patients with NAFLD having H. pylori co-infection: A pilot open label randomized controlled clinical study, Shalimar, AIIMS, 2 years, 2017-19, Rs 10 lakhs

### **Departmental projects**

#### **Ongoing**

1. A randomized control trial of exclusive enteral nutrition with corticosteroids vs corticosteroids alone in patients with acute severe ulcerative colitis
2. A randomized controlled trial of adjunctive incremental pregabalin therapy vs placebo for pain management in chronic pancreatitis
3. Assessment of prevalence and etiology of non-responsive celiac diseases in patients on gluten free diet for one year or more
4. Comparative analysis of cost and nutritional composition of gluten-free food with their gluten containing counterparts.
5. Defining intestinal failure in patients with Celiac disease
6. Development and validation of a tool for assessment of gluten free diet in Indian celiac disease patients
7. Early use of non-invasive positive pressure ventilation in acute hypoxemic respiratory failure in acute pancreatitis: A randomised controlled trial
8. Early versus delayed percutaneous drainage for infected acute fluid collections in acute pancreatitis: A randomised controlled trial.
9. Effect of supplementation of branched chain amino acids on parameters of sarcopenia in patients with liver cirrhosis: A double blinded randomized controlled trial
10. Efficacy and tolerability of hyperbaric oxygen therapy in small bowel stricturing and fistulizing Crohn' disease: A stratified RCT
11. Extra small intestinal GI manifestations of celiac disease
12. Intravascular fluid guided therapy versus standard fluid therapy in predicted severe acute pancreatitis: A randomized controlled study.

13. Mesenchymal stem cell therapy in patients with acute on chronic liver failure: A double blind, randomized placebo controlled trial
14. Pooled prevalence of celiac disease in patients with chronic liver disease: Systematic reviews and meta-analysis
15. Pooled prevalence of celiac disease in patients with short stature: Systematic review and Meta-analysis
16. Predictors of response and adverse events to biologics in patients with Inflammatory bowel disease
17. Prevalence of Celiac Disease in patients of Inflammatory Bowel Disease
18. Role of immune pathways in the pathogenesis of chronic pancreatitis.
19. Role of liquid biopsy biomarkers in hepatocellular carcinoma and Hepatitis B virus induced carcinogenesis
20. Sarcopenia in chronic pancreatitis: Prevalence, diagnosis and prognostic value
21. Spectrum of dental manifestation of celiac disease in treatment naïve and those on gluten-free diet patients with celiac disease
22. Spectrum of dermatological manifestations of celiac disease
23. Treat to target strategy in active ulcerative colitis patients: A randomized control trial

### ***Completed***

1. A multiparameter model to differentiate intestinal tuberculosis from Crohn's Disease in ulcero-constrictive disease of the intestine
2. Elafin in patients with celiac disease
3. Extra small intestinal GI manifestations of celiac disease
4. Intestinal permeability in patients with acute pancreatitis- role of tight junction proteins and effect of enteral nutrition
5. Modulation of Human Immune and Inflammatory Responses by Vitamin A in Inflammatory Bowel Disease (Ulcerative Colitis, Crohn's Disease)
6. Prevalence of elevated alanine aminotransferase levels in asymptomatic healthy individuals: A community-based study from North India
7. Prevalence of sarcopenia in cirrhosis and its correlation with serum myostatin and myostatin gene expression in muscle biopsy
8. Prognostic role of autophagy in patients with pancreatic adenocarcinoma
9. Role of microRNA as biomarker and its modulation in HCC targeting mTOR pathway
10. Role of miRNA mediated modulation of signal transduction in pancreatic cancer
11. To study the prevalence of cerebral edema and neuropathological changes in acute on chronic liver failure patients

### **Collaborative projects**

#### ***Ongoing***

1. A randomized trial of endoscopic versus laparoscopic drainage of pancreatic pseudocysts, Surgical Disciplines.
2. Biopsy in Adult celiac disease (Bio.A.CeD)- the ESsCD Consensus: Multinational study, Dipartimento di Medicina e Chirurgia, Scuola Medica Salernitana, Università di Salerno, Italy
3. Comparison of various diagnostic modalities for identification of refractory celiac disease in a cohort of patients with celiac disease unresponsive to gluten free diet, Pathology
4. Correlation of hepatic fat content and angiographic coronary artery stenosis. Department of Cardiology, VMMC and Safdarjang Hospital
5. Development of a low-cost diagnostic platform for the identification of viral DNA using CRISPR/Cas13a system, South Asian University, New Delhi
6. Effect of anti-inflammatory drugs on duct ligation and Na-Taurocholate model of experimental acute pancreatitis in rats, GI Surgery and Anatomy
7. Effect of urbanization on gut microbiome, mycobiome and virome in patients with inflammatory bowel disease from northern India, Department of Microbiology, Maharshi Dayanand University, Rohtak, Haryana
8. Fecal microbiome in patients with gallbladder cancer, Surgical Disciplines
9. Genetic association of cytokine with suicidality in Indian population, Forensic Medicine

10. Hepatic regenerative potential of exosomes derived from human mesenchymal stem cells in liver fibrosis model, Stem Cell facility
11. Intestinal stem cells in celiac disease, Pathology
12. miRNA as disease modifier in HLA-DQ2/ DQ8 matched first degree relatives of patients with celiac disease, Pathology
13. Nanotechnology based vaccine against hepatitis E virus, Dept. of Biotechnology, Jaypee Institute of Information Technology, NOIDA, UP
14. Prevalence of acute gastrointestinal injury in critically ill children, Paediatrics
15. Towards understanding the role of gut microbiota and their metabolites in the causation and treatment of colorectal cancer, National Institute of Immunology (NII), New Delhi

### **Completed**

1. Liver involvement in patients with celiac disease: Proof of causality using IgA/ anti-tTG co-localization Techniques, Pathology
2. Seroprevalence of celiac disease in high altitude area in India, Gastroenterology, IGMC Shimla, Himachal Pradesh
3. Association of inflammatory cytokines with suicidal deaths: a hospital based comparative cross-sectional study, Forensic Medicine
4. To assess the prognostic value of various cytokines in Acute on Chronic liver failure (ACLF) patients, Infectious disease
5. Nanoparticles based amperometric biosensor for detection of thyroid dysfunctioning, Biotechnology, Jaypee Institute of Information Technology, NOIDA, UP

### **PUBLICATIONS**

**Journals: 44**

**Abstracts: 48**

**Chapters in Books: 3**

### **PATIENT CARE**

#### **Routine Gastroenterology Clinic (Monday to Friday)**

New cases: 27593

Old cases: 53048

#### **Special clinics**

<b>Name of the clinic</b>	<b>New cases</b>	<b>Old cases</b>
Liver Clinic	867	13350
Pancreas clinic	805	3951
IBD & ITB Clinic	884	8698
Interventional Clinic	391	795
Celiac Clinic	102	864

#### **Endoscopy services**

##### **Procedures**

Diagnostic and therapeutic endoscopies:	17214
Diagnostic and therapeutic colonoscopies:	3337
Diagnostic sigmoidoscopies:	1817
Side viewing endoscopies:	670
Endoscopic retrograde cholangiopancreatography (ERCP):	2150
Endoscopic ultrasound (Diagnostic and therapeutic):	500
Fibroscan:	8954

#### **GI Motility**

• High resolution esophageal manometry:	376
• High resolution anorectal manometry:	197
• Biofeedback:	350
• 24 hours ambulatory pH monitoring:	7

**Tests done in the department**

<b>Name of the test</b>	<b>Nos.</b>
NucleicAcid isolation for testing	4154
HBV quantitation by Real time PCR	2054
HCV quantitation by real time PCR	1134
HCV genotyping by Real time PCR	93
HCV genotyping by Line probe Assay (LIPA)	102
HEV detection quantitative	339
HBsAg by ELISA	1482
HBeAg by ELISA	561
Anti Hbe by ELISA	197
Anti HBc Total by ELISA	393
HBc IgM by Vidas	6
HAV IgM by ELISA	544
HEV IgM by ELISA	578
Anti HCV by ELISA	1142
Arterial Ammonia	645
IgG 4 by Nephelometry	14
D-Xylose by colorimetry	297
Fecal Fat by ether extraction	195
Fecal elastase by ELISA	603
Hydrogen breath test	111
Urea breath test	213
Ttg IgA by ELISA	3127
Ceruloplasmin by turbidometry	1615
Serum Copper by colorimetry	837
24 hr Urinary copper	663
Lipid peroxidation (MDA) by spectrophotometry	120
Free radical Antioxidant potential (FRAP)	40
Lactose	90
Mannitol	90
Insulin	113
Glucose	113
hsCRP by ELISA	113
Apo-A1	113
Apo-B	113
Fecal Calprotectin	96
Total Oxidant Stress (TOS)	80
Total Antioxidant Stress (TAS)	80

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Pramod Garg** was awarded Fellow of Indian National Science Academy, India; nominated member, Scientific Advisory Board, Indian Council of Medical Research, New Delhi; Member, Scientific Advisory Group for the Division of Non-Communicable Diseases, Indian Council of Medical Research, New Delhi.

**Professor Govind Makharia** was nominated as the Co-chair of Clinical Research Committee, World Gastroenterology Organization (2019-21); Co-chairman, Global guidelines on “Diet and Gut” by World Gastroenterology Organization; Board Member, International Association for the Studies on Celiac Disease (2015-2019); Council Member, Asian Pacific Association of Gastroenterology (2019-2022); Secretary general of Indian Society of Gastroenterology (2016-2022); Editorial Advisory Board Member, Clinical and Translational Gastroenterology (American College of Gastroenterology); Member, Scientific Advisory Board, National Agro-Food Biotechnology Institute, Mohali; Member of Biosafety Committee, School of Life Sciences, JNU; Member, Academic Committee, National Institute of Immunology, New Delhi; Coordinator of the Department of Biotechnology Consortium on Celiac Disease; Group leader, Asian Pacific Working Group on Celiac disease; Governing Council Member, Indian Motility and Functional Diseases Association; Coordinator of Indian Society of Gastroenterology Task Force on Inflammatory Bowel Disease; Coordinator of Young Clinician Program, Indian Society of Gastroenterology; Developed Indian Society of Gastroenterology and Association of Physicians of India Joint Guidelines on Gastro-esophageal reflux disease

**Dr Baibaswata Nayak** awarded Best Oral Paper and Cash prize at Indian Society of Oncology, ISO-ISMPO 2019 (Sonu Kumar/ Dr Nayak, Supervisor), Second position on oral talk at Virocon 2020, Indian Society of Virology (Sonu Kumar/ Dr.Nayak, Supervisor), National Postdoctoral Fellowship, SERB (Dr Geetanjali/ Dr Nayak Mentor), nominated as reviewer of 24 national and international journals including; Review and expert committee member for Innovation & Translation Research, ICMR; Reviewer for ICMR RA and SRF, and ICMR Project review committee member for (for diarrhoeal diseases); Reviewer to extramural funding of DST SERB, AYUSH/CCRH, ICMR STS expert group; ICMR ITR (innovation translation research) group and DBT nominee for Institute Biosafety committee (IBSC).

**Dr Saurabh Kedia** awarded the Japanese society of Gastroenterology fellowship at Tokyo Medical and Dental University, Tokyo, Japan from 1st September 2019 to 30th November 2019

**Dr Deepak Gunjan** conducted Hands-on Session on POEM in Asian Pacific Digestive Week (APDW) 2019, Kolkata, Hands-on Session on POEM in Synergy 2020; an EUS-ERCP-PTBD convergence 2020, Mumbai, nominated Co-organizing Secretary; CPLD 2019, AIIMS, New Delhi

## VISITING SCIENTISTS

1. Dr Kanwarpal Singh, Group Leader, Max Planck Institute for the Science of Light, Erlangen, Germany on 4 June 2019.
2. Dr Undurti N. Das, Chief Medical Officer & Chairman, Scientific Advisory Board, Asha Nutrition, California, USA on 14 January 2020.
3. Dr Anjan Dhar from UK on 26 February 2020.





## 9.14. Gastrointestinal Surgery and Liver Transplantation

### Professor and Head

Peush Sahni

### Professors

Sujoy Pal

Nihar Ranjan Dash

### Assistant Professors

Rajesh Panwar

Anand Narayan Singh

Saurabh Galodha

### HIGHLIGHTS

The department organized the 29th national conference of the Indian Association of Surgical Gastroenterology (IASGCON 2019) from 9 to 13 October 2019. This 5-day conference included a bursary program, six workshops, a CME program and 2 days of main conference.

### EDUCATION

The department is actively involved in the teaching of undergraduate students. The following topics were taught to sixth & eighth semester students through didactic lectures and integrated seminars:

Benign and malignant esophageal disorders	Portal hypertension
Upper gastrointestinal bleeding	Lower gastrointestinal bleeding
Acute intestinal obstruction	Intestinal tuberculosis
Inflammatory lesions of small and large bowel	Gall stone disease and complications
Amoebic lesions of the bowel and liver	Gall bladder cancer
Cancer of the stomach	Diseases of the Pancreas
Biliary strictures	Chronic pancreatitis
Obstructive Jaundice	Acute pancreatitis
Nutrition in surgical patients	

The department offers 3-year training leading to award of MCh in Gastrointestinal Surgery. There are 14 MCh students in the department. The department also offers short-term observership for a period of 1–3 months. The weekly academic activities include a weekly audit, presentations of abstracts of recently published papers, a seminar, journal club, and discussion on research and dissertation projects. Besides these, a combined round with Gastroenterology and a GI Radiology conference are held once in a week, and a GE-GI Surgery histopathology conference once in two weeks.

### CMEs/Workshops/Symposia/National and International Conferences organized by the department

1. Twenty-ninth National Conference of the Indian Association of Surgical Gastroenterology (IASGCON 2019), AIIMS, New Delhi, 9 to 13 October 2019
2. Cadaveric Workshop on Multiple Organ Harvesting Techniques, AIIMS, New Delhi, 10 October 2019
3. Surgical skills workshop on Bowel anastomosis, AIIMS, New Delhi, 10 October 2019
4. Surgical skills workshop on vascular anastomosis, AIIMS, New Delhi, 10 October 2019
5. Endoscopy workshop: Basic and advanced, AIIMS, New Delhi, 10 October 2019
6. Workshop: Doing Research: The methods & the statistics, AIIMS, New Delhi, 10 October 2019
7. Operative (Video) Workshop, AIIMS, New Delhi, 10 October 2019

### Lectures delivered

Peush Sahni: 75

Sujoy Pal: 17

Nihar Ranjan Dash: 4

Rajesh Panwar: 6

Anand Narayan Singh: 1

Saurabh Galodha: 3

Oral papers/posters presented: 20

## RESEARCH

### Funded projects

#### *Ongoing*

1. Developing and implementing a Gall Bladder Cancer Registry to collect clinico-pathological data (demography, treatment patterns, therapeutic outcomes) and collect bile/tissue samples from registered patients for a biorepository for molecular profiling/microbial analysis focusing on identifying an association between GBC and microbial infection, Sujoy Pal, AIIMS THSTI collaborative, 3 years, 2019-22, Rs 10 lakhs
2. Esophageal resection vs. no resection for corrosive esophageal strictures: A RCT, N R Dash, AIIMS, 2013-2020, Rs 5 lakhs
3. Isolation and molecular characterisation of colorectal cancer stem cells, Sujoy Pal, AIIMS, 2015-2020, Rs 25 lakhs
4. Safety and effectivity of HIPEC in Gall Bladder Cancer. Nihar Ranjan Dash, AIIMS, 3 years, 2016–19, Rs 5 lakhs

#### *Completed.*

1. Posterior (SMA-first) approach vs. standard pancreatoduodenectomy in patients with pancreatic cancer with special focus on circumferential resection margins and medium term survival outcome: a prospective randomized controlled trial, Sujoy Pal, AIIMS, 5 years, 2013–18, Rs 5 lakhs
2. A preliminary study to document the genetic and molecular profile of resected colorectal cancers in India, Sujoy Pal, AIIMS, 3 years, 2016-19, Rs 5 lakhs
3. Development of an indigenous affordable no-frill enteral feeding pump, Peush Sahni, DST, 3 years, 2015–18, Rs 23.85 lakhs
4. Randomized controlled trial on skin preparation with chlorhexidine alcohol prep vs. savlon/betadine prep in elective gastrointestinal surgery, Peush Sahni, AIIMS, 5 years, 2012–18, Rs 1.50 lakhs

### Departmental projects

#### *Ongoing*

1. A randomized trial of peri-operative low dose vs standard dose steroid regimen in patients of ulcerative colitis
2. Impact of proton pump inhibitor on the development of anastomotic stricture and reflux symptoms after gastric pull up and cervical oesophagogastric anastomosis – a randomized trial
3. A prospective study to evaluate sarcopenia in adult chronic liver disease (CLD) patients waiting for liver transplantation.
4. Experimental model of acute pancreatitis with organ dysfunction
5. A study of the effect of targeted therapy on organ dysfunction in an experimental model of severe acute pancreatitis
6. External drainage of pancreatobiliary limb vs no drainage in patients undergoing pancreaticoduodenectomy – A pilot study
7. Comparing feeding jejunostomy with nasojejunal tube placement in patients undergoing esophagectomy – A pilot study

#### *Completed*

1. Safety and efficacy of hyperthermic intra peritoneal chemotherapy in the management of gastric cancer
2. Patient reported outcome measures in ulcerative colitis – a cross-sectional observational study in a tertiary care center in India

### Collaborative projects

#### *Ongoing*

1. Isolation and molecular characterisation of colorectal cancer stem cells, Biochemistry
2. Development of singleplex PCR based test for detecting multiple hepatitis viruses simultaneously, Laboratory medicine
3. Isolation, identification and characterization of cancer stem cells from different histopathological grades of colorectal carcinoma, Biochemistry

4. Elucidating the role of differentially expressed gene(s) in colorectal cancer stem cells, Biochemistry
5. Genomics in Gall bladder cancer in Indian Population, Radiation Oncology

### **Completed**

1. Assessment of frailty in geriatric patients undergoing GI surgery, Geriatric Medicine

### **PUBLICATIONS**

**Journals: 15                      Abstracts: 20                      Books: 1**

### **PATIENT CARE**

#### **OPD**

Total number of new patients seen: 3400                      Total number of old patients seen: 7406

#### **Specialty clinics**

Department is running a daily clinic for stoma patients.

#### **Special laboratory facilities**

Anal manometry, Oesophageal manometry, 24-hour ambulatory oesophageal pH monitoring, Endotraining laboratory.

#### **Inpatients**

Total Surgical procedures:                      627                      Elective:                      467                      Emergencies: 160

#### **Special interest areas**

Biliary obstruction:	90	Portal hypertension:	35
Oesophageal cancer:	19	Carcinoma gall bladder:	27
Ulcerative colitis:	45	Upper GI haemorrhage:	5
Lower GI haemorrhage:	10	Acute pancreatitis:	21
Chronic pancreatitis:	21	Biliary strictures:	15
Pancreato-duodenectomy:	56	Liver resections:	46

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Peush Sahni** was Past President and Chair, Education Committee, Indian Association of Surgical Gastroenterology; President, Indian Association of Medical Journal Editors; Chair, Membership Committee, World Association of Medical Editors; Member, Editorial Board, Journal of Gastrointestinal Surgery (official Journal of Society for Surgery of the Alimentary Tract) and International Representative, Member Services Committee, Society for Surgery of the Alimentary Tract, USA; Member, International Committee of Medical Journal Editors; Member, Ethics Committee, Medical Council of India; Member, Board of Studies, AIIMS, Bhubaneswar; was Co-organiser of the Annual National Conference of Indian Association of Surgical Gastroenterology at New Delhi, 9-13 October 2019 at AIIMS, New Delhi; delivered the Dr B. Shanmukewara Rao memorial oration of the Andhra Pradesh State Chapter of the Association of Surgeons of India for the year 2019.

**Professor Sujoy Pal** participated in a Community health Camp at Dharamshala, Himachal Pradesh organized under the auspices of the Hon'ble Dalai Lama from 20 June to 24 June 2019; Co-organiser of the Annual National Conference of Indian Association of Surgical Gastroenterology at New Delhi, 9-13 October 2019 at AIIMS, New Delhi; Best Paper award for the biliary free paper session (Moond V, Panwar R, Singh AN, Dash NR, Pal S, Sahni P). Biliary surgery in portal biliopathy: Short and longterm outcomes in 29th Annual conference of IASG, 9-13 October 2019, New Delhi.

**Professor Nihar Ranjan Dash** continued as President, Indian Ostomy Society and organized the Annual meeting of the Indian Ostomy Society. He was reviewer for European Radiology, BMC Surgery, BMC Case reports & Tropical Gastroenterology. He was appointed Expert for Union Public Service Commission in Surgery with specialization in GI Surgery, interviews of Lecturer Surgical Gastroenterology in Health & Medical Education Department, Jammu and Kashmir, Central Drugs Standard Control Organisation (CDSCO), Prashna India, ICMR Gall bladder task force, and selection of Faculty in the Department of Surgical Gastroenterology, AIIMS, Bhubaneswar and Jodhpur; was co-organiser of the Annual National Conference of Indian Association of Surgical Gastroenterology at New Delhi, 9-13 October 2019 at AIIMS, New Delhi.



## 9.15. Geriatric Medicine

### Professor and Head

AB Dey

### Associate Professor

Prasun Chatterjee

Avinash Chakrawarty

### Assistant Professor

Vijay Kumar

### HIGHLIGHTS

*Her Majesty Queen Silvia of Sweden* visited the Memory and Dementia service of the department on 3 December 2019 to familiarize herself with the care provided in India as a part of her interest in dementia care. The department organized a real time demonstration of care provided by various departments of AIIMS to older patients.

HONOURABLE SHRI M. Venkaiah Naidu, Vice President of India released the book “Health and Wellbeing in Late Life: Perspectives and Narratives from India” authored by Dr Prasun Chatterjee on 21 December 2019 at his official residence.

The Department organized a live demonstration of Integrated Care of the Older Person (ICOPE) for participants from 10 South-East Asia Regional Countries of World Health Organization on 19 September 2019.

The Department was a co-organizer of 19th Biennial Conference of Association of Gerontology (India) Conference at All India Institute of Medical Sciences on 17-18 August 2019 in collaboration with the Department of Biophysics.

Dr AB Dey was appointed as member of the South-East Asia Regional Expert Advisory Panel on Healthy Ageing for three years with effect from 10 July 2019.

### EDUCATION

The department is the largest postgraduate department of Geriatric Medicine in India. In addition to active participation in institutional academic activities the department placed major focus on postgraduate training with five sessions of teaching every week. Col Sumit Bhaskar of Army Medical Corps joined the department as a long-term trainee for 2 years from 1 July 2019. The department provided observership to MD student of the Department of Medicine from AIIMS, Rishikesh for establishing a Geriatric Service.

### CMEs/Workshops/Symposia/National and International Conferences Organized by the department

1. 19th Biennial Conference of Association of Gerontology (India), 17-18th August 2019, New Delhi
2. WHO SEARO- demonstration of ICOPE, 19 September 2019, New Delhi

### Lectures delivered

AB Dey: 12

Prasun Chatterjee: 5

Oral papers/posters presented: 18

### RESEARCH

#### Funded projects

#### Ongoing

1. Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI): Genomic Study, AB Dey, NIH (USA), 5 years, 2019-2024, Rs 2201.96 lakhs
2. Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI), AB Dey, NIH (USA), 5 years, 2015-2020, Rs 528.66 lakhs
3. Longitudinal Aging Study of India (LASI), AB Dey, MoHFW, 4 years, 2015-2019, Rs 100 lakhs
4. www.oldagesolutions.org—A web portal for older people and their care givers, AB Dey, DST, 3 years, 2019-2022, Rs 47.38 lakhs

5. Study of Sarcopenia: Establishment of norms for diagnosis, prevalence and risk factors in ageing North Indian population and development of preventive strategies, AB Dey, ICMR, 3 years, 2019-2022, Rs 88.25 lakhs
6. Validation and Implementation of Integrated Care for Older People (ICOPE) as cornerstone for community-based care of older persons in India: A pilot study, AB Dey, WHO, 1 year, 2019-2020, Rs 10.05 lakhs
7. Multimodal intervention (diet, exercise and computer based cognitive training) amongst elderly subject with Subjective cognitive impairment (SCI) attending Geriatric clinic of AIIMS, Prasun Chatterjee, DST, 3 years, 2017-2020, Rs 38.52 lakhs
8. Effect of Smart Nordic Walking Training on Mobility Independence in Community Elderly- A pilot Study, Prasun Chatterjee, ICMR, 2 years, 2019-2021, Rs 38.15 lakhs
9. Characteristics of Indian Super Agers—A pilot prospective cohort study with a potential future predictive model, Prasun Chatterjee, ICMR, 3 years, 2019-2022, Rs 61.36 lakhs
10. National Study of Knowledge, Attitude, Perception & Medical Awareness towards a Model of Intergenerational Engagement & Science, for Sanitation, Hygiene & Health, Prasun Chatterjee, DST, 1 year, 2019-2020, Rs 21.16 lakhs

## **Departmental projects**

### ***Ongoing***

1. Impact of Nordic Walking training on functional status in the very old: A randomized control trial
2. Geriatric Assessment of patients with hematological malignancies (Multiple Myeloma) by a newly developed scale for older persons with malignancy for their initial assessment, prognostication and care
3. Transcriptome profiling (mRNA/miRNA) of specialized skeletal muscle cells (satellite cells) for identification of factors involved in age related myopathies
4. Validation of newly developed scale (SCOPE-C, Version 1) for geriatric patients with lung cancer for their initial assessment, prognostication and care and explore the potential of tumor suppressors as biomarkers in lung cancer in older population
5. Clinical frailty scale as a predictor of mortality in older adults with SARI – A prospective observation study
6. Observations on sarcopenia in residents of old age home
7. Predictor of survival following hospitalization for illness of recent onset amongst the oldest old
8. Biological ageing indicators and its correlates in older Indians
9. Caregiver stress and burden among caregivers of cognitively impaired individuals
10. Incidence and prevalence of delirium and its socio-demographic, clinical and biochemical correlate in geriatric population
11. Study of biomarkers in subjects with subjective cognitive decline
12. Validation of ICT-BRIEF tool as Mortality predictor at 6 month and 1 year in older adults
13. Gait and balance profile of users of Smart Nordic Walker and Smart Shoes
14. Item reduction of SCOPE C Version 1 and validation of same in elderly with malignancy
15. Effect of intergenerational learning on cognitive reserve in elderly
16. Study of the gut micro biota in sarcopenic and non-sarcopenic in older adults
17. Gait analysis in persons aged 75 years and above

### ***Completed***

1. Study of skeletal muscle regeneration in old age
2. Development of Healthcare Policies and Programmes Awareness Questionnaire (HPPAQ) to study the awareness about the national
3. Healthcare policies and programmes for senior citizens among geriatric patients and medical/paramedical professionals
4. Predicting Frailty in Indian Hospital Setting: Comparison of Three Indicators
5. Randomized placebo control trial to assess clinical and immunological efficacy of pneumococcal vaccine in Indian older adults
6. Quantitative assessment of the cardiopulmonary fitness in Indian older adults attending the Geriatric OPD
7. Assessment of autonomic function across frailty status in Indian elderly

8. Estimation of novel proteins among older subjects as biomarkers for cognitive impairment
9. One carbon metabolism and cognitive impairment in older Indians
10. Development of new frailty scale in older Indians
11. Establishment of clinical construct of intrinsic capacity in older adults
12. Biomarkers and diagnostic tools of sarcopenia in Indian older population

## PUBLICATIONS

**Journals: 12**

**Abstracts: 1**

**Chapters in Books: 2**

**Books: 1**

## PATIENT CARE

The Department provided daily OPD service and once-a-week afternoon Memory Clinic. During the year 51511 (new and revisit) consultations were provided to patients in OPD and 312 (225 new and 87 revisit) patients were seen in the Memory Clinic. Rehabilitation service from the Day Care Service of the department was provided to 14969 patients. 1623 patients were admitted under Geriatric Medicine during the year.

### Community Service

The faculty and residents of the Department participated in health camps for senior citizens organized by non-governmental organization Healthy Aging India in old age homes in Delhi NCR region.

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Dr Prasun Chatterjee and Dr Vijay Kumar** participated in several health education programmes of Door Darshan and delivered talk on old age issues.

**Dr Joyita Banerjee** was appointed as the National Representative for India by International Society of Geriatric Oncology (SIOG), Geneva, Switzerland.

**Professor AB Dey** participated in: Expert Group Consultation to review manual for training primary care physicians in care for older people at held in WHO Regional Office for South-East Asia, New Delhi, India from 20 to 21 August 2019; Consultation of Stakeholders for development of National Strategy on Ageing, Bhutan from 23 to 25 August 2019 at Paro, Bhutan; WHO Regional meeting on Integrated Care for Older People (ICOPE) in South-East Asia Region 18-20 September 2019, New Delhi, India; WHO Consortium on Metrics and Evidence for Healthy Ageing on 10 and 11 October 2019 at Geneva, Switzerland; Stakeholders Consultation on National Strategy for Healthy Ageing, Bhutan from 14 to 16 October 2019 at Wangdue, Bhutan; WHO Clinical Consortium on Healthy Ageing on 21 and 22 November 2019 at Geneva, Switzerland; WHO SEARO Training programme on ICOPE for Primary Care Physicians by from 16 December to 18th December 2019 at Pune, Maharashtra; WHO India State level Training of Trainers on Healthcare of Elderly for CHC Medical Officers at Hyderabad, *Telangana*.

**Dr Prasun Chatterjee** was appointed as a Consultant in WHO-SEARO in March 2020. He participated in: Expert Group Consultation to review manual for training primary care physicians in care for older people at held in WHO Regional Office for South-East Asia, New Delhi, India from 20 to 21 August 2019; WHO Regional meeting on Integrated Care for Older People (ICOPE) in South-East Asia Region 18-20 September 2019, New Delhi, India; WHO Clinical Consortium on Healthy Ageing on 21 and 22 November 2019 at Geneva, Switzerland; WHO SEARO Training programme on ICOPE for Primary Care Physicians by from 16 December to 18 December 2019 at Pune, Maharashtra; Conducted the WHO India State level Training of Trainers on Healthcare of Elderly for CHC Medical Officers at Hyderabad, *Telangana as the lead trainer; Participated and contributed substantially in National Consultation meeting on Do Not Attempt Resuscitation (DNAR), ICMR Head Quarters on 2 December 2019.*





## 9.16. Haematology

	<b>Professor and Head</b> M Mahapatra	
	<b>Professors</b>	
S Tyagi		Tulika Seth
	<b>Assistant Professors</b>	
Rishi Dhawan Ganesh Kumar V	Jasmita Dass	Mukul Agarwal Pradeep Kumar
	<b>Scientist-II</b> Suman Lata	
	<b>Scientist-I</b>	
Ravi Ranjan		Ravi Kumar

### HIGHLIGHTS

- The ISHTM-AIIMS external quality assessment programme for hemogram, conducted by Department of Hematology, AIIMS was accredited for further two years as PT provider by NABL.
- Department of Hematology continued to be Regional training Centre by International Society of Hemostasis and Thrombosis in collaboration with the Institute of Experimental Hematology and Transfusion Medicine, University Clinic Bonn.

### EDUCATION

- The department conducts DM (Clinical Haematology), DM (Haematopathology) and PhD program in the field of Haematology. The academic programme includes regular seminars, symposia, micro-teaching and case discussions.
- The faculty is involved in theory and practical classes for undergraduate students in the subjects of Pathology, Hematology and Internal medicine. Clinical case studies are taught in the department of Pediatrics. Students of MD (Pathology) are trained in Haematology.
- The department provides short term training for visiting doctors, healthcare professionals and M.Sc. students interested in the field of Haematology.
- The department has provided training in the field of clinical and laboratory hematology to one doctor from other institution for two weeks each. Also 06 M.Sc. students also undertook short-term training hematology for two months each, during this year.

### CMEs/Workshops/Symposia/National and International Conferences

- The department organized 60th Annual Conference of Indian Society of Hematology and Blood Transfusion (HAEMATOCAN 2019) 7-10 November 2019. More than 1500 delegates participated in the conference.
- It also organized three workshops on 7 November 2019. These workshops were on:
  - Flowcytometry in Benign Hematology
  - Thrombophilia
  - Haemophilia- Musculo-Skeletal

### Lectures delivered

**M Mahapatra: 9**      **Seema Tyagi: 1**      **Tulika Seth: 20**  
**Rishi Dhawan: 6**      **Mukul Agrawal: 12**      **Jasmita Dass: 7**  
**Ganesh Kumar V: 4**

**Oral papers/posters presented: 30**

## RESEARCH

### Funded projects

#### *Ongoing*

1. Mitigation of clinical phenotype by activated platelets in severe hemophilia, M Mahapatra, DBT, 3 years, 2019-2022, Rs 8 lakhs
2. NN7415-4311explorer 7, NN7415-4311, Concizumab label trial for Hemophilia B with Inhibitors, Tulika Seth, Novo Nordisk, 3 years, 2019-2021, Rs 3.5 lakhs
3. Explorer 8 NN7415-4311/4307, Tulika Seth, Novo Nordisk, 3 years, 2019-2021, Rs 3.5 lakhs
4. India 13 Multicenter project for capacity building with national training centres, Tulika Seth, NNHF, 1 year, 2019-2020, Rs 14 lakhs

#### *Completed*

1. Socio-Ecological Impact & Tribal Health: A Study on Epidemiological Diversity of Thalassemia Mutations among Tribes in India and Impact of Socio-Ecological Influences, Renu Saxena, DST, 3 years, 2017-2020, Rs 4.38 lakhs per year
2. Safety of turoctocogalfa for prophylaxis and treatment of bleeding episodes in previously treated patients with moderate or severe Haemophilia A in India, Tulika Seth, Novo Nordisk India Private Ltd, 1 year, 2018-2019
3. Clinical outcomes of CLL and MCL patients treated with Ibrutinib: An observational retrospective medical chart review from India, Tulika Seth, SiroClinPharma Pvt Ltd, 1 year, 2018-2019

### Departmental projects

#### *Ongoing*

1. Impact of molecular genetics on the phenotype of Indian sickle cell syndrome patients
2. Identification and in-silico characterization of molecular defects underlying inherited deficiencies of FVII and FX in India
3. To study the combined role the BCR-ABL1 Kinase Domain and Elsewhere mutation in Chronic Myeloid Leukemia patients with resistance to Tyrosine Kinase Inhibitors (TKIs)
4. Molecular profiling of Myelodysplastic Syndromes subgroups – MDS with single lineage dysplasia and MDS with multi-lineage dysplasia for assessment of prognosis and treatment response
5. Mitigation of clinical phenotype by activated platelets in severe hemophilia
6. Role of hMICL in BCR-abl 1 negative MPNs by FCM
7. Immunophenotyping and MRD analysis in Multiple myeloma by flow cytometry
8. Flow cytometric ploidy analysis in B-cell acute lymphoblastic leukemia
9. Minimal residual disease analysis in acute myeloid leukemia by flow cytometry using a limited antibody panel
10. Flow cytometry assessment of CD 26+ leukemia stem cells in chronic myeloid leukemia
11. Study of the role of thromboelastography in predicting risk of hemorrhage in patients with acute leukemia
12. Compare HbCZE and HPLC in diagnosis of hemoglobinopathies
13. To compare the diagnostic performance of Whole Body Low dose Computed Tomography (WB LDCT) and Conventional Skeletal Survey (CSS) in diagnosis and management of patients with Multiple Myeloma (MM) in a Tertiary Care Centre
14. Effect of tyrosine kinase inhibitor on sperm parameters and pituitary gonadal axis in male patients with Chronic myeloid leukemia
15. Imatinib dose escalation in CML: indication, responses and outcomes
16. Assessment of eligibility for treatment free remission in patients of chronic phase of CML attending OPD of a tertiary care center
17. Evaluation of transient elastography, hepatic iron concentration by MRI t2\* liver, serum liver fibrosis indexes versus liver biopsy in thalassemia major patients who are candidates for hematopoietic stem cell transplant, a comparative pilot study
18. Evaluation of response to immunosuppressive therapy and eltrombopag in aplastic anemia
19. Correlation of endogenous thrombopoietin levels with response to thrombopoietin receptor agonists and assessment

of serum LDH profile in adults with primary ITP

20. To compare the side effect profile, minimal residual disease and early event free survival in patients of CD 20 positive precursor B acute lymphoblastic leukemia who receive rituximab versus those who do not receive rituximab with induction therapy

### **Completed**

1. Evaluate the Role of Tissue Factor and Tissue Factor Pathway Inhibitor Gene Polymorphisms in the Pathogenesis of Deep Vein Thrombosis in India
2. Study of expression of cereblon protein by immunohistochemistry in newly diagnosed and treated multiple myeloma patient
3. Assessment of Nutritional status/Parameters in acute leukemia patients undergoing induction chemotherapy
4. Efficacy of low dose rasburicase in management of tumor lysis syndrome in leukaemia and lymphoma patients
5. Abdominal infections in immunocompromised hosts: A clinical, microbiological and radiological correlation
6. Nilotinib versus Imatinib deep molecular response in CML
7. Clinical and laboratory profile of patients with hypereosinophilia presenting to a tertiary care center on north India
8. Correlation of serum iron profile and Hcpidin level in patient with microcytic hypochromic anemia.
9. Role of IHC with CD 61 and p53 on bone marrow biopsies in enhancing diagnosis in suspected MDS cases- retrospective and prospective study
10. Study of bone marrow lymphocyte subset in acute myeloid leukemia

### **Collaborative projects**

#### **Ongoing**

1. Prospective observational study to assess the prevalence of platelet refractoriness and its reasons in patients receiving multiple platelet transfusion in an Indian setting, Transfusion Medicine
2. Autoimmune haemolytic anaemia: Clinical and Serological correlation, Transfusion Medicine
3. Randomized control trial to evaluate safety and efficacy of intra vitreal injection of autologous bone marrow derived stem cells in acute cases of ischaemic central retinal vein occlusion, RP Centre
4. A population based prospective cohort study to unravel the causes of stroke and cognitive decline: A cross cultural perspective. Erasmus Medical Center, Rotterdam, Netherlands
5. Ocular GVHD in post Allogeneic HSCT patients, Transplant Immunology & Immunogenetics
6. Immune reconstitution in Haplo identical HSCT, Transplant Immunology & Immunogenetics
7. Role of platelet activation in the development of systemic inflammations in patients with type-2 diabetes, Endocrinology, AIIMS and Regional Centre for Biotechnology (RCB)
8. Outcome predictors of patients with secondary Hemophagocytic lymphohistiocytosis Medicine
9. Ras homolog gene family (RHOA) and Isocitrate dehydrogenase 2 (IDH2) mutation in Angioimmunoblastic T cell Lymphoma (AITL), Pathology
10. Identifying association of gene polymorphism and Prakriti in responders & non responders to dual antiplatelet therapy in coronary artery disease patients. Cardiology
11. To evaluate the role of serum d-dimer, neutrophil:lymphocyte ratio, platelet: lymphocyte ratio and CA125 in assessment of ovarian masses, Obstetrics and Gynaecology
12. Efficacy of intravenous iron therapy compared to oral iron treatment in iron deficient adult cyanotic, congenital heart disease patients for improvement in clinical outcome at 3 months, Cardiology

#### **Completed**

1. The effect of negative pressures used during ultrafiltration on erythrocyte, CTVS
2. Study of efficacy of topical rituximab encapsulated in nanoparticle in oral pemphigus vulgaris – a randomized double blinded placebo-controlled trial, Dermatology
3. Standardization of Voriconazole/posaconazole levels for pediatric hematology patients, Microbiology

### **PUBLICATIONS**

**Journals: 23**

**Abstracts: 29**

**Chapters in Books: 2**

## PATIENT CARE

### A. Clinical Services

#### Hematology Day Care Center Census 2019-20

Month	Admissions	BT	Chemo	PRP	Cryo	FFP	SDP	BMBx	TT	Phlebotomy	Hickman removal	Male	Female	Combined
April	1090	373	379	192	-	19	6	146	55	32	2	461	178	460
May	1260	383	499	214	-	15	12	186	34	21	6	520	234	501
June	1245	375	538	202	1	21	1	172	34	33	3	581	298	538
July	1338	407	602	205	3	18	1	179	60	41	3	515	205	274
August	1209	365	550	180	2	17	2	144	38	27	2	432	216	554
September	1338	349	628	172	-	23	5	142	53	34	4	468	304	524
Oct	1139	354	496	128	-	19	1	138	48	30	1	381	290	445
Nov	1132	324	544	137	1	15	1	118	53	32	1	413	277	442
Dec	1152	345	471	147	-	16	3	156	55	48	2	432	281	422
January	1160	362	504	147	1	15	3	145	58	32	3	462	290	417
Feb	1164	353	507	173	1	17	5	149	55	34	3	438	307	406
March	884	281	366	127	-	15	3	57	30	12	-	379	185	309
Total	14111	4271	6084	2024	9	210	43	1732	573	376	30	5482	3065	5292

#### *Community services*

The department has been active in the area of thalassemia and hemophilia awareness at both community sensitization programmes, and public forums at AIIMS and with the thalassemia and Hemophilia society. The department has collaborated with GAP health and given inputs for patient safety programmes and for designing curriculum for genetic counseling for blood disorders.

Carried forward the Hemophilia patient/parent self-infusion program for anti-hemophilic factors by conducting a workshop at SET facility, AIIMS. Organized and participated in community awareness program in association with Uttarakhand state government, and NGO GAP health foundation, to organize the first patient safety conference.

### B. Laboratory Services

The Department of hematology has state-of-the-art facilities of following:

- Bone marrow aspirate, bone marrow biopsies and peripheral smears
- Immunohistochemistry
- Molecular genetics
- Hemolytic anemia workup
- Flow cytometry
- Capillary electrophoresis for hemoglobinopathies
- Coagulation workup for inherited and acquired bleeding disorders
- Platelet aggregometry
- Thrombophilia workup
- Prenatal diagnosis of Hemophilia and hemoglobinopathies

## Census of Various Laboratories (2019-20)

• <b>Bone Marrow Biopsy laboratory</b>	
• Immunohistochemistry:	449
• Reticulin slides:	815
• Massan Trichome:	10
• LAP Score:	90
• Cytochemistry:	940
<b>Total Biopsies:</b>	<b>1849</b>
• <b>Coagulation laboratory</b>	
• Coagulation test:	10846
• Thrombosis:	2126
<b>Total</b>	<b>12972</b>
• <b>Hemolytic Lab</b>	
• HPLC:	2227
• Serum Ferritin:	1106
• G6PD:	707
• DCT:	237
• OFT:	203
• PNH:	92
• Urine Hemositrin:	34
• Cryoglobulin:	12
• Sickling test:	30
<b>Total:</b>	<b>4648</b>
• <b>Hemogram laboratory</b>	
• OPD and ward patients:	52170
• Hematology OPD patients:	41530
• Bone marrow staining:	8081
• Retic Count:	40240
• <b>Molecular diagnostic laboratory</b>	
• RTPCR/RQPCR:	<b>2340</b>
• <b>Flowcytometry</b>	
- Acute leukemia:	406
• Chronic lymphoproliferative disorders:	183
• Paroxysmal Nocturnal hemoglobinuria:	772
• Minimal Residual disease:	64
• CD34 enumeration:	41
• Platelet disorders:	20
<b>Total:</b>	<b>1486</b>

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor M Mahapatra** is Vice-President of Indian Society of Hematology and Blood Transfusion (ISHBT); Elected as Editor in Chief of Indian Journal Hematology and Blood Transfusion (IJHBT); Represented as an Indian leader to speak on “Aplastic Anemia in India” during 2nd Kings College Bone Marrow Failure/Aplastic Anemia Meeting held at Kings College, London, UK in October 2019; Represented as an Indian leader by ISHBT to discuss with European/American leaders in hematological education and research collaborations with India.

**Professor Tulika Seth** is Member of ethics committees- AIIMS-PG, Member of ethics committees- Delhi University, Member subcommittee of IEC AIIMS for reporting of adverse events in clinical trials, Nominated member of NBE for Hematology, National coordinator India 13 project for training of trainers at National training centers for Hemophilia care, Member Secretary of ethics committee, Can support

**Dr Mukul Agarwal** is Working as Hematology expert for Athlete biological passport management unit (ABPU) with National Anti-doping agency (NADA), India and with Anti-Doping Laboratory, Tokyo

**Dr Rishi Dhawan** was selected for one-year certificate course—Global Clinical Scholars Research Training (GCSRT) 2021 Program by Harvard Medical School, United States with 25% tuition fee waiver scholarship.

## **VISITING SCIENTIST**

1. Dr Sanjeet Dadwal, Pofessor, Transplant Infectious Diseases, City of Hope, Duarte, United States, 30 May 2019
2. Dr Nathan Punwani Associate Professor BMT and Hematology, Cedars Sinai Medical center USA, 29 February 2020
3. Dr Nandita Khera, Associate Professor, Hematology, Mayo Clinic Arizona, United States, 5 March 2020

## 9.17. Hospital Administration

### Professor and Head

Sidhartha Satpathy

### Medical Superintendent, Dr RP Centre

Shakti Kumar Gupta

### Medical Superintendent, Main Hospital

DK Sharma

### Professors

IB Singh

Sanjay Arya

Aarti Vij

### Additional Professors

Nirupam Madaan  
Amit Lathwal

Anoop Daga  
Mahesh R

### Associate Professors

Angel Rajan Singh

Vijaydeep Siddharth

Parmeshwar Kumar

### Assistant Professors

Jitender Sodhi  
Sheetal Singh

Abdul Hakim

Vikas H  
Laxmi Tej Wundavalli

### EDUCATION

The Department is running a postgraduate degree program for medical graduates, viz. MD (HA), earlier known as MHA (Masters in Hospital Administration). This course was started in February 1966, for the first time in India and has since been recognized as a distinct postgraduate discipline. In January 2016, this course had been converted to MD (Hospital Administration) in accordance with decision of Academic Committee (AC-113/10) duly ratified by GB (GB-152/7) during its meeting held on 13 April 2015. The Residency Program in Hospital Administration focuses on 'hands-on' training, where Resident Administrators are posted in the 'Administrative Control Room' of the main hospital, Jay Prakash Narayan Apex Trauma Center, and the National Cancer Institute, Jhajjar, round-the-clock as 'Duty Officers', and coordinate all the hospital activities after duty hours. The Administrative Control Room is the nerve center of the Hospital/centers. The Department also has Senior Residents, who are posted at the Main Hospital and various centers for assisting Faculty members in administrative tasks. They are also involved in the execution of new projects at AIIMS.

Faculty members also conducted several training programmes for the doctors working in various organizations including Central, State Governments, Paramilitary Forces and in various PSUs such as IICM, Ranchi and also other management institutes.

### LONG AND SHORT TERM TRAINING

1. One PG Student of MD (HA) from BP Koirala Institute of Health Sciences, Dharan, Nepal
2. Two MD (HA) students from Sher-i-Kashmir Institute of Medical Sciences, Srinagar, J&K
3. Four ITBP Medical Officers
4. One Armed Forces Medical Institute, Dy. Commandant, Bangladesh
5. Six MBA – Hospital Management students of Jamia Hamdard University
6. One student of MBA-HA from Chaudhary Charan Singh University, Meerut

### CONTINUING MEDICAL EDUCATION

1. Organized SASH (Safe & Sustainable Health)-2020 Conference, 21-23 February 2020, AIIMS, New Delhi in collaboration with Academy of Hospital Administration, Noida
2. 17th Healthcare Executive Management Development Programme, 1-7 March 2020, Goa



**Lectures delivered****Sidhartha Satpathy: 25****Sanjay Arya: 6****Amit Lathwal: 2****Vijaydeep Siddharth: 8****Sheetal Singh: 3****Shakti Kumar Gupta: 4****Nirupam Madaan: 13****Mahesh R: 14****Abdul Hakim: 9****DK Sharma: 2****Anoop Daga: 5****Angel Rajan Singh: 2****Jitender Sodhi: 9****Oral papers/posters presented 1****RESEARCH****Departmental projects*****Ongoing***

1. A comparative analysis of APAR vs ACR systems in AIIMS
2. A satisfaction survey of battery operated buses under CSR initiative being used for intramural transportation at AIIMS
3. A study of gender sensitive behaviors in the workplace with the aim of designing gender sensitivity training modules for AIIMS, New Delhi
4. A study of process handling of the medico legal cases at the emergency deptt. of AIIMS, New Delhi from the respective of systemic improvement
5. A study of the effectiveness of a Mascot in spreading awareness about sanitation & safe disposal of hospital waste among healthcare workers at AIIMS, New Delhi
6. A study of the inventory management practices at Blood Bank of Main hospital
7. A study on prevalence of fire cracker injury and outcomes with demographic profile of patients visiting the emergency department of a tertiary care centre of North India during the festive season of Diwali
8. A study to assess the knowledge, attitude & practices towards COVID-19 among non-medical health workers/patients/attendants at a tertiary care hospital in New Delhi
9. A study to develop a hospital infrastructure project implementation model
10. A study to identify the various patients assistance and welfare schemes available in AIIMS hospital and its centres and the methods to provide financial assistance to poor patients
11. Application of queing theory as decision making tool for OPD services in hospital
12. Fire control manual AIIMS, New Delhi
13. Gap Analysis for LAQSHAY Accreditation of Labour Room & Maternity OT Complex at main hospital
14. ICMR taskforce centre on rational use of Medicine
15. Implementation of an institutional antifungal stewardship program (AFSP) and its impact on antifungal usage and outcomes in patients with invasive fungal infections
16. Need Analysis of CSR in AIIMS
17. Study on radiotherapy services and utilization of specific radiotherapy equipment across different centers of AIIMS, New Delhi
18. Study to assess the impact of educational intervention on incidence of CLABSI line associated blood stream at ICU of JPNATC
19. To study the awareness about eye donation among patients and their attendants visiting AIIMS
20. To study the impact of mechanized laundering of floor mops on mop disinfection and sanitation services at AIIMS, New Delhi

***Completed***

1. Study of leadership profile of Department Heads and its impact on work performance and well-being of fellow doctors
2. Comparative study of the emergency department of select hospitals in Delhi, with 100 and above beds, against standard guidelines
3. A study of the effectiveness of the “never use” list of abbreviations in medical prescriptions at AIIMS.
4. A study of association between the sexual assault and the socio-economic status of sexual assault survivors coming

to AIIMS

5. Assessment of drug dispensing practices at free drug pharmacy at AIIMS
6. An interventional study on impact of use of mechanized laundered floor mops on mop cleaning and disinfection

### **Collaborative projects**

#### ***Ongoing***

1. Evaluation of Dual dye technique for sentinel lymph node biopsy in breast cancer: Two arm open labeled parallel design non-inferiority randomized controlled trial, Surgical Disciplines
2. Costing of Standardized laparoscopic mesh repair of midline abdominal wall hernia, Surgical Disciplines

#### ***Completed***

1. Evaluation of the impact of training amongst the food handlers in dietary services on knowledge, practices and beliefs of food safety behavior, Dietetics

### **PUBLICATIONS**

**Journals: 15**

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

AIIMS New Delhi bagged the prestigious “Kaya Kalp” award for the third year in succession in October 2019 under the category of Hospitals with a prize money of INR 3 crores. All the key- result areas showed improvement under the leadership of Faculty members of the Department, ably supported by Residents, Nursing Administrators, Hospital Officers, Infection Control Committee members, Engineering department, and others.

**Professor Sidhartha Satpathy** was awarded the International ICMR Fellowship 2019-20 for Senior Bio-Medical Scientist at University of Alabama at Birmingham, USA for 3 weeks in October-November 2019. The National Conference on Safe and Sustainable Hospitals (SASH-2020) was organized by Department of Hospital Administration in collaboration with Academy of Hospital Administration, Noida on 21-23 February 2020, at JL Auditorium, AIIMS, New Delhi; Nominated as Member of National Accreditation Board for Hospital & Healthcare providers (NABH) as AIIMS representative by Director AIIMS; Contributed to development of AIIMS Bhubaneswar as Mentor, and subject expert to assist Selection Committee for non-Faculty Administrative posts at AIIMS Bhubaneswar on 21 September 2019; Participated as Subject Expert for selection of Professor and Assistant Professor, Dept of Hospital Administration, AIIMS, Rishikesh and Mangalagiri, and Super-Specialty Cancer Hospital (SSCH), Lucknow. Expert Member of Committee for development of Bhopal Memorial Hospital & Research Center (BMHRC) by Dept of Health Research, GoI; Member of Building Committee of National Brain Research Institute, providing oversight for development of Auditorium, Academic Block and Laboratories; Also contributed as Expert Member of Academic Audit Committee of IIMR University, for improvement of academics as mandated by UGC; Member of Committee for rationalization of recruitment rules for posts at upcoming CAPFIMS under the aegis of Ministry of Home Affairs, Govt. of India; Contributed as Editorial Committee member of JAHA and IJRFHHA, and Reviewer for National Medical Journal of India.

**Dr Shakti Kumar Gupta** was an expert member for the development of the Standard Operating Procedure for the prevention of Corona Virus Disease (COVID-19) for homes, organized by Department of Hospital Administration, AIIMS, New Delhi; Program Director for Master Class on “Essentials of Continual Quality Improvement (CQI)” organized by Research Foundation of Hospital & Healthcare Administration (RFHHA) held on 9 February 2020 at IIC, New Delhi; Program Director for 17th Healthcare Executive Management Development Programme (HxMDP) from 1 to 7 March 2020 at Pride Sun Village Resort, Goa, India organized by Department of Hospital Administration, AIIMS, New Delhi; Elected Executive member of Board of Directors of the International Association of Applied Management and Executive Vice President of the Association and Chair of the Healthcare Administration track for International Association for Applied Management Conference held in London, England, 2019; External expert member for the interview for Superspecialty Direct quota posts of Medical faculty in Chandigarh, India on 22 September 2019; Visited Bhutan as member of the expert committee for establishing 350 bedded Multidisciplinary Superspecialty hospital at Thimpu, Bhutan from 7 to 9 August 2019. The report has been submitted to MoHFW, GOI and Joint Secretary (North), Ministry of External Affairs, GOI on 12 September 2019. Appointed as External examiner for MD (Medical Administration) Examination by University of Colombo, Sri Lanka for which exams were held from 29 July to 5 August 2019 at Colombo, Sri Lanka; Appointed External Expert Member for the selection of Professor in School of Health System Studies at Tata Institute of Social Sciences, Mumbai on 28 August 2019; Attended Board Meeting along with Quality Conclave on Ayushman Bharat and its implementation from 8 to 10 August 2019 organized by Consumer Online Foundation at Banaras Hindu University, Varanasi; Attended the CME meeting on Cornea, Cataract, Refractive Surgery & Hospital Administration held at Biratnagar, Nepal on 27 July

2019; Expert Member for faculty selection in the subject of Hospital Administration at KGMU, Lucknow on 24 July 2019; Member of Expert Committee for finalization of Master plan for AIIMS, Jammu and AIIMS, Awantipora, Srinagar on 18-19 July 2019; External Expert Member of the panel discussion for the “Challenges in Hospital Administration and Way Ahead” organized by Steel Authority of India, Management Training Institute, Ranchi, Jharkhand for Learning from Each Other Workshop on Hospital Administration – Systems and Practice, held from 16 July to 18 July 2019; Expert member to chair the scientific session at the 26th Annual Conference of the International Association for Applied Management at Holiday Inn, London, England on 12 July 2019; External examiner to conduct 2<sup>nd</sup> year practical examination for Masters in Hospital Administration held on 28 June 2019 at SGPGMIS, Lucknow; Expert member to finalize the Master plan for the establishment of AIIMS, Kashmir on 7 June 2019 at AIIMS, Rishikesh; Attended the meeting to finalize the Master plan for AIIMS, Kashmir, Jammu and Awantipora; Member of the National Executive Committee of Haemovigilance Programme of India constituted by National Institute of Biologicals, Ministry of Health & Family Welfare, Government of India; Delivered keynote address at the CME on Cornea, Cataract, Refractive Surgery & Hospital Administration at Biratnagar, Nepal.

**Dr DK Sharma** visited Nizam’s Institute of Medical Sciences, Hyderabad to act as an External Examiner to conduct Final Examination of MD (Hospital Administration); Visited Soura Srinagar (J&K) as an External Examiner for conducting the practical part of MD Hospital Administration Annual Examination (Batch-2016) for Sher-i-Kashmir Institute of Medical Sciences (Deemed University); Visited AIIMS Jodhpur to attend the Standing Selection Committee Meeting as an External Expert for selection of Faculty of Deptt. of Hosp. Admn., Visited Jaipur on behalf of MCI to inspection of assigned Medical College in either Gujarat, Dadra and Nagar Haveli, Daman and Diu, Maharashtra, Rajasthan for a critical time bound assessment of starting of new course U/s. 10(A) of the IMC Act, 1956 for MD – Hospital Administration Course; Visited Puducherry on behalf of MCI to inspection of assigned Medical College in either Gujarat, Dadra and Nagar Haveli, Daman and Diu, Maharashtra, Rajasthan for a critical time bound assessment of starting of new course U/s. 10(A) of the IMC Act, 1956 for MD – Hospital Administration Course; Attended the selection committee meeting as an Expert for Faculty Selection (Hospital Administration) at Superspecialty Cancer Institute & Hospital (SSCI&H), Lucknow; Visited Darbhanga as a part of Central Team constituted by MoHFW, GoI for setting up second AIIMS in the state of Bihar; Attended the Apical Selection Committee meeting as an Expert for the selection of Faculty (Hospital Administration) at Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Jammu; Attended the selection committee meeting as a Subject Expert for selection of Faculties in the Deptt. of Hosp. Admn., AIIMS, Bhubaneswar; Visited IGNOU, New Delhi as a Member of Expert Committee Meeting for Revision of PGDHHM Programme of SOHS; Attended meeting of the committee constituted by MoHFW to finalise the master plan for establishing new AIIMS in Kashmir to be held in the office of Director AIIMS Rishikesh; Visited ESIC Medical College at Alwar, Rajasthan – Proposed plan for site visit and request for required coordination and providing a detailed report about existing infrastructure & facilities.

**Professor IB Singh** was appointed Internal Examiner for the Board of Examiners for the MD in Hospital Administration Final Examination and Evaluator for Dissertations for PG degree examination in Hospital Administration (MD) in Medical Colleges under Dr. NTR University of Health Sciences, AP; Appointed Chairman of the Board of Examiners for MD Hospital Administration examination at The Nizam Institute of Medical Sciences, Hyderabad; Appointed External Expert for recruitment of Faculty position (Hospital Administration) at AIIMS, Bhopal; Appointed external examiner for the Final Examination for the Master in Hospital Administration Course of Post Graduate Institute of Medical Education and Research, Chandigarh; Nominated as expert committee member and participated (i) 32<sup>nd</sup> Meeting of Technical Evaluation Committee (TEC) for evaluation of Detailed Project Reports Under Phase III of Centrally sponsored Scheme for ‘Establishment of New Medical Colleges attached with existing District/Referral Hospitals’- in GDHS, Nirman Bhawan and (ii) 33<sup>rd</sup> Meeting of Technical Evaluation Committee (TEC) for up-gradation of existing Medical colleges to increase MBBS seats in the country and strengthening and up-gradation of State Government Medical Colleges for starting New PG disciplines and increasing PG seats; Chaired the Scientific session: papers presented by Faculties, Professionals and students, from various institutions—open session in SASH-2020-National Conference on ‘Safe and Sustainable Hospitals’.

**Dr Nirupam Madaan** was a member of the Editorial Board, International Journal of Research Foundation of Hospital & Healthcare Administration (IJRFHHA). She was also nominated as a member of Health Informatics, MHD-17, from AIIMS, New Delhi.

**Dr Anoop Daga** was an Associate Editor, Journal of Academy of Hospital Administration (JAHA) and a member of the Editorial Board, International Journal of Research Foundation of Hospital & Healthcare Administration (IJRFHHA). He is also member of the Technical Textile Committee (incl. Medical & Surgical Textile), Bureau of India Standards (BIS). Member, Service Sector Division Council, BIS. He is also the Project in-charge of the **Mother & Child Block** (425 Beds) project. He was also the organizing Secretary for the “**National conference on Safe & Sustainable Hospitals**” (SASH 2020).

**Dr Amit Lathwal** was a resource faculty at NIHFV in the training course on “District Preparedness for Public Health

Emergencies Management” for District Health Officers, and at AHA for NQAS Certificate course and training course on nursing service administration & quality management. He visited Japan in August 2019 as part of Human resource development exchange programme for trauma care for studying the Japanese trauma care system.

**Dr Mahesh R** was a member of the Committee to examine the pros and cons of Central Legislation against the assault on Doctors on duty and Clinical Establishments. He is the Member Secretary, Fire Audit Team. He is also the Chairman of the sub-committee for assessment of cases for eligibility for Compassionate appointment at AIIMS, New Delhi. He is a Technical Expert, Medical Value Travel as part of Champion Service Sector Scheme, MOHFW, FICCI & SEPC Dept. of Finance Services. He chaired a Session in International Conference on Operations Research and Decision Sciences (ICORDS-2019) at IIM, Vishakapatnam. He continues to Contribute as Principal Member of Medical Equipment & Hospital Planning Division Council (MHDC), Bureau of Indian Standards.

**Dr Angel Rajan Singh** was the moderator for Project Management in Healthcare in times of Digital Disruption - The Intersection of Strategy, People, Technology and Process. “SASH 2020: Connecting The Dots...for Better Management of Hospitals” organized by Department of Hospital Administration, AIIMS, New Delhi.

**Dr Jitender Sodhi** was contributed as a reviewer for the manuscript “Patient awareness of costs of treatment at a Govt-Sponsored hospital” for Indian Journal of Pediatrics; Contributed as a Member Secretary in an inquiry committee in the institute; Contributed as convener of the registration committee of the department’s conference: **National conference on Safe & Sustainable Hospitals (SASH 2020)** held at AIIMS, New Delhi.

**Dr Abdul Hakim** was a member of the Committee of Working Group-5 ‘Strengthening of Public Hospitals through AB PM-JAY’.

**Dr Sheetal Singh** attended the Conclave & Refresher Course on 5th edition of NABH Hospital Standards as an NABH Assessor held on 15 February 2020 in New Delhi.



## 9.18. Laboratory Medicine

### Professor and Head

M Irshad (up to 30 June 2019) Renu Saxena (1 July 2019 till 31 December 2019)  
Subrata Sinha (from 1 January 2020)

### Professor

Sarman Singh (on deputation)

### Associate Professors

Sudip Kumar Datta

Shyam Prakash

### Assistant Professors

Suneeta Meena (from 17 October 2019) Tushar Sehgal (from 4 November 2019)  
Priyam Batra Shiba Ansari Aparna Ningombam  
(Contract) (Contract, from 19 October 2019) (Contract, from 25 November 2019)

### HIGHLIGHTS

The Department successfully developed an integrated automated robotic laboratory designated as SMART Lab in the New RAK OPD block. This lab is equipped with state-of-the-art automated analyzers, which are integrated with a pre-analytical system to minimize the human interface and a post-analytical archival system for systematic sample storage and retrieval.

Platelet Function Analyzer (Helena Platelet Aggregometer) has been successfully installed, in the Hematology section of the department for platelet function studies.

The Department has started Clinical Pathology and Molecular diagnostic services. The department has also started diagnostic services for the following parameters: HbA1c by HPLC, serum Chromogranin, Vitamin A/E and vitamin D.

The Central Collection Facility extended the blood collection timings from 7.45 AM to 11.30 AM followed by collection of post-prandial samples up to 1.30 PM. The 2nd shift extends from 1:30 PM to 3 PM. Since February 2020, sample collection facility in the New OPD block has been started.

Phlebotomy Training programs for Lab Technologists working in various laboratories in AIIMS, New Delhi, have been started.

The Journal of Laboratory Physicians, an open access journal of which Prof Sarman Singh is the Editor and Prof Arulselvi S, Prof Purva Mathur and Dr Sudip Kr Datta are Associate Editors, has been indexed in PubMed and is being currently published by Thieme Publishers.

### EDUCATION

The Department is running a 3-year MD (Laboratory Medicine) course and a thriving PhD program. There are regular teaching sessions including seminars, journal club presentations, monthly case presentations, interactive slide morphology sessions through multi-header microscope, interactive reporting sessions with discussions on Quality Control and EQAS program with regular internal assessment.

**Interdepartmental collaboration:** The Department has restarted the Integrated Seminars with Dept. of Pathology. Besides, the department facilitates teaching and training of MD Residents from Pathology, Biochemistry and Pediatrics departments through structured programs.

Departmental faculty are also involved in taking lectures for MBBS, Nursing students, and M. Biotechnology students.

### CMEs/Workshops/Symposia/Conferences Organized

Workshop on "Diagnostic Techniques in Parasitology" was organized on 7 June 2019, by the Clinical Microbiology Section in collaboration with Indian Association of Medical Microbiologists - Delhi Chapter.

### Lectures delivered

Sudip Kumar Datta: 9

Shyam Prakash: 5

Suneeta Meena: 1

Oral papers/posters presented 22

## RESEARCH

### Funded projects

#### *Ongoing*

1. Genotypic characterization of Autosomal Dominant Polycystic Kidney disease (ADPKD) in Indian population: a pilot study, Sudip Kumar Datta, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
2. Development of Opto-electronic sensor for point-of-care diagnostics of micro-albumin in urine sample, Sudip Kumar Datta, AIIMS – IIT Delhi Collaborative Research Project, 2 years, 2019-21, Rs 10 lakhs
3. Molecular expression and interaction between growth differentiation factor-15 and iron trafficking proteins in Nonalcoholic fatty liver disease, Shyam Prakash, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
4. Rapid diagnostic evaluation of micro PCR for hepatitis B virus DNA (HBV DNA) and HCV RNA quantitation, Shyam Prakash, BigTec Bangalore, 4 years, 2016-2020, Rs 30 lakhs
5. Clinical validation of two versions of salivary glucose and urea analyzers for developing of rapid non-invasive prototypes, Shyam Prakash, AIIMS-IIT Delhi collaborative research Funds, 2 years, 2019-2021, Rs 10 lakhs
6. Molecular expression and interaction between growth differentiation factor-15 and nitric oxide regulatory genes in diabetes and metabolic syndrome, Shyam Prakash, ICMR (SRF fellowship), 3 years, 2018-2021, Rs 13.7 lakhs
7. CAP-53194, a novel predictive tumor inhibitor of Polo Like Kinase-1, Shyam Prakash, DST (for WOS-A), 3 years, 2019-2022, Rs 14.73 lakhs
8. Development and validation of standalone meter for non-invasive salivary glucose quantification, Shyam Prakash, BIRAC, 2020-2021, Rs 7.91 lakhs

### Departmental projects

#### *Ongoing*

1. To study qualitative and quantitative abnormalities in hematological parameters in COVID-19 patients
2. A study on carbapenem and colistin resistance in urine isolates in a tertiary care center
3. Abnormality of platelet functions and effect of ammonia levels in Acute liver failure and acute on chronic liver failure.
4. Assessment of Fok 1 polymorphism of vitamin D receptor gene (VDR), Vitamin D and parathyroid hormone levels in stage 4-5 chronic kidney disease patients
5. CAP-53194, a novel predictive tumor inhibitor of polo-like kinase-1
6. Development of a multiplex real time PCR (qPCR) for simultaneous detection of Hepatitis viruses (A-G) in serum
7. Dysregulation of asymmetric dimethyl arginine and molecular expression of tight junctions (claudins) & programmed cell death ligand-1 in gastric cancer
8. Evaluation of Cathepsin B in peripheral blood of Isolated Traumatic Brain Injury patients and its correlation
9. Evaluation of myelin loss and oligodendrocyte pathology in severe traumatic brain injury
10. Free radical markers: SOD, FRAP, MDA, Nutritional markers: Soluble transferrin, HsCRP, Hepacidin, Folic acid in obesity and metabolic syndrome
11. Molecular expression and interaction between growth differentiation factor-15 (GDF-15), and nitric oxide regulatory genes in Diabetes & Metabolic syndrome
12. Molecular expression and interaction between growth differentiation factor-15 (GDF-15), iron trafficking proteins, micronutrient antioxidants in diabetes and metabolic syndrome
13. Molecular expression of GDF-15, prokineticins, NOS 2, NOS 3, PDL-1 gene, ZIP-8, ZIP-14, Claudins in nafld and metabolic syndrome
14. Molecular interaction of reactive oxygen species in mitochondrial dysfunction and Nrf-2 gene expressions in polycystic ovary syndrome (PCOS).
15. Monitoring of thiopurine drug metabolites and hematological indices in inflammatory bowel disease: An assessment of efficacy & outcome
16. Randomized controlled trial to compare the impact of exercise and nutritional interventions on changes in skeletal muscle mass and function in obese patients with sarcopenia
17. Study of mild traumatic brain injury induced novel circulating brain protein SNTF as a rapid diagnostic and prognostic biomarker for brain dysfunction
18. Study of molecular and peripheral blood biomarkers and their utility to diagnose mild and moderate TBI induced cognitive impairment

19. To establish in house method of the micro PCR for HIV quantification and compare with HIV Real time PCR
20. Translational application of novel clinically accessible biological predictors to improved identification of mild and moderate Traumatic Brain Injury (TBI) induced neuro psychological impairment.

### **Completed**

1. Cloning expression and purification of the novel recombinant protein from *Toxoplasma gondii* and its evaluation for the diagnosis of human toxoplasmosis
2. Flowcytometric Assessment of CD4+T and CD8+T cell subset populations in active pulmonary tuberculosis with and without type 2 diabetes mellitus
3. To study suitability of citrated plasma stored in a conventional refrigerator over a 2-day period for use as internal quality control material
4. To study stability of citrated plasma stored in a conventional refrigerator over 36 hours for use as Internal Quality Control in resource finite settings.

### **Collaborative projects**

#### **Ongoing**

1. Urine albumin creatinine ratio as a marker for predicting acute kidney injury and patient outcome in critically ill sepsis patients—A prospective observational study, Anesthesiology, Pain & Critical Care
2. Evaluation of HE4 level in epithelial ovarian cancer for diagnosis & and monitoring of therapy, Laboratory Oncology
3. Application of Integrated Care Tool- BRIEF (ICT-BRIEF) in detection of Intrinsic Capacity and Geriatric Syndromes of older Indians, Geriatric Medicine
4. To evaluate the role of commercially available kit-based loop mediated isothermal amplification (TB LAMP Assay) in diagnosis of extra pulmonary TB, Medicine
5. Role of CSF Lactate and chloride in identifying the etiology of meningitis, Medicine
6. Prevalence of parasitic infections in patients with eosinophilia in a partially care hospitals in north India, Medicine, Microbiology
7. Utility of serum ferritin in Dengue fever, Medicine, Microbiology
8. Validation of an empiric tool to predict neurological outcomes in critically ill children- A prospective observational study, Pediatrics
9. The prevalence and risk factors of cystic fibrosis related diabetes in children with cystic fibrosis: cross-sectional study, Pediatrics
10. Role of Serum Matrix Metalloproteinase 7 Levels in Diagnosis and Prognostication of Infants with Extra-Hepatic Biliary Atresia, Pediatric Surgery
11. Expression of Immune checkpoints (CTLA-4, PD-1, PD-L1), cytokines and T-reg cells in Lupus Nephritis, Nephrology
12. Comparative evaluation of endocrine disrupter chemicals (organochlorine, organophosphate, Biphenyl A, Phthalate) in polycystic ovary syndrome, type-2 diabetes mellitus and healthy reproductive age Indian women, and their correlation with dietary habits (vegetarian Vs non-vegetarian) and genetic variability, Multi-centric project
13. Role of T- Regulatory cells (T-regs) in obesity and their clinical correlation in obesity associated inflammation in type 2 diabetic and chronic kidney disease (CKD), Nephrology
14. Evaluation of prevalence, regional phenotypic variation, co morbidities, risk factors and the variations in response to different therapeutic modalities among Indian women with polycystic ovary syndrome (PCOS): A Multicenter study across India, Multi-centric project
15. To examine myelination and changes in oligodendrocytes in white matter pathology post severe traumatic brain injury (sTBI) among humans, Forensic Pathology and Molecular DNA, JPNATC
16. Randomized Controlled trial to compare the impact of exercise and nutritional interventions on changes in skeletal muscle mass and function in obese patients with sarcopenia, Medicine
17. Comparison of dried blood spots and plasma samples for the quantification of amino acid using HPLC method among inborn error of metabolism patients, Genetics, Pediatrics
18. Effect of parental presence on stress biomarkers, melatonin level and anxiety scores during induction of anesthesia in children undergoing ophthalmic procedures. A randomized controlled trial, RP Centre (Anaesthesia)



### Completed

1. Macronutrient composition of very preterm (<32wk) breast milk –A prospective observational study, Paediatrics
2. Effect of low dose Rasburicase in management of tumor lysis syndrome, Hematology
3. Role of spot urine sodium in furosemide stress test in volume overloaded critically ill patients with acute kidney injury, Anaesthesia and Critical Care
4. Psychosocial stress and lipid profile as predictors of adverse pregnancy outcomes, Obstetrics and Gynaecology

### PUBLICATIONS

Journals: 19

Abstracts: 15

### PATIENT CARE

#### CENTRALIZED BLOOD COLLECTION FACILITY:

Phlebotomy procedure done at CCF for Clinical Chemistry (1,58,000), Hematology (1,10,000), ESR (40,000), Coagulation profile (9500), Clin Path & Molecular Lab (5930), Clin Microbiology (6500), Human Nutrition (210), Endocrinology (50), Blood Bank (4100). Under the clinical Pathology and Molecular Immunology the tests done for routine services such as HbA1c (4645) and Serum Chromogranin (290)

#### EMERGENCY LABORATORY SERVICES (Round the clock)

Hematology Services	No. of tests
Complete Hemogram without DLC	105954
Peripheral smear Examination	10800
<b>Coagulation Services</b>	
Prothrombin time and INR	103516
APTT	60200
<b>CSF and Body Fluids</b>	
Urine ketones/sugar	1457
Blood culture /CSF plating	9430
Body fluids including CSF microscopy for TLC, DLC	12714
<b>Sub Total</b>	<b>3,04,071</b>
<b>Clinical Biochemistry Services</b>	
Plasma Glucose	4765
S. Urea	268851
S. Creatinine	269045
S. Bilirubin	212721
S. Amylase	9757
Serum Electrolytes (Na, K, Cl)	188121
Ionic Ca	188121
SGOT	1314
SGPT	1314
ALP	1314
CSF-Glu.	5081
CSF-Prot.	5081
Arterial Blood Gas analysis	7836
<b>Sub Total</b>	<b>11,63,321</b>
<b>TOTAL</b>	<b>14,67,392</b>

## ROUTINE LABORATORY SERVICES

### Clinical Biochemistry

Test	Blood	Urine	Body Fluids
Sugar	386190	--	3537
Urea	311999	1714	--
Creatinine	316600	14452	--
Calcium	327267	5802	--
Phosphate	329779	4876	--
Uric acid	329087	1947	--
Electrolytes (Na, K)	320078	6527	--
SGOT	331406	--	--
SGPT	331406	--	--
ALK. Phosphate	333376	--	--
Bilirubin			
5. Total	333180	--	--
6. Conj.	168021		
T. Protein	326831	14490	3537
Albumin	326831	--	3537
Cholesterol	10919	--	--
Amylase	3955	--	2533
<b>Total</b>	<b>44,86,925</b>	<b>49,808</b>	<b>13,144</b>
<b>Grand Total</b>	<b>45,49,877</b>		

### Haematology Services

TEST	No. of Tests
Complete Hemogram including DLC	274057
Reticulocyte count	1064
Peripheral smear	41627
ESR	18481
PT/ INR	11543
APTT	2416
Platelet Function Tests	10
<b>Total</b>	<b>3,49,198</b>

### Clinical Microbiology Services

#### A. Routine Investigations

Name of the Tests	OPD	WARD	TOTAL
<b>1. Urine</b>			
Medical board	932	0	932
Routine	55223	59798	115021
Microscopy	29163	29899	59062

pH, Specific gravity, Acetone, Bile pigment/salt, Urobilinogen, Blood			
Bence Jones Protein	43	19	62
Chyluria	42	24	66
Urine Cultures	22112	0	22112
Strain identifications tests	18527	0	18527
Antibiotic Sensitivity	3380	0	3380
<b>Sub Total</b>	<b>129422</b>	<b>89740</b>	<b>219162</b>
<b>2. Stool Investigations</b>			
Wet mount saline	6998	4020	11018
Wet Iodine stain	6998	4020	11018
Occult blood in stool	396	2156	2552
Fat globules	140	48	188
Special stains for stool Z-N stain, Modif	60	16	76
<b>Subtotal</b>	<b>14592</b>	<b>10260</b>	<b>24852</b>
<b>3. Semen analysis</b>			
Routine	4497	0	4497
No. of Reactions	4497	0	4497
Motility	4497	0	4497
Count	3212	0	3212
Fructose	1772	0	1772
<b>Subtotal</b>	<b>18475</b>	<b>0</b>	<b>18475</b>
<b>4. Sputum Analysis</b>			
Total Number of samples received	1610	125	1735
ZN staining (Microscopy)	3220	250	3470
MTB Culture	509	11	520
<b>Subtotal</b>	<b>5339</b>	<b>386</b>	<b>5725</b>
<b>5. Urine AFB Analysis</b>			
Total Number of samples received	708	14	722
ZN staining (Microscopy)	1416	28	1444
<b>Subtotal</b>	<b>2124</b>	<b>42</b>	<b>2166</b>

## **B. Specialized Investigations**

### **Immuno-Serological & Molecular Diagnosis TORCH**

<b>TORCH</b>	<b>Number</b>		
Toxoplasma gondii IgG	1744	Toxoplasma gondii IgM	1815
Rubella IgG	2056	Rubella IgM	2085
Cytomegalovirus IgG	2015	Cytomegalovirus IgM	1952
Herpes Simplex virus IgG	504	Herpes Simplex virus 2 IgG	504
Rubella IgG avidity	10		
<b>Subtotal</b>			<b>12685</b>

<b>6. Viral Markers &amp; HIV</b>			
HAV IgM	2086	Anti HCV antibody	52587
HBsAg	54967	HEV IgM	231
HBc IgM	173	HIV	41570
HBeAg	2919	HBV DNA	867
Anti HBe	10	HCV RNA	547
Anti HBs	1258		
<b>Subtotal</b>		<b>157215</b>	
<b>7. Others</b>			
Measles IgG	108	Mumps IgG	108
Varicella IgG	96		
<b>Subtotal</b>		<b>312</b>	
<b>8. Molecular Tests</b>			
CMV (RT PCR)			1427
<b>Subtotal</b>		<b>1427</b>	
<b>9. Leishmania Serology</b>			
Lab Strain Maintenance in Hamster			810
<b>Subtotal</b>			<b>810</b>
<b>10. BD Influx Cell Sorter (Flow Cytometer)</b>			
<b>11. TB Laboratory</b>			
ZN staining	494	LJ medium inoculated	749
BACTEC MGIT 960 inoculated	250	GeneXpert MTB/RIF	311
RK 39	40		
<b>Subtotal</b>		<b>2,091</b>	
<b>Grand Total</b>			<b>444920</b>

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Dr Sudip Kumar Datta** is Corresponding Member from India for International Federation of Clinical Chemistry (IFCC) Task Force on Ethics (2018-till date); Secretary, American Association of Clinical Chemistry (AACC)- India Section (2018-till date); Executive member, Association of Medical Biochemists of INDIA (AMBI), Delhi chapter (2019-till date); awarded Six-Sigma green belt from Indian statistical institute, New Delhi on successful completion of training and project; reviewer of several Journals: Renal Failure, Toxicology Research, Int J of Diabetes in Developing Countries, Ind J of Clinical Biochemistry, Ind J of Biochemistry and Biophysics, Molecular Cell Biology, Practical Laboratory Medicine.

**Dr Shyam Prakash**, Associate Editor of Manipal J of Medical Sciences; Member of project review Committee of the SERC division of DST; Member of project review Committee of the Nutrition Division of ICMR; Reviewer of research paper in Journal of Indian J of Clinical Biochemistry; Reviewer of research paper in Journal of Clinical Nutrition ESPEN; Reviewer of research paper in Journal of Diabetes and Metabolic Syndrome: Clinical Research & Reviews; Reviewer of Molecular Biology Reports.



## 9.19. Medicine

### Professor and Head

Naveet Wig

### Professors

Rita Sood  
Sanjeev Sinha

Ashutosh Biswas  
Naval K Vikram

### Additional Professors

Manish Soneja

Piyush Ranjan

### Associate Professors

Neeraj Nischal  
Arvind Kumar

Pankaj Jorwal  
Ranveer Singh Jadon

### Assistant Professors

Animesh Ray  
Prayas Sethi

Upendra Baitha  
Ved Prakash Meena

## HIGHLIGHTS

The Department of Medicine is a vibrant department providing holistic patient care services, innovating in medical education, and conducting translational and clinical research. The department has a strong presence in the fields of infectious diseases, metabolic disorders, chest medicine and sleep disorders and a large number of medical problems requiring multi-disciplinary care. The patient-care services at the Infectious diseases, Travel Health and Adult Immunization Clinic were augmented to keep up with increasing demands. Existing facilities were strengthened, and new investigations were introduced at the point-of-care test laboratory, which functions round-the-clock and helps in taking important decisions in the management of critically ill patients. The department received re-designation as a WHO Collaborating Centre for Training and Research in Tuberculosis. The department faculty and residents are at the forefront of contributing in various national level activities like the response to COVID-19, guideline formulation in various infectious diseases like tuberculosis, HIV, dengue, chikungunya, influenza and COVID-19. This year we also started using the digital platform and launched an antibiotic application, which is the highest downloaded free antibiotic application on android platforms, worldwide. A YouTube channel that was created has also been widely appreciated. We hosted world-renowned specialists of Internal Medicine who interacted with our students, thus, helping them develop an international perspective.

## EDUCATION

The department runs comprehensive undergraduate and postgraduate teaching program which includes integrated lectures, seminars, journal club and bedside clinical case discussions. Currently, 58 MD students, 39 DM Infectious Diseases and 15 Senior Residents are being trained in the department. We are striving to improve the clinical training of undergraduates and postgraduates with better alignment between the expected outcomes, learning opportunities and assessments. There is increasing focus on regular formative assessment and feedback to students.

## CMEs/Workshops/Symposia/National and International Conferences Organized by the department/departmental faculty

- Public Lecture and panel discussion on Dengue Fever on occasion of National Dengue Day on 16 May 2019 in New Delhi
- Meeting of National Technical working group on TB-Comorbidities, 21 May 2019, New Delhi
- Symposium on “Mechanical Ventilation” on 30 May 2019 in New Delhi
- Symposium on “Quality Improvement” held on 4 June 2019 in New Delhi
- Symposium on “GI Tuberculosis” on 12 June 2019 in New Delhi
- Symposium on “Stroke” held on 4 July 2019 in New Delhi
- Symposium on “Myocardial Infarction” held on 11 July 2019 in New Delhi
- Symposium on “Autoimmune Neurology” held on 20 July 2019 in New Delhi
- Symposium on “Lymph Node TB” on 10 August 2019 in New Delhi

- ‘Expert Group meeting for Extra-Pulmonary TB Training Module Development’ from 11 to 13 September 2019 in New Delhi
- Workshop on “Antibiotic Stewardship Program” on 18 September 2019 in New Delhi
- AIIMS Medicine National Medical Quiz on 20 October 2019 in New Delhi
- ‘Expert Group meeting for Extra-Pulmonary TB Training Module Development’ from 21 to 23 October 2019 in New Delhi
- Symposium on “Lung Transplantation” on 28 November 2019 in New Delhi
- Symposium on “Insulin Therapy” held on 21 December 2019 in New Delhi

#### Lectures delivered

Naveet Wig: 1

Naval K Vikram: 3

Arvind Kumar: 3

Prayas Sethi: 1

Ashutosh Biswas: 2

Manish Soneja: 4

Animesh Ray: 6

Sanjeev Sinha: 3

Neeraj Nischal: 1

Uendra Baitha: 1

#### Oral papers/posters presented: 3

### RESEARCH

#### *Ongoing*

1. Initiating antimicrobial stewardship activities in hospitals in India. Naveet Wig, ICMR, 1 year, 2019-20, Rs 10 lakhs
2. Functional analysis of human CD8 T-cell, Naveet Wig, DBT, 3 years, 2019-22, Rs 25.18 lakhs
3. National Guidelines for the management Opportunistic infections in HIV patients, Naveet Wig, NACO, 3 years, 2019-20, Rs 54 lakhs
4. New Bio-therapeutic Approaches to the Treatment of Tuberculosis, Sanjeev Sinha, Dept. of Pharmaceuticals, Govt. of India, 4 years, 2015-19, Rs 45 lakhs
5. Prevention of Relapse in Category I Treated Pulmonary Tuberculosis Patients with & Without Vitamin D3 Supplementation: A Randomized Double Blind Control Clinical Trial, Sanjeev Sinha, DHR, ICMR, 5 years, 2015-20, Rs 40 lakhs
6. Mechanism of rapid propagation of dengue virus during infection, NK Vikram, DBT, 3 years, 2018-21, Rs 20 lakhs
7. A randomized controlled trial of 6 months yogic exercise vs regular physical activity on body composition, multiple metabolic measures in North India individuals with non-alcoholic fatty liver disease and obesity. NK Vikram, DST, 3 years, 2019-21, Rs 96.39 lakhs
8. Randomized controlled trial to compare the impact of exercise and nutritional interventions on muscle functional improvement and changes in skeletal mass in obese patients with sarcopenia. NK Vikram, ICMR, 3 years, 2019-21, Rs 83.01 lakhs
9. Role of biomarkers and its utility in algorithm for early diagnosis of invasive fungal infections. Manish Soneja, AIIMS, 2 years, 2018-20, Rs 10 lakhs
10. Open labelled RCT of IV fluid therapy in Dengue fever with warning signs. Manish Soneja, ICMR, 3 years, 2019-22, Rs 57 lakhs
11. A study to evaluate the safety and efficacy of saroglitazar 4 mg versus placebo in the treatment of HIV associated lipodystrophy, Neeraj Nischal, Zydus Cadila, 3 years, 2016-19, Rs 30 lakhs
12. To evaluate the role of Kit-based Loop Mediated Isothermal Amplification (TB-LAMP) in the diagnosis of Extra-pulmonary Tuberculosis. Neeraj Nischal, AIIMS, 1 year, 2018-19, Rs 3 lakhs
13. Paradoxical reaction in lymph node tuberculosis among non-HIV subjects – Clinical implications and Outcome. Pankaj Jorwal, RNTCP, 1 year, 2019-20, Rs 1.9 lakhs
14. To study the effect of Vitamin C and Thiamine in patients with sepsis in Indian Population: Single blind, Randomized controlled trial. Arvind Kumar, ICMR, 3 years, 2019-22, Rs 50 lakhs
15. Clinical and cytokine profile of acute febrile illness patients with multi-organ dysfunction presenting with and without shock: a prospective observational study, Ranveer Singh Jadon, AIIMS, 1 year, 2019-20, Rs 2 lakhs
16. A study comparing nebulised amphotericin b with oral itraconazole for treatment of chronic cavitary pulmonary aspergillosis patients. Animesh Ray, AIIMS, 2 years, 2018-20, Rs 4.6 lakhs

17. Effect of probiotics on gut microbiome and clinical course in patients with critical care illnesses—A pilot study. Animesh Ray, ICMR, 2 years, 2019-21, Rs 35.33 lakhs
18. A study on the effects of simulation on resident doctors and nurse's knowledge and skills about basic & advanced life support. Upendra Baitha, AIIMS, 2 years, 2019-21, Rs 5 lakhs

### **Completed**

1. Consumption pattern of food and food products/items high in fat, salt and sugar among selected cities/towns and rural population of India, NK Vikram, ICMR, 15 months, 2018-19, Rs 62.59 lakhs
2. Seroprevalence of Dengue Infection, Ashutosh Biswas, NVBDCP, MoHFW, 3 years, 2016-19, Rs 30 lakhs
3. Study of leptospira & scrub typhus in patients admitted with acute undifferentiated febrile illnesses. Ranveer Singh Jadon, AIIMS, 2 years, 2017-19, Rs 4.25 lakhs
4. To study the effect of mobile phones on well-being, sleep and cognitive function, Sanjeev Sinha, DST, 4 years, 2015-19, Rs 78 lakhs
5. Effect of electromagnetic radiations due to mobile phone use on sleep and neurocognitive functions: A molecular approach, Manish Soneja, DST, 4 years, 2015-19, Rs 65 lakhs
6. The pattern of invasive fungal infections in high risk patients in medical ICU at AIIMS, New Delhi, Pankaj Jorwal, AIIMS, 2 years, 2016-18, Rs 5 lakhs

### **Departmental projects**

#### **Ongoing**

1. A prospective observational study on clinical profile and outcome of patients to standard care of chronic pulmonary aspergillosis attending tertiary hospital
2. A prospective observational study to determine cause of death in adults using minimally invasive tissue sampling
3. A study to compare the clinico-radiological and pulmonary function test profile of post tubercular and smoking related COPD patients
4. Active surveillance and targeted intervention in an ICU and HIC practices and its impact on ventilator associated pneumonia
5. Anti-tubercular therapy induced liver injury in patients with type 2 diabetes mellitus: prospective cohort study
6. Assessment of body composition and metabolic profile of young health care providers
7. Assessment of sarcopenia in HIV population
8. Burden of cardiometabolic disorders in PLHIV on second line ART
9. Characteristics and clinical outcomes of patients with spinal tuberculosis presenting to a tertiary care hospital in India
10. Clinical and etiological profile of patients with eosinophilia
11. Clinical and serological characterization of autoimmune hemolytic anemia
12. Clinical and Socio-demographic Correlates of the Patients presenting with Medically Unexplained Physical Symptoms in Medicine Outpatient Clinic
13. Clinical, radiological and functional correlation in treated pulmonary tuberculosis sequele patients
14. Clinico-etiological profile and outcome of patient of fever of unknown origin at a tertiary care center
15. Clinico-microbiological profile and outcome of patients with uro-sepsis –A prospective study in a tertiary care hospital in north India
16. Evaluating adherence to and outcome of evidence based practices in the care of the mechanically ventilated patient: A quasi-interventional study
17. Evaluation of commonly used bedside clinical Early warning scores in patients with suspected sepsis for prediction of outcome
18. Evaluation of TB LAMP assay in diagnosis of tubercular meningitis
19. Factors affecting treatment outcome in Advanced HIV disease
20. Impact of Active Continuous Surveillance in an Intensive Care Unit on Ventilator Associated Pneumonia and Association of Exogenous flora with Ventilator Associated Pneumonia
21. Incidence of respiratory syncytial virus infection in adults in the first year following hematopoietic stem cell transplant
22. Incidence, outcome and predictors of paradoxical reaction in HIV negative lymph node tuberculosis
23. Invasive Fungal Infections and role of Biomarkers and molecular approaches in early diagnosis



24. Outcome predictors in secondary HLH
25. Paradoxical reactions in HIV negative EPTB Patients—incidence, outcome and predictive factors
26. Prevalence of immunologic failure among adult HIV/AIDS patients on Anti-Retroviral Therapy (ART)
27. Psychiatric morbidities in TB-HIV Co-infection
28. Role of FDG PET in patients of spinal TB
29. Role of Impulse oscillometry in evaluation and follow-up of newly diagnosed cases of Interstitial lung diseases
30. Role of PD1 on T cells and PDL1 on monocytes in mortality associated with hospital acquired infections in septic patients
31. Role of serum ca-125 level in diagnosis and monitoring of treatment response in pulmonary and extra-pulmonary tuberculosis
32. Secondary Hemophagocytic Lymphohistiocytosis (HLH) in patients with sepsis
33. Spectrum of systemic fungal infections in medical wards at AIIMS
34. Sterile pyuria in patients admitted to medical wards: Incidence of Chlamydia trachomatis, Ureaplasma urealyticum, Mycoplasma hominis and Mycoplasma genitalium
35. Study of brain volume and cognitive assessment in patients with NAFLD
36. Synthesis, quality control and biodistribution studies of <sup>99m</sup>Tc labelled antibiotics for infection imaging
37. To evaluate the role of 'Kit-based commercial Loop-Mediated Isothermal Amplification (TB-LAMP)' assay in the diagnosis of Tubercular Lymphadenitis
38. Utility of PET Scan in HIV encephalopathy

#### **Completed**

1. Analysis of clinical and environmental fungal isolates in medical ward and Intensive care unit—A tool for hospital infection surveillance
2. Association of lean mass, muscle strength and physical performance with diabetes and metabolic parameters
3. Burden of Dengue Among Adult Population in DELHI/NCR AIIMS, New Delhi
4. Clinical, etiological and laboratory profile of patients with pericardial effusion
5. Comparison between Obese and Non-obese Individuals with Non-alcoholic Fatty Liver Disease
6. Diagnostic utility of Bronchoalveolar lavage and Computerised tomography in diagnosis of recurrence among treated sputum scarce and sputum negative pulmonary tuberculosis suspects
7. Effectiveness of Isoniazid Preventive Therapy for tuberculosis among retro positive individuals
8. Impact of surveillance and preventive interventions on device associated infections in Medical ICU
9. Knowledge attitude practice among Medicine Health care workers of AIIMS, New Delhi
10. Quality improvement of invasive procedures in Medicine wards
11. Role of serum procalcitonin levels in the management of sepsis
12. Spectrum of systemic fungal infection in medicine ward at AIIMS, New Delhi
13. To Evaluate the incidence and Risk Factors of Mortality in Dengue Infection

#### **Collaborative projects**

##### **Ongoing**

1. Effect and safety of semaglutide 2.4 mg once-weekly in subjects with overweight or obesity and type 2 diabetes, Endocrinology and Metabolism
2. A Randomized Placebo Controlled Prospective Phase II Clinical Study of an Ayurvedic Coded Drug 'AYUSH-D' on Glycemic control in Pre-Diabetic Subjects, Endocrinology and Metabolism
3. A Randomized Placebo Controlled Prospective Phase II Clinical Study of an Ayurvedic Coded Drug 'AYUSH-D' on Glycaemic control in T2DM with metformin as add on therapy Subjects, Endocrinology and Metabolism
4. A randomized double-blind placebo controlled parallel group multicentered study to evaluate the effect of EFPEGLENATIDE on cardiovascular outcomes in T2DM patients at high cardiovascular risk, Endocrinology and Metabolism
5. A randomized 24-week controlled open label parallel arm multicentered study comparing the efficacy and safety of the insulin glargine/lixisenatide fixed ratio combination to insulin glargine in T2DM patients, inadequately controlled on basal insulin with or without metformin, Endocrinology and Metabolism

6. A 26-week randomized open label parallel group comparison of SAR 341402 mix 70/30 to NovoMix® 30 in adult patients with diabetes mellitus using pre-mix insulin analogs, Endocrinology and Metabolism
7. A randomized double-blind placebo control parallel group multicentered study to demonstrate the effects of Sotagliflozin on cardiovascular risk and renal events in patients with T2DM cardiovascular risk factor and moderately impaired renal function, Endocrinology and Metabolism

## PUBLICATIONS

**Journals: 69**

**Abstracts: 3**

**Chapters in books: 1**

## PATIENT CARE

Medicine OPD is a direct non-referral clinic running 6 days in a week. The Department runs speciality clinics including Infectious Diseases, Travel Health and Adult Immunization Clinic (Monday 2 PM), Sleep Disorders Clinic (Monday 2 PM), Obesity and Metabolic Disorders Clinic (Wednesday 2 PM) and Chest Clinic (Friday 2 PM). The Department also runs ART centre under national programs. Point-of-care test lab in CII ward provides investigations for critically ill patients including arterial blood gas analysis, biomarkers for sepsis, cardiac biomarkers, etc. The Department has a Pulmonary Function Tests lab wherein, there is no waiting period and the investigations are done and reports given on the same day. Bronchoscopy lab is situated in DII ward and equipped with state-of-the-art Endobronchial Ultrasound system. Sleep lab located in CII ward is equipped with polysomnography machines, ambulatory blood pressure monitoring system, and equipment for non-invasive assessment of endothelial dysfunction. The Department of Medicine provides diagnostic facilities for tuberculosis to patients coming to the AIIMS hospital as well as those referred from five zones of Delhi (Chest Clinics) under the RNTCP (Revised National Tuberculosis Control Programme). The Department has state-of-the-art biosafety level 3 (BSL-3) lab. Following is the data of patients in various clinics and laboratory investigations run by the department:

### OPD & Clinics

**Medical OPD:** Total cases **157590**

**Infectious Diseases, Travel Health and Adult Immunization Clinic:** Total Cases **3809**

**Sleep Clinic:** Total Cases **767**

**Chest Clinic:** Total cases **5151**

**Obesity and Metabolic Disorders Clinic:** Total cases **1405**

**Antiretroviral (ART) Centre:** Pre-ART **870**                      ART visits **61360**

### Laboratories:

#### Sleep lab:

Sleep studies	<b>330</b>	Ambulatory monitoring of blood pressure	<b>12</b>
Endothelial dysfunction studies	<b>10</b>		

#### PFT Lab:

Pulmonary Function Test	<b>6688</b>	6 Minute walk test	<b>398</b>
FOT	<b>446</b>		

#### Bronchoscopy lab:

Fibre-optic bronchoscopy	<b>424</b>	EBUS	<b>62</b>
Tracheostomy	<b>9</b>		

#### Biochemistry Lab:

ACE tests	<b>508</b>		
-----------	------------	--	--

#### Intermediate Reference Laboratory (IRL) services (number of samples):

Sputum smear:	<b>12,000</b>	Solid culture:	<b>600</b>
Liquid culture:	<b>18,739</b>	Solid Drug Susceptibility test:	<b>92</b>
Liquid DST (1st line):	<b>205</b>	Liquid DST (2nd line):	<b>559</b>
Line Probe Assay (1st line LPA):	<b>5,448</b>	Line Probe Assay (2nd LPA):	<b>848</b>
Gene/Xpert:	<b>12,407</b>		

#### Point-of-care Lab

Procalcitonin:	<b>5115</b>	Trop I:	<b>2654</b>
Pro BNP:	<b>2600</b>		

Arterial blood gas analysis:	<b>26,672</b>		
------------------------------	---------------	--	--

Blood Culture (From 27.10.19)	<b>1350</b>		
-------------------------------	-------------	--	--

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Naveet Wig** was member of National Task Force on COVID-19, Clinical Research Group (ICMR) on COVID-19, Nodal Officer, WHO Collaborating Centre for Training and Research in Tuberculosis; Chairman, National Technical Working Group on TB – comorbidities; Chairman Expert Committee, DHR – ICMR for funded workshop on clinical training and translational research; Co-chair, Standing Treatment Guidelines (Medicine), ICMR; Member, Governing Body of All India Institute of Ayurveda; Member of Scientific Body of Indian Pharmacopoeia Commission; Member of ICMR Technical Resource Group on HIV/AIDS and member of HIV/AIDS Project Review Committee (PRC) of ICMR.

**Professor Ashutosh Biswas** was nominated as Expert for Training of Rapid Response Teams on Public Health Preparedness and Response to Ebola Virus Disease at Delhi, Kolkata, Pune, Bengaluru; WHO Expert Consultant on “Nipah Virus Infection” in WHO South-East Asia Region, Expert member for a 2nd Central Team to Ernakulam to assist Govt. of Kerala for Control and containment of Nipah Virus disease and UPSC Expert for Personality Test (PT) Board for the Combined Medical Services Examination.

**Professor Sanjeev Sinha** was member of Association of Physician of India, Indiaclen, National Academy of Medical Sciences (MNAMS), Indian Chest Society, Indian Thyroid Society, American Thoracic Society, International AIDS Society, National Academy of Sciences India (NASI). He was also member of Medical Board Antarctica Expedition, Govt. of India, Goa, Scientific Committee, NACO, Ministry of Health & FW, Govt. of India, Health wellness programme, Ministry of Tourism, Govt. of India, FDC, DCGI, India. Membership of Editorial boards of indexed international journals/Review committees of National bodies and Institutions: Member of Editorial board of “Cases Journal”, Review Committee of Journal of Physical Education and Sport Management. Published from South Africa, Review Committee of Journal IJMR and Review Committee of Journal of Current HIV Research, Review Committee of projects funded by DHR, ICMR, Government of India, Fellowship of National Academy of Sciences India (NASI) and National Academy of Sciences India (NASI). He is also Member Secretary of AIIMS Ethics Committee of PGR.

**Professor NK Vikram** was awarded Fellowship of Indian College of Physicians in January 2020.

**Dr Manish Soneja** was awarded Fellowship of Indian College of Physicians in January 2020. He was Chairman Sub-Committee of Management of Influenza Guidelines, NCDC; Member Expert Group of National Guidelines on Dengue and Influenza, Member Expert Group of ICMR Antibiotic Policy, and Sub-Committee of Standing National Committee on Medicines (SNCM) on Hygiene and other health care products.

## VISITING SCIENTIST

1. Dr Sanjeet Singh Dadwal, Clinical Professor, Division of Infectious Diseases, City of Hope National Medical Centre, California, USA (28 May 2019).

## 9.20. Microbiology

	<b>Professor and Head</b> Rama Chaudhry	
	<b>Professors</b> Lalit Dar Immaculata Xess	Bimal K Das Benu Dhawan Urvashi B Singh
Arti Kapil Bijay Ranjan Mirdha Seema Sood	<b>Associate Professors</b> Aashish Choudhary	Gagandeep Singh Nishant Verma
Sarita Mohapatra Hitender Gautam	<b>Assistant Professors</b>	
Kiran Bala		Megha Brijwal

### HIGHLIGHTS

The department has always been dedicated towards patient care, teaching, research and CME programmes. It has been actively involved in teaching undergraduate and postgraduate students enrolled in MBBS, MD, PhD and BSc (Nursing) courses. The DM (Infectious Diseases) course (3- and 6-year programmes) have continued with the Department of Medicine.

The Department of Microbiology, which is an essential component of health care services, contributed significantly towards patient care. During this year it carried out a total of **2,51,925 diagnostic tests** and also played a prime role in Hospital infection control. The department played a major role in the institute's response in the management of COVID-19 related issues such as testing of samples received from patients (confirmed/suspect/contacts), training of all categories of staff at AIIMS (including various centers) in relation to the infection control practices, developing several protocols to meet the challenges posed by this pandemic and monitoring and ensuring the implementation of the infection control protocols.

It was a really proud achievement for us that we became the first Department at AIIMS, New Delhi to become **NABL accredited**. This again highlights the expertise, dedication and sincere hard work of our entire Microbiology team. This also is a reflection of best practices and quality protocols being rigorously followed in the department to ensure reliable and timely reporting for effective patient management. The external inspection committee for Kaya Kalp made several visits to laboratories and other areas of the Department and were extremely satisfied with the level of cleanliness and Bio-Medical waste management standards being followed.

The Department made a significant contribution in terms of research with **57 publications** in indexed national and international journals. Several funded research projects were started or continued during the period, many of which were in collaboration with other departments or institutes. Many award winning oral and poster presentations were made at national and international conferences.



**National Accreditation Board for  
Testing and Calibration Laboratories**  
(A Constituent Board of Quality Council of India)



**CERTIFICATE OF ACCREDITATION**

**DEPARTMENT OF MICROBIOLOGY, ALL INDIA  
INSTITUTE OF MEDICAL SCIENCES (AIIMS)**

has been assessed and accredited in accordance with the standard

**ISO 15189:2012**

**"Medical laboratories - Requirements for quality and  
competence"**

for its facilities at

DEPT. OF MICROBIOLOGY, SECOND FLOOR, TEACHING BLOCK, NEW DELHI, DELHI, INDIA

in the field of

**Medical Testing**

Certificate Number: MC-3267

Issue Date: 15/11/2019

Valid Until: 14/11/2021

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.  
(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Signed for and on behalf of NABL



N. Venkateswaran  
Chief Executive Officer







## EDUCATION

### Undergraduate Teaching

MBBS for Medical Microbiology BSc (Nursing) – Medical Microbiology

### Postgraduate Teaching

#### *PhD (Microbiology)*

Lecture: Once/week

Journal Club: Once/week

#### *MD (Microbiology)*

Lecture/Seminar: Once/week

Journal Club: Once/week

Tutorial: Twice/month

Practical Exercise presentation: Twice/month

Laboratory postings in different sections of the department

#### *DM (Infectious Diseases)*

Seminar: Once/week

Laboratory postings in different sections of the department

### Short-Term Training

1. The 2nd Regional Advocacy Workshop Virus Research and Diagnostic Laboratory (VRDL) Network, 5 November 2019 at AIIMS, Delhi
2. Workshop/training Organized for State Reference Laboratory (SRLs)

3. EQAS panel distribution Workshop and training on NACO PRAYOGSHALA Online tool for laboratory data reporting to NACO, 20th January 2020. (Participants: Three State Reference Laboratories participated i.e PGIMER, Chandigarh; Govt Medical College, Patiala; Govt Medical College, Amritsar and staff of HIV Laboratory, AIIMS.)
4. Sysmex CD4 Cyflow counter (CD4 testing machine by flowcytometry) training for HIV laboratory staff in September 2019.

Department provided short-term training to 25 candidates from various parts of the country.

### **CMEs/Workshops/Symposia/National and International Conferences**

#### **Lectures delivered**

**Rama Chaudhry: 8**

**BR Mirdha: 1**

**Seema Sood: 1**

**Gagandeep Singh: 7**

**Arti Kapil: 9**

**Immaculata Xess: 1**

**Sarita Mohapatra: 7**

**Hitender Gautam: 8**

**Lalit Dar: 1**

**Benu Dhawan: 1**

**Aashish Choudhary: 1**

**Nishant Verma: 2**

**Oral Papers/Posters Presented: 47** (Young Investigator Award, Awarded 2nd prize, Best poster award, Snehlata Memorial award in recognition of best oral presentation, Dr. Ramakant Memorial Award in recognition of best poster presentation)

### **RESEARCH**

#### **Funded projects**

##### ***Ongoing***

1. Seroepidemiological study of Rickettsia and Scrub typhus among patients with acute febrile illness and molecular detection by Real time PCR. Rama Chaudhry, DBT, 3 years, 2019, Rs 2269.8 lakhs
2. A detail study to understand the non-putrefying property of river Ganga in both water and sediment, Rama Chaudhry, Ministry of Water Resources, Govt of India. 2 years, 2017-19, Rs 68 lakhs
3. A study to assess the effect of a probiotic strains (Bacillus clausii) on gut microbiota and mucosal immunity in Inflammatory Bowel Disease (Ulcerative Colitis/Crohn's disease), Rama Chaudhry, Unique Biotech, 4 years, 2016-20, Rs 60 lakhs
4. Characterization of bacteriocins produced by Lactobacillus and assessment of Antimicrobial Profile, Rama Chaudhry, AIIMS, 2 years, 2017-19, Rs 10 lakhs
5. Community and hospital burden of antibiotic resistance in the Indian pediatric population; impact of probiotics and geography (Multicentric study), Rama Chaudhry, ICMR, 3 years, 2016-18, Rs 50 lakhs
6. Nodal Center for National surveillance of Antimicrobial resistance, 2018-2023, ICMR, New Delhi. Arti Kapil, ICMR, 5 years, 2018-23, Rs 60 lakhs for first year
7. National Surveillance System for Enteric Fever in India (NSSEFI)-Tier 3, Arti Kapil, ICMR, 1 year and 6 months, 2018-20, Rs 40 lakhs
8. Halophilic/haloalkaliphilic actinomycetes and bacteria and hypersaline habitat as potential source of antibacterial molecules for drug resistant microbes, Arti Kapil, IIT, Delhi, 2 years, 2018-19, Rs 10 lakhs
9. Regional Virus Research and Diagnostic Laboratory (RL-VRDL), Lalit Dar, DHR, 2019 onwards, Rs 500 lakhs approximately
10. National Viral Hepatitis Control Program Surveillance laboratory, Lalit Dar, MoHFW, 2019 onwards, Rs 95 lakhs approximately
11. NACO Regional Reference Laboratory for HIV viral load (VL) and early infant diagnosis (EID), Lalit Dar, National AIDS Control Organization (NACO), 2012 onwards, Rs 11 lakh per annum + reagent support
12. National Vector Borne Disease Control Programme Apex Laboratory for Dengue and Chikungunya, Lalit Dar, National Vector-borne Disease Control Programme (NVBDCP), 2012 onwards, Rs 3 lakhs per annum + reagent support
13. A multi-centric observational study to examine replicative fitness and pathogenic properties of the emerging new viral strains of HIV-1 in India, Bimal K Das, DBT, 1 year, 2018-19, Rs 21 lakhs
14. External Quality Assurance Scheme, Bimal K Das, National AIDS Control Organisation, 1 years, 2018-19, Rs 9.9 lakhs
15. CD4 Testing, Bimal K Das, National AIDS Control Organisation, 1 years, 2018-19, Rs 0.25 lakhs
16. Multicentric prospective hospital based sentinel surveillance to determine the etiology of acute bacterial in children



- with conventional and molecular methods, Bimal K Das, Central Research Laboratory, KIMS Medical College, Bangalore, 1 years, 2018-19, Rs 1.45 lakhs
17. Biomarker for bacteremia, anti-microbial resistance and hospital acquired infection by NMR and mass spectrometry among febrile neutropenic patients, Bimal K Das, BIRAC- DBT, 1 year, 2018-19, Rs 10.95 lakhs
  18. Active surface modification strategies to inhibit biofilm formation and bacterial infections, Bimal K Das, IITD-AIIMS Multi-Institutional Faculty Interdisciplinary Research Project, 2 years, 2019-21, Rs 25 lakhs
  19. Study of immunopathogenesis and disease dynamics of *Pneumocystis jirovecii* pneumonia (*Pneumocystis pneumonia*), BR Mirdha, SERB, DST, 3 years, 2018-21, Rs 44 lakhs
  20. A study of the ecology, evolution and resistance mechanisms of *Candida auris*, Immaculata Xess, DST, 3 years, 2019-22, Rs 32.22 lakhs
  21. Early detection of *Hemophilus ducreyi*, *Treponema pallidum*, Herpes Simplex Virus type 1 and 2 from patients with genital ulcer disease by Multiplex PCR in a tertiary care hospital, Benu Dhawan, ICMR, 3 years, 2017-20, Rs 37.63 lakhs
  22. Effectiveness of bundled intervention in surgical site infections among patients undergoing clean orthopedic surgeries with hardware implants: A randomized controlled trial, Benu Dhawan, ICMR, 3 years, 2019-22, Rs 43.01 lakhs
  23. Nano-enabled Biosensor for detection of *N. gonorrhoeae*, Seema Sood, DBT, 3 years, 2016-19, Rs 50 lakhs
  24. Development of an aptamer based detection system for *N. gonorrhoeae*, Seema Sood, DHR, 3 years, 2016-19, Rs 46.5 lakhs
  25. Studies on halophilic/haloalkaliphilic actinomycetes and bacteria from hyper saline habitat as potential source of antibacterial molecules for drug resistant microbes, Arti Kapil and Seema Sood, AIIMS-IIT Delhi Collaborative Research Grant, 2 years, 2019-21, Rs 10 lakhs
  26. Crohn's Disease in India: A multicenter study from a country where intestinal tuberculosis as well as Johne's disease is endemic, Urvashi B Singh, DHR, 3 years, 2016-20, Rs 500 lakhs
  27. Utility of Moxifloxacin as a treatment option in Pre-XDR-TB, Urvashi B Singh, Delhi State OR Task Force, RNTCP, 1 year, 2017-20, Rs 2 lakhs
  28. Prognostic value of serum markers in Category II tuberculosis patients, Urvashi B Singh, Delhi State OR Task Force, RNTCP, 1 year, 2017-20, Rs 2 lakhs
  29. Diagnosis of Pulmonary And Extra Pulmonary Tuberculosis Patients Using Differentially Expressed Proteins As Potential Biomarkers: An Approach Towards Development Of Point Of Care Test, Urvashi B Singh, ICMR, 3 years, 2018-21, Rs 60 lakhs
  30. Rapid Molecular Drug Resistance Detection For MDR And XDR-TB And Molecular Typing Of Mycobacterium tuberculosis From Ziehl-Neelsen's Stained Microscopic Slides From Delhi State, Urvashi B Singh, ICMR, 3 years, 2018-21, Rs 60 lakhs
  31. Mapping hotspots of MDR-TB in Sikkim, Assam and Tripura using Genomics approaches , Urvashi B Singh, DBT-NER, 3 years, 2018-21, Rs 400 lakhs
  32. Early Bactericidal activity (EBA) of Rifampicin and Faropenem in Tuberculosis (Rifampicin Susceptible), Urvashi B Singh, ICMR, 2 years, 2019-21, Rs 70 lakhs
  33. Early Bactericidal activity (EBA) and Pk/Pd study of Rifampicin, Faropenem, Cefdinir with Clavulanate vs Standard of Care in Newly Diagnosed Smear Positive Rifampicin Susceptible TB, Urvashi B Singh, ICMR, 2 years, 2019-21, Rs 70 lakhs
  34. Design and Validation of point of Care Disposable Sensor Strip for Diagnosis of Tuberculosis from Urine samples, Urvashi B Singh, DBT, 3 years, 2018-21, Rs 60 lakhs
  35. Emerging drug resistance in community acquired urinary tract infection and molecular insights into dynamics of resistant traits in Indian isolates- A pan-India multi-centric cross-sectional study, Sarita Mohapatra, ICMR, 3 years, 2019-22, Rs 65 lakhs
  36. Efficacy of cold atmospheric plasma jet for its antimicrobial activity against drug resistant bacterial and fungal pathogen: An in-vitro and in-vivo study, Sarita Mohapatra, AIIMS-IIT, 2 years, 2019-21, Rs 20 lakhs
  37. Development of super hydrophobic catheters to inhibit bacterial and yeast growth, Sarita Mohapatra, AIIMS-IIT, 2 years, 2019-21, Rs 20 lakhs
  38. Active surface modification strategies to inhibit biofilm formation and bacterial infections, Sarita Mohapatra, AIIMS-IIT, 2 years, 2019-21, Rs 20 lakhs
  39. A multicentric, prospective, community-based cohort study to estimate the incidence of dengue infection in India (INDEN study), Aashish Choudhary, ICMR, 2 years, 2020-22, Rs 38 lakhs

40. Human cytomegalovirus disease in pediatric hematological malignancies, Aashish Choudhary, AIIMS, 2 years, 2019-21, Rs 5 lakhs
41. Comparison of conventional and molecular tests for the diagnosis of herpes zoster, Aashish Choudhary, AIIMS, 1 year, 2020-21, Rs 2 lakhs
42. Correlation of circulating dengue types with primary and secondary dengue infection in children and adults, Aashish Choudhary, AIIMS, 1 year, 2020-21, Rs 2 lakhs
43. Prevalence of Histoplasmosis in HIV positive patients, Gagandeep Singh, AIIMS, 2 years, 2017-19, Rs 6 lakhs
44. Biomarkers for bacteremia, antimicrobial resistance and hospital acquired infections by NMR and Mass Spectrometry among febrile neutropenic patients, Hitender Gautam, BIRAC-DBT, 18 months, 2019-20, Rs 36.46 lakhs
45. Study of cytokine profile and immune cells in acute and chronic meningitis, Hitender Gautam, AIIMS, 1 year, 2019-20, Rs 4.95 lakhs
46. Magnitude of asymptomatic malaria infections in pregnant women in a community hospital, Nishant Verma, AIIMS, 1 year, 2018-19, Rs 4.98 lakhs
47. A prospective study of viral infections in hematopoietic stem cell transplant recipients at a tertiary care hospital in India, Megha Brijwal, ICMR, 3 years, 2019-22, Rs 45 lakhs
48. Detection and genotyping of BK polyomavirus in renal transplant recipients, Megha Brijwal, AIIMS, 2 years, 2018-20, Rs 9 lakhs

### **Completed**

1. Defining ECOFF value for Azithromycin susceptibility in Salmonella enteric serovar Typhi and Paratyphi A, Arti Kapil, ICMR, 2 years, 2015-17, Rs 22 lakhs
2. Enhancing bio-risk mitigation awareness in public health community and creating lab. networks for surveillance and outbreaks of high-risk group viral pathogens causing VHF and respiratory infections, Lalit Dar, Centre for Disease Control (CDC), Atlanta (through NIV, Pune), 3 years, 2015-18, Rs 4.5 lakhs (per annum)
3. Invasive Fungal Infections: Epidemiology, Drug Resistance and Molecular characterization of the clinical and environmental isolates from the hospital, Immaculata Xess, ICMR, 3 years, 2017-20, Rs 52 lakhs
4. Validation of Novel Bio-signature for Diagnosis of Active Pulmonary Tuberculosis in Children, Urvashi B Singh, DBT, 3 years, 2018-21, Rs 38 lakhs
5. Validation of indigenously developed technologies for diagnosis of Pediatric Pulmonary tuberculosis: Multicentric, Urvashi B Singh, ICMR, 1 year, 2018-19, Rs 125 lakhs
6. Validation of indigenously developed technologies for diagnosis of Extra-Pulmonary tuberculosis: Multicentric, Urvashi B Singh, ICMR, 1 year, 2018-19, Rs 125 lakhs
7. To Study Current Practice in the Management of Bacterial Urinary tract infection In Patients at AIIMS, New Delhi with focus on current antibiotic usage and clinical outcome, Sarita Mohapatra, AIIMS, 1 year, 2018-19, Rs 1 lakhs
8. Clinical evaluation of viability assays for assessing treatment response in pulmonary tuberculosis, Kiran Bala, AIIMS, 1 year, 2018-19, Rs 4.94 lakhs
9. Investigation of Colistin sensitivity by different methods and rapid detection of Colistin resistance in Enterobacteriaceae, Hitender Gautam, AIIMS, 1 year, 2018-19, Rs 4.94 lakhs

### **Departmental projects**

#### **Ongoing**

1. Audit for antifungal treatment usage in adults with invasive fungal infections
2. Azithromycin for poorly controlled Asthma in Children: A randomized controlled trial
3. BK and JC polyomavirus detection in patients with allogenic hematopoietic stem cell transplant
4. Characterization of lactobacillus strains and assessment of their immunomodulatory effects
5. Clinico-Microbiological Profile and Outcome of Urosepsis – A Prospective Study in a Tertiary Care Hospital in North India
6. Comparison of conventional and molecular techniques for the diagnosis of herpes zoster (shingles)
7. Comparison of diagnostic accuracy of Real time PCR versus Nugent's scoring in Indian women with and without Bacterial Vaginosis (BV)
8. Determination of acute bacterial meningitis aetiology in children by multiplex PCR and virulence markers of S. pneumoniae
9. Etiological Agents in Ventilator Associated pneumonia with special emphasis on Atypical organisms
10. Identification and antimicrobial susceptibility pattern of hypervirulent Klebsiella pneumoniae

11. Identification and characterization of cryptic species of *Aspergillus* isolated from clinical samples
12. In vitro susceptibility of Eravacycline v/s Tigecycline in clinical isolates of XDR *Acinetobacter baumannii* and study of resistance mechanisms
13. Magnitude of Prosthetic Joint Infections and role of amplification based DNA analysis for identifying microbial profile of prosthetic joint infection in a tertiary care hospital
14. Metabolomic profile in childhood intra-thoracic tuberculosis
15. Microbiological follow up and genotypic investigation of close contacts of MDR-TB patients
16. Molecular detection and characterization of Rickettsiaeeae among patients with acute febrile illness
17. Molecular detection and characterization of tick-borne Lyme Borreliosis, Human Monocytic Ehrlichiosis and Human Granulocytic Anaplasmosis
18. Molecular detection of *Legionella pneumophila* by real time PCR and characterization of isolates by sequence-based typing
19. Multiplex PCR assay for diagnosis of malaria and molecular detection of chloroquine resistance in *P.vivax*
20. Occurrence of *Chlamydia trachomatis*, *Ureaplasma urealyticum*, *Mycoplasma hominis* and *Mycoplasma genitalium* in patients with sterile pyuria
21. Prevalence of parasitic infections in patients with eosinophilia in a tertiary care hospital in North India
22. Role of aptamer technology in detection of Bacterial Vaginosis (BV) associated bacteria
23. Serum Homocysteine (HCY) as a Non-invasive diagnostic marker of spontaneous bacterial peritonitis
24. *Staphylococcus aureus* colonization in HIV infected patients: incidence, risk factors and subsequent skin and soft tissue infections
25. Stratified Antibiogram & role of educational intervention in empirical antibiotic choices & antibiotic choices
26. Study of bacterial infections in a cohort of patients clinically diagnosed of *Pneumocystis jirovecii* pneumonia (PjP)/*Pneumocystis pneumonia* (PCP) and its impact on outcome of the disease
27. Study of *Pneumocystis jirovecii* as an etiology of bronchiectasis and its effect on disease progression
28. Utility of 99m-Tc Ubiqicidin in differentiation of infective and non infective lesions

#### ***Completed***

1. PCR for EBV DNA PCR in patients with suspected nasopharyngeal carcinoma
2. Real time PCR for diagnosis of invasive fungal infections
3. Screening for *Candida* Colonization, with Special Reference to *Candida auris* Among Patients Admitted In Medicine ICU
4. Prevalence of moulds and nocardial infections in patient admitted to pulmonary ward and ICU
5. Detection of *N. gonorrhoeae* in genital and extra genital sites in men who have sex with men (MSM)
6. Prevalence of intestinal colonization and blood-stream infection due to Carbapenem resistant Enterobacteriaceae in haematological malignancy patients
7. Role of HCMV reactivation in causing pneumonia in immunocompetent, mechanically-ventilated patients

#### **Collaborative projects**

##### ***Ongoing***

1. Effect of probiotic supplementation on cognition and motor symptom in patients with fluctuating Parkinson's disease, Physiology
2. Identification, antimicrobial susceptibility pattern and clinical correlation of the rare pathogens detected by MALDI-TOF MS in North India, Microbiology
3. AMR-Diag: A novel diagnostic tool for sequence-based prediction of antimicrobial resistance, Biophysics
4. CDC-AIIMS Cooperative Agreement projects on Influenza and other respiratory viruses, Centre for Disease Control (CDC), Atlanta (USA) and Centre for Community Medicine
5. Evaluation of various clinical and immunological parameters in predicting the outcome of sino-nasal and skull base invasive fungal diseases: A descriptive study, Otorhinolaryngology
6. A Prospective Observational study on Clinical profile and treatment outcome of patients with Chronic Pulmonary Aspergillosis attending tertiary care Hospital, Medicine
7. Invasive Fungal Infections and role of Biomarkers and molecular approaches in early diagnosis, Medicine
8. The effect of candida and antifungal therapy on pro-inflammatory cytokines in oralleukoplakia- A pilot study,

Oral Medicine & Radiology

9. Candida auris: infection, colonization and risk of transmission in healthcare setting, Medicine
10. A Phase-IV, double blind, comparative, prospective, multicentric study to assess safety and efficacy of fixed dose combination of Clindamycin 100 mg & Clotrimazole 100 mg vs Clotrimazole 100 mg vaginal suppositories in patients with mixed vaginal infection, Obstetrics & Gynaecology
11. Analysis of the diagnostic/or predictive potential of metabolomics in BV, its treatment failure, relapse and susceptibilities to other STIs, Dermatology
12. Analysis of vaginal microbiome and metabolome in women affected with bacterial vaginosis before and after treatment and their correlation with relapse or recurrences, Dermatology
13. Exploration of alternate salivary diagnostic strategies for ovarian cancer, Biophysics
14. A phase IIB Open Label Randomized trial to evaluate the anti-bacterial activity, pharmacokinetics, safety and tolerability of metformin when given along with rifampicin, isoniazid, pyrazinamide and ethambutol in adults with newly diagnosed sputum positive pulmonary tuberculosis: an 8-week study, Pulmonary Medicine and Sleep Disorders
15. Phase III, Randomized, Double-blind, Placebo controlled Trial to Evaluate the Efficacy and Safety of VPM1002, Immunovac Vaccines in Preventing of Tuberculosis Disease in Healthy Household Contacts of Newly Diagnosed Sputum Positive Pulmonary TB (PTB) Patients, Pulmonary Medicine and Sleep Disorders
16. Role of Tuberculosis and genital Chlamydia trachomatis infection in women with “unexplained infertility”, Obstetrics & Gynaecology
17. Effect of Glycemic status on initial presentation and treatment response in newly diagnosed sputum positive pulmonary tuberculosis patients: a prospective study, Community Medicine
18. Evaluation of Newer Molecular methods and antigen based diagnostic modalities against NTEP recommended methods in Early Diagnosis of Female Genital Tuberculosis, Obstetrics & Gynaecology
19. Clinical efficacy of using MALDI-TOF MS over Conventional processing in Blood Stream Infections patients combined with Prescription pattern monitoring: A pre-post quasi experimental study, Medicine
20. The clinicopathological evaluation of cholesteatoma aggressiveness, ENT
21. Efficacy of two different Chlorhexidine gluconate preparation for skin antiseptics in neonates: A noninferiority randomized trial, Paediatrics
22. Abdominal infections in immunocompromised hosts: A radiological, microbiological and clinical correlation, Hematology
23. NeoAMR Global Observational Study: A prospective cohort study of sepsis in hospitalised neonates, Paediatrics
24. Does the fetal immune response in case of neonatal early onset sepsis begin in utero? Paediatrics
25. Investigation of Colistin sensitivity by different methods and rapid detection of Colistin resistance in Enterobacteriaceae, Microbiology
26. To study the effect of Vitamin C and Thiamine in patients with sepsis in Indian Population: Single blind, Parallel Group, Randomized controlled trial, Medicine
27. Burden of multidrug-resistant neonatal sepsis in district hospital settings in India, Paediatrics
28. Effectiveness of a Cranberry extract mouth rinse Vs a Sodium Fluoride mouth rinse on microbial counts in caries active children-A double blind randomised controlled trial, Center of Dental Research and Education
29. In-vitro susceptibility of Eravacycline V/S tigecycline in clinical isolates of XDR Acinetobacter baumannii and study of resistance mechanisms, Microbiology
30. Isolation and Identification of Bacteriophages against MDR Bacterial strains, Microbiology
31. Multi-centric prospective hospital based sentinel surveillance to determine the aetiology of acute bacterial meningitis in children, Central Research Laboratory, K.I.M.S. Hospital & Research Centre, Kempegowda Institute of Medical Sciences, Bangalore
32. Utility of Radiolabeled Antibiotics as Imaging Agents in Establishment of a Decision Support Algorithm in Patients with Pyrexia of Unknown Origin (PUO) caused by Infection and its Impact on Short Term and Long Term Clinical Outcomes, Nuclear Medicine
33. Etiological profile of infants, children and adolescents presenting with acute, subacute and chronic encephalitis/encephalopathy in a tertiary care centre in North India, Paediatrics
34. Detection of V. Cholerae in stool samples by loop mediated isothermal amplification method, Biomedical Engineering
35. Molecular Detection of Colistin Resistance in Multidrug Resistance Gram Negative bacilli from various Clinical Samples, Texila American University

36. Comprehensive National Nutrition Survey, UNICEF
37. Multiplexed Point-of-Care test for acute febrile illness (mPOCT), Paediatrics
38. Efficacy of enriched fecal microbiota transplantation in patients with treatment naïve ulcerative colitis: A randomized control trial, Gastroenterology
39. Association of therapeutic drug levels and worm infestation with treatment response in patients with TB lymphadenitis, Medicine
40. Evaluation of risk factors for severity in Plasmodium vivax infection - A prospective study, Medicine

### **Completed**

1. A Clinical study on the investigation of carries risk in children with Cleft lip and or palate (CL/P) and non-cleft control, Orthodontics, CDER
2. Assessment of Microflora of Dental carries in Indian Children using anaerobic culture and molecular techniques, Pedodontics, CDER
3. Study of intestinal microbiota in Juvenile Idiopathic Arthritis-A Cross- Sectional Observational Study, Lady Hardinge Medical College and Associated Hospitals, New Delhi
4. Cryptococcal antigenemia in people living with HIV and AIDS, Medicine & Microbiology
5. To study the dynamic relationship of airway colonization and Endotracheal Tube Biofilm with Ventilator Associated Pneumonia, Pulmonary Medicine
6. To Study Diagnostic Performance of Presepsin in Sepsis: A Pilot Study, Medicine
7. Elucidating Role of microRNA in the pathogenesis of active generalized vitiligo and in pigment regulation, Dermatology
8. To determine if colonization of gut with carbapenemase resistant enterobacteriaceae in surveillance cultures affect the outcome of the high risk febrile neutropenic patients, Hematology
9. A proof-of-concept study of 3 days intravenous Ceftriaxone followed by switch to oral Cefexime with Nephrotic syndrome, Pediatrics
10. Randomized Controlled Trial to compare efficacy of Decongestive Compression Therapy and injection Benzathine Penicillin G vs Decongestive Compression Therapy, injection Benzathine Penicillin - G and Placement of Hydrophobic Silicone tube in upper limb Lymphedema following ALND in breast cancer, Surgery
11. Abdominal infections in immunocompromised hosts: A radiological, microbiological and clinical correlation, Pediatrics

### **PUBLICATIONS**

**Journals: 45**

**Abstracts: 7**

**Chapters in Books: 2**

**Books: 1**

### **PATIENT CARE**

The Department of Microbiology carried out a total of **2,51,925 tests** during the year 2019-20.

Name of assay/test/investigation	No. of tests performed	Name of assay/test/investigation	No. of tests performed
<b>BACTERIOLOGY LAB</b>		<b>PARASITOLOGY LAB</b>	
Pus samples culture and identification	13,589	<b>Intestinal parasitosis</b>	
Urine samples culture and identification	31,874	Stool examination- Ova/Parasites (wet mount/concentration)	2,289
Blood samples culture and identification	24,832	Coccidian parasites - Mod. Acid-fast/ special staining	2,289
Sputum/Throat swab/Tracheal swab samples culture and identification	13,611	In-vitro culture	30
CSF/sterile samples culture and identification	6,558	PCR assay for Microsporidia	2,289

Stool samples culture and identification	1,422	<b>Malaria</b>	
Antimicrobial susceptibility testing		Giemsa staining	4,676
Pus/Exudates/Tissue -Antimicrobial susceptibility testing	2,902	Acridine orange (AO) fluorescent staining	4,676
Urine - Antimicrobial susceptibility testing	2,425	Quantitative buffy coat (QBC)	4,676
Blood - Antimicrobial susceptibility testing	2,229	Malaria Antigen detection assay	4,676
Respiratory samples - Antimicrobial susceptibility testing	2,192	<b>Leishmaniasis (Kala azar)</b>	
CSF/sterile samples - Antimicrobial susceptibility testing	589	Giemsa staining	89
Stool samples - Antimicrobial susceptibility testing	7	Acridine orange (AO) fluorescent staining	89
Latex Agglutination (Antigen detection) from CSF Samples for Bacterial Meningitis	10	Kala-azar serology (rk-39)	663
<b>Total</b>	<b>1,02,240</b>	<b>Filariasis</b>	
<b>HOSPITAL INFECTION CONTROL (HIC) LAB</b>		Direct examination & concentration of blood	739
Surveillance cultures	26,522	Thin Smear	739
CSSD/Sterilization Monitoring	2,755	Thick Smear	739
Water samples	1,603	Acridine orange (AO) fluorescent staining	739
<b>Total</b>	<b>30,880</b>	Filaria antigen detection	739
		Quantitative buffy coat (QBC)	739
<b>ANAEROBIC, SPECIAL PATHOGENS &amp; MYCOPLASMA LABS</b>		<b>Other investigations</b>	
Anaerobic culture (Blood, Bile, BAL, CSF, Tissue)	756	Investigation for detection of <i>Pneumocystis jirovecii</i> infection (PCP) by staining & PCR assay	1262
<i>C. difficile</i> stool culture	575	Cerebrospinal fluid examination for Free Living Amoebae (FLA)	59
Stool samples for <i>C. difficile</i> ELISA	575	Worm specimens	1
Susceptibility testing for anaerobes	57	Arthropod specimens	2
PCR for <i>C. difficile</i> ( <i>tox A</i> gene)	88	Parasitic serology	
PCR for <i>C. difficile</i> ( <i>tox B</i> gene)	88	Amoebic Serology for anti-amoebic IgG antibodies by ELISA	113
<i>Bartonella</i> culture	12	Hydatid disease serology (ELISA/IHA)	135

<i>Bartonella</i> IFA	13	Toxoplasmosis serology for IgG antibodies by ELISA	57
<i>Bartonella</i> PCR (citrate synthase gene)	10	<b>Miscellaneous</b>	
<i>Bartonella</i> PCR ( <i>rib C</i> gene)	6	Examination of aspirates (Sputum, Pus etc.)	101
<i>Leptospira</i> IgM ELISA	639	<b>Total</b>	<b>32,606</b>
<i>Leptospira</i> -Urine dark ground microscopy	636		
<i>Leptospira</i> -Plasma dark ground microscopy	634	<b>VIROLOGY LAB</b>	
<i>Leptospira</i> culture (urine and plasma)	130	Molecular tests (PCR, RT-PCR)	
<i>Leptospira</i> PCR	6	SARS-CoV-2 novel coronavirus real time RT-PCR (E gene)	1,818
<i>Legionella pneumophila</i> IgM ELISA	226	SARS-CoV-2 novel coronavirus real time RT-PCR (ORF 1b gene)	152
<i>Legionella pneumophila</i> Urine Antigen (ICT)	159	SARS-CoV-2 novel coronavirus real time RT-PCR (RdRp 2 gene)	152
<i>Legionella</i> spp. culture	174	Influenza real time multiplex RT-PCR	711
<i>Legionella pneumophila</i> Real time PCR ( <i>mip</i> gene)	211	Respiratory virus panel (other than influenza) multiplex PCR	73
<i>Legionella pneumophila</i> serogroup 1 real-time PCR ( <i>wzm</i> gene)	55	HSV 1&2 DNA PCR (CSF, GUD, Ocular etc.)	82
<i>Legionella</i> PCR for MLST (44 environmental isolates, 7 genes each)	308	HCMV DNA PCR (Urine, Colonic biopsy, CSF etc.)	127
Scrub typhus IgM ELISA	623	HIV-1 RT-PCR for Early Infant Diagnosis (on DBS samples)	4,087
Scrub typhus IgM IFA	326	HIV-1 RNA RT-PCR (Viral load)	2,048
Scrub typhus IgM ICT	88	Dengue, Chikungunya & Zika virus real time RT-PCR	21
Scrub typhus nested PCR (56 kDa gene)	136	Polyomavirus (BK/JC) real time RT-PCR	295
Scrub typhus Real time PCR (47 htra gene)	24	Enterovirus (Nested, real time) RT-PCR	5
Rickettsia Spotted fever group IgM ELISA	458	Fever with rash Viral Panel (Measles, Enterovirus, Parvovirus B19, HHV-6 & HHV-7)	2
Rickettsia Typhus group IgM ELISA	458	Viral Meningitis/encephalitis PCR panel (HSV, Enteroviruses, Parechoviruses, VZV, Mumps)	54
Rickettsia Screen IgM IFA	180	Viral Gastroenteritis panel (Rotavirus, Norovirus, Adenovirus 40/41, )	5
Rickettsia nested PCR <i>glt</i> gene	164	Epstein-Barr virus (EBV) DNA PCR (Conventional, real time)	16
<i>Mycoplasma pneumoniae</i> IgM ELISA	226	Parvovirus B19 real time PCR	21

<i>Mycoplasma pneumoniae</i> culture	172	Cell culture (Influenza A/B, Dengue, HSV 1&2, Adenovirus, etc.)	271
<i>Mycoplasma pneumoniae</i> Real time PCR (CARDS toxin gene)	164	<b>Antigen detection</b>	
<i>Chlamydia pneumoniae</i> IgM ELISA	226	Dengue NS1 antigen (ELISA)	984
<i>Borrelia burgdorferi</i> IgM ELISA	106	Rotavirus antigen (ICT)	5
<i>Borrelia burgdorferi</i> IgG ELISA	106	Antibody detection	
<i>Borrelia burgdorferi</i> IgM immunoblot	20	Anti-Dengue IgM (ELISA)	1351
<i>Borrelia burgdorferi</i> IgG immunoblot	20	Anti-Chikungunya IgM (ELISA)	57
<i>Borrelia burgdorferi</i> Realtime PCR (CSF-target OspA)	60	Anti-Japanese Encephalitis IgM (ELISA)	20
<i>Anaplasma phagocytophilum</i> IgG IFA	140	Anti-Measles antibody- Complement fixation test (CFT)- for SSPE diagnosis (CSF/Serum)	44
<i>Ehrlichia chaffeensis</i> IgG IFA	140	Anti-Measles IgG/ total IgG (ELISA) (CSF/Serum)	32
		<b>Direct Microscopy</b>	
<i>Mycoplasma hominis</i> culture	442	Tzanck smear (for HSV 1&2, VZV)	12
<i>Mycoplasma hominis</i> PCR	508	PS for Downey cells/atypical lymphocytes (EBV-related Infectious mononucleosis)	4
<i>Ureaplasma urealyticum</i> culture	442	<b>Total</b>	<b>12,449</b>
<i>Ureaplasma urealyticum</i> PCR	508		
<i>Chlamydia trachomatis</i> PCR	530	<b>MYCOLOGY AND ICPLAB</b>	
<i>Mycoplasma genitalium</i> PCR	478	<b>Direct Microscopy/Culture</b>	
<b>Total</b>	<b>12,103</b>	Blood culture/Bone marrow/Blood BACTEC	1238
<b>SEXUALLY TRANSMITTED DISEASES (STD) LAB</b>		Respiratory (BAL, Sputum, Tracheal aspirate)	5035
		Urine	1142
High vaginal swabs (HVS)	384	C.S.F.	1465
Semen	1019	Tissue/Biopsy	861
Expressed prostatic secretions (EPS)	28	Skin scrapping/Nail/Hair	142
Urethral discharge	66	Fluid (Peritoneal, Pericardial and Ascitic fluid)	776



Cervical discharge	133	Pus	567
Vaginal discharge	3	Miscellaneous (Plates, Swabs, Catheter tips)	1092
Pharyngeal swabs	30	Fungal Serology/Antifungal /TDM/PCR	
Rectal swabs	30	Cryptococcal antigen	1016
Urethral swabs	7	Galatomannan antigen	2023
Vaginal swabs for BV (Microscopy alone)	486	Urinary Histoplasma antigen	29
Urethral discharge-PCR for <i>Neisseria gonorrhoea</i>	66	$\beta$ D Glucan assay	153
Vaginal discharge-PCR for <i>Neisseria gonorrhoea</i>	3	Histoplasma antibody	20
Cervical discharge-PCR for <i>Neisseria gonorrhoea</i>	133	Aspergillus antibody	86
Rectal swabs-PCR for <i>Neisseria gonorrhoea</i>	30	TDM(Voriconazole)	168
Pharyngeal swabs-PCR for <i>Neisseria gonorrhoea</i>	30	Antifungal Susceptibility	463
<b>Antimicrobial susceptibility testing</b>		PCR (Panfungal 11, Histoplasma 3, Cryptococcus 1, Aspergillus 2)	68
High vaginal swabs (HVS)	101	<b>Total</b>	<b>16,344</b>
Semen	96	TUBERCULOSIS LAB	
Expressed prostatic secretions (EPS)	9	Samples processed for ZN Smear	6,588
Urethral discharge	05	Culture on LJ medium	139
Cervical discharge	-	Rapid Culture on MGIT 960	3,689
Vaginal discharge	-	MGIT DST	218
Pharyngeal swabs	-	PCR for <i>Mycobacterium tuberculosis</i>	4,618
Rectal swabs	-	Genxpert MTB/RIF	615
<b>Total</b>	<b>2,659</b>	<b>Total</b>	<b>15,867</b>
<b>HIV IMMUNOLOGY LAB</b>		<b>SEROLOGY LAB</b>	
HIV testing	2,920	VDRL	8689

CD4 counts	9,930	Widal	4336
Western blot for HIV indeterminate samples (Received from linked State Reference Laboratories)	4	TPHA	361
<b>Total</b>	<b>12,854</b>	ASO	100
		Standard Agglutination Test (SAT) for Brucella antibody	9
<b>MOLECULAR BIOLOGY LAB</b>		<b>Total</b>	<b>13,495</b>
Multiplex PCR for Acute Bacterial Meningitis (ABM)	428		
<b>Total</b>	<b>428</b>		

#### **Virology laboratory**

- The laboratory performed training on the molecular diagnosis of SARS-CoV-2 novel coronavirus by real time RT-PCR for institutes in Delhi NCR (Army Hospital R&R, Lady Harding Medical College (LHMC), Maulana Azad Medical College (MAMC), National IMR, and ILBS)
- The laboratory performed SARS-CoV-2 novel coronavirus testing for evacuees held at the Army camp at Manesar, and the ITBP camp at Chhawla, and various states (Punjab, Haryana, J&K, Himachal Pradesh etc.)

#### **HIV Immunology laboratory**

- NABL accredited laboratory - NABL Accreditation
  - Successful NABL desktop assessment of National HIV Reference Laboratory and NACO Regional Referral Laboratory for HIV Viral Load and Early Infant Diagnosis in June.
  - Successful NABL re-verification visit post fire incident (August 2019) in December 2019.

Validity: July 2018 to July 2020. NABL Scope including:

- HIV Diagnostic serology using Rapid tests
- CD4 count/CD4 percentage estimation
- HIV qualitative real time PCR for early infant diagnosis (EID)
- HIV quantitative real time PCR for viral load (VL)
- Quality Control Program (External Quality Control Activities)
  - EQAS activity with Apex lab National AIDS Research Institute, Pune
- July 2019 & January 2020: Performance: 100%
  - EQAS Panel Distributed to 4 State reference laboratories (SRLs)
- August-2019 cancelled due to fire & January 2020- 100% Participation
  - International EQAS activity with National Serology Reference Laboratory (NSRL) Australia
- June 2019 & September 2019. Performance: 100%
- ICTC activity
  - Pre-test Counseling: 2920 Patients
  - Post-test counseling: 2901 Patients

#### **Parasitology laboratory:**

- Quality Control Program (External Quality Control Activities)
  - Accorded Grade A by Indian Academy of Tropical Parasitology for its routine diagnostic services

#### **Serology Laboratory:**

- External Quality Assessment Scheme (EQAS): Participated in IAMM-EQAS, New Delhi, with concordant result.

**HICC-COVID response: The department of Microbiology is an integral part of HICC at AIIMS hospital. The faculty was a part of the following COVID-19 response related activities:**

- Preparation of various documents:
  - Infection prevention and Control Guidelines
  - Disinfection and Sterilization protocols (including Terminal Disinfection)
  - Ready reckoner for HIC related activities
  - Checklists for Donning/Doffing
  - Checklist for Disinfection/Cleaning
  - Sample collection and transport of samples
  - Appropriate usage of PPE
  - Reuse of Face shields and goggles
  - Extended use and Limited re-use of N95 protocol
  - Disinfection and reuse of PPE
  - Dead body disposal protocol
- Teaching & Training of healthcare workers
  - Videos for training
  - Posters for display
  - Live Demonstration of PPE Donning & Doffing
- Preparation of areas for donning and doffing
- Day to day resolution of HIC related issues
- Biomedical Waste Management for COVID-19
- Contribution to developing a facility for disinfection and reuse of PPE – coverall suits and N-95 masks

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

- Third Prize for Best Poster Presentation for Department at 64th Institute Day, AIIMS, New Delhi. 24- 27 September 2019.
- Snehlata Memorial award in recognition of best oral presentation: Sreenath K Chaudhry R, Chandolia A, Kabra SK, Dey AB, Guleria R for “Molecular detection of novel *Mycoplasma pneumoniae* CARDS toxin in pneumonia and pulmonary disease severity” during XI-th National Symposium of IAM, 2019, 3-4 December 2019, Pune, India.
- Dr. Ramakant Memorial Award in recognition of best poster presentation: Sreenath K, Chaudhry R, Valavane A, Sagar T, Choudhary M, Varma-Basil M. et al. for “Detection and identification of *Mycoplasma pneumoniae* and *Legionella pneumophila* in patients with Community-Acquired Pneumonia in New Delhi, India: A Multi-centric Study” by during XI-th National Symposium of IAM, 2019, 3-4 December 2019 Pune, India.
- “Young Investigator Award” to V Deepak Bamola to present paper “A Double-Blind, Placebo-Controlled Study in Indian Population to Assess the Effects of Probiotic strain *Bacillus coagulans* Unique IS2 in Inflammatory Bowel Disease” by Bamola VD, Dubey D, Samanta P, Ahuja V, Chaudhry R given by Gut Microbiota and Probiotic Science Foundation (India); in 10th India Probiotic Symposium, “Cutting Edge Science and Applications – Intestinal Microbiota and Probiotics” 29 February and 1 March 2020 in New Delhi.
- The Virology Laboratory was designated a Regional level Virus Research and Diagnosis Laboratory (RL-VRDL) under ICMR-DHR this year.
- Second best poster award: Biswal D, Verma N, Surve A, Kumar V, Mirdha BR. Intra-ocular hydatid cyst in a child: a rare case presentation. TROPACON 2019. KMC, Manipal, 6-8 September 2019.
- Best Poster Award: Singh G, Xess I, Mani P, Iram A, Soneja M, Mohan A, Xess A, Sachdev J. Clinical spectrum and antifungal susceptibility profile of *Aspergillus terreus* species complex: A single centre study from India. AAAM2020. Lugano, Switzerland, 27-29 February 2020.
- Best Poster Award: **Sahu M**, Soneja M, Singh G, Xess I, Wig N. Invasive aspergillosis at rare sites: Series of three cases. LID. ILBS, New Delhi, August 2019.

**Professor Rama Chaudhry** received prestigious ‘Atal Swasthya Bhushan Samman 2019’ by Honourable Lok Sabha Speaker, Parliament of India; Organised workshop on best practice of scientific writing and publishing, 22 August at SGT University, Gurgaon; Organised “Human *Mycoplasma* Infections: an update” Pre-conference workshop at Nepal Medical College Teaching Hospital on 11 September, 2019; Organised workshop on *Mycoplasma* cultivation and detection, XI National Symposium of IAM and International Conference on Human, Animal and Plant *Mycoplasmas*, 2 December

2019, Pune; Organised workshop on Anaerobic Culture Techniques at the All India Institute of Medical Sciences, Bhopal, 26 and 27 February 2020; Reelected as ASM ambassador to India- 2019 to 2021; Member of ASM Ambassadors leaders Council , Only Nine members selected world over; Member of Project Review committee of AMR, ICMR; Chairman of Project Review committee for Zoonoses of ICMR; Special invitee to joint Monitoring group of Ministry of Health for COVID-19; Member of Expert meeting on acceptance criteria of quality test performance on qualitative and quantitative in-vitro diagnostic kits used for COVID-19 by Drug controller of India.

**Professor Lalit Dar** was member of the ICMR High Level Task Force for the SARS-CoV-2/COVID-19; Designated by DHR ICMR as a Chair of the Viral Research and Diagnostic Laboratory (VRDL) national network comprised of 105 virology laboratories across the country; The virology laboratory achieved NABL accreditation for virological tests, including both serological and molecular diagnostic tests for infections like HIV, influenza, dengue and chikungunya; Member of the National Technical Advisory Group on Immunization (NTAGI), the apex body for advising the Government of India on its immunization policies; The virology laboratory, is a Regional Viral Research and Diagnostic Laboratory (RL-VRDL) of the Department of Health Research (DHR) since 2019. It was also designated a National Viral Hepatitis Surveillance Programme Laboratory in 2019. It is already NACO Regional Reference Laboratory for HIV Viral Load and Early Infant Diagnosis and an Apex Laboratory of the National Vector Borne Disease Control Programme (NVBDCP) for Dengue and Chikungunya; actively contributes to various agencies outside of AIIMS: Member, Core Accreditation Committee of the National Accreditation Board for Testing and Calibration Laboratories (NABL); Adjunct Faculty, Public Health Foundation of India; Member, Technical Resource Group, National Viral Hepatitis Control Programme (NVHCP); Member, ICMR Virology Project Review Committee for Virology; Member, ICMR Fellowship Committee; Member, NACO Technical Resource Group (Laboratory Services)

**Professor Seema Sood** filed for Patent: Malhotra S and Sood S. Aptamers for Neisseria gonorrhoeae. Application Number: 201911021888; Executive member- IUSTI Asia Pacific Region; Faculty- National Board of Examination (NBE); Member-Project Review Committee (ICMR) for Adhoc & Fellowship proposals; Member- Student Research Advisory Committee (SRAC) Jamia Millia Islamia; Member- Institution Human Ethical Committee (IHEC), ACBR (Dr. B.R. Ambedkar Centre for Biomedical Research); Subject Expert- Recruitment of Faculty, NITTTR, Chandigarh; Reviewer: Nature Reviews, Expert Review of Molecular Diagnostics

**Professor Urvashi B Singh** was Chairperson: Session: Symposium on Tuberculosis at Pulmocrit 2020 on 8 March 2019 organized at AIIMS, New Delhi; Advisor and Invited as an expert; Awarded Fellowship of National Academy of Medical Sciences, October 2019; Expert member in DBT appointed committee on 'Artificial Intelligence Applications for Affordable and Accessible Healthcare-Big Data and Genomics', August 2019; Appointed Expert Member by DCGI to the Committee for approval of Clinical Trials, New Drugs including cellular biology based drug products / stem cell derived products and new Medical Devices etc., January 2020; Appointed member of ICMR Steering Committee for National Tuberculosis Prevalence Survey, January 2020; Co-Chairperson, National Technical Expert Group on Diagnosis of Tuberculosis under RNTCP, since 2018; Member, National Technical Working Group on LTBI Management in India, since 2018; Member, National Technical Expert Group on Treatment of Tuberculosis under RNTCP, since 2018; Member, National Technical Expert Group on Treatment of Pediatric Tuberculosis under RNTCP, since 2018; Member, National Technical Working Group on TB Co-morbidities under RNTCP, since 2018; Member, Technical Specifications Committee for RNTCP, since 2018; Member 'STOP TB New Diagnostics Working group', WHO since 2009; Expert in 'Expert Committee for finalizing validation protocols for Indian Indigenous Technologies', ICMR since 2014; India TB Research Consortium, ICMR, Member on Diagnostic, Therapeutic, Vaccine and Implementation Research Groups; Member, State TB Task Force and OR Committee; Expert member on International SAG committee of India TB Research Consortium, ICMR since 2016; Reviewer: Emerging Infectious Diseases, Medical Microbiology, Microbes and Infection, Epidemiology and Infection, PLOS One, Journal of Biosciences, Indian J Med research, Indian J Tuberculosis.

**Dr Sarita Mohapatra** conducted workshop under Swachhata Action Plan: "Antibiotic Awareness Week" from 18 November 19 to 24 November 19 at Neurosciences Center, and Cardiothoracic Center, AIIMS, New Delhi; Best poster award: Neuroanaesthesia and Neurocritical Care Update, 2019; 1st prize poster competition: IAMM Delhi Chapter, 2019

**Dr Aashish Choudhary** was awarded the degree of Fellow of the Canadian College of Microbiologists (FCCM) on 28 May 2019; Member- Institute Biosafety committee (IBSE), AIIMS Delhi; Member- BSL-3 facility, Central Core Research Facility (CCRF), AIIMS Delhi

**Dr Hitender Gautam** was nominated faculty from Department of Microbiology for 64th Institute Day, AIIMS, New Delhi, 24-27 September 2019. Third Prize for Best Poster Presentation for Department; Part of AIIMS KAYA KALP Team and Responsible for Department KAYA KALP Activities & Inspection: KAYA KALP 2019: First Prize for AIIMS, New Delhi; Committee member for Developing National Protocols for Infection Prevention and control in Maternal and child Health Care under National LaQshya Program, National Health Mission, MOHFW, GOI; Invited Expert in Ministry of Health,

GOI for Infection prevention and lab strengthening guidelines, 9 July 2019; Technical Committee Member for Technical Evaluation of CSSD for Upcoming New AIIMS, under Pradhan Mantri Swasthya Suraksha Yojana, PMSSY 6 November 2019, at HITES Office, Noida; Committee member for Pre-bid meeting of Department of Microbiology related Equipment for Upcoming AIIMS under Pradhan Mantri Swasthya Suraksha Yojana. 24 July 2019, at HITES Office, Noida; External Expert JIPMER, Puducherry for purchase of MALDI-TOF, 3 April 2019; Committee member for MBBS Curriculum reforms & AIIMS Undergraduate Curriculum Organizing Group (AU-COG) at AIIMS, New Delhi w.e.f. 22 November 2019; Department NABL Core Committee Member & Deputy Quality Manager for Dept. of Microbiology, AIIMS, New Delhi: Department has been NABL Accredited w.e.f. 15 November 2019; Co-Guide for PhD in Medicine by Research Medical Microbiology program at Texila American University; Member Secretary: Infection Control Committee in Dr. BRA IRCH, AIIMS, New Delhi; Core Group Member: Hospital Infection Control Committee (HICC), AIIMS, New Delhi; Series of Lectures on daily basis for Health Care Staff of Dr. B.R.A.IRCH & Main AIIMS on “Prevention & Control of COVID-19 in Health Care Setting” AND “Donning & Doffing of PPE”, 13 March to 31 March 2020, AIIMS, New Delhi; Chairperson in 60th Annual conference of Indian Society of Hematology and Blood Transfusion (HAEMATOCON 2019) “Pre-analytical errors in the era of automation”. 7 November 2019, New Delhi.

**Dr Nishant Verma** was NABL accreditation of Parasitology lab; Member departmental Store purchase committee; Departmental DM ID teaching committee member; External examiner (Theory, oral and practical) for MBBS II (Supple.) examination-Microbiology, at MAMC, LHMC, and UCMS, New Delhi; External examiner for MBBS 2nd professional (Microbiology) examination at Maharishi Markandeshwar medical college & hospital, Solan, Himachal Pradesh; Training sessions for COVID-19 as HICC core committee member; Participated as an expert in a committee constituted by Central Drugs Standard Control Organisation, DGHS, Ministry of Health & Family Welfare (Medical Device & Diagnostic Division) in relation to clinical performance evaluation of new In Vitro Diagnostics medical devices at FDA Bhawan, Kotla Road, New Delhi-110002; Judge for posters (award category) at TROPACON 2019 held at KMC, Manipal (6-8 September 2019); Executive committee member: Indian Association of Tropical Parasitology; Member-Hospital Infection Society- India; Member-IAMM- Delhi Chapter; Core group member for HIC committee at AIIMS, New Delhi; Member Secretary: Infection Control Committee at CDER, AIIMS, New Delhi; Reviewer: Journal of Hospital Infection, Tropical Parasitology and PLoS neglected tropical diseases.

**Dr Kiran Bala** was Member - Indian Association of Medical Microbiologists (Life Membership 3301/19), The Union International union against tuberculosis and lung disease (Membership CU 0783207); Expert member BSL-3, BSL-2 Subcommittee of CCRF core committee at AIIMS, New Delhi 2018; Reviewer: Indian J of Urology, International J of Medicine and public health, Medical mycology, Indian J Med research, Indian J Tuberculosis, Mycopathologia; Participated in the workshop ‘Basic statistical methods & hands on data analysis using stata statistical software’ at Department Of Biostatistics, AIIMS, New Delhi from 9 to 12 December 2019.

## 9.21. Nephrology

**Professor and Head**  
Sanjay Kumar Agarwal

**Professor**  
Dipankar Madhusudhan Bhowmik Sandeep Mahajan

**Associate Professor**  
Soumita Kamal Kumar Bagchi Raj Kumar Yadav

**Assistant Professor**  
Arun Kumar Subbiah

### HIGHLIGHTS

Department is regularly doing state-of-the-art nephrology care including renal transplantation at affordable cost. ABO-incompatible renal transplant in the institute during this period is regularly being done. Department is continuing immunosuppressive drug monitoring and monitoring of infection in renal transplant free of charge for all renal transplant patients. The department is providing hemodialysis to nearly 80 patients per week at very low cost and free for patients below poverty line. Department is also providing bed side dialysis in many departments across institute and supporting dialysis in Trauma Centre. Department is running a bio-repository of samples for potential research in renal sciences for patients of primary glomerular disease and chronic kidney disease. Department faculty is in almost all government policy-making bodies related to chronic kidney disease, dialysis and renal transplantation. Dr. SK Agarwal is technical advisor to National Organ and Tissue Transplant Organization (NOTTO) and officer-in-charge of National Organ and Tissue Transplant Registry (NOTTR). Department has also started interventional nephrology program for vascular access for hemodialysis and peritoneal access for peritoneal dialysis within own department.

### EDUCATION

#### Long-term training

The department runs DM Nephrology, a three-year degree course for post MD (Medicine and Pediatric) candidates, selected by AIIMS on the basis of merit through all India entrance examination. Along with AIIMS Delhi, department is conducting examination for other AIIMS like institution as per need. Three candidates were admitted to DM nephrology course at AIIMS, New Delhi during this period. Residents from department of pediatrics and pathology regularly come for the training courses in Nephropathology. At present the department has three non-academic junior residents for 6 months each.

#### Short-term training

The department is providing short-term training for following:

1. Postgraduates from the department of Internal Medicine, Geriatric Medicine, Emergency Medicine, Urology, Anesthesia, Infectious disease, Critical Care Medicine and Transfusion Medicine are posted on rotational basis for a variable period of few weeks to few months.

#### CME/Workshops/Symposia/National & International Conference Organized by Department

1. World Kidney Day-2019, Public Awareness on 12 March 2020 regarding kidney diseases was organized in collaboration with RML Hospital, at AIIMS and RML Hospital, New Delhi on 11 and 12 March 2019.

#### Lectures delivered

SK Agarwal: 9      Dipankar Bhowmik: 9      Sandeep Mahajan: 9  
Soumita Bagchi: 4      RK Yadav: 3      Arunkumar S: 3

**Oral paper/poster presented: 14**

### RESEARCH

#### Funded Projects

##### Ongoing

1. Prospective cohort study to find Circulating Levels of Anti Phospholipase A2 receptor (PLA2R) Antibodies and its Correlation with Idiopathic Membranous Nephropathy (IMGN), S.K. Agarwal, ICMR, 3 years, 2017–2020, Rs 31 lakhs

2. Role of T-regulatory cells (T-regs) and their clinical correlation in obesity associated inflammation in type-2 diabetic & CKD, Sandeep Mahajan, ICMR, 3 years, 2019–2022, Rs 56.53 lakhs
3. The association of HLA antigens with primary IgA nephropathy in Indian patients, Soumita Bagchi, AIIMS, 1 year, 2019–2020, Rs 5 lakhs
4. An adaptive seamless randomized, double blind, placebo-controlled, dose ranging study to investigate the efficacy and safety of LNP023 in primary IgA nephropathy patients, Soumita Bagchi, Novartis, 2 years, 2019-2021, Rs 1.98 lakhs per patient
5. A randomized, treatment open-label, dose-blinded parallel group, three arm, proof-of-concept clinical trial to investigate the efficacy and safety of LNP023 compared with rituximab in the treatment of subjects with idiopathic membranous nephropathy. Soumita Bagchi, Novartis, 3 years, 2019-2022, Rs 2 lakhs per patient
6. A Randomized, Double-blind, Placebo-controlled, Parallel-group, Multicenter Study to Demonstrate the Effects of Sotagliflozin on Cardiovascular and Renal Events in Patients with Type 2 Diabetes, Cardiovascular Risk Factors and Moderately Impaired Renal Function, RK Yadav, Sanofi Pharma, 5 years, 2018-2023, Rs 4.71 lakhs per patient

### **Completed**

1. Multicentric Study to Find Out Prevalence of Chronic Kidney Disease in Adults in Urban Indian population, SK Agarwal, ICMR, 7 years, 2012–2019, Rs 90 lakhs
2. Prevalence and significance of serum galactose deficient IgA1 in Indian patients with IgA nephropathy: A case control study, Soumita Bagchi, AIIMS, 1 year, 2017–2018, Rs 5 lakhs
3. Pattern of CYP3A5 and MDR-1 single nucleotide polymorphism and its Impact on Individualization of Tacrolimus based Immunosuppression in Living Renal Allograft Recipient, RK Yadav, AIIMS, 2016–2019, Rs 4.05 lakhs

### **Departmental Research**

#### **Ongoing**

1. Clinicopathological correlation of HBV and HCV infection in patients on renal replacement therapy
2. Evaluation of changes in measured GFR, Echocardiography, markers of bone mineral metabolism and carotid intimal medial thickness (CIMT) after renal donation
3. A study of proteinuria in kidney transplant recipients in first year post transplant
4. Impact of Hepatitis C treatment on long term outcomes of renal allograft recipients in Indian setting
5. Evaluation of nutritional status and exercise tolerance in chronic kidney disease
6. A cohort study to evaluate the changes in exercise tolerance and nutritional status in chronic kidney disease patients on hemodialysis before and after renal transplantation
7. To study the role of Vitamin D levels on disease severity and outcome in Indian patients with primary IgA nephropathy from the AIIMS Primary IgA Nephropathy (APIgAN) cohort
8. Designing of rapid and cost-effective Nano-LAMP based detections of BK virus from serum and urine samples of post-renal transplant patients
9. Supportive management of IgA nephropathy-A prospective study
10. Correlation of serum Immunoglobulin A/complement factor 3(IgA/C3) with the clinical and histologic severity in patients with IgA nephropathy
11. Electrolyte and acid base disturbances in post renal transplant patients: Prospective study
12. To study vitamin D deficiency as a risk factor for PTDM after kidney transplantation

#### **Completed**

1. A Cohort Study to Evaluate the Change in Exercise Tolerance and Nutritional Status in Chronic Kidney Disease (CKD) Patients on Hemodialysis before and after Renal Transplant
2. A cross sectional study to assess the link between fluid overload status and quality of sleep in patients on maintenance hemodialysis at AIIMS, New Delhi
3. A study to assess the effect of intradialytic exercises on urea-creatinine clearance and fatigue level of CKD patients undergoing hemodialysis at a tertiary care hospital
4. Impact of universal CMV prophylaxis with Valganciclovir on incidence and pattern of CMV infection in D+/R+ Renal Transplantation in Indian setting
5. Long term outcome of renal donors
6. Pulmonary infections in renal transplant recipients: prospective cohort observational study

7. Retrospective study for evaluating the clinical profile and treatment response and outcome of adult patients with primary FSGS
8. Study of cognitive function in patients with chronic kidney disease and the effect of renal transplantation
9. The profile and risk factors of infections requiring hospitalisation in the first year after renal transplantation
10. Three arm randomized comparison of laparoscopic peritoneal dialysis catheter insertion with or without omentectomy versus conventional open peritoneal dialysis catheter insertion in chronic kidney disease stage 5 patients in terms of catheter malfunction and post-operative complications
11. To delineate the pattern of biopsy proven renal disease in a tertiary care hospital in India
12. To study the demographic and clinical profile of non proteinuric kidney disease in Type 2 diabetic patients
13. To study the outcomes of percutaneous hemodialysis catheters in tertiary care nephrology centre

## **Collaborative Projects**

### ***Ongoing***

1. To define intestinal insufficiency in patients with celiac disease, Gastroenterology
2. Detection and genotyping of Human Cytomegalovirus from Neonates and Renal Transplant Recipients, Microbiology
3. Molecular detection and characterization of Pneumocystis Jiroveci in respiratory samples from the patients both immunocompromised as well immunocompetent with suspected interstitial pneumonia and other chronic lung diseases, Microbiology
4. To study the prevalence of UL 97 Gene Mutation in Ganciclovir Non-Responders vis a vis Responders in Indian Renal Transplant Patients, Lab Medicine
5. A Prospective study Comparing outcomes and quality of life after Laparoscopic donor nephrectomy Versus open donor nephrectomy, Surgery
6. Study of Population genetics of clinical strains of Pneumocystis Jiroveci and its clinico-epidemiological correlation, Microbiology
7. Development of Immunoblot assay for diagnosis of subclinical Cryptococcus, Microbiology
8. Detection and genotype distribution of BK polyoma virus in renal transplant recipients, Microbiology
9. Study of muscle enzyme elevation in neurosurgery and its relevance in postop acute kidney injury: A pilot study, Neuroanaesthesia
10. An immunohistochemical and ultra-structural study of glomerular capillary endothelial injury in cellular rejection, Pathology
11. Development of Immunoblot assay for diagnosis of subclinical cryptococcosis, Microbiology
12. Antifungal susceptibility testing and genotyping of Cryptococcal isolates from Delhi and other parts of India, Microbiology
13. To study the effect of 24 hour versus standard 7-day prophylactic antibiotic regimen in renal transplant recipients: A randomized control study, Surgery
14. Assessment of Fok I polymorphism of VDR gene, vitamin D and parathyroid hormone levels in stage 4-5 CKD patients, Laboratory Medicine
15. Improving maturation rates of AV fistula hemodialysis access in CKD V patients using autologous adipose tissue derived mesenchymal stem cells: A double blind, randomized placebo-controlled trial, Cardiovascular Radiology & Endovascular Interventions
16. Short term and long-term outcomes following laparoscopic donor nephrectomy and open donor nephrectomy: An ambispective comparative cohort study, Surgery
17. Genotypic characterization of Autosomal Dominant Polycystic Kidney disease (ADPKD) in Indian population: A pilot study, Biochemistry

### ***Completed***

1. Long-term outcome of anti-complement factor H antibody associated atypical hemolytic uremic syndrome, Paediatrics
2. Membranous nephropathy: a study of immunofluorescence, electron microscopy and PLA2R profile with clinical correlation, Pathology
3. Intravascular fluid guided therapy versus standard fluid therapy in predicted severe acute pancreatitis: A randomized controlled study, Gastroenterology
4. Stent vs no stent in ureteroneocystostomy in live related renal transplant: a prospective randomized controlled trial, Surgery



5. Prevalence of sarcopenia in cirrhosis and its correlation with serum myostatin and myostatin gene expression in muscle biopsy, Gastroenterology
6. A study to assess the knowledge and quality of life among CAPD patients at AIIMS hospital with a view to develop an information booklet, College of Nursing
7. Membranous nephropathy: A study of immunofluorescence, electron microscopy and PLA2R profile with clinical correlation, Pathology

## PUBLICATIONS

**Journals: 12    Abstracts: 1    Chapters in Books: 3**

## PATIENT CARE

Arunkumar S

1. Medical Camp at Leh, Ladakh (2 October 2019 to 6 October 2019)
2. Health Awareness Camp for Hon'ble M.P.'s (23 November 2019 to 4 December 2019)

### *Facilities available in the department*

In addition to providing general nephrology care for all nephrology related illnesses, department provides state-of-the-art renal replacement therapy; hemodialysis, CAPD and renal transplant at very low cost to any patient of end stage renal disease. Department provides swap transplant and ABO incompatible renal transplant. Department also provides immunosuppressive drug monitoring free of cost. During hemodialysis, ultrapure water is provided to machine so that absolutely safe hemodialysis can be provided to patients.

*Following number of patients were provided respective facility.*

S. No.	Area				
1	Haemodialysis Related	HD New Patients	1377		
		Emergency HD Patients	1113		
		Total HD	11453		
		Plasmapheresis	84		
		Femoral Vein catherisation	933		
		Jugular / Subclavian catherisation	336		
		AV Fistula	570		
		Permacath Insertion	133		
		2	ICU Related	CRRT/SLED	23
3	Peritoneal Dialysis	Acute PD	12		
		CAPD	17		
4	Indoor Related	Kidney Biopsy	819		
		Liver Biopsy	2		
		Indoor regular admission	1378		
		Indoor short admission	4382		
		Indoor Death / male	60/37		
		Nephrology consultation	6320		
		Ultrasound	762		
		5	Day Care Treatment	Pulse Methylprednisolone Tt	66
				IV Iron Therapy	189
IV Cyclophosphamide Therapy	27				
Other Miscellaneous Therapies	1742				

6	Renal Transplant	Evaluation of LRRT	441
		Evaluation of Cadaver recipient	141
		Living RT done	114
		Cadaver RT done	6
7	Renal Lab related	Blood sampling	140685
		Biochemistry (Urea, Cr, Na, K)	88211
		Urine osmolality	1324
		24 hr urine testing	19683
		Hemogram for RT Patients	12746
		CO2	29239
		Serum iron	6513
		TIBC	6513
		UIBC	6513
		T Saturation	6513
		Serum Ferritin	2749
		Tac Level	5365
8	OPD Related	Renal clinic new patient	11282
		Renal clinic old patient	48029
		Renal clinic Total Patients	59311
		RTCC New Cases	441
		RTCC Old Cases	1447
		RT new cases	212
		RT old cases	10492
		RT Clinic Total Patients	10704

#### AWARDS, HONORS AND SIGNIFICANT EVENTS

**Professor SK Agarwal** conferred Dr. Siddhartha N Shah Oration on Epidemiology on “Public Health Initiative Directed Towards Community Screening of Hypertension and CKD” during 28th Annual Conference of Hypertension Society of India and 1st International Kidney and Hypertension Conference, held at Hotel Trident, Mumbai on 20-22 September 2019; Editor in chief Seminars in Dialysis (2020-continuing); Invited to mentor renal transplant program in Gandhi Medical College, Bhopal; Initiated renal transplant program at Indira Gandhi Medical College, Shimla, HP; Member of consultation meet on the need for public health approach to address Non-Alcoholic Fatty Liver Disease (NAFLD) dated 17 March 2020 at NITI AAYOG; Chair Global Burden of Disease: Indian CKD group (2017-continuing); Member “Subject Expert Committee” of “Cradio-Renal Division” of CDSCO (2016-continuing); Member of South Asian Board of Nephrology, a division of International Society of Nephrology (2011-continuing); Member of the Appellate committee of National Organ Transplant Program, Government of India; Member of committee of MOHFW for deciding the fitness of renal transplant patients for the government jobs; Member of expert group for review of Draft guidelines for CKD by National Center of Disease Control, Government of India; Editor of Indian J of Nephrology, 2015-continuing; Core group member of National Acute Kidney Injury registry of Indian Society of Nephrology; Invited to be member of Technical Expert Committee for National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS), August 2017-continuing; Invited as an expert in Medical Technology Assessment Board (MTAB) of government of India for renal replacement therapy in the country, 2017-continuing; Member of expert committee for making guidelines for National Organ Transplant Program; Member of expert committee making operational guidelines for continuous ambulatory peritoneal dialysis in India; Elected by the ISN-Advancing Clinical Trial (ACT) as ISN-ACT Committee member (2016-continuing); Invited to be member of “Expert Group” constituted for Kidney Diseases under Grant-in-aid (GIA) scheme of Inter-Sectoral Convergence and Coordination for Promotion and Guidance on Health Research formed by department of Health Research, 2018-continuing; Invited to be editorial board member of European Medical Journal (2018-continuing); Invited to be editorial board member of Archives in Nephrology (2018-continuing).

**Professor Dipankar M Bhowmik** is Visiting Professor Nephrology AIIMS Rishikesh; Deputy Editor of Indian Journal of Nephrology; External expert for faculty selection in: (a) AIIMS Rishikesh, (b) ILBS, New Delhi, (c) IGMER RML Hospital, (d) IGIMS Patna, (e) Rajiv Gandhi Superspecialty Hospital, Tahirpur, Delhi; DM examiner for various national institutes, PGI Chandigarh, IGMC Shimla; Trustee of Guru Kripa Trust; Member of CSIR selection committee for Pool officers; Member of National Committee List of Essential Medicines (Devices); Organised World Kidney Day celebrations in March 2020 in AIIMS, RML and Safdarjung in association with ISNNZ and IFKD; Member of Store Purchase Committee AIIMS.

**Professor Sandeep Mahajan** was awarded fellowship of Indian Society of Organ Transplantation (2019); Member of the National PD Guidelines Committee (2014-continuing); Invited to the National Expert Panel of the Certificate Course in Management of Hypertension by Public Health Foundation of India (2016-continuing); Member of the Scientific Committee of Peritoneal Dialysis Society of India (2019-continuing); Program Chair for the Post Graduate Medical Program (Nephrology) for the Texila American University (2017-continuing); Expert member of the reconstituted Task Force of Metabolic Disorders and Auto-Immune Diseases, by Department of Biotechnology, Ministry of Science & Technology (2017-continuing); Member of Committee for roll-out of Peritoneal Dialysis under the National Health Mission (2017-continuing); Nominated as Co-chairperson for the Expert Group set up by ICMR, for the preparation of standard treatment workflows (STWs) for Nephrology (2018-continuing); Nominated as Member of South Asian Guidelines for Travel and endemic infections in solid organ recipients (2019-continuing); Member of the Drug Selection Committee of AIIMS (2018-continuing); Member of the Committee on Extra Budgetary Resources and Corporate Social Responsibility (2018-continuing); Member of the AIIMS Public Awareness Committee (2018-continuing); Member of the AIIMS Project Management Committee for New Paid Ward Block (2018-continuing); Member of the Committee to review plans for expansion of AIIMS, New Delhi (2018-continuing).

**Dr RK Yadav** is the reviewer for Abstracts - 28th International Congress of the Transplantation Society (TTS 2020), Seoul, South Korea from 12 to 16 September 2020; Talk on All India Radio on Chronic Kidney Disease, 2 September 2020, Delhi; Developed a module 'Collection of Arterial blood sample' for UG teaching under SET facility.

**Dr S Arunkumar** is the recipient of ISN – ANIO Indukaka Ipcowala Advanced Scholarship for the year 2019; ERA (European Renal Association) travel award for young nephrologists to attend SEID (Scientific Education and Interaction Day).

#### VISITING SCIENTIST

1. **Dr Anju Yadav**, MD FASN, Assistant Professor and Assistant Director, Living Kidney Donor Program, Division of Nephrology Hypertension and Transplantation, Thomas Jefferson University Philadelphia, USA visited the department of nephrology on 11 February 2020 and gave a talk on "Living Related Renal Transplant: Experience from USA". She also attended CGR held between 4 and 5 PM done by department of Radiodiagnosis on Hepatic Vein Outflow Tract Obstruction and enjoyed well.
2. **Patrick Toby Hewlett COATES**, Professor of Medicine and Director of Transplantation, Australian Renal Transplant Service, Royal Adelaide Hospital, Consultant, National Transplantation Services, Australian Red Cross Blood Transfusion Service, Associate Editor: Transplantation and Immunology & Kidney International, Councillor ISN for Declaration of Istanbul Custodian Group (DICG) and President Elect Transplantation Society of Australia and New Zealand (TSANZ) visited department of Nephrology on 15 February 2020 and gave a talk on "Everolimus in Renal Transplant".
3. **Ervin Steve Woodle**, Professor of Surgery, division of transplantation, University of Cincinnati College of Medicine and Chairman, Board of Director. Israel Penn Center of Transplant Oncology visited department of Nephrology on 25 February 2020 and gave a guest lecture on "Redefining Rejection as a Basis for Development of New Rejection Therapies".

## 9.22. Nuclear Magnetic Resonance

### Professor and Head

Rama Jayasundar

### Professor

S Senthil Kumaran

### Additional Professors

Uma Sharma

Virendra Kumar

### Scientists

Sujeet Kumar Mewar

Pawan Kumar

### HIGHLIGHTS

The MRI Facility was operational from the beginning of the COVID19 crisis. It is the only MRI facility functional during this crisis. Using the 1.5 Tesla Aera MR scanner, an Advanced Cardiovascular MR Workshop (techniques, technologies and applications) was conducted by Department of Cardiovascular Radiology and Endovascular Interventions in collaboration with Department of NMR on 7-8 November 2019. Four radiographers from the department participated in a marathon MR scanning of Iron estimation in Thalassemia patients (230 patients in 64 hours) in a collaborative study between Department of Cardiovascular Radiology and Endovascular Interventions and Department of NMR.

### EDUCATION

The Faculties and Scientists delivered lectures and participated in the demonstration of MR techniques in the following courses in the Institute: (i) M. Biotech programme of the Department of Biotechnology – (i) Course 10 (Structural Biology and NMR Technology), Course 11 (Bioinformatics and Molecular Medicine); (ii) Third Semester, MBBS Course; (iii) MD Physiology Course, Department of Physiology.

### Short/Long Term Training

Four candidates from medical and science disciplines from various government hospitals from India and BSc Radiography students, AIIMS, underwent training in MRI, fMRI and MRS techniques.

### CMEs, National and International Conferences

#### Lectures delivered

Rama Jayasundar: 35

S Senthil Kumaran: 3

Oral papers/posters presented: 44

### RESEARCH

#### Funded projects

##### Ongoing

1. NMR phytometabolomics and studies of chemosensory signature to address the fundamental question of 'rasa' in ayurvedic pharmacology, Rama Jayasundar, SERB, 3 years, 2017-2020, Rs 74.76 lakhs
2. Elucidating the pathobiology of classical ayurvedic interventions in post stroke recovery using magnetic resonance and other techniques based structural, functional and chemical biomarkers, Rama Jayasundar, SERB, 3 years, 2017–2020, Rs 79 lakhs
3. Effects of environmental and occupational noise on cognition, S Senthil Kumaran, Life Sciences Research Board (LSRB), DRDO, 3 years, 2018-2020, Rs 59.25 lakhs
4. Morphological and Neurobiological Changes in Spinocerebellar Ataxia Affected Patients (SCA) through MRI Techniques Using Computer Vision Based Analysis, S Senthil Kumaran, SERB, 3 years, 2019–2021, Rs 65.22 lakhs
5. Understanding and Facilitation of Neural Plasticity for Enhancing Post Stroke Recovery Using Low-Cost Non-Invasive Brain Stimulation Techniques, S Senthil Kumaran, DHR-ICMR, 3 years, 2017-2020, Rs 34.32 lakhs

6. Role of Normobaric Oxygen Therapy, Fluoxetine and Transcranial Direct Current Stimulation (rTDCS) in Hypoxic Ischemic Brain Injury - HIBI Initiative, S Senthil Kumaran, DBT, 5 years, 2018–2023, Rs 106.03 lakhs
6. MR spectroscopy for identification of non-invasive biomarkers in patients with gluten ataxia and celiac disease, Uma Sharma, AIIMS, 2 years, 2019-2021, Rs 4.50 lakhs
7. Elucidating the structural, neurobiological changes and identification of non-invasive biomarkers using magnetic resonance imaging and spectroscopy in major depressive disorder, Uma Sharma, SERB, 3 years, 2020-2023, Rs 33.08 lakhs

#### **Completed**

1. Spectroscopic analysis of medicinal plants for standardization and quality assessment, Rama Jayasundar, National Medicinal Plant Board (NMPB), Ministry of AYUSH, Govt. of India, 5 years, 2014-2019, Rs 48.96 lakhs
2. Elucidating the science of yoga as a therapeutic intervention in post stroke recovery study of brain using the technique of Magnetic Resonance, Rama Jayasundar, SERB, 3 years, 2017-2020, Rs 43.23 lakhs
3. Morphological, functional, Biochemical and Behavioral evaluation post-emf radiation, S Senthil Kumaran, SERB, 3 years, 2015-2018, Rs 52.70 lakhs
4. Neuro-imaging Hyposmia in Movement Disorder, S Senthil Kumaran, DST, 2014-2019, Rs 49.5 lakhs

#### **Departmental projects**

##### **Ongoing**

1. NMR phytometabolomics for chemosensory and pharmacological evaluation for functional signatures of select medicinal plants
2. Role of Magnetic Resonance in assessing therapeutic efficacy of physiotherapy interventions in stroke patients
3. Role of Magnetic Resonance in assessing therapeutic efficacy of Ayurveda interventions in stroke patients
4. Spectroscopic studies on anti-HIV medicinal plants
5. Mapping functional and biochemical correlates in brain of Parkinson's Patients with Cognitive Impairment
6. In-bore MR guided targeted prostate biopsy in patients suffering from prostate cancer.
7. MRI and MRS of prostate cancer
8. NMR metabolomics study blood and urine in prostate cancer patients.
9. Metabonomics study of celiac disease by NMR spectroscopy
10. Metabolomic profile of healthy neonates
11. Evaluation of fumaric acid esters (FAEs) in experimental model of stroke in rats.
12. Neuroprotective study of nano carrier based Berberine chloride in middle cerebral artery occlusion model of transient focal cerebral ischemia in rats.
13. Evaluation of dihydromyricetin in experimental model of stroke and post stroke seizure susceptibility in rats.
14. MRI and MRS of prostate cancer
15. Metabolomics of patients with gluten ataxia
16. Evaluation of neuroprotective effects of safinamide in experimental model of ischemic stroke

##### **Completed**

1. Role of Magnetic Resonance in assessing therapeutic efficacy of yoga interventions in stroke patients
2. Identification of biomarkers in Parkinson's disease using NMR
3. Molecular and biochemical characterization of hepatic glycogenoses type I and III
4. Magnetic Resonance (MR) multi-parametric approach to the study of breast cancer and its correlation with molecular markers.

#### **Collaborative projects**

##### **Ongoing**

1. Spectroscopic analysis of medicinal plants for standardization and quality assessment, Ocular pharmacology and pharmacy
2. NMR phytometabolomics and studies of chemosensory signature of Ayurvedic medicinal plants, Ocular pharmacology and pharmacy

3. Elucidating the pathobiology of classical ayurvedic interventions in post stroke recovery using Magnetic Resonance and other technique based structural, functional and chemical, biomarkers, Neurology, Neuroradiology
4. Studies on anti-HIV medicinal plants, Biochemistry
5. Study of Cognition and QOL in chronic intractable epilepsy using Functional magnetic resonance imaging (fMRI), Neurology
6. Providing insights into the mechanism of modified Constraint Induced Movement Therapy in children with hemiparetic cerebral palsy – A Functional Magnetic Resonance Imaging based study, Paediatrics
7. Cue Induced Craving in Adolescent Inhalant Users: A functional magnetic resonance imaging (fMRI) study, Psychiatry
8. Neuroprotective study of lercanidipine and citalopram in experimental model of stroke in rats, Biophysics
9. Neurochemical Correlates of Cognitive Functions in Euthymic Patients with Bipolar I Disorder, Psychiatry
10. Providing insights into the mechanism of modified Constraint Induced Movement Therapy in children with hemiparetic cerebral palsy – A Functional Magnetic Resonance Imaging based study, Paediatrics
11. Cortical reorganization in complete spinal cord injured rats: Effect of superparamagnetic nanoparticles and low intensity magnetic field exposure, Physiology
12. Role of mediodorsal thalamic nuclei in sleep, Physiology
13. Robotic hand assisted Transcranial Magnetic Stimulation therapy for post stroke, Neuro-Rehabilitation, IIT New Delhi–CBME
14. Efficacy of comparative Magnetoencephalography vs Electroencephalography Source Localization and Propagation of interictal epileptic discharges in patients with drug resistant epilepsy, Neurosurgery and NBRC
15. Neurocognitive correlates of emotion and cognition among Yoga practitioners, physically active and sedentary lifestyle individuals: An fMRI and neuropsychological study, CIMR
16. Understanding movement execution and its cognitive processing in Parkinson's Disease–A pilot study. Department of Neurology, LHMC, New Delhi
17. Role of advanced ultrasound and advanced MRI in evaluation of prostate cancer, Radiodiagnosis
18. Role of multiparametric MRI in detection and localization of prostate cancer, Centre for Biomedical Engineering, IIT-Delhi
19. Metabolomics of serum in sepsis patients using proton nuclear magnetic resonance spectroscopy, Medicine
20. EEG cortical sources and connectivity of working memory and language processing in Attention Deficit Hyperactivity Disorder, Physiology
21. A comparative study of neurochemical alteration on 1h mrs in schizophrenia, obsessive compulsive disorder and schizophrenia with obsessive compulsive symptoms, Psychiatry
22. Small molecule Bio-signatures in Diagnosis of Tuberculosis, Microbiology
23. Analysis of anti-neurotoxicity of amyloid beta in Alzheimers (AD) disease pathology targeting lipooxygenases, Biophysics

#### **Completed**

1. HIV associated neurocognitive decline and brain metabolism, Medicine
2. Elucidating the science of yoga as a therapeutic intervention in post stroke recovery study of brain using the technique of magnetic Resonance, Neurology and Neuroradiology

#### **PATIENT CARE**

The department has three MRI scanners (two 3.0 Tesla and one 1.5 Tesla scanners) for patient care and research. The department provides continuous patient care MRI (24x7) services. The details of the number of patients scanned during the period April 2019 to March 2020 are:

Clinical Diagnostic MRI Scans	:	6119 patients
Research	:	876 patients and healthy volunteers

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Rama Jayasundar** was nominated by Hon'ble President of India as His (Visitor's) nominee for Nagaland University Mumbai for a period of three years; Nominated by Vice Chancellor, Jawaharlal University (JNU) as a member of the Academic Council for Annual Refresher Program in Teaching Course in History of Indian Science and Technology; Invited by Ministry of External affairs, Govt. of India to address Foreign Diplomats from various countries on the science of Ayurveda; Hon'ble President of India's nominee as a member of the Executive Council of Delhi University; Hon'ble President of India's nominee for Indian Institute of Technology (IIT), Mumbai; Member of Advisory Committee of CSIR-Traditional Knowledge Digital Library (CSIR-TKDL), Council of Scientific and Industrial Research, New Delhi; Member of the Scientific Advisory Committee, Centre of Excellence, Interdisciplinary School of Health Sciences, Savitribhai

Phule Pune University; Member of the Board of Governors of Indian Institute of Science Education & Research (IISER), Kolkata; Ministry of Human Resource Development (MHRD)'s nominee for the selection committee for appointment of Professors in the Indian Institute of Science Education & Research (IISER), Mohali; Nominated as member of jury for awards for Excellence in Information Technology in AYUSH Sector, Ministry of AYUSH, Government of India; Nominated as Member of the Executive Committee of the Central Council for Research in Homeopathy (CCRH), Ministry of AYUSH, Government of India; Keynote, plenary and invited speaker in 12 conferences; Editorial Board panel of Journal of Ayurveda and Integrative Medicine; Reviewer for Current Science and Journal of Ayurveda and Integrative Medicine.

**Professor S Senthil Kumaran** was elected member of Executive committee of ISMRM-Indian Chapter; Reviewer for Annals of Indian Academy of Neurology, Magnetic Resonance in Medicine, Neurorehabilitation & Neural Repair (Sage Publishing) and IEEE Access.

**Dr Uma Sharma** was Guest Editor for Frontiers in Neurosciences.

**Dr Virendra Kumar** was Editorial Board panel of Current Metabolomics and Systems Biology, Bentham Science; Reviewer for Journals: Scientific Reports, Springer Nature; Cancer Imaging, Springer Nature; World Journal of Surgical Oncology, Springer Nature; Cancer Medicine, John Wiley; Magnetic Resonance in Medicine, John Wiley; Journal of Electrical and Computer Engineering, Hindawi; Computer Methods and Programs in Medicine, Elsevier.

## 9.23. Nuclear Medicine

### Professor and Head

CS Bal

### Professors

Rakesh Kumar

Chetan D Patel (CNC)

### Additional Professors

Madhavi Tripathi

Anil K Pandey (Medical Physics)

### Associate Professors

Nishikant A Damle

Shamim A Shamim

### Assistant Professor

Khangemam Bangkim Chandra

### HIGHLIGHTS

Department of Nuclear Medicine has two distinct services: Diagnostic and Therapeutic facilities. The Diagnostic services include general nuclear medicine services using Gamma Camera, SPECT and SPECT/CT in main department and specialty services as Nuclear Cardiology unit in CNC that caters to patients referred for cardiac studies from CN center and other departments of the hospital. The main department has two PET/CT scanners and a dedicated 11 MeV Cyclotron with PET radiochemistry facility. The other division provide Therapeutic nuclear medicine facility for Endocrine tumours, metastatic Neuroendocrine tumours, metastatic castration-resistant Prostate cancers (mCRPC), pediatric cancers like neuroblastoma, adult malignant pheochromocytomas and paragangliomas, hepatocellular carcinoma, radiosynovectomy and Bone pain palliation using beta-particle emitters, namely I-131, Lu-177, P-32, Sm-153 and most recently alpha radionuclide Actinium-225 labelled DOTATATE and PSMA-617. In alpha therapy AIIMS is ahead of USA and among top 3 countries of the world using Ac-225.

### EDUCATION

The Department has 3 PhD, 5 DM, 22 MD & 18 MSc students in this academic year. Apart from that department also trained two physicians from Regional Cancer Centre at Agartala, Govt of Tripura in PET/CT for 6 months each and two Physicians from Imphal Govt Hospital, Manipur in Nuclear Cardiology for 3 months. Hands-on-training of five senior Nuclear Medicine Physicians from various National medical centres /hospitals in Therapeutic Nuclear Medicine under the supervision of Prof CS Bal from 22-24 April 2019.

Integrated teaching seminars for 6th Semester UG students taken by Professor CS Bal one on Introduction to Imaging along with Radiology faculty Prof DN Srivastav and for 8th Semester UG on Renal function Tests along with Professor Mahajan and again for 8th semester UG students on Neuroimaging along with Dr Joseph, Additional Professor in Neuroradiology.

Dr Madhavi Tripathi took Integrated seminar for 6th semester students on 19 March 20, on '*Benign and malignant tumors of the tracheo-bronchial tree including mediastinal tumors*'. Prof SK Kabra, Dr Sanjiv Sinha, Dr Smita Manchanda, and Dr Madhavi Tripathi.

### CMEs/Workshops/Symposia/National and International Conferences

#### Lectures delivered

CS Bal: 12

Rakesh Kumar: 9

Chetan Patel: 3

Madhavi Tripathi: 6

Anil Kumar Pandey: 5

Nishikant A Damle: 5

Shamim A Shamim: 2

Oral papers/posters presented: 48 (BEST PAPER AWARD)



## RESEARCH

### Funded projects

#### Ongoing

1. Dosimetry Of <sup>177</sup>Lu -Labelled PSMA-617 In Castration-Resistant Prostate Cancer Patients. CS Bal, ICMR, 3 years, 2017-2020, Rs 25 lakhs
2. Comparison of Alpha Emitting <sup>225</sup>Ac-DOTATATE Versus Beta Emitting <sup>177</sup>Lu-DOTATATE Therapy in Advanced End-stage Gastroenteropancreatic Neuroendocrine Tumor (GEP-NET) Patients. CS Bal, ICMR, 5 years, 2019-2024, Rs 150 lakhs
3. Use of PET-CT with Gallium-68 Labeled Prostrate Specific Membrane Antigen in the Diagnosis and Follow-up of Patients with Prostate Cancer, Rakesh Kumar, IAEA, 5 years, 2017-2022, Euro 15,000
4. International study on imaging in Cardio-Oncology Study (iCOS), Chetan D. Patel, IAEA, 5 years, 2019-2023, Euro 2000
5. Enhancing the capacity of neuroimaging and biomarkers: Application in early-stage Alzheimers disease with comorbidities, Madhavi Tripathi, IAEA, 4 years, 2015-2020, Euro 18,000
6. Evaluation of long acting octreotide therapy in steroid resistant Graves ophthalmopathy with somatostatin receptor expression on <sup>68</sup>Ga-DOTANOC PET/CT, Nishikant A. Damle, AIIMS, 2 years, 2019-2021, Rs 5 lakhs/year
7. Diagnostic accuracy of antifungal scintigraphy in diagnosing invasive fungal disease (IFD) in febrile neutropenia in pediatric hematologic malignancies, Nishikant A. Damle, AIIMS, 2 years, 2019-2021, Rs 5 lakhs/year
8. Utility of Radiolabelled Antibiotics as Imaging Agents in Establishment of a Decision Support Algorithm in Patients with Pyrexia of Unknown Origin (PUO) caused by Infection and its Impact on Short Term and Long Term Clinical Outcomes, Nishikant A. Damle, ICMR, 2019-2022, 3 years, Rs 36 lakhs
9. <sup>68</sup>Ga-PSMA PET-CT for evaluation of hepatocellular carcinoma, Shamim A Shamim, AIIMS, New Delhi, 1 year, 2019-2020, Rs 5 lakhs
10. Comparison of Re-188-HDD Lipiodol Trans Arterial Radionuclide Therapy (TART) with Re-188-DEDIC Lipiodol TART in the management of advanced Hepatocellular Carcinoma: A Randomized Control Trial, Shamim A Shamim, ICMR, 3 years, 2019-2022, Rs 47.56 lakhs

### Departmental projects

#### Ongoing

1. <sup>225</sup>Ac-DOTATATE therapy in GEP-NETs
2. <sup>225</sup>Ac-PSMA-617 therapy in castration resistant prostate cancer
3. <sup>68</sup>Ga-PSMA PET-CT for evaluation of hepatocellular carcinoma
4. A retrospective cohort study to analyse the diagnostic accuracy of SISCOS in drug refractory epilepsy
5. A retrospective study to compare diagnostic accuracy of <sup>18</sup>F-FCH PET/CT, 4D-CT and <sup>99m</sup>Tc-Sestamibi in detection and localization of culprit lesions in patients with primary hyperparathyroidism
6. Biodistribution and radiation dosimetry of <sup>68</sup>Ga-DOTA.SA.FAPi in patients diagnosed with various cancers.
7. Comparison of <sup>225</sup>Ac-PSMA-617 versus <sup>177</sup>Lu-PSMA-617 in the treatment of metastatic castration resistant prostate cancer.
8. Comparison of Re-188-HDD Lipiodol Trans Arterial Radionuclide Therapy (TART) with Re-188-DEDIC Lipiodol TART in the management of advanced Hepatocellular Carcinoma: A Randomized Control Trial
9. Design and methods of the YOGICAD study- A probe trial to evaluate the efficacy of yoga based cardiac rehabilitation in Post PCI patients
10. Diagnostic performance of CRH stimulated BIPSS in patients with ACTH dependent Cushing's syndrome
11. Dosimetric study in children and young adults with differentiated thyroid cancer undergoing radioiodine therapy.
12. Evaluation of standard uptake value ratios in <sup>18</sup>F-tau positron emission tomography
13. Evaluation of Striatal Binding ratios on <sup>99m</sup>Tc-TRODAT SPECT/CT
14. Gastric emptying scintigraphy using standard vegan meal: Establishment of control values
15. Is there a need to change administered <sup>131</sup>I activity in high turnover Graves disease
16. Non invasive tissue diagnosis – A comparison of the accuracy of parametric mapping on MRI with cardiac PET scan in determining the response to therapy in cardiac sarcoidosis

17. Prospective comparison between 18F-FDG PET/CT and conventional modalities for Ewing's family of tumors
18. Prospective evaluation of Prostate Specific Membrane Antigen expression in recurrent high grade gliomas using Ga-68 PSMA PET/CT.
19. Role of 18F-Fluorocholine PET/CT in the localization of culprit lesions in patients with persistent/recurrent primary hyperparathyroidism
20. Role of 68Ga-DOTA/DATA.SA.FAPi in the staging of breast cancer.
21. Role of 68Ga-PSMA-HBED-CC PET/CT in Adenoid Cystic Carcinoma
22. Role of Texture analysis in 18F-FDG PET/CT in response assessment in soft tissue sarcoma
23. Scintigraphic Image Restoration using Constrained least square filtering
24. Scintigraphic images Restoration using Richardson Lucy Algorithm
25. Standardization of technetium-99m ethylene dicysteine (99mTc-LLEC) clearance in renal transplant donors/normal human subjects and comparison with Glomerular Filtration Rate (GFR) in vitro by two plasma sample method
26. To assess the feasibility of Fluorine-18 Fluoro L-Dihydroxyphenylalanine (F-18 FDOPA) PET-CT for evaluation of cardiac sympathetic innervation in Heart Failure. Comparison with Carbon-11 Hydroxyephedrine (C-11 HED) PET-CT
27. To study the clinical profile, investigations and outcome of patients Undergoing Parathyroidectomy: A Retrospective and Prospective Experience.
28. To study the concordance of thyroid imaging and data reporting system (TIRADS) and the Bethesda system for reporting thyroid cystopathology (TBSRTC) with final histopathology in solitary thyroid nodule (STN)
29. To study the role of vascular function and pain sensitivity in microvascular angina
30. Utility of 99m-Tc Ubiqicidin in differentiation of infective and noninfective lesions

### **Completed**

1. A pilot study to assess the therapeutic potential of 177Lu-DKFZ-PSMA 617 in 68Ga-PSMA HBED CC PET/CT positive anaplastic thyroid carcinoma
2. A Prospective study to determine the efficacy of Positron Emission Tomography/Computed Tomography (PET/CT) in detecting residual disease in Locally Advanced Head & Neck Squamous Cell Carcinoma managed with primary Chemo-Radiation Therapy
3. Comprehensive assessment of right ventricle function and pulmonary perfusion in patients with Eisenmenger syndrome using multi-modality imaging
4. Dosimetry and efficacy of 177Lu-PSMA-617 therapy in metastatic castration resistant prostate patients
5. Effect of dietary intervention in reducing interfering infra-cardiac activity in patients undergoing Tc99m-MIBI Myocardial Perfusion SPECT
6. Efficacy of Rhenium -188 HDD lipiodol in hepatocellular carcinoma with malignant portal vein thrombosis
7. Evaluation of amnesic mild cognitive impairment using F-18 Tau and F-18 FDG PET/CT.
8. Image denoising using wavelet transform
9. Imaging PSMA expression in metastatic triple negative breast cancer using Ga-68 PSMA PET/CT.
10. In vivo assessment of somatostatin receptor expression with 68-Ga DOTANOC PET/CT in patients with autoimmune and immune related orbitopathy
11. Interim treatment response evaluation of high grade lymphoma using texture analysis on F-18 FDG PET/CT study
12. Prevalence of asymptomatic stress induced myocardial ischemia in patients with advanced CKD by stress myocardial perfusion scintigraphy
13. Role of 18-FDG PET-CT in staging and early treatment response evaluation in patients of soft tissue sarcoma
14. Role of Ga68-DOTANOC PET/CT in Cardiac Sarcoidosis; Comparison with Cardiac MRI
15. Synthesis, Quality Control and Biodistribution Studies Of 99mTechnetium (99m Tc) Labelled Antibiotics for Infection Imaging.

### **Collaborative projects**

#### **Ongoing**

1. Biodistribution and radiation dosimetry of 68Ga-DATA.SA.FAPi in patients diagnosed with various cancers. University of Mainz, Germany.

2. Evaluation of the graft kidney by contrast-ultrasound and elastography in early postoperative period, Radiology
3. Evaluation of unknown head and neck primaries metastatic to cervical lymph nodes, ENT, Ortho
4. Monosymptomatic rest tremor classification based on clinical electrophysiological and dopamine transporter binding profile in Indian patients. Department of Neurology, GB Pant Institute of Maulana Azad Medical College & Associated G.I.P.M.E.R., New Delhi
5. Role of 68Ga-DOTA/DATA.SA.FAPi in the staging of breast cancer. University of Mainz, Germany.
6. Value of Gated-SPECT MPI for Ischemia-Guided PCI of non-culprit vessels in STEMI Patients with Multivessel Disease after primary PCI, Cardiology

#### **Completed**

1. A study of clinical spectrum of drug induced movement disorders and its associated risk factors. Department of Neurology, GB Pant Institute of Maulana Azad Medical College & Associated G.I.P.M.E.R., New Delhi
2. Cognitive impairment in early onset and idiopathic parkinson's disease. Department of Neurology, GB Pant Institute of Maulana Azad Medical College & Associated G.I.P.M.E.R., New Delhi

#### **PUBLICATIONS**

**Journals: 79**

#### **PATIENT CARE**

Department of Nuclear Medicine has two distinct services: Diagnostic facility that includes general nuclear medicine services using Gamma Camera, SPECT and SPECT/CT in main department and specialty services as Nuclear Cardiology unit in CNC that caters to patients referred for cardiac studies from CN center and other departments of the hospital. The department does 120-150 diagnostic patient scans/studies per day.

The other division provide therapeutic nuclear medicine facility for Endocrine tumours, metastatic Neuroendocrine tumours, metastatic castration-resistant Prostate cancers (mCRPC), hepatocellular carcinoma, radiosynovectomy and Bone pain palliation using beta-particle emitters, namely I-131, Lu-177, P-32, Sm-153 and most recently alpha radionuclide Actinium-225 labelled DOTATATE and PSMA-617. The therapeutic facility provide OPD facility for 110-170 patients per day and admits about 35-50 patient studies per week. Most of the therapies in Nuclear medicine is OPD procedures and as per AERB regulations all thyroid cancer patients administered more than 30 mCi I-131 need admission. We have more than 11,000 DTC patients under our regular follow up since 1967, and more than 7000 hyperthyroid patients since 1972. We have daily OPD services with faculty and DM students taking care of both indoor and outpatient facilities.

The department routinely performs myocardial perfusion SPECT imaging which is an integral investigation in the diagnosis and management of patients with coronary artery disease. We also perform cardiac PET imaging with PET tracer F-18 FDG for assessment of myocardial viability and for cardiac infective pathologies. New diagnostic techniques for non CAD indications are now performed like Gallium-68 DOTANOC and Tc99m PYP for cardiac sarcoidosis and infiltrative/inflammatory pathologies, respectively. We have also assessed the feasibility of F-18 FDOPA for evaluation of cardiac sympathetic innervations and in an ongoing study evaluating its role in Heart failure patients. The department also performs radionuclide ventriculography for assessment of left ventricular function in CAD patients referred from the center and from IRCH for cardiac evaluation in patients receiving chemotherapy.

#### **The number of diagnostic scans and radionuclide therapies administered 2019-2020**

<b>Routine diagnostic</b>	
99mTc-RBC Blood Pool Scan	24
DMSA	1460
DRCG	178
ECD-Ictal SPECT	229
ECD-INT SPECT	258
GER	502
GET	99
HIDA	278
LIV-SPLN	02
Lymphoscintigraphy	219
MDP Bone Scan	1803

131I-MIBG-Dx	271
131I-MIBG-Tx	27
Meckel's Scan	40
Parathyroid Imaging	213
Renal Dynamic Study	3788
Sentinel Node Imaging	02
Pertechnetate Thyroid Scan	457
99mTc-Trodat Scan	14
WBS -Dx	1179
WBS-Tx	864
177LU-DOTATATE	48
177LU-PSMA-617	35
177LU-EDTMP/DOTMP/BPAMD/ZOL	20
225Actinium – DOTATATE	28
225Actinium-PSMA-617	12
131I-MIBG	1145
131I-Therapy for Hyperthyroidism	300
131I-Therapy for Thyroid Cancer	798
GFR	2242
<b>Diagnostics- POSITRON EMISSION TOMOGRAPHY (PET/CT)</b>	
18F FDG	7546
Ga68 PSMA	520
Ga68 DOTA NOC	774
F18 Choline	83
68Ga Exendin4	12
F18 DOPA	101
F18 TAU	15
18F-Fluoride PET/CT Bone Scan	20
NH3 cardiac PET scan	9
68Ga-GUL-NOTA PET/CT	34
68Ga-FAPI PET/CT scan	6
NCCT	621
<b>CARDIAC CENTRE ACTIVITIES</b>	
Cardiac F18-FDG PET	156
99mTc/Myocardial perfusion study	1859
RNV Study(MUGA)	562
Misc. (V/Q Scan, 1st Pass)	147

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

Professor CS Bal received *Best Paper Award-2019 for Yadav MP, Ballal S, Tripathi M, Damle NA, Sahoo RK, Seth A, Bal CS.* <sup>177</sup>Lu-DKFZ-PSMA-617 therapy in metastatic castration-resistant prostate cancer: safety, efficacy, and qual-

ity of life assessment. Eur J Nucl Med Mol Imaging (2017) 44: 81. doi: 10.1007/s00259-016-3481-7. EANM, Barcelona, Spain; Also presented in the following: ***Oncology: Clinical Therapy and Diagnosis - Center for Therapy Excellence YIA Symposium*** Ballal S, Yadav M, Bal CS. Early results of <sup>225</sup>Ac-DOTATATE Targeted Alpha Therapy in Metastatic gastroenteropancreatic Neuroendocrine Tumors: First Clinical Experience on Safety and Efficacy. J Nucl Med 2019 60:74. **SNMMI, 2019, Anaheim, USA**; was elected as FNASc (Fellow of National Academy of Sciences, India) and FNSc (Fellow of Indian Academy of Sciences, Bengaluru) in October and December 2019, respectively.

**Professor Chetan Patel** has been elected as Vice President, Nuclear Cardiological Society of India; Member of Executive Committee, Society of Nuclear Medicine, India; Member of Executive Committee, Association of Nuclear Medicine Physicians of India; Chairperson in Nuclear Cardiology session Panel discussion 51st Annual conference of Society of Nuclear Medicine, 12-14 December 2019, Mumbai Maharashtra

## 9.24. Obstetrics and Gynaecology

<b>Professor and Head</b>		
Sunesh Kumar		
<b>Professors</b>		
Dipika Deka (on deputation)	Neerja Bhatla	KK Roy
Neena Malhotra	Vatsla Dadhwal	JB Sharma
	Neeta Singh	
<b>Additional Professors</b>		
K Aparna Sharma		Garima Kachhawa
Reeta Mahey		P Vanamail
<b>Associate Professors</b>		
Vidushi Kulshrestha		Seema Singhal
Rajesh Kumari		Jyoti Meena
<b>Assistant Professors</b>		
Juhi Bharti	Nilanchali Singh	Monica Gupta
Richa Vatsa	Deepali Garg	Rinchan Zangmo
Kusum Lata	Archana Kumari	Anju Singh
Neha Varun	Soniya Dhiman	Indira Prasad
	Anubhuti Rana	
<b>Scientist</b>		
Rohini Sehgal (G III)		Arun Kumar (G I)

### HIGHLIGHTS

The Department started Gynaecologic Oncology services at the National Cancer Institute, AIIMS, Jhajjar, in February 2020. Both OPD and OT services were initiated with 24x7 availability of resident doctors and consultants.

### EDUCATION

The first candidates of MCh (Gynaec Oncology) and DM (Reproductive Oncology) passed the examination in December 2019.

### Short Term Training

1. The Department offers short term training in various super specialty subjects like Gynae Endoscopic Surgery, High Risk Pregnancy, Gynae Oncology, Ultrasonography and Infertility. Following Doctors were trained in different disciplines.
2. Dr Beela Venkata, Vishakapatnam, 15 March 2019 to 15 May 2019, Minimally Invasive Gynaecological Surgery
3. Dr Radha Kumari, Vishakapatnam, 15 March 2019 to 15 May 2019, Minimally Invasive Gynaecological Surgery
4. Lt Col Dr Shahnur Chisty, Bangladesh, 17 June 2019 to 16 December 2020, Maternal Foetal Medicine
5. Col Dr Ismat Ara, Bangladesh, 17 June 2019 to 16 December 2029, Maternal Foetal Medicine
6. Dr Poonam Sharma, Haryana, 3 September 2019 to 2 March 2020, Minimally Invasive Gynaecological Surgery
7. Lt Col Abhijeet Kumar, Military Hospital, Ramgarh Cantt, 1 October 2019 to 30 September 2020, Maternal Foetal Medicine
8. Dr Charu Sharma, Rajasthan, 9 December 2019 to 20 December 2019, Maternal Foetal Medicine
9. Dr Meenakshi Gothwal Rajasthan, 9 December 2019 to 20 December 2019, Maternal Foetal Medicine
10. Dr Divya Pandery New Delhi, 23 December 2019 to 5 January 2020, Obstetrics & Gynaecology

### Long Term Training

1. Lt Col Dr Vinod G Nair, Ministry of Defence, New Delhi, 31 October 2017 to 31 October 2019, Minimally Invasive Gynaecological Surgery
2. Lt Col Dr Venus Deshwal, Ministry of Defence, New Delhi, 1 November 2017 to 31 October 2019, Minimally Invasive Gynaecological Surgery

3. Lt Col (Dr) Mhaske Nilesh Madhukar, Ministry of Defence, New Delhi, 15 October 2018 to 14 October 2019, Maternal Foetal Medicine
4. Wg Cdr N Mohana Priya, Command Hospital (AF), Bangalore, 7 October 2019 to 7 October 2021, Minimally Invasive Gynaecological Surgery

### **CMEs/Workshops/Symposia/National and International Conferences**

#### **Organized by the Department**

1. Understanding Doppler in Obstetrics, 28 April 2019, AIIMS, New Delhi
2. VIIth AIIMS Fetal Medicine Workshop, 29 April 2019 to 2 May 2019 AIIMS, New Delhi
3. Bowel Suturing Practicum Workshop for MCh (Gyn Onc) & SRs, 11 May 2019, AIIMS, New Delhi
4. Fetal Echocardiography Workshop, 8 September 2019, AIIMS, New Delhi
5. 41st Annual Conference of Association of Obstetricians and Gynaecologists of Delhi 26-29 September 2019, Nehru Place, New Delhi
6. National Partners Meeting for Quality of Care Work, 16 and 17 December 2019, AIIMS, New Delhi
7. Expert Group Meeting to review undergraduate medical curriculum to strengthen comprehensive abortion care: WHO-SEARO, 23 and 24 December 2019, New Delhi

#### **Organisation of Workshops related to Quality Improvement**

1. First Residents Orientation Workshop for Quality Improvement, 13 April 2019, AIIMS, New Delhi
2. Second Residents Orientation Workshop for Quality Improvement, 11 May 2019, AIIMS, New Delhi
3. Quality Improvement Methodology Workshops, under the AOGD QI committee, 28 July 2019, LHMC, New Delhi
4. Orientation Workshop for National Mentoring for LaQshya identified Medical Colleges led by AIIMS, 30 and 31 August 2019, AIIMS, New Delhi
5. Quality Improvement Methodology Workshops, under the AOGD QI committee, 16 November 2019, MAMC, New Delhi
6. Quality Improvement Methodology Workshops, under the AOGD QI committee, 14 December 2019, AIIMS, New Delhi
7. Third Residents Orientation Workshop for Quality Improvement, 12 December 2019, AIIMS, New Delhi
8. Fourth Residents Orientation Workshop for Quality Improvement, 3 March 2020, AIIMS, New Delhi

#### **Lectures delivered**

**Sunesh Kumar: 1**

**Neena Malhotra: 27**

**Neeta Singh: 8**

**Reeta Mahey: 5**

**Rajesh Kumari: 5**

**Richa Vatsa: 1**

**Archana Kumari: 1**

**Neerja Bhatla: 24**

**Vatsla Dadhwal: 22**

**K Aparna Sharma: 52**

**Vidushi Kulshrestha: 6**

**Jyoti Meena: 7**

**Rinchan Zangmo: 1**

**Neha Varun: 2**

**KK Roy: 23**

**JB Sharma: 17**

**Garima Kachhawa: 9**

**Seema Singhal: 6**

**Juhi Bharti: 8**

**Deepali Garg: 1**

**Anubhuti Rana: 9**

#### **Oral papers/posters presented: 63**

**(Best Poster Award; Dr RP Soonawala Award in Obstetrics; FOGSI-Karan Gupta Memorial prize; First Prize for oral presentation)**

### **RESEARCH**

#### **Funded projects**

##### **Ongoing**

1. A Double-blind, Randomized, Adaptive Design, Controlled Clinical Trial to Evaluate the Efficacy and Safety of Saroglitazar 2 mg and 4 mg Tablets Versus Placebo for Treating Women with Polycystic Ovary Syndrome (PCOS), Garima Kachhawa, Cadila Health Care Ltd., 1.5 years, 2019-2021, Rs 1 lakh
2. A feasibility study to assess the usability, usefulness and adherence to Standard Treatment Guidelines in Indian Healthcare Settings with the use of Elsevier's "Arezzo ®"-a Declarative Artificial Intelligence based IClinical Decision Support System and pathway technology, K Aparna Sharma, NITI Aayog-UK-DIT, 1 year, 2019-2020, Rs 37.83 lakhs

3. A Phase-II/III, Partially Double-blind, Randomized, Active-controlled, Multicentric Study to Assess the Immunogenicity and Safety of SIPL's qHPV Vaccine Administered Intramuscularly in Healthy Volunteers According to a two-dose Schedule to Cohort 1 (Girls and Boys Aged 9-14 years) and a three-dose Schedule to Cohort 2 (Women and Men Aged 15-26 years) as Compared to Merck's HPV6/11/16/18 vaccine (Gardasil®), Neerja Bhatla, Serum Institute of India Pvt. Ltd., Pune, 5 years, 2018-23, Rs 17.47 lakhs
4. A prospective study to develop a preeclampsia prediction model for the Indian Population based on contingent utilisation of historical factors and biophysical and biochemical parameters, K Aparna Sharma, AIIMS, 2 years, 2018-2021, Rs 3.5 lakhs
5. A prospective, open-label, single-center, single arm, post-marketing study to evaluate the efficacy and safety of D-chiro inositol and myo-inositol combination on ovarian function and metabolic factors in women with polycystic ovarian syndrome (PCOS), Garima Kachhawa, Ambrosia Life Science Pvt. Ltd., 2 years, 2019-2021, Rs 12.96 lakhs
6. A Randomized Controlled Trial of a Study Comparing Autologous Rectus Fascia Pubovaginal Sling versus Mid-Urethral Sling versus Burch Colposuspension Procedure in Women with Stress Urinary Incontinence. JB Sharma, ICMR, 3 years, 2019-2022, Rs 65 lakhs
7. A side-by-side comparison of a transvaginal colposcope to standard of care visual inspection in a 100-patient pilot study on women undergoing cervical cancer screening, Neerja Bhatla, Duke University, NC, USA, 3 years, 2017-20, Rs 10.53 lakhs
8. Age specific normograms of Anti-Mullerian Hormone (AMH) and Antral Follicle Counts in infertile and fertile Indian women, Neena Malhotra, CSR funded by RECPDCL, Government of India, 3 years, 2016-2020, Rs 50 lakhs
9. AIIMS National Mentoring Group for Implementation of Laqshya in Medical Colleges: A Quality Improvement Project, K Aparna Sharma, AIIMS-MOHFW-NHSRC Initiative, 1 year, 2019-2020, Funding for travel, stay and Honorarium of Mentors by GOI
10. Circulatory exosomal microRNA as marker of endometriosis-A Pilot Study, Juhi Bharti, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
11. Developing a low cost training model for teaching the skills of screening and treatment of pre invasive lesions of cervix to health care professionals, Seema Singhal, AIIMS, 1 year, 2019-2020, Rs 3.45 lakhs
12. Development of an informative tool for early detection of placenta iron status and risk of malaria: a cost-effective approach to reduce adverse pregnancy outcomes, K Aparna Sharma, DHR, 36 months, 2017-2020, Rs 101.66 lakhs
13. Effect of Yoga on maternal and perinatal outcome on Pregnancy, JB Sharma, DST, 3 years, 2020-2023, Rs 35 lakhs
14. Effectiveness and safety of 2 vs 3 doses of HPV vaccine in preventing cervical cancer: An Indian Multi-centre randomized trial, Neerja Bhatla, WHO-IARC, 11 years, 2009-20, Rs 193.36 lakhs
15. Effects of Non-ionizing Electro Magnetic Field (EMF) on Human Health, JB Sharma, ICMR, 5 years, 2019-2024, Rs 47 lakhs
16. Enhanced, tailored antenatal care to reduce anaemia in pregnancy – The Comprehensive Anaemia Programme and Personalized Therapies (CAPPT) project, Vatsla Dadhwal, DBT, 3 years, 2018-2021, Rs 116.98 lakhs
17. Evaluation of prevalence, regional phenotypic variation, co-morbidities, risk factors and the variation in response to different therapeutic modalities among Indian women with PCOS: A multicenter study across India, Neena Malhotra, ICMR, 4 years, 2018-2021, Rs 37.58 lakhs
18. Implementation of WHO ANC Model using web based application in primary, secondary and tertiary health care levels by trained health care providers, semi-skilled healthcare providers and community health workers, K Aparna Sharma, DST, 2 years, 2019-2021, Rs 19.75 lakhs
19. Rapid point of Care Detection of HPV-Associated Malignancies, Neerja Bhatla, NCI, USA through Arizona State University, USA, 3 years, 2017-20, Rs 90.19 lakhs
20. Role of Endocrine Disrupting Chemicals (EDC'S) in Maternal and Child Health, Garima Kachhawa, ICMR, 3 years, 2018-2021, Rs 35.72 lakhs
21. To evaluate combination of biochemical endothelial markers and arterial stiffness in prediction of preeclampsia, Garima Kachhawa, ICMR (DHR), 3 years, 2018-2021, Rs 73.93 lakhs
22. To evaluate the role of Autologous Bone Marrow derived Stem Cells transplantation for premature ovarian ageing, Neeta Singh, AIIMS, 2 years, 2019-2020, Rs 10 lakhs
23. To investigate the role of natural Killer cells in implantation failure and to study immunomodulatory effect of Intralipids in women with elevated uterine natural Killer (uNK) cells in fresh non donor IVF cycles- A randomized Controlled trial, Neeta Singh, ICMR, 3 years, 2019-2022, Rs 40 lakhs
24. To study the efficacy and safety of Diosmin (900 mg) given along with Traneximic acid (500 mg) and Mefenamic acid (250 mg) in reducing menstrual blood loss in patients of Abnormal Uterine bleeding, JB Sharma, Wallter Bushnel, 4 years, 2016-2020, Rs 17 lakhs



25. To study the prevalence of FSH receptor gene polymorphisms in infertile and fertile Indian women and evaluate response to ovarian stimulation in the infertile subset undergoing IVF/ICSI, Reeta Mahey, SERB, 3 years, 2018-2021, Rs 35 lakhs
26. Validation of Preeclampsia Congo Red Detection kit (Point-of-Care test) : Multicentric trial, K Aparna Sharma, Perkin-Elmers, 2 years, 2019-2021, Funding for Kits

### **Completed**

1. Comparison between two Regiments of Intermittent Ulipristal Acetate treatment in management of uterine fibroids, Garima Kachhawa, Jagsonpal Pvt. Ltd, 3 years, 2016-2019, Rs 4.45 lakhs
2. Development and pilot testing of smart phone based app for non-invasive detection of anaemia in pregnant women, Vatsla Dadhwal, AIIMS-UCL, 1 year, 2019, Rs 5 lakhs
3. Evaluation of Gene Xpert as compared to conventional methods in diagnosis of genital TB among infertile women, JB Sharma, Ministry of Health and Family Welfare (MOHFW), 3 years, 2016-2020, Rs 28 lakhs
4. The expression of Human Epididymis protein 4 (HE4) in ovarian carcinoma and correlation with prognosis, Neerja Bhatla, ICMR, 2 years, 2017-2019, Rs 3.19 lakhs

### **Departmental projects**

#### **Ongoing**

1. A comparative pilot study of TOT vs rectus fascia pubovaginal sling surgery in patients with urodynamically proven SUI
2. A comparison of efficacy of transrectal ultrasonography (TRUS) with magnetic resonance imaging (MRI) in assessing tumor characteristics and metastatic disease in women with cervical malignancy
3. A Cross-Sectional Case- Control Study of Depression in Incontinent Women
4. A prospective randomized control trial to compare the efficacy of darifenacin versus
5. A Prospective randomized controlled trial to study the effect of prenatal yoga on maternal weight gain and psychological stress in pregnancy and its association with pregnancy outcomes: A Pilot study
6. A prospective study of Fetal Cardiac profiling in Appropriately Grown small for Gestational age and Growth restricted fetuses and its association with perinatal outcome
7. A Prospective Study to Evaluate the Effect of Laparoscopic Salpingectomy on Ovarian Reserve in Patients with Hydrosalpinges
8. Agonist (LEUPROLIDE) prior to in-vitro-fertilization (IVF) cycle in women with endometriosis associated infertility – A Randomized Controlled study
9. Assessment of pain score after administration of 1% injection lignocaine versus emla cream in patients undergoing prenatal invasive testing
10. Assisted Reproductive Technique outcomes after growth hormone supplementation in poor responders undergoing IVF – A Randomized Controlled Trial
11. Association of placental volume and vascularisation indices in pregnancy following in vitro fertilisation & adverse pregnancy outcome
12. Comparison of a dual trigger versus a single trigger in antagonist cycles in non donor in vitro fertilization: A Randomised Controlled Trial
13. Comparison of Cervical Shear Wave Elastography, Bishop Score, and Transvaginal Cervical Length Measurement for Prediction of Successful Labor Induction: A Pilot Study
14. Comparison of Direct Trocar and Verres Needle in Establishing Pneumoperitoneum During Laparoscopy: A Clinical Trial
15. Comparison of Insulin Resistance as Marker of Psychological Morbidity (perceived stress, depression and anxiety) and Quality of Life (QoL) Between PCOS and non-PCOS Infertile women- A case control study
16. Comparison of Myoinositol plus Metformin versus Myoinositol alone in PCOS women undergoing ovulation induction and IUI cycles- A Randomized Controlled Trial
17. Comparison of portable advanced intrapartum monitoring system and standard cardiotocography for assessment of fetal heart rate and uterine contractions and correlation with neonatal outcome
18. Comparison of Quality of Antenatal Care delivered using a Web Based mobile Application as compared to the standard care protocol: A Pilot Study

19. Correlation of first trimester metabolic parameters and maternal body fat indices with development of gestational diabetes mellitus in Asian Indian women- A comparative study
20. Evaluation of efficacy and feasibility of implementation of Enhanced Recovery After Surgery (ERAS) protocol in women undergoing gynaecological surgery
21. Evaluation of Hormonal and Metabolic Parameters in Adolescent and Young Indian Girls with Menstrual dysfunction
22. Evaluation of leucocyte and platelet indices in preeclampsia compared to normotensive asian indian pregnant women
23. Evaluation of ovarian reserve after ovarian cystectomy for endometriosis between 2 different surgical techniques
24. Evaluation of Placental Elastography and Placental Vascularisation Index in Fetal Growth Restricted Pregnancy: A Case Control Study
25. Evaluation of surgical resectability of epithelial ovarian, fallopian tube and primary peritoneal carcinoma using CT based reporting system "PAUSE"
26. Evaluation of who and intergrowth-21 fetal growth charts in indian population
27. Feasibility and efficacy of an artificial intelligence based device for screening and management of preinvasive lesions of cervix
28. Feasibility and efficacy of modern minilaparoscopy with 2.9 mm laparoscope for diagnostic and level II gynaecological procedures
29. Feasibility and outcome of minilaparotomy assisted laparoscopic myomectomy for large myomas
30. Feasibility and Outcome of Minilaparotomy Assisted Laparoscopic Myomectomy for Large Myomas
31. Female sexual dysfunction in women with urinary incontinence
32. Prevalence of mental health problems (Anxiety, Depression and Stress Reaction) in mothers of preterm infants admitted to NICU: A Cross Sectional Study
33. Prospective study to develop the current nomogram of semen analysis parameters in fertile Indian males
34. Pulmonary vein pulsatility index cardiac remodelling (global sphericity index) and function (myocardial performance index) in growth restricted and normally grown fetuses
35. Randomised control trial comparing pregnancy outcome using Letrozole versus GnRH agonist HRT for endometrial preparation during frozen embryo transfer cycles
36. Relationship between middle cerebral artery peak systolic velocity and perinatal outcome in intrauterine growth restricted fetuses
37. Relationship of MCA PSV & perinatal outcome in FGR fetuses
38. Role of endometriosis fertility index for prediction of pregnancy outcome with assisted reproductive technology in patients with endometriosis: A Prospective Study
39. Role of Epigenetics in FGTB
40. Role of Gene Xpert in diagnosis of female genital tuberculosis
41. Role of Myoinositol in the Treatment of Gestational Diabetes Mellitus Compared to Medical Nutrition Therapy alone in Asian Indian Women: A Pilot
42. Study of fetal cardiac remodeling and its postnatal persistence in pregnancies after assisted reproductive technologies
43. The Role of Paracervical Block in Reducing Immediate Post Operative Pain after Laparoscopic Hysterectomy: A Prospective Randomised Placebo Controlled Trial
44. To compare letrozole plus gonadotrophins versus gonadotrophins alone for controlled ovarian stimulation among PCOS women undergoing IVF-ICSI cycles- A Randomized Trial
45. To compare the efficacy of Solifenacin and Tolterodine in women with overactive bladder
46. To evaluate exhaled air carbon monoxide level in pregnancy and correlate with maternal and fetal outcome: A Pilot Study
47. To evaluate role of TB loop mediated isothermal amplification assay as compared to other conventional techniques in diagnosing female genital tuberculosis
48. To evaluate the combination of biochemical and biophysical markers in prediction of Preeclampsia
49. To evaluate the role of Serum D-dimer, Neutrophil/Lymphocyte Ratio, Platelet/Lymphocyte ratio and CA125 in assessment of Ovarian masses
50. To look for incidence of Urogynaecological problems in postpartum patients and its relation to mode of delivery
51. Use of normal saline Vs room temperature normal saline as distension medium for pain relief during office hysteroscopy-A Randomised Controlled Trial

### **Completed**

1. A crossover randomized study of portable transvaginal colposcope and hand-held colposcope for evaluation of cervical intraepithelial neoplasia
2. A prospective study of Fetal Cardiac profiling in appropriately grown small for Gestational age and growth restricted fetuses and its association with perinatal outcome.
3. A validation of endometriosis fertility index (efi) for non-art pregnancy in women with endometriosis associated infertility: A prospective study
4. Comparison of various modalities to diagnose occult stress urinary incontinence in pelvic organ prolapse
5. Co-relation of fetal soft tissue thickness measured Sonographically with neonatal body composition
6. Effects of myoinositol in comparison to metformin on art outcome in women with Pcos undergoing in-vitro fertilization (IVF) cycles- A “non-inferiority” trial
7. Placental growth factor, uterine artery doppler and 3D power Doppler of placenta for prediction of pre-eclampsia in high risk pregnancies
8. Prediction of adverse perinatal outcome by Cerebroplacental ratio in term Pregnancy
9. Psychosocial stress and lipid profile as predictors of adverse pregnancy outcomes
10. To evaluate the changes in serum AMH levels in endometrioma patients receiving dienogest therapy in comparison to endometriotic cystectomy
11. To study the role of Myo-Inositol-D-Chiro-Inositol Combination Versus Combined Oral Contraceptives on Clinico-hormonal and Metabolic Parameters in Young Asian-Indian Girls with Polycystic Ovary Syndrome

### **Collaborative projects**

#### **Ongoing**

1. A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus. India, Bangladesh, Sri Lanka, Endocrinology & Metabolism
2. A quasi experimental study to assess the effectiveness of low fidelity simulation on knowledge regarding selected midwifery skills among undergraduate nursing students, College of Nursing
3. A randomized, open label, assessor-blind, parallel group, multi-centre Phase III study to compare the efficacy and safety of r-hMG and HP-hMG in subjects undergoing controlled ovarian stimulation for ART, Bharat Serum Pharmaceuticals
4. Assessment of BRCA and Non-BRCA mutations with multi gene panel testing in patients of ovarian cancer: A cross-sectional observational study
5. Association of HIPEC treatment with expression of T regulatory cells (FOXP3) in epithelial ovarian cancer and its clinical significance, Surgical Oncology
6. Bio-markers for prediction of successful pregnancy in women undergoing IVF: Using the proteomics approach in a North Indian population: hospital-based prospective cohort study, Clinical Epidemiology Unit
7. Detection of HPV circulating tumour DNA in cervical cancer patients before and after chemoradiotherapy by droplet digital PCR, Preventive Oncology
8. Development and Validation of a questionnaire to assess violence against doctors, Medicine
9. Development, Validation and Dissemination of Communication Skills Training Modules (CSTM) for MBBS students and Resident Doctors in India, Medicine
10. Efficacy and safety of ultrasound guided superior hypogastric plexus block in chronic pelvic pain: A Randomized Controlled Study, Anaesthesiology and Pain medicine
11. Endometrial Neurotrophic Factors and Nerve Fibres in Endometriosis Associated Pain, ICMR
12. Evaluation of Gene Xpert as Compared to Conventional Methods in Diagnosis of Genital TB Among Infertile Women, Ministry of Health and Family Welfare
13. External delivery of Cisplatin using Human Papilloma Virus (HPV 16) based nanocarriers for treatment of cervical cancer, Anatomy
14. Genetic determinants of premature and primary ovarian failure, Reproductive Biology
15. Magnetic nanoparticles and quantum dots coupled visual confirmation of cervical cancer cells from cytology sample: A cost effect, quick and suitable test for rural Indian setup, Anatomy
16. Molecular characterization of endometrial cancer and correlation with clinicopathological features, Pathology

17. R2TP complex as a target of human papilloma virus oncoproteins E6 and E7, DST
18. Role of hydrogen sulphide as a pharmacological modulator in adverse pregnancy outcomes like pre-eclampsia, Anatomy
19. STAT3 regulation via miRNAs in ovarian cancer stem cells: A therapeutic approach, Reproductive Biology
20. Status of hydrogen sulphide producing enzymes, matrix metalloproteinases and miR-22 in preeclampsia and their role in modulating trophoblast invasion, Anatomy
21. Study of Citrate Synthase Expression in Human Sperm and Oocyte Activation in Mice, Reproductive Biology
22. To develop a strategy for postpartum follow up of woman with history of gestational diabetes mellitus by using the right test and frequency of testing and developing patient centric approach after incorporating their views, Endocrinology & Metabolism
23. To establish mother-offspring-spouse cohort of women with history of gestational diabetes mellitus to study the vertical and horizontal influence on cardiovascular risk factors, Endocrinology & Metabolism
24. To evaluate the effectiveness of lifestyle intervention program in overweight/obese women (within 2 years of last childbirth) when delivered to them along with their spouse as compared to them alone: Two arm parallel Randomized Control Trial, Endocrinology & Metabolism
25. To evaluate the effectiveness of lifestyle intervention programme in women with history of gestational diabetes mellitus when delivered to them along with their spouse as compared to them alone: Two arm parallel randomized control trial, Endocrinology & Metabolism

### **Completed**

1. Comparing the vascularization potential of MSCs and MAPCs in monoculture and coculture systems with human OECs under normoxia and hypoxia, Stem Cell Facility
2. Effectiveness of Intravenous Ferric Carboxy Maltose (FCM) in improving haemoglobin level among postpartum women with moderate to severe anaemia at a Sub District Hospital, Faridabad, Haryana – An interventional study, Community medicine
3. Effectiveness of intravenous iron sucrose in the treatment of moderate anemia among pregnant women attending sub-district hospital in Haryana, North India, Community medicine
4. Etiological evaluation of nonimmune hydrops fetalis (NIHF), Pediatrics
5. Metabolomics approach for identification of differentially regulated metabolites and pathway in Preeclampsia/ Gestational Hypertension and Gestational diabetes patients during pregnancy, ICGB
6. Psychosocial Dynamics of Pregnancy Loss: Development of a Multidimensional Scale & Development and Efficacy (a Randomized Control Trial) of a Group Psychological Intervention Module, Psychiatry

### **PUBLICATIONS**

**Journals: 57**

**Abstracts: 9**

**Chapters in Books: 13**

### **PATIENT CARE**

#### **Facilities**

Colposcopy	–	806	Cryotherapy	–	23
Thermal Ablation	–	26	LEEP	–	29

### **Community services/camps**

1. Nationwide 48 Cervical Cancer Screening and Treatment Camps conducted in 12 cities in collaboration with AOGIN-India and Kalyanmayee (CSR wing of Airports Authority of India) in 2019-20
2. Public lecture on Cervical Cancer – Role Rotary can play in its prevention at Annual Programme of The Cancer Foundation, Samvednai, 10 May 2019
3. First Prize awarded to Department of Obstetrics & Gynaecology for Poster Presentation on **Cervical Cancer: Prevention by Vaccination and Screening** on 64th Foundation Day Exhibition, AIIMS, New Delhi, 25 September 2019
4. Public Lecture on **Elimination of Cervical Cancer – What Rotary Can Do** at Annual Rotary Convention, Noida, 11 January 2020
5. National Coordinator, FOGSI Breast and Cervical Screening Camps for paramilitary forces by 225 member societies countrywide on International Women's Day, 8 March 2020

**Neena Malhotra**

Expert for Live show (Phone-in) at Good Evening India the most popular programme of Delhi Doordarshan by DD News topic is based on “IVF Treatment” on 21 May 2019 at 4 to 5 pm, New Delhi

**Vatsla Dadhwal**

Invited for the live programme “HELPLINE” Topic-Cervical Cancer on Tuesday i.e. 14 January 2020 from 03:00 to 04:00 pm on AIR FM Rainbow 102.6 MHZ

**Garima Kachhawa**

Successfully running the special Gynae Endo Clinic in the department of Obstetrics and Gynecology where patients are treated in a multidisciplinary manner

As a dedicated faculty with expertise in Minimally Invasive Surgery in Gynaecology, doing laparoscopic and hysteroscopic surgery for gynae patients especially coming for fertility treatment

**Aparna Sharma****Quality Improvement Projects**

1. Implementation of infection prevention bundle to reduce the surgical site infections in caesarean sections
2. Ensure post-test counselling for all patients undergoing prenatal diagnostic invasive procedures in Fetal Medicine OT
3. Ensure timely IUI within 30 minutes of reaching Gynecology OPD after sample retrieval for all patients planned for IUI
4. Reducing the waiting time to initiation of infertility treatment in the Gynaecology OPD
5. Establishing birth companion practice in labour room of a tertiary care centre- A quality improvement initiative

**Community Service**

1. Live Panel discussion on Lok Sabha Television on Safe Motherhood Day, 12 April 2019
2. Panel Discussion on Health Today on Birth Defects on 21 April 2019
3. Testified in high court regarding need and safety MTP at 24 weeks for a fetus with congenital malformation not compatible with life
4. Made Departmental Poster made on Universal Health care theme during Institute Day Celebrations, 24 September 2019
5. Organised the “Safe Abortion Awareness Walk” on the morning of 29 September 2019 as a part of the annual conference of the Association of Obstetricians and Gynecologists of Delhi
6. Participated in Health Camp in Naudera, Pratapgarh, organized by Samudayik Vikas Samiti, on 9 December 2019
7. Part of a live Panel Discussion on Pradhan Mantri Surakshit Matratav Abhiyan on 6 March, 2020 (Friday) from 5.00 pm to 6.00 pm through Lok Sabha Television under Healthy India Programme

**Juhi Bharati**

Participated as national mentor in AIIMS-GOI led mentoring program for implementation of Laqshya labour room guidelines in medical colleges. In this regard, visited SCB Medical College, Cuttack and organized Point of Care Quality Improvement workshop on 15 November 2019 and conducted onsite mentoring visit on 16 November 2019

**Anubhuti Rana****Quality Improvement Projects**

1. Ensure post-test counselling for all patients undergoing prenatal diagnostic invasive procedures in Fetal Medicine OT
2. Ensure timely IUI within 30 minutes of reaching Gynecology OPD after sample retrieval for all patients planned for IUI

**Community Service**

1. Organised the “Safe Abortion Awareness Walk” on the morning of 29 September 2019 as a part of the annual conference of the Association of Obstetricians and Gynecologists of Delhi.

## Details of patient care services during 2019-2020

### Distribution of Patients' attendance by type of clinics

Clinics	Number of days/ week	New patients	Old patients
High risk pregnancy clinic	3	1981	10051
Gynae Endocrine clinic	3	26	144
Gynaecological cancer clinic	2	737	3741
IVF clinic	1	1073	3427
ANC	3	749	3207
URO Gynae clinic	1	170	639
Family Welfare clinic	6	4267	4053

### Maternal Health performance

Type of services	No. of pregnant women benefited
TT 1st dose	1232
TT 2nd dose	1048
No. of pregnant women given IFA tablets	2256
No. of pregnant women detected with Hypertension (BP > 140/90) and managed	300
No. of Eclampsia cases managed	44
No. of pregnant women tested for HB	2461
No. of pregnant women treated with HB<11	604
No. of pregnant women treated with HB<7	20
No. of pregnant women tested for OGTT	2461
No. of pregnant women treated for GDM	505
No. of pregnant women given insulin out of GDM positives	109
No. of pregnant women tested using POC test for syphilis	2461

### List of Minor and Major surgeries performed during 2019-2020.

#### Foetal medicine

Surgery Details	Total
Amniocentesis	252
Amnio-Infusion	1
Amnioreduction	7
Cephalocentesis	1
Chorionic Villus Sampling	312
Cordocentesis	29
Cyst Aspiration	10
Digoxin Instillation	1
Fetoscopy + Laser Ablation	1
Intra Amniotic Infusion	1

Intra Cardiac Kcl	1
Intramymotrial Methotrexate	1
Intrauterine Transfusion	183
Kcl Instillation	2
Ovarian Cyst Aspiration	4
Pleural Fluid Aspiration	2
Radio Frequency Ablation	22
Selective Fetal Reduction	16
Vesicocentesis	4
<b>Total</b>	<b>850</b>

#### Minimally invasive (minor surgeries)

Surgery Details	Major	Minor	Total
B/L Laparoscopic Salpingoophorectomy	1		1
Cystoscopy		37	37
Davydov's Vaginoplasty	1		1
Diagnostic Hysteroscopy		946	946
Hysteroscopic Adhesiolysis	22		22
Hysteroscopic Iucd Removal	16		16
Hysteroscopic Myomectomy	25		25
Hysteroscopic Polypectomy	89		89
Hysteroscopic Septal Ressection	40		40
Hysteroscopy + Ea +Ecc		69	69
Hysteroscopy + Ea/Ecc/Mock Et		50	50
Hysteroscopy + Mirena Insertion		7	7
Hysteroscopy +Mock Et		14	14
Hysterosopy+Mock Et+Ea		21	21
Laparoscopic Cystectomy	126		126
Laparoscopic Rudimentary Horn Excision	7		7
Laparoscopic (R) Hemihysterectomy	1		1
Laparoscopic Abdominal Cerclage	2		2
Laparoscopic Adenomyomectomy	5		5
Laparoscopic Cystectomy	30		30

Laparoscopic Davido Vaginoplasty	3		3
Laparoscopic Davydovs		1	1
Laparoscopic Extrafascial Hysterectomy+Bso+B/L Pelvic Lymphadenectomy	7		7
Laparoscopic Gonadectomy	4		4
Laparoscopic Ligation		20	20
Laparoscopic Myomectomy	50		50
Laparoscopic Ovariopexy	1		1
Laparoscopic Ovariectomy	23		23
Laparoscopic Radical Hysterectomy (Type-C)+Bso+B/L Pelvic Lymphadenectomy	2		2
Laparoscopic Rudimentary Horn Excision	6		6
Laparoscopic Salpingectomy/ Clipping	107		107
Laparoscopic Scar Site Excision	1		1
Laparoscopic Staging		1	1
Laparoscopic lymphadenectomy	1		1
Laparoscopy + Hysteroscopy + Polypectomy		1	1
Laparoscopy + Transverse Septum Excision+Vaginoplasty	2		2
Laparoscopy For Infertility (Diagnostic)	300		300
Laparoscopy For Infertility (Operative)	57		57
Laparoscopy Assisted Vaginoscopic Septal Resection	9		9
Rfa		2	2
Tlh ± Salpingectomy	102		102
Tlh ±U/L Or B/L Salpingo-Oophorectomy	52		52
U/L Laparoscopic Salpingoophorectomy	5		5
Vacc + Ligation		7	7
Laparoscopy- Diagnostic	170		170
Total	1267	1176	2443

#### Open Abdominal Surgeries

Open Abdominal Major Surgery Details	Total
Abdominal Sacrocolpopexy	8
Adenomyomectomy	6



Bilateral Ureteric Reimplantation	1
Caeseran Hysterectomy	1
Cystectomy/Ovariectomy U/L Or B/L Salpingoophorectomy	43
Debulking Surgery For Ca Ovary	93
Extrafascial Hysrectomy+ Bso+ B/L Lymphadenectomy	52
Laparotomy + Cerclage	5
Laparotomy + Tubal Recanalisation	1
Laparotomy for Ectopic	21
Laparotomy+Subtotal Hysterectomy	11
Minilap Ligation	7
Multiple Peritoneal Leiomyoma Excision + Infracolic Omentectomy	1
Laparoscopic Myomectomy	70
Radical Hysterectomy	29
Radical Trachelectomy	1
Rectus Fascia Sling Surgery	2
Scar Site Cyst Excision	1
Staging Laprotomy for Ca Ovary	72
Tah ± U/L /B/L Salpingoophrectomy	51
Tah± Salpingectomy	117
Tubal Recanalisation Surgery	6
Total Abdominal Hysterectomy	59
Total Laparoscopic Hysterectomy	53
<b>Total</b>	<b>711</b>

### Vaginal Surgeries

Surgery Details	Major	Minor	Total
Bursch Colposuspension		2	2
Cerclage	5	4	9
Cervical Cerclage	5		5
Cervical Conisation	1		1
Cervicovagoplasty	2		2
Cystocele Repair	2		2
Cystoscopy	2		2
Eua+Cervicovaginoplasty		4	4
Fothergill's Surgery	3		3
Labial Mass Excision	1		1
Labial Separation	1		1
Laparoscopic Vaginoplasty		3	3
Malecot Change	1		1
McDonalds Cerclage		22	22

Mcindoe's Vaginoplasty		10	10
Ndvh	1		1
Radical Vulvectomy + B/L Inguino-Femoral Lymphadenectomy		3	3
Radical Vulvectomy+B/L Inguino Femoral Lymph Node Dissection	3		3
Rectovaginal Fistula Repair		3	3
Rvf Repair	2		2
Sacrospinous Fixation	4		4
Tvt-O	9		9
Vaginal Hysterectomy		7	7
Vaginal Hysterectomy + Pfr	40		40
Vaginal Sacrospinous Fixation		5	5
Vaginoplasty	15	1	16
Vaginoscopy		1	1
Vesicovaginal Fistula Repair		1	1
Vulval Hematoma Drainage		3	3
Vvf Repair	1		1
With Anterior Colporrhaphy		6	6
With Anterior Colporrhaphy and Posterior Colpo-Perineorrhaphy		2	2
With Posterior Colpo-Perineorrhaphy		4	4
<b>Grand Total</b>	<b>98</b>	<b>81</b>	<b>179</b>

#### Other Surgeries

Other Surgeries	Major	Minor	Total
Abdominal Scar Endometrioma Excision		6	6
Adhesiolysis		16	16
Bartholin Cyst Excision		20	20
Biopsies (Cervical/Vaginal/Vault/Vulval)		79	79
Biopsies (Vulval/Cervical/Vault)		18	18
Cerclage	6	2	8
Cervical Polypectomy		8	8
Conization		2	2
Cpt Repair	3		3
Cs Scar Ectopic Excision	1		1
Cyst Aspiration		9	9
Cystoscopy		2	2
Cystoscopy + Cocktail Therapy		2	2
Cystoscopy + Vaginoscopy		1	1
Ea + Ecc +Pap Smear		260	260
Ea+Ecc		290	290
Ea+Ecc+Polypectomy		14	14

Ea+Mock Et		1	1
Epidural Analgesia		6	6
Eua + L° + H° + Hematometra and Hematocolpos Drainage	1		1
Examination Under Anaesthesia	8		8
Exploratory Laparotomy + Ascitic Fluid Cytology + Peritoneal Biopsy	1		1
Hematoma Drainage	2		2
Hysteroscopy+Ea+Ecc+Polypectomy		4	4
Iucd Removal		10	10
Lap Fimbrioplasty		2	2
Leep		16	16
Malecot Change		3	3
Malicot Removal		1	1
Manual Removal of Placenta	1		1
Mirena Insertion		69	69
Mirena Removal		1	1
Mould Change		47	47
Myomectomy		11	11
Open Endometriotic Cystectomy	8		8
Open Uterosacral Plication	2		2
Ovarian Drilling	6		6
Ovariectomy	6		6
Pap Smear		28	28
Pelvic Lymphadenectomy	1		1
Peripartum Hysterectomy	2		2
Polypectomy		26	26
Pyometra Drainage		24	24
Rectus Fascia Sling Surgery		4	4
Resuturing		74	74
Rv Repair		1	1
Septal Resection		19	19
Therapeutic D and C		3	3
Transverse Vaginal Septum Excision	5		5
Transverse Vaginal Septum Excision	1		1
Tubal Cannulation		8	8
Tubal Clipping for Hydrosalpinx	7		7
Tuboplasty	3		3
Tvt-O / Tot		2	2
Vacc		31	31
Vacc+Cu-T		1	1
Total	64	1121	1185

## Details of various procedures carried out in Gynae OPD

### Minor:

No. of MTP	577
PNDT for pregnancies	10837
PNDT for Obstetrics	5332
Gynae Ultrasound	1658
F-form USG	286

### Delivery Details:

2. Major (LSCS)	3. 1341
4. Minor (Vaginal+Foreceps)	5. 1120
6. Total deliveries	7. 2461

## Post Partum Programme

### Achievements of different Family Planning Methods, Post Partum Programme

Methods	2018-2019	2019-2020
Cu.T	1262	1001
DMPA Injection 1st dose	118	120
DMPA Injection 2nd dose	16	33
DMPA Injection 3rd dose	8	6
DMPA Injection Fourth and more	4	6
Oral pills	446 pkts	811 pkts
CHAYYA	30	35
Conventional Contraceptives	75500 pieces	81550 pieces
Tubectomy	676	526

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Sunesh Kumar** is Peer Reviewer “European Journal of Obstetric, Gynaecology and Reproductive Medicine”; Member, Interview Board for the post of Medical Officer, Union Public Selection Commission (UPSC), New Delhi; Member, Selection Committee for selection of Faculty in Gynae at PGI, Chandigarh; Member, Selection Committee for the selection of Faculty in Gynae at PGIMER, Rohtak; Member, ICMR Group on Research in Reproductive Medicine; Member, ICMR Research Advisory Committee for Model Rural Health Research Unit (MRHRU), Rajasthan; Member, Bureau of Indian Standard, Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India; Member, DBT Sub-Group Committee for finalizing the REACH Scheme for Biotechnology based Programme for Women; Member, Technical Specification/Selection Committee at AIIMS, New Delhi; Member, Staff Council Committee at AIIMS, New Delhi; Member, Ethics Committee, AIIMS, New Delhi; Member, Subcommittee on Cancer Cervix, Indian Council of Medical Research, New Delhi; Member, ICMR Committee on Healthcare Quality and Patient Steering Advisory Committee; Member, ICMR Task Force Committee on Implementation of Quality Care in India; Member, Committee to review of Fellowship Programs at AIIMS, New Delhi; President, Association of Obstetrics and Gynaecologist of Delhi (2019-2020).

**Professor Neerja Bhatla** was awarded ISCCP Excellence Award 2019 for contributions in the field of cervical cancer prevention; IOG Dr Styra Paul Awards 2019 for Best Original Study. Has been Member, WHO Expert Group and Working Groups for Cervical Cancer Elimination; Council Member, Asian Society of Gynecologic Oncology and National Academy

of Medical Sciences, India, 2019-21. Membership of Programme Advisory Committee, Scientific Advisory Committee, Research Advisory Committee, Government Advisory: Member, Programme Advisory Committee—XXIII FIGO World Congress 2021, Australia, Scientific Track – Gynecological Oncology; World Congress, International Federation of Cervical Pathology & Colposcopy (IFCPC) India 2020. Member, Scientific Advisory Committee—Scientific Advisory Board, ICMR; Strategic Advisory Group of Experts (SAGE) Working Group on HPV vaccines, WHO; National Technical Advisory Group on Immunization (NTAGI); Chair the First Task Force meeting on optimizing the use of Cesarean section in India: ICMR Hqrs, New Delhi, 12 April 2019; Technical Advisory Group for NPCDCS (National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke) e-learning Course for medical officers to prevent and manage NCDs, 16 May 2019; Scientific Advisory Committee Meeting, KnIT program, BIRAC. Member, Government Advisory: Technical Advisory Group of India Cancer Research Consortium, ICMR; Assessor for NBE Accreditation of (i) Gynaecologic Oncology, (ii) Obstetrics & Gynaecology; Member, General Council of Srimanta Sankaradeva University of Health Sciences, Guwahati, Assam. Member, Research Advisory Committee: National Institute of Research in Reproductive Health (NIRRH), ICMR, Mumbai; Gynaecology DMG Guidelines and research group, National Cancer Grid, TMH, Mumbai. New Teaching and Service Initiatives: Gynaec Oncology Incharge, AIIMS Jhajjar. Initiated daily OPD and twice weekly OT services, including MIS services. Development of Guidelines: ICMR Guidelines on Management of Ovarian Cancer, New Delhi, 2019; WHO guidelines for Screen and Treat for cervical pre-cancer, 2020. Development of New International Collaborations: Duke University, North Carolina, USA – Development of a self-screening tool for cervical cancer screening; University College London, UK – Evaluation of genetics of ovarian cancer in India.

**Professor Neena Malhotra** was awarded the Overseas Travel RCOG's Award by Royal College of Obstetricians and Gynaecologists, London for the academic year 2019-2020 held on 20 June 2019, assisted conception unit at Birmingham women's hospital Birmingham, UK.

**Professor Vatsla Dadhwal** was Member SEC (Reproductive & Urology); Hon. Secretary Association of Obstetricians & Gynecologists of Delhi; Member for AEFI committee; Assistant Editor Journal of Fetal Medicine (issue on Infections); Examiner; Invited as Faculty to participate in the current series of post exam review of question paper workshop on 7 January 2020 at National Board of Examinations Dwarka office, PSP Area, Sector-9, opp. District Court Dwarka, New Delhi; Fellowship in Maternal Fetal Medicine-AIIMS; Co-Guide; Comparison of quality of Antenatal care delivered using a web based mobile application as compared to the standard care protocol: A pilot study; A Prospective randomized controlled trial to study the effect of prenatal yoga on maternal weight gain and psychological stress in pregnancy and its association with pregnancy outcomes: A pilot study; Completed Thesis—Prospective study of association between placental volume and vascularisation indices in pregnancies conceived by In Vitro Fertilisation compared to those conceived spontaneously and adverse pregnancy outcomes; To Evaluate the changes in Serum AMH levels in Endometrioma Patients receiving Dienogest therapy in comparison to Endometriotic Cystectomy: A pilot study; A Prospective Study of Fetal Cardiac Profiling in Appropriately Grown, Small for Gestational age and Growth Restricted Fetuses and its association with perinatal outcome; A Study to Evaluate Genetic Abnormalities in Patients with Recurrent Spontaneous Abortions (RSA).

**Professor Neeta Singh** is External Expert for Board of Studies in Deptt. of Obst & Gynae, AIIMS, Rishikesh on 15 April 2019; Awarded the fellowship of ICMR-DHR for UCL London, UK for Reproductive Medicine, 3 June 2019 – 8 August 2019; As an Adviser in “Personality Test (PT) Board for Combined Medical Services Examination 2019”, UPSC for assessing candidates who have qualified in the Combined Medical Services Examination, 2019 from 30 October 2019 – 1 November 2019 at UPSC office, New Delhi; Expert External Subject Expert in the panel of Standing Selection Committee for recruitment of Faculty position in the Department of Obstetrics & Gynaecology at AIIMS, Bhopal (MP) on 17 December 2019; Awarded Dr (Mrs) Mridula Kamboj Memorial Oration-2020 on recognition of outstanding contributions in the field of Reproductive Health by Indian Society for the Study of Reproduction and Fertility (ISSRF).

**Dr K. Aparna Sharma** was awarded John J Sciarra IJGO Prize Paper Award, Honorable Mention 2019 for Best Clinical Research Article from a Low/Middle-Income Country. (International Journal of Gynaecology and Obstetrics); Recipient of the FOGSI-Imaging Science Committee Award for the year 2019; Observership in Fetal Medicine at Harris Birthright Centre, King's College Hospital, London as a part of FOGSI-IAEC-SUN International Travelling Fellowship 5-20 June 2019; Second prize for the Departmental Poster made on Universal Health care theme during Institute day Celebrations 24 September 2019; Certificate of Appreciation from SET facility, AIIMS for involvement, advancement and innovation of SET Facility Programs; Adjunct Faculty for Institute of Health Improvement: Care International – Bihar MCH Initiative. Program Advisory Committee (Government): Part of the National Mentoring Group of Laqshya Labor room quality improvement program of MOHFW, GOI; Leading the AIIMS National Mentoring Group for Implementation of Laqshya in Medical Colleges in Ten Medical Colleges in Nine states by a network of 25 mentors from all over the country. Government Advisory Committee: Member, Expert group to review Antenatal Care Guidelines, MOHFW, GOI; Member, Expert group to review Caesarean Section Audit Form, MOHFW, GOI; Member National level Consultation Workshop on Hysterectomy on the 1 August 2019; Member Ethics Committee for draft MTP Amendment Bill, 8 August 2019; Member, Expert Group for Technical Deliberation for Preconception Care – 5 September 2019, MoHFW, GOI; Member, National Techni-

cal Advisory Group on Immunization (NTAGI), Sub Group on Maternal Immunisation; Member, Expert group to review Technical Guidelines for High Risk Pregnancies, MOHFW, GOI; Nominated for Medical Experts for District Advisory Committee, PC & PNDT Act, South District, New Delhi; Member, TRG on Sustainable Model for LaQshya, Labor Room Quality Improvement Program, MOHFW, GOI; Member, TRG on Potential areas of research under LaQshya, MOHFW, GOI; Member, Expert group to review Respectful Maternity & Newborn Care guidelines and training package, MOHFW, GOI. Scientific Advisory Committee: Executive Committee member, Society of Fetal Medicine (SFM), India, 2020-2022; Joint Secretary, Association of Obstetricians and Gynecologists of Delhi (AOGD), 2019-2020; Co-Chairperson, Quality Improvement Committee, AOGD, 2019-2021; North Zone Coordinator, Safe Motherhood Committee FOGSI, 2020-2022; Co-Convener, Special Interest Group on Early Pregnancy, Indian Fertility Society, (IFS) 2020-2022; Scientific Committee, Breaking Silos Across: Adolescence To Menopause, 10 and 11 August 2019; Program Advisory Committee, BMJ-IHI International Forum On Quality And Safety In Health Care, 2020; Expert Reviewer Group supporting the India-UK Healthcare Artificial Intelligence Catalyst (HAIC), to validate the version of Arezzo which is being adapted for the Indian public health system led by NITI Aayog (2019-2020); Member of Genetics and Fetal Medicine Committee of FOGSI 2019-21; Participant, South-East Asia Regional Technical Advisory Group (SEAR-TAG) towards reduction of maternal mortality and stillbirths in the context of Universal Health Coverage, 25-27 November 2019, New Delhi. Member of Institute Committees (AIIMS): Member, Hospital Quality & patient safety Committee and Creation of Quality & patient Safety Cell at AIIMS Hospital under Quality and Patient Safety Programme.

**Dr Garima Kachhawa** is Project Secretary- Post Partum Programme w.e.f. 1 February 2018 for a period of 2 years; Guest Editor in AOGD BULLETIN Volume 19 January 2020, Monthly issue 9. Dedicated Issue: Gynae Endocrinology. EDUCATION: Undergraduate: Lecture-2; Postgraduate: Guide and Perceptor for Seminar and journal club. Departmental Works: Compiled an Evaluation Proforma for assessment of Clinical Skills of Junior Residents. This helped us to provide a structured and individualized training of JRs for surgical and Clinical Skills; Also developed a Skill Enhancement Proforma for Senior Residents to track their learning and to provide individualized training in the department.

**Dr Reeta Mahey** participated as external examiner for MBBS supplementary exam (3rd Professor) at AIIMS, Rishikesh (26 April 2019); Participated as consultant in free Health Checkup Camp organized by Tibetan Patient Trust (28 February to 3 March 2020) held at Dalai Lama Temple, Macleod Gunj, Dharamshala.

**Dr P. Vanamail** co-authored publication Award John J. Sciarra IJGO Prize Paper Award, Honorable Mention 2019 for Best Clinical Research Article from a Low/Middle-Income Country (International Journal of Gynaecology and Obstetrics); IJMR Journal Reviewer; ICMR Expert Committee member for Data-base Management System.

**Dr Vidushi Kulshrestha** is Co-Editor, AOGD Bulletins for the year 2019-2020; Awarded Dr R D Pandit Research prize as a co-author on research titled, 'To evaluate the role of Gene Xpert in diagnosis of female genital tuberculosis as compared to other conventional diagnostic techniques' at 63rd AICOG on 2 February 2020 held at Lucknow; Awarded prize for the best poster as a co-author on 'Bladder an Innocent Victim' at 63rd AICOG on 2 February 2020 held at Lucknow. Facilitator/ Faculty for the following: Expert- Core group Meeting for revision of BEmOC curriculum (a NHSRC, MoHFW, GOI initiative); National Mentor for LaQshya- Labour room & Maternity OT Quality Improvement Initiative for AIIMS, Jodhpur; Facilitator for Quality Improvement Workshop held at AIIMS Jodhpur on 23 and 24 December 2020; Faculty, Medical Board, AIIMS for new entrants for MBBS, B.Sc. Nursing, in courses. (2014 onwards). Quality improvement (QI): Instrumental in Quality Improvement Initiative of the Department. SET facility team member: Drafted skill module for conduct of vaginal delivery for UG teaching. Co-moderated Quiz on General Gynaecology at 63rd AICOG held on 29 September 2019. EDUCATION: Undergraduate Lectures: Physiology of menstruation; Normal & abnormal puberty (VI Semester), 4 January 2020; Benign and premalignant lesions of uterus (VIII Semester), 6 January 2020; Postgraduate Teaching: Seminar Guide: Post-partum Hemorrhage; Twin Pregnancy: Complications; Post-datism/IUD/Still birth; Preceptor for Journal club: NEJM; Contraception. 41st Annual Conference of Association of Obstetricians and Gynaecologists of Delhi, Organised by Department of Obstetrics and Gynaecology AIIMS, New Delhi, 28 and 29 September 2019 (Member-Organizing Committee; Co-Editor- Conference Proceedings; faculty In-charge of Paper/Poster Presentation).

**Dr Seema Singhal** was awarded UICC technical fellowship award and visited Memorial Sloan Kettering cancer center, New York, USA from 25 October 2019 to 28 November 2019; Received first prize in ASGO talent show at biennial meeting of Asian society of gynaecologic Oncologists in Incheon Korea; Expert member Subject expert committee (SEC) New Drug Division DCGI; Elected as Executive member AOGIN India 2020-2022; Guest Editor of AOGD bulletin vol 19(10) February 2020, dedicated issue on Gynecological cancers; Editor AOGIN India 2017-2019; Honorable Mention in John J Sciarra IJGO Prize Paper Award for Best Clinical Research Article from a Low/Middle-Income Country. Documents drafted: Revised curriculum for LSAS. Life saving anaesthesia Skills training program under MOHFW for imparting Anesthesia skills to Medical Officers. Expert member for drafting Revised EmoC curriculum.

**Dr Rajesh Kumari** 41st Annual Conference of Association of Obstetricians and Gynaecologists of Delhi, Organised by

Department of Obstetrics and Gynaecology AIIMS, New Delhi, 28 and 29 September 2019. (Member-Organizing Committee; Co-Editor- Conference Proceedings; faculty In-charge of Urogynecology Preconference workshop); Clinical secretary of AOGD 2019-2020; .1st Prize AIUG 2019 15-17 November KIMS Hospital 1st prize FECAL INCONTINENCE- Experience from tertiary care center. Facilitator/ Faculty for the following: Faculty, Medical Board, AIIMS for new entrants for MBBS, BSc Nursing, in courses (2014 onwards); Joint Organising secretary in Urogynecology Workshop organised by OBG AIIMS, New Delhi on 26 September 2019; Examiner in UROGYNECOLOGY FELLOWSHIP PROGRAMME; MBBS Examiner as external examiner at Dr SN Medical College, Jodhpur on 9 to 11 February 2020.

**Dr Jyoti Meena** received Dr RP Soonawala Award in Obstetrics for Best Oral paper at 33rd Annual Conference of RCOG held at Kolkata; FOGSI-Karan Gupta Memorial prize for best poster in miscellaneous group at 63rd All India Congress of Obstetrics and Gynaecology held at Lucknow; Felicitated for contribution to e-SET facility on 5 December 2019.

**Dr Juhi Bharti** participated in Organizing (as Joint Secretary) FOGSI Conference “Breaking Silos Across: Adolescence to menopause” on 10 and 11 August, New Delhi.

**Dr Rinchan Zangmo** was awarded Member of Royal College of Obstetricians & Gynaecologists (MRCOG) on 15 February 2020.

**Dr Deepali Garg** was awarded Fellowship of Indian college of obstetrician & gynaecologists (FICOG); Awarded Fellowship of Indian college of maternal and child health (FICMCH).

**Dr Archana Kumari** was awarded Dr Kamini Rao Orator award for North Zone for 2020; Awarded Fellow of Indian College of Obstetricians & Gynaecologists (FICOG) on 1 February 2020. Documents drafted: Module named “Interpretation of CTG” for SET Facility.

**Dr Anubhuti Rana** is National mentor for RIMS, Ranchi as a part of AIIMS National Mentoring Group for Implementation of Laqshya in Medical Colleges in Medical Colleges.

## 9.25. Orthopaedics

### Professor and Head

Rajesh Malhotra

### Professors

Hira Lal Nag  
Shah Alam Khan

Ravi Mittal  
Vijay Kumar

### Additional Professors

Bhavuk Garg

Mohd. Tahir Ansari

### Assistant Professors

Vijay Kumar Digge  
Vivek Shankar

Vikrant Manhas  
Venkatesan Sampath Kumar

### HIGHLIGHTS

Excelling in the trinity of mission of AIIMS, department of orthopedics was rated the best in the country this year as well maintaining the zeitgeist of last decade. We have been the leaders in the field of orthopedic education country-wide besides providing best undergraduate and postgraduate training. Our regular cadaveric courses, workshops and conferences remained most sought-after in the field last year and covered all subspecialties of orthopedics.

The department witnessed an unparalleled rise in orthopedic research last year and had several research projects with national as well as international funding. We developed dedicated 'state of the art' research labs namely 3D printing lab, Genetic lab, Gait lab, which provided us both national and international recognition in terms of several papers of PubMed repute, papers presentation and awards.

Regarding patient care, our department grabbed unmatched skills and facilities and performed all sorts of complex orthopedic problems. Our new orthopedics operation theatres became best equipped, comparable to any advanced center in the world. We recently introduced robotic facility, EOS facility, advanced intraoperative imaging facilities and many other advanced technologies which also carry the tag of first and only facility in the country. Our "SATHI" and "SSHARA" services are first one of its own kind service in India to cater primary and secondary prevention of fragility fractures.

### EDUCATION

- Innovative and comprehensive fellowship training in Adult reconstruction, Arthroscopy, Pelvic acetabular trauma and Orthopedic oncology
- Objective and comprehensive training of postgraduates and undergraduates in the form of seminars, bedside teaching, case discussions, real life case scenarios, journal clubs

### CMEs/Workshop/Symposia/National and International Conferences

1. Current Concepts in Trauma 2019, Trauma Society of India, 5-7 April 2019, Gurgaon
2. Oxford Instructional Course, 26 and 27 April 2019, New Delhi
3. Fourth AIIMS ACSST Pelvic Acetabulum Workshop, JPNATC, 27 April 2019, New Delhi
4. Round Table Meeting on Promulgation of Emergency Nursing in India, AIIMS, 2 August 2019, New Delhi
5. Workshop on Addressing Emergencies & Critical Care under National Health Mission, Ministry of Health and Family Welfare, Govt. of India, 2 August 2019, New Delhi
6. Workshop on Unicompartamental Knee Replacement during Current Concepts in Arthroplasty, 2019, 16 August 2019, AIIMS, New Delhi
7. Current Concepts in Arthroplasty 2019, 17 and 18 August 2019, AIIMS, New Delhi
8. Best of Orthopaedic Techniques, 13 and 14 September 2019, Aerocity New Delhi
9. AIIMS Arthroplasty Program, 7 and 8 November 2019, AIIMS, New Delhi

### Lectures delivered

**Rajesh Malhotra: 45**

**HL Nag: 4**

**Ravi Mittal: 16**

**Shah Alam Khan: 4**

**Vijay Kumar: 21**

**Bhavuk Garg: 28**

**Mohd. Tahir Ansari: 6**

**Vijay Kumar Digge: 8**

**Vikrant Manhas: 5**

**Venkatesan Sampath Kumar: 7**

**Oral papers/posters presented: 10**



## RESEARCH

### Funded projects

#### *Ongoing*

1. Comparative Evaluation of Genetic and Biochemical profile in postmenopausal osteoporotic and age matched healthy women, Rajesh Malhotra, ICMR, 3 years, 2019- 2022, Rs 139 lakhs
2. A prospective randomized study to compare the systemic emboli in computer assisted navigation vs conventional surgical technique of knee replacement, Rajesh Malhotra, ICMR, 3 years, 2019 to 2022, Rs 50 Lakhs
3. Prospective, Multi-centre Outcomes Study of Persona Knee System in Total Knee Arthroplasty. Study Protocol # CSA2014-02K, Rajesh Malhotra, Zimmer, 7 years, 2015 to 2022, Rs 24 lakhs
4. A prospective randomized study to compare the systemic emboli in computer assisted navigation vs conventional surgical technique of knee replacement, Rajesh Malhotra, ICMR, 3 years, 2019-2022, Rs 50 lakhs
5. Understanding differences in the patterns of osteoarthritis in Indian and Western population: Impact on symptoms, treatment options and their outcome, Rajesh Malhotra and Vijay Kumar, DST-UKIERI, 3 years, 2017-2020, Rs 88 lakhs
6. Treatment response evaluation in extra spinal musculoskeletal tuberculosis using molecular imaging (PET-CT), Shah Alam Khan, ICMR, 3 years, 2018-2020, Rs 8 lakhs
7. Surveillance in Paediatric Bone Sarcomas, Shah Alam Khan, Jiv Daya Foundation, USA, 3 years, 2016-2019, USD 20,000
8. Study of Osteogenic Humoral Factors on Fracture Healing in Patients with Head Injury: decoding the Mystery, Vijay Kumar Digge, DST, 3 years, 2018-2021, Rs 49 lakhs
9. Comparative evaluation of genetic and cytokines profile in age matched Indian subjects with and without knee osteoarthritis, Bhavuk Garg, ICMR, 3 years, 2017-2020, Rs 140 lakhs
10. A Prospective, Active-controlled, Randomized, Double blind, Multicentre, Phase III Study to Compare the Safety and Efficacy of Biosimilar Denosumab of Enzene Biosciences Limited versus Innovator Denosumab in the Treatment of Postmenopausal Osteoporosis, Bhavuk Garg, Alkem Laboratories, 2 years, 2018-2020, Rs 8 lakhs
11. Bone health assessment in transgender population: A pilot study, Bhavuk Garg, ICMR, 2 years, 2018-2021, Rs 72 lakhs
12. Designing of patient specific Total Elbow Replacement prosthesis for Indian Population, Bhavuk Garg, ICMR, 3 years, 2019-2022, Rs 84.63 lakhs
13. Use of O-arm navigational technique versus Free hand standard method in pedicle screws placement for the treatment of Spinal disorders: A Randomized controlled trial, Bhavuk Garg, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
14. Evaluation of Immune Checkpoints in tumour micro-environment of Osteosarcomas, Venkatesan Sampath Kumar, AIIMS, 2 years, 2018-2020, Rs 5 lakhs

#### *Completed*

1. CV185-158: Phase IV, Open-Label, Multi-center Study to Evaluate the Safety of Apixaban in Indian Subjects Undergoing Elective Total Knee Replacement or Total Hip Replacement Surgery, Rajesh Malhotra, PPD, 4 years, 2015 to 2019, Rs 33 lakhs
2. Epigenetic insight looking at possible differential miRNA expression among osteoporotic elderly and young patients with hip fractures, Bhavuk Garg, AOTRAUMA Asia Pacific Research Grant, 2 years, 2018-2019, Rs 1.7 lakhs
3. Anatomy of the apical pedicles in scoliosis, Bhavuk Garg, AIIMS, 1 year, 2019-2020, Rs 1.25 lakhs

### Departmental projects

#### *Ongoing*

1. A Prospective Randomized Study to compare Computer Assisted Navigation Vs Free Hand Surgical Technique of Total Hip Replacement
2. Double Blind Randomized Control Trial to Assess the Outcome of Open Vs. Arthroscopic Excision of Dorsal Wrist Ganglion
3. Prospective Observational study of Transfusion Practices in Severely injured Trauma Patients in Emergency department at Level I Trauma Centre
4. Delay in Surgery after Hip Fracture: Reasons and Impacts on Outcomes
5. To evaluate the tunnel/socket morphology in an arthroscopic ACL reconstruction with two different method of graft fixation methods: A prospective randomized control trial
6. Determination of accuracy of implant positioning and limb alignment in medial unicompartmental knee arthroplasty with computer navigation- an ambispective study
7. Functional and radiological outcomes following plating for displaced fractures of patella
8. Functional and radiological outcomes of fixed versus mobile bearing navigated UKR in patients with AMOA: A RCT

9. Double blind randomised control trial to assess the outcome of pulley release and pulley reconstruction for de quervain's tenosynovitis
10. Higher Forgotten Joint Score In Cruciate Retaining V/S Posterior Stabilising Total knee arthroplasty
11. Double blind randomised control trial to assess the outcome of open vs arthroscopic excision of dorsal wrist ganglion
12. Functional Impact of Congenital Hand Differences: Initiation and maintenance of the congenital Upper Limb Differences (could), Registry at All India Institute of Medical Sciences (AIIMS)

#### **Completed**

1. A prospective randomized clinical trial to compare clinical, fluoroscopic and radiological outcome between medial pivot and lateral pivot knee
2. A Prospective Randomized Study to Evaluate Kinematic and Mechanical Alignment in Total Knee Arthroplasty
3. Molecular imaging of tuberculosis
4. Implant migration analysis using RSA and clinic-radiological outcome in Indian population undergoing mobile bearing UKR
5. A Prospective Randomized Study to compare Computer Assisted Navigation Vs Free Hand Surgical Technique of Total Hip Replacement
6. A Prospective Randomised Study To Compare Large Console, Image Less Computer Assisted Navigation Vs Accelerometer Based Portable Navigation Technique Of Total Knee Replacement

#### **Collaborative projects**

##### **Ongoing**

1. Understanding Differences in the Patterns of Osteoarthritis in Indian and Western Population: Impact on Symptoms, Treatment Options and Their Outcome, UKIERI-DST
2. The safety and efficacy of transcatheter arterial embolization in moderate osteoarthritis and medial knee pain, Cardiovascular Radiology and Endovascular interventions

##### **Completed**

1. Safety Suitability and Clinical Effectiveness of Unicompartmental Knee Replacement in the Indian Population, DST-UKIERI
2. Biomechanical Investigation of Extracorporeal Irradiation Therapy in Malignant Bone Tumors, IIT, Delhi
3. Quantification of tendon injuries using high frequency ultrasonography in upper limb injuries, Radiology

#### **PUBLICATIONS**

**Journals: 45**

**Chapters in Books: 4    Books: 1**

#### **PATIENT CARE**

- The Orthopedic outpatient and operative care to poor patients - RAAHAT Camp, Mandla (M.P.) on 10-13 November 2019
- Member of committee constituted by AIIMS for Rastriya Arogya Nidhi (RAN) to provide financial assistance for poor patients
- Installation of state of the art modular Ortho OT complex
- Gait lab
- Genetic Lab
- O arm facility
- EOS facility
- SATHI and SSHARA services
- New OPD block
- Robotic spine surgery
- Morning General OPD, twice a week
- Running "Sports Clinic" in the afternoon, once a week
- Attending the injured athletes at Medical Centre, J.L. Nehru Stadium, New Delhi, in the afternoon, once a week

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Rajesh Malhotra** was awarded best paper award for the paper entitled: “Influence of Etiology and Onset of Deformity on 3D Gait Pattern of Patients with Complex Spinal Deformity” during the 3rd International Conference on Spine & Orthopaedic Biomechanics on 26-28 April 2019 in New Delhi; Awarded IMA Doctor’s Day Award 2019 for Most Distinguished Services during the Doctor’s Day Celebration on 1 July 2019 at IMA, New Delhi; Awarded the CME Educator Award (Individual) during CME Excellence Summit and Awards with media partner CNN News 18 in New Delhi on 7 August 2019; Awarded First Prize in the Exhibition Category- Universal Healthcare during 64th Foundation Day Celebration at AIIMS, New Delhi on 25 September 2019; Awarded First Prize for Hindi Dictation during the Hindi Week Celebration at AIIMS, New Delhi from 2 to 14 September 2019; was **Member** of 2nd Meeting of the Technical Expert Committee (TEC) on “Biomedical Engineering (Medical Devices, Diagnostics and Implants) on 11 July 2019 at Department of Biotechnology, New Delhi; Expert for Scientific and Technical Advisory Group (STAG) meeting of medical biotechnology of DBT on 14 and 15 October 2019; Expert Member, Technical /Advisory Core Committee on International Cooperation- Sweden, Finland, France of DBT; Expert, Expert Committee for shortlisting of proposals received against call for proposals on “Nanotechnology interventions in Dentistry and Bone diseases” and “Nanotechnology based tools to enhance agricultural productivity”; Third Technical Expert Committee on Biomedical Engineering (Devices, Diagnostics and Implants); Technical Expert Committee meeting on “Nanobiotechnology”; Bionest Committee at AIIMS, New Delhi; **Co-Chairman**, National core group of experts for Strengthening Emergency and Trauma Care Services of Ministry of Health & Family welfare; Editorial Board Member, Medical Journal of Dr DY Patil Vidyapeeth; Editor, Journal of Clinical Orthopaedics and Trauma; Expert for Selection Committee for the interview of Nursing Tutor, scientist I (Biostatics) and Clinical Psychologist on 16 April 2019 at AIIMS, New Delhi; Chief Guest in ASAMI Indian Basic Ilizarov and Deformity Course in New Delhi on 8 and 9 June 2019; Invited by Commandant, Army Hospital to perform Reconstruction using Allograft surgery for Revision of Failed Distal Femoral Megaprosthesis at Army Hospital (R&R), Delhi Cantt on 13 June 2019; Visit to Leeds, UK under the DST-UKIERI Project entitled: “Understanding differences in the patterns of osteoarthritis in Indian and Western population: Impact on symptoms, treatment options and their outcome” on 26-29 June 2019; Chief Guest in DOA-MIDCON 2019 in New Delhi on 7 July 2019; Guest of Honour in 8th Annual Convocation of Academy College of Emergency Experts at AIIMS, New Delhi on 3 August 2019; Visit to Narita, Japan under “Human resources Exchange Program in Trauma and Acute Medicine” on 19-24 August 2019; Guest of Honour in Swatchh Yamuna Abhiyan at Constitution Club, New Delhi on 25 December 2019.

**Professor Hira Lal Nag** was Chairman, Sports Medicine Section, Central working committee of IOA; Editorial board member, Journal of arthroscopy and sports medicine, official journal of IAS; Expert Member, Human Rights Committee; Member, EHS Advisory Committee; Live surgical demonstration of “High tibial osteotomy” at Jaipur and “All inside ACL reconstruction” Kolkata; Surgical demonstration of “Meniscus Repair” on dry model at Jodhpur; Honorary consultant for Sports Authority of India (SAI); Appointed Member, Hospital Management Board; Nominated Member, Technical Specification Selection Committee of Surgical Items; External Examiner for MS Examination at JIPMER, Puducherry and PGIMER, Dr RML Hospital; Vice President, Orthopaedic Research Society, AIIMS; Member, store purchase committee, AIIMS; External Expert, Standing Selection Committee for selection of Faculty, Department of Orthopaedics, AIIMS, Rishikesh; Unit Incharge of Orthopaedics Unit-II & Acting Head of Department from time to time; Faculty Incharge, Orthopaedics OT; Member, Medical equipment committee for SIC (expansion), Safdarjung Hospital; Member, Medical team of Health Camp at Leh; Member, Enquiry Committee for SIC, Safdarjung; External Expert, Standing Selection Committee, for selection of Faculty, Dept of Orthopaedics, AIIMS, Gorakhpur; Expert Member, Indian Standard Bureau for Orthopaedic Implants; Member, Committee for special audit of SIC, Safdarjung Hospital, New Delhi; Member, UG Expert Committee, MCI; External Expert, Standing Selection Committee, for selection of Faculty, Dept of Orthopaedics, Govt Institute of Medical Sciences, Gr. Noida, UP; External Expert, Standing Selection Committee, for selection of Faculty, Dept of Orthopaedics, PGIMER, Rohtak, Haryana.

**Professor Vijay Kumar** was elected Joint Secretary, North Zone Orthopaedic Association; Organized a “Walk for Elderly” during Combined Meeting of 6th International Geriatric Orthopaedic Society of India Conference, Fragility Fracture Network (India) & Current Concept in Arthroplasty 2018 at AIIMS, New Delhi on 7 September 2018; Visited Leeds University under DST UKIERI Project entitled “Understanding differences in the patterns of osteoarthritis in Indian and Western population: Impact on symptoms, treatment options and their outcome”, 23 June-2 July 2018.

**Dr Bhavuk Garg** received the Asia Pacific Mimics innovation Award 2019; was Young Fellows Association (YFA) Liaison Representative to the American College of Surgeons Advisory Council for Orthopaedic Surgery; Assistant editor, Indian Journal of Orthopedics; Associate editor, Journal of Clinical Orthopedics & Trauma; Editorial board member, North American Spine Society Journal (NASSJ); AO spine International faculty; Member: SRS patient education committee; Delhi Representative, North Zone Orthopaedic Association; Member executive committee, Association of spine surgeons of India; Member, Task Force on Stem Cell Research and Regenerative Medicine, DBT; Task force on elearnspine.org, Association of spine surgeons of India (ASSI); Task force on scoliosis screening, Association of spine surgeons of India (ASSI); Task force on capacity building, Association of spine surgeons of India (ASSI); Task force on EPTB guidelines, AIIMS; Member, AIIMS TB core committee.

**Dr Mohd. Tahir Ansari** received the AO trauma fellowship: 4 November-13 December 2019; BG Clinic and University Hospital, Tübingen; Germany.

**Dr Vijay Kumar Digge** was Chairperson for the debate on posteromedial corner injury at KASCON held at Bengaluru on 29 June 2019 and Chairperson for the ankle session at IASCON held at Indore on 28 September 2019.

**Dr Vikrant Manhas** successfully completed “AO advance trauma course”, organised by AO foundation on 2-4 May 2019 in New Delhi and “Teacher mentor programme” organised by CMET, AIIMS on 18 July 2019; Table instructor for Oxford UKA saw bone Workshop in “CCA 2019”, 16-18 August 2019 at AIIMS, New Delhi; Successfully completed “Amsterdam foot and ankle course” on 13 and 14 December 2019 at Jaipur, Rajasthan; Workshop on lag screw exercise, external fixator and DHS in “DOA Basic Trauma Course”, 22 December 2019 in New Delhi; Organised a guest lecture on “Recent advances in foot and ankle surgery” by Dr Nasef Mohamed Nasef on 28 February at New Delhi; Appointed as reviewer of “Indian Journal of Orthopaedics” on 26 March 2020.

**Dr Venkatesan Sampath Kumar** visited Ganga Hospital, Coimbatore on “APOA- Ganga Hospital Travelling Trauma Fellowship” between 17 and 24 June 2018.

#### **VISITING SCIENTIST**

1. Dr Ching Lau, USA, Guest Lecture on Genomic Landscape of Osteosarcoma, 10 April 2019, AIIMS, New Delhi
2. Dr Ormonde M Mahoney from Athens, Georgia, Guest Lecture on Current Trends and Controversies in TKR, 16 October 2019, AIIMS, New Delhi
3. Professor Rohit Amritanand, CMC, 12 July 2019, Vellore
4. Professor Raymond P Onders, Cleveland Medical Centre, Ohio, 25 July 2019, USA



## 9.26. Otorhinolaryngology

### Professor and Head

Suresh Chandra Sharma (up to 31 January 2020)

Alok Thakar (from 1 February 2020)

### Professor

Rakesh Kumar

### Additional Professor

Kapil Sikka

Chirom Amit Singh

### Associate Professor

Rajeev Kumar

Prem Sagar

David Victor Kumar Irugu (up to 16 September 2019)

Arvind Kairo

Shuchita Singh

Hitesh Verma

### HIGHLIGHTS

The department continued its activities to impart quality education to its own students and also to delegates and observers. It conducted 10 major and minor workshops in the year. The department planned the International Workshop on Head and Neck Surgery which was to include cadaveric demonstration dissection and Live surgery demonstration but the workshop had to be postponed due to the Covid pandemic. The department conducted two advanced cochlear implant electrode design and insertion technique workshops and CI rehabilitation workshops. The department continued with conducting two Head and Neck cadaveric workshops in July and November. It also organized one cadaveric endoscopic sinus surgery and one microvascular anastomosis course along with pre-conference head and neck CME for SAARC and IAOHNS ENT Conference. Our Public awareness and panel discussion on "World Hearing Day" on 3rd March 2020 was well attended where many patients were screened for hearing and their queries answered.

### EDUCATION

The formal lecture schedule for MBBS students was in the 6th and 8th semesters and consists of 1-hour lectures. The undergraduate students are posted in the department (OPD and Ward) for 2 months on rotation basis. They learn the basic ENT examination, become familiarized with diagnosing the common ENT diseases and learning the elementary management, including communication skills. The clinical training consists of:

1. Two classes on introduction to the clinical aspects of ENT including proper ear, nose and throat examination
2. Bedside teaching and case discussion on common ENT conditions like CSOM, Deviated Nasal septum, Nasal polyps, Cancer larynx, etc.
3. Orientation to commonly used ENT instruments and X-Rays in ENT practice
4. Exposure to commonly done OPD procedures like nasal packing, ear packing, cauterly, etc.
5. Exposure to selective operative procedures like tracheostomy, tonsillectomy, septoplasty, nasal polypectomy, etc.
6. Preventive Otology and head & neck cancer

At the end of the Otorhinolaryngology posting, the students are able to:

1. Examine and diagnosis common ear, nose, and throat problems.
2. Suggest common investigative procedures and their interpretation to diagnose and manage the patient.
3. Treat the common ENT and Head & Neck problems at primary care centre, while treating the patient.
4. Train to perform various minor surgical procedures like ear syringing, nasal packing and biopsy procedure.
5. Have awareness of Preventive otology and head & neck cancer for public guidance.

For postgraduates (PG), major goals are patient care, teaching, research ability, and team work. PG students have to do presentation of seminar/paper, research writing, and acquire Clinical decision making ability and management expertise. Postgraduate students perform major and minor surgical procedures under supervision of a faculty member/a senior resident. They are trained to perform major and minor operations independently. During training, they are posted in orientation programme including exposure to Audiology Section and Vestibular Laboratory, learn bedside history taking in ward, OT exposures, casualty, ICU requirement and their visit to related disciplines such as Neurosurgery/Anaesthesia, Care of indoor (Medical; preoperative and postoperative) patients. Attends operation theatre and emergency operations. Assists ward rounds and visit other wards with senior colleagues to attend call/consultations from other departments. Participates

in the teaching sessions in ward for bedside clinical aspect, in specialty clinics in afternoon in seminar/journal Club and do emergency duty as per Roster of the department. Postgraduate students also have to do thesis under guidance of faculty.

The department also runs a superspecialty course of MCh Head and Neck Surgery and fellowship in Skull Base surgery. The MCh residents have been allocated duties in the respective specialties in OPD, OT and also attend academic activities jointly with departments of radiation oncology, medical oncology, pathology, neurosurgery etc. MCh residents and Skull Base Fellows also are promoted to participate in research projects jointly with faculty members. They present Seminars and Journal clubs by rotation. MCh residents are also posted in NCI Jhajjar for clinical and academic duties.

The department also organizes workshops and conferences for benefits of national and international delegates from time to time on various recent topics of interest. The department also welcomes delegates for observership from India and abroad and hosts them to observe departmental activities, specialty clinics, seminars and operative procedures.

### **Long Term Training**

Major Dr Roohie Singh, Graded Specialist (ENT), Military Hospital, Hisar, 1 year, May 2019 onwards

### **Short Term Training**

Dr Manvi Saini, Specialist (ENT), NDMC Charak Palika Hospital, New Delhi, 6 weeks, 15 July 2019 to 23 August 2019

### **Elective training**

1. Internship posting of students of Bachelor's in Audiology and Speech Language Pathology (BASLP), AYJNISHD, Regional Centre, Noida
2. TYBASLP students of AYJNISHD (Divyagjan), Mumbai, visited the Department on 21 February 2020 as part of their education tour

The department had observers and rotation postings from Departments of Emergency Medicine, Pediatrics, Medicine, Physiology and Fellows under the School of International Biodesign (SiB)

### **CMEs/Workshops/Symposia/National and International Conferences**

1. Public awareness camp and Panel Discussion on World Hearing Day, 3 March 2020
2. Two-day advanced surgical and electrode design workshop on cochlear implants: Improving hearing performance with innovation, 12 and 13 February 2020, AIIMS, New Delhi
3. Microvascular techniques and suturing workshop, 27-31 January 2020, AIIMS, New Delhi
4. Second Hands on Functional Endoscopic Sinus Surgery Cadaveric workshop, 18 and 19 January 2020, ACSST Trauma Centre, AIIMS
5. Ninth Cadaveric Head and Neck Course, 26 and 27 November 2019, ACSST, Trauma Centre, AIIMS
6. CI Habilitation and Awareness workshop for parents, 13 and 14 November 2019, AIIMS and Mandi House Auditorium
7. Two-day advanced surgical and electrode design workshop on cochlear implants: Improving hearing performance with innovation with focus on CI 532 Electrode for Cochlear Implant, 7 and 8 November 2019, AIIMS
8. Pre conference workshop on Head and Neck, 8th Annual Conference of Indian academy of Otolaryngology, Head and Neck Surgery and 11th SAARC ENT conference, 15 August 2019
9. Eighth Cadaveric Head and Neck Course at ACSST, 17 and 18 July 2019, Trauma Centre, AIIMS
10. Tenth AIIMS cadaveric and 2nd international workshop, 24-28 March 2020: Postponed due to COVID Pandemic

### **Lectures delivered**

SC Sharma: 1    Alok Thakar: 46    Rakesh Kumar: 18  
Kapil Sikka: 25    Chirom Amit Singh: 13    Rajeev Kumar: 10  
Prem Sagar: 9    Arvind Kumar Kairo: 6    Shuchita Singh: 6  
Hitesh Verma: 15

**Oral papers/posters presented: 18**

## RESEARCH

### Funded projects

#### *Ongoing*

1. Prevalence & Etiology of hearing impairment- National Task Force project (Coordinating Centre), Alok Thakar, ICMR, 4 years, 2015-2019, Rs 97 lakhs
2. Effects of non-ionizing electromagnetic field on human health: effects on auditory and vestibular system, Rakesh Kumar, ICMR, 3.5 years, Rs 90 lakhs
3. Sound4All: Re-engineering High-end Audiometric Devices for Robust and Affordable Audiological Testing Phase 2, Kapil Sikka, Indo German Science and Technology Center (IGSTC), 3 years, 2019-2022, Rs 54 lakhs
4. Factors impacting outcomes of Cochlear Implants in Pediatric population, Kapil Sikka, ICMR, 3 years, 2019-2022, Rs 2.84 lakhs
5. The Clinicopathological evaluation of Cholesteatoma aggressiveness, Kapil Sikka, AIIMS, 2 years, 2018-2020, Rs 6.5 lakhs
6. Study of Human Papilloma Virus (HPV) Association in Sinonasal Tumors, Kapil Sikka, AIIMS, 2 years, 2018-2020, Rs 20 lakhs
7. Evaluation of unknown head and neck primaries metastatic to cervical lymph nodes, Chirom Amit Singh, AIIMS, 2 years, 2018-2020, Rs 4.95 lakhs
8. Evaluation of genetic profile of olfactory neuroblastoma, Rajeev Kumar, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
9. An evaluation of HLA, phagocytic function and trace elements in cases of sinusitis, invasive fungal sinusitis and non-invasive fungal sinusitis, Hitesh Verma, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
10. Development of single-cell derived clonal spheroids as a tool for drug discovery in cancer research with focus on Head and Neck Cancer, Hitesh Verma, ICMR, 3 years, 2019-2022, Rs 3 crores
11. Salivary micro-RNA: Their utility as bio-marker during molecular changes in tobacco users vs. tobacco non-users, Shuchita Singh, AIIMS, 2 years, 2016-18, Rs 9.8 lakhs
12. Study of Inner Ear Protein Otolin-1, Vitamin D and Ionized Calcium in circulation as a biomarker in non-Meniere's disease vertigo patients, David Victor Kumar Irugu, AIIMS, 2 years, 2018-2020, Rs 8.66 lakhs
13. Pilot comparative study on expressional level difference of 'psoriasin' between different squamous ear diseases in patients undergoing mastoid surgeries BRCC3 Expression as a prognostic marker in Oropharyngeal Carcinoma Patients and its effect on radiotherapy resistance, Arvind Kumar Kairo, AIIMS, 2 years, 2018-2020, Rs 9.05 lakhs
14. Prevention of Radiotherapy Induced Xerostomia by intraductal administration of N- Acetyl, Arvind Kumar Kairo, ICMR, 3 years, 2020-2023, Rs 36 lakhs

#### *Completed*

1. To elucidate the functional relevance of Sin3B mRNA alternate splicing in pathogenesis of oral squamous cell carcinoma (OSCC), SC Sharma, Science and Engineering Research Board (SERB), 2 years, 2017-2019, Rs 3.55 lakhs
2. Evaluation of level of Vascular Endothelial Growth Factor' – in cases of Recurrent Respiratory Papillomatosis, Hitesh Verma, AIIMS, 2 years, 2016-18, Rs 4.7 lakhs
3. Clinical and biochemical evaluation for depression in patients with recently diagnosed head and neck cancer, Prem Sagar, AIIMS, 3 years, 2016-2019, Rs 8 lakhs

### Departmental projects

#### *Ongoing*

1. Allogenic tissue engineered tracheal transplantation in wistar rats – preclinical study
2. To evaluate the role of transnasal esophageal endoscopy for detection of synchronous esophageal neoplasm in head and neck cancer patients
3. Impact of OSMF on Occult and Overt lymph node metastasis in Gingivobuccal complex carcinoma of Oral Cavity- A prospective study



4. Design and development of Tracheoesophageal prosthesis for improved deployment and voice rehabilitation in post-laryngectomy patients.
5. Parathyroid identification in thyroid surgery by naked eye evaluation, microscopic evaluation and by near infrared fluorescence using indocyanine green
6. Evaluation of clinical features and treatment outcomes in patients with Skull Base Osteomyelitis
7. Evaluation of serum Otolin 1as biomarker and significance of serum vitamin D in BPPV Patients
8. Comparison of different cochlear implantation outcome scores with auditory cortical activity seen on fNIRS in prelingual profound SNHL patients at least 3 years after cochlear implantation
9. Severity of OSA- An evaluation with effect of surgery by inflammatory markers and correlation with anatomical factors
10. Evaluation of fat implantation in patients with sulcus vocalis and videolaryngostroboscopic assessment before and after treatment
11. To determine the incidence of paratracheal lymph node metastasis in patients with carcinoma larynx and hypopharynx planned for partial/ Total Laryngectomy
12. Outcomes of patients undergoing same stage pinna reconstruction and canalplasty
13. Coblation assisted endoscopic excision of juvenile nasopharyngeal angiofibroma: A prospective pilot study
14. Survival outcomes and quality of life evaluation for surgically treated oral cavity carcinoma patients

### **Completed**

1. Assessment of depth of invasion in oral cavity squamous cell carcinoma (T1-T3) by clinical palpation and radiology and their correlation to histopathological depth of invasion
2. Study of microvascular density and tumour associated macrophages in oral squamous cell carcinoma
3. A prospective study to explore patterns of nicotine dependence in newly diagnosed cases of head and neck squamous cell carcinoma and evaluate its association with perioperative complications
4. Outcome in patients undergoing surgical correction of microtia
5. Evaluation of various clinical and immunological parameters in predicting the outcomes of sinonasal and skull base invasive fungal diseases: A descriptive study
6. A pilot study on the causal relationship of gastroesophageal reflux and obstructive adenoid or adenotonsillar hypertrophy in paediatric population
7. SDH-X mutation in head and neck paragangliomas: A clinicopathological study
8. Effect of short term endotracheal intubation on laryngeal function
9. Clinico radiological correlation of severity of disease with vit D and immune markers in cases of allergic rhinitis and nasal polyposis
10. Comparison of post cochlear implant outcomes in children with inner ear malformation vs normal anatomy
11. Prospective pilot study to evaluate the incidence of lymph node metastasis in olfactory neuroblastoma
12. EMG findings in dysphonia due to laryngopharyngeal reflex disease and correlation with treatment outcome: an observational study
13. To correlate functional near infrared spectroscopy measurement of auditory cortex activation with auditory verbal outcome in prelingual profound sensorineural hearing loss patients after cochlear implantation
14. Assessment of clinical profile in patients of Menieres Disease and Vestibular Migraine
15. Exploration of first echelon lymph node drainage of squamous cell carcinoma of tonsil with reference to lateral retropharyngeal lymph node of rouviere
16. Role of 68 gapsmahbed cc scan in patients with juvenile nasal angiofibroma S
17. Assessment of host immunological tumour response by histochemistry in cancer oral cavity and its impact on prognosis-retrospective cohort study
18. A prospective study to determine the efficacy of PET-CT scan in determining residual disease in locally advanced head and neck squamous cell carcinoma managed with primary chemoradiotherapy (Department of Nuclear Medicine)
19. A pilot study to assess the therapeutic potential of Lu- 177 DKFZ- PMSA 617 in Ga-68 PSMA HBED CC PET-CT positive anaplastic thyroid carcinoma (Department of Nuclear Medicine)

## Collaborative projects

### Ongoing

1. Prevalence of human papilloma virus in head-neck squamous cell carcinoma (AIIMS Site), Head Neck Co-operative Oncology Group (HNSCOG)
2. Evaluation of machine learning techniques including deep learning for the identification of Malignancy in tissue samples, Pathology
3. 3D Printed Tracheal grafts for Regenerative application, Stem Cell Facility
4. Molecular Characterization of Olfactory Neuroblastomas for classification into prognostically and therapeutically relevant subgroups, Pathology
5. Interdisciplinary variations in the spectrum of oral mucosal lesions, Dermatology
6. Pilot study on comparison of efficacy and usability of indigenous handheld suction assembly for pediatric tracheostomised patients with the existing suction devices, Pediatrics
7. Developing suctioning machine for cleaning tracheostomy tubes, IIT Delhi
8. Cleft Lip and Palate anomaly in India: Clinical profile Risk factors and current status of treatment: A hospital based study, Centre for Dental Education and Research
9. Serum Zinc levels in Indian population with chronic idiopathic tinnitus, Pharmacology
10. A longitudinal Survey to assess Patient Satisfaction for Nurse Initiated Follow Up Tele-Consultation among patients discharged from a selected tertiary care hospital, Nursing
11. An OMR sheet based feed-back survey on in-patient satisfaction regarding various hospital services in a selected tertiary care hospital, College of Nursing
12. Phenotypic and genotypic characterization of non-typeable Haemophilus influenzae (NTHi) from North India, Microbiology
13. A Study of nasopharyngeal carriage of Haemophilus influenza in north Indian population, Microbiology
14. Fluorosis mitigation in scheduled caste community of Bihar through intervention and counselling, Anatomy
15. Pilot study on comparison of efficacy and usability of indigenous handheld suction assembly for paediatric tracheostomised patients with the existing suction devices, Paediatrics
16. Clinico-radio-pathological evaluation of different possible primary sites in cases of FNAC proven SCC of lymph node in head and neck malignancy, Radio-diagnosis and Pathology
17. Role of ultrasound in predicting the depth of tumour invasion and lymph node metastasis in early tongue carcinoma, Radiology
18. Evaluation of split- bolus dual energy CT in staging of carcinoma larynx, Radiodiagnosis
19. Evaluation of WNT and SHH signalling pathways in olfactory neuroblastomas, Pathology, Medical Oncology
20. To compare the functioning of delayed surgical obturator fabricated using conventional and vacuum formed method in maxillectomy patients: a randomized control study, Prosthodontics and Pathology
21. To evaluate the role of Kit-based Loop-Mediated Isothermal Amplification (TB-LAMP) assay in the diagnosis of Extra-pulmonary tuberculosis (EPTB), Medicine

## PUBLICATIONS

**Journals: 43**

**Abstracts: 3**

**Chapters in Books: 3**

## PATIENT CARE

Apart from OPD, Operation theatre and minor OT services, the department runs a rehabilitation unit of audiology and speech pathology and specialty clinics in Audiology and skull base with cochlear implant, rhinology, vertigo, voice and swallowing, and twice a week Head and neck cancer clinic. Department also provides rural services at CRHSP Ballabgarh and Outreach OPD, Jhajjar. The statistics are as follows:

Ward Admissions (D4 Ward): 5298

Long admissions: 1469

Short Admissions: 3829

Number of patients operated

Main OT: Major cases: 2690

Minor cases: 1938

Minor OT: OPD procedures: 16960

Number of patients seen in OPD

New patients: 46910

Old registration: 65382

Number of patients seen in RUAS

New patients: 2755

Old Registrations: 2273

Total: 5028

Total audiological tests done (PTA+Tympanometry+FFA+BERA+OAE+ASSR): 29,075

### Specialty Clinics

S. No.	Clinic	New cases	Old cases	Total
1	Vertigo	131	267	398
2	Otology and Skull Base	122	34	156
3	Cochlear Implant	264	547	811
4	Voice	294	246	540
5	Rhinology	207	87	294
6	Head and Neck Cancer	1208	4515	5723
7	Head and Neck Rehabilitation Clinic	76	87	163
8	Radiology Conference	1024	-	1024

### Community service clinics

- Twice weekly clinics in community hospital in Ballabhgarh with once a week operating facilities
- Weekly clinics in primary health centre in Gurgaon
- Weekly clinics in community hospital in IIT Delhi
- The department is providing daily OPD services at Outreach OPD Jhajjar and thrice a week OT services.

### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor SC Sharma** was Chairman designate of National Medical Commission; President, AIIMS, Jodhpur; Member, Institute Body of AIIMS, Raebareli; Fellow (Member of University Senate), Punjab University, Chandigarh; Member, Institute Body, Standing Purchase Committee and Standing Estate Committee of PGIMER, Chandigarh; Chairman, HR Sub-committee of PGIMER, Chandigarh; Honorary Advisor (Deafness), under the National Programme for Prevention and Control of Deafness (NPPCD) in the Ministry of Health & Family Welfare, Govt. of India, New Delhi; Member, Technical Steering Committee, National Programme for Prevention and Control of Deafness (NPPCD) in the Ministry of Health & Family Welfare, Govt. of India, New Delhi; Member, Authorization Committee under the Transplantation of Human Organs Act, 1994, AIIMS, New Delhi; Co-Chairman, Engineering Advisory Committee, AIIMS, New Delhi; Subject Expert, Committee for Sleep disorders, cognitive dysfunction & ENT projects under the programme entitled “Possible Impact of EMF Radiation Exposure from Mobile Towers and Handsets on Life” and related R&D initiatives, Science & Engineering Research Board, Government of India, Vasant Kunj, New Delhi; Chairman, ‘Ear, Nose and Throat Surgery Instruments’ Sectional Committee of Bureau of Indian Standards (MHD04); Member, Executive Committee of the Haryana Welfare Society for Persons with Speech & Hearing Impairment, Panchkula; Member, Committee to taking initiative of promoting a culture of excellence in the new AIIMS (constituted by Hon’ble Minister of Health and Family Welfare, GOI); Visiting Professor in Department of ENT, AIIMS, Rishikesh; Member, ‘National Medical Devices Promotion Council’ under the aegis of Department for Promotion of Industry & Internal Trade (DIPP), Ministry of Commerce and Industry, Government of India; Attended official function (inaugurated Modular Operation Theatre) of AIIMS, Jodhpur on 10 April 2019; Accompanied the Hon’ble Vice President of India during his visit to Ranchi and Chennai, 10th – 13 August 2019; Chief Guest of the ‘7th Annual Day’ function of AIIMS, Jodhpur on 15 September 2019; Visited the site of ESIC Medical College at Alwar, Rajasthan as a Team Member on 16 September 2019 (Ref. No. F.10-8/92(D) Estt. I dated 5 September 2019); Chaired the 2nd Convocation ceremony of AIIMS, Jodhpur on 7th December, 2019.

**Professor Alok Thakar** is Chairperson, ICMR Committee for Standard Treatment Workflows in ENT, 2019; Co -Chairperson, Subcommittee for Medical Devices, Standing National Committee on Medicines; Co-ordinator for Head- Neck Cancer National Cancer Grid; Honorary President - Foundation for Head-Neck Oncology; Council Member - Asia-Pacific Society of Thyroid Surgery (APTS) – 2019-2022; Convenor - Delhi Head-Neck Oncology Forum; WHO Expert Member- Regional Expert Group on Hearing Care for South-East Asia Region; International Faculty American academy of Otolaryngology & Head-Neck Surgery (AAOHNS 2019), New Orleans; Visiting Professor, Department of Otolaryngology, AIIMS Rishikesh (2019); Member, Board of Studies Department of Otorhinolaryngology, Faculty of Health Sciences, Manipal University

2017; Member, Project Review Committee, Indian Council of Medical Research; Padmabhushan Dr. Dukhan Ram Memorial Oration- New Perspectives to Vocal fold paralysis, Bihar & Jharkhand 2019 Annual Conference, Dhanbad, 6-8 December 2019; Keynote Lecture- Surgical Reanimation for the paralyzed facial nerve, Annual meeting of Gujrat Association of Otolaryngologists of India Udaipur, 28 September 2019.

**Dr Rakesh Kumar** is Chairperson of MHD-4 of BIS for looking after standards of ENT surgical instruments in India; Honorary Vice President, Otorhinolaryngologic Research Society of AIIMS (ORSA); Honorary Consultant at Department of Otorhinolaryngology and HNS, IGIMS Patna; Honorary Visiting Consultant at Department of Otorhinolaryngology and HNS, AIIMS, Rishikesh; Attended workshop on improving hearing outcome in cochlear Implant at St Mary Hospital, Seoul, South Korea; Starting new facilities at other places in India-**Cochlear implant programme** at AMU Aligarh; Organized Three workshops/conferences and CMEs. Ninth Head Neck Dissection Course, CTERF AIIMS, New Delhi, 26-27 November, 2019 and two hands on workshops for Training ENT surgeons in advanced cochlear implantation; Oration on Cochlear Implant at Himachal Pradesh Chapter of AOI held at IGMC, Shimla on 1 June 2020; Invited as external examiner for MS (ENT) at Govt. Medical College, Haldwani, Guwahati, KGMU, Lucknow, Delhi University, RML; Invited as external subject expert in the panel of standing selection committee for recruitment of faculty at AIIMS, Bhubneshwar and Bhopal; Invited guest faculty at various.

**Dr Kapil Sikka** is Editorial Board Member and Assistant Editor, Indian J of Otolaryngology; Reviewer, Indian J Otolaryngology, Indian J Otorhinolaryngology, Head and Neck Surgery, Indian J Pediatrics, Indian J Cancer; Joint Secretary, Association of Otolaryngologists of India, Delhi State Branch; Hony Treasurer, Otorhinolaryngologic Research Society of AIIMS (ORSA), 2017; Organising Secretary, International Head and Neck Cadaveric workshop; Mentoring team, Cochlear Implant program at JNU Aligarh and DMC Ludhiana; Member Medical Board, AIIMS; Member, editorial team for research directory, AIIMS; Organised Public awareness camp and Panel Discussion on World Hearing Day on 3 March 2020. Was widely covered by media, both print and electronic; Conducted 2 day advanced surgical and electrode design workshop on cochlear implants "Improving hearing performance with innovation" at AIIMS, New Delhi on 12 and 13 February 2020; Invited faculty at 12 national and international Workshops and Conferences; Conducted 8 and 9 Cadaveric Head and Neck Course at ACSST, Trauma Centre, AIIMS in July and November 2019; Organized CI Habilitation and Awareness workshop for parents on 13 and 14 November 2019 at AIIMS and Mandi House Auditorium. Addressed the parents and their queries; Expert, panel discussion on prevention and early diagnosis of Cancer on "Swasth Bharat" on Lok Sabha TV... Addressed live queries on 8 November 2019; Faculty trainer for CI 532 Electrode for Cochlear Implant and conducted workshop for same on 7 and 8 November 2019; Faculty for development of Extra Pulmonary TB Training module and also preparation of training content; Awarded scholarship by THNS (Taiwan Head and Neck Society ) for attending the 13th Annual Meeting of THNS, Taichung City, 26-28 July 2019; External Examiner, MCh Exam at Tata Memorial Hospital, Mumbai; Member, Workshop for institutions identified for issue of disability certificates under All India Quota To ensure application of uniform criteria as per amended Regulations by MCI conducted at AIIMS on 1 June 2019. Led the session on Hearing and Speech Disability; Mentor, CI Program at Safdarjung Hospital, New Delhi

**Dr Chirom Amit Singh** Organized and conducted 2nd Microvascular anastomosis workshop (Live rate model) from 27 to 30 January 2020; One of the members of AIIMS team who conducted health camp at Dharamshala from 19 to 23 June 2019; Reviewer BMJ Innovations; Co-Organised and Conducted 8th and 9th Cadaveric Head and Neck Course at ACSST, Trauma Centre, AIIMS in July and November 2019; Organised Public awareness camp and Panel Discussion on World Hearing Day on 3 March 2020. Was widely covered by media, both print and electronic; Faculty incharge, ENT Department store and faculty incharge Undergraduate Exams; External Examiner, SPMC Bikaner RUHS; Chairperson, Management of Oropharynx, Larynx and Hypopharynx Cancer: Surgical Vs Non surgical & Robotic Vs Endoscopic 4th Congress of IGRhNS on 4-6 October 2019.

**Dr Rajeev Kumar** was awarded Second Prize in "Junior Consultant Award Paper" category in 6th Annual Conference of IAOHNS and 11th SAARC ENT Conference from 15th to 18th August, 2019 at Gurugram, Haryana; Honorary Treasurer of Association of Otolaryngologists of India, Delhi Branch, 2019-2020; Reviewer in the following medical journals: **Indian Journal for Otolaryngology and Head & Neck Surgery, Journal of Medical Case Reports, Indian Journal of Radiology and Imaging, World Journal of Paediatric Surgery, BMJ Case reports.**

**Dr Prem Sagar** was awarded Gold Medal in Temporal bone dissection competition in 28th Annual Conference of Indian Society of Otolaryngology (ISOCON 2019) on 15-17 November 2019 in Kolkata, West Bengal; Judged session on PG Award Paper presentation, 28th Annual Conference of Indian Society of Otolaryngology (ISOCON 2019), 15-17 November 2019 Kolkata, West Bengal; **Member** of Expert group for review of Health Benefit Packages for ENT under AB-PMJAY, Ministry of Health and Family Welfare, Govt. of India; Member of Expert group for Standard Treatment Workflows (STWs) for ENT by Ministry of Health and Family Welfare, Govt of India. Co-opt Member of the panel on ENT Sectional Committee looking after and setting up the standard of ENT Surgery Instruments, MHD 04 by Bureau of Indian Standards; Honorary Editor of Association of Otolaryngologists of India, Delhi Branch, 2019-2020; Executive body member of Neuro-Equilibriometric

Society (NES)- India, 2019-2020; Reviewer in the following medical journals: Annals of Otolaryngology, Rhinology & Laryngology, SAGE Journals; Indian Pediatrics, official journal of Indian Academy of Pediatrics, Springer Nature. International Archives of Otorhinolaryngology, Thieme publication, Developmental Medicine & Child Neurology, a Mac Keith Press publication and official journal of the American Academy for Cerebral Palsy and Developmental Medicine (AACPD) and the British Paediatric Neurology Association (BPNA), Journal of International Medical Research, SAGE Journals; BMJ Innovations, BMJ Journals.

**Dr Shuchita Singh Pachaury** organized a Talk on Endoscopic ear surgery by a foreign guest faculty, by Dr Pryer at AIIMS, New Delhi on 9 December 2019.

**Dr Hitesh Verma participated in** Allergy and ear disease. “Hello Doctor program” Sahara news 24 November 2019; Health camp. Shiv kumari Dubey teaching institute, Pratapgarh on 7 December 2019; CORONA virus talk. INDIA TV, 13 March 2020; MBBS supplementary examination. 12 March 2020, HIMSA

## 9.27. Paediatrics

### Professor and Head

Ashok K. Deorari (Neonatology)

### Professors

Vinod K. Paul (On deputation to NITI Ayog) (Neonatology)

Arvind Bagga  
(Nephrology)

Sushil K Kabra  
(Pulmonology, Intensive Care, Tuberculosis)

Madhulika Kabra  
(Genetics)

Pankaj Hari  
(Nephrology)

Sheffali Gulati  
(Neurology)

Rakesh Lodha  
(Pulmonology, Intensive Care, Tuberculosis)

Rachna Seth  
(Oncology)

Vandana Jain  
(Endocrinology)

Ramesh K Agarwal  
(Neonatology)

Neerja Gupta  
(Genetics)

### Associate Professors

M Jeeva Sankar  
(Neonatology)

Aditi Sinha  
(Nephrology)

Biswaroop Chakrabarty  
(Neurology)

Kana Ram Jat

Jhuma Sankar  
(Pulmonology, Intensive Care, Tuberculosis)

Rajni Sharma  
(Endocrinology)

Anu Sachdeva  
(Neonatology)

Prashant Kumar Jauhari  
(Neurology)

Rohan Malik  
(Gastroenterology)

Jagdish Prasad Meena  
(Oncology)

Narendra Kumar Bagri  
(Rheumatology)

Aditya Kumar Gupta  
(Oncology)

### Assistant Professors

Ankit Verma  
(Neonatology)

Madhumita Roy Chowdhary  
Rashmi Shukla (Contract)

### Scientists

Amita  
Kajal Jain

Anuja Agarwala (Dietician)  
Pallavi Mishra (Biochemist)  
Dhaneshwar Yadav

### Other Staff

Sumita Gupta (Senior Physiotherapist)  
Sadhna Arora (Technical Officer)  
Neena Mehta

(Medical Social Service Officer)

### HIGHLIGHTS

The Department holds the distinction of running six DM courses, two WHO collaborating centres (WHO Collaborating Centres one in Newborn Training & Research in Newborn Care and another on Training in Clinical and Laboratory Genetics) and two ICMR advanced centres of Excellence (Nephrology & Pulmonology) and a Centre for Advanced Research for Childhood Neurodevelopmental Disorders. There are at present 46 DM students and 38 MD students enrolled in Academic programs and another 34 non-academic senior residents positions.

Division of Neonatology organised 'Advocacy meeting for National Newborn Health' on 21 November 2019 with WHO India country office support for partners (Niti Aayog, GOI, UNICEF, PATH, USAID, IAP, NNF India) and state leaders at Director's Board Room, AIIMS, New Delhi

Under leadership of Departmental Faculty Postgraduate students brought multiple laurels to the Department.

### Awards

- Dr. Umang Bharadwaj and Dr. Satya Prakash MD Residents won the NNF National Quiz, held at NEOCON in Hyderabad between 12-15 December 2019

- Dr. S. Madathil, DM won the Dr. S.S. Manchanda Neonatology Research Award for his study titled, “Intravenous Fentanyl versus Intravenous Ketamine for analgesia during laser treatment for Retinopathy of prematurity (ROP) in preterm infants – A Randomized Trial”, at the 57th IAP PEDICON held in Indore from 9-12 January 2020
- Dr. Sagar T, MD won the Dr. Meherban Singh Gold Medal Award for his study titled, “Comparison of Physiological responses during Kangaroo care by fathers and mothers in stable preterm neonates: A non- inferiority cross over study”, at the IAP NEOCON held in Bangalore from 27-29 September 2019

Nearly 10 research papers from various Divisions were judged as Best Paper in various specialty conferences

## EDUCATION

Department is running six DM courses in Neonatology, Nephrology, Neurology, Genetics, Oncology and Pulmonology & Intensive care with 43 students enrolled. A Vibrant PhD program is ongoing with five students.

**MD Program:** An MD program involving a total of 37 students is ongoing. There are regular teaching sessions and a system of ongoing internal assessment. New flip class teaching by Faculty once a month has been introduced. We undertook several training workshops including the Neonatal resuscitation & Paediatric Advanced Life support programme for postgraduate students of the Department and Ventilation Workshop for the for postgraduate students of the Department.

**DM Program:** All the Divisions have regular structured teaching activities 3-4 times a week. Interdisciplinary and inter-departmental teaching in the form of integrated seminars and case discussions, are encouraged in all disciplines. Regular small workshops and interactive case discussions involving residents and faculty are held. Pulmonology Division uses Telemedicine to connect to other institutions. Neonatology Division organised weekly workshops on common topics such as Kangaroo Mother Care, Total Parenteral Nutrition, understanding equipments, which involve hand on training of residents and nurses. The Division organised 24 such workshops in the last year.

**MBBS teaching:** Departmental faculty is involved in bedside teaching of MBBS students during their posting in Pediatrics (OPD and wards) along with lectures, structured tutorials and integrated seminars. Department of Paediatrics have contributed for the development of skill modules for Undergraduate Medical students for SET facility. Division of Neonatology organised a workshop for UG students on Standard Treatment Protocols for management of Sick neonates using wall charts, simulators, tablets, case studies and workshop on neonatal resuscitation for sixth semesters.

## Endocrinology

- Education and Patient Interaction Programs were held regularly for children with Type 1 Diabetes. New resource material has been developed for children with type 1 diabetes. These include booklets on carbohydrate counting and healthy recipes.
- A dedicated interactive bilingual website for Type 1 diabetes has been developed. It has been made widely available through the Indian Society of Pediatric and Adolescent Endocrinology
- Interactive group sessions are held regularly for children with obesity and their families. A dietician, psychologist and yoga instructor (all employed in research projects) are part of the multi-disciplinary team.

## Gastroenterology

- Short Visit (14-26 September 2019) to Boston Children’s Hospital & Harvard Centre for excellence in celiac disease as part of INDO –US Science and technology Forum (IUSTF) faculty exchange program
- Short term training (24-30 November 2019) in Pediatric IBD at Malaga Spain
- Co organized annual Celiac day and Public lecture at AIIMS New Delhi with Department of Gastroenterology on 15 February 2020 with over 500 people attending
- Upgradation and sanctioning of new equipment: capsule endoscopy, enteroscopies, pH impedance apparatus
- Addition of Gastroenterology Specialty Nurse to the team and her training

## Neonatology

- Dr Ashok Deorari has been elected as President of National Neonatology Forum of India for the year 2020, an organization with nearly 8500 members
- Division of Neonatology is re-designated a WHO Collaborating Centre (2019-23) for training and research in Newborn Care
- Our WHO Collaborating Center for Newborn health supported by UNICEF, UNFPA, USAID and WHO disseminates QI to organizations through its on-line resources, face-to-face workshops and the Point of Care Continuous Quality

Improvement (POCQI) module. A dedicated website (<http://aiimsqi.org/>) on quality improvement provides free resources for teaching and learning QI, and as a platform for capacity building of teams and sharing QI work. Many SEARO (South East Asian Regional Organization) countries have initiated QI work in their areas. Division has facilitated many workshops for Improving Quality of Hospital Care for Maternal and Newborn Health in India.

- The Division of Neonatology has partnered with PGI, Chandigarh and GMCH, Chandigarh, and Public Health Foundation of India to improve the quality of care of preterm neonates being treated in special newborn care units (SNCU) in four states of the country. The major objective of this activity was to reduce the incidence of retinopathy of prematurity (ROP) in preterm neonates by implementing evidence based practices.
- Division of Neonatology is using e-Learning for disseminating Evidence Based Practices on Newborn Health for healthcare professionals. Currently, three e-learning courses are being offered ([www.ontop-in.org](http://www.ontop-in.org)): Sick newborn care, Newborn nursing and CPAP. We have completed nearly 18 sick newborn and eight essential newborn care courses.
- Developed an App on mobile phone on Preterm baby care package (Download on Android as WHO AIIMS PTC & iOS as Preterm Care) which deals in evidence-based management of the preterm infant is available online and has been completed by 3000 healthcare professionals [www.pretermcare-elimintaingrop.org](http://www.pretermcare-elimintaingrop.org).
- Organised 'Advocacy meeting for National Newborn Health' on 21 November 2019 with WHO India country office support for partners (Niti Aayog, GOI, UNICEF, PATH, USAID, IAP, NNF India ) and state leaders at Director's Board Room, AIIMS, New Delhi

### **Nephrology**

- Professor Arvind Bagga was awarded the prestigious IPNA Education award during the triennial congress of the International Pediatric Nephrology Association, held in Venice, Italy
- Dr Aditi Sinha was member of the core group for IPNA guidelines on management of steroid resistant nephrotic syndrome

### **Neurology**

- Department of Pediatrics organized 4th Dr OP Ghai Memorial Oration which was given by Prof Veena Kalra on "Pediatric Neurology: Present and Future" on 27 November 2019 at AIIMS, New Delhi

### **Oncology**

- Organized patient education and awareness program for child cancer programs
- Organized public lecture and exhibition on childhood cancers
- Facilitated financial assistance from government and non government organization to families with a child cancer patient
- Prepared modules on E-Learning on Cancer Fundamentals as part of initiative by Indian Cancer Society

### **Rheumatology**

- Patient awareness talk on "Autoimmune diseases in children" in public awareness programme "Total Health" on Doordarshan broadcasted on 27 January 2019

### **Genetics**

1. Undergraduate Teaching including teaching for Nurses : 20 lectures on common Genetic, and Pediatric problems
2. Postgraduate Teaching (Pediatrics): 5-6 days a week
3. Also involved in Biotechnology PG teaching
4. PhD (Genetics) teaching – 2 classes per week

### **Short Term Training Record - 2019-2020**

1. Dr Ankur Singh, 1-30 April 2019, 1 month, Molecular, Cytogenetics, Biochemical, Institute of Medical Sciences, Banaras Hindu University, Varanasi
2. Dr Siva S, 30 September 2019 to 31 March 2020, 6 months, Molecular, Cytogenetics, Biochemical DBT under UMMID initiative
3. Dr Ambrish, 14 October 2019 to 15 April 2020, 6 months, Cytogenetics, DBT under UMMID initiative
4. Dr Ekta, 16 October 2019 to 15 April 2020, 6 months, Molecular, Cytogenetics, Biochemical, Lady Harding Medical College, New Delhi
5. Neetu Kataria, 15 February 2019 to 30 April 2019, 2 ½ months, Molecular Lab, College of Nursing, AIIMS, Rishikesh, Uttarakhand



6. Ms. Surbhi, 01 June 2019 to 30 July 2019, 2 months, Biochemical Lab, Molecular Lab, Maharshi Dayanad University, Haryana
7. Ms. Sonia Jangra, 01 June 19 to 31 July 19, 2 months, Biochemical Lab, Molecular Lab, Maharshi Dayanad University, Haryana
8. Lt. Col. Shivani Sangwan, 17 June 2019 to 16 June 21, [Long Term Training], 2 years (24 months), Cytogenetic Lab, Office of DGAFMS/DG-1D, Ministry of Defence, New Delhi

#### ***Fellowship/Rotation Intra and inter Departmental***

1. Dr Rahul Sinha, DM (Pediatric Neurology) Student in Deptt. of Pediatrics, 1-30 March 2020, One month, Through: Professor Sheffali Gulati, Department of Pediatrics, AIIMS, New Delhi
2. DrGurleen Oberoi DM Hematopathology in Deptt. of Hematology, 1-10 July 2019, 10 days, All 3 labs, HOD, Department of Hematology
3. DrUpinder Singh J.R. (Acad.) Lab.Medicine, 1-30 November 2019, One month, All 3 labs, HOD, Deptt of Lab. Medicine
4. DrVadanya Shrivastava, Dr Rameshwar Tiwary, Dr Sanket Katpara MD students, 14-24 September 2019, 10 days, All 3 labs, PG Teaching-in-charge, Deptt. of Biochemistry
5. Dr Ayushman Dobhal, Dr. Nikhil Chandran, Dr. Suman Saha, Dr. Astha Sachan, MD students, 31 October 2019 to 11 November 2019, 10 days, All 3 labs, PG Teaching-in-charge, Deptt. of Biochemistry
6. Dr Danish Ali, J.R.(Acad.) Lab.Medicine, 1-31 May 2019, 1 month, All 3 labs, Dr M Irshad, HOD, Lab Medicine
7. Dr Priyanka Goswami, J.R.(Acad.) Lab.Medicine, 1-31 May 2019, 1 month, All 3 labs, Dr M Irshad, HOD, Lab Medicine
8. Dr.Srimantinee Routray, J.R.(Acad.) Lab.Medicine, 1-30 April 2019, 1 month, All 3 labs, Dr. M. Irshad, HOD, Lab Medicine
9. Dr.Abhirup Sarkar, J.R.(Acad.) Lab.Medicine, 1-30 April 2019, 1 month, All 3 labs, Dr. M. Irshad, HOD, Lab Medicine

#### **Neonatology**

##### ***MD Program***

1. The division undertook two training workshops on Neonatal Resuscitation Program for postgraduate students of the Department
2. The division organised weekly workshops on common topics such as Kangaroo Mother Care, Total Parenteral Nutrition, understanding equipment, involving hands on training of residents and nurses. There were 12 such workshops in the last year.
3. The attendees of these workshops included postgraduate residents and nurses in the division.

##### ***DM program***

1. The division organised weekly workshops on bedside echocardiography, parenteral nutrition, ventilator settings in respiratory disorders and neonatal equipment. A senior DM resident (final year) under the mentorship of division faculty steers the training which involves other DM residents and senior MD residents.
2. The division organised five integrated seminars and case discussions involving other disciplines in the teaching programme.

##### ***MBBS teaching***

1. Department of Paediatrics has contributed for development of skill modules for Undergraduate Medical students for SET facility. The Division of Neonatology organised a workshop for seventh semester students on Standard Treatment Protocols for management of Sick neonates using wall charts, simulators, tablets and case studies. And a regular neonatal resuscitation programme workshop in small groups for sixth semester students.
2. UG students are encouraged to use E contents developed by the Division, available on [www.newbornwhocc.org](http://www.newbornwhocc.org) or on Mobile Apps

#### **Nephrology**

The DM program currently has 5 residents. Two residents completed the course in 2019.

##### ***Long- and Short-term training in Pediatric Nephrology***

- Dr Ajite Adebukola, from Abuja, Nigeria, trained for 3 months during June-August 2019

- Lieutenant Colonel Zaw Min Htwe, lecturer & consultant pediatrician in Defense Services Medical Academy, Yangon, Myanmar, completed his 6-months training in April 2019
- Two fellows continued their two-year fellowship training; Lieutenant Colonel Aditi Sharma, classified specialist pediatrician from the Indian Army (training since August 2018) and Dr Jasinth Sabanadesan, trainee from Breach Candy, Sri Lanka (training since March 2019).

**International Pediatric Nephrology Association (IPNA) Asian Pediatric Nephrology Association (AsPNA) Junior Master Class (Cycle 2, year 1):** This triennial event was conducted on 6-7 April 2019 at AIIMS, New Delhi. Faculty included ~25 nationwide experts in Pediatric Nephrology and four eminent international speakers, namely Professors Pierre Cochat (Lyon, France), Hui Kim Yap (Singapore), Elena Levchenko (Leuven, Belgium) and Amita Sharma, (Boston, USA). About 110 delegates, chiefly postgraduate residents and trainees in Pediatric Nephrology from across India, attended the meeting.

**Training of Specialty Nurses:** Two technicians and two nursing officers from Kalawati Saran Children's hospital observed in the pediatric hemodialysis unit for two weeks in March 2020.

### Neurology

1. **DM Paediatric Neurology ongoing program** (11 students till December 2019; now 10 students)
2. **Undergraduate Teaching** (Professor Sheffali Gulati is Preceptor) including teaching for Nurses: all the three faculty members were actively involved in the 4th, 6th and 8th semester undergraduate teaching programmes.
3. **Postgraduate teaching programme:** All the 3 faculty members were actively involved in the post graduate teaching programme.
4. **Short Term Trainees:** Dr. Md. Abu Sayed (Bangladesh) 18 February 2019 to 14 April 2019
5. **Rotation of intra-institute of students and residents:** MD (PMR) residents, DM (Adult Neurology) 15, MSc Nursing 6, Fellow Pediatric Neurosurgery 1
6. **Innovative Educational activities:**  
E learning modules on various aspects of Child Neurology  
Mobile app based diagnostic tool developed: Autism, Epilepsy, Attention Deficit Hyperactivity Disorder and Neuro Motor Impairments.  
Autism Sensory Integration intervention pamphlets (English and Hindi)

### Pulmonology, Intensive Care, Tuberculosis

1. DM (Pediatric Pulmonology and Intensive Care) ongoing two batches completed. Two days a week teaching program along with 3 teleconferencing with PGIMER Chandigarh. Other Medical institutions (AIIMS, Jodhpur, AIIMS Bhubaneswar) also join it.
2. Division is mentoring students in MD (Pediatrics); MSc (Nursing); BSc Nursing; MBBS; PhD program

### Rheumatology

1. Faculty in conducting workshop on "Clinical Immunological Investigations: A Primer for Residents" held on 10 November 2019
2. Involved in drafting teaching modules for undergraduates in SET facility and formulating "Pulse Oximetry" module.

### CMEs/Workshops/Symposia/National and International Conferences

#### Endocrinology

- AIIMS workshop and brainstorming meeting on Disorders of Sex Development, on 2nd November 2019 at AIIMS, New Delhi

#### Genetics

1. Birth defects, From Count to Care, 20 April 2019, AIIMS, New Delhi
2. Educational Program on Turner Syndrome, Jointly organised by University of Colorado, Sir Ganga Ram Hospital and All India Institute of Medical Science, 19 January 2020, AIIMS, New Delhi.
3. Tuberous sclerosis CME & Symposium for patient & Parent Education in collaboration Tuberous Sclerosis India Alliance, 11-12 February 2020, AIIMS, New Delhi
4. From Genes to Genome—Rejuvenating the Concepts!! 25 January 2020, AIIMS, New Delhi

## Neonatology

1. A total of Five simulation-based learning for improving 'Preterm baby care' using 'Point of Care Quality Improvement' approach (Total: 5) supported by Public Health Foundation India, 11-13 January 2019, 17-19 May 2019, 11-13 September 2019, 11-13 November 2019, 27-29 December 2019, AIIMS, New Delhi
2. Breastfeeding workshop (Comprehensive lactation management centre (CLMC) team supported by Common Wealth Human Rights Initiative, India, 7 August 2019, AIIMS, New Delhi
3. POCQI (Point of care quality Improvement) (for Pediatricians and IAP working committee), 3 and 4 November 2019, New Delhi
4. POCQI (Point of care quality Improvement), (for Pediatricians and IAP working committee), 20 and 21 December 2019, New Delhi
5. Quality Improvement sensitisation workshop for newly joined residents as part of Research methodology foundation course, 4 March 2020, New Delhi

## Neurology

1. Organized National Workshop on Sensory Modalities in the treatment of children with Autism in Center of Excellence & Advanced Research on Childhood Neurodevelopmental Disorders on 13-14 April 2019 at SET facility, Convergence Block, AIIMS, New Delhi
2. Training of working professionals in Alternative and Augmentative communication along with Action for Ability Development and Inclusion (AADI) inauguration on 14 February 2020 for 7 weekends

## Oncology

1. Public lecture & panel discussion, Childhood cancer awareness, 17 February 2020, AIIMS, New Delhi.
2. Patients education program, Childhood cancer, 09 December 2019, AIIMS, New Delhi.
3. C2S meeting Childhood cancer Survivorship & late effects, 03 December 2019, AIIMS, New Delhi.
4. CCR Eosinophilia exotica! Think beyond allergy & infections, 15 October 2019, AIIMS, New Delhi.
5. Patient education program Childhood cancer, 13 May 19, AIIMS, New Delhi.
6. 15th meeting of NIPOF (North India Pediatric Oncology Forum), 20 July 2019, Sir Ganga Ram Hospital, New Delhi.
7. Annual Oncology Forum on behalf of NIPOF, 08 December 2019, New Delhi

## Pulmonology, Intensive Care, Tuberculosis

1. AIIMS Pediatric pulmonology and Intensive Care: Module 8: Pulmonary rehabilitation Course, 20-21 July 2019, AIIMS, New Delhi
2. AIIMS Pediatric Pulmonology and Intensive Course Module 9 on Imaging in Pediatric Pulmonology, 21-22 February 2020, AIIMS New Delhi
3. IJP Annual function and 12th Dr KC Chaudhuri oration, 7th Dr IC Verma excellence in research award, best original research award and competitive clinical grand round, AIIMS, Board room on 29 September 2019

## Lectures delivered

**Vandana Jain: 7**

**Madhulika Kabra: 6**

**Ashok K Deorari: 24**

**Arvind Bagga: 22**

**Sheffali Gulati: 53**

**Rachna Seth: 10**

**SK Kabra: 55**

**Jhuma Shankar: 10**

**Rajni Sharma: 9**

**Neerja Gupta: 9**

**M Jeeva Sankar: 23**

**Pankaj Hari: 10**

**Biswaroop Chakrabarty: 14**

**Jagdish P Meena: 4**

**Rakesh Lodha: 2**

**Narender Kumar Bagri: 5**

**Rohan Malik: 5**

**Madhumita Roy Chowdhury: 2**

**Anu Sachdeva: 14**

**Aditi Sinha: 17**

**Prashant Jauhari: 9**

**Aditya Kumar Gupta: 6**

**Kana Ram Jat: 14**

**Oral papers/posters presented: 95 (Rank 2 for Gold Medal Paper; 2019 International Scholarship Award; Dr. S. S Manchanda Neonatology Research Award; Best oral presentation award; Dr Meharban Singh gold medal award for best paper; 2nd Prize in Oral Paper category; Best paper award in Scientific session; Best paper award)**

## RESEARCH

### Funded projects

#### Ongoing

1. “Chemo to Cure (C TO C)” study of cancer survivorship, Rachna Seth, JIV DAYA foundation, 8 years, 2011-2021, Rs. 120 lakhs
2. A collaborative, multicenter, national study for newly diagnosed patients with acute lymphoblastic leukaemia, (ICiCle), Rachna Seth, National Cancer Grid & ICMR, 5 years, 2017-2022, Rs. 30 lakhs
3. A Phase 3, Randomised, Double blind, Placebo-controlled efficacy and safety study of Ataluren in patients with non sense mutation Duchenne Muscular Dystrophy and Open label extension, Sheffali Gulati, PTC Therapeutics, USA, 2 years, 2019-2020, 50 lakhs
4. A Randomized, double blind placebo controlled six month study to evaluate the efficacy, safety and tolerability of Sarizotan in patients with Rett syndrome with respiratory symptoms, Sheffali Gulati, Neuron Pharmaceuticals, Italy, 2 years, 2017-2020, Rs 42 lakhs
5. A Study for Evaluation of the performance of the stool Proccessing Kit Combined with Xpert MTB/RIF Ultra for Paediatrics TB Diagnosis, Rakesh Lodha, FIND, INDIA, 15 months, 2019-2020, Rs. 42.82 lakhs
6. Anti-complement factor H (FH) associated hemolytic uremic syndrome (HUS) in children: Immunological and genetic basis, and functional characterization of autoantibodies, Aditi Sinha, DST, 3 years, 2017-2020, Rs 68.21 lakhs
7. Autoantibody associated alternative complement pathway dysregulation in nephrotic syndrome secondary to membranoproliferative glomerulonephritis, Pankaj Hari, DBT, 3 years, 2017-2019
8. Biomarkers of Acute Gastronitestinal Injury in Critically ill Children, Rakesh Lodha, ICMR, 2 years, 2019-2021, Rs. 55.84 lakhs
9. Breakpoint Mapping of Apparently Balanced Chromosome Rearrangements Associated with Clinical Phenotypes, Rashmi Shukla, AIIMS, 2 Years, 2019-2021, 10 lakhs
10. Burden of multidrug-resistant neonatal sepsis in district hospital settings in India, M Jeeva Sankar, BMGF, US, 2 ½ Year, 2019-2021, USD 12,43,286
11. Center for advance research in Pediatric Respiratory Diseases. ICMR, 2018-2023. Rakesh Lodha, Kanaram Jat, Jhuma Sankar, Rs 620 lakhs Projects as follows (i) Capacity building for management of chronic respiratory disorders in children. (ii) Cystic Fibrosis in India: Prevalence, Mutation Profile and Development of Registry (iii) Interstitial lung disease in children (iv) Point of care testing for Primary Ciliary Dyskinesia in Children.
12. Center of Excellence & Advanced Research on Childhood Neurodevelopmental disorders with its projects in 5 thrust areas, Sheffali Gulati, GIA (supported by MOHFW) and IIFCL (as part of its CSR), 5 years, 2017-2022, Rs 1130 lakhs
13. Comparison of dried blood spots and plasma samples for the quantification of amino acid using HPLC method among inborn error of amino acid metabolism patients, Pallavi Mishra, AIIMS, 2 Years, 2019-2020, 10 lakhs
14. COMPASS: Communication-focused parent-mediated treatment for Autism Spectrum Disorder in South Asia trial (University of Manchester and Sangath), Sheffali Gulati, MRC, UK, 4 years, 2018-2022, Rs 1120 lakhs
15. Comprehensive evaluation of underlying molecular mechanisms of severe fetal and neonatal Mendelian developmental defects using whole exome sequencing, Neerja Gupta, Madhulika Kabra, DHR, 2 years, 2018-2020, Rs 49.3 lakhs
16. Contribution of Copy Number and Sequence Variants in Cilia and Sonic Hedgehog Pathway Genes in the Formation of AVSD in Down Syndrome, Rashmi Shukla, ICMR, 3 years, 2019-2022, 65 lakhs
17. **Deciphering idiopathic intellectual disability (DIID) through Next Generation Sequencing (DIID-NGS study)**, Neerja Gupta, Madhulika Kabra, DBT, 3 years, 2018-2021, Rs 86.81 lakhs
18. Deciphering molecular pathogenesis and clinical spectrum of Isolated Lateralized Overgrowth/ Isolated Hemihyperplasia, Madhumita Roy Chowdhury, AIIMS, 2 years, 2018-2020, Rs. 10 lakhs
19. Dengue Infection in India, SK Kabra, NIH, 5 years, 2015-2020, Rs. 90 lakhs
20. Dengue Virus Infection In India, Rakesh Lodha, NIH, USA, 5 year, 2015-2021, Rs 210 lakhs
21. Detection of circulating cell free micro RNA in the blood sample of neuroblastoma patients and its clinical correlation, Aditya K Gupta, AIIMS, 2 years, 2020-2022, Rs 10 lakhs
22. Detection of genetic mutations profile of Primary Ciliary Dyskinesia and correlation of mutation with clinical phenotype in Indian Children, Kana Ram Jat, DBT, New Delhi, 3 years, 2018-2021, Rs 30.86 lakhs
23. Developing reinforcement based AI model for improvising the predictive skills of individuals with autism, Sheffali Gulati, AIIMS–IIT Delhi Collaborative Research Project, 1 year, 2019-2020, Rs 5 lakhs
24. Development of a high throughput genome editing pipeline based on based on an orthologous CRISPER/Cas9

- system (FnCas9) and its application in the generation of 3D organoids for disease modelling and correction In collaboration with IGIB, Madhulika Kabra, Neerja Gupta, Madhumita Roy Chowdhury, DBT, 2 years, 2019-2021, Rs 120 lakhs
25. Early Detection of Sepsis in Paediatric Intensive Care Units through Integration of Clinical and Big Data, Rakesh Lodha, Wellcome Trust –DBT, 5 years, 2015-2020, Rs. 196 lakhs
  26. Efficacy of Metformin in reduction of hepatic fat fraction and insulin resistance in overweight adolescents with NAFLD: an RCT, Vandana Jain, ICMR, 3 yrs, 2018-21, Rs. 59.2 lakhs
  27. Establishing a biorepository& registry for patients with hemolytic uremic syndrome, Arvind Bagga, ICMR, 5 years, 2017-2022,
  28. Evaluation of geno-phenome of Indian patients with skeletal dysplasia using comprehensive genomic evaluation and translational bioinformatics, Neerja Gupta, Madhulika Kabra, ICMR, 3 years, 2019-2022, 57 lakhs
  29. Evaluation of read through compounds for nonsense suppression of ATM mutations in Indian patients, Rashmi Shukla, ICMR, 3 years, 2019-2022, 45 lakhs
  30. Ex vivo Correction of ATM Splice Variants Using Antisense Oligonucleotides, Rashmi Shukla, (SRF Fellowship awarded to Ms Akhila Sankar), ICMR, 3 years, 2019-2022, 16 lakhs
  31. Formulating & disseminating evidence-based guidelines for diagnosis & therapy of childhood renal illnesses, Arvind Bagga, ICMR, 5 years, 2017-2022,
  32. Human B Cell responses and receptor repertoire in dengue patients from India, Rakesh Lodha, DBT, 2 years, 2019-2021, Rs. 46.6 lakhs
  33. ICMR Registry for Rare and other inherited disorders, Madhulika Kabra, Neerja Gupta ICMR, 6 years, 2019-2025, Rs 109 lakhs
  34. Integrated molecular biology of biological markers: Role of copy number alterations of genes in Indian Childhood B Lineage Acute Lymphoblastic Leukemia, Nivedita, Rachna Seth, UGC women Scientist Fellowship, 5 years, 2018-2022, Rs. 40 lakhs
  35. Longitudinal Big-Data Mining for Prediction and precision in Critical care Medicine, Rakesh Lodha, DST, 2 year, 2018-2020, Rs. 35.74 lakhs
  36. Mobile app based Augmentative and Alternative Communication based intervention in Children with ASD, Sheffali Gulati, AIIMS UG Research mentorship Scheme, 2 years, 2019-2021, Rs 2 lakhs
  37. Molecular alterations in childhood acute lymphoblastic leukemia (ALL): Role of Cytokine receptor –like F actor-2 (*CRLF2*) rearrangements and Janus kinase (JAK) mutation, Rachna Seth, ICMR, 3 years, 2015-2019, Rs. 38 lakhs
  38. Molecular evaluation of gene copy number variations and mutation profile in pediatric Acute Myeloid Leukemia (AML) patients and its association with disease prognosis, Jagdish Prasad Meena, AIIMS, 2 years, 2018-2020, Rs 4.76 lakhs per year
  39. Multicenter randomized double blind placebo controlled trial to evaluate the effects of intra erythrocyte dexamethasone sodium phosphate on neurological symptoms in patients with Ataxia Telangiectasia, Sheffali Gulati, Ery Del, S.p.A, Italy, 2 years, 2018-2020, 72 lakhs
  40. Multi-system health outcomes (neurodevelopment, growth, respiratory, cardiac, metabolic and renal) of extremely preterm (<28 weeks OR <1000 g) at 2-5 years of age, Anu Sachdeva, AIIMS, 1 year, 2019-2020, Rs. 5 lakhs
  41. NeoAMR Global Neonatal Sepsis Observational Study (NeoOBS): a prospective cohort study of sepsis in hospitalized neonates, Ramesh Agarwal, DNDi and GARDP, Swaziland, 1 ½ year, 2018-2020, Rs 151.35 lakhs
  42. NeoAMR Global Neonatal Sepsis Observational Study (NeoOBS): a prospective cohort study of sepsis in hospitalized neonates, Ramesh Agarwal, ICMR, 1 ½ year, 2018-2020, Rs 102.46
  43. Noninvasive markers of injury in celiac disease, Rohan Malik, AIIMS, 2 years, 2019-2020, Rs 10 lakhs
  44. Open label, randomized, controlled trial to compare the efficacy of daily therapy with low dose prednisolone vs. standard therapy on alternate days in patients with frequently relapsing or steroid dependent nephrotic syndrome, Arvind Bagga, ICMR, 5 years, 2017-2022,
  45. Optimizing insulin and diet regimes for children with type 1 diabetes in low resource settings, Vandana Jain, Department of Health Research, 2.5 yrs, 2017-20, Rs. 25 lakhs
  46. Pediatric Renal Biology Program: Research on nephrotic syndrome, Arvind Bagga, DBT, 5 years, 2016-2021, Rs 800 lakhs
  47. Pilot study of genetic variations among Indian children with vesicoureteral reflux, Pankaj Hari, ICMR, 5 years, 2017-2022,
  48. Prevalence of mycoplasma and chlamydia infection in children with poorly controlled asthma, Kana Ram Jat, AIIMS, 2 years, 2019-2021, Rs 9.8 lakhs

49. Pro-Adrenomedullin as a Novel Biomarker for Predicting Infections and Response to Antimicrobial Therapy in Febrile Neutropenic Children with Cancer and its Comparison to Procalcitonin, Jagdish Prasad Meena, DST, 3 years, 2020-2023, Rs. 42.18 lakhs
50. Procalcitonin guided antibiotic therapy in children, Jhuma Sankar, ICMR, 3 years, 2019-2021, Rs. 81 lakhs
51. ICMR Advanced Centre for Research in Pediatric Kidney Diseases, Arvind Bagga, ICMR, 5 years, 2017-2022, Rs 160.95 lakhs
52. Randomized open labeled controlled trial to compare the efficacy and safety of levamisole versus long term alternate days steroids made daily during infection, in patients with frequently relapsing steroid sensitive nephrotic syndrome, Arvind Bagga, ICMR, 5 years, 2017-2022
53. Randomized, multicentric, open label, parallel group trial to compare the efficacy of 6-months versus 3-months therapy with prednisolone for the first episode of idiopathic nephrotic syndrome in children younger than 4 years, Arvind Bagga, DBT, 5 years, 2016-2021,
54. Respiratory Complications of Primary and Acquired Immunodeficiency Disorders in children, SK Kabra, ICMR, 5 years, 2018-2022, Rs 600 lakhs
55. Serum and urinary microRNAs as biomarkers of renal histology and response to therapy in children with steroid resistant nephrotic syndrome, Arvind Bagga, DBT, 5 years, 2016-2019
56. Serum matrix metalloproteinase- 9: A potential biomarker for predicting calcification and epilepsy in Neurocysticercosis; a longitudinal observational study, Biswaroop Chakrabarty, AIIMS, 3 years, 2016-2019, Rs 5 lakhs
57. Serum sICAM5 and MP9/TIMPI Ratio: Potential Predictors Of Disease Activity In Children With Encephalopathy With Electrical Status In Sleep (ESES) Syndrome, Prashant Jauhari, AIIMS, 2 years, 2017-2019, Rs 5 lakhs
58. Signs of shock in children, Jhuma Sankar, DST, 3 years, 2019-2021, Rs. 35 lakhs
59. Systematic Pulmonary Tuberculosis Case finding among severely malnourished children admitted to nutritional rehabilitation centres. SK Kabra, ICMR, 2 years, 2018-2020, Rs 14.2 lakhs
60. To compare efficacy and safety of Melatonin and Triclofos in inducing sleep in children posted for sleep deprived sleep EEG: A double blind, parallel design, randomised clinical trial, Prashant Jauhari, Undergraduate research mentorship scheme AIIMS, 2 years, 2020-2021, Rs 1.1 lakhs
61. To determine the role of Ikzf1 gene and various IKAROS isoforms in pathogenesis of B cell acute lymphoblastic leukemia (BALL) in Indian pediatric population, Kakali Purkayastha, Rachna Seth, DBT under BIOCARE grant, 3 years, 2018-2020, Rs. 60 lakhs
62. To establish the comprehensive lactation management centre (CLMC) to universalize access and uptake of human milk for babies to improve neonatal outcomes, Kajal Jain, CHRI, India, 3 years, 2018-2021, Rs. 18.31 lakhs and equipment for CLMC
63. To evaluate the efficacy of oral probiotic supplementation in children with Autism Spectrum Disorders (ASDs): A randomized double blind, placebo controlled Trial, Sheffali Gulati, ICMR, 2 years, 2019-2021, Rs 33.32 lakhs
64. To explore the role of synovial fluid proteomics in predicting the disease course and subtypes of Juvenile Idiopathic Arthritis, NK Bagri, ICMR, 3 years, 2019-2021, Rs. 42.12 lakhs
65. To provide technical support to sustain the regional learning platform for improving quality of care, Prof. Ashok Deorari, WHO, 1 year, 2020-2021, 34.44 lakhs
66. Training of Clinicians cum Creation of Genetic Diagnostic unit' in Human Genetics with an Aspirational District component, under Unique Methods of Management and treatment of Inherited Disorders (UMMID) initiative. Madhulika Kabra, Neerja Gupta, DBT, 3 years, 2019-2022, Rs 400 lakhs
67. Translation Research Consortium for establishing platform Technologies to support Prophylactic and Therapeutic Strategies for Dengue Discovery to Proof-of-Concept, Rakesh Lodha, BIRAC, DBT, 4 years, 2019-2023, Rs. 161.68 lakhs
68. Understanding disease biology and diagnosis of bacterial sepsis in hospitalized neonates: A multi- centre study, Ramesh Agarwal, DBT, India, 5 years, 2015-2020, Rs. 209.12 lakhs
69. Use of Biomarkers and Imaging for early detection and treatment of chemotherapy induced cardio toxicity in newly diagnosed children of acute leukemia, Rachna Seth, ICMR, 3 years, 2019-2022, Rs. 70.68 lakhs
70. WHO guidelines on postnatal care of the mother and the newborn, M Jeeva Sankar, WHO, 4 Months, 2019-2020, Rs. 7.14 lakhs
71. Whole exome sequencing in patients with non-diarrheal & non-autoimmune form of hemolytic uremic syndrome, Arvind Bagga, ICMR, 5 years, 2017-2022,

## Completed

1. APW on Quality Assurance & Quality Improvement for Birth Defects surveillance in SEAR, Madhulika Kabra, WHO, 1 year, 2019-2020, Rs 12 lakhs
2. Balanced salt versus normal saline in initial fluid resuscitation in septic shock, Jhuma Sankar, DST, 3 years, 2017-2019, Rs 71 lakhs
3. Blood heavy metal levels and quantitative EEG correlates in children with autism, Sheffali Gulati, ICMR, 4.5 years, 2014-2019, Rs. 49.04 lakhs
4. Developing guidelines on complementary feeding for preterm babies <34 weeks of gestation, M Jeeva Sankar, ICMR, 1 year, 2018-2019, Rs. 9.51 lakhs
5. Development & validation of a scalable mobile platform for screening of developmental neuropsychiatric disorders in low-resource settings: START-Screening Tools for Autism Risk using Technology (MRC Foundation Award Scheme, UK), Sheffali Gulati, MRC, UK, 2 years, 2017-2019, Rs. 4.8 lakhs
6. Does the fetal immune response in case of neonatal early onset sepsis begin in utero?, Kajal, AIIMS, 2 years, 2017-2019, Rs. 9.5 lakhs
7. Effect of outdoor air pollution on acute respiratory symptoms in Delhi: A multisite study. Technical coordinator site. SK Kabra, ICMR, 2 years, 2017-2019, Rs. 56.21 lakhs
8. Effect of Rituximab added to standard chemotherapy therapy on minimal residual disease during induction in CD-20 positive pediatric acute lymphoblastic leukemia: a randomized controlled pilot study, Aditya Kumar Gupta, AIIMS, 1 year, 2018-2019, Rs. 3.5 lakhs
9. Efficacy and safety of vitamin D supplementation in asthmatic children who are vitamin D deficient: a randomized controlled trial (ESDAC trial), Kana Ram Jat, ICMR, 2 years, 2017-2019, Rs 34.88 lakhs
10. Efficacy of a family based comprehensive yoga program for weight reduction among overweight children and adolescents: An RCT, Vandana Jain, Ministry of Ayush, 3 years, 2016-2019, Rs 51.6 lakhs
11. Evaluating the efficacy and safety of an innovative and affordable Goat Lung Surfactant for the treatment of respiratory distress syndrome in preterm neonates: a multi-site randomized clinical trial, Ramesh Agarwal, Wellcome Trust, UK, 3 ½ years, 2016-2019, Rs. 1008.63 lakhs
12. Facilitation of research on neonatal sepsis and antimicrobial resistance in LMICs: A collaboration with GARDP/DNDi, Ramesh Agarwal, Drug for Neglected Disease initiative (DNDi), 1 year, 2018-2019, Rs. 45.78 lakhs
13. Honey versus standard treatment for bed sores in critically ill children, Jhuma Sankar, World Federation of Pediatric Intensive and Critical Care-HARD grant, 1 year, 2017-2018, Rs. 6.5 lakhs
14. Improving diagnosis and management of inherited rare disorders of sex development in India, Vandana Jain, ICMR, Delhi and BMBF, Germany, 2.5 years, 2017-2019, Rs. 47 lakhs
15. Integrate quality improvement training in preterm newborn care package and pre-service education, Ashok Deorari, WHO, 1 year, 2018-2019, Rs. 33.56 lakhs
16. Intermittent versus continuous ScvO<sub>2</sub> monitoring in children with septic shock, Jhuma Sankar, AIIMS, 3 years, 2015-2018, 8 lakhs
17. International study on atypical hemolytic uremic syndrome, Arvind Bagga, CEFIPRA (DST), 3 years, 2016-2019, Rs. 12.25 lakhs
18. Minimally invasive autopsy (MIA) in the evaluation of fetal malformations and still births- A feasibility study for the development of a standard protocol for still birth evaluation, Neerja Gupta, Madhulika Kabra, ICMR, 3 years, 2017-2020, Rs 29.59 lakhs
19. Multiplex point-of-Care test for acute febrile illness (mPOCT). Rakesh Lodha, THSTI, 2 years, 2017-2019, Rs. 32 lakhs
20. Pharmacokinetics of Second-Line Anti-Tubercular Drugs in Children. Rakesh Lodha, DHR, 2 years, 2017-2019, Rs. 24.58 lakhs
21. Predicting Response to Methotrexate In Children With Juvenile Idiopathic Arthritis: Role Of Biomarkers, AIIMS, 2016-2018, 2 years, Rs. 4 lakhs
22. Prenatal screening initiative by dried blood spots: role for triaging and resource utilization, Neerja Gupta, Madhulika Kabra, DBT, 3 years, 2016-2019, 17.86 lakhs
23. Reducing retinopathy of prematurity by improving the quality of neonatal care in special care neonatal unit, Ashok Deorari, PHFI, 3 ½ years, 2016-2019, Rs 114.03 lakhs
24. Validation and Indian Adaptation of the adapted ASQ-3 (Ages and Stages Questionnaire) as a developmental screening tool as compared to reference standard tool (DASII-Developmental Assessment Scale for Indian Infants) in at risk Indian children 2 to 24 months of age, Sheffali Gulati, ICMR, 2 years, 2017-2019, Rs 19.01 lakhs

## Departmental projects

### Ongoing

1. Safety of Procalcitonin Guided Discontinuation of Antibiotic Therapy among Children Receiving Cancer Chemotherapy and Having Low Risk Febrile Neutropenia – A Randomized Non-Inferiority Trial (ProFenC study)
2. A pilot study on the causal relationship of gastro-esophageal reflux and obstructive adenoid or adeno-tonsillar hypertrophy in paediatric population, Functional outcomes of children with severe sepsis, To develop algorithm for diagnosis of cystic fibrosis in resource limited setting using clinical features, lab tests and aquagenic wrinkling of palms
3. A Randomized Sham Controlled Trial Of Targeted Low Frequency rTMS Therapy In Childhood And Adolescent Focal Onset Refractory Epilepsy.
4. Assessment of dysregulated adipokines in survivors of acute lymphoblastic leukemia
5. Association of *IKZF1* gene alterations and *Cytokine Receptor Like Factor 2 (CRLF2)* expression with prognostic markers at presentation and response to induction chemotherapy in Indian children with Acute Lymphoblastic Leukemia (ALL)
6. Azithromycin for poorly controlled asthma in children: a randomized controlled trial.
7. Body composition (Fat mass and fat free mass) in preterm (28-34 week) Very low birth weight (<1500 g) infants fed unfortified breast milk compared to fortified breast milk: A Randomized controlled trial
8. Body composition in preterm newborns at birth and in early infancy by air displacement plethysmography: A longitudinal study
9. Body composition monitoring in patients on hemodialysis
10. Characterization of the immune response of HIV 1 infected children
11. Childhood and Adolescent Sleep Awareness in Caregivers and Health care Professionals: a Community and Hospital Based Survey
12. Clinical and Molecular Characterization of Congenital Limb Defects Using Genomic Approaches
13. Comparison of oxidative biomarkers between Autism Spectrum Disorders and Typically Developing children between 2 – 18 years of age
14. Cortical excitability in children aged 5 to 12 years with Electrical Status Epilepticus in Sleep (ESES) compared to non-epileptic healthy children using Transcranial Magnetic Stimulation.
15. Development and validation of a prediction model based on machine learning for early recognition of multi-drug resistance in newborns with sepsis admitted in a tertiary health centre
16. Development and Validation of a Weight Estimation Tool for Acutely Ill Children Who Cannot be weighed.
17. Devising A Formula For The Insertion Length of Peripherally Inserted Central Catheter (PICC) In Indian Newborns – A Prospective Observational Study
18. Diagnostic and treatment gap in Neurodevelopmental Disorders in children aged 1 month to 18 years: An observational study
19. DTI, fMRI and qEEG correlates of cognition and behaviour in children and adolescents with well controlled non-lesional epilepsy: An observational study.
20. Early versus delayed initiation of parenteral nutrition in critically ill children
21. Effect of visual inspection based abdominal monitoring vs routine prefeed abdominal girth monitoring on time to reach full enteral feeds in preterm neonates ( $\leq 32$  weeks' gestation) - A randomized controlled trial
22. Efficacy and safety of intravenous rituximab versus tacrolimus for frequently relapsing nephrotic syndrome
23. Efficacy and safety of olanzapine as an add on therapy in children receiving highly emetogenic chemotherapy. A randomized double blind placebo controlled study
24. Efficacy of intravenous rituximab versus oral mycophenolate mofetil in sustaining remission in steroid resistant nephrotic syndrome maintained on calcineurin inhibitors for more than 2-years: Open-label non-inferiority randomized controlled trial
25. Efficacy of Pulse Dexamethasone in addition to standard therapy versus standard therapy alone in children with Juvenile Idiopathic Arthritis: A double blind randomized controlled trial
26. Estimating the prevalence of sensory processing abnormalities in children aged 3-15 years with cerebral palsy using the sensory profile caregiver questionnaire 2: a cross sectional observational study.
27. Evaluation of diaphragm function of ventilated children using bed side ultrasonography
28. Evaluation of HIV-1 subtype C Envelop in infected children
29. Evaluation of repetitive Transcranial Magnetic Stimulation as an adjunct to modified Constraint Induced Movement



- Therapy in improving Upper Limb Function in Children with Hemiparetic Cerebral palsy aged 5-18 years - A Randomized Controlled Trial.
30. Evaluation of trisaccharide BM-652 as a potential biomarker in serum of ERT naive patients with MPS I and MPS II aged 6 months-18 years”
  31. Fat gain trajectory from birth to 6 months in healthy infants, and its effect on serum insulin, IGF-1 and adiponectin at 2 years of age
  32. Feasibility and efficacy of sustained low efficiency dialysis in critically ill children with severe acute kidney injury
  33. Feasibility, effectiveness and sustainability of the implementation of —facility-team-driven approach for improving the quality of care in the Special Newborn Care Unit in South India
  34. Furosemide stress test in predicting progression to acute kidney injury (AKI) stage III in children admitted to the ICU with early stages of AKI
  35. Gastrointestinal dysfunction in children with septic shock (DM thesis)
  36. Incidence and determinants of outcome of neutropenic enterocolitis in pediatric cancer patients
  37. Ketamine Mouthwash versus Placebo in the Treatment of Severe Oral Mucositis Pain in Children with Cancer; A randomized double-blind Placebo-controlled trial
  38. Long-term safety of rituximab therapy in children with NS: Prevalence of human anti-chimeric antibodies (HACA), hypogammaglobulinemia and BK and JC viruria
  39. Molecular detection and characterization of Rickettsia among patients with acute febrile illness.
  40. Molecular detection and characterization of Tick born Lyme Borreliosis, Human Monocytic Ehrlichiosis and Human granulocytic Anaplasmosis
  41. Neurological outcomes in critically ill children (MD thesis)
  42. Neutropenic Diet vs Standard Indian diet in reducing the incidence of febrile neutropenia following chemotherapy in pediatric oncology patients: A Randomized controlled Trial
  43. Norepinephrine versus epinephrine in children with septic shock (DM thesis)
  44. Optimal EEG duration in children and adolescents with seizures: An observational study
  45. Performance of two visual methods of assessment of neonatal jaundice- Kramer’s and Modified Kramer’s method in healthy term and near term neonates
  46. Predictors of outcomes in Juvenile Dermatomyositis: a cross-sectional study (Institute UG research grant)
  47. Prevalence of acute gastrointestinal injury in critically ill children, Changes in muscle thickness and muscle echogenicity in critically ill children during their initial 7 days’ stay in PICU: an observational study
  48. Prevalence of microdeletions in NF1 gene and evaluation of phenotypic spectrum of patients with Neurofibromatosis Type 1
  49. Pulmonary dysfunction in childhood Hodgkin lymphoma survivors
  50. Pulmonary dysfunction in Hodgkin Lymphoma survivors
  51. Remediating Indian school going children having Specific learning disorder with Dyslexia using Artificial Intelligence based structured intervention program: A longitudinal intervention study.
  52. Respiratory complications in primary and acquired immunodeficiency disorders in children
  53. Role of Intestinal Fatty Acid binding protein and Citrulline in the diagnosis of Celiac disease and evaluation of Compliance on follow up
  54. Short term efficacy and safety of atorvastatin for treatment of dyslipidemia in children with chronic kidney disease
  55. Study Of Bacterial Infections in a cohort of patients clinically diagnosed Of *Pneumocystis Jirovecii* Pneumonia (Pjp)/ *Pneumocystis* Pneumonia (Pcp) and its impact on outcome of the disease.
  56. The Incidence and Risk Factors for Occurrence of Acute Kidney Injury in Newly Diagnosed Pediatric Patients with Acute Lymphoblastic Leukemia receiving High Dose Methotrexate
  57. To study changes in muscle thickness and muscle echogenicity in critically ill children, aged 1-18 years during their initial 7 day stay in picu: an observational study
  58. To study the infant pulmonary function tests (IPFT) in children with airway anomalies and to correlate these with bronchoscopy finding.
  59. To study the prevalence and the risk factors of psychiatric morbidities and sleep disturbances in pediatric Acute lymphoblastic leukemia survivors
  60. To study the prevalence of dosage anomalies at 22q11 locus and Evaluate the phenotypic spectrum of facio-auriculo-ocular spectrum disorders

## **Completed**

1. "Simulation-based" education vs. "conventional" education in improving the practices and knowledge of health care professionals for stabilization of a preterm neonate in delivery room: A randomized trial
2. A cross-sectional observation study to assess the prevalence of renal dysfunction in children with solitary functioning kidney
3. A pilot study of the genetic variation among Indian children with vesicoureteral reflux
4. A Study on clinical profile and outcome of Chronic pulmonary aspergillosis patients attending speciality clinic in tertiary hospital in North India
5. Association of IKZF-1 gene alterations & Cytokine Receptor like Factor 2 (CRLF2) expression with prognostic markers at presentation & response to induction chemotherapy in Indian children with Acute Lymphoblastic Leukemia (ALL)
6. Body composition of healthy term neonates at birth by air displacement plethysmography
7. Cardiovascular outcomes in renal transplant recipients
8. Characterization of bone marrow involvement in pediatric Hodgkin lymphoma using 18F-FDG PET/CT and its comparison with blind bone marrow biopsy
9. Comparison of Efficacy of Low Glycemic Index Therapy and Modified Atkins Diet among Children with Drug Resistant Epilepsy: A Randomized Non-Inferiority Trial
10. Comparison of performance of two point-of-care glucose meters in detection of hypoglycemia among at risk neonates
11. Comparison of symptom severity as per AIIMS Modified INDT-ADHD tool with Conner's Parent reported scale in 6-18 year old children and adolescents with ADHD
12. Comparison of three different methods of orotracheal tube length estimation in neonates: A postmortem study
13. Correlation of cord blood and breast milk IGF-1 levels with neonatal adiposity in infants born to mothers with gestational diabetes mellitus - A prospective cohort study
14. Cystic kidney disease in infants and children: clinical spectrum and ultrasound findings
15. Decreasing administration of first dose of antibiotics is associated with increased mortality in children with septic shock
16. Developing a counselling package for the mothers and the families for care of low birth babies between 1800 gm to 2499 gm
17. Developing a structured remedial intervention program for Indian school going children having Specific learning disorder with Dyslexia: A longitudinal intervention study
18. Development and Validation of a Questionnaire based tool to identify sleep problems in school going children and adolescents aged 2-18 years
19. Diagnostic accuracy of predictive algorithms in detecting retinopathy of prematurity
20. Efficacy of two different chlorhexidine gluconate preparations for skin antiseptics in neonates: a non-inferiority randomized trial
21. Etiological evaluation of nonimmune hydrops fetalis (NIHF)
22. Evaluation of metabolic abnormalities in children with nephrolithiasis
23. Evaluation of molecular alterations at 11p15.5 locus in Isolated Hemihyperplasia
24. Fentanyl versus ketamine for analgesia during laser treatment for retinopathy of prematurity (ROP) in preterm infants an interventional case series study
25. Fortification of expressed breast milk with preterm formula powder vs. human milk fortifier in preterm very low birth weight neonates: A randomized, non-inferiority trial
26. Functional characterization of anti-factor H autoantibodies in patients with hemolytic uremic syndrome
27. Incidence and risk factors of periventricular - intraventricular hemorrhage and periventricular leukomalacia in preterm neonates born before 32 weeks' gestation or with birthweight less than 1500 gm: A Prospective cohort study
28. Inter-observer agreement between Primary Care Physicians and Pediatric Neurologists in classifying epilepsy among children aged one month to 18 years using AIIMS modified INDT EPI Tool according to ILAE 2017 classification scheme
29. Molecular & biochemical characterization of Hepatic Glycogenosis Type I & II
30. Mutation spectrum in TSC gene in Indian patients with Tuberous sclerosis
31. National Knowledge and training centre for neurodevelopment disorder affecting infants, children and adolescents from 1 month to 18 years of age and work on up gradation, developing innovations for website [www.pedneuroaiims](http://www.pedneuroaiims).

org ; developing e-learning modules, mobile apps and operationalizing interactive forum on the website ( UG Summer Fellowship: 2 students)

32. Plasma PCSK9 in children with steroid resistant nephrotic syndrome
33. Polyneuropathy in Critically Ill Mechanically Ventilated Children
34. Prevalence and Risk factors of ABPA in children with poorly controlled asthma
35. Prevalence of Non Alcoholic Fatty Liver Disease (NAFLD) in Children with Down Syndrome
36. Prevalence of sleep disordered breathing in Asthmatic children
37. Quality improvement initiative to promote potentially best practices in the first week of life in preterm neonates <32 weeks gestation: focus on prevention of bronchopulmonary dysplasia
38. Risk factors for mortality in children with severe dehydration and shock (completed)
39. Risk factors for sepsis induced myocardial dysfunction
40. Sepsis -3 vs. Goldstein definition in diagnosis of septic shock
41. Spectrum of Neurological Manifestations In Indian Patients With Gaucher Disease - A Prospective Study
42. Study of hematocrit profile in term and preterm at-risk infants during the initial 48 hours of life: A prospective Cohort study
43. To evaluate efficacy of Sensory Integration Therapy (SIT) reinforced with standard therapy in improving gross motor function in spastic cerebral palsy children aged  $\geq 3$  to 12 years with GMFM level I-III with sensory processing abnormalities
44. To generate Ultrasound muscle-based parameters for evaluation of Hypotonia in children aged 1 month to 18 years
45. To Study The Behavioral Problems, Psychiatric Co Morbidities, And Cognitive Functioning, In Children And Adolescents With Bronchial Asthma
46. To study the mutation spectrum & its correlation with histopathology, neuroimaging & biochemical metabolites in Indian patients with mitochondrial disorders
47. Urinary metabolomic profile of term healthy male neonates from first 24 to 72 hours of life

## **Collaborative projects**

### ***Ongoing***

1. A comparative study to evaluate the efficacy of Ibedone in comparison with placebo in Leber's Hereditary optic Neuropathy patients- A pilot study, RP Centre
2. A Multi-center, Open labelled Trial to evaluate the sensitivity and specificity of DSM IV TR and DSM 5 in diagnosis of Autism Spectrum Disorder, 5 sites across India
3. A phase 2 double arm randomized trial comparing conventional radiotherapy alone Vs hypofractionated radiotherapy with concurrent and adjuvant temozolomide in patients with diffuse intrinsic pontine glioma, Radiotherapy
4. Anti-complement factor H (FH) associated hemolytic uremic syndrome (HUS) in children: Immunological and genetic basis, and functional characterization of autoantibodies, Institute of Genomics & Integrative Biology, New Delhi
5. Collaborative study for Relapsed/Refractory Hodgkin Lymphoma, Indian Pediatric Oncology Group (InPoG)
6. Community based assessment of disability among adult population in Delhi using WHO International Classification of Functioning, Community Ophthalmology
7. Cortical sources and connectivity in Autism spectrum disorder: A QEEG study, Physiology
8. Delhi Air Pollution: Health and Effects, University of Edinburgh, Informatics, University of Edinburgh, Cardiology, Imperial College, London, Institute of Occupational Medicine, Sri Ramachandra University, Chennai, Indian Institute of Technology Kanpur, Indian Institute of Technology Delhi, International Clinical Epidemiology Network, India, University College of Medical Sciences
9. Development of a high throughput genome editing pipeline based on based on an orthologous CRISPER/Cas9 system (FnCas9) and its application in the generation of 3D organoids for disease modelling and correction, IGIB, New Delhi
10. Efficacy, safety and tolerability of Modified Atkins Diet in Adolescents and Adults with Drug Resistance Epilepsy: A Randomized Controlled Trial, Neurology
11. Enhanced, personalized versus routine antenatal care in the amelioration of anemia in pregnancy in rural LMIC settings- the Comprehensive Anemia Program and Personalised Therapies (CAPPT) project, Obstetrics and Gynecology

12. Establishment of a genomic facility to develop, test and validate an informative, cost-effective and efficient panel of genetic markers for chronic pancreatitis, Gastroenterology
13. ICMR Young Diabetes registry, Endocrinology and Metabolism
14. Identification of novel driving tyrosine kinases in Indian pediatric Ph-like ALL, Lab Oncology
15. Impact of advanced paternal age and poor lifestyle on sperm epigenome: possible etiology in Autism Spectrum Disorder, Anatomy
16. Multicentric India left Task Force Project, CDER, AIIMS
17. Neurodevelopmental outcomes in children with cyanotic congenital heart disease following open heart surgery, Pediatric cardiology
18. Outcomes of primary Ranibizumab vs laser for treatment of zone 2 Type 1 ROP, Ophthalmology
19. Pain assessment in Childhood cancer assessment, College of Nursing
20. Pediatric Renal Biology Program: Research on nephrotic syndrome Institute of Genomics & Integrative Biology, New Delhi, Translational Health Sciences & Technology Institute, Govt. of India, Faridabad; Research and Referral Hospital, New Delhi, St. John's Medical College, Bengaluru, Christian medical College, Vellore
21. Pilot study of genetic variations among Indian children with vesicoureteral reflux, Institute of Genomics & Integrative Biology, New Delhi
22. Prospective Study to compare role of 18F-DOPA PET/CT and 131I-MIBG Scintigraphy in Neuroblastoma, Nuclear medicine
23. Role of FDG PET/CT in assessment of initial chemotherapy response in pediatric Langerhans cell histiocytosis, Nuclear medicine
24. Role of F-DOPA PET-CT in pediatric and adult patients with hyperinsulinemic hypoglycemia, Nuclear Medicine
25. The Indian Childhood Cancer Survivorship Study (C<sub>2</sub>S study), After treatment completion registry of childhood cancers: Multicentre study
26. Use of 'My Whole Child; Child Health and Development Interactive System', a web based platform for holistic evaluation and management of Indian children and adolescents upto 18 years of age; a tertiary centre pilot study, Chadis, USA
27. Utility of Contrast Enhanced Ultrasound (CEUS) and whole body MRI in response assessment in Juvenile Idiopathic arthritis, Radiodiagnosis
28. Whole exome sequencing in patients with non-diarrheal & non-autoimmune form of hemolytic uremic syndrome, Institute of Genomics & Integrative Biology, New Delhi

### **Completed**

1. Comparative proteomic profiling of PBMC isolated from FRDA patients and that in presence of different frataxin up-regulating therapeutics, Biochemistry
2. Correlation of fetal soft tissue thickness measured sonographically with neonatal body composition, Obstetrics and Gynecology
3. Emotion Recognition and Social Behaviour in children with Autism Spectrum Disorder: A study of Behavioural and Phenotypic Linkage, IIT, Kanpur
4. Establishing objective measures for identifying children with Autism Spectrum Disorders using eye-tracking technology in the UK and India (EIRA: Eye-trackIng assessment for children with Autism), Birkbeck, University of London
5. Imaging of Infantile Brachial Plexopathy, Radiology
6. Interim assessment response evaluation of high grade lymphoma using texture analysis on F18 FDG PET/CT, Nuclear Medicine
7. International study on atypical hemolytic uremic syndrome, Laboratoire d'Immunologie, Ho

pital Europe<sup>en</sup> Georges Pompidou, INSERM UMRS 872, Paris, France
8. Molecular biology of immature T-acute lymphoblastic leukemia, Lab Oncology
9. Pattern of CYP3A5 & MDR-1 single nucleotide polymorphism & its impact on individualization of Tacrolimus based immunosuppression in living Renal Allograft recipient, Nephrology
10. Prenatal screening initiative by dried blood spots: role for triaging and resource utilization, MAMC, New Delhi
11. Prognostic and surgical outcomes of cataract surgery in paediatric uveitis, Ophthalmology
12. Study of bone mass in Asian Indian Newborns, Endocrinology
13. Surgical outcomes of sutureless clear corneal microincision vitrectomy surgery in end stage 5 ROP, Ophthalmology

14. The pathways to cure for Autism Spectrum Disorders, Public Health Foundation of India (PHFI), New Delhi
15. The pattern of visual impairment in spectrum of hypoxic ischemic encephalopathy, Department of Ophthalmology, RP Centre
16. Understanding and improving the nonverbal biomarkers of object perception in autistic subjects, IIT Delhi

## PUBLICATIONS

**Journals: 162 Abstracts: 44 Chapters in Books: 22 Books: 5**

## PATIENT CARE

Name of Service	New Cases	Old Cases	Total Attendance
Paediatric General OPD	32994	81124	114118
Pediatric Neurology Clinic (PNC)	888	5683	6571
Paediatric Neuromuscular disease	208	1375	1583
Pediatric Gastroenterology Hepatology and Nutrition (PGC)	244	1862	2106
Paediatric Well Baby Clinic	512	08	520
Paediatric High Risk Neonatology Clinic (HRC)	315	1723	2038
Pediatric Renal Nephrology Clinic (RMC)	455	3488	3943
Paediatric Chest Clinic (PCC)	400	3422	3822
Paediatric Tuberculosis Clinic	186	1174	1360
Paediatric Rheumatology Clinic (PRC)	452	2981	3433
Paediatric Genetics and Birth Defects Clinic	3317	1214	4531
Paediatric Genetic Antenatal cases	2477	144	2621
Paediatric Oncology Clinic	317	2341	2658
Pediatric Cancer Survivors' Clinic (PCSC)	177	1318	1495
Pediatric Endocrine and Metabolism Clinic (PEC)	141	1053	1194
Child Development Clinic (CDC)	1107	2480	3587
Neurocysticercosis clinic (NCC)	194	1119	1313
Autism Clinic	470	2510	2980
Pediatric Psychology Clinic	442	185	627
Pediatric Myopathy Clinic	461	1871	2332
Grand Total			

In addition, Cystic fibrosis and Paediatric HIV services were provided in Paediatric Chest Clinic.

Kangaroo Mother Care unit is run along with follow-up services of normal and at-risk neonates.

**Physiotherapy Services** were provided to the patients in various clinics (Neurology, Myopathy, Genetics, High risk, Endocrinology, Development, Chest, Rheumatology) and seeking general OPD services.

**Total physiotherapy sessions provided during 2019-2020: 4550**

### Indoor services

- Indoor services include admission facilities in general wards, day care facility, neonatal units (NICUs A and B), Kangaroo Mother Care unit and Pediatric Intensive care facility.
- The Department operationalized an 8-bedded **High Dependency Unit** in children ward to cater to child patients

with life-support and other special needs. A special training program for the nurses of the HDU was held.

- Children requiring short procedures or interventions are admitted for a day in the Day Care Unit situated in the C5 ward.

### Total indoor admissions

Long admissions in Paediatric wards: 2861

Admission in day care facility: 16,600

Patient admitted in PICU

Admissions in NICU A+B: 612

### Specialized investigations

#### Endocrinology

Body composition analysis by PEAPOD: 385

#### ECLIA tests

1. Human Growth Hormone: 645	2. Insulin: 150
3. Vitamin B12: 165	4. Folic acid: 165
5. Ferritin: 65	6. HBsAg: 70
7. HCV: 70	8. PCT: 650
9. FT <sub>4</sub> : 20	10. Vitamin D: 50
11. Cortisol: 30	

#### Gastroenterology

Diagnostic Gastroscopy: 700	Endoscopic variceal ligation and sclerotherapy: 300
Endoscopic glue injection: 5	Endoscopic hemoclip application: 2
Foreign body removal: 15	Percutaneous endoscopy gastrostomy: 5
Colonoscopy: 120	Liver biopsy: 55

#### Genetics

<b>Cytogenetics Lab:</b>	Peripheral and cord blood cultures 398
Amniotic fluid cultures 233	Chorionic villi cultures 20
QF-PCR 583	

#### Molecular Lab

##### Routine tests carried out:

1. Beta Thalassemia ( $\beta$  Thal) mutation analysis carried out in - 201 families  
Prenatal diagnosis for  $\beta$  Thal offered to – 81 families
2. Spinal Muscular atrophy (SMA) mutation analysis carried out in - 141 cases  
Prenatal diagnosis for SMA offered to – 14 families
3. Duchene Muscular dystrophy (DMD) mutation analysis carried out in - 347 families  
Prenatal diagnosis for DMD offered to – 22 families
4. Fragile X screening carried out in – 345 families
5. Cystic fibrosis molecular analysis carried out in – 104 cases  
Prenatal diagnosis for Cystic fibrosis offered to -05 families
6. Achondroplasia mutation analysis carried out in – 18 cases  
Prenatal diagnosis for Achondroplasia offered to - 03 families

7. Non-syndromic hearing loss (Connexin 26) screening carried out in – 24 cases  
Prenatal diagnosis for Connexin 26 offered to - 03 families
8. Sex Chromatin related abnormalities in – 42 cases
9. Albinism Screening carried out in – 01 case  
Prenatal diagnosis for Achondroplasia offered to - 02 families
10. RETT Syndrome analysis carried out in –31 cases  
Prenatal diagnosis for RETT syndrome offered to - 03 families

**Tests carried out on Research basis:**

1. Prenatal diagnosis for BWS offered to – 01 family
2. Megalencephalic leukoencephalopathy (MLC) mutation analysis carried out in –07 cases
3. Prenatal diagnosis for Mitochondrial mutation analysis carried out in – 02 cases
4. Prenatal diagnosis for MPS (MPS-I) offered to - 01 family
5. Prenatal diagnosis for GSD offered to - 01 family
6. Prenatal diagnosis for Krabbe Disease offered to – 01 family
7. Prenatal diagnosis for APERT offered to – 01 family
8. Prenatal diagnosis for GA offered to - 01 family

**Biochemical Genetics Lab:**

1. **Antenatal Screening: 1654**
  1. Triple Marker - 65
  2. Dual Marker – 1589
2. **Enzyme Assays for Inborn Error of Metabolism: 667** (including Chitotriosidase)
  - Gaucher Disease: 67
  - Neimenn pick disease: 55
  - Hurler (MPS-I): 22
  - Hunter (MPS-II): 20
  - Sanfilippo (MPS III B, C, D): 16
  - Morquio A (MPS-IVA): 22
  - Morquio B (MPS-IV B): 11
  - GM1 Gangliosidosis: 33
  - Metachromatic leukodystrophy: 43
  - MPS-VI: 14
  - MPS VII: 2
  - Tay-Sach's: 35
  - Sandoff disease: 5
  - Mucopolipidosis: 6
  - Krabbe's: 35
  - Neuronal Ceroid Lipofuscinosis: 42
  - Pompe: 32
  - Biotinidase Deficiency: 57
  - Galactosemia: 48
3. **Biomarkers for LSDs**
  - Chitotriosidase: 102
  - Urinary GAGs: 74
4. **Prenatal Diagnosis of Lysosomal storage disorders**
  - Non Immune Hydrops: 17
  - Other Lysosomal Storage disorders: 17
  - Gaucher Disease: 3
  - GM2 Gangliosidosis: 3
  - GM1 Gangliosidosis: 2
  - MPS IVA: 2
  - Others: 7 (MLD, MPSI, MPSII, MPSVI, NPD, Krabbes, NCL)
5. **Small Molecule Inborn Errors of Metabolism**
  - Blood Ammonia: 149
  - TLC: 98
  - HPLC: 63

**6. Urine Chemical tests**

Small Molecules: 96  
 Large Molecule (MPS, Oligosaccharide): 15

**Neonatology**

Invasive blood pressure monitoring: 110  
 Targeted neonatal echocardiography: 120  
 Targeted neonatal ultrasonography:120  
 High frequency ventilation: 34  
 Inhaled nitric oxide: 14  
 Total parenteral nutrition: 100  
 AABR: 200  
 Therapeutic hypothermia:7  
 Arterial blood gas analysis: 300  
 Point of care glucose estimation: 800  
 Hematocrit: 450  
 Total serum bilirubin: 600  
 Gram staining: 300  
 Laser therapy for ROP: 390

**Nephrology**

**Special tests and procedures**

Kidney transplants in children 14  
 Hemodialysis 1535  
 Acute peritoneal dialysis (including automated peritoneal dialysis) 64  
 Continuous ambulatory peritoneal dialysis 163  
 Plasmapheresis sessions 677  
 Continuous renal replacement therapy 13  
 Sustained low efficiency dialysis 27  
 Temporary hemodialysis catheter placement (internal jugular, femoral) 85  
 Renal biopsies 133  
 Ambulatory blood pressure monitoring 340  
 Monitored infusions (albumin, cyclophosphamide, rituximab) 1481  
 ELISA for antibodies to complement factor H 334  
 Surface CD46 expression 56

**Neurology**

Total number of procedures done  
 1) EEG – 2207, Video EEG – 1637, Ambulatory EEG – 132 (Total EEG – 4076)  
 2) NCS and EMG – 295  
 3) RNST - 25  
 4) PSG – 150  
 5) Day Care Procedures: Lumbar Puncture – 176, Skin biopsy – 33, Nerve biopsy – 7, Muscle biopsy – 70  
 6) Spinraza treatment to spinal muscular atrophy patients under SIPHAP (SPINRAZA INDIVIDUAL PATIENT HUMANITARIAN ACCESS PROGRAM)

Loading dose (4 doses fortnightly) given to SMA type 1- 2 patients: SMA type 2- 10 patients.

<b>Psychological and Developmental test</b>	
VSMS for SQ (for SQ, Cochlear Implant)	3600
Developmental Profile 3	4000
Childhood Behavior Checklist	6800
Malin’s Intelligence Scale for Indian Children	4500
Wechsler Intelligence scale for children	40
House Tree Person test	1100
Developmental scale for Indian Infants (DASII)	570
Sensory Profile 2	280
DSM-5 for Autism Spectrum Disorder	1010



Childhood Autism Rating Scale	540
INCLIN tool for ASD	126
ISAA tool for ASD	126
DSM-5 for Attention Deficit Hyperactivity disorder	120
INCLIN tool ADHD	74
AIIMS modified tool for ADHD	74
CONNER's rating Scale for ADHD	95
Grade Level Assessment Device	300
NIMHANS battery for learning disorder	152
<b>Total Patients = 12,680</b>	
<b>Including ward and Emergency Patients: (13, 535)</b>	
<b>Intervention and Counseling</b>	
<b>Total Psychological intervention</b>	
Early stimulation therapy	1360
Behavioral Intervention	5600
Psychological & personality assessment using HTP (Functional)	740
Psychological counseling for Nocturnal Enuresis	65
Counseling for Tic disorder	52
Cognitive Behavior Therapy	1200
Parent's counseling in Ward	195
Parent's counseling in Emergency	35
<b>Certification</b>	
<b>Disability Certification</b>	
Patients evaluated for certification	<b>325</b>

### Oncology

S. No	Tests	Numbers
1	Pro BNP	175
3	URIC ACID	144
4	SGOT	84
5	SGPT	84
6	PHOSPHATE	24
7	MAGNESIUM	144
8	BILIRUBIN (DIRECT)	60
9	BILIRUBIN (TOTAL)	60
10	TROPONIN-I	175
11	TOTAL PROTEIN	24
12	ALBUMIN	24
13	CREATININE	24
14	UREA	24
15	POTASSIUM	24

16	Flowcytometry & MRD estimation for acute lymphoblastic leukemia	100
17	Hemogram I critical care lab	4000
18.	Bone marrow	700
19.	CSF/ITM	1100
20.	Biopsy	600
21.	PRP/PRBC transfusion	1200

### **Pulmonology, Intensive Care, Tuberculosis**

#### **Special lab tests**

1. High Speed Video Microscopy: 274
2. Transmission Electron Microscopy from nasal brush: 150
3. Mutations for PCD 150
4. Sweat chloride estimation: 631
5. Pediatric flexible bronchoscopy 321
6. EBUS (Endobronchial ultrasound) 43
7. Spirometry 1251
8. Infant PFT 368
9. Plethysmography 7
10. Impulse Oscillometry (IOS) 781
11. Fractional excretion of Nitric Oxide (FeNO): 671
12. Nasal Nitric Oxide (NO): 221
13. Total and specific IgE 192
14. Specific IgE against aspergillus 74
15. Specific IgG against aspegillus 71
16. Specific IgG against Lentil 12
17. Specific IgG against avian antigen 15
18. Exercise testing 72
19. 24 hours esophageal pH study 15
20. Cryo lung biopsy 2
21. Stool for Xpert ultra 36
22. Urine for LAM by fusiLAM 36
23. Rapid strip test for Dengue 101

#### **Rheumatology**

Telephonic services: 240

Collaborative Uvea-JIA clinic in partnership with Department of Ophthalmology (July 2019 Onwards) children screened: 430

Transitional care services in collaboration with Department of Rheumatology (transferred to adult care): 05

Intra-articular steroid (IACS) administrations & US guided IACS:

- Joints injected: 279
- USG guided IACS injections: 14
- Diagnostic arthrocentesis: 06
- Diagnostic Skin biopsy: 04

Administration of Biological agents for various rheumatic disorder: 41

#### **Senior physiotherapist**

Performed 98 cardio-pulmonary exercise testing in Pediatric Medicine OPD

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

### Students/ Research Staff

- 1) First position in Neuropedicon Neurology Quiz, 28 July 2019 (Dr Prabhjot Kaur and Dr Juhi Gupta)
- 2) Dr Priyanka Madaan won the 2019 International Scholarship Award for her thesis titled “Neurocognitive outcomes and their Diffusion Tensor Imaging (DTI) correlates in children with Mild Traumatic Brain Injury (mTBI)”

**Dr Rajni Sharma** delivered a talk at Doordarshan on “Hypothyroidism” on DD News Total Health Programme on 7 July 2019; took part in Public lecture and panel discussion on “Obesity: a growing epidemic” organized by Department of Medicine at AIIMS on 16 October 2019.

**Professor Madhulika Kabra** was invited by the WHO for an Expert group meeting on Genomic & Genetic Disorders at Pretoria South Africa; was appointed as a Co- Chair for the ICMR Rare Disease Task Force

**Dr Madhumita Roy Chowdhury** secured a First prize for poster presentation in the Clinical Research & Basic Sciences Category at Sixth Annual Conference of the Society for Indian Academy of Medical Genetics & Indo-US symposium on Genetic Neuromuscular Disorders organized by NIMS, Hyderabad & CDFD Hyderabad, from 21st to 23rd November 2019.

**Dr Rashmi Shukla** was awarded the Short Term ICMR-DHR International Fellowship for Senior Biomedical Scientists 2019-2020.

**Professor Ashok Deorari:** West Zone Neocon 2019 Oration ‘Innovative solutions to RMCHA education’; West Bengal state NNF Prof Bagchi Oration: “Quality of Care”; Dronacharya Award for the best teacher at CME Excellence Summit and Awards; Special mention award #mBillionth2019 for the preterm care App developed for Best Practices in Preterm “Do No Harm”.

**Professor Ramesh Agarwal** acted as the Guest Editor to a supplement to Journal of Perinatology entitled “Goat lung surfactant for treatment of respiratory distress syndrome in preterm neonates in India”.

**Dr M. Jeeva Sankar** was Coordinator of the “Basic Course in Bio-medical Research”, an online course for post-graduate medical students and faculty of the country; course approved by Board of Governors - in supersession of Medical Council of India and conducted by NIE, ICMR; Member of the Technical Expert Committee (TEC) on Maternal and Child Health – Developmental and Disease Biology, Department of Biotechnology, Government of India; Expert and Member of the Project Monitoring Committee (PMC) of the BIRAC-DBT-BMGF Grand Challenges India for reviewing the progress of research projects; Member of the Working Committee of the ‘Clinical Research Unit (CRU)’, AIIMS, New Delhi, which shall provide resources and services to advance clinical research in the institute; Member of the ‘First Level Screening Committee’ under Grant-in-aid scheme of Department of Health Research, Ministry of Health and Family Welfare (MoHFW), Government of India for reviewing the research proposals on Child Health; Member of the Guideline Development Group (GDG) of the World Health Organization in Maternal and Perinatal Health; Member of the Centre Core Committee (C3) for the Maternal and Child Health program of the Knowledge Integration and Translational (KnIT) Platform, supported by BIRAC, Department of Biotechnology, Government of India; Global and national collaborator to the ‘Global Burden of Diseases, Injuries, and Risk Factors Study (GBD)’ – the largest effort to measure epidemiological levels and trends of disease burden worldwide – for Health Metrics and Evaluation (IHME) at the University of Washington; Member of the Technical Group overseeing the conduct of the ‘Fellowship in Clinical Research Methodology and Evidence Based Medicine’ course at AIIMS, New Delhi; Member of the Expert Consultation Group on ‘STG Development Manual’ that facilitates development of Standard Treatment Guidelines for the MoHFW, Government of India; Member of Editorial Group of ‘NNF – Clinical Practice Guidelines 2019’; involved in hand-holding neonatologists across the country to help develop the guidelines.

**Dr Anu Sachdeva** was Member of the Consultation Group on ‘STG Development Manual’ that facilitates development of Standard Treatment Guidelines for the MoHFW, Government of India; Member of Writing Group of ‘NNF – Clinical Practice Guidelines 2019’.

**Professor Arvind Bagga** received International Pediatric Nephrology Association Education award, 2019; Secretary General of Asian Pediatric Nephrology Association; Assistant Secretary, International Pediatric Nephrology Association; Editor, Asian Journal of Pediatric Nephrology; Editor, Cochrane Kidney and Transplant Group; Editorial Board, Pediatric Nephrology; Indian Journal of Pediatrics; Pediatrics & Child Health; World J Pediatrics; Member, Pediatric Review Group, Indian Council of Medical Research; Research Advisory Committee: Department of Biotechnology, Government of India; and All India Institute of Medical Sciences.

**Professor Pankaj Hari** was Council Member from India, to International Pediatric Nephrology Association; Member, Best Practices & Standards Committee, International Pediatric Nephrology Association; Member, Editorial Board, Asian Journal of Pediatric Nephrology, Indian Journal of Trauma and Emergency Pediatrics, Journal of Progress in Pediatric Urology, International Journal of Nephrology Urology; Reviewer for Clinical Journal of American Society of Nephrology, British Medical Journal (Open), Pediatric Nephrology, Nephron, Kidney and Blood Pressure Research, Acta Paediatrica, Renal failure, Indian Pediatrics.

**Dr Aditi Sinha** received Dr. HB Dingley Memorial Award, for research in Pediatrics, Indian Council of Medical Research for the year 2018; Member, core group for IPNA Guidelines on management of steroid resistant nephrotic syndrome; Joint Secretary, Indian Society of Pediatric Nephrology; Member, Editorial Board, Pediatric Nephrology, Asian Journal of Pediatric Nephrology; Section Editor for Nephrology, Indian Journal of Pediatrics; Reviewer for Pediatric Nephrology, Indian Pediatrics, Indian Journal of Nephrology, Indian Journal of Pediatrics.

**Professor Sheffali Gulati** was awarded Atal Swasthya Bhushan Samman 2019 for her extraordinary services extended through clinical practice in Sevron Foundation on 21 December 2019 at NDMC Convention Centre, Sansad Marg, New Delhi; Award by Pediatric Neurology Chapter of IAP, in recognition of outstanding contribution in the field Pediatric Neurology and Commendable devotion and hard work to Pediatric Neurology Chapter of IAP during Neuropedicon 2019; Advisory Board Member, Academy of Pediatric Neurology, IAP 2019 onwards; Chairperson elect, Academy of Pediatric Neurology, IAP, March 2020; Patron 3rd International BMI Autism conference, Behavior Momentum India, February 2020; Only Asian Expert selected for Elicitation Board Expert Group for Autism Spectrum Disorder, France, January 2020; Felicitated for Championing Inclusion of Differently abled by Learning Ladder Family April 2019; Serving as Editorial Board Member (4); Reviewer for various International and National Journals (including BMJ open, Journal of Inherited Metabolic disease, American Journal of Medical Genetics, Journal of Child Neurology, Frontiers, Epileptic Disorders); Examiner and Reviewer of various theses of MD, DCH DM and PhD. Member of many International and National Professional bodies (23); Expert for various committees: Ministry of Health and Family Welfare: Rashtriya Bal Swasthya Karyakram; formulating guidelines for treatment of rare diseases. Consultation on Early Childhood Development: Journey of the First 1000 days, National trust: Autism; National Coordinator of master trainers in Autism tools; early intervention, Selected as representative of Ministry of Health and Family Welfare for reviewing National Trust Act Amendmen, Member of ICMR Project Review Group of Reproductive Biology, Maternal & Child Health, Member of DBT Technical Expert Committee (TEC) of Maternal and Child Health-Developmental and Disease Biology, Biotechnology Industry Research Assistance Council (BIRAC): Expert for evaluation of projects, National List of Essential Medicines (NLEM): member of the "Neurology/ Psychiatry Expert Group", Indian pharmacopeia mission: Expert of Subject review committee for 6th edition of National Formulary of India (NFI) 2019-2020, Member of MCI expert group for drafting DM (Pediatric Neurology curriculum), Teacher qualifications and Expert for Inspections of Medical colleges, including for DM pediatric Neurology, UGC expert for evaluating medical universities, selection for fellowships, travel grants, Member Neurology Expert Group to discuss the advisory and editorial board recommendations for STWs, and the Health Benefit Packages under the AB-PMJAY scheme in collaboration with the NHA, Ministry of Women and Child Development: Expert for Sensitizing the communities to the needs of persons with disabilities in Promoting Promising Dietary Practices: Social & Behavioral Change Communications (SBCC) strategies to advance "Jan Andolan" in Poshan Aabhiyaan, Ministry of Social Justice and empowerment: Chairperson of subcommittee on Certification of Developmental Disorders including Autism; Member of National Expert Committees: for developing guidelines for assessment and certification of specified disabilities; Disabilities requiring high support; Identification of posts in government jobs for persons with disabilities, PH reservation in MCI and Combined Medical Services; sub committee on multiple disabilities; Expert group for finalizing training module for In-Service Training & Sensitization Programme, Rehabilitation Council of India; UNICEF: Global partnership on children with disability- ECD task force; NCERT: inclusion of children with special needs in mainstream schools, ECCE, Member of Expert committee on Education of children with special needs

**Dr. Biswaroop Chakrabarty** was part of Central Team of Experts deputed by MOHFW during AES outbreak in June 2019, Muzaffarpur, Bihar; Part of the High Powered National Consultation on AES in Bihar at ICMR Headquarters, New Delhi on 19 July 2019; Nominated as a member of the Anti-infectives expert group for revision of National list of Essential Medicine by Standing National Committee, Department of Health and Family Welfare (Drug Regulation System), MOHFW and attended the first meeting on 7 February 2020.

**Professor Rachna Seth** was Chairperson survivorship & late effects subcommittee of Indian Pediatric Oncology Group, the research body of pediatric hematology Oncology chapter, Indian Academy of Pediatrics; Continuing as member of Editorial board, Indian Pediatrics; Co-ordinator DM Program Pediatric Oncology, AIIMS; External examiner for DM Pediatric Oncology at TMH Mumbai & Kidwai memorial hospital, Bengaluru; Member Global Retinoblastoma Study Group; Ongoing First multicentric childhood cancer survivorship registry steered by AIIMS, Pediatric Oncology division, Dept. of Pediatric; Felicitated by Director, AIIMS at "World Blood Donor Day" on 14 June 2019; DM Pediatric Oncology residents presented cases at IJP Clinical grand round (September 2019) and IAP Delhi meeting (July 2019); Chairperson: CME in Pediatric Hematology Oncology, CME on pediatric leukemia and lymphoma, CME on brain tumors.

**Dr Aditya Gupta** was starting Allogenic Hematopoietic Stem Cell Transplant in the Division. Three allogenic HSCT have been done in the year 2019 and the total number of HSCT done is 15 (since 2017); Chairing a session on The best TKI in Pediatric CML; CME on Lymphomas and Leukemias; 9 February 2020. Sir Ganga Ram Hospital.

**Professor SK Kabra** delivered SMS Medical College seven decade celebration oration on “Innovative Approach for Identification and Management of a Rare Disease in Resource Poor Setting: Cystic Fibrosis a Prototype” at SMS Medical College, Jaipur on 25 January 2019; Late Prof A. C Baruah Oration on “Cystic fibrosis diagnosis & management” in Annual Conference of AIP Assam (ASPEDICON 2019) organized by IAP Tinsukia at Tinsukia on 29-30 November 2019; Member: Technical working group for updation of guidelines on Paediatric TB.Ministry of Health and Family welfare, central TB division.GOI; Member Technical working group on Latent TB Infection Management in India. Ministry of Health and Family welfare, central TB division. GOI; Chairperson: Subcommittee Latent TB Infection Management in India. Ministry of Health and Family welfare, central TB division. GOI.

**Dr KR Jat** was awarded Top Reviewer for Indian Pediatrics, 2019; Associate Editor: BMC Pediatrics; Reviewer for following journals: Cochrane Collaboration, Chest, Pediatrics, Pediatric Pulmonology, Indian Pediatrics, Allergy, asthma and clinical immunology, Pediatric Allergy, Immunology, and Pulmonology, Indian Journal of Pediatrics, Respiratory care, Indian J of Critical Care Medicine (IJCCM), Plos One, BMC infectious disease, BMJ Open. **Membership of scientific societies:** Member of PRESIDE (Pediatric Research and Education Society of India), Member of European Respiratory Society (ERS), Member of American Thoracic Society (ATS), Life member of Respiratory Chapter of Indian Academy of Pediatrics (IAP), Life Member of Indian Academy of Pediatrics (IAP), Life Member of Rheumatology Chapter, IAP, Life member of Indian Rheumatology Association (IRA), Life member of Indian Immunology Society (IIS), Instructor for Pediatric Advanced Life Support (PALS) and Basic Life Support (BLS), Trainer of Asthma Training Module (ATM), Respiratory Tract Infection-Group Education Module (RTI-GEM), and Pediatric Tuberculosis module.

**Dr Jhuma Shankar** was Organizing team of “Basic life support course for health care providers at AIIMS”- 11 August 2019; Organized “Advanced life support course at AIIMS-7th and 8 September 2019; Organizing team of “AIIMS Pediatric Pulmonology and Intensive Care Module 2019”- 20 July to 21st July 2019; Organised training program for doctors and nurses from Bihar for acute encephalitis syndrome for 2 batches (1-14 February and 7-21 March 2020); Faculty and resident were posted in Muzaffarpur, Bihar at Sri Krishna Medical College and Hospital, for the 2019 Acute Encephalitis Syndrome outbreak for 2 weeks for patient care, training, supervision and guideline development. We were involved in investigation of the epidemic, in making draft management protocol and are involved in Bihar governments Standard Operating Procedure development for AES in Muzaffarpur, Bihar.

**Dr Narendra Bagri** has Life membership of Indian Rheumatology Association (LM-1300) 2019; Membership of Pediatric Rheumatology European Society membership (PRESM2019-I/283) 2019; Nominated as medical member of NOC committee, Central Adoption Resource Authority (CARA), Ministry of Women & Child Development from 201; Participated in Health Camp organized by Samudayik Vikas Samiti at Pratapgarh, Uttar Pradesh on 7 December 2019; Contributed as medical experts from AllMS, New Delhi to Muzaffarpur, Bihar to join the Central team of experts during the acute encephalopathy syndrome 2019.

## VISITING SCIENTIST

1. Professor Olaf Hiort (Professor of Pediatric Endocrinology at Lubeck University, Lubeck, Germany and European Lead of the Euro- Network for rare Diseases, and Dr. Ralf Werner, Geneticist at Lubeck University, Lubeck, German), visited the division of Pediatric Endocrinology from 30 November to 2 December 2019.
2. Dr Nicole Fleischer, Head of Applications & Research, FDNA Inc delivered a lecture on “Identifying facial phenotypes of genetic disorders using deep learning” on 13 November 2019.
3. Dr Inderneel Sahai (Chief Medical Officer of the New England Newborn Screening Program and Senior Attending in the Department of Genetics and Metabolism at Massachusetts General Hospital, Boston) took lectures on Metabolic myopathies and Newborn screening on 3 October 2019.
4. Dr Anibh Das (Head of Paediatric Metabolic Medicine at the Department of Paediatrics, Hannover Medical School) delivered lecture on Hepatorenal tyrosinaemia: diagnosis, treatment, outcome and monitoring’ on 25 September 2019.
5. Dr Sadiqua Anjum (DM Neonatology), Osmania Medical College, Hyderabad, Telangana from 1 January 2020 to 15 January 2020
6. Dr Karamalla Saddam Hussaain (DM Neonatology), Maulana Azad Medical College, New Delhi, India from 1 September 2019 to 15 September 2019
7. Dr Kaushiki Shankar (DM Neonatology), Maulana Azad Medical College, New Delhi, India from 1 October 2019 to 15 October 2019
8. Dr Parvati Chabd Dadwal, University of Queensland, Canada from 24 January 2019 to 23 February 2019

## 9.28. Paediatric Surgery

	<b>Professor and Head</b> M Bajpai	
	<b>Professor</b>	
Sandeep Agarwala		M Srinivas (on deputation)
	<b>Additional Professor</b> Shilpa Sharma (JPNATC)	
	<b>Associate Professors</b>	
Vishesh Jain Prabudh Goel		Anjan Dhua Devendra Kumar Yadav
	<b>Assistant Professors</b>	
Ajay Verma		Aparajita Mitra (Contract)

### HIGHLIGHTS

The Department organized the 45th Annual Conference of the Indian Association of Pediatric Surgeons (IAPSCON 2019) along with the CME cum Live Operative Paediatric Urology workshop from 30 October to 3 November 2019. The event coincided with the Golden Jubilee celebrations of the establishment of the Department of Paediatric Surgery in the Institute. To commemorate the occasion, the event also witnessed the Meeting of the Alumni of the Department in the evening of 30 October 2019 and the First International Nursing CME and Module Development in Child Care. The events were attended by more than 300 delegates with widespread representation from all parts of India and abroad. The department introduced for the first time in the Annual Conference of IAPS features like Live telecast wordover and launched a smartphone application for the smartphone. An alumni meet was also held which was attended by more than 150 alumni from the Department scattered over the world. A “First Day Cover celebrating the Golden Jubilee of the Department of Paediatric Surgery” was released by the Department of Postal Services, Government of India. The Department launched the Journal of Progress in Paediatric Surgery at this conference.

The department is poised for expansion with faculty, space and staff in the upcoming maternal and child health centre, developing all sub-specialties and caring for children with serious malformations, advanced cancers, trauma and others.

### EDUCATION

#### *Undergraduate, postgraduate, paramedical teaching*

The department is actively involved in teaching and training of MCh Pediatric Surgery trainees, postgraduate, undergraduate, nursing students, BSc and MSc nursing students. A new and innovative idea to develop and improve teaching and academics in our department is creation of a google group called “Surgery-paedia”. Day to day in clinical practice and during seminar various doubts and queries are generated. The doubts and queries are allotted to residents who read about the query and post the answer in the google group for the benefit of everybody. The platform has been further enhanced by cataloguing the communications system wise for easier and faster search and retrieval.

#### **Short term training was provided to:**

- Dr Shipra Sharma, Medical Institute, Chattisgarh, 24 July 2019 - 23October 2019
- Dr Sandeep Kumar, Dr Ram Manohar Lohia Hospital, 1-31 October 2019
- Dr Addagatla Rajashekhar, Dr Ram Manohar Lohia Hospital, 1-30 November 2019
- Dr Ritesh Kumar, Dr Ram Manohar Lohia Hospital, 2-31December 2019

#### **CMEs/Workshops/Symposia/National and International Conferences**

- 45th Annual conference of the Indian Association of Pediatric Surgeons (IAPSCON) from 1 to 3 November 2019
- CME cum Live operative Pediatric Urology Workshop on 30 and 31 October 2019
- 1st International Nursing CME and Module Development in Child care on 1 and 2 November 2019
- Public Awareness Lecture series Program on Child Sexual Abuse on 12 November 2019

**Lectures delivered****M Bajpai: 8****Vishesh Jain: 3****Devendra Kumar Yadav: 1****Sandeep Agarwala: 8****Anjan Dhua: 6****Ajay Verma: 1****Shilpa Sharma: 34****Prabudh Goel: 5****Oral papers/posters presented: 74****RESEARCH****Funded projects*****Ongoing***

1. Biocompatible dressing for paediatric hypospadias repair, Shilpa Sharma, AIIMS-IIT Delhi, 2 years, 2019-2021, Rs 10 lakhs
2. Centre for advanced research in congenital uropathies & CKD, Minu Bajpai, AIIMS, 5 years, 2018, Rs 190 lakhs
3. Development of a portable rapidly adjustable camera holding device to minimize image tremor and fatigue of the camera holding assistant during minimally invasive surgery in children, Vishesh Jain, AIIMS-IIT Delhi, 2 years, 2020-2021, Rs 10 lakhs
4. Development of technology-based doctor patient interface to facilitate patient care and health research in paediatric urology, Prabudh Goel, ICMR, 3 years, 2019, Rs 130 lakhs
5. Electromotive administration of Intravesical Botulinum Toxin A in Pediatric Neurogenic Bladder, Shilpa Sharma, AIIMS, 2 years, 2019-2020, Rs 5 lakhs
6. Establishing Guidelines for Fetal Counseling for Surgical Congenital Anomalies, Shilpa Sharma, DBT, 4.5 years, 2014-20, Rs 48.36 lakhs
7. Reference range of serum alpha fetoprotein in children below 3 years of age, Devendra Kumar Yadav, AIIMS, 2 years, 2015-2020, Rs 2.3 lakhs

***Completed***

8. Effect of Curcumin and its combination with Piperine in experimentally induced Liver fibrosis in rats: A comparative analysis., Shilpa Sharma, AIIMS, 2 years, 2016-2018, Rs 5 lakhs
9. Role of Bone marrow mononuclear cells and Renal Stem cells in renal preservation in Obstructive Renopathy—An Experimental study in mice, Shilpa Sharma, AIIMS, 2 years, 2013-2015, Rs 5 lakhs
10. Role of cortical transit time on MAG3 scintigraphy in children with PUJ obstruction, Vishesh Jain, AIIMS, 2 years, 2015-2019, Rs 1.65 lakhs

**Departmental projects*****Ongoing***

1. A comparative study of smooth muscle cell characteristics and myofibroblasts in processus vaginalis of pediatric inguinal hernia, hydrocele and undescended testis
2. A prospective study of the short term outcomes of operated cases of distal penile hypospadias in terms of immediate and early complications.
3. A study on differential expression of molecular markers in urine with respect to genetic propensity to congenital uropathies
4. Antegrade or retrograde insertion of transanastomotic feeding tube in primary repair of esophageal atresia with tracheoesophageal fistula on leak rate and wound infection
5. Assessment of intra-hepatic portal anatomy (left and right portal veins) and anatomical feasibility of Rex shunt surgery on computed tomography portography in pediatric patients with Extra-hepatic Portal Vein Obstruction
6. Assessment of renal function in children with unilateral non-syndromic Wilms' tumor: An ambispective control study
7. Comparison of Double "J" and Infant feeding tubes as stents in open Cohen's ureteric reimplantation -A Randomized Study
8. Differences in microvessel density and growth factor levels between inner and outer preputial skin in distal hypospadias
9. Early outcomes in children with anorectal malformations following single-staged abdomino-perineal pull through by hanging bowel technique: an ambispective cohort study

10. Evaluation of cardiotoxicity related to administration of Adriamycin in children with solid tumors
11. Hypospadias Outcomes Long-Term Database (HOLD): A Prospective Cohort Study
12. Long term outcomes of bladder functions in patients treated for posterior urethral valves
13. Longterm outcome of PSARP in Anorectal malformation
14. Neonatal Anogenital Distance Nomogram and its correlation with anthropometry for North Indian Population
15. Normative Assessment of Pediatric Penile Length in Indian Population
16. Normative values of renal length, parenchymal thickness and renal elastography in Indian Pediatric population
17. Outcome of treatment with ICE (Ifosphamide, carboplatin and etoposide) salvage regime in children with relapsed / recurrent solid tumors
18. Outcomes of non-operative management of Unilateral Pelvi-ureteric Junction Obstruction
19. Plasma GDNF Levels In Spina Bifida: Correlation With Neurological Impairment In Children
20. Profile of serum hepatotrophic factors, serum ammonia levels and quality of life in pts of EHPVO
21. Prospective study of treatment of children with Hepatoblastoma on treatment with Monotherapy and PLADO regime
22. Prospective study of treatment of children with Rhabdomyosarcoma on treatment with IRS-5 regimen
23. Prospective study of treatment of children with Wilms' tumor on treatment with modified NWT5-5 regimen
24. Prospective study on five drug regimen for the management of Clear Cell Sarcoma of the Kidney
25. Prospective Study to Evaluate the Trend of Serum Procalcitonin Levels in Surgical Neonates and Infants and its Correlation with Events during the Post-Operative Period
26. Prospective, Observational Study to evaluate the vasodilatory effect of caudal block in pediatric patients
27. Quality Improvement (QI) project to ensure compliance with administration of maintenance intravenous fluids to Paediatric Surgical patients called for day-care procedures in the pre-operative waiting period
28. Retrospective study of the factors that affect the long-term outcome of operated cases of hypospadias
29. Role of Plasma Renin Activity in predicting renal damage in patients with neurogenic bladder and its correlation with existing parameters of renal damage
30. Role of pulmonary metastectomy in pediatric solid tumors
31. Role of Serum Matrix Metalloproteinase-7 levels in diagnosis and prognostication of infants with extra-hepatic biliary atresia
32. Sonographic Assessment of Epidural Space Depth and Orientation in Paediatric Patients at Various Vertebral Levels: An Observational Cross-Sectional Study
33. Study to identify the genotype-phenotype correlation in testicular biosynthetic defects and 5- $\alpha$  reductase deficiency with respect to Disorders of Sex Development
34. To study the long-term effects of disease and its treatment in survivors of childhood solid tumors
35. Validation of Sliding Scale Penometer for Measurement of Stretched Penile Length in Pediatric Age-Groups

### ***Completed***

1. A study on the prevalence of polymorphism in nephrogenic genes in congenital uropathies and their influence on renal functional outcomes
2. Assessment of long term postoperative outcomes of anorectal function in patients with Hirschsprung's disease
3. Comparison of analgesic efficacy of ultrasound guided quadratus lumborum block versus erector spinae plane block in children undergoing open pyeloplasty: a randomized double blinded controlled study
4. Esophageal button battery in the pediatric population
5. Evaluation of interstitial cells of Cajal- like cells (ICC-LC) and histopathology in congenital pelviureteric junction obstruction and their correlation with intraoperative findings
6. Functional bladder outcomes in patients in patients with bladder/prostate rhabdomyosarcomas
7. Long term outcome of Disorders of Sexual Differentiation
8. Measurement of Stretched Penile Length by the Ruler Method: Estimation of Intra-observer and Inter-observer variations and standardization of the technique
9. MR evaluation of intra-hepatic biliary ductular architecture in patients of EHBA after Kasai portoenterostomy
10. Prognostic factors and outcomes in neuroblastoma in a developing country: An ambispective study
11. Sensitivity and specificity of focussed assessment with sonography for Trauma in determining paediatric solid organ injury following blunt trauma abdomen



12. Study of Immuno-histochemistry correlation of anti-TERT antibody and tumour behaviour in Hepatoblastoma- A pilot study
13. Study of temporal relationship between early markers of renal injury in children with congenital uropathies with and without genetic propensity to renal injury
14. Study on the prevalence of polymorphism in nephrogenic genes in congenital uropathies and their influence on renal functional outcomes
15. To compare aspartate aminotransferase to platelet ratio index, supersonic shear wave elastography and histopathology of the liver in patients of biliary atresia as tools to evaluate hepatic fibrosis
16. To study the temporal relationship between early markers of renal injury in children with congenital uropathies with and without genetic propensity to renal injury

### **Collaborative projects**

#### ***Ongoing***

1. Biofabrication of Skin Graft Substitutes using Functionalised Materials for Tissue Regeneration, Stem Cell Facility, CTVS
2. Efficacy of hetastarch with ropivacaine in prolongation of duration of ilioinguinal and iliohypogastric nerve blocks in paediatric inguinal hernia repair- A preliminary study, Anaesthesia
3. Hepatic regenerative potential of exosomes derived from human Mesenchymal Stem Cells in liver injury model
4. Long term outcomes of bladder functions in patients treated for Posterior Urethral Valves, Radiology, Nuclear Medicine
5. Presentation, management and outcomes in children with adrenocortical tumors, Pathology and Biostatistics
6. Rare disease modelling using induced Pluripotent Stem Cell, Stem Cell Facility, CTVS
7. Role of MIBG therapy for advanced non-responsive and recurrent neuroblastoma, Nuclear Medicine, Stem Cell Facility, CTVS
8. Study of prognostic factors in thoracic PNET, Medical Oncology, Radiotherapy, Radiodiagnosis
9. To study the long-term effects of disease and its treatment in survivors of pediatric solid tumors, Medical Oncology, Reproductive Biology, Obstetrics and Gynecology, Cardiology
10. Understanding the therapeutic role of adult stem cell derived exosome in combating virus induced neurodegenerative disease

#### ***Completed***

1. Efficacy of two different Chlorhexidine gluconate preparations for skin antisepsis in neonates: A non-inferiority randomized trial, Paediatrics
2. Intra- and interobserver variability in the measurements of Cortical Transit Time following MAG-3 Scintigraphy in children with unilateral PUJ obstruction, Nuclear Medicine
3. Presentation, outcomes and management in children with ureterocoele, Nuclear Medicine
4. Role of cortical transit time on MAG3 scintigraphy in children with PUJ obstruction, Nuclear Medicine

### **PUBLICATIONS**

**Journals: 27**

**Abstracts: 24**

**Chapters in Books: 7**

### **PATIENT CARE**

#### **Out Patient Department**

Pediatric surgery outpatient department is run every day. In addition specialty clinics are also run to provide more focused attention to few conditions.

#### **Various specialty clinics run by the Department and faculty:**

- Antenatal Diagnosis
- Craniosynostosis
- Follow Up
- GI Hepatobiliary
- Hydrocephalus

- Intersex and Hypospadias
- Solid Tumor
- Thoracic Surgery
- Urology

#### Facilities available

- Intensive care unit for neonates
- High dependency area
- Computer based Urodynamic and uroflowmetry study
- Computer based Anorectal manometry
- Computer based Esophageal manometry
- 24 hours pH monitoring for Gastroesophageal reflux
- Impedence Manometry for Gastroesophageal reflux

#### Community services

- Weekly outpatient clinic and operative session at CRHSP, Ballabgarh

#### Attendance in OPD and Specialty clinics

OPD/Clinic	New Cases	Old Cases	Total
General	7664	18308	25972
Hydrocephalus	0	34	34
Urology	411	1971	2382
Intersex and urology	16	250	266
Tumor	24	498	522
Craniosynostosis	Nil	Nil	Nil
CRHSP, Ballabgarh	2207	Nil	2207

#### Admissions

AB5 ward: 2481 (1101 Long admissions; 1163 short admissions and 118 long admission) AB5/ICU: 162

#### Surgical procedures

##### Main OT

**Routine:** Major Procedures: 1202; Minor Procedures: 242

**Emergency:** Major Procedures: 343; Minor Procedures: 11

**OPD procedures:** 2884

Biopsies in OPD: 78

**CRHSP, Ballabgarh:** Cases operated: 82

Minor procedures: 166

#### Special Investigations

Urodynamic study: 411

Uroflowmetry: 216

Anorectal manometry: 88

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor M Bajpai** received distinguished teacher award during the CME on Paediatric Surgery in R&R hospital: 21 and 22 September 2019; Professor-in-charge-International Cooperation, Domestic and International MoUs, 3 December 2019, AIIMS, New Delhi; Addressed Her Majesty, The Queen Sylvia of Sweden on Developing collaboration between Swedish Trade Commissioner's office in India and AIIMS, New Delhi, on behalf of All India Institute of Medical Sciences and in the capacity of Professor -in-charge-International Cooperation, Domestic & International MoUs, 3 December 2019, AIIMS, New Delhi; Co-Chair Working Group: Committee on Terms of Reference UCL Global Engagement Office, UK and AIIMS, New Delhi; Led by Director, AIIMS, represented AIIMS, New Delhi on the invitation of Ministry of Health and Welfare (MOHW), Taiwan, National Cheng Kung University (NCKU) and National Cheng Kung University Hospital (NCKUH), Taiwan from 8 – 12 April 2019; Chairman: Cafeteria management committee; As Professor-in-charge-International Coop-

eration, Domestic and International MoUs- Conducted 35 meetings with international delegates, heads of institutions, Deans, Vice-chancellors, Ambassadors of Governments, Trade Commissioners and representatives from Embassies; Organizing Chairman: 45th Annual Conference of the Indian Association of Pediatric Surgeons (IAPSCON 2019); Organizing Chairman: CME cum Live Operative Paediatric Urology workshop from 30 October – 3 November 2019; Organizing Chairman: Golden Jubilee celebrations of the establishment of the Department of Paediatric Surgery at AIIMS, New Delhi; Organized the Meeting of the Alumni of the Department in the evening of 30 October 2019; Organizing Chairman: First International Nursing CME and Module Development in Child Care; Designed LOGO on behalf of the Department and for the release of “First Day Cover celebrating the Golden Jubilee of the Department of Paediatric Surgery” by the Department of Postal Services, Government of India; Launched the Journal of Progress in Paediatric Surgery for the Department of Paediatric Surgery at the All India Institute of Medical Sciences, New Delhi during the IAPSCON 2019.

**Professor Sandeep Agarwala** was awarded the MS Ramakrishnan Oration 2019 of the Indian Association of Pediatric Surgeons; Executive Board Member for the Asian Association of Pediatric Surgeons; Section Editor for the Indian Journal of Pediatrics; Vice Chairman of the Resource Challenged Nations Study Group of SIOPEL; Chairman 62nd Annual Report Committee of AIIMS; Co-Chairman Faculty coordination committee for Pulse 2019, AIIMS; Secretary AIIMSONIANS- The Alumni Association of AIIMS; Member of Committee to consider PhD reforms at AIIMS; Chairman of Messes, shops and establishments committee of AIIMS; Hostel superintendent for AIIMS; Member, Committee for selection of Shri Mohan Lal Wig Medal for Clinical Research; Course instructor for Surgical Oncology Course, Conducted by International Society of Pediatric Surgical Oncology (IPSO), and the European Board of Examination, and European Society of Pediatric Surgery prior to Annual Congress of the European Society of Pediatric Surgery; Course instructor for Master class in Pediatric Surgical Oncology, Conducted by International Society of Pediatric Surgical Oncology (IPSO), and the European Board of Examination, and European Society of Pediatric Surgery.

**Dr Shilpa Sharma** was reelected Executive Body Member World Federation of Association of Pediatric Surgeons 2017-2019, 2020-2022; Executive Council Member of the International Society of Hypospadias and DSD 2018-2020; Chairman of the Delhi Chapter of Indian Association of Pediatric Surgery 2019-2021; Secretary of Research Section of Indian Association of Pediatric Surgery 2018-2020; Editorial Board Member of Pediatric Surgery International; Editorial Board Member of Annals of National Academy of Medical Sciences; Awarded membership of National Academy of Medical Sciences; Member Standing Selection Committee for faculty recruitment of AIIMS, Patna for 2019, 2020; Member, Institute Ethics Committee, Superspecialty Pediatric Hospital and Postgraduate Teaching Institute, Sector 30, Noida.

**Dr Vishesh Jain** was External member on the selection board for selection of Assistant Professor (Paediatric Surgery) held on 4 October 2019, ABVIMS, Dr RML hospital, New Delhi; received Best paper awards for 7 presentations over the last 1 year; Thesis received the UC Chakraborty Award for the best research by the Indian Association of Pediatric Surgeons; Joint Secretary of the 45th Annual Conference of the Indian Association of Pediatric Surgeons; received Travel scholarship by University Grants Commission for presenting a research paper in Japan in May 2019.

**Dr Anjan Dhua** is Member as external expert of Technical Specification Committee of Paediatric Surgery Dept. in ABVIMS, Dr RML Hospital, New Delhi; External member on the selection board for selection of Assistant Professor (Paediatric Surgery) held on 18 September 2019, ABVIMS, Dr. RML hospital, New Delhi; Chairperson in Morning session in “CME-Live operative pediatric urology workshop”, IAPSCON 2019, 30 October 2019, AIIMS; Chairperson of session “Basic sciences in pediatric solid tumors” on 21 December 2019, SOSCON- Mumbai; Chairperson of session “Panel discussion on solid tumour” on 21 December 2019, SOSCON- Mumbai; Nominated as departmental nodal officer for fire safety drills at AIIMS, Delhi; Member of Institute’s Annual Report Drafting Committee; Joint Secretary of the 45th Annual Conference of the Indian Association of Pediatric Surgeons.

**Dr Prabudh Goel** was awarded Fellowship of Indian Association of Pediatric Surgeons; awarded Fellowship of International Scientific Research Organization for Science, Engineering and Technology; honored with the Sushruta Medical Science Award for the year 2018-2019 in July 2019; conferred the Shiromani Award for Excellent and Honorary efforts in the field of Medical and Social Service in August 2019; Award of Excellence for Commendable Contribution in Field of Social Service, Science, Sports, Education, Law, Journalism, Environment and Society from the Advance Research Institute for Development of Social Science in September 2019; Award of Excellence for Committed, Dedicated and Meritorious Service to Teaching, Research, Sports, Environment, Media and Administrative Contribution in September 2019.

**Dr Ajay Verma** delivered a public lecture on child abuse on 12 November 2019.

#### VISITING SCIENTIST

1. Dr Sumit Dave, Associate Professor Surgery and Pediatrics, London Health Sciences Centre, Victoria Hospital, London, Ontario, Canada
2. Dr Andrew McNeely, BC Children Hospital, Vancouver, Canada
3. Dr Mohan S Gundeti, Chicago, USA

## 9.29. Pathology

### Professor and Head

Chitra Sarkar

### Professors

Manoj K Singh  
MC Sharma

Ruma Ray  
Venkateswaran K Iyer  
Vaishali Suri

AK Dinda  
Sandeep R Mathur

### Additional Professors

Sudheer Arava  
Deepali Jain

Geetika Singh

Asit Ranjan Mridha  
Prasenjit Das

### Associate Professors

RajniYadav  
Shipra Aggarwal

Seema Kaushal  
Saumya Ranjan Mallick

### Assistant Professors

Adarsh Barwad  
Madhu Rajeshwari

Prashant Ramtake  
Ruchi Rathore  
Kavneet Kaur

Aanchal Kakkar  
Aruna Nambiranjana

### Group A Officers

Himender Singh Tomar

Rajeshwar Khadia

## HIGHLIGHTS

In the year 2019-2020, Department of Pathology has been able to maintain high-level academics and efficient clinical services. The department is engaged in routine diagnostic reporting of Histopathology (total of 56000 cases) and Cytopathology cases (total of 27000 cases), teaching of undergraduate and postgraduate students, as well as high quality research in various areas of pathology.

New facilities have been added in the department related to molecular pathology and cytogenetic work-up, which include *in-situ* hybridization, capillary electrophoresis, real-time PCR etc. In addition, the department has established tissue microarray system and flow-cytometry set-up. The diagnostic immunohistochemical panel has been expanded and a total of 60000 slides have been stained and studied during this period. The Department is regularly providing reports for Her-2/neu amplification in breast cancers (total 120 cases) and *EGFR* gene mutation in lung cancer (total 450 cases) using molecular methods.

The Department faculty have received funding for 32 extramural projects and 18 intramural projects. A total of 197 papers have been published in peer reviewed national and international journals. The faculty of the Department have presented their research work at various national and international platforms and received awards individually or to their residents. Prof. Chitra Sarkar received the Lifetime Achievement Award from the Delhi Neurological Association for her contributions in Neuropathology. Professor AK Dinda has been nominated as Executive Council Member of Global Council of Regulatory Science Research at Global Summit on Regulatory Science 2019 (GSRS19), European Commission, Joint Research Centre Ispra, Italy. Dr Prasenjit Das has received Kunti Devi Mehrotra Award for Best Published Paper by the Indian Association of Pathologists & Microbiologists. The Department has organized one CME on Bone marrow biopsies, one annual conference of Delhi chapter of IAPM and three post-graduate teaching sessions for Delhi postgraduate students of Pathology. Dr MK Singh has been made the adaptation editor for Robbin's Textbook on Pathological basis of Disease with South Asia content (10th edn.)

Department has organized the visit of Dr Ian Cree who is World Health Organization (WHO) editor of blue books of classification of all tumors from International Agency for Research on Cancer (IARC), Lyon, France. Professor Chitra Sarkar has been nominated as a member of working committee of CIMPACT-NOW (Consortium to Inform Molecular and Practical Approaches to CNS tumor Taxonomy) under the aegis of WHO. Professor Chitra Sarkar has been invited to be a co-author in upcoming 2020 WHO classification of CNS tumors and Updates of CIMPACT-NOW. Professor MC Sharma and Dr Kavneet Kaur have also been invited co-author chapters in the upcoming 2020 WHO Classification of CNS Tumors. Dr Deepali Jain has been selected to editorial board position and author of upcoming 2020 WHO classification of tumors of Lung, Pleura, Thymus and Heart.

## EDUCATION

### Postgraduate

MD students: 31

Senior Residents: 19

PhD students: 10

### Short term training / Long term training.

1. Dr/Ms Neha Kumari completed ShortTerm Training, 1-30 April 2019
2. Dr Malvika Gaur Completed Short Term Observership, 25 March-11 April 2019
3. Dr Chettan Dass Completed Short Term observership, 1 March-31 May 2019
4. Dr/Ms Neha Garg completed Short Term Training, 5 July-5 November 2019
5. Dr Sarita Asotra completed her training, 30 September 2019 to 8 February 2020
6. Dr Asmeet Kaur completed Short Term Training, 30 September 2019 to 7 October 2019
7. Dr Archana Chirag Buch completed one month training, 13 May-13 June 2019
8. Dr Natasha Dogra is undergoing Long Term Training, 28 December 2018 to 27 December 2020

### CMEs /Workshop/Symposia/National and International Conferences

CME on Bone marrow Biopsy, 10 November 2019, AIIMS, New Delhi

### Lectures delivered

Chitra Sarkar: 3

Manoj K. Singh: 2

AK Dinda: 9

Mehar C Sharma: 10

Vaishali Suri: 3

Sandeep Mathur: 6

Geetika Singh: 4

Asit Ranjan Mridha: 5

Deepali Jain: 10

Sudheer Arava: 7

Prasenjit Das: 8

Rajni Yadav: 5

Saumya Ranjan Mallick: 5

Seema Kaushal: 7

Shipra Agarwal: 2

Prashant Ramtake: 2

Adarsh W. Barwad: 2

Aanchal Kakkar: 4

**Oral papers/posters presented: 56 (First Prize as Best Free Poster Category; First Prize as Best Poster; Best Paper-Marudhara Jodhpur Prize session, Annual USICON 2019; Best poster award; First Runner up award; Young investigator award; 1st prize paper presentation)**

## RESEARCH

### Funded projects

#### Ongoing

1. A comprehensive analysis of mammalian target of rapamycin (mTOR) and mitogen activated protein (MAP) Kinase signaling pathways in non- small cell lung carcinoma, Deepali Jain, Lady Tata Memorial Trust Young Researcher Award, 5 years, 2015-2020, Rs 29 lakhs
2. A multi-centric study to develop comprehensive molecular genetic panels for glioblastoma personalized therapy. Chitra Sarkar, DBT, 5 years, 2016-2021, Rs 50 lakhs (approx.)
3. A novel Immuno Nano Fluorescence Assay (INFA) system for noninvasive detection of prostate cancer using urine based protein biomarkers, PSA and MSMB, AK Dinda, DST, 3 years, 2018-2021, Rs 70.89 lakhs
4. Analysis of circulating DNA for BRAF (T1799A) mutation as a futuristic non-invasive tool for diagnosis of papillary thyroid cancer. Shipra Agarwal, ICMR, 3 years, 2018-2020, Rs 8.12 lakhs
5. Clinicopathological and serological assessment of adult-onset idiopathic inflammatory myopathies (IIM) aimed at improved characterization of sporadic inclusion body myositis, MC Sharma, ICMR, 3 years, 2020-2023, Rs 50 lakhs
6. Comparison of various diagnostic modalities for identification of refractory celiac disease in a cohort of patients with celiac disease unresponsive to gluten -free diet, P Das, ICMR, 3 years, 2019-22, Rs 38.29 lakhs
7. Correlation of Immunologic Milieu and PD-L1 in Non-Small Cell Lung Carcinoma, Deepali Jain, AIIMS, 2 years, 2018-2020, Rs 8 lakhs
8. Development of Labyrinth based mechanical and fast isolation technique for identifying circulating tumor cells of colorectal carcinomas for metastasis evaluation, Asit Ranjan Mridha, DHR, 3 years, 2019-2022, Rs 30 lakhs
9. Development of minimal invasive novel injectable hydrogel and nano-carrier - hybrid system for localized targeted cancer therapy, AK Dinda, DHR, 3 years, 2018-2021, Rs 75.56 lakhs
10. Development of Rotary Ultrasonic Bone Drilling Machine Prototype, Asit Ranjan Mridha, SRISTI, Ahemdabad, Gujrat, 2 years, 2018-2020, Rs. 15 lakhs

11. DHR-ICMR Advance Medical Oncology Diagnostic Services (DIAMONDS) under HTAInpiot research project, Chitra Sarkar, DHR-ICMR, 3 years, 2020-23, Rs 170 lakhs
12. Evaluation of Artificial Intelligence as a Diagnostic Tool for Automated Detection and Grading of Colorectal Cancer, Rajni Yadav, AIIMS-IIT Delhi, 2 years, 2018-2020, Rs 20 lakhs
13. Evaluation of EGFR mutations, HPV status and PD-L1 expression in pathogenesis of sinonasal squamous neoplasms, Aanchal Kakkar, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
14. Evaluation of Machine Learning Techniques including Deep Learning for Identification of Malignancy in Tissue Samples, Aanchal Kakkar, AIIMS-IITD collaborative research project, 2 years, 2018-2020, Rs 20 lakhs
15. Evaluation of molecular sub types of peripheral T cell lymphoma, S Mallick, AIIMS, 2 years, 2019-2020, Rs 10 lakhs
16. Explainable Deep Learning for Automated Evaluation & Grading of Duodenal Biopsies, P Das, AIIMS-IIT Delhi Collaborative Research Project, 2 years, 2019-2021, Rs 10 lakhs
17. Identification of Comparative Genetic and Epigenetic Alterations of Various Proto-Oncogenes and Tumor Suppressor Genes, Implicated in Development of Aberrant Crypt Foci of Proximal Versus Distal Colon. P Das, DST under Women Scientist Scheme, 3 years, 2017-2020, Rs 27 lakhs
18. Identification of novel molecular subtypes of prostate cancer as potential therapeutic targets for immunotherapy, Seema Kaushal, ICMR, 3 years, 2020-2023, Rs 25 lakhs
19. Immunohistochemical characterization of four common viruses in a clinically suspected cases of viral myocarditis, Sudheer Arava, AIIMS, 2 years, 2018-2019, Rs 10 lakhs
20. Immunomodulators in small cell lung cancer: Basis for implementation of cancer immunotherapy, Deepali Jain, DST, 3 years, 2019-2022, Rs 40 lakhs
21. Immunophenotypic profile of tumour infiltrating cells of the immune system & expression of PDL1 in triple negative/Her-2 neu positive breast cancer patients and their correlation with response to neoadjuvant chemotherapy, Sandeep R Mathur, DST, 3 years, 2017-2020, Rs 21 lakhs
22. Integrative transcriptome analyses of different histological and molecular subgroups of meningiomas to identify prognostic signature and therapeutics, V Suri, ICMR, 2019-2022, Rs 62 lakhs
23. JC Bose Research Fellowship, Chitra Sarkar, DST, 5 years 2016-2020, Rs 15 lakhs per year
24. miRNA as disease modifier in HLA-DQ2/DQ8 matched first-degree relatives of patients with celiac disease, P Das, DST, 3 years, 2018-2021, Rs 45 lakhs
25. Molecular characterization of Endometrial Cancer and its correlation with Clinicopathological Features, Sandeep R Mathur, AIIMS, 2 years, 2018-20, Rs 10 lakhs
26. Molecular characterization of olfactory neuroblastomas for classification into prognostically and therapeutically relevant subgroups, Aanchal Kakkar, SERB, 3 years, 2020-2023, Rs 47 lakhs
27. Molecular subtyping of Muscle Invasive Bladder Cancer on the basis of IHC markers, Seema Kaushal, AIIMS, 2 years, 2019-2021, Rs 4.9 lakhs per year
28. MUC1 Pulsed DC-derived exosomes for cancer immunotherapy, Adarsh Barwad, DBT, 3 years, 2019-2021, Rs 62.27 lakhs
29. NIRMAAN 3D-Novel minimally invasive Implants for Reconstructive surgery using materials providing mechanical instruction and prepared by 3D printing, AK Dinda, DBT, 4 years, 2018-2022, Rs 64.34 lakhs
30. Normal superior and inferior parathyroid glands: Molecularly similar or dissimilar? Shipra Agarwal, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
31. Novel minimally invasive implants for Reconstructive surgery using Materials providing mechanical instruction and prepared by 3D printing, AK Dinda, DBT (Indo-Dutch), 3 years, 2018-2021, Rs 50.88 lakhs
32. Pharmacological effects vitamin D in diabetic cardiomyopathy via ACE2/Angiotensin (1-7)/Mas receptor axis in experimental diabetic rats, Asit Ranjan Mridha, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
33. Prognostic relevance of p53 mutation in advanced soft tissue sarcoma, Asit Ranjan Mridha, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
34. Proposal for Creating & Testing Virtual Teaching Modules (MOOCs) in various areas of Healthcare, Manoj Kumar Singh, Swayam & Swayam Prabha (Ministry of HRD), 3 years, 2018 -2021, Rs 3.15 lakhs
35. Ras Homolog Member A (RHOA) and Isocitrate Dehydrogenase (IDH2) mutations in Angioimmunoblastic T-cell lymphoma, S Mallick, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
36. Sequencing Target genes aimed at Neuromuscular disorders in India (STAND-INDIA), MC Sharma, ICMR, 3 years, 2018-2021, Rs 50 lakhs

37. Study of Clinical, Laboratory and Pathological Profile of Pediatric Patients with Persistent Cholestasis, Rajni Yadav, AIIMS, 2 years, 2018-2020, Rs 9.9 lakhs
38. Study of HPV association in Sino-nasal epithelial tumors, Deepali Jain, AIIMS, 2 years, 2018-2020, Rs 20 lakhs
39. Study of Urinary Exosome as a Predictive biomarker for podocytic injury in childhood idiopathic nephrotic syndrome, Geetika Singh, DBT, 3 years, 2018-2021, Rs 76.17 lakhs
40. Sudden cardiac death: Histopathological and molecular study to identify the course, Sudheer Arava, ICMR, 3 years, 2019-2021, Rs 69 lakhs
41. Surrogate molecular and Immunohistochemical markers to categorize the colorectal carcinomas as per the Comprehensive molecular subtypes and its clinical relevance, P Das, AIIMS, 2 years, 2019-21, Rs 10 lakhs
42. The Genetic Landscape of Alport Syndrome in India with Phenotypic Correlation, Geetika Singh, ICMR, 3 years, 2020-2023, Rs 80 lakhs
43. To evaluate the molecular subtypes of peripheral T Cell Lymphomas, S Mallick AIIMS, 2 years, 2019-20, Rs 10 lakhs
44. To evaluate the role of CMYC, BCL2, BCL6 AND Epstein Barr virus on survival in patients with refractory/relapsed primary diffuse large b cell lymphoma: An ambispective study, S Mallick, DST, 3 years, 2016-2019, Rs 30 lakhs
45. To evaluate the role of microenvironment clonality assay and 9P24 alteration in diagnosis and prognostication of refractory Hodgkin's Lymphoma, S Mallick, DST, 3 years, 2017-2020, Rs 35 lakhs
46. To evaluate the role of R2TP Complex as a novel regulator of PI3K/Akt/mTOR and AR signalling pathway in prostate cancer, Seema Kaushal, DHR, 3 years, 2020-2023, Rs 26 lakhs
47. Tumor Immune landscape: PDL1 expression and evaluation of tumor immune interplay by investigating the immune cell infiltration in supratentorial ependymoma and its correlation with survival outcomes, MC Sharma, ICMR, 3 years, 2020-2023, Rs 35 lakhs
48. Unraveling the role of miRNA clusters (C14MC & C19MC) in oligodendrogliomas: Study using genetic and functional approach with clinicopathological correlations, Chitra Sarkar, ICMR, 3 years, 2017-2020, Rs 10 lakhs per year
49. Unravelling the functional relevance of Snail paralogs in the pathogenesis of pediatric ependymomas, MC Sharma, DST, 3 years, 2018-2020, Rs 45 lakhs
50. Utility of newer immunohistochemistry markers in proper characterization of small B-cell non-Hodgkin's lymphomas, Prashant Ramteke, AIIMS, 2 years, 2017-2019, Rs 6.5 lakhs

#### **Completed**

1. Analysis of NPHS1, NPHS2, WT1, ACTN4 and INF2 in non syndromic focal segmental glomerulosclerosis, Adarsh Barwad, AIIMS, 2 years, 2016-2018, Rs 10 lakhs
2. Association of BK Polyoma virus and urothelial carcinoma: A study in the Indian population, Geetika Singh, AIIMS, 1 year, 2012-2014, Rs 4.93 lakhs
3. Detection and comparison of EGFR mutations in matched tumor tissues and sera of patients with pulmonary adenocarcinoma, Deepali Jain, DBT, 3 years, 2016-2019, Rs 25 lakhs
4. Evaluation of HPV status and its correlation with AKT/ mTOR signaling pathway activation in oral and oropharyngeal squamous cell carcinomas, Aanchal Kakkar, AIIMS, 2 years, 2017-2019, Rs 8.8 lakhs
5. Gene expression analysis of oncogene transcript in Aberrant Crypt foci, in comparison to the normal colonic mucosa and colorectal carcinoma, from formalin fixed paraffin embedded tissue samples, P Das, DBT, 3 years, 2015-2019, Rs 25 lakhs
6. Intestinal stem cells in celiac disease, P Das, AIIMS, 1 year, 2018-2019, Rs 5 lakhs
7. Study of p 53 immunoexpression and Ki67 LI in patients with advanced soft tissue sarcoma, Asit Ranjan Mridha, AIIMS, 2 years, 2016-2019, Rs 10 lakhs
8. The Virtual Skills Laboratory, Manoj K Singh, Deity (Department of Electronics and Information Technology, 2 years, 2014-2018, Rs 262.5 lakhs

#### **Departmental projects**

1. Analysis of EGFR downstream pathways in NSCLC and elucidating mechanisms for TKI resistance
2. Analysis of immune check point markers in gliomas
3. Clinico pathological Profile of Anaplastic Large cell lymphoma
4. Comparison of molecular and immune profile of Epithelioid GBMs and PXA

5. Detection of streptococcal bacterial DNA with polymerase chain reaction in excised valvular tissue of RHD patients
6. Detection of human papilloma virus in sinonasal epithelial tumors
7. Differential expression of apoptosis related miRNA in diagnosis and Prognosis of Wilms Tumor and Neuroblastoma
8. EMT pathway in meningioma
9. Evaluation of chromatin remodeling, mTOR pathway and SSTR expression in pancreatic neuroendocrine neoplasms
10. Evaluation of EGFR mutations and AKT/ mTOR pathway in sinonasal squamous neoplasms
11. Evaluation of MSI and PDL1 Expression in Upper Tract Urothelial Carcinomas
12. Histological Analysis and Subcategorization of Progressive Familial Intrahepatic Cholestasis
13. Histopathological evaluation of surgically excised rheumatic heart valves
14. Molecular characterization of Endometrial Cancer and its correlation with Clinicopathological Features
15. Molecular profiling of Epithelioid Glioblastoma
16. Prognostic relevance of p53 mutation in patients with advanced soft tissue sarcoma
17. Programmed Death Ligand -1 Expression in Molecular subtypes of Muscle Invasive Bladder Cancer
18. Ras homolog gene family (RHOA) and Isocitrate dehydrogenase 2 (IDH2) mutation in Angioimmunoblastic T cell Lymphoma (AITL)
19. Study of EGFR-MAPK, NFkB and SHH pathway activation in corticotroph pituitary adenomas
20. Study of intra-tumoral heterogeneity in surgically resected gall bladder adenocarcinoma
21. Study of iron homeostasis in chronic kidney disease
22. Study of p53 immunoreexpression and Ki67 LI in patients with advanced soft tissue sarcoma
23. Study of PD-L1 expression and correlation with mutational profiling in thyroid carcinomas.
24. Study of WNT and Sonic hedgehog signaling pathways in olfactory neuroblastoma
25. Study on the activation of lectin pathway of complement in membranoproliferative glomerulonephritis
26. Sudden cardiac death in young: An histopathological and molecular study to identify the cause
27. Utility of a Panel of Surrogate Immunohistochemical and Molecular Markers to Classify Human Colorectal Carcinomas according to the Consensus Molecular Subtypes and Clinical Correlation

### **Completed**

1. A comparative study of efficacy and composition of various cell populations of extracted hair follicle outer root sheath cell suspension prepared using a single enzyme (trypsin) and multiple enzymes (trypsin, collagenase and dispase) for transplantation in vitiligo
2. An immunohistochemical and ultrastructural study of glomerular capillary endothelial injury in cellular rejection
3. Analysis of selected Transcription factors and Receptors in Primary Hyperparathyroidism.
4. Cell death Ligand 1 and its association with T regulatory cells In Non Small cell lung carcinoma: Use of cytology specimen.
5. Clinicopathological Profile of Diffuse Large B Cell Lymphoma
6. Clinical and Histopathological Analysis of Tonsils in Obstructive Airway Patients
7. Clinicopathological study of infant gliomas
8. Development of low cost functionalized biocompatible polymeric wound dressing
9. Development of targeted nanodrug delivery system for Rheumatoid Arthritis
10. DNA methylation array for molecular subgrouping of medulloblastomas (Dr Chitra Sarkar)
11. Expression of Her 2 neu stain in gall bladder carcinoma and its clinical impact
12. Expression of Matrix Metalloproteinase-2, Matrix Metalloproteinase-9, Tissue Inhibitor Metalloproteinase-1, Tissue Inhibitor Metalloproteinase-2, Collagen I and IV Expression in Thoracic Aortic Aneurysms
13. Expression of PD1, PD-L1 and CD8 cell markers in gall bladder carcinoma and their clinical impact
14. EZH2-WNT expression and correlation in tumor invasiveness, stem cell phenotype and progression in pituitary adenomas
15. Fibrillin 1 gene mutation and TGF beta in TAAA of non marfanoid individuals
16. Histological Features of acute on chronic failure on Tru-cut Liver Biopsies
17. Histopathological and electron microscopic changes in ligamentum flavum in patients with degenerative lumbar canal stenosis Study of p 53 immunoreexpression and Ki67 LI in patients with advanced soft tissue sarcoma



18. Membranous Nephropathy: A study of immunofluorescence, electron microscopy and PLA2R profile with clinical correlation
19. PDL-1 expression and tumor infiltrating lymphocytes in triple negative breast cancer and its correlation with clinico-pathologic features and response to chemotherapy (MD Thesis)
20. Programmed Death Ligand-1 (PDL-1) and its Association With T Regulatory Cells in Non-small Cell Lung Carcinoma: Use Of Cytology Specimens
21. Study of galactose deficient IgA1 in glomerular diseases
22. Subtyping of primary muscle invasive bladder carcinoma into basal and luminal types on the basis of immunohistochemical markers
23. Targeted nanoparticle based drug delivery system for the treatment of Kalazar
24. Targeted sequencing of IDH negative gliomas
25. Utility of urinary circulating cell free DNA in EGFR mutation testing of pulmonary Adenocarcinoma

## **Collaborative projects**

### ***Ongoing***

1. A prospective comparison of mri-inbore targeted biopsy with 12-core systematic transrectal ultrasound biopsy in the diagnosis of prostate cancer, Radiology
2. A prospective observational study comparing CT scan vs PET CT scan in carcinoma ovary for determining the pre operative disease burden and resectability, Surgical Oncology
3. A prospective study to evaluate the accuracy of axillary staging using ultrasound guided fine needle aspiration cytology (fnac) in early breast cancer patients, Surgical Oncology
4. A Study of Immune Pathways in the Pathogenesis of Chronic Pancreatitis, Gastroenterology
5. Artificial skin (Bio-inspired bi-layer polymeric hybrid scaffold) for burn injuries in trauma care (IMPRINT Project), Center for Biomedical Engineering, IIT, Delhi
6. Assessment of disease severity in patients with epithelial ovarian cancer by EMT related protein expression and micro RNA 200a,b,c, Gyn & Obs
7. Autoantibody associated alternative complement pathway dysregulation in nephrotic syndrome secondary to membranoproliferative glomerulonephritis Pediatric Nephrology
8. Autologous non cultured dermal cell suspension transplantation in treatment of facial volume loss, Dermatology
9. Bio statistical Aspects of Prognostic Factors Including Molecular Parameters in Breast Cancer Patients: An Epidemiological Appraisal, BRA-IRCH
10. Biomarkers based early diagnosis and understanding of breast cancer metastasis by infrared imaging, Biophysics
11. Brain metastasis in lung cancer, Medical oncology
12. BRCC3 expression as a prognostic marker in Oropharyngeal squamous cell carcinoma patients and its effects on radiotherapy resistance, Otorhinolaryngology
13. Cancer stem cells in Colon Carcinoma, Biochemistry
14. Cellular and Immunomodulatory Functions of Dipeptidylpeptidase III in Esophageal Cancer, Biochemistry
15. Circulating microRNAs as biomarkers for testicular germ cell tumors: A pilot study, Reproductive Biology
16. Comparative evaluation of MicroRNA profiling and cytokine profiling analysis in patients with Pulmonary Sarcoidosis and Mediastinal tuberculosis, Pulmonary Medicine
17. Comparative evaluation of miRNA in mediastinal sarcoidosis and tuberculosis, Pulmonary Medicine & Sleep Disorders
18. Comparison of cold cup versus bipolar biopsy specimens for bladder carcinoma, Urology
19. Comparison of standard 12 cores systematic TRUS guided biopsy and MRI-fusion biopsy in the detection of prostate cancer-a prospective randomized study, Urology
20. Correlation of barrel index determined by MRI in early cervical cancer with operability, lymph node status and local extension of disease, Gynaecology & Obstetrics
21. CT texture analysis of renal masses for prediction of histopathology, Radiology
22. Detection of streptococcal bacterial DNA with polymerase chain reaction in excised valvular tissue of RHD patients, Cardiology
23. Development of a new formulation and packaging for reducing adverse effects and injection pain of Mycobacterium

- vaccine and its clinical trial in recalcitrant anogenital and extra-genital (common) warts, Dermatology
24. Development of non-invasive diagnostic kit for ovarian cancer: A new walk on old path, Biophysics
  25. Development of Rotary Ultrasonic Bone Drilling Machine Prototype, Mechanical Engineering, IIT, Delhi
  26. Differences in the Microvessel Density and Growth Factors between the inner and outer preputial skin in Distal Hypospadias, Pediatric Surgery
  27. Efficacy of cold atmospheric plasma jet for its antimicrobial activity against drug resistant bacterial and fungal pathogen: An in-vitro and in-vivo study, Microbiology
  28. Estrogen Related Receptor gamma (ERR $\gamma$ ) as a potential biomarker and therapeutic target for thyroid cancer and its correlation with iodine handling genes in thyroid cancer, Medical Oncology Lab
  29. Evaluation of anti-urolithiatic activity of herbal extracts in animal model, National Innovation Foundation, Ahmedabad
  30. Evaluation of genetic profile of olfactory neuroblastomas, Otorhinolaryngology
  31. Evaluation of immune checkpoint in tumor microenvironment of osteosarcoma, Orthopaedics
  32. Evaluation of Immune escape mechanism in RCC, Biochemistry
  33. Evaluation of Renal Cell Carcinoma with C11-Methionine PET/CT and comparison with 18 Flourodeoxyglucosw PET/CT, Nuclear Medicine
  34. Evaluation of unknown head and neck primaries metastatic to cervical lymph nodes, Otorhinolaryngology
  35. Exploring the phenotypic and functional role of  $\gamma\delta$  T cell subsets along with Pattern recognition receptors (PRRs) in the immunopathogenesis of PemphigusVulgaris, Pharmacology
  36. Exploring the role of adipose tissue ABCA1 in determining serum HDL cholesterol, Biochemistry
  37. Fat gene in gliomas, Biochemistry
  38. FBXO4 as a novel Ubiquitin Ligase that targets cyclin D1 in pathogenesis of breast cancer, Biochemistry
  39. Finding the correlation of toll like receptors (TLRs) with inflammation in patients with chronic heart failure, Cardiology
  40. Genetic Study on Sertoli Cell Only Syndrome, Reproductive Biology
  41. Human Papillomavirus status in Penile carcinoma in Indian patients: Incidence, type distribution and correlation with Clinico-pathological staging, Urology
  42. Identification of Glucose related protein 78(GRP78) as a biomarker fortumorbehavior in patients of renal cell carcinoma, Urology
  43. Identification of Potential Molecular markers (PRL3 phosphatase, CAV2, LAMA4) in Renal Cell Carcinoma for predicting tumour behaviour, Urology
  44. Molecular and immune profile of midline gliomas, Neurosurgery
  45. Molecular and immunological characterization of benign fibroosseous lesions affecting oral and maxillofacial region, Oral Pathology and Microbiology, CDER
  46. MUC! Pulsed DC-derived exosomes for cancer immunotherapy, IIT, Delhi
  47. Mycobacterium paratuberculosis in human Crohn's disease and Jone's disease: A multicenter Indian study, Gastroenterology
  48. Optical Characterization of Breast cancer, Surgery
  49. Pharmacological effects vitamin D in diabetic cardiomyopathy via ACE2/Angiotensin (1-7)/Mas receptor axis in experimental diabetic rats, Pharmacology
  50. Phenotypic and molecular characterization of Th17 and Treg cells in renal cell carcinoma, Biochemistry
  51. Potassium channel expression in the intestinal tissues of patients with ulcerative colitis correlates with disease severity and long term outcomes, Gastroenterology
  52. Prevalence of Dermatitis Herpetiformis in patients with celiac disease Gastroenterology
  53. Prevalence of refractory celiac disease: An Institutional study, Gastroenterology
  54. Production of a crucial therapeutic protein for Trauma and Accident care in Escherichia Coli system (IMPRINT Project), The School of Biological Sciences, IIT, Delhi
  55. Retrospective Analysis of Testicular Germ Cell tumours at IRCH, AIIMS, Medical Oncology
  56. Role of B Cells in Urinary Bladder Carcinoma, Biochemistry
  57. Role of circulating tumour cells and CXCR1 expression in patients with metastatic RCC, Urology
  58. Role of micro RNA in identifying benign versus malignant variety of cystic neoplasm of pancreas, Gastroenterology

59. Role of MRI in evaluation of residual tumor burden following neoadjuvant chemotherapy in patients with breast cancer, Radiodiagnosis
60. Role of PAQosome Complex in the Regulation of Beta Oxidation during Prostate Cancer Progression, Biochemistry
61. Role of Phosphofructokinase-P (PFKP) in Breast cancer, Med Oncology BRA-IRCH
62. Role of Shearwave Elastography and Multiparametric MRI in the assessment of endometrial pathology, Radiodiagnosis
63. Studies on the effect of Roxithromycin in an experimental model of prostatitis, Pharmacology
64. Study of Autophagy associated HMGB-1 and its related molecules in Urothelial Carcinoma of Bladder, Biochemistry
65. Study of cardiac markers, gross findings and histopathological Changes in heart in cases of suspected cardiac death, Forensic Medicine
66. Study of intestinal stem cell niche in celiac disease, Gastroenterology & RCB, Faridabad
67. Study of miRNA profile in Sertoli Only Syndrome (SCOS), Reproductive Biology
68. Study of miRNA-182 and miRNA-187 as potential biomarkers in prostate cancer patients and its correlation with serum PSA, Gleason score and staging of prostate cancer, Urology
69. Study of PKC signaling in Ovarian Serous Carcinoma, Med Oncology BRA-IRCH
70. Study of Sesamol in Bleomycin induced pulmonary toxicity in rat, Pharmacology
71. The clinicopathological evaluation of cholesteatoma aggressiveness, Otorhinolaryngology
72. The Role of 68Ga-PSMA-PET/CT Scan as a single Staging Modality in Prostate Cancer, Nuclear Medicine
73. Thymic tumors and VATS Laparoscopic Surgery
74. To characterize immune landscape of SCLC in tumor and peripheral blood circulation, Pathology
75. To identify unique differential signatures for the diagnosis of stage-specific Non alcoholic fatty liver disease using the multi-omics approach: A pilot study, Gastroenterology
76. To study correlation of TIRADS and cytological grading with final histopathology in solitary thyroid nodule, Surgical disciplines
77. Use of Cancer Testis Antigen POTE-E in preoperative diagnosis of Epithelial Ovarian Tumors: A Pilot Study, Gyn & Obs
78. Utility of newer immunohistochemistry markers in proper characterization of small B- cell non-Hodgkin's lymphomas, Pathology
79. Utility of Radiolabeled Antibiotics as Imaging Agents in Establishment of a Decision Support Algorithm in Patients with Pyrexia of Unknown Origin (PUO) caused by Infection and its Impact on Short Term and Long Term Clinical Outcomes, Nuclear Medicine

### **Completed**

1. A Comparative Evaluation of HPV E6/E7 mRNA Assay and High Risk HPV DNA Test for the Diagnosis of High Grade Cervical Intraepithelial Neoplasia, Gynaecology & Obstetrics
2. A pilot study to assess the therapeutic potential of Lu-177\_DKFZ\_PSMA 617 in Ga-68 PSMA HBED CC PET CT positive anaplastic thyroid carcinoma, Nuclear Medicine
3. Abnormalities in metabolic pathways in Celiac disease investigated by the metabolic profiling of small intestinal mucosa, blood plasma and urine by NMR spectroscopy, NMR
4. Assessment of the role of early dynamic PET/CT with 18F-Fluorocholine in differentiation of parathyroid lesions and lymph nodes in patients with primary hyperparathyroidism, Nuclear Medicine
5. Clinical Significance of Notch Pathway Associated microRNA-107 in Pancreatic Ductal Adenocarcinoma, Gastroenterology
6. Clinical Utility of cell-free DNA in intraoperative pleural lavage fluid and plasma for patients with resectable primary pulmonary malignancies – A pilot study, Surgical oncology
7. Comparison of 4D CT, 4D MRI and Fluorocholine PET in the Localisation of Parathyroid Lesions in Patients with Primary Hyperparathyroidism (HPT), Radiodiagnosis
8. Comparison of diagnostic yield using graded suction pressures during EBUS TBNA, Pulmonary Medicine & Sleep Disorders
9. Evaluation of Transient Elastography, Hepatic Iron Concentration by MRI T2\* Liver, Serum Liver Fibrosis Indexes versus Liver Biopsy in Thalassemia Major patients who are candidates for Hematopoietic Stem Cell Transplant (HSCT), A Comparative Pilot study, Hematology
10. Mesenchymal stem cells (MSCs) offer a drug tolerant and immune-privileged niche to Mycobacterium tuberculosis,

Gastroenterology, AIIMS & IGIB, New Delhi

11. Microarray based Gene Expression Profiling of Advanced Gall Bladder Cancer: A Pilot Study, Medical Oncology
12. Minimally invasive autopsy (MIA) in the evaluation of fetal malformations and still births- A feasibility study for the development of a standard protocol for still birth evaluation, Pediatrics
13. Molecular classification of breast cancer using FDG PET CT, MRI and NMR: A pilot study, Surgery
14. REG4 expression in Pancreatic Ductal Adenocarcinoma can serve as a potential marker both for Diagnosis and Assessment of Prognosis, Gastroenterology
15. Role of hENT1, RRM1, RRM2, and ERCC1 expression in Advanced gall bladder Carcinoma treated with Gemcitabine-Platinum Doublet, Medical Oncology
16. Role of hENT1, RRM1, RRM2, and ERCC1 expression in Advanced gall bladder Carcinoma treated with Gemcitabine-Platinum Doublet, Medical Oncology
17. Role of HRCT in the diagnosis of apparently idiopathic interstitial lung diseases, Radiodiagnosis
18. Role of shearwaveelastography and multiparametric MRI in the assessment of endometrial pathology, Radiodiagnosis
19. Role of sono-elastography in the assessment of uterine pathology, Radiodiagnosis
20. Scalp biopsy: A comparison of vertical and transverse sections in alopecia diagnosis, Dermatology
21. Sculpturing corneal constructs using micropatterned surface and decellularized cornea, Textile Engineering, IIT Delhi, Stem Cell Facility, RP Center
22. Study of predictors of diagnostic yield of various interventional pulmonology procedures for Lung Cancer, Pulmonary Medicine & Sleep Disorders
23. To Study Spectrum of Extra Small Intestinal Gastrointestinal Tract Involvement in Celiac Disease, Gastroenterology

#### **PUBLICATIONS**

**Journals: 182**

**Abstracts: 28**

**Chapters in Books: 2**

#### **PATIENT CARE**

##### **Laboratory services**

##### **Surgical Pathology Laboratory**

Specimens processed	55,600	Special stains	38,100
---------------------	--------	----------------	--------

##### **Cytopathology Laboratory**

Total specimens	26719	FNAC (out patient)	10696
-----------------	-------	--------------------	-------

Exfoliatives routine	13943	Cervical smears (PAP smears)	2080
----------------------	-------	------------------------------	------

Autopsies performed	13	Electron microscopy	1505
---------------------	----	---------------------	------

##### **Immunohistochemistry Laboratory**

Diagnostic	51268	Research	805
------------	-------	----------	-----

##### **Neuropathology Laboratory**

Total Specimen	2106	Frozen Section	359
----------------	------	----------------	-----

##### **Immunohistochemistry**

Routine IHC	8375	Research IHC	5238
-------------	------	--------------	------

Muscle IHC	1699		
------------	------	--	--

Total Muscle Received	291		
-----------------------	-----	--	--

Muscle Enzyme-histochemistry	658		
------------------------------	-----	--	--

##### **Fluorescence in situ hybridization**

Diagnostic	349	Routine	272
------------	-----	---------	-----

##### **EM Facility**

Total muscle sample	288	Total nerve sample	37
---------------------	-----	--------------------	----

Immunoblot sample	55		
-------------------	----	--	--

**Tissue Culture Lab**

H&E Staining	9827	Special Stains	1320 + H-Pylori 6239
Immunohistochemistry	4979	Frozen Sections	2380
Unstained	3289	Coated slides	26295
Research Block Cutting	2989		

**Renal pathology services**

Urine sediment analysis	1860
Immunofluorescence of kidney biopsy	968
Electron microscopy of kidney biopsy	941

**Cardiac pathology****Specimens**

Routine	310	Research	163
---------	-----	----------	-----

**Others works**

Immunohistochemistry	392 slides	H & E stain	305 slides
Special stains	102 slides		
Rapid processing of post-transplant biopsies	29 cases		
Cutting of blocks (unstained sections)	631 slides		

**Skin biopsy cutting** 282 cases (each 6 slides) 1672

**Renal biopsy cutting** 580 cases (each 10 slides)

**Frozen cutting** 80 cases (each 3 slides)

**Coated slides** 2200 slides

**AWARDS, HONOURS AND SIGNIFICANT EVENTS****Resident Awards**

**Best poster award** won by Roy D, Kumar H, Sarangi J, Kakkar A, Jain D, Mathur SR, Iyer VK, Dhar A, Fine Needle aspiration cytology of retiformhemangioendothelioma: a maiden case report. Eighth Annual Conference of Delhi Chapter of Indian Academy of Cytologists, 21st September 2019, New Delhi, India

**Best poster award** won by Roy D, Kakkar A, Jain D, Mathur SR, Iyer VK, Fine needle aspiration cytology of metastases to parotid gland, 49th Annual Conference of Indian Academy of Cytologists, 7-10 November 2019, Chandigarh, India  
Kumar M Awarded **First Prize** as **Best Research Paper - Marudhara Jodhpur Prize sessionat Annual USICON 2019**

**Young Investigator Award:** Varsha Singh PhD Student: National Lung Cancer Conference (NALCCON), KGMC, Lucknow for work entitled as 'Survival analysis of common and uncommon EGFR (Epidermal Growth Factor Receptor) mutations in non-small cell lung carcinoma (NSCLC), December 2019

**Runner up prize** for poster presentation to Dr Shraddhanjali Satapathy at National Lung Cancer Conference (NALCCON), KGMC, Lucknow for work entitled as 'EGFR mutation testing on plasma and urine samples: A pilot study evaluating the value of liquid biopsy in lung cancer diagnosis and management', December 2019

**Dr Satya Monga Award** (Dr Tripti Nakra) for published paper titled INSM1 is a robust nuclear immunostain for the diagnosis of small cell lung carcinoma in cytology smears, Cytocon, November 2019.

**Professor Chitra Sarkar** was Member of working committee of CIMPACT-NOW (Consortium to Inform Molecular and Practical Approaches to CNS tumor Taxonomy), Co-author in upcoming WHO classification of CNS tumors and updates of CIMPACT-NOW, Appointed as President, AIIMS, Kalyani by Ministry of Health & Family Welfare, Chairperson of the Committee constituted by Ministry of Health & FW to suggest recommendations regarding Bhopal Memorial Hospital and Research Centre (BMHRC), Member, Governing Body of Institute of Medical Sciences, Banaras Hindu University Member, THSTI Society Committee Nominated Member of DST-INSPIRE Fellowship Standing Committee Nominated Member of Expert Evaluation Committee of DST-INSPIRE Fellowship Chairperson, Women's grievance cell, AIIMS, Chairperson, Prevention of Sexual Harassment of Women at AIIMS, Coordinator for Memorandum of Understanding between AIIMS and other Institutions for collaborative research, Member of Nano Mission Council (NMC) of Department of Science and Technology, Government of India, Member, Apex Committee for North Eastern Region Biotechnology Programmes of Department of Biotechnology, Vice President of the International Society of Neuropathology, Secretary, Neuropathology

Society of India, Selection committee member for Ranbaxy Awards, Member of Sectional committee (Health Sciences) of INSA, Member, Editorial Board of journal Neuropathology (published from Japan), Member, Assessment Committee for scientists' promotions of ICMR, Member of the Governing Body and Scientific Advisory Committee of National Brain Research Centre, Manesar, Member of the Scientific Advisory Committee of Institute of Pathology, New Delhi, Co-chairperson of Human Ethics Committee of National Institute of Immunology, New Delhi, Member, Oncology Sub-Committee of NCD-III, ICMR.

**Professor Manoj K Singh** Chaired Session 68th Annual Conference of Indian Association of Pathologists & Microbiologists & IAP-ID, 5 December 2019 to 8 December 2019, Department of Histopathology, PGIMER, Chandigarh.

**Professor AK Dinda** was nominated as Executive Council Member of Global Council of Regulatory Science Research at Global Summit on Regulatory Science 2019 (GSRS19), European Commission, Joint Research Centre Ispra, Italy.

**Professor Sandeep R Mathur** has been appointed as Secretary of the Delhi Chapter of Indian Academy of Cytologists for 3 years till 2020.

**Dr Deepali Jain** was Editorial Board Member World Health Organization Classification of Tumors Of Lung, Pleura, Thymus and Heart; Responsible author and Co-author of several chapters of World Health Organization Classification of Tumors Of Lung, Pleura, Thymus and Heart; Member Pathology Committee International Association for Study of Lung Cancer (IASLC), USA; 2019 PPS Travel award by Pulmonary Pathology Society USA, Dubrovnik, Croatia, June 2019; ICMR Travel Award 20<sup>th</sup> International Congress of Cytology, Sydney, Australia, May 2019; Chairperson Symposium on lung cancer AIIMS Pulmocrit 2019 March 2020 Delhi; Member Brain Storming Committee on COPD-DBT.

**Dr Seema Kausal** was nominated as Founder Executive Member of SGUP (Society of Genitourinary Pathologists) of India; paper entitled "Improved Correlation of Urinary Cytology Specimens by Implementation of the Paris System in biopsy proven Upper and Lower Urinary Tract Urothelial Carcinomas" was awarded as one of the top five papers in theme of Urine Cytology at International Conference of Cytology held at Sydney in May 2019; Chaired the session on "Common Problems in Pathological Assessment of Testicular Tumors" Dialogues in urooncology: Urooncology Summit 2020, 22 February 2020, MP Urological hospital and Teaching Institute Nadiad, Gujarat

**Dr Prasenjit Das** received Professor Kunti Devi Mahrotra Award for Published paper of the IAPM 2019-20 for Published paper of the APCON 2019, by the Indian Association of Pathologists & Microbiologists; Invited to present our research on patients with celiac disease and was a visiting Pathologist at the Beth Israel Deconess Medical Centre & Harvard Medical School, Boston, from 31 October -13 November 2019 under Celiac disease joint Research Network for excellence funded by Indo-US Science & Technology Forum (IUSSTF); invited to be the National Editorial Board Member, Indian Journal of Pathologists & Microbiologists from 1 January 2020.

**Dr Adarsh Barwad** Awarded Long term international fellowship for young scientist under ICMR/DHR 2019-2020 scheme at University of Pittsburgh PA, USA.

#### VISITING SCIENTIST

Dr Ian Cree MD WHO blue book editor IARC, Lyon, France

Dr Holger Moch MD Professor of Pathology University of Zurich, Zurich, Switzerland



## 9.30. Pharmacology

<b>Professor and Head</b> VL Kumar		
NR Biswas (on deputation) Jatinder Katyal	<b>Professors</b> SK Maulik Surender Singh Jagriti Bhatia	
	DS Arya KH Reeta	
Pooja Gupta	<b>Associate Professors</b> Harlokesh Narayan Yadav	Sudhir Chandra Sarangi
<b>Assistant Professor</b> NS Raj		
Sharda S Peshin (till 31 August 2019) Madhuri Gupta	<b>Scientists</b> Thomas Kaleekal Sunder Singh Samuel	Amita Srivastava Swati Sharma

### HIGHLIGHTS

“SYMP NPIC – 2019”: National symposium on Poisoning as a public health problem was organized on 26 April 2019 to mark the 25th year of establishment of National Poison Information Centre (NPIC).

### EDUCATION

The Department is engaged in the teaching programmes of BSc Nursing (Hons), BSc OT Technician, MBBS, MSc (Medical Pharmacology), MD, PhD and DM (Clinical Pharmacology) courses.

### CMEs/Workshops/Symposia/National and International Conferences Organized by department

Fifth Annual Conference of the Delhi Chapter of Indian Society for Atherosclerosis Research (ISAR-DCCON 2019), 3 August 2019, AIIMS, New Delhi.

### Lectures delivered

VL Kumar: 1

Pooja Gupta: 3

Harlokesh Narayan Yadav: 2

Sharda Shah Peshin: 2

Thomas Kaleekal: 1

Amita Srivastava: 1

**Oral papers/posters presented: 25 (Young Investigator Award-First Prize in Basic category; IPS-CON – Best Poster Presentation Award (PC Dandiya Prize))**

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Ameliorative potential of Vinpocetin in Streptozotocin induced diabetic cardiomyopathy in Wistar rats, Harlokesh Narayan Yadav, ICMR, 3 years, 2019-2022, Rs 16.80 lakhs
2. Anti-inflammatory strategy in the treatment of pulmonary Artery Hypertension: an Experimental study, SK Maulik, ICMR, 3 years, 2017-2020, Rs 30 lakhs
3. Depression in persons with epilepsy (PWE): Correlation with Serum biomarkers and CYP2C19 polymorphism, a pilot study, Jatinder Katyal, AIIMS, New Delhi, 2 years, 2018-2020, Rs 7.87 lakhs
4. Development of Solid Lipid Nanoparticles for oral delivery of Liraglutide, an anti-diabetic drug, Harlokesh Narayan Yadav, DBT, 2 years, 2018-2020, Rs 14.75 lakhs
5. Early biomarkers for chemotherapy induced cardiotoxicity in patients with hematological malignancies, Shalini Rawal (Pooja Gupta-Mentor WOS-B), DST, 3 years, 2019-2022, Rs 30.24 lakhs



6. Effect of antidepressants on neurodegeneration and neuroplasticity in patients with depression, SC Sarangi, ICMR, 3 years, 2019-2022, Rs 29.03 lakhs
7. Effect of antiepileptic drug monotherapy with Levetiracetam and Valproate on metabolic status in women with epilepsy, SC Sarangi, AIIMS, New Delhi, 2 years, 2018-2020, Rs 5 lakhs
8. Effect of Sildenafil monotherapy versus vitamin and Sildenafil combination in experiment model of pulmonary hypertension in rats, Harlokes Narayan Yadav, AIIMS, New Delhi, 2 years, 2019-2020, Rs 10 lakhs
9. Evaluation of effect of Asiaticoside & Medecassoside on pharmacodynamics and pharmacokinetics of azathioprine in rat model of colitis, Thomas Kaleekal, AIIMS, New Delhi, 2 years, 2019-2021, Rs 4.9 lakhs (for first year)
10. Evaluation of Fumaric Acid Esters (FAEs) in Experimental Model of Stroke in Rats, KH Reeta, DBT, 3.5 years, 2015-2019, Rs 57.54 lakhs
11. Evaluation of Safinamide in Experimental Model of Stroke and Post Stroke Seizure Behaviour in Rats, KH Reeta, DST, 3 years, 2018-2021, Rs 27.61 lakhs
12. Genomic and Biochemical Correlation of "Prakriti" Stratified Patients diagnosed with Coronary Artery Disease (CAD): An Integrative Approach towards Personalized CAD Management, Pamila Dua (Dr KH Reeta-Guide), DST (Women Scientist), 3 years, 2019-2022, Rs 31.21 lakhs
13. ICMR Task force Centre on Rational use of drugs, Pooja Gupta, ICMR, 3 years, 2019-2022, Rs 15.75 lakhs
14. Modulation of AMPA receptor: Effect on post-stroke damage after focal cerebral ischemia reperfusion injury in rats, KH Reeta, ICMR, 3 years, 2019-2022, Rs 51.40 lakhs
15. Pharmacodynamic and pharmacokinetic interactions of the ayurvedic formulation (BGR-34) with Glibenclamide in experimental model of diabetes in rats, SC Sarangi, AIMIL Pharmaceuticals, New Delhi, 3 years, 2018-2021, Rs 21.01 lakhs
16. Pharmacological and Molecular approaches to investigate the effect of Adhato dawasica in experimental model of bleomycin induced pulmonary fibrosis, Jagriti Bhatia, Central council for research in Unani medicine, Department of AYUSH, 3 years, 2018-2021, Rs 55.42 lakhs
17. Pharmacological effects of Vitamin D in diabetic cardiomyopathy via ACE-2/Angiotensin (1-7)/Mas receptors axis in experimental diabetic rats, Harlokes Narayan Yadav, AIIMS, New Delhi, 2 years, 2018-2020, Rs 20 lakhs
18. Pharmacological screening of Homeopathic drugs used in rheumatoid arthritis, Surender Singh, AYUSH, 2 years, 2017-2019, Rs 27.56 lakhs
19. Role of GSK3 $\beta$  in modulating autophagy and apoptosis in permanent and transient model of ischemic stroke in rats, Devendra Singh (Dr KH Reeta - Guide), ICMR (RA), 3 years, 2019-2022, Rs 21.58 lakhs
20. Surface engineered Silver (Ag) nanoparticles and Peptide conjugate for angiogenesis based animal wound management, Harlokes Narayan Yadav, DBT, 3 years, 2018-2021, Rs 87.36 lakhs
21. Targeted Co-delivery of P53 modulator and anti-cancer drugs to achieve synergistic effect for cancer therapeutics, Harlokes Narayan Yadav, DST, 3 years, 2016-2021, Rs 35 lakhs
22. To evaluate the effect of topical urea in secondary prophylaxis of hand foot skin reaction in cancer patients undergoing sunitinib chemotherapy, Pooja Gupta, AIIMS, New Delhi, 1 year, 2019-20, Rs 5 lakhs
23. To study the influence of CYP2C19 polymorphism on bortezomib blood concentration and clinical response in myeloma patients, Pooja Gupta, DST, 3 years, 2017-2020, Rs 25.31 lakhs

#### **Completed**

1. Evaluation of the nephroprotective effect of Berberine and Diadzein in Cisplatin induced nephrotoxicity in rats, Jagriti Bhatia, DBT, 3 years, 2015-2019, Rs 24.99 lakhs
2. Formulation and evaluation of lipid based nanoparticles of Epalrestat in experimental diabetic neuropathic pain in Wistar rats, Harlokes Narayan Yadav, AIIMS, New Delhi, 2 years, 2017-2019, Rs 5 lakhs
3. Nano-Berberine for Protection against Chemotherapy Induced Cardiotoxicity in vitro, Pooja Gupta, AIIMS, New Delhi, 1 year, 2018-2019, Rs 5 lakhs
4. Role of brain derived neurotrophic factor (BDNF) as a potential biomarker in seizure related cardiac abnormalities, Jatinder Katyal, DST (SERB), 2 years, 2017-2019, Rs 22.03 lakhs

#### **Departmental projects**

##### **Ongoing**

1. Ameliorative potential of Vit. D in experimental diabetic cardiomyopathy in rats
2. An evaluation of cognitive impairment in persons with epilepsy(PWE) on Levetiracetam versus Sodium Valproate monotherapy

3. Berberine nanoparticles for protection against 5-Fluorouracil induced Cardiotoxicity – an in vitro and in vivo study
4. Comparison of effect of antidepressants on neurodegeneration in patients with depression
5. CYP2C19 polymorphism in Persons with Epilepsy on Levetiracetam
6. Depression in persons with epilepsy(PWE): Correlation of Serum BDNF and Zinc levels
7. Effect of add on zinc with Levetiracetam in seizure induced depression in rats
8. Effect of Benidipine alone and in combination with Bosentan and Sildenafil in Monocrotaline induced pulmonary arterial hypertension in rats
9. Effect of Vit. D on Monocrotaline induced pulmonary hypertension in rats
10. Evaluation of effect of oral hypoglycaemic agents on cognitive function in young and middle-aged type 2 diabetes mellitus patients.
11. Markers of Chemotherapy-induced Cardiotoxicity in Hematological Malignancy Patients Receiving Doxorubicin-containing Regimens
12. Open-label placebo versus double-blind placebo treatment for experimentally induced pain in healthy volunteers: A pilot study
13. Pharmacological and molecular characterization of the cardioprotective effect of Teriflunomide in experimental models of myocardial infarction and diabetic I/R-injury in rat heart
14. Pharmacological studies Odelineate the effect of Nilotinib in experimental models of Non Alcoholic Fatty Liver Disease (NAFLD)
15. Prescribing Pattern in Advanced Non-small Cell Lung Cancer (NSCLC) at IRCH, AIIMS with Quality of Life and Cost Analysis
16. Randomized placebo controlled crossover study to evaluate the effect of single dose of paracetamol on the psychomotor skills, cognitive and decision making capabilities in healthy volunteers
17. Studies on the effect of Artesunate in experimental model of sepsis
18. Studies on the effect of Roxithromycin in an experimental model of prostatitis
19. Studies on the effect of Roxithromycin in experimental model of sepsis
20. To evaluate the effect of Abatacept on Carbon Tetrachloride induced hepatotoxicity
21. To study the effect of Sesamol in Bleomycin induced pulmonary toxicity in rats
22. VEGF-A as a biomarker for diagnosis and therapeutic monitoring in patients with extra-pulmonary tuberculosis: A pilot study

### **Completed**

1. A pilot study exploring glucose regulated protein-78 (grp78) as a biomarker of responsiveness to Bortezomib based regimen in patients with multiple myeloma
2. A randomized double blind cross-over study to assess the effect of regular and decaffeinated coffee on psychomotor performance in healthy volunteers during post-lunch period
3. Comparison of newer and conventional antiepileptic drugs in focal and generalized seizures in terms of quality of life and cost of treatment
4. Development of nanoparticles based oral formulation of Liraglutide and evaluation of its effect in high fat diet induced obesity in mice.
5. Effect of antiepileptic drugs on physical activity, reproductive endocrine health and quality of life in women with epilepsy
6. Effect of Ascorbic acid supplementation on pulmonary functions in persons of age  $\geq 35$  years: A Randomized Controlled Pilot Study
7. Effect of H. pylori eradication therapy in patients with non-alcoholic fatty liver disease (NAFLD) on liver fat: A Randomized Controlled Pilot Study
8. Effect of U-50488, a kappa opioid receptor (KOR) agonist and IRL-1620, an endothelin B (ETB) receptor agonist on epileptogenesis and cardiac changes in rat lithium pilocarpine (LiP) seizure model.
9. Factors associated with seizure recurrence in persons with epilepsy undergoing anti-epileptic drug tapering: A prospective observational Study
10. Formulation of oral Liraglutide polymeric nanoparticles and evaluation of its hypoglycemic activity in experimentally induced diabetes mellitus in Wistar rats

## Collaborative projects

### Ongoing

1. A randomized Randomized controlled Controlled pilot Pilot Trial to compare the efficacy of Rituximab infusion versus intravenous Dexamethasone Pulse therapy in Pemphigus vulgaris and its correlation with phenotypic and functional determinants of B and T cells, Dermatology
2. Effectiveness of Cranberry Extract Mouth- Rinse compared to Sodium Fluoride Mouth Rinse on Microbial Counts in Caries Active Children-A Randomized Controlled Trial, Department of Pedodontics and Preventive Dentistry, CDER
3. High resolution Genomic screening using SNP Microarray to find out Genomic Causes in Idiopathic Sertoli Cell Only Syndrome (SCOS) cases, Reproductive Biology

### Completed

1. A study to determine the association of trace elements and heavy metals with lung cancer and their correlation with smoking, Medical Oncology, IRCH
2. Comparative evaluation of Simvastatin gel and diode laser for pulpotomy in primary molars: single blind, phase 2 randomized trial, Pediatric Dentistry, CDER

## PUBLICATIONS

Journals: 31

Abstracts: 16

## PATIENT CARE

### National Poisons Information Centre (NPIC)

The National Poisons Information Centre (NPIC) in the Department of Pharmacology has completed 25 years of service in imparting information on management of poisonings. It plays a vital role in providing relevant information on management of poisonings. Round the clock service rendered by NPIC is availed by treating physicians, government agencies, NGOs, and general public from all over the country. 8126 calls were received by NPIC from 1st April 2019 to 31st March 2020.

### Month-wise calls received by NPIC

Month	Number of Calls
Apr-19	659
May-19	737
Jun-19	646
Jul-19	684
Aug-19	622
Sep-19	621
Oct-19	638
Nov-19	572
Dec-19	750
Jan-20	731
Feb-20	746
Mar-20	720
<b>TOTAL</b>	<b>8126</b>

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor VL Kumar** was Chairperson in Session I, Common Poisons: Issues and perspectives, in “SYMP NPIC – 2019” - National Symposium on Poisoning as a Public Health Problem, organized by National Poisons Information Centre, Department of Pharmacology, AIIMS, on 26 April 2019 at AIIMS, New Delhi

**Professor KH Reeta** was on Specialist Board in specialty Pharmacology, National Board of Examinations, March 2019 onwards; Expert Member, 1st Biomedical and Health Sciences (Core Research Grant) Project Advisory Committee Meeting, Science and Engineering Research Board, Department of Science and Technology, Government of India; Member, Subject Expert Committee, CDSCO

**Dr Pooja Gupta** is Co-Ordinator for ADR monitoring centre (ADR-AMC) under Pharmacovigilance Programme of India (PvPI) and Medical Device Monitoring Centre (MDMC) for Materiovigilance Program of India (MvPI) by Ministry of Health and Family Welfare, Government of India.

**Dr Sudhir Sarangi**, obtained Certificate of Achievement for poster presentation at 33rd International Epilepsy Congress, 2019 held at Bangkok, Member of Institute Ethics Subcommittee for monitoring of adverse events in clinical trials at AIIMS, New Delhi; Subject expert for Standing National Committee on Medicine (SNCM) for revision of National List of Essential medicines (NLEM) 2015 organized by ICMR, New Delhi; Subject expert for 4th Meeting of Subject Review Committee for revision of National Formulary of India organized by Indian Pharmacopoeia Commission, MoHFW, Govt of India on 15 November 2019 at Translational Health Science and Technology Institute (THSTI), Faridabad.

**Dr Thomas Kaleekal** was Chairperson in Session III, on ‘Technological advancements in application of LCMS/MS in unknown poison identification’ and Demonstration of Micromedex databases, in “SYMP NPIC – 2019” - National Symposium on Poisoning as a Public Health Problem, organized by National Poisons Information Centre, Department of Pharmacology, AIIMS, on 26 April 2019 at AIIMS, New Delhi.

**Dr Amita Srivastava** received IAMLE fellowship in 10th International conference on legal medicine, medical negligence and litigation in medical practice and 10th International conference on current trends in forensic sciences, forensic medicine and technology (IAMLE 2019) held on 12-15 September 2019 at Kathmandu, Nepal (SAARC); Chairperson in Session III, on ‘Technological advancements in application of LCMS/MS in unknown poison identification’ and Demonstration of Micromedex databases, in “SYMP NPIC – 2019” - National Symposium on Poisoning as a Public Health Problem, organized by National Poisons Information Centre, Department of Pharmacology, AIIMS, on 26 April 2019 at AIIMS, New Delhi; Chairperson in session on ‘Forensic Pharmacology’, in the 10th International conference on legal medicine, medical negligence and litigation in medical practice and 10th International conference on current trends in forensic sciences, forensic medicine and technology (IAMLE 2019), on 12-15 September 2019 at Kathmandu, Nepal.



## 9.31. Physical Medicine and Rehabilitation

### Professor and Head

U Singh

Sanjay Wadhwa

### Professors

SL Yadav

Gita Handa

### Associate Professor

Srikumar V

### Assistant Professor

Asem Rangita Chanu

### Superintendent Physiotherapist

Mrs Smita Das

### Senior Physiotherapist

Mr OP Yadav

### Superintendent Occupational Therapist

Mr Raman Kumar Singh

### Senior Occupational Therapist

Mrs Lily Farhat Parveen

### Senior Technical Officer

Mr Ajay Babbar

### HIGHLIGHTS

Many faculties and residents of the department attended the 14th Annual Conference of Indraprastha Association of Rehabilitation Medicine “Delhi PMR Conference 2019” at ABVIMS and Dr RML Hospital, New Delhi on 30 November and 1 December 2019 on the theme —Critical care rehabilitation: New Horizon in PMR. The event was attended by eminent faculties from Delhi and rest of India who shared their experiences and enriched the knowledge.

### EDUCATION

Undergraduate teachings for the VIII Semester and VI Semester were undertaken by the department. Eleven postgraduate students are doing MD (PMR). PMR DNB Students from RG Kar Medical College (Kolkata) visited our department as part of their teaching/training program. Postgraduate and fellowship training for Palliative Care and Onco-Anesthesiology, Pediatric Neurology and Pain Fellows was conducted in the department. One surgeon from the Army Medical Corps started his Long Term Training in our department.

### CMEs, National and International Conferences

#### Lectures delivered

U Singh: 5

Sanjay Wadhwa: 13

Gita Handa: 4

Srikumar V: 9

Hafis Rahman: 1

**Oral Papers/Posters presented: 23 (Dr Sanath Kumar Memorial Best Poster for PGT)**

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Smart dynamic fabric actuator for prolonged standing professionals for management of chronic leg pain, Srikumar Venkataraman, AIIMS-IIT Delhi Collaborative Research Project, 2 years, 2018-2020, Rs 10 lakhs

##### *Completed*

1. Development and Testing of custom 3D printed foot orthotics using foot images from Smartphone for various foot problems, Gita Handa, BIRAC (DBT), 1.5 years, 2017-2019, Rs 12 lakhs

## **Departmental projects**

### ***Ongoing***

1. A cross sectional study to observe the prosthetic usage and functional status of upper limb amputees
2. A cross-sectional study to assess balance impairment and risk of fall in patients with Ankylosing Spondylitis.
3. A randomized controlled trial to compare effectiveness of smart dynamic fabric actuator with exercises in chronic musculoskeletal leg pain associated with prolonged standing
4. A Randomized Controlled Trial to Effect of Intra – Articular Adalimumab versus Intra – Articular Hyaluronic Acid in Patients with Primary Osteoarthritis of the Knee
5. Comparing Change in Disease Activity with Exercise Tolerance in Persons with Ankylosing Spondylitis on Adalimumab Therapy – An Observational Pilot Study
6. Comparing Change in Disease Activity with posture and balance in Persons with Ankylosing Spondylitis on Adalimumab Therapy – An Observational Pilot Study
7. Comparison of hamstring extensibility of patients having chronic nonspecific low back pain with healthy controls
8. Damper control in Lower Limb Prosthesis
9. Effect of Transcranial Magnetic Stimulation on Pain Modulation Status in Fibromyalgia Patients
10. Evaluation of efficacy of sensory integration therapy as an adjunct to standard care versus standard care alone in improving gross motor skills in children with cerebral palsy GMFCS I-III with sensory processing abnormalities: A single blinded randomized study
11. Hirayama Disease: Clinicoradiological features and long neck hypothesis
12. Incidence of recurrence of pressure injury in spinal cord injury patients
13. Post traumatic growth and its association with functioning and quality of life in patients with spinal cord injury.
14. Randomized Controlled Trial to compare the impact of exercises and nutritional interventions on changes in skeletal muscle mass and function in obese patients with sarcopenia.
15. The International Spinal Cord Society (ISCoS) Database Project
16. Work-related low back pain among health care professionals of AIIMS, New Delhi: a cross-sectional study

### ***Completed***

1. A Randomized Controlled Trial randomized control trial to compare effect of ultrasound guided corticosteroid injection versus conservative treatment on pain, function and ultrasonographic features of common extensor tendons in patients with lateral epicondylitis
2. Prevalence of Bifid Median Nerve in Carpal Tunnel Syndrome: A Case Control study
3. Lipofibromatous hamartoma of median nerve presenting as carpal tunnel syndrome
4. Pectoralis major tear: a rare cause for shoulder pain
5. Sacral osteomyelitis in a diabetic patient masquerading as coccydynia
6. A Randomized Controlled Trial to Compare the Effect of Zoledronic Acid versus a Structured Exercise Programme in Primary Osteoporosis
7. A Randomized Controlled Trial randomized control trial to compare the effect of single dose platelet rich plasma and corticosteroid injection in patients with carpal tunnel syndrome
8. A Randomized Controlled Trial randomized control trial to compare effect of platelet rich plasma and dextrose prolotherapy in patients of chronic plantar fasciitis
9. A cross sectional study to evaluate the correlation of gross motor, hand function, caregiver reported quality of life with intelligence in children with cerebral palsy
10. A Randomized Controlled Trial randomized control trial to compare effectiveness of electrical stimulation of foot and oxybutynin in overactive bladder in persons with spinal cord injury
11. PARK EASE Trial: A randomized controlled trial to study the efficacy of exercises in early stage Parkinson's disease
12. A Randomized Controlled Trial to Compare the Effect of Intra - Articular Adalimumab versus Intra - Articular Hyaluronic Acid in Primary Osteoarthritis of the Knee
13. Rehabilitation medical professional's perceptions on spirituality and health
14. Needs and experiences of patients with chronic pain in spiritual care and rehabilitation

## Collaborative projects

### Ongoing

1. A Study of Pain Status and Motor Cortex Excitability in Chronic Low Back Pain patients: Effect of Transcranial Magnetic Stimulation, Physiology
2. Design of Artificial Hand with Artificial Fingers. In collaboration with North Eastern Hill University, Shillong. NEHU, Shillong
3. Design, development and validation of ergonomically enhanced surgical instruments, Surgery
4. Detection of pressure points on residual limbs in transtibial amputees using thermal imaging, Biomedical Engineering/ IIT-D
5. Effect of yoga on pain and corticomotor excitability in chronic low back pain, Physiology
6. Electrophysiological analysis of cognitive load during locomotion and balancing and to investigate the improvement in gait and balance in lower limb amputees after using tactile feedback, Biomedical Engineering, AIIMS/IIT Delhi
7. Force Myography (FMG) driven affordable active lower limb prosthesis for resource-limited countries, IIT Delhi, University of Oregon, USA
8. Randomised control trial to compare the impact of progressive resistive exercise and nutritional interventions in skeletal muscle mass and function in obese patients with sarcopenia, Medicine
9. Synergy based Adaptive Prosthesis for Transfemoral Amputee. (Under ICMR), IIT, Delhi.

### Completed

1. Effect of motor imagery on corticomotor excitability and pain status in Rheumatoid Arthritis, Physiology
2. Evaluation of Pulmonary Function in Ankylosing Spondylitis, Physiology

## PATIENT CARE

New Patients	
OPD (Physician Consultations)	10939
New Registrations (P&O Workshop)	2615
<b>Total New Cases</b>	<b>13554</b>

Old Cases	
OPD (Physician Consultations)	24917
P & O Workshop	5678
Disability Evaluation Clinic	92
Railway Concession Certificates	159
OPD visits (PT Section)	18674
OPD visit (OT Section)	17156
OPD visit (MSW)	4669
Foot Clinic	101
EMG/NCV Lab Procedures	34
Diagnostic Ultrasound and interventional procedures	2517
Minor OT procedures	5010
<b>Total old cases</b>	<b>79007</b>

### Special Clinics of the department:

1. Musculoskeletal ultrasound guided interventions
2. Custom molded insoles in Foot Clinic
3. Wheelchair prescription and checkout clinic for customized wheelchair delivery as per WHO guidelines



4. Musculo-skeletal laboratory: Computerized evaluation and exercise equipment
5. Foot lab/Clinic
6. Disability Evaluation Clinic.
7. Brace Check-Out Clinic: Checking prosthetic and orthotic devices made in our workshop before final delivery to the patients.
8. Case Conference: Discussion of long-term rehabilitation patients for goal setting and treatment evaluation.
9. Gym Round Clinic: Evaluation of the therapy of the indoor patients admitted under PMR.

### Community Services

**Patient Care:** The departmental Faculty and Resident Doctors are periodically involved in Rural Camps in Mathura for the welfare of the persons with disability.

**Mass Media: Public Awareness Lectures and TV Health Programmes:** Dr Sanjay Wadhwa, Professor and Dr SL Yadav, Professor have participated a number of talks/programs on the TV/Radio for public health awareness and issues related to Disability.

### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor U Singh** is Member, Academic Committee, National Institute for the Orthopaedically Handicapped, Kolkata; Expert for the Research Degree Committee in MYAS-GNDU, Amritsar; Emeritus Editor, Indian Journal of Physical Medicine and Rehabilitation; Editorial Board Member, Spinal Cord Series and Cases, Journal of International Spinal Cord Society (ISCoS), UK; Consulting Editor and Reviewer, Journal of Rehabilitation Council of India Locomotor and Associated Disabilities; Reviewer, Annals of Indian Academy of Neurology; Reviewer, Indian Journal of Neuro-surgery; Reviewer, Journal of Spinal Cord Medicine; Reviewer, Journal of American Academy of Physical Medicine and Rehabilitation; Reviewer, Leprosy Review; Editorial Board Member, Indian Journal of Physiotherapy and Occupations Therapy; Honorary member of the editorial board for the International Journal of BioSciences and Technology (IJBST); Senior Editor: Astrocyte, Multispecialty Journal by National Board of Examinations, New Delhi, from December 2013; Chairman, Scientific Session 1, IPARM, Clinical Meeting, AIIMS, New Delhi, 10 August 2019; Chairperson and Judge for best paper award, Scientific Session XVIII. International spine and spinal injuries conference, New Delhi, 13 October 2019; Awarded second prize for Hindi Dictation Competition for the year 2018-19 during the Hindi Fortnight, organized by AIIMS, New Delhi, 14 September 2019.

**Professor Sanjay Wadhwa** is Convenor, International Standards Organization. Technical Committee 173, Working Group 12 (ISO/TC173/WG12); Chairman, Sectional Committee (MHD09) of Bureau of Indian Standards (BIS) till 2023; President of the Indian Association of Physical Medicine & Rehabilitation (IAPMR) w.e.f. 1 April 2019 for a 2 years term (2019-2021); Vice-President of the National Academy of Medical Sciences (NAMS) till June 2021; Member of Governing Council of the National Academy of Medical Sciences (NAMS) till June 2021; Member of the Medical and Hospital Division Council of Bureau of Indian Standards (BIS) till 2023; Member, Disability Committee, Medical Council of India; Member, Project Review Committee on Disability, ICMR; Member, Project Review Committee on Geriatrics, ICMR; Organized, as Programme Officer, a Training Workshop on Disability Assessment Guidelines for Ten Medical Colleges/Institutions designated for Issuing Disability Certificates for NEET UG Examination, on 1 June 2019 in the Seminar Room, Department of Anatomy at AIIMS, New Delhi. It was requested by the MCI (Board of Governors); Organized a Meeting of Sub-Committee under IAPMR for Drafting PMR related Benefit Packages under Aayushman Bharat Pradhan Mantri Jan Aarogya Yojana on 6 June 2019 in the Department of PMR at AIIMS, New Delhi; Organized a Lecture-cum-Demonstration for PG Students on “Vestibular Rehabilitation” by Dr Puneet Dhaliwal, PhD (PT) on 15 October 2019 in the Department at AIIMS, New Delhi; Organized Nation-wide Consultations for evolving Consensus and Drafting the PMR related Benefit Packages under Aayushman Bharat Pradhan Mantri Jan Aarogya Yojana. Submitted on behalf of IAPMR the Draft Document to the CEO, PM-JAY, Government of India on 12 March 2020; Participated as an Expert during a TV Programme Total Health on DD News on “How to Stay Fit During the Nation-Wide Lockdown on account of Coronavirus Infection/COVID-19” on 29 March 2020; Participated as an Expert during a TV Programme on DD News to Raise Awareness on the occasion of “International Day of Persons with Disabilities” on 3 December 2019; Participated as an Expert during Programme on Lok Sabha Television (LSTV) on “Spinal Cord Injuries” on 6 September 2019; Participated as an Expert during an important Programme ‘Sports 360’, on Doordarshan on “Sports Injuries” on 16 November 2019; Participated in the “SCI Rally to Raise Awareness About Issues Related to Spinal Cord Injuries” at Raj Path, India Gate on 7 September 2019.

**Professor SL Yadav** did Research in PMR: Opportunities and Challenges (Presidential Oration) during 48th National Conference of Indian Association of Physical Medicine and Rehabilitation, 17 January 2020, Calicut, Kerala; Fellowship of IAMLE (Indian Association of Medicolegal Experts) for the Year 2019; UGC (Ministry of Human Resource Develop-

ment, Government of India) appointed as a mentor in the EEC efforts to help the, IOE Institutions in their journey the World ranking ladder.

**Dr Srikumar V** is Reviewer, SN Comprehensive Clinical Medicine, Springer Publications; Member, Development Group, Traumatic Brain Injury – Package of Rehabilitation Interventions, World Health Organization (WHO), Geneva; Member, Technical Committee, Wearable Electronic Devices and Technologies (LTD-33), Bureau of Indian Standards, Ministry of Consumer Affairs, GOI; Resource Person, CME on Spinal Cord Injury – Tamil Nadu Chapter of Indian Association of Physical Medicine and Rehabilitation, Govt. Institute of Rehabilitation Medicine, 2 February 2020, Chennai; Chairperson, Session on Alternative therapies and Recent Trends, International Spine and Spinal Injuries Conference 2019, 12-14 October 2019, New Delhi; Chairperson, PGT Award Paper Session, 48<sup>th</sup> Annual National Conference of Indian Association of Physical Medicine and Rehabilitation, 16-19 Jan 2020, Kozhikode; Chairperson, Civil Services Examination - 2019 Medical Board for Person's with Benchmark Disabilities (Locomotor Disability), Department of Personnel & Training, Ministry of Personnel, Public Grievances and Pensions, GOI; External Examiner, MD (Physical Medicine and Rehabilitation) Thesis Evaluation, 13 February 2020, SMS Medical College, Jaipur; Non-examiner coordinator, Practical Examination, Diplomate of National Board (Physical Medicine and Rehabilitation), 27 September 2019, AIIMS, New Delhi; Nodal officer, Indents of Machinery and equipment under plan and GeM, Department of PMR; Treasurer, Indian Association of Physical Medicine and Rehabilitation; Joint Secretary, Indraprastha Association of Rehabilitation Medicine.

**Dr Asem Rangita Chanu** is Reviewer, Journal of Medical Society; Chairperson, Civil Services Examination - 2019 Medical Board for Person's with Benchmark Disabilities (Locomotor Disability), Department of Personnel & Training, Ministry of Personnel, Public Grievances and Pensions, GOI; Content Provider from PMR for AIIMS website; Chief Guide in PG Thesis – A Cross Sectional Study to Observe the Prosthetic Usage and Functional Status of Upper Amputees; Member of Doctoral Committee for PhD student (Dr Souvik Manna) in Community Ophthalmology - Community based assessment of disability among adult population of Delhi using WHO-ICF.

#### **Resident Doctors**

1. Our Department Poster on 'Basics and Advances in Rehabilitation & Breaking Barriers in Rehabilitation' was put up during the 64th Institute Day Exhibition-2019 of AIIMS, New Delhi.
2. Dr Hafis Rahman (SR), Dr Krishna B (JR) were awarded 1st place in quiz conducted at the 14th Annual Conference of IPARM titled Delhi PMR Con 2019.
3. Dr Ansarul Haq Miyan and Dr Aravind PR (JRs) were awarded 2nd place in quiz conducted at the 14th Annual Conference of IPARM titled Delhi PMR Conference 2019.
4. Dr Fatima Haneena P (JR), won Dr Sanat Kumar Sarkar Memorial Medal for best post-graduate poster presentation in 48th Annual National Conference held at Kozhikode, Kerala on 18 January 2020.
5. Dr Kanhu Charan Mallik (SR) was awarded IFNR Young Fellowship award during the IFRCON-2019 for the essay on the topic 'Vision Neurorehabilitation-2025'.
6. Dr Kanhu Charan Mallik (SR) was awarded Young Investigator Award (Consolation) in Clinical research in ISAR-DCCON 2019, organized by the Department of Pharmacology, AIIMS, New Delhi.
7. Dr Raunak Kumar (SR) was awarded 2nd prize (silver) at VMMC & SJH for academic performance in PG batch MD PMR On Occasion of Bhagwan Mahaveer Janam Jayanti Mahotsav, 16 April 2019.
8. Dr Raktim Swarnakar (JR) received MDS (Movement Disorder Society) Congress 2019 Travel Grant Award for presenting poster in the International Congress of Parkinson's Disease and Movement Disorders, 22-26 September 2019 in Nice, France
9. Dr Raktim Swarnakar (JR) received Mrs Dwarka Prasad Trust Travel Grant Award for the session October 2019-March 2020 for attending and presenting paper at 2nd National Biomedical Research Competition (NBRCOM-2019), at PGIMER, Chandigarh on 17th November 2019.

#### **VISITING SCIENTISTS**

1. Dr Darren J Player, Lecturer in Musculoskeletal Bioengineering, Division of Surgery and Interventional Science, Faculty of Medical Science, University College London, United Kingdom.
2. Raj Mitra, MD, The Senator Robert J Dole, Professor and Chairman, Department of Rehabilitation Medicine, The University of Kansas Medical Center, United States of America.



## 9.32. Physiology

**Professor and Head**  
Kishore Kumar Deepak

Hrudananda Mallick	<b>Professors</b>	
Ratna Sharma	Debabrata Ghosh	Kanwal Preet Kochhar
Ashok Kumar Jaryal	Nalin Mehta	Suman Jain
	Raj Kumar Yadav	Anjana Talwar

Asmita Patil	<b>Additional Professors</b>	Renu Bhatia
--------------	------------------------------	-------------

Simran Kaur	<b>Associate Professors</b>	Prashant Tulsidas Tayade
Dinu Santha Chandran		Nasreen Akhtar

Ritesh Kumar Netam	<b>Assistant Professors</b>	Akanksha Singh
Geetanjali Gokarn Bade		Suriya Prakash Muthukrishnan

### HIGHLIGHTS

The Department of Physiology has been involved in undergraduate and postgraduate teaching in addition to the doctoral program. The faculty also undertook to train manpower for undergraduate, postgraduate teaching and research techniques in-house by holding workshops and symposia at AIIMS and other institutions. A number of extramural and intramural research projects were taken up by the faculty in various areas such as neurophysiology (including autonomic nervous system), cellular and molecular physiology, nutrition, vascular physiology, reproduction, respiration, sleep, cognition, transcranial magnetic stimulation and yoga. The research outcomes were presented in various national and international scientific forums and published in indexed journals. On the basis of its original research, the department has provided significant support in patient care by utilizing cutting-edge technologies in autonomic and vascular function assessments, pain management, intraoperative monitoring during corrective surgeries, and yogic intervention. Several awards and honors have been received by faculty members and the students of the department in appreciation of their innovative contributions in research and medical education. The department organized “Techniques in Physiological Sciences - Advanced Workshop”, the workshop for SAARC Nations from 12 to 15 December 2019 and shared their expertise with the scientists abroad (Picture 1). The department also organized 37th Annual Meeting of Indian Academy of Neurosciences from 18 to 21 November 2019 and was a grand success (Picture 2). Neuroscientists -School Children Meet was organized by the Department to stimulate research interests in young Indian minds on 18 November 2019 (Picture 3). As a significant recognition, seven research paper presentations were invited from our Space and Environmental Physiology lab by Human Space Program, 2020 organized under the aegis of ISRO in January 2020.



**Photograph 1:** Inaugural Ceremony of Techniques in Physiological Sciences - Advanced Workshop (12 December 2019) organized by Department of Physiology

Left to right: Dr R Bhatia, Professor HN Mallick, Professor R Guleria, Professor KK Deepak



**Photograph 2:** Inaugural Ceremony of 37th Annual Conference of Indian Academy of Neurosciences (18 November 2019), organized by Departments of Physiology and Anatomy

Left to right: Professor S Jain, Professor KK Deepak, Professor P Seth, Professor SB Singh, Professor PN Tandon (Guest of Honor), Professor R Guleria (Chief Guest), Professor MK Thakur, Professor VK Khanna, Professor TS Roy, Professor S Kaur.



**Photograph 3:** Neuroscientists -School Children Meet held at Jawaharlal Auditorium on 18 November 2019, organized by Departments of Physiology and Anatomy  
 Left to right: Professor HWM Steinbusch, Professor SB Singh, Professor P Seth, Professor KK Deepak, Professor R Sircar, Professor PK Seth, Professor S Jain, Professor TS Roy

## EDUCATION

1. **Undergraduate teaching:** Lecture 200 hours and Practical 240 hours, UG students: Total number of students: 107
2. **Postgraduate teaching:** Total Number of PG students:
  - a. MSc students: 10
  - b. MD students: 19
  - c. PhD scholars: 27
3. **Nursing and allied courses:** Total number of students:155
4. **Short Term Training in the Department of Physiology:**
  - a. Two BSc students from Hansraj College, University of Delhi from 9 March 2020 to 18 March 2020
  - b. One faculty from GMC, Guntur from 13 August 2019 to 27 August 2019
  - c. One MSc student from School of Studies in Neuroscience, Jiwaji University, Gwalior from 3 June 2019 to 30 July 2019
  - d. Two Faculty from Gadag Institute of Medical Sciences, Gadag from 15 July 2019 to 27 July 2019
  - e. One student from University College of Science and Technology, Kolkata from 15 November 2019 to 30 November 2019
  - f. One BS-MS student from IISER, Mohali from 15 June 2019 to 31 July 2019
  - g. One senior resident from VMMC & Safdarjung Hospital, Delhi from 17 February 2020 to 16 March 2020
  - h. One student from HNB Garhwal University, Uttarakhand from 1 June 2019 to 31 July 2019
  - i. One BPTH student from MGM Allied Health Sciences Institute, Indore from 1 May 2019 to 15 June 2019
  - j. Two students from DIPSAR, Delhi from 19 June 2019 to 19 July 2019
  - k. Two students from BR Ambedkar Centre for Biomedical Research, University of Delhi from 15. June 2019 to 15 July 2019

## **CMEs/Workshops/Symposia/National and International Conferences**

1. Techniques in Physiological Sciences - Advanced Workshop: Workshop for SAARC Nations, 12-15 December 2019, AIIMS, New Delhi
2. Twenty seventh Annual Meeting of Indian Academy of Neurosciences, Theme: “Neuron to Behavior”, 18-21 November 2019, AIIMS, New Delhi
3. Satellite Workshop on Techniques and Protocols to study space Physiology and their earth applications as part of 8th Congress of Federation of Indian Physiological Societies (FIPS Congress) – 2019, 26 September 2019, AIIMS, New Delhi
4. Workshop on “Autonomic function Testing” during National Conference and hands on workshop on noninvasive assessment of neural and vascular functions in diabetes, 16 May 2019, Nashik
5. Workshop on “Autonomic function Testing” during National CME cum Workshop on Autonomic Neurosciences, 12 April 2019, Gadag, Karnataka
6. Workshop on “Autonomic function Testing” during CME on Basics and future trends in Autonomic Function Testing’ at Gandhi Medical College, 15 February 2020, Bhopal
7. Workshop on “Autonomic function Testing” during 65th Annual Conference of Association of Physiologist & Pharmacologist of India (APPICON 2019), Guahati Medical College, 27 November 2019, Guwahati
8. Workshop on “Autonomic function Testing” during CME and Workshop on Autonomic Neurosciences, Guntur medical College, Dr NTR University of Health Sciences, 13 October 2019, Guntur
9. Fourth National Medical Laboratory Professionals Week 2019 (NMLPW), 22 July 2019, Department of Physiology, AIIMS, New Delhi
10. Second IAPEN Clinical Nutrition Update Symposium Series-2019 themed around “Surgical Nutrition”, 22 May 2019, AIIMS, New Delhi
11. Symposium on “Quantitative EEG as a neuroimaging tool for understanding cognition” at the 8th Congress of Federation of Indian Physiological Societies (FIPS Congress 2019), 26–29 September 2019, ESIC Medical College and Hospital, Faridabad
12. Symposium on “Capturing Neural Activity to Assess Cognition” at the 27th Annual Meeting of Indian Academy of Neurosciences, 18-21 November 2019, AIIMS, New Delhi
13. Workshop on ‘QEEG: A tool to assess cognition’ at the 27th Annual Meeting of Indian Academy of Neurosciences, 18-21 November 2019, AIIMS, New Delhi
14. Workshop on Cognitive Function Tests and QEEG, Techniques in Physiological Sciences - Advanced Workshop, 12-15 December 2019, AIIMS, New Delhi
15. Workshop on Methodological basis of Expression Microarray and Functional Genomics, Techniques in Physiological Sciences - Advanced Workshop, 12-15 December 2019, AIIMS, New Delhi
16. Neuroscientists -School children meet, 18 November 2019, AIIMS, New Delhi
17. Workshop on Pain assessment in humans and animals, Techniques in Physiological Sciences - Advanced Workshop, 12-15 December 2019, AIIMS, New Delhi
18. Symposium cum workshop: ‘Innovations in digital learning & Teaching Physiology’ under the aegis of Association of Physiologists and Pharmacologists of India (APPI), Delhi Chapter, 24 June 2019, AIIMS, New Delhi
19. Symposium on ‘Recent updates in Mind, Body, Medicine’, 28 November 2019, APPICON 2019, Guahati Medical College, Guwahati
20. Workshop on Transcranial magnetic stimulation for Pain management, Techniques in Physiological Sciences - Advanced Workshop, 12-15 December 2019, AIIMS, New Delhi
21. Pre-Conference workshop at 8th International Conference of Physical Therapy, 19 December 2019, JPNTC and AIIMS, New Delhi
22. Intensive Sleep Technology Workshop, 14-19 April 2019, AIIMS, New Delhi
23. Polysomnography workshop, Techniques in Physiological Sciences - Advanced Workshop, 12-15 December 2019, AIIMS, New Delhi
24. Polysomnography Workshop, 28 November 2019, APPICON 2019, Guwahati Medical College, Guwahati

## **Lectures delivered at CME/ National and International Conferences**

**Kishore Kumar Deepak: 26**

**Ratna Sharma: 5**

**Raj Kumar Yadav: 3**

**Debabrata Ghosh: 4**

**Nalin Mehta: 15**

**Anjana Talwar: 7**

**Kanwal Preet Kochhar: 2**

**Suman Jain: 5**

**Asmita Patil: 6**

**Renu Bhatia: 5**

**Dinu S Chandran: 4**

**Ritesh Kumar Netam: 1**

**Suriya Prakash Muthukrishnan: 5**

**Oral/Poster presentations: 56 (Award for the best post graduate thesis paper; Award for best presentation)**

**Simran Kaur: 4**

**Nasreen Akhtar: 5**

**Geetanjali Gokarn Bade: 6**

**Prashant Tayade: 3**

**Akanksha Singh: 4**

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. A novel combinatorial approach for neuroregeneration in an in-vivo spinal cord injured rat model: neurotrophic factors coated iron oxide nanoparticles impregnated in a biocompatible hydrogel system, Suman Jain, DST, 3 years, 2017-2020, Rs 32.24 lakhs
2. A study of EEG microstates and source connectivity as state and trait markers in schizophrenia with depression, Ratna Sharma, ICMR, 3 years, 2018-2021, Rs20.73 lakhs
3. Characterization of thermosensitive neurons of preoptic area, Nasreen Akhtar, AIIMS, 2 years, 2018-2020, Rs 9.97 lakhs
4. Clinical research to assess efficacy of repetitive transcranial magnetic stimulation along with implantation of neurotrophic coated nanoparticles in complete spinal cord injury patients, Suman Jain, DBT, 3 years, 2020-2023, Rs 88.35 lakhs
5. Correlation of cortical sources and brain iron during rest and visuospatial working memory in Attention deficit hyperactive disorder, Simran Kaur, DHR, 2.5 years, 2017-2020, Rs 17.74 lakhs
6. EEG microstates and phase synchrony correlates of cognitive deficits in Parkinson's Disease, Ratna Sharma, ICMR, 4 years, 2016-2020, Rs 17.44 lakhs
7. EEG microstates as a biomarker in addictive disorders, Simran Kaur, AIIMS, 2 years, 2019-2021, Rs 8.05 lakhs
8. Effect of acute changes in ambient air pollutants on pulmonary variables and inflammatory markers in healthy subjects and asthmatics, Geetanjali Gokarn Bade, AIIMS, 2 years, 2019-2021, Rs 2 lakhs
9. Effect of chronic exposure to low intensity magnetic field on streptozotocin induced synaptic dysfunction and amyloid precursor protein processing in rats, Suman Jain, ICMR, 3 years, 2019-2022, Rs 13.20 lakhs
10. Effect of extremely low frequency magnetic field on neuroregeneration in severely injured spinal cord in rat model, Suman Jain, ICMR, 3 years, 2017-2020, Rs 12.50 lakhs
11. Effect of functional magnetic resonance imaging neurofeedback-guided motor imagery training on corticomotor excitability and pain status in rheumatoid arthritis, Renu Bhatia, ICMR, 3 years, 2019-2022, Rs 26 lakhs
12. Effect of Probiotic supplementation on Cognition and Motor symptoms in patients with Fluctuating Parkinson's Disease, KP Kochhar, DST, 3 years, 2019-2022, Rs 53.94 Lakhs
13. Effect of repetitive transcranial magnetic stimulation on pain status and corticomotor excitability in chronic low back pain patients, Renu Bhatia, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
14. Effect of yoga on pain status and corticomotor excitability in chronic low back pain patients, Renu Bhatia, DST, 3 years, 2017-2020, Rs 22.63 lakhs
15. Effect of yogic intervention on pain status in fibromyalgia patients, Renu Bhatia, DST, 3 years, 2019-2022, Rs 56 lakhs
16. Efficacy of a yoga-meditation based lifestyle intervention in patients with obesity and major depressive disorder: A randomized controlled trial, Raj Kumar Yadav, DST, 3 years, Rs 79 lakhs
17. Formulation of phantom brain to establish dosimetry of magnetic fields following repetitive transcranial magnetic field stimulation, Suman Jain, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
18. Functional and morphological study of antigravity muscle in spinal cord transected rats: combinatorial effect of electromagnetic field exposure and iron oxide nanoparticle implantation, Suman Jain, ICMR, 3 years, 2019-2022, Rs 13.20 lakhs
19. Gender differences in phase relationship between circadian rhythm and sleep: a spindle architecture and spectral analysis study, Nasreen Akhtar, AIIMS, 1 year, 2019-2020, Rs 1.98 lakhs
20. Immunophenotyping and functional characterisation of peripheral and in-vitro induced T regulatory cells: putative role in pathogenesis of COPD, Anjana Talwar, AIIMS, 2 years, 2018-2020, Rs 20 lakhs
21. Molecular basis of estrogenism in endometriosis, Debabrata Ghosh, SERB, 5 years, 2016 - 2020, Rs 49.72 lakhs



22. Neurohormonal response to mild haemorrhage using the model of blood donation, Akanksha, AIIMS, 2 years, 2018-2020, Rs 9 lakhs
23. Neuromodulation of cortical excitability and plasticity by low frequency repetitive transcranial magnetic stimulation in infantile hemiplegic cerebral palsy patients, Suman Jain, ICMR, 3 years, 2019-2022, Rs 51.35 lakhs
24. Prognostic value of endothelial dysfunction and arterial stiffness for major adverse cardiovascular events in patients with Non-ST elevation Acute coronary syndromes, Dinu S Chandran, AIIMS, 2 years, 2019-2021, Rs 9.92 lakhs
25. QEEG based neural correlates and microstates of attention and interference in ADHD: An endophenotypic marker, Simran Kaur, CSRI, DST, 1.5 years, 2017-2020, Rs 11.97 lakhs
26. QEEG correlates of default mode network activity and its correlation with cognitive deficits in multiple system atrophy-parkinsonian type and multiple system atrophy -cerebellar ataxia type, Ratna Sharma, ICMR, 3 years, 2019-2022, Rs 21.58 lakhs
27. Quantification of systemic inflammatory biomarkers and immunophenotyping of immune cells in post tuberculosis sequelae patients, Geetanjali Gokarn Bade, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
28. Study of EEG microstates in Om chanting, Prashant Tayade, AIIMS, 1 year, 2019-2020, Rs 4.63 lakhs
29. To investigate the biochemical and functional alterations by novel diagnostic tool GluCEST and prevention of progression of Alzheimer's disease by non-invasive Magnetic field stimulation therapy in streptozotocin (STZ) induced rat model, Suman Jain, ICMR, 3 years, 2019-2022, Rs 21.58 lakhs
30. To study effect of exposure to diesel biodiesel and biodiesel blend fuel-engine exhaust on testicular morphology and spermatogenesis in male Wistar rats, Asmita Patil, AIIMS-IIT, 3 years, 2019-2021, Rs 10 lakhs
31. To study the relationship between resting retrograde shear and atherogenic profile in peripheral, central and coronary arteries in patients of myocardial infarction, Dinu S Chandran, ICMR years, 3 years, 2018-2020, Rs 10.68 lakhs (Funded for SRF position)
32. Transcriptomic landscaping for endometriosis from genome-wide analysis (GWA) of expression arrays, Debabrata Ghosh, DST, 5 years, 2015-2020, Rs 47.37 lakhs

### ***Completed***

1. Acute effects of slow breathing on cardiovascular variability during head up tilt, head down tilt and lower body negative pressure in naïve healthy subjects and trained yoga practitioners, KK Deepak, AYUSH, 3 years, 2016-2019, Rs 66.76 lakhs
2. Circadian rhythm disruption, social jet lag and sleep disorders in urban young adults, Nasreen Akhtar, ICMR -STS Award, 1 year, 2019
3. Comparison of inflammatory and oxidative stress markers in exhaled breathcondensates of smoker COPD and biomass smoke exposed COPD, Geetanjali Gokarn Bade, AIIMS, 2 years, 2017-2019, Rs 7.32 lakhs
4. Continuous noninvasive blood pressure waveform measuring device for cardiovascular health, Dinu S Chandran, BIRAC, 1.5 years, 2018-2019, Rs 5.88 lakhs
5. Development and validation of peripheral arterial applanation tonometer to derive altered shear profile in conduit arteries, Dinu S Chandran, AIIMS, 1 year, 2018-2019, Rs 4.50 lakhs
6. Effect of hypothalamic inflammation on glucose sensing neurons in arcuate Nucleus in high fat diet induced obesity rat model, Ritesh Kumar Netam, AIIMS, 3 years, 2017-2020, Rs 10 lakhs
7. QEEG based neural correlates of perceptual dominance, Simran Kaur, AIIMS, 3 years, 2016-2018, Rs 6.62 lakhs

### **Departmental projects**

#### ***Ongoing***

1. A morphological and functional study on intracerebroventricular streptozotocin induced rat model of Alzheimer's disease: effect of magnetic field stimulation
2. A study of cortical connectivity and EEG sources in Autism spectrum disorder
3. A study of endothelial function and gene expression in healthy individuals, and their correlation with various somatotype classifications
4. A study of pain status and corticomotor excitability in chronic low back pain patients: Effect of transcranial magnetic stimulation
5. A study of pulmonary functions and inflammatory biomarkers in post-pulmonary tuberculosis sequelae patients
6. Acute cardio-autonomic responses to graded head down tilt in long term Sirsasana Yoga practitioners

7. Cortical reorganization in complete spinal cord injured rats: Effect of superparamagnetic nanoparticles and low intensity magnetic field exposure
8. Default mode network in major depressive disorder: A Quantitative EEG study
9. EEG cortical sources and connectivity of working memory and language processing in Attention Deficit Hyperactivity Disorder
10. EEG Microstates in major depressive disorder
11. Effect of countermeasure gravity loading body gear on antigravity muscle activity and autonomic function
12. Effect of deep hypothermia on nerve conduction in humans
13. Effect of electrolytic and neurotoxic lesion of VLPO on sleep and wakefulness in rats
14. Effect of graded lower body positive pressure on dynamic cerebral autoregulation
15. Effect of head down tilt on phasic events during sleep in healthy adult subjects
16. Effect of sympatho-inhibitory manoeuvres on resting retrograde shear in brachial artery of middle aged and elderly human subjects
17. Effect of yoga on pain and corticomotor excitability in chronic low back pain
18. Effective brain connectivity in visual object recognition
19. Effects of short-term yoga-based lifestyle intervention on hypothyroidism: A Randomized Controlled Trial
20. Emotional interference in opioid addiction: A QEEG study
21. Evaluation of autonomic function in different types of achalasia patients diagnosed by high resolution manometry
22. Evaluation of protein expression of microchimeric Y-Chromosome in ovarian endometriosis
23. Evaluation of pulmonary functions in ankylosing spondylitis
24. Genomic expression and protein profile correlates of peripheral blood mononuclear cells in obesity after yoga-based lifestyle intervention
25. Hemodynamic correlates of retrograde shear augmentation in brachial artery by lower body negative pressure (LBNP)
26. Immunophenotyping and functional characterization of peripheral T regulatory cells in COPD
27. Muscle regeneration in complete spinal cord injury: Effect of iron oxide nanoparticle implantation along with magnetic field exposure in rats
28. Neuromuscular changes in sleep and sleep deprivation
29. Neuroregeneration following implantation of iron oxide nanoparticle along with magnetic field exposure in spinal cord injured rats
30. QEEG based neural correlates and microstates of attention and interference in ADHD: An endophenotypic marker
31. Quantitative EEG correlates of single nostril breathing
32. Study on association between pain and neurotrophins in ovarian endometriosis
33. To investigate the arterial wall mechanics of low flow mediated constriction
34. To study the effect of simulated microgravity on the baroreflex sensitivity and carotid artery structure in rats
35. To study the mechanism of altered spontaneous baroreflex sensitivity during blood donation
36. To study the neural correlates of local sleep and its association with cognition: A QEEG study
37. To study the role of vascular function and pain sensitivity in post myocardial patients
38. To study the vascular mechanisms contributing to augmentation of brachial artery retrograde shear in response to graded cuff pressure over forearm

### ***Completed***

1. A neoplastic potential of endometrial stromal cells in endometriosis
2. A study of offset analgesia in trigeminal neuralgia
3. A study of transcriptomic landscape of ovarian endometriosis
4. Acute effects of slow breathing on cardiovascular variability during head up tilt, head down tilt and lower body negative pressure in naïve subjects and trained yoga practitioners
5. Brain computer interface based on EEG data of motor imagery
6. Cortical sources of working memory in opioid addicted patients: A Quantitative EEG study
7. Default mode network of addictive disorders- A quantitative EEG study

8. Effect of Angiotensin converting enzyme inhibitor on autonomic vascular & endothelial function in diabetics with newly diagnosed hypertensive
9. Effect of physiological challenges on regional brain temperature in Rats
10. Effect of short-term Yoga-based lifestyle intervention on stress, airway resistance and inflammation in bronchial asthma patients: A randomized controlled trial
11. Effect of static handgrip exercise on frequency dependence of baroreflex sensitivity
12. Effect of vitamin D supplementation on pancreatic beta cell functions in obese Indian subjects: A Randomized Controlled Trial
13. Endometrial telomerase reverse transcriptase protein expression in ovarian endometriosis
14. Evaluation of autonomic functions in patients of spinocerebellar ataxia types 1, 2 and 3 & comparison with morphological changes in brain
15. Evaluation of autonomic tone, vascular and endothelial function in myocardial on Infraction patients undergoing yoga best cardiac rehabilitation
16. Flow mediated slowing of pulse wave velocity during reactive hyperemia as a measure of endothelial function
17. Molecular basis of estrogenism in endometriosis
18. Neural correlates of cognitive performance in glaucoma: A quantitative EEG study
19. Neural processing of congruency and affective valence during binocular rivalry: A QEEG study
20. Polysomnographic studies of the effect of pranayamas on various physiological functions
21. Quantitative EEG correlates of emotion induced changes in cognitive performance in healthy volunteers
22. Quantitative EEG correlates of visuo-spatial working memory in Schizophrenia
23. Role of mediodorsal thalamic nuclei in sleep
24. Role of the lateral septal nuclei in sleep in Rats
25. The effect of motor imagery on pain status and corticomotor excitability in rheumatoid arthritis patients
26. To study radial artery low flow mediated constriction in response to shear modulation by graded supra-systolic occlusion
27. To study the electrophysiological signatures of arousal from sleep in adult human subjects
28. To study the therapeutic effect of superparamagnetic iron oxide nanoparticles implantation and magnetic field stimulation on motor, cognitive in a 6-OHDA rat model of Parkinson's Disease
29. To study the vascular mechanisms contributing to augmentation of brachial artery retrograde shear in response to graded cuff pressure over forearm
30. Understanding the pathophysiology of endometriosis by protein profiling and its correlation with stress

### **Collaborative projects**

#### ***Ongoing***

1. A Cross Sectional Study to assess the Severity of Chronic Pruritus and its effect on Quality of life using the 12 Item Pruritus Severity Scale and the 5-D Itch Scale, Dermatology and Venereology
2. A prospective study to evaluate the restoration of abdominal wall dynamics in patients with incisional hernia following laparoscopic IPOM plus repair in comparison to healthy controls using surface EMG, Surgery
3. A randomized controlled trial of adjunctive incremental pregabalin therapy vs placebo for pain management in chronic pancreatitis, Gastroenterology and Human Nutrition
4. A randomized sham-controlled trial of targeted low frequency repetitive transcranial magnetic stimulation therapy in childhood and adolescent with focal onset refractory epilepsy, Pediatrics
5. A randomized, double-blind, placebo-controlled, split-head trial to study the effects of autologous platelet-rich plasma on hair growth and lesional T-helper and T-regulatory cells expression markers in alopecia areata, Dermatology and Venerology
6. A study for determination of allocentric neural navigation process schematic utilizing dynamic optic array for prospective control, Psychiatry
7. A study of autonomic functions in adolescents with specific learning disorder (dyslexia) with and without ADHD, Psychiatry
8. A study of brain activation using functional near infrared spectroscopy and quantitative electroencephalographic spectral analysis in depression, negative and positive schizophrenia, Psychiatry
9. A study of the functional brain activation and electro-physiological spectral analysis in catatonia, Psychiatry

10. Analysis of anti-neurotoxicity of amyloid beta (A $\beta$ ) in Alzheimer's disease (AD) pathology targeting lipoxygenase, Biophysics
11. Change in Sleep pattern, perceived stress and coping strategies at the end of first year among first year medical undergraduate students: A prospective study, Medicine
12. Comparative assessment of cognition, default mode networks and analysis of psychosocial behavior and lifestyle, between obese and post-bariatric surgery groups of patients, Surgery
13. Comparative study of effects of lignocaine vs dexmedetomidine administration on the incidence of Postoperative cognitive dysfunction in the elderly, Anesthesiology, Pain Medicine and Critical Care
14. Cortical excitability in children with electrical status epilepticus in sleep compared to non-epileptic healthy children using Transcranial magnetic stimulation, Pediatrics
15. Delhi glaucoma epidemiology study, RPC for ophthalmic Sciences
16. Development of countermeasure gravity loading bodysuit and its potential association with cardiovascular and muscular system, Dr BR Ambedkar National Institute of Technology, Jalandhar
17. DTI, fMRI and qEEG correlates of cognition and behaviour in children and adolescents with well controlled nonlesional epilepsy: An observational study, Pediatric Neurology
18. Effect of acute changes in ambient air pollutants on pulmonary variables and inflammatory markers in healthy subjects and asthmatics, Pulmonary, critical care and sleep medicine
19. Effect of repetitive magnetic field stimulation on neurogenesis in streptozotocin induced rat model of Alzheimer's disease, Biotechnology
20. Effect of Suryanamaskara practice on physiological variables: A pilot study, Centre for Integrative Medicine and Research
21. Effect of vitamin D on monocrotaline induced pulmonary artery hypertension in rats, Pharmacology
22. Effect of yoga based lifestyle intervention on biomarkers of cellular aging in patients with depression, Anatomy
23. Effect of yoga on maternal and perinatal outcome in pregnancy, Obstetrics and Gynecology
24. Efficacy of a family based comprehensive yoga program for weight reduction among overweight children and adolescents, Pediatrics
25. Endometrial neurotrophic factors and nerve fibres in endometriosis-associated pain, Obstetrics & Gynecology
26. Endothelial dysfunction in young patients with non-alcoholic fatty liver disease, Medicine
27. Evaluation of effect of mindfulness based stress reduction on optic disc perfusion using OCT-angiography in glaucoma patients: A Randomized Controlled Trial, RPC for ophthalmic Sciences
28. Evaluation of immediate and occlusal pattern changes and their influence on electromyographic activity of jaw muscles in growing patients treated with rapid maxillary expansion for posterior crossbite- A prospective clinical study, Centre for Dental Education and Research
29. Evaluation of pulmonary functions in ankylosing spondylitis, Physical Medicine and Rehabilitation
30. Evaluation of repetitive transcranial magnetic stimulation as an adjunct to modified constraint induced movement therapy in improving upper limb function in children with hemiparetic cerebral palsy aged 5–18 years - A Randomized Controlled Trial, Pediatrics
31. Evaluation of the effect of mindfulness based stress reduction in patients with advanced glaucoma, Ophthalmology
32. Exploring graphene functionalized 3D scaffolds for enhanced neuronal differentiation of human mesenchymal stem cells and use in rat Parkinson's disease model, Stem Cell facility, IRCH
33. Identification of biomarkers in Parkinson's disease using NMR, NMR
34. Immunophenotyping and functional characterization of peripheral and in-vitro induced T regulatory cells: putative role in pathogenesis of COPD, Pulmonary, critical care and sleep medicine
35. Impact of supervised diet and lifestyle modifications on weight loss, body fat distribution and insulin resistance in adult Indian obese patients, Surgical disciplines
36. Impact of yoga and meditation on epigenetic profile in rheumatoid arthritis, Anatomy
37. Investigation of heart-brain interactions during internally operative versus externally operative attention regulatory mechanisms, Dr BR Ambedkar National Institute of Technology, Jalandhar
38. Is central sensitization a characteristic feature of chronic nonspecific neck arm pain? - a comparison with fibromyalgia and healthy individuals, Neurosurgery
39. Isolation and molecular characterization of colorectal cancer stem cells, Biochemistry
40. Longitudinal changes in EMG activity of masseter and temporalis muscles of patients undergoing temporomandibular joint replacement, Centre for Dental Education and Research

41. Neurobiological basis of early life stress induced aggressive behavior, Institute of Genomics and Integrative Biology, Delhi
42. Nutritional profile and lifestyle of Indian women (18-40 years) with infertility, Lady Irwin College, Delhi University
43. Quantification of systemic inflammatory biomarkers and immunophenotyping of immune cells in post tuberculosis sequelae patients, Pulmonary, critical care and sleep medicine
44. Repetitive transcranial magnetic stimulation to the inferior parietal lobule in task specific focal hand dystonia: A randomized cross over blinded outcome assessment study, Neurology
45. Role of cytokine levels in recurrent pregnancy loss and effect of progesterone on cytokine levels, Obstetrics & Gynecology
46. Role of Regulatory T Cells in COPD, Pulmonary Medicine
47. Role of selective neuropeptides in the spinal cord of morphine treated rats, Anatomy
48. Role of Yoga based intervention as an adjunct in improving quality of life of glaucoma patients, RPC for ophthalmic Sciences
49. Sternocleidomastoid and trapezius muscle activity before and after twin block therapy in skeletal class ii growing patients, Centre for Dental Education and Research
50. Study of clock genes in rat model of mania-like behavior, Neurology
51. Study of cognitive function in patients with chronic kidney disease and the effect of renal transplantation, Nephrology
52. The neurophysiological effect of pranayama in comparison to slow breathing, Centre for integrative medicine and Research
53. The study of synaptic plasticity in rat model of chronic post-surgical pain, Anatomy
54. To evaluate combination of biochemical endothelial markers and arterial stiffness in prediction of preeclampsia, Obstetrics and Gynecology
55. To evaluate neck muscles activity after mandibular postural changes in growing class II High angle patients with twin block therapy-An EMG study, Centre for Dental Education and Research
56. To study the changes in Bereitschafts potentials or movement related cortical potentials in fibromyalgia syndrome, Psychiatry, PMR
57. To study the effect of collagen-based scaffoldson the functional recovery in complete spinal cord injured rats, NIPER, Ahmedabad
58. To study the effectiveness of repetitive transcranial magnetic stimulation (rTMS) on activities of daily living, behavioral and cognitive ability (A-B-C) of Parkinson disease patients, Neuropsychology
59. Unique aspects of idiopathic hypoparathyroidism, Endocrinology and Metabolism

### **Completed**

1. A cross sectional study to assess autonomic nervous system imbalance and its correlation with cutaneous manifestation in patients with systemic sclerosis, Dermatology and Venereology
2. A pilot study for development of visual cue-induced craving paradigm for alcohol dependence and its QEEG correlates, Psychiatry
3. A pilot study of the role of intercessory prayer in determining the outcome after severe traumatic brain injury, Department of Neurosurgery, RML, New Delhi; Neurosurgery, AIIMS, New Delhi
4. A study of autonomic functions in adolescents with specific learning disorder (dyslexia) with and without comorbid ADHD, Psychiatry
5. A study of impulse oscillometry in sarcoidosis, Pulmonary Medicine
6. A study of respiratory impedance, resistance and reactance in interstitial lung disease, Pulmonary Medicine
7. An exploratory study with a purpose of finding a relationship between stress and pain perception/ modulation in context of presence or absence of anxiety, Department of Psychology, University of Delhi
8. Assessment of autonomic function across frailty status in Indian elderly, Geriatric Medicine
9. Association of lean mass, muscle strength and physical performance with diabetes and metabolic parameters, Medicine
10. Blood heavy metal levels and quantitative EEG correlates in children with autism, Pediatrics
11. Cardiac autonomic tone and reactivity in patients with alcohol use disorders undergoing treatment of acute withdrawal symptoms, Psychiatry and NDDTC
12. Central serous chorio-retinopathy and meditation: Functional and morphological outcome study, RPC for Ophthalmic Sciences

13. Characterization of dynamic interaction between cardiovascular and respiratory signal during autonomic stimulation, Dr BR Ambedkar National Institute of Technology, Jalandhar
14. Comparison of inflammatory and oxidative stress markers in exhaled breath condensates of smoker COPD and biomass smoke exposed COPD, Pulmonary, critical care and sleep medicine
15. Comparison of one session vs four session formats of journal clubs in postgraduate teaching, VMMC and Safdarjung Hospital, New Delhi
16. Comparison of propofol and ketofol on transcranial motor evoked potentials in patients undergoing thoracolumbar spine surgery, Neuro-anaesthesiology and Critical Care
17. Differential pre frontal cortex (PFC) activation for Attention Deficit Hyperactive Disorder (ADHD) patients and control group in response to emotional stimuli: A Functional Near Infrared Spectroscopy (fNIRS) study, Department of Psychology, University of Delhi
18. Effect of Yoga-based intervention on intraocular pressure, quality of life, inflammatory markers and gene expression profile in glaucoma patients: A Randomized Controlled Trial, RPC for Ophthalmic Sciences
19. Endothelial dysfunction in young patients with non-alcoholic fatty liver disease, Medicine
20. Evaluation of effect of mindfulness-based stress reduction in patients with primary open angle glaucoma, RPC for Ophthalmic Sciences
21. Feasibility of introducing structured yoga programme and its effect on stress and perceived well-being on new medical undergraduate students of AIIMS, New Delhi, Centre for Community Medicine
22. Impact of nutritional and lifestyle modification in subjects with BMI 25-29.9 kg/m<sup>2</sup> vs 30-34.9 kg/m<sup>2</sup> and to assess the effect of bariatric surgery in BMI  $\geq$ 35 kg/m<sup>2</sup>, Surgical Disciplines
23. Polyneuropathy in critically ill mechanically ventilated children, Pediatrics
24. Study of autonomic function in children and adolescents with specific learning disability, Psychiatry
25. Study of potential modulator targeting pathways involved in the hyperphosphorylation of tau in Alzheimer disease, Biophysics
26. The study of the effect of static magnetic field exposure on red blood cells and blood flow in humans, Biomedical Engineering, IIT Delhi

## PUBLICATIONS

**Journals: 41**

**Abstracts: 14**

**Chapters in Books: 2**

## PATIENT CARE

**Autonomic Function lab and Vascular Function lab** provide diagnostic facility for referred patients. The labs provide routine test of autonomic reactivity along with autonomic tone quantification. A total number of 1038 of humans have been tested for autonomic function test this year, which included 1011 patients and 27 healthy subjects.

**Gastrointestinal Physiology** provided diagnostic facility (upper GI manometry) for 55 referred patients from Gastroenterology and Surgery.

**Intraoperative Neurophysiology** intraoperative neuro-monitoring support was provided to 350 patients from departments of neurosurgery, 100 from orthopedics, 10 from trauma center, 5 from CTVS, and 1 from pediatric surgery.

**Integral Health Clinic (IHC)** is a facility for mind, medicine & meditation integration, primarily for health promotional activities. IHC is an outpatient facility which is used not only for therapeutic gains but also as part of a developing health consciousness. As a de-stressor facility, the IHC is a supportive facility to de-stress AIIMS employees including faculty, students, residents and staff. A total of 619 subjects were enrolled at IHC for short-term yoga-based intervention, and a total of 4532 subjects (on daily basis/ day-wise) were trained & benefited at IHC during the year 2019 -2020. This includes patients of chronic diseases (like diabetes type 2, obesity, hypothyroidism, cardiovascular diseases, chronic depression, etc) and, referred patients from different departments of AIIMS (R.P.C. for ophthalmic sciences, Endocrinology & Metabolism, Psychiatry, Orthopedics, etc.)

**Respiratory Physiology lab** provided 20 cardiopulmonary exercise testing (CPET) for pre-operative assessment of patients for Lung resection.

**Pain Research and TMS laboratory** 886 rTMS (Repetitive Transcranial Magnetic Stimulation) sessions given at Motor cortex/ Dorsolateral Prefrontal cortex, 480 supervised Yoga sessions with flexibility assessment and 44 motor imagery sessions to chronic pain patients were given. Pain and Somatosensory assessment of 108 chronic pain patients and 20 healthy volunteers were done. EMG recordings of pericranial and cervical muscles done for 35 patients. Corticomotor excitability measurement and evaluation of 70 chronic pain patients and 40 healthy volunteers was also conducted. Quantitative

sensory testing was performed for 53 patients. The chronic pain patients included patients with chronic low back pain, fibromyalgia, rheumatoid arthritis, chronic neck and shoulder pain, chronic pruritus, hypothyroidism and young children undergoing orthodontic therapy. Patients were referred from various clinical departments of AIIMS namely Rheumatology, Physical Medicine and Rehabilitation, Orthopedics, Neurosurgery, Oral and maxillofacial surgery, Orthodontics, Dermatology, Endocrinology, Anesthesiology and Neurology.

### Social Outreach Programmes

Media coverage (Television):

1. Internet (YouTube), Exercise and Brain Health, <https://youtu.be/IqcTCT71wXk>; Medical experts: Prof. KK Deepak, Dr Geetanjali Bade, Dr H Barun Sharma, Gagan Banodhe, 4 August 2018, Accessible on the internet
2. Television, DD News: Fit India Mission Prof. KK Deepak, 1 April 2018, 7.30 pm to 8.00 pm, 10.30 pm-11 pm
3. Television, DD NEWS channel live show 'TOTAL HEALTH' on "Prevention of diseases by Yoga"; Medical expert: Prof. Raj Kumar Yadav, 1 April 2019, 8.30 am to 9.30 am
4. Television, DD NEWS channel live program "Total health" on Yoga, medicine & health; Medical expert: Professor Raj Kumar Yadav, 16 June 2019, 8.30 am to 9.30 am
5. Television, DD NEWS channel program "Yoga Parv" on Yoga & medicine; Medical expert: Professor Raj Kumar Yadav, 20 June 2019, 3.30 pm to 4.30 pm
6. Television, DD National Channel live program "Yogatsav" on 'Yoga International Day'; Medical expert: Professor Raj Kumar Yadav, 21 June 2019, 11 to 11.45 pm
7. Television, DD NEWS (Both Hindi & English news) program 'FIT INDIA'; Medical expert: Prof. Raj Kumar Yadav, 29 August 2019, 8 pm to 9 pm (Hindi) 9 pm to 10 pm (English)

### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor KK Deepak** is the Executive Editor, Indian Journal of Physiology and Pharmacology (IJPP) 2017-2020; Chairman, Committee for the development of age appropriate fitness protocols, Ministry of Youth Affairs and Sports, Department of Sports (Fit India Cell, FIT India Mission), GOI; Chairman, Committee to finalize tender document and monitor all further process for tender hiring of agency/consulted/service provider for computer-based test online examination for various examinations, Examination Section, AIIMS, New Delhi; Chairman, Negotiation Committee, AIIMS, New Delhi; Member, Store Purchase Committee, AIIMS New Delhi; Member, Board of studies of the Department of paramedical sciences, School of Nursing sciences and Allied health, Jamia Hamdard, Delhi; Member, Board of studies for PhD program of the Guru Govind Singh University (2019); Chairman, Committee for management system for Examination Section, AIIMS New Delhi; Member, Selection committee "Khelo India", Ministry of Sports and Youth Affairs, GOI; Member, Biomedical Device and Technology Development (BDTD) Expert Advisory Group (EAG) DST, GOI; Member of Initial Screening Committee (ISC), Technology Development Board, Govt. of India; Expert member of Executive Board of DRDO; Member of NRDC National Innovation Awards, National Societal Innovation Awards & National Budding Innovators Awards 2019; Co-chair, 37th Annual conference of Indian Academy of Neurosciences (November, IAN 2019); Organizing Secretary, Techniques in Physiological Sciences - Advanced Workshop, 2019; Workshop for SAARC Nations; Member, Expert Committee for standardization of curriculum and admission qualifications for various courses in the Universities identified for funding, Ministry of Sports & Youth Affairs, GOI (2019); External expert in the meeting of Personal Promotion Assessment Board" for promotion of faculty member at department of Physiology, IGIMS, Patna; Member in Program Advisory Group of the Technology Enabling Centre of University of Hyderabad (TEC-UoH), Department of Science and Technology (DST), Govt. of India; National advisor, VIII Congress of Federation of Indian Physiological Societies (FIPS Congress – 2019) held at ESIC Medical College and Hospital, Faridabad; Convener of the Symposium: Cerebellar and brainstem mediated autonomic Modulation, 37th Annual Conference of Indian Academy of Neurosciences (November, IAN 2019); Served as panelist for interaction with more than 500 School children during 37th Annual Conference of Indian Academy of Neurosciences (IAN 2019) held at AIIMS, New Delhi; National advisor, 65th Annual Conference of Association of Physiologist & Pharmacologist of India (APPICON 2019); Executive Member, Association of Physiologist & Pharmacologist of India; Member PG committee of Medical Council of India; Member, Initial Screening Committee (ISC) Meeting for National Award-2020 applications, Technology Development Board, Department of Science & Technology, GOI.

**Professor Kanwal Preet Kochhar** was Chairperson, 4th National CME and Certificate Course on Repetitive Transcranial Magnetic Stimulation (rTMS) organized by Department of Psychiatry, AIIMS, New Delhi held on 12-14 December 2019; Special Guest in IAN-2019 37th Annual Meet of Indian Academy of Neurosciences "Neuron to Behaviour" was held on 18th to 21st November 2019 organized by Department of Physiology & Anatomy; Speaker in FIPS Congress-2019 was held Workshop on 26 September 2019 and Conference on 27-29 September 2019 organized by Department of Physiology, ESIC Medical College & Hospital, NH-3, NIT Faridabad; Speaker in the CME entitled "Global Trends in Neuropsychophysiology Research" Workshop on "Clinical Electro-diagnostic Tools for Teaching and Research organized by the Department of Physiology, Maulana Azad Medical College, Delhi on 16 September 2019; Technical Subject Expert for the area of preventive and promotive healthcare services for the body and mind and Coping Skills and Stress Management in a Video Conference on 18th April 2019 at the office of Directorate General, Ministry of Home Affairs, RK Puram.

**Professor Nalin Mehta** was Honorary Advisor to the General Secretary and Board of Governors in supersession to the Medical Council of India; Member, UG expert Committee appointed by the Board of Governors in Supersession of MCI; Member, Selection Committee for Faculty at Guru Nanak Dev University (GNDU), Amritsar, Punjab; Member Research Ethics Board, Regional Institute of Medical Sciences (RIMS), Imphal, Manipur; External Expert Member, Standing Selection Committee for Selection of Faculty (Physiology), AIIMS, Jodhpur; External Member, Board of Studies, for Undergraduate courses, AIIMS, Bhubaneswar.

**Professor Suman Jain** was Vice President of Indian Academy of Neurosciences; Member of IUPS-IUPHAR committee by INSA; Secretary of Delhi-NCR Chapter of Indian Academy of Neurosciences; Subject Expert of Physiology by Standing Selection Committee of JIPMER Pondicherry for appointment to regular faculty posts and assessment promotions; Member of “Project Review Committee-Basic Sciences” by competent authority, AIIMS New Delhi; Member of committee constituted for appointment of Nurses officer for temporary post at AIIMS, New Delhi; Member for counseling of Non-Academic Junior residents, AIIMS Delhi; Judge to evaluate posters of PhD and Postdoc students during Research Day at AIIMS Delhi; Technical expert for purchase of Transcranial Magnetic Stimulation for Centre of advance research and excellence on Neuromodulation and Mental Health of ICMR; External Expert by Vice Chancellor, Bharathiar University for Doctoral Research Committee of PhD student at Defense Institute of Physiology and Allied Sciences, Delhi; External Expert of Research Advisory Committee of PhD scholar by NIRMA University, Ahmedabad; Adjunct faculty to National Brain Research Centre, Manesar, Haryana and Dept. of Biotechnology, AIIMS, New Delhi.

**Professor Raj Kumar Yadav** was Member Editorial board: Annals of yoga and physical therapy; Editor: International Journal of clinical and experimental physiology; Deputy Hostel Superintendent, AIIMS, New Delhi; Finance Secretary, TIPS 2019, Techniques in Physiological Sciences for SAARC nations, AIIMS, New Delhi, December 2019; General Secretary: FAIIMS: Faculty Association of AIIMS, New Delhi (Till January 2020); Secretary, Association of Physiologists & Pharmacologists of India (APPI), Delhi chapter; Secretary, Faculty Club, AIIMS, New Delhi; Member, Committee to formalize Scientific Cadre, AIIMS, New Delhi; Member, AIIMS Students Benevolent Fund Committee for UG students; Member, Oversight Committee, AIIMS Power Grid Vishram Sadan, JPNA Trauma Centre, AIIMS, New Delhi (Since May 2018); Wellness program for Post Graduate Trainees: as speaker & resource faculty at Ramalingaswami Board Room, AIIMS, New Delhi, 2019 (multiple sessions); Chaired a Scientific Session during ‘Evidence-Based Non-invasive Therapies: Futuristic Medicine’ At Govt Institute of Medical Sciences, Greater Noida; 19 November 2019; Guest of Honour, Secretary, APPI, Delhi chapter, AIIMS, New Delhi, 24 June, 2019.

**Dr Renu Bhatia** was a Member of International Association for Study of Pain (IASP), a Member of AIIMS UG Curriculum organizing group and Member of Women in Brain Stimulation.

**Dr Suriya Prakash M** received “Young Researcher Award” for the Poster presentation (Medical Sciences category) with 2nd Cash prize of Rs.15000/- for the research work titled “The Potential of EEG-Derived Resting-State Functional Cortical Connectivity as a Diagnostic Biomarker for Alzheimer’s disease and Mild Cognitive Impairment” at 2nd National Biomedical Research Competition (NBRCOM-2019), 17 November 2019, PGIMER, Chandigarh. He is Member, Committee for MBBS Curricular Reforms, AIIMS, New Delhi And was awarded travel support of Rs. 99661/- by Science & Engineering Research Board (SERB) for presenting research work titled “Brain networks communicate through theta oscillations to encode high load in a visuospatial working memory task: An EEG connectivity study” at Neuroscience 2019, 49th Annual Meeting of Society for Neuroscience, 19-23 October 2019, Chicago IL, USA

**Dr Akansha Singh** was Joint Secretary-Finance, TIPS 2019 (Techniques in Physiological Sciences) for SAARC nations, AIIMS, New Delhi, December 2019.

#### **VISITING SCIENTISTS**

Dr Elad Fein, CEO iFEEL, Israel on Heart Rate variability in Department of Physiology on 9 December 2019.





## 9.33. Plastic, Reconstructive and Burns Surgery

**Professor and Head**  
Maneesh Singhal

Raja Tiwari  
Rajkumar Manas

**Assistant Professors**

Shashank Chauhan  
Rakesh Dawar

### HIGHLIGHTS

The Department was established in July 2015. Presently, the department has 5 faculty members, 15 MCh senior residents, 2 non-academic senior residents and 5 non-academic junior residents. The monthly inflow in out-patient department as well as admissions has steadily increased over the past one year. We have specialized clinics in hand, cleft, and Dermatotomy. We provide services for creation of arteriovenous fistulas and reconstruction of various defects in collaboration with Oncosurgery, Neurosurgery, Cardiothoracic surgery, Orthopedic, Pediatric surgery, General surgery, Ocular surgery teams and various other departments. At Jai Prakash Narayan Apex Trauma Center, we are providing the complete spectrum of post-traumatic reconstructive surgeries including microvascular surgery and replantation, along with a special clinic for evaluation and management of patients with brachial plexus injuries. The department has conducted various national and international cadaveric courses and hands-on workshops on reconstructive flap cover surgeries. We also run an OPD at Ballabhgarh, Haryana for outreach to the rural population. There have been multiple presentations by our faculty and residents at various national and international conferences. Department has successfully conducted the MCh exams of seven candidates.

### Infrastructure Development

Establishment of Burn and Plastic block. The future endeavors of the department include starting of a state-of-the-art Center for Burn Care and Reconstructive Surgery, a dedicated skin bank, and a composite tissue allotransplantation program for hand and face transplant.



### CMEs/Workshops/Symposia/National and International Conferences Organized by the Department

1. ISVCA 2019, 28 and 29 September 2019, New Delhi
2. Masterclass in craniomaxillofacial reconstruction, 17 October 2019 at AIIMS, New Delhi
3. Cadaveric Dissection Course for Filler and BOTOX, ACS(I)CON 2019, New Delhi
4. Cadaveric Dissection Course for Skin grafts and Flaps, at ACS(I)CON 2019, New Delhi
5. Member of expert group, Development of First Aid for the Community, a WHO project in association with the Ministry of Health & Family Welfare, Government of India
6. Organized CMETi: Workshop on wound care and Pressure sore prevention, 21 January 2019, at AIIMS, New Delhi
7. Organized CMETi: Workshop on wound care and pressure sore prevention, 3 March 2019 at AIIMS, New Delhi

**Lectures Delivered****Maneesh Singhal: 7****Raja Tiwari: 7****Raj Kumar Manas: 8****Shashank Chauhan: 6****Oral Papers/Posters presented: 12****RESEARCH****Funded projects****Ongoing**

1. Role of Microdialysis in post-operative assessment of Microvascular free flaps, Shashank Chauhan, AIIMS, 2 years, 2018-2020, Rs 4.95 lakhs
2. Pilot Study on utility of Robotic surgery for Brachial plexus reconstruction, Raja Tiwari, AIIMS, 2 years, 2020-2022, Rs 29.5 lakhs

**Completed**

1. Controlled Clinical trial to assess the effectiveness of topical application of C1 herbal oil on split thickness skin graft donor. (Phase I), Maneesh Singhal, Ministry of AYUSH, 4 years, 2014–2018, Rs 17.22 lakhs
2. Developing First Aid Module for Community, Maneesh Singhal, WHO & Ministry of Health and Family Welfare, Govt of India, 6 months, 2018, Rs 6.1 lakhs

**Departmental Projects****Ongoing**

1. A prospective study to evaluate the efficacy of Fluorescent angiography in detection of nipple Areolar perfusion in patients undergoing reduction Mammoplasty
2. Outcomes after breast cancer treatment: An International perspective
3. Epidemiology of hand injuries in single centre JPNATC AIIMS, Retrospective and prospective study
4. Effectiveness of a regular training program on microsurgery skills in plastic surgery residents.
5. Prognostic factors associated with outcome in patients who were treated for spaghetti wrist injuries
6. To study the clinical and electrophysiological outcomes of using Platelet-rich plasma in acute peripheral nerve injury repair
7. Analysis of factors affecting survival of digital replant

**Completed**

1. Liposuction assisted subcutaneous mastectomy
2. Soft tissue profile of patients with cleft lip and palate in the Indian population
3. Evaluation of the suitability and outcome of Profunda artery perforator flap for different defects

**Collaborative Research****Ongoing**

1. Cleft lip and palate anomaly in India: Clinical profile risk factors and current status of treatment: A hospital-based study, Centre for Dental Education & Research

**Completed**

1. A Clinical Study on the investigation of caries risk in children with cleft lip and palate (CL/P) and non-cleft control, Centre for Dental Education & Research

**PATIENT CARE**

Facilities available in the department

## a) Inpatient patient care facilities:

- Hyperbaric Oxygen therapy facility
- Microvascular facility
- Hand and congenital anomalies surgery facility

- Craniofacial and cleft surgery
- Aesthetic surgery
- Head and neck reconstruction
- Trunk and extremity reconstruction

b) Clinics:

- Combined Cleft clinic
- Hand clinic
- Brachial Plexus Clinic
- Combined leprosy Clinic

c) Community Service/Camps:

- Organised a “**Burn Prevention Awareness and primary Aid Programme**” at CHRPC, Ballabgarh and AIIMS New Delhi Trauma Centre in which we delivered a public lecture on burn prevention, firecrackers and other types of burns and first aid management. About 100 patients and patient’s relatives attended the programme in the OPD premises and were educated on prevention of burns
- Plastic Surgery OPD services at CHRPS, Ballabgarh, Haryana every Tuesday

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Maneesh Singhal** was awarded ICMR-DHR International Fellowships for Senior Indian Biomedical Scientist 2019-20; Expert committee members on Video Spots on Burn Injuries under NPPMBI, Ministry of Health and Family Welfare, Government of India; Expert committee members on IEC development for awareness and prevention of Burn Injuries under NPPMBI, Ministry of Health and Family Welfare, Government of India; Expert committee members on awareness and prevention of Drowning under Ministry of Health and Family Welfare, Government of India; Central expert for monitoring for Trauma Care Facilities and Burn Units of Chandigarh and Odisha; Ad-hoc committee members for giving suggestions and monitoring infrastructure development of AIIMS, Raebareli; Invited member for Education Working Group, International Federation of Red Cross and Red Crescent Societies; ISTACT consensus meeting, Consensus meeting on ISTAC Guidelines for the management of Solid organ injuries to be held on 18 and 19 January, 2020 at DELNET, Vasant Kunj, New Delhi; Member of the INDICEFT task force, ICMR, New Delhi; Nominated by Ministry as expert for National Workshop on Highway Accidents & Emergency Medical Management India International Centre, New Delhi: 28 February 2020; Member of project sanctioning committee, Central Sector Scheme for up gradation to Centre of Excellence (COE), Ministry of AYUSH; Member of Constitution committee to revise the strategy of implementation of Trauma & Burn Programme at National Level; Expert group Member for development of Guidelines for management of Cleft Anomalies in India, ICMR, New Delhi; Faculty for ATLS course, 28-30 November ABVIMS & Dr RML Hospital, New Delhi; Chairperson for Session VI of NANOBIOTECK - 2019, 21-23 November 2019, Aerocity, Delhi; Member, Committee for MBBS curricular reforms at AIIMS, New Delhi; Member, Institute ethics Committee for MBBS curricular reforms at AIIMS, New Delhi; Member of Faculty selections panel at SSCI&H, Lucknow; Expert Group Meeting for developing National Guidelines on Patient Safety, MOHFW, New Delhi; Advisory committee member of 100 Bedded General Hospital at RHTC, Najafgarh; Expert member for Medical Device Division, Central Drugs Standard Control Organisation DGHS, Ministry of Health & Family Welfare, New Delhi-110002; Examiner for national board of examination for DNB, Plastic surgery.

**Dr Raja Tiwari** was First Indian to be awarded Fellowship in Advanced Reconstructive Microsurgery from Royal Melbourne Hospital, Australia. Fellowship duration 6 months from 1 April 2019 to 30 September 2020; Chairperson: CME-Basic and Recent Trends in Plastic Surgery, 12 October 2019, Rewa, MP; Moderator and co-organiser in masterclass craniomaxillofacial reconstruction in jai Prakash Narayan Trauma Centre, Delhi, 17 October 2019.

**Dr Rakesh Dawar** was invited faculty and chairperson, 12-15 September 2019, Puri, Odisha India; Co-organiser in masterclass craniomaxillofacial reconstruction in Jai Prakash Narayan Trauma Centre, Delhi, 17 October 2019.

**Dr Raj Kumar Manas** was invited faculty and chairperson in NABICON 2019 and elected as Executive Member of NABI, National Academy of Burns-India during the meeting held in Kandaghat; Invited faculty and chairperson and Judge for best poster presentation in ISSH 2019, Annual Conference of Indian Society of Surgery of Hand held in Puri; Invited faculty and chairperson in ISVCA 2019, International Congress of International Society of Vascularised Composite tissue allo-transplantation, moderated the session on research and experimental vascularised allo-transplantation, held in New Delhi.

**Dr Shashank Chauhan** was judge of Competitive Paper Session, APRASOCON 2019, 13 January 2019, Bhubaneswar.



## 9.34. Psychiatry

**Professor and Head**  
Rakesh Kumar Chadda

**Professors**

Pratap Sharan      Rajesh Sagar      Nand Kumar      Mamta Sood

**Additional Professor**

Raman Deep      Sujata Satapathy

**Associate Professors**

Koushik Sinha Deb      Rohit Verma      Bichitra Nanda Patra

**Assistant Professors**

Gagan Hans      Vaibhav Patil      Barre Vijay Prasad

**Child Psychologist**  
Renu Sharma

**Clinical Psychologist**  
Vandana Chowdhary

### HIGHLIGHTS

The Department of Psychiatry in addition to the conducting quality training for MD (Psychiatry), PhD (Psychology) and MBBS students is also engaged in the training programmes for BSc/MSc nursing and residents from the departments of Medicine, Geriatric Medicine, Emergency Medicine, Palliative Medicine, and DM Neurology posted in psychiatry for various durations. The Department of Psychiatry is currently undertaking a number of key funded research projects in collaboration with International and National agencies like WHO, NIHR (UK), DST, ICMR, NCPDR, etc. The Department successfully organized a number of key events in the year including National CME on Strengthening Home-based Care for Severe Mental Disorders in Low Resource Settings (April 2019), Wellness Program for Post Graduate Trainees (August 2019; March 2020), Mental Health Fiesta 2019 (October 2019), XXI Annual Conference of the International Society of Addiction Medicine (November 2019) and 4th National CME and Certificate Course on Repetitive Transcranial Magnetic Stimulation (December 2019). The Department of Psychiatry has always been a pioneer in providing quality mental health services. The Department runs daily walk-in and follow up clinics in addition to weekly specialty clinics for child and adolescent psychiatric disorders, psychosomatic disorders, common mental disorders, severe mental disorders, dual diagnosis disorders and brain stimulation clinic. The Department also provides community outreach services 6 days a week at the CRHSP, Ballabgarh with services provided to 3597 new cases and 6432 follow up cases in 2019-2020. The Department provided out-patient consultation services to a total of 14409 new cases and 68706 follow up cases in 2019-2020 with inpatient management for 301 patients.

### EDUCATION

#### Undergraduates

*Theory lectures* 6th Semester - 20 hours

*Clinical teaching/posting*

3rd Semester - 7 hours

4th and 5th Semester - 25 days

6th-8th Semester - 40 days

*Teaching in community at CRHSP, Ballabgarh*

7th Semester – 12 hours (Community Psychiatry)

#### BSc Nursing

*Theory lectures*

First year (Psychology) for 15 hours

Third year (Psychiatry) for 8 hours

*Clinical posting*

Third year in Psychiatry ward for 2 months

#### MSc Nursing

*Theory lectures*

First year for 8 hours

### *Clinical posting*

First year – 8 months in psychiatry ward and one month in psychiatry OPD

Second year – 3-4 months in psychiatry ward

### *Thesis work*

Conduct their thesis work in psychiatry OPD and ward

### **Training of Junior Residents posted from other departments**

Junior residents from Departments of Medicine, Geriatric Medicine, Emergency Medicine and Palliative Medicine, and DM trainees in Neurology are posted to department of psychiatry for a period of 2-4 weeks for training in psychiatry

### **MD (Psychiatry) and PhD Teaching**

- Seminar once a week
- Case Conference once a week
- Journal discussion once a week
- Thesis protocol and midterm presentation once a week
- Tutorials once a week
- Psychotherapy supervision for postgraduate psychiatry and doctoral level clinical psychology students
- Supervision of Consultation-Liaison training for junior residents in psychiatry

### **CMEs/Workshops/Symposia/National and International Conferences**

- National CME on Strengthening Home-based Care for Severe Mental Disorders in Low Resource Settings at **Conference Hall, AIIMS, New Delhi**, 27th April 2019
- Mental Health Fiesta 2019 in JLN Auditorium AIIMS New Delhi, 4th October 2019
- 21st Annual Conference of the International Society of Addiction Medicine, New Delhi, 13-16 November 2019
- Fourth National CME and Certificate Course on Repetitive Transcranial Magnetic Stimulation at Ramalingaswamy Board Room & TMS Lab, AIIMS, New Delhi, 12–14 December 2019.

### **Lectures Delivered**

**Rakesh Kumar Chadda: 12**

**Nand Kumar: 9**

**Raman Deep: 4**

**Bichitra Patra: 3**

**Barre Vijay Prasad: 3**

**Pratap Sharan: 11**

**Mamta Sood: 6**

**Koushik Sinha Deb: 12**

**Gagan Hans: 7**

**Renu Sharma: 4**

**Rajesh Sagar: 51**

**Sujata Satapathy: 2**

**Rohit Verma: 11**

**Vaibhav Patil: 4**

**Oral Papers/Posters Presented: 48**

### **RESEARCH**

#### **Funded Projects**

##### ***Ongoing***

1. A study of acute and longitudinal effects of brain stimulation in treatment of depression and schizophrenia, Rohit Verma, AIIMS, 1 year, 2018-2020, Rs 10 lakhs
2. Assessment of Clinical profile, mitochondrial DNA 10398, peripheral glucose utilization (HOMA\_IR) and inflammation (TNF- $\alpha$ ) in Matrilineal Bipolar Disorder Raman Deep, AIIMS, 2019-2021, 2 years, Rs 3.9 lakhs
3. Assessment of emotional and behavioral problems and quality of life among children and adolescents with cleft lip and palate, Rajesh Sagar, ICMR, 2 years, 2020-2021, Rs 39.89 lakhs
4. Assessment of quality and best practices under District Mental Health Programme Rajesh Sagar, WHO-Country and Ministry of Health and Family Welfare, 6 months, 2019–2020, Rs 9.94 lakhs
5. Biomarkers of Lithium response in Bipolar disorder: Assessment of the clinical markers, peripheral blood based markers and gray matter volume in individuals with bipolar disorder on long-term lithium prophylaxis, Raman Deep, DST: ECRA, 3 years, 2018-2021, Rs 24 lakh (approx)
6. Center for Advance Research and Excellence (CARE) in Neuromodulation on Mental Health, Nand Kumar, ICMR, 5 years, 2019, Rs 450 lakhs

7. Clinical Study, translation, cross-cultural adaptation and development of norms of Cognitive Assessment system (COGNISTAT) for persons from Northern India Rajesh Sagar, Cognitive Health Rehabilitation System LLP, 2 years, 2018-2020, Rs 7.92 lakhs
8. Cognitive and Psycho-Physiological Effects of AIIMS Cognitive Training Toolkit (CTT) and Computer Based Cognitive Training (PSS CogRehab) on Children with ADHD aged 6-11 years: A Randomized Control Pilot Study, Sujata Satapathy, DST/CSRI, 3 years, 2019-2022, Rs 53 lakhs
9. Deliberate self-harm in adolescents: A school-based study, Bichitra Nanda Patra, ICMR, 2 years, 2019-2021, Rs 27 lakhs
10. Detection of New Psychoactive Substances among Substance Abuse Treatment Seekers in India – Multi Centric Study, RK Chadda, Department of Revenue, Govt of India, 3 years, 2017-2020, Rs 651 lakhs
11. Development of Panic and Anxiety Indian Questionnaire (PANIQ) Pratap Sharan, ICMR 3 years, 2018-2020, Rs 180 lakhs
12. Diffuse optical tomography based cortical analysis for evaluating auditory semantic and prosodic content, language acquisition and facial identification as determinants of emotion recognition in schizophrenia, Rohit Verma, DST CSRI, 3 years, 2018-2021, Rs 51.98 lakhs
13. H1-MR Spectroscopy based evaluation of metabolic abnormalities in anterior cingulate cortex, hippocampus and amygdala in treatment naïve patients with unipolar and bipolar depression and its relationship with peripheral glutaminase, Gagan Hans, AIIMS, 2 years, 2019-2020, Rs 3.6 lakhs
14. Impact of Post-Partum Depression and Anxiety on Infant Growth and Development: A Community Cohort Study Rajesh Sagar, 3 years, 2016-2019, Rs 8.57 lakhs
15. NIHR Global Health Research Group on Psychosis Outcomes: Protocol based assessment and management of First Episode Psychosis (AIIMS Centre), Mamta Sood, National Institute of Health Research, UK, 3 years, 2017-2020, Rs 106 lakhs
16. NIHR Global Health Research Group on Psychosis Outcomes: The Warwick-India-Canada {WIC} Network, RK Chadda, National Institute of Health Research, UK 3 years, 2017-2020, GBP 269,146
17. Psychiatric morbidity and its early antecedents in the New Delhi Birth Cohort, Rajesh Sagar, QED and WHO-SEARO, 3 years, 2018-2020, Rs 8.67 lakhs
18. Psychosocial Dynamics of Pregnancy Loss: Development of a Multidimensional Scale and Development and Efficacy (a Randomized Control Trial) of a Group Psychological Intervention Module, Sujata Satapathy, ICMR, 3 years, 2019-2022, Rs 59 lakhs
19. To develop audio-visual and digital content on Bio-Psycho and Socio-cultural model for students of VI to VIII to improve their resilience, Mental Health and overall health, Nand Kumar, AAI, 2 years, 2019, Rs 98 lakhs
20. Validation and Standardization of Indicators/Markers of Penetrative CSA in Children's Draw-A-Person-Test (DAPT), Sujata Satapathy, NCPCR, 6 months, 2020, Rs 3.99 lakhs

### ***Completed***

1. Feasibility and Efficacy Testing of Newly Developed AIIMS CTT (Non-computer based Cognitive Training Intervention Kit) for 6-11 years Old Children with ADHD, Sujata Satapathy, AIIMS, 2 years, 2018-2020, Rs 3.6 lakhs
2. H1-MR spectroscopy-based evaluation of metabolic abnormalities in right dorsolateral prefrontal cortex in patients with obsessive compulsive disorder- a pilot study, Gagan Hans, AIIMS, 2 years, 2017-2019, Rs 0.9 lakhs
3. Psycho-social outcome and Cognitive functions in Bipolar disorder: - A longitudinal study, Rajesh Sagar, DST, 3 years, 2016-2019, Rs 28.53 lakhs
4. To study the effect of high-frequency Repetitive Transcranial Magnetic Stimulation (rTMS) in cognitive function and predominately negative symptoms in people suffering from Schizophrenia in Randomized Sham Controlled Double Blind Trial, Nand Kumar, DST, 3 years, 2015-2019, Rs 50.56 lakhs

### **Departmental Projects**

#### ***Ongoing***

1. A Cross-Sectional Study of Childhood Adversity, Perceived Parenting, Perceived Social Support, and Psychological Health among Treatment Seeking Adults suffering from Common Mental Disorders
2. A Cross-Sectional Study of Childhood Adversity, Perceived Parenting, Perceived Social Support and Psychological Wellbeing among Treatment Seeking Adults suffering from Common Mental Disorders and Healthy Controls



3. A pilot randomized controlled trial of targeted prefrontal cortex modulation with anodal transcranial direct current stimulation (tDCS) for examining task dependent effect on executive functioning
4. A randomized controlled single blind trial of ketamine versus modified electroconvulsive therapy to improve neuropsychological and clinical outcomes in treatment resistant depression
5. A Study of Autonomic Functions in Adolescents with Specific learning disorder (Dyslexia) with and without Comorbid ADHD
6. A Study of Serum Brain-Derived Neurotrophic Factor levels in Patients of Schizophrenia on Clozapine therapy and its Association with Clinical Profile
7. Assessing factors affecting treatment response to antidepressant medications in Indian patients with non-psychotic depression – A longitudinal follow-up study.
8. Assessment of clinical characteristics of suicide attempters among remitted patients with recurrent mood disorders: A descriptive study
9. Assessment of Treatment Response, Inflammatory Cytokine (TNF- $\alpha$ ) And MtDNA 10398a/G Polymorphism in Familial Bipolar Disorder (BD) I
10. Behavioral effects of transcranial direct current stimulation (tDCS) induced dorsolateral prefrontal cortex plasticity in alcohol dependence
11. Effectiveness of Nurse LED Intervention on Self Care Behaviour, Psychological symptoms and quality of life among kidney transplant recipients in a Selected Tertiary Care Hospital of New Delhi
12. Effects of brain stimulation in treatment of depression: A diffuse optical tomography study of acute and longitudinal effects on brain function
13. Medical co-morbidities in bipolar affective disorder and it's correlates
14. Metacognitive therapy in depressive disorders
15. Preliminary assessment of the therapeutic efficacy of intermittent theta-burst magnetic stimulation (iTBS) in treatment resistant depression: A double-blind sham-controlled study
16. Preliminary assessment of the tolerability and efficacy of intermittent theta-burst magnetic stimulation (iTBS) on negative symptoms and cognitive functioning in schizophrenia
17. Psycho-behavioural and Cognitive Functioning of Children with Acute Lymphoblastic Leukaemia: Development and Feasibility of Composite Psychological Intervention Module
18. Psychological Trauma Resilience in Children and Adolescents: Development and Psychometric Properties of a Multidimensional Scale
19. Repetitive transcranial magnetic stimulation in medication non-responsive obsessive compulsive disorder: A randomized double blind parallel group sham controlled trail to compare different sites of stimulation
20. Study of immunological, oxidative markers and cognitive function in ADHD

### ***Completed***

1. A comparative study of serum brain-derived neurotrophic factor levels in patients with alcohol dependence, depression and co-morbid alcohol dependence and depression
2. A descriptive study of anxiety and depression following myocardial infarction
3. A pilot randomized controlled trial of targeted prefrontal cortex modulation with bilateral transcranial direct current stimulation (tDCS) for reducing craving in patients with opioid dependence
4. A randomized trial of add on effect of repetitive transcranial magnetic stimulation (rTMS) in non-responding obsessive compulsive disorder patients
5. Assessment of Gray Matter Volume and White Matter Integrity in patients with suicidality in Bipolar Disorder type I
6. Child Sexual Abuse: Development of Multidimensional scale and Psychological Trauma Focused Intervention Module
7. Development of Home-based Intervention for Specific Learning Disorder
8. Neuro-physiological and neuro-cognitive markers of prefrontal functioning as predictors of treatment response in first episode psychosis
9. Psychiatric morbidity, quality of sleep, and mental adjustment style among adult myeloma patients in active treatment and maintenance phase
10. Repetitive transcranial magnetic stimulation in medication non-responsive obsessive-compulsive disorder: A randomized double-blind parallel group sham-controlled trial to compare different sites of stimulation

11. Study on role of intensive physiotherapy and trans cranial magnetic stimulation (TMS) in stroke recovery and the correlation of growth factors with intervention and recovery
12. Substance use Disorders in Children and Adolescents with ADHD
13. To assess the effect of repetitive transcranial magnetic stimulation (rTMS) on cognitive functioning in patients with moderate TBI
14. Transcranial direct current stimulation (tDCS) in treatment resistant obsessive –compulsive disorder: An open label trail

## **Collaborative Projects**

### ***Ongoing***

1. A comparative study to assess the impact of nature based Virtual Reality intervention on physiological parameters in caregivers of individuals suffering from severe mental illness. College of Nursing
2. A Cross Sectional study to assess the severity of chronic pruritus and its effect on quality of life using the 12 item pruritus severity scale and the 5-d itch scale, Dermatology
3. A hermeneutic phenomenological study on experiences of patients post heart transplantation at AIIMS New Delhi, College of Nursing
4. A pilot multicentre open label parallel arm RCT evaluating whether yoga can delay initiation of insulin therapy in patients with type 2 diabetes mellitus with suboptimal glycemic control on near maximal oral drugs and/or who may require insulin therapy in near future, Endocrinology
5. A Prospective study on the effect of prenatal and postnatal yoga on weight gain in pregnancy and postpartum period, psychological stress, quality of life, pulmonary functions in pregnancy and its association with pregnancy outcome, Gyne & Obs
6. A prospective study to evaluate the restoration of abdominal wall dynamics in patients with incisional hernia following laparoscopic IPOM plus repair in comparison to healthy controls using surface energy EMG, Surgical Disciplines
7. A quasi experimental study to assess the effectiveness of structured group counseling among caregivers of heart failure patients on selected outcomes in cardiology unit at AIIMS, New Delhi, College of Nursing
8. A randomised, two arm, comparative, clinical study to evaluate the effectiveness of early integrated palliative care versus routine oncological care in advanced sarcoma patients in tertiary care centre in India, Medical Oncology, IRCH
9. A Randomized Control Trial to study the impact of Yoga Intervention in lower limb amputees following trauma in relation to postsurgical outcome, behavior and quality of life at Level-I, Trauma Surgery-JPNATC
10. A study of allocentric neural navigation process schematic utilizing dynamic optic array for prospective control, Physiology
11. A Study of serum biomarkers of kynurenine pathway in major depressive disorder (MDD), Anatomy
12. A study to assess the factors influencing delay in treatment seeking in patients of common mental disorders, College of Nursing
13. A Translational randomized trial of yoga-based lifestyle intervention for major depressive disorder (MDD) management in India and analyzing biomarkers of cellular aging associated with it, Anatomy
14. AADAR-Dementia Science Program (DSP), NBRC, INCLEN & premier institutions
15. Adolescents' Resilience and Treatment Needs for Mental health in Indian Slums (ARTEMIS), George Institute of Global Health, New Delhi
16. Altered microRNA expression in peripheral blood and brain following severe traumatic brain injury, Lab Medicine, JPNATC
17. An Exploratory Study to Evaluate Surgical Outcome and Financial Burden in Patients Treated with 3D Printing Technology Assisted Surgery versus Conventional Surgery for Facial Fractures at Level 1 Trauma Centre, AIIMS, New Delhi, Trauma Surgery, JPNATC
18. An open-label 3 arm RCT to evaluate the effect of different modalities of lifestyle intervention on HbA1C in individuals with type 2 DM on half maximal dose of 2 or more oral anti-hyperglycemic drugs for at least 3 months, CIMR
19. Analyzing EEG data for hearing impaired persons Department of Computer Science, Indraprastha Institute of Information Technology, Delhi
20. Assessment of Cognitive, Neuroanatomical and Neurofunctional abnormalities in adults with Type 1 Diabetes, Endocrinology

21. Assessment of distress, anxiety and depression symptoms amongst patients of suspected familial cancer visiting the IRCH genetic clinic for counselling and analysis of the effect of genetic counselling on them: A prospective cohort study, Medical Oncology, IRCH
22. Assessment of Emotional and Behavioral Problems and Quality of life among Children with Cleft lip and palate, Centre for Dental Education and Research
23. Assessment of Sexual Health of cancer patients undergoing chemotherapy and their knowledge and attitude regarding sexual health and intimacy. Medical Oncology, IRCH
24. Association of Common Mental Disorders with Diabetes Mellitus - A Community based Case-control Study in north India, Community Medicine
25. Association of social cognition and behavioral impairment in persons with epilepsy on antiepileptic drug monotherapy: Correlation with neuroimaging findings and trace elements status, Pharmacology
26. Burden and associated factors of chronic multimorbidity among adults (>30 years) in rural Ballabgarh, North India, Community Medicine
27. Center for Advance Research & Excellence (CARE) in Neuroassistive technologies in stroke recovery. IIT, New Delhi
28. Cleft Lip and Palate anomaly in India; Clinical profile Risk factors and current status of treatment: A hospital-based study-Main phase, Centre for Dental and Educational Research
29. Comparative study of cortical activation using fMRI and fNIRS across cognitive tasks in patients with depression, NMR
30. Comparison of "Multigene hereditary panel testing" profiles in breast cancer patients qualifying and not qualifying the NCCN 2018 criteria for genetic testing: A prospective study in North Indian population, Medical Oncology, IRCH
31. Comparison of effect of antidepressants on neurodegeneration in patients with depression, Pharmacology
32. Comparison of Insulin Resistance as Marker of Psychological Morbidity (perceived stress, depression and anxiety) and Quality of Life (QOL) Between PCOS and non-PCOS Infertile women- A case control study, Obstetrics & Gynaecology
33. Comparison of outcomes in post cochlear implantation children with and without congenital inner ear malformation, Otorhinolaryngology
34. Convergent validation of proposed behavioural indicators of intellectual and adaptive behaviour functioning for ICD-11, University of Ottawa & World Health Organization, Geneva, Switzerland
35. Correlation between preoperative CSF melatonin levels and post-operative delirium in geriatric hip fractures, Orthopaedics
36. Correlation of cortical sources and brain iron during rest and visuospatial working memory in Attention deficit hyperactive disorder, Physiology
37. Development and Assessment of Efficacy and Acceptability of Comprehensive Treatment Module in the management of Patients with Medically Unexplained Physical Symptoms, Medicine
38. Development and Validation of Comprehensive Psychological Autopsy, Forensic Sciences and Toxicology
39. DTI, fMRI and qEEG correlates of cognition and behaviour in children and adolescents with well controlled non-lesional epilepsy: An observational study, Pediatric Neurology
40. EEG cortical sources and connectivity of working memory and language processing in Attention Deficit Hyperactivity Disorder, Physiology
41. Effect of antidepressants on neurodegeneration and neuroplasticity in patients with depression, Pharmacology
42. Effect of integrated Yoga on ART outcomes and Psychological stress in patients undergoing In-Vitro-Fertilization (IVF) cycles: A Prospective Randomized Controlled Trial, Obstetrics & Gynaecology
43. Effect of Mindfulness Based Stress Reduction (MBSR) on optic disc perfusion using oct angiography in glaucoma patients: A randomized controlled trial, Dr Rajendra Prasad Centre for Ophthalmic Sciences
44. Effect of paravertebral anaesthesia on quality of life scores and circulating tumour cells in breast cancer patients, Anaesthesia
45. Effect of Structured Yoga Program on Stress and Professional Quality of Life among Selected Nursing Staff in a Tertiary Care Hospital of Delhi - A Small Scale Phase-II Trial, CCM
46. Effect of structured yoga programme on stress and professional quality of life among selected nursing staff in tertiary care hospital of Delhi: A small scale phase 2 trial, CIMR
47. Effect of Yoga on psychological, cognitive and glycemic control in patients with T2DM and Depression: Two arm parallel Randomized controlled trial, Endocrinology

48. Effect of yoga on Psychological, cognitive and glycemic control in patients with T2DM: Two arm Randomized control trial, CIMR
49. Effect of yoga on stress and psychological wellbeing in ICU nurses: A RCT, CIMR
50. Effect of yoga therapy on QoL in laparoscopic Incisional hernia repair, Surgical Disciplines
51. Effect of yoga therapy on Quality of life in patients undergoing laparoscopic incisional hernia and ventral hernia repair- a randomized control trial, Surgical Disciplines
52. Effects of environmental and occupational noise on cognition, NMR
53. Efficacy of a Family based comprehensive Yoga Program for weight reduction among over- weight Children and Adolescents Pediatrics, AYUSH
54. Efficacy of Yoga on Symptom Severity and Quality of Life of Patients Suffering from Pain Predominant Medically Unexplained Physical Symptoms (MUPS), Medicine
55. Evaluation of brain behaviour relationship associated with cognitive deficit in early-onset schizophrenia (EOS) using multi-model MRI, NMR
56. Evaluation of prevalence, regional phenotypic variation, comorbidities, risk factors and the variations in response to different therapeutic modalities among Indian women with polycystic ovary syndrome (PCOS): A multicenter study across India, Endocrinology
57. Evaluation of Risk Factors Causing Residual Refractive Error in Corneal Refractive Surgery, RP Centre
58. Evaluation of role of oral eplerenone as an adjunct to reduce fluence photodynamic therapy in Central Serous Chorioretinopathy: An open label randomized control trial, Ophthalmology
59. Feasibility of Introducing Yoga and Its Effect on Stress and Perceived Well-Being on New Medical Under Graduate Students of AIIMS, New Delhi, CCM
60. Feasibility of Introducing Yoga and its effect on Stress and Psychological Well-Being on First and Second Year Under Graduate Nursing Students of AIIMS, New Delhi, CIMR
61. Financing of expenditure on mental illness-a case study, IGNOU, Delhi
62. Genetic association of cytokines with suicidal behavior in Indian population, Forensic Medicine & Toxicology
63. Genetic expression of monoaminergic neurotransmission related polymorphisms and their association with antidepressant response in Indian patients suffering from depression, Pharmacology
64. Incidence and Severity of Psycho-social and somatic disorders in survivors of childhood solid malignant tumors. Pediatric-Oncology
65. Interventions for stigma in persons with epilepsy in India funded by institute, CIMR
66. Long term outcome of patients with walled off necrosis/pseudocyst of pancreas in terms of recurrence of pancreatitis, fluid collection and functional consequences following internal drainage by laparoscopic or endoscopic method, Surgical Disciplines
67. Mapping functional and biochemical correlates in brain of Parkinson's Patient with Mild Cognitive Impairment, NMR
68. Mental Health Risk Factors among Older Adolescents living in Urban Slums: An Intervention to Improve Resilience (ANUMATI), George Institute of Global Health
69. Morphological, functional, Biochemical and Behavioral evaluation post – EMF radiation, NMR
70. Neural correlates of obsessive-compulsive disorder and its washing subtype: A cross-sectional fMRI study, Nuclear Magnetic Resonance
71. Neurocognitive rehabilitation modules for patients with schizophrenia, Neuropsychology, CN Centre
72. Neuropsychological Basis of Decision Making: Testing Lateralization of Cognitive Function in Medial Temporal Lobe Epilepsy, Neurology & Department of Psychology. Indian Institute of Technology, Delhi
73. Optimizing diet and insulin regimes in children with Type 1 Diabetes in low- resource settings, Pediatrics
74. Prevalence and factors affecting Preoperative anxiety, depression, and distress in cancer patients: A prospective cross-sectional study, Onco-Anesthesia and Palliative Medicine, IRCH
75. Prevalence of mental health problems (anxiety, depression and stress reactions) in mothers of preterm infants admitted to NICU- A cross sectional study, Obstetrics and Gynecology
76. Prospective randomized controlled trial comparing the effects of intraoperative dexmedetomidine and lignocaine administration over the incidence of post-operative cognitive decline in elderly, Anaesthesiology
77. Psychiatric morbidity in HIV/TB co-infection, Medicine & Microbiology
78. QEEG based neural correlates and microstates of attention and interference in ADHD: An endophenotypic marker, Physiology

79. Quality of life following BCS and mastectomy along with sentinel node biopsy in operable breast cancer, Surgery
80. Reconstruction of Post-Traumatic Facial Defects using Adipose Tissue Derived Mesenchymal Stem Cells Seeded on 3D Printed Hydroxyapatite Scaffold guided by CAD Models in Zygomatico- orbito maxillary complex fractures, Trauma surgery
81. Role of Frontal Asymmetry in Valence and Decision Processing in Select Clinical Disorder Department of Psychology, Indian Institute of Technology, Delhi
82. Severity and pattern of early childhood caries and parental stress among pre-school children and its association with various behavioral factors- A hospital based study. Centre for Dental Education and Research
83. Study of cortical sources of EEG and brain iron levels during rest and visuospatial working memory in Attention deficit hyperactivity disorder (ADHD), Physiology
84. Study of molecular and peripheral blood biomarkers and their utility to diagnose mild and moderate TBI induced cognitive impairment, Lab Medicine
85. Systematic Medical Appraisal, Referral and Treatment (SMART) Mental Health Programme for Welcome Trust-DBT Alliance Fellowship George Institute of Global Health, New Delhi
86. The feasibility and efficacy of yoga on Quality of Life and psychophysiological parameters among adolescents and adult patients treated for Cyanotic Congenital Heart Disease (CCHD) more than a year ago: A randomized controlled trial, Cardiology
87. The Integrative Systematic Palliative Care (ISPC) vs Standard Oncology Care in Advanced Non-Small Cell Lung Cancer at A Tertiary Care Centre In India: A Prospective Randomized Controlled Trial, Onco-Anesthesia and Palliative Medicine, IRCH
88. The Psychometric Properties of Family Vitiligo Impact Scale: A Quality of Life Scale for Family Members of Patients with Vitiligo, Dermatology
89. To compare different cochlear implantation outcome scores with auditory cortical activity seen on functional near infrared spectroscopy in prelingual profound sensorineural hearing loss patients at least 3 years after cochlear implantation, Otorhinolaryngology
90. To determine the association between decreased cerebral blood flow in the prefrontal cortex intraoperatively and incidence of postoperative emergence delirium in children (2-5 years) induced and maintained with sevoflurane: An fNIRS based observational study, Anaesthesiology
91. To develop a technology driven intervention of Psychological First Aid (PFA) model for Mental Health Challenges. Mental Health Foundation (India)
92. To develop an Oral Health Toolkit for Paediatric Oncology Patients (OHTPOP) and compare its effectiveness for a better oral health status and lesser oral complications versus standard of care , Centre of Dental Education and Research
93. To evaluate Results of Soft Tissue Reconstruction and Augmentation with Structural Fat Grafting in Patients with Post Traumatic Facial Disfigurement, Trauma Surgery, JPNATC
94. To study effects of antidepressant drugs in mild and moderate depression in patients with epilepsy- A randomized controlled trial, Neurology
95. To study the impact of Yoga on pulmonary functions, immune response and quality of life in chest trauma patients at level-I trauma Centre, Trauma Surgery, JPNATC
96. To study the prevalence and the risk factors of psychiatric morbidity and sleep problems in pediatric Acute Lymphoblastic Leukemia survivors, Pediatrics
97. To test effects of breath-focus on lateralized cognitive and affective processing in Generalized Anxiety Disorder (GAD) patients, Physiology & Department of Psychology. Indian Institute of Technology, Delhi
98. Translational application of novel clinically accessible biological predictors to improved identification of mild and moderate Traumatic Brain Injury (TBI) induced neuro psychological impairment, Laboratory Medicine, JPNATC
99. Two Arm Parallel Open-Label Randomized Controlled Add on trial to investigate the efficacy of Shirodhara (Ayurvedic Oil-Dropping Treatment) in the subjects with Chronic Insomnia Disorder, CIMR

### **Completed**

1. A comparative study of neurochemical alteration on H1 MRS in schizophrenia, obsessive compulsive disorder and schizophrenia with obsessive compulsive symptoms, NMR
2. A Prospective study Comparing outcomes and quality of life after Laparoscopic donor nephrectomy Versus open donor nephrectomy, Surgical disciplines
3. A Study to Assess Parenting Stress and Psychological Health of Women Having Single-Parenting Experience in Delhi- NCR, College of Nursing

4. A study to assess the effectiveness of caregiver- training programme on knowledge in managing aggressive patients at home, College of Nursing
5. A Three Arm Randomized Controlled Study to Compare Sexual Functions Following Open Mesh Hernioplasty, Laparoscopic Totally Extra Peritoneal (TEP) and Trans Abdominal Pre-Peritoneal (TAPP) Repair of Groin Hernia, Surgical Disciplines
6. Assessment of Mental health services in district Faridabad, Haryana-a mixed method study, Community Medicine
7. Association Between Parental Growth Patterns and Chronic Disease Risk in their Children-An Intergenerational Study in the New Delhi Birth Cohort, Public Health Foundation of India
8. Central serous chorioretinopathy and Meditation: Functional and Morphological outcome study, Ophthalmology
9. Collaborative Care for Depression and Diabetes in India, Endocrinology
10. Common mental disorders and related Mental health Literacy among adolescents in an urban area of Delhi, Community Medicine
11. Comparison of Quality of Life after Single Stage Vs Two Stage Management of Patients With Concomitant Gall Stones and Common Bile Duct Stones: A Prospective Randomized Control Trial. Department of Surgical Disciplines
12. Depressive Disorders Amongst Adolescents in Rural Ballabgarh: A community based study, CCM
13. Effect of 30 minutes of YOGA and Meditation and Life Style Modification in comparison to standard treatment on person with mild to moderate depressive disorders, Mental Health Foundation (India)
14. Effect of cognitive and emotional stress in patients of multisomatoform disorder: A fMRI-based case-control study, Nuclear Magnetic Resonance
15. Effect of EMF radiation due to mobile phone use on sleep and neurocognitive functions: A molecular approach, Medicine
16. Effect of Virtual Reality Therapy (VRT) in improving Balance and Quality of life in Lower limb amputation, Trauma Centre
17. Effects of a Preoperative Carbohydrate Drink on Postoperative Vomiting in Paediatric Strabismus Surgery: A Randomized Controlled Observer Blinded Trial, RPC, Anesthesiology
18. Effects of yoga based lifestyle interventions on biomarkers of cellular aging in patients with depression. Laboratory for Molecular Reproduction and Genetics
19. Evaluation of eating disorders and their effect on metabolic parameters and glycemic control in adult patients with diabetes mellitus type 2, Endocrinology
20. Impact of Behavior and Temperament on Food intake and Diet Quality of Adolescents studying in public Schools of Delhi. Delhi University
21. IPS Multi-centric study for long term course and outcome of Bipolar disorder. PGIMER, Chandigarh
22. New Delhi Birth Cohort – Follow-up studies to Assess Association of Early Life Growth Patterns on Lung function, Cardio metabolic risk factors and Mental Health in a Family Cohort, Public Health Foundation of India
23. Prevalence of common mental disorders among pregnant women in rural Ballabgarh, Haryana, Community Medicine
24. Primary Versus Delayed Primary Closure in patients undergoing lower limb amputation following trauma: A Randomized control study, Trauma Surgery
25. Prospective pilot study evaluating incidence of postoperative cognitive decline in older adults comparing Isoflurane and Desflurane, Anesthesiology
26. Prospective Randomized Controlled Study Comparing Long term outcome, chronic pain, quality of life and cost effectiveness following Laparoscopic Repair of Incision and ventral hernias with different techniques of Mesh Fixation- a pilot study, Surgical disciplines
27. Prospective Randomized Controlled Study to Compare the Outcome of Standard Four Port Laparoscopic Cholecystectomy with Single Incision Laparoscopic Cholecystectomy in patients with Gall Stone Disease, Surgical disciplines
28. Psychosocial stress and lipid profile as predictors of adverse pregnancy outcomes, Obstetrics & Gynaecology
29. Qualitative study exploring perspectives on the International Classification of Diseases (11th revision); Using lived experience to improve mental health Diagnosis in India. World Health Organization, Geneva, Switzerland
30. Study of clock genes in rat model of mania-like behavior, Neuro-chemistry
31. To correlate Functional Near Infra-Red Spectroscopy measurement of Auditory Cortex Activation with Auditory Verbal Outcome in prelingual profound sensorineural hearing loss patients after Cochlear Implantation, Otorhinolaryngology

32. To study clinical and immunological parameters in predicting short term outcomes in polytrauma patients admitted to Trauma Surgery, Trauma Surgery
33. To study management, outcomes and quality of life in patients with pelvic fracture at level 1 trauma Center, Trauma Surgery
34. To study the effect of mobile phones on well-being, sleep and cognitive function, Medicine
35. To study the effect of Yoga on Pulmonary functions, Respiratory muscle strength and endurance, Chest wall mobility, Inflammatory markers and Quality of life in blunt chest trauma patients and their correlation with Thoracic Trauma Severity Score at level-I trauma centre, Trauma Surgery
36. Toxicological Analysis and distribution pattern of alcohol and different drugs in various biological samples and their neurobiological effects in suicidal deaths, Forensic Medicine
37. Utility on novel Coated Platelets as a marker for early prognostication of neurocognitive impairment following traumatic injury, Lab medicine, JPNATC

#### **PATIENT CARE**

- **Special Clinics**
  - Psychosomatic Clinic: Once in a week
  - Common Mental Disorders Clinic: Once in a week
  - Child and Adolescent Psychiatric specialty services
  - Severe Mental Disorders Clinic: Once in a week
  - Brain Stimulation /TMS clinic on Thursday once in a week
  - Neuropsychiatry OPD in C N Centre on Tuesday. Once in a week.
  - Psychiatry services at CRHSP, Ballabhgarh
  - Dual Diagnosis Clinic: Once in a week

#### **Consultation liaison services**

- **COVID-19 Services**
  - In the wake of ongoing COVID 19 Pandemic, the department of psychiatry has done following activities:
    - Development of public health educational material on mental health issues related to the pandemic were developed. For lay public, The posters on “Coping with stress during the 2019-nCoV outbreak” and “Helping children cope with stress during 2019-nCov outbreak” by WHO were translated into various Indian languages (Hindi, Punjabi, Gujarati, Marathi, Bengali, Kannada, Telugu, Tamil, Malayalam, Odia and Manipuri), after taking due permission from the WHO.
    - Development of guidance notes for healthcare workers at our hospital giving general instructions about how to identify stress in them and to cope with it. Focus on basics of stress management was done. We also prepared short video clips on the subject and these were put on social media and the Institute’s website. A tele helpline was also created for the in-house employees.
    - Development of guidance notes both in English and Hindi for the persons in quarantine or put in isolation using resource materials from the relevant literature, adapting it to local needs.
    - Development of guidance notes for physicians and mental health professionals.
    - Teleconsultation facility for persons with mental health problems already under AIIMS psychiatry follow up was established on 28th March 2020 as outpatient services were closed on 24th March 2020. We have dedicated 3 phones for tele consultation. All the patients who have taken appointment from, are called by a psychiatrist to confirm about their current mental health status and need for a fresh prescription. In patients needing any modification, the patient is asked to send the old prescription electronically and a fresh prescription is issued and sent electronically. Till March 2020, 238 patients were offered services.
- **Facilities in Department (Special Labs)**
  - Upgradation of Brain Mapping Lab facility – added wireless fNIRS system to the existing static fNIRS & QEEG system for development of a state-of-the-art facility for brain mapping
  - Upgradation of MECT facility – Improved data collection/digitalization in functioning of ECT; Added computerized cognitive testing; Added utility of Ketamine use for increasing ECT effectiveness
  - Initiation of Ketamine Clinic – Initiated the utility of ketamine as an anti-depressive agent for use in at-risk suicidal patients and treatment resistant depressive individuals
  - Initiated High-definition Transcranial Electrical Stimulation – Initiated the HD-tDCS, tACS & tRNS facility as a neuromodulation facility
  - Advanced signal analysis of Electroencephalography – In collaboration with Department of Computer Sciences, IIT, Delhi

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Rakesh Kumar Chadda** delivered VN Bagadia Oration, Social Psychiatry: Essence of Psychiatry- Delivered at KEM Hospital, Mumbai, 20th November 2019; Elected Secretary General, World Association of Social Psychiatry (2019-2022); Organizing Chairperson, 21st Annual Conference of International Society of Addiction Medicine, 13-16 November 2019; Chair, Awards Committee, Indian Association for Social Psychiatry, Chair, Indian Psychiatric Society Sub Committee on Psychotherapy; Member, Editorial Board, BJ Psych International; Member, Editorial Board, World Social Psychiatry; Member, Selection Committee, PGIMER, Chandigarh; AIIMS, Jodhpur; KGMU, Lucknow; UHS, Rohtak.

**Professor Pratap Sharan** is Professor-in-Charge of Student Welfare at AIIMS; Member of the International Advisory Group for Training and Implementation for ICD-11 Mental, Behavioural and Neurodevelopmental Disorders (2018 – onwards); Vice President of the Indian Association for Social Psychiatry (IASP, 2018-2020); Vice President of the Society for Promotion of Research on Mental Health; Co-Chair for PG Psychiatric Education Subcommittee for Indian Psychiatric Society (2017-2021); Senior Editor of Journal for Eating Disorders; Associate Editor of the National Medical Journal of India; Member of the Editorial Board of the following journals: Indian Journal of Psychiatry, Indian Journal of Social Psychiatry, Journal of Indian Association for Child and Adolescent Mental Health, and Journal of Mental Health and Human Behaviour. He is also the Ombudsman for the Indian Journal of Social Psychiatry; Member, Advisory Committee of the ICMR – DHR for the developments of Standard Treatment Workflows; Chief coordinator for the Committee for MBBS curricular reforms at AIIMS; Member of AIIMS Project Review Committee (Clinical Sciences) and AIIMS Ethics Committee; Member of the Research Advisory Committee of the **George Institute for Global Health, India**; **Resource person for the Resilient Futures India Initiative** of the Queen Mary University of London; National Expert for Mental Health Capacity Building Programme of the Public Health Foundation of India; Expert member, National Steering Committee (India) for ‘Research Priorities & Agenda Setting for Migration and Health in South Asia for 2020-2030’; Expert member, Committee of “End of Life Care Policy” at AIIMS; Member, Selection Committee at Jawaharlal Nehru Institute of Postgraduate Medical Education and Research, Puducherry; Pt. BD Sharma University of Health Sciences, Rohtak & Kalpana Chawla Govt. Medical College, Karnal; and various AIIMS; Reviewer for National Institute for Health Research, UK, Medical Research Council, UK, Wellcome Trust, UK and the Indian Council of Medical Research; Completed a Johns Hopkins Online Course on Medical Education Curriculum Development; Peer reviewer for the following journals: Plos One, BMJ Open, Psychological Medicine, Psychiatry Research, BMC Psychiatry, BMC Psychology, Epidemiology and Psychiatric Sciences, Journal of Affective Disorders, World Social Psychiatry, Asian Journal of Psychiatry, the Primary Care Companion for CNS Disorders, Indian Journal of Medical Research, National Medical Journal of India, Indian Journal of Psychiatry, and Indian Journal of Social Psychiatry

**Professor Rajesh Sagar** received PPA Oration award in 15th **Biennial National Conference of Indian Association of Child and Adolescent Mental Health (IACAMCON-19)**, 9 November 2019 at Chandigarh; Received the distinguished Alumnus Award-2019 for Clinical, Academic and Research activities by Maulana Azad Medical College (MAMC), New Delhi at 61st College Annual Day & Convocation, 26 February 2020; Received felicitation award by DGHS, Ministry of Health & Family Welfare, Govt. of India on occasion of the National Doctors’ Day (1st **July 2019**) at Nirman Bhawan, New Delhi; Received ‘THE HEALING AWARD’ for long outstanding and brilliant contribution in providing a healing touch to those suffering from mental disorders in ‘The Positivity Awards-2019’ organized by the Brain Behaviour Research Foundation of India, at Constitution Club of India, New Delhi on 21 December 2019; Received Fellowship of Royal College of Physicians of Edinburgh, FRCP (Edin.) 2019; Luke Clack Young Scientist Award for the paper “Tobacco use in children and adolescents with ADHD” presented at 15th Biennial conference of Indian Association for Child and Adolescent Mental health conference held at Chandigarh, India in November 2019; Professor M Murugappan Award for the poster “Prefrontal Cortical Activity with ADHD” presented at the 72nd Annual national conference of Indian Psychiatric society held at Kolkata in January 2020; Best Paper award at International Training Conference on Brief Psychotherapies, IMHANS, Kozhikode (2019); Best Poster Award at National Annual Conference of Indian Association of Clinical Psychologists (NACIACP), 2020, Punjab University, Chandigarh (2020); Chair, **the Global Disease Burden (GBD) India of Mental Health Expert Group for India State-Level Disease Burden Initiative by ICMR, PHFI, IHME(USA)**; Honorary Professor by department of Psychiatry, University of Melbourne, Melbourne, Australia; Member, Central Mental Health Authority (Regulatory body under Mental Healthcare Act, Govt. of India); Member of Ethics Committee of Central Council of Homeopathy Research (CCRH), Ministry of AYUSH, Government of India; Honorary Advisor for mental health to Directorate General of Health Services, Ministry of Health & Family Welfare, Govt. of India, 2013 and continuing; Co-Chairman, Journal Committee of Indian Psychiatry Society, 2019; Expert Member of Project Review Committee for woman health, mental health of ICMR, CCRH, DBT; Expert member of Signal Review Panel of National Coordination Centre-Pharmacovigilance Programme of India. Indian Pharmacopoeia Commission; Expert Member of the Institutional Ethics Committee of the Public Health Foundation of India (PHFI-IEC); Invited as expert in Doordarshan, DD News, DD National, DD Kisan, Lok Sabha TV, Rajya Sabha TV and Radio program, FM Rainbow, All India Radio; Expert member and advisor in Ministry of Health & FW for various activities such as contributed in development of format to collect information from States/UT about rehabilitation of patients with psychiatric illness under direction of Hon’ble Supreme Court, Expert member of committee for revision of the existing District Mental Health Programme Guidelines-Dte GHS,



Ministry of Health & Family Welfare, meeting on 10 May 2019, nominated for meeting in NCBC on 5 July 2019, Expert member of group to finalize the CMHA Regulations as per Mental Healthcare Act-2017-meeting on 21 March 2020; Hosted & coordinated the International meet on WHO's Schedule for Clinical Assessment in Neuropsychiatry (SCAN) Advisor group at AIIMS, 24-26 February 2020, AIIMS, New Delhi.

**Professor Nand Kumar** was nominated as Chairperson, *Physical Treatment - Sub Committee by Indian Psychiatry Society (IPS) From 14th March 2020 till now*; Member, screening committee meeting of TIDE (Technological intervention of elderly and disable, Dept of science and technology on 29 and 30 January 2020 in Delhi; Organising secretary, 4th National CME on "TMS: Global Medical Revolution" being organized by the Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), New Delhi on 12 to 14 December 2019; Organizing chairperson for Mental Health Fiesta on 10 October 2019, Organized jointly by registered, not for profit organization MHFI and Department of Psychiatry AIIMS, New Delhi.

**Professor Mamta Sood** is Secretary General, Indian Association for Social Psychiatry; Organizing Secretary, National CME on Strengthening Home-based care for Severe Mental Disorders in General Hospital Settings.

**Dr Koushik Sinha Deb** received 2019: Balint Award - 26th National Conference of Indian Association for Social Psychiatry (NCIASP); 2020-2021: Chairperson, Website Committee, Indian Psychiatric Society.

**Dr Rohit Verma** is Assistant Editor of the Journal – "Asian Journal of Cognitive Neurology"; Secretary General & Founder Member of Neuromodulation Society (India).

**Dr Bichitra Nanda Patra** received Luke Clack Young Scientist Award for the paper "Tobacco use in children and adolescents with ADHD" presented at 15th Biennial conference of Indian Association for Child and Adolescent Mental health conference held at Chandigarh, India in November 2019; Dr VK Varma Award for the paper "Initial treatment dropout in patients with substance use disorders attending a tertiary care de-addiction centre in north India" at the annual national conference of Indian Association for Social Psychiatry held at Bhubaneswar, Odisha, India in November-December 2019; Professor M Murugappan Poster Session-II Award for the poster "Prefrontal Cortical Activity with ADHD" presented at the 72nd Annual National Conference of Indian Psychiatric society held at Kolkata in January 2020.

**Dr Gagan Hans** was awarded AIIMS Intramural Project grant for the year 2019-2020 for the project in collaboration with the Department of NMR, AIIMS; Served as Peer Reviewer for the Journal of Mental Health and Human Behavior and Clinical Case Reports.

**Dr Renu Sharma** is Member, Medical Board for Autism Spectrum Disorder in Department of Psychiatry, AIIMS, New Delhi in accordance with Ministry of Social Justice and Empowerment.

**Dr Vandana Chowdhary** was nominated for Helmut Remschmidt Research Seminar (HRRS) 2019 residential research training of IACAPAP held from 25 to 30 August 2019 at Singapore to discuss "*Developing Research and Collaborations in Child & Adolescent Mental Health in Asia*".

## 9.35. Pulmonary Medicine and Sleep Disorders

**Professor and Head**  
Anant Mohan

**Professor and Director, AIIMS**  
Randeep Guleria

**Associate Professors**

Karan Madan

Vijay Hadda

**Assistant Professors**

Pawan Tiwari

Saurabh Mittal

**Scientist-I**

Sneh Arora

A Surendranath

### HIGHLIGHTS

Department organized an annual conference on Pulmonary, Critical Care & Sleep Medicine “PULMOCRIT 2020”. The conference consisted of 2 days AIIMS-CHEST Workshop on Sleep Medicine and 2 days of update on Pulmonary, Critical Care and Sleep Medicine. For the workshop there were 3 faculties who came from the United States of America and close to 30 Indian faculties contributed and gave hands-on training to the participants. Despite the Covid-19 scare, our workshop was full and attended by 100 Physicians. There was positive response from the participants. Similarly, for 2 days long update there were close to 400 attendees from whole country and neighboring countries also.



During the academic session, Smt Rajbir Kaur Interventional Bronchoscopy and Pulmonology Laboratory, a “State of the Art” interventional pulmonology suite has also been inaugurated by Honourable Director and is functional since 31 July 2019. The suite is fully equipped with advanced bronchoscopic sampling techniques (TBAN, EBUS, Radial- EBUS, Lung Point), therapeutics in pulmonology (airway stenting, debulking) and medical thoracoscopy. The suite is equipped with anesthesia station to do any diagnostic or therapeutic procedure here.





## EDUCATION

### CMEs/Workshops/Symposia/National and International Conferences

1. **AIIMS PULMOCRIT 2020: UPDATE in Pulmonary, Critical Care and International Workshop on Sleep Medicine** from 5 to 8 March 2020.
2. **Establishing diagnosis of ILD: A Multi-disciplinary approach (AIIMS Pulmonology Course 2019 (APC))** September 2019, AIIMS

### Lectures delivered

**Anant Mohan: 26**

**Karan Madan: 17**

**Vijay Hadda: 17**

**Saurabh Mittal/Pawan Tiwari: 5**

### Oral papers/posters presented: 5

1. Hadda V, Kumar R, Madan K, Tiwari P, Mittal S, Mohan A, et al. Comparison of clinical profile of patients with ALK-positive and EGFR-positive non-small cell lung adenocarcinoma in an Indian population., *ATS 2019, 17-22 May 2019, Kay-Bailey Hutchison Convention Center, Dallas, USA, Texas, Dallas*
2. Hadda V, Shah TH, Khilnani GC, Madan K, Tiwari P, Mittal S, [et al.](#) Neurally Adjusted Ventilatory Assist (NAVA) Versus Non-Invasive Pressure Support Ventilation (NIV-PSV) in COPD Exacerbation (NAVA-NICE): A Randomized Trial, *ATS 2019, 17-22 May 2019, Kay-Bailey Hutchison Convention Center, Dallas, USA, Texas, Dallas*
3. Hadda V, Doddamani S, Madan K, Mittal S, Tiwari P, Mohan A, et al. Efficacy of intrabronchial voriconazole instillation for inoperable pulmonary aspergilloma: A randomized controlled trial, *APSR 2019, 14-18 November 2019, National Convention Center, Hanoi, Vietnam, Hanoi*
4. Madan K, Mittal S, Kumar U, Guleria R, Mohan A, Bhalla AS, et al. Bronchoalveolar lavage fluid cytokines in the assessment of interstitial lung disease in systemic sclerosis: a prospective study, *ERS International Congress, 29 September 2019, Madrid, Spain,*
5. Mittal S. A Comparison of a wrist worn postable device (WatchPAT) with in lab polysomnography for the diagnosis of obstructive sleep apnea, *Vancouver, 19-27 September 2019, Canada*

## RESEARCH

### Funded projects

#### *Ongoing*

1. Determination of plasma drug levels of Anti-Tubercular drugs in patients with Extra-Pulmonary Tuberculosis (Lymph nodes and pleural effusion) and its association with treatment outcomes, Anant Mohan, RNTCP (Delhi), 2 years, 2019-2021, Rs. 2.72 lakhs
2. Comprehensive Assessment of Clinical outcomes following a hospital based structured pulmonary rehabilitation program in patients with moderate severe COPD and strategies for field-level implementation, Anant Mohan, ICMR, 3 years, 2018-2021, Rs. 38 lakhs

3. Randomized double blind placebo controlled clinical study of ayurvedic coded drug “Ayush – A” in the management of bronchial asthma (tamaka shwasa), Anant Mohan, Ministry of Ayush, 2020, Rs. 60.4 lakhs
4. MicroRNAs in exhaled breath condensate and bronchial brushings as Biomarkers for Early Diagnosis of lung cancer, Anant Mohan, DBT, 3 years, 2019-2022, Rs. 180 lakhs
5. Application of the Sciences of Breathomics in Respiratory Diseases, Anant Mohan, ICMR-CARE (Centre for Advanced Research and Excellence), 5 years, 2019-2024, Rs. 500 lakhs
6. Characterization of leukocytes and prediction of outcome among patients with sepsis, Vijay Hadda, AIIMS, 3 years, 2017-2020, Rs. 4.5 lakhs
7. Immune cell dysfunctions and risk of hospital acquired infections in critically ill patients with sepsis, Vijay Hadda, SERB, 3 years, July 2018, Rs. 35.0 lakhs
8. National Environmental Health Profile: 20 City Multi-Site Study, Vijay Hadda, MEFCC, 3 years, August 2019, Rs. 62.67 lakhs
9. Design and development of a biodegradable airway stent, Dr. Karan Madan, AIIMS-IIT, 2 years, 2019-2021, Rs. 5 lakhs

### Departmental projects

#### Ongoing

1. Study of predictors of diagnostic yield of various interventional pulmonology procedures for lung cancer at a tertiary health care facility
2. An observational study of the clinico-pathological profile and outcomes in patients with lung cancer at a tertiary care center an observational study of the clinico-pathological profile and outcomes in patients with lung cancer at a tertiary care center
3. Determination of plasma drug levels of Anti-tubercular drugs in patients with Extra Pulmonary Tuberculosis (Lymph nodes and Pleural effusion and its association with treatment outcomes)
4. Selection criteria and clinical and socioeconomic profile of patients referred for lung transplant at a tertiary health care facility

### Collaborative projects

#### Ongoing

1. Structure-based design of nanobody inhibitors against EGFR: A Protein engineering approach to develop novel therapeutics for lung cancer, Life Sciences, Shiv Nadar University; Center for Computational Biology and Bioinformatics, Central University of Himachal Pradesh
2. A nanomedicine approach against drug-resistant EGFR kinase for the treatment of EGFR positive tumors, Department of Chemistry, IIT Delhi, Department of Biochemistry, Microbiology and Immunology, University of Ottawa, Canada
3. Targeting drug resistant tumor harboring mutant EGFRs: A next generation molecular approach for the treatment of Non-Small Cell Lung Cancer, Department of Chemistry, IIT Delhi

### PUBLICATIONS

**Journals: 40**

**Abstracts: 11**

#### PATIENT CARE

##### Pulmonary Medicine OPD

New Cases	10213	Old Cases	24408
Chemotherapy Procedures	3994		

##### Lung Cancer Clinic

New Cases	410	Old Cases	1860
-----------	-----	-----------	------

##### Combined Pulmonary Surgery Clinic

New Cases	160	Old Cases	773
-----------	-----	-----------	-----

##### Sleep Disorder Clinic

New Cases	177	Old Cases	304
-----------	-----	-----------	-----

<b>ILD/ PAH Clinic</b>			
New Cases	170	Old Cases	1650
<b>Indoor Patients (Ward/ ICU/ Day Care)</b>			
Regular Admission	767	Short Admission	5074
<b>LABORATORIES</b>			
<b>Respiratory laboratory</b>			
Spirometry procedures	14400	Diffusion capacity estimation	2750
Body Box (Plethysmography) measurements	210	MIP, MEP	150
FOT/IOS	195		
<b>Bronchoscopy Laboratory</b>			
Fiberoptic bronchoscopy procedures	1371	Endobronchial Ultrasound	582
Thoracoscopy	44	Cryotherapy	10
Stenting	40	Rigid Thoracoscopy	120
Radial EBUS	102		
<b>Sleep laboratory</b>			
Polysomnography studies	414	CPAP titration	310
Watch PAT	181		
<b>Allergy Testing</b>			
CPET	120	FENO	1587
Six Minute Walk Test	1806	Skin Prick Test	70
Total IgE Level	3245	Aspergillus IgE Level	2860
Aspergillus IgG Level	855		

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Faculty of the department were** Member of the Independent Expert Committee-Serious Adverse Events, Drugs Controller General (India) since July 2016; Member of "Subject Expert Committee", DCGI since 2018; Member of Special Committee of "Special Centre for Molecular Medicine", J.N.U. since September 2016; Member of Task Force "Environmental Sciences" at National Institute for Research in Environmental Health, Bhopal; Chairman of the Research Committee" of VP Chest institute; Member of Institute Research Review Committee, and Ethics Committee of VP Chest Institute, Delhi; Continuing as Expert member of Project Review Committee of ICMR (Environmental Sciences); Member of the "Joint Monitoring Group" of Ministry of Health and Family Welfare, N Delhi since February 2020; Member of AIIMS Research Committee since 2018.



## 9.36. Radiodiagnosis

### Professor and Head

Arun Kumar Gupta

### Professors

Deep Narayan Srivastava  
Sanjay Sharma (RPC)  
Shivanand Gamanagatti (Trauma Centre)

Raju Sharma  
Ashu Seith Bhalla

Sanjay Thulkar (IRCH)  
Smriti Hari  
Atin Kumar (Trauma Centre)

### Additional Professors

Chandan J Das  
Manisha Jana

Madhusudhan KS  
Devasenathipathy Kandasamy

Surabhi Vyas  
Chandrashekhara SH (IRCH)

### Associate Professors

Smita Manchanda  
Mukesh Yadav (IRCH)

Ankur Goyal

Priyanka Naranje  
Ekta Dhamija (IRCH)

### Assistant Professor

Krithika Rangarajan (IRCH)

### Scientist-IV

Shashi B Paul

### Chief Technical Officer (Group A)

Mr Braham Singh

Mrs Renu Soorma

## HIGHLIGHTS

The Departmental faculty was actively engaged in patient care, education and research. The department made a concerted and successful attempt to reduce the waiting period for various imaging procedures. Reporting of all investigations is currently electronic and done on work-stations. During this period three portable ultrasound machines and one film scanner were added to the diagnostic armamentarium of the department. Faculty members delivered over 206 lectures in various CMEs, national and international conferences. Faculty members were actively involved in research, and published 137 papers in various indexed national and international journals and contributed 42 chapters to text-books of Radiology. They also edited four books on Radiology. About 60 posters and oral papers were presented in various conferences in India and abroad. The department faculty members were principal investigators in 4 funded projects. Besides, they were involved in 21 ongoing departmental projects and over 64 collaborative projects with other clinical departments. The department conducted two Radiology courses, one national conference and one state branch conference during this period which were very well received and attended by a large number of delegates from across the country.

## EDUCATION

### *Undergraduate*

The department faculty was actively involved in teaching undergraduate students. There were a total of 62 lectures taken by the faculty for them in this period.

### *Postgraduate*

There were a total of 25 junior residents in the department during this period, including 6 new residents who joined the department. The department had six fellows pursuing their fellowships during this period. Academic activities for post-graduate students included around 36 seminars, 35 journal clubs, 70 case discussions, 70 interesting film sessions and 80 didactic lectures. The department provided short term training to five radiologists from all over the country and one from Nepal, during this period.

### *BSc (Hons) Medical Technology in Radiography (MTR):*

This course is of three years duration and a total of 29 students are pursuing this course.



### **CMEs/Workshops/Symposia/National Conferences organized:**

1. Fourth AIIMS-MAMC-PGI Imaging Course on Recent Advances in Imaging Technology, 5 and 6 April 2019
2. Seventeenth Annual National Conference of the Indian Society of Pediatric Radiology ISPR2019, 7 and 8 September 2019
3. AIIMS Radiology Course Series, Imaging of Chest Tumors, 30 November and 1 December 2019
4. Department of Radiodiagnosis in collaboration with Delhi Branch of Indian Radiology & Imaging Association organized the Annual Conference of the state branch: DIU 2020, 7 and 8 February 2020

### **Lectures delivered**

**Arun Kumar Gupta: 1**

**Sanjay Sharma: 1**

**Shivanand Gamanagatti: 18**

**Madhusudhan KS: 6**

**Devasenathipathy Kandasamy: 18**

**Priyanka Naranje: 14**

**Deep N Srivastava: 3**

**Ashu Seith Bhalla: 24**

**Atin Kumar: 20**

**Surabhi Vyas: 8**

**Smita Manchanda: 19**

**Raju Sharma: 27**

**Smriti Hari: 12**

**Chandan Jyoti Das: 5**

**Manisha Jana: 12**

**Ankur Goyal: 15**

**Oral Papers/posters presented: 59 (3rd prize poster presentation; Best oral paper award; Cum Laude award; Trainee Research Prize; Scientific Exhibit Award; Bronze; First prize)**

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. Application of Artificial Intelligence, in MRI Spine for degenerative & traumatic spine diseases, Raju Sharma, M/s Synapsica Technologies Private Limited, New Delhi, 2 years, 2019-2021, Rs 10.85 lakhs
2. Interstitial lung Diseases: Texture based analysis for quantification, Ashu Seith Bhalla, CSIR-IGIB, 2 years, 2018-2020, Sub-project under CSIR Mission Mode Project titled "Intelligent Systems (IS)-Intelligent Technology and Solutions"
3. To study the radiological and histological features of fibro-adipose vascular anomaly and develop a scoring system for diagnosis and prognostication, Ankur Goyal, AIIMS (Intramural), 2 years, 2019-2021, Rs 5 lakhs per year
4. Use of artificial intelligence to detect breast cancer on mammogram and its use in the Indian population, Arun Kumar Gupta, DBT, 3 years, 2020-2023, Rs 89.19 lakhs

### **Departmental projects**

#### ***Ongoing***

1. Advanced magnetic resonance imaging and radiological interventions in patients of osteoarthritis of knee
2. Clinico-Radiological profile of symptomatic breast patients : A prospective study at a Tertiary care centre in India
3. Deep Learning for detection and classification of abnormalities on Full Field Digital Mammography
4. Diagnostic accuracy of MRI with respect to HRCT in connective tissue disease related interstitial lung disease
5. Diagnostic utility of dual energy CT in pulmonary nodules and masses
6. Evaluation of split-bolus dual energy CT in staging of carcinoma larynx
7. Fibroadipose Vascular Anomaly: Comprehensive analysis of clinic-radiologic-pathological features and treatment outcomes of this new entity
8. Genetic variations of Pituitary adenoma in cushing's syndrome
9. Imaging and interventions in pediatric Budd Chiari syndrome.
10. Imaging and radiological interventions in patients presenting with non-variceal gastrointestinal hemorrhage: Technical and clinical outcomes.
11. IVIM DWI MRI in patients with lymphoma
12. Modalities of therapeutic intervention and assessment of multi-system complications in idiopathic hypoparathyroidism
13. MRI vs MDCT in pediatric bronchiectasis: A non-inferiority trial

14. Percutaneous image guided interventions in spinal diseases
15. Response assessment of Hepatocellular carcinoma to TACE
16. Response Assessment to Anti-Tubercular Therapy in Tuberculosis of Spine on MRI
17. Role of dual energy computed tomography and magnetic resonance imaging in the evaluation of chronic pancreatitis
18. Role of imaging for clinical outcome evaluation in pelvic fracture patients
19. Role of ultrasound guided wire localization and surgical removal of clipped pretreatment positive axillary lymph nodes in increasing the diagnostic accuracy of sentinel lymph node biopsy after neoadjuvant chemotherapy in breast cancer patients.
20. To investigate the arterial wall mechanics of low flow mediated constriction

### **Completed**

1. 3D ultrasound to evaluate fetal femoral volume
2. Advanced MR Imaging and Image Guided Interventions in chronic low back pain
3. Characterization of Renal Cell Carcinoma with Dual Energy Computed Tomography and Multiparametric Magnetic Resonance Imaging and Correlation with Histopathology.
4. Diagnostic and prognostic role of MRI in acute cervical cord trauma
5. Evaluation of soft tissue vascular anomalies using contrast-enhanced ultrasound and shear wave elastography
6. IVIM DWI MRI in patients with osteosarcoma and ESFT
7. Multimodality imaging evaluation of chronic mass forming mastitis and role of ultrasound-guided core needle biopsy in determining the etiology
8. Role of Advanced CT & MR techniques in Pancreatic masses
9. Role of Contrast Enhanced Ultrasound and MR Perfusion in the characterization of neck masses
10. Role of HRCT in the diagnosis of apparently idiopathic interstitial lung diseases.
11. Sclerotherapy in low-flow vascular malformations: Assessment of clinical effectiveness of the current practices in a tertiary care center
12. To identify imaging features of chronic cavitary pulmonary aspergillosis and differentiate it from simple aspergilloma on DECT in patients with postTb sequelae and hemoptysis

### **Collaborative projects**

#### **Ongoing**

1. A comparison of ultrasonography and MRI in assessing tumour characteristics and locoregional spread in carcinoma cervix, Obstetrics and Gynaecology
2. A morphological study of the human Temporomandibular joint, Anatomy
3. A study to evaluate the predictors of outcome in patients with Blunt Liver Trauma, Trauma Surgery
4. A Three Arm Randomized Study to Compare Sexual Functions and Fertility Indices Following Open Mesh Hernioplasty (OMH), Laparoscopic Totally Extra Peritoneal (TEP) And Trans Abdominal Pre- Peritoneal (TAPP) Repair of Groin Hernia, Surgery
5. Applicability of Laparoscopic Ultrasound in Various Intra-Abdominal Pathologies, A Prospective Observational Study, Surgery
6. Assessment of liver fibrosis in patients with Chronic liver disease using Transient elastography, Shear wave elastography and Serum biochemical markers, Gastroenterology
7. Assessment of tumor response to locoregional therapy in patients of Hepatocellular carcinoma using Shear wave elastography, Gastroenterology
8. Association of *Pneumocystis jirovecii* infection in bronchiectasis and its effect on clinical characteristics and disease progression, Microbiology
9. Baseline and post neoadjuvant chemotherapy imaging of optic nerve in extraocular retinoblastoma. Can MRI Predict Prognosis? RP Centre
10. BIPSS in ACTH dependent Cushing's syndrome, Endocrinology and Metabolism
11. Clinical Profile, Pulmonary Function And Quality of Life of Patients with Post Tuberculosis Chronic Lung Disorders in a Tertiary Care Hospital, Pulmonary Medicine and Sleep Disorders

12. Coblation Assisted Endoscopic Excision Of Juvenile Nasopharyngeal Angiofibroma: A Prospective Pilot Study, ENT and Head & Neck Surgery
13. Comparison of Cervical Shear Wave Elastography, Bishop Score, and Transvaginal Cervical Length Measurement for Prediction of Successful Labor Induction: A Pilot Study, Obstetrics and Gynaecology
14. Comparison of mesotherapy (non operative) with surgery in management of superficial lipomas, Surgical Disciplines
15. Comparison of outcomes in post cochlear implantation children with and without congenital inner ear malformation, ENT and Head & Neck Surgery
16. Comparison of Transarterial radioembolization versus Transarterial chemoembolization in the management of intermediate Hepatocellular Carcinoma : A Randomized Control Trial, Gastroenterology, Nuclear Medicine
17. Correlation of first trimester metabolic parameters and maternal body fat indices with development of gestational diabetes mellitus in asian indian women- a comparative study, Obstetrics and Gynaecology
18. Correlation of placental vascularisation indices and placental elastography in IUGR pregnancies with perinatal outcome: A case control study., Obstetrics and Gynaecology
19. Derivation of nomograms for aortic and iliofemoral dimensions using multidetector computed tomography in the Indian population, Cardiac Radiology
20. Diagnostic accuracy of Contrast enhanced Ultrasound in detecting early response to Neoadjuvant Chemotherapy in Breast cancer patients, Surgical and Medical Oncology
21. Diagnostic Accuracy of Transcranial Ultrasound to Detect Clinically Significant Condition in post Craniectomy Patient, Emergency Medicine
22. Disconnected pancreatic duct syndrome is uncommon and asymptomatic following cystogastrostomy for pseudocyst/walled off necrosis in patients with acute pancreatitis, Gastroenterology
23. Double blind randomised control trial to assess the outcome of open vs arthroscopic excision of dorsal wrist ganglion, Orthopedics
24. Economic Burden, Prevention and Control of Pneumonia among Elderly, Centre for Community Medicine
25. Effect of phrenic nerve stimulation on diaphragm strength and thickness in mechanically ventilated patients. An Randomized Controlled Trial, Physiotherapy
26. Effects of use of bolster and its orientation on kidney position in reference to prone percutaneous lithotomy, Urology
27. Efficacy and tolerability of hyperbaric oxygen therapy in structuring & fistulizing small bowel Crohn's disease, Gastroenterology
28. Etiological Evaluation of Microcephaly in Young Patients, Genetics
29. Etiological Evaluation of Microcephaly in Young Patients, Pediatrics
30. Evaluation of 99 m Technetium labelled antibiotic scintigraphy in diagnosis and monitoring of tuberculosis with abdomen involvement, Medicine
31. Evaluation of Dual dye technique for sentinel lymph node biopsy in breast cancer: Two arm open label parallel design Non-inferiority Randomized Controlled Trial, Surgery
32. Evaluation of Hormonal and Metabolic Parameters in Adolescent and Young Indian Girls with Menstrual dysfunction, Obstetrics and Gynaecology
33. Evaluation of intralesional bleomycin in periocular and adnexal vascular lesions, RP Centre
34. Exploring the usage of Ultrasonography in assessing mid palatal suture opening in Rapid Palatal Expansion: Pilot study, Orthodontics
35. Feasibility of Enhanced recovery after surgery protocol in general thoracic surgery : prospective cohort study, Surgery
36. Incidence and outcome of neutropenic enterocolitis in paediatric cancer patients, Paediatrics
37. Minimally invasive autopsy (MIA) in the evaluation of fetal malformations and stillbirths- A feasibility study for the development of a standard protocol for stillbirth evaluation, Paediatrics
38. Neoadjuvant chemotherapy with short course radiotherapy for locally advanced rectal cancer: A pilot study, Surgery
39. Normative Values Of Renal Length And Parenchymal Thickness and Renal Elastography in Indian Paediatric Population, Paediatric Surgery
40. Oncological outcomes of breast conservation surgery in patients with locally advanced breast cancer post neoadjuvant chemotherapy, Surgery
41. Outcomes of patients of microtia with canal atresia undergoing same stage pinna reconstruction and canalplasty, ENT and Head & Neck Surgery
42. Prediction of Difficult Laryngoscopy and Orotracheal Intubation Using Lateral Neck X-ray: A Prospective

Observational Double Blind Study, Anaesthesiology, Pain medicine and Critical Care

43. Prosthetic material(mesh) anchored by mechanical device versus glue during laparoscopic repair of ventral hernia: A double blind randomised controlled trial, Surgery
44. Randomized Control Trial Comparing Radiological, Clinical and Functional Outcomes following Uniaxial vs Polyaxial Plating in Management of Tibial Plateau Fractures and CT Guided Mapping of Proximal Tibial Fractures in Indian Population, Orthopedics
45. Role of contrast enhanced USG in assessing activity in non specific aortoarteritis, Cardiac Radiology
46. Role of Liquid Biopsy Biomarkers in Hepatocellular carcinoma and Hepatitis B virus induced carcinogenesis, Gastroenterology
47. Role of MR guided biopsy in detection of prostate cancer, NMR
48. Safety and efficacy of Stem cell therapy in Perianal fistula in Crohn's disease, Gastroenterology
49. Sensitivity and specificity of Focussed Assessment with Sonography for Trauma (FAST) in determining pediatric solid organ injury following blunt trauma abdomen, Pediatric Surgery
50. Spectrum and profile of patients with Interstitial lung diseases presenting at a tertiary care center in north India (AIIMS-ILD registry), Pulmonary, Critical Care and Sleep Medicine
51. Study of risk factors for breast cancer in Indian women: A case control study, Surgery
52. Systemic effect of surgery in obstructive sleep apnea severity- an evaluation with inflammatory markers, Otorhinolaryngology- Head and neck surgery
53. To compare the diagnostic performance of Whole Body Low dose Computed Tomography (WB LDCT) and Conventional Skeletal Survey (CSS) in diagnosis and management of patients with Multiple Myeloma (MM) in a tertiary care centre, Hematology
54. To determine by Ultrasound the Optic Nerve Sheath Diameter in Pediatric Patient with Intracranial Pressure Compared with Control Group, Emergency Medicine
55. To determine incidence of paratracheal lymph node metastases in laryngeal and hypopharyngeal carcinoma, ENT and Head & Neck Surgery
56. To establish an algorithm for the management of axilla in patients with early operable breast cancer having clinically negative axilla, Surgery
57. To study the management outcomes in patients with Primary Aldosteronism, Endocrinology and Metabolism
58. To study the usefulness of pre-operative USG guided FNAC in avoiding radical surgery in patients with gallbladder wall thickness or polyp associated with gallstone disease, Surgery
59. Understanding differences in the patterns of osteoarthritis in Indian and Western population : impact on symptoms, treatment options and their outcome, Orthopaedics

### **Completed**

1. Abdominal infections in immunocompromised hosts: A Radiological, Microbiological and Clinical Correlation, Hematology
2. Achalasia cardia: Long term outcome and assessment of factors predicting outcome following laparoscopic heller's cardiomyotomy, Surgery
3. Age estimation between age 1 and 18 years by Radiological Study of Epiphyseal Union Around the Elbow and Wrist Joints, Forensic Medicine
4. Changes in muscle mass thickness and echogenicity in critically ill patients over 7 days, Paediatrics
5. Comparison of 3 Different Methods of Orotracheal Tube Length Estimation in Neonates: A Post-mortem Study, Paediatrics
6. Comparison of quality of life and oncological outcomes of Skin Sparing Mastectomy versus Breast Conservative Surgery among ladies with Early Breast Cancer: A Randomized comparison with superiority hypothesis, Surgery
7. Double blind randomized control trial to assess the outcome of pulley release and pulley reconstruction for de Quervain's tenosynovitis', Orthopedics
8. Evaluation of 2 Dimensional and 3 Dimensional Ultrasonography in preoperative assessment of adnexal masses, Obstetrics and Gynaecology
9. Evaluation of diaphragm function of ventilated children using bedside ultrasonography, Paediatrics
10. Evaluation of outcome of intra-lesional bleomycin in orbital lymphangioma, RP Centre
11. Evaluation of various clinical and immunological parameters in predicting the outcomes of sino-nasal and skull

- base invasive fungal diseases : A descriptive study, ENT
12. In vivo assessment of somatostatin receptor expression with 68Ga DOTANOC PET/CT in patients with autoimmune and immune-related orbitopathy, Nuclear Medicine
  13. Incidence and risk factors of preterm brain injury (periventricular leukomalacia and/or intraventricular hemorrhage) in very low birth weight neonates (32 weeks gestation or 1500 gm birth weight): A prospective cohort study, Paediatrics
  14. Multimodality imaging evaluation of chronic mass forming mastitis and role of ultrasound guided core needle biopsy in determining its etiology, Surgery
  15. Non-alcoholic Fatty Liver Disease in Indian Children with Down Syndrome, Paediatrics
  16. Pre- and Post-Operative Dysglycemia in Cases Of Pheochromocytoma / Paraganglioma –A Tertiary Care Centre Study in Northern India, Endocrinology and Metabolism
  17. Prospective Pilot Study for Evaluating Incidence of Occult Lymph Node Metastasis in Patients of Olfactory Neuroblastoma, ENT
  18. Randomized Parallel Comparative Study for the Evaluation of Effect of Vitamin K Supplementation on Bone Mineral Density in Prostate Cancer Patients, Pharmacology
  19. Role of microRNAs as a biomarker in hepatocellular carcinoma, Gastroenterology
  20. Role of placental growth factor, uterine artery doppler and 3D doppler ultrasound of placenta for prediction of pre-eclampsia in high risk pregnancies., Obstetrics and Gynaecology
  21. Safety, suitability and clinical effectiveness of unicompartmental knee replacement in the Indian population, Orthopaedics
  22. Sonographic comparison of Subclavian vein and Inferior Vena Cava collapsibility index for the assessment of volume status of hypotensive patients, Medicine
  23. Synthesis Quality Control and Biodistribution Studies of 99 m Technetium (99 m Te)'' Labelled Antibiotics for Infection Imaging, Nuclear Medicine
  24. The effect of 1 cm versus 2 cm resection margin and oncoplastic closure of breast parenchymal defect on oncological and aesthetic outcome in ladies with early breast cancer: A 2X2 factorial Randomized Controlled Trial, Surgery
  25. The pattern of visual impairment in spectrum of hypoxic ischemic encephalopathy (RPC), RP Centre
  26. To study and compare the prevalence of NAFLD in women with and without previous history of GDM, Endocrinology and Metabolism
  27. To study the prevalence of primary aldosteronism in subjects with hypertension, Endocrinology and Metabolism
  28. Ultrasound assessment of gastric emptying of clear fluids with different energy content in children: A cross over pilot study, Anesthesiology, Pain Medicine and Critical care
  29. Utility of trabecular bone score and bone mineral density in assessing bone health including vertebral fracture in primary hyperparathyroidism and their change after parathyroidectomy, Endocrinology and Metabolism

## PUBLICATIONS

**Journal: 107**

**Abstracts: 2**

**Chapters in books: 42**

**Books: 4**

## PATIENT CARE

S. No.	Name of Investigations / Special procedures	Total no. of Investigation
1	<b>Routine X-rays</b>	
	OPD	99229
	Indoor	28421
	Casualty	62694
	Portable	49718
2	<b>Special Investigations</b>	
	Barium Studies	2368
	Intravenous pyelography	1602

	Micturating cystourethrography	2663
	Hysterosalpingography	1012
	Operation Theater Studies	224
	Others contrast studies	860
3	<b>Mammography</b>	3811
4	<b>Dexa Scan</b>	123
5	<b>Ultrasound</b>	
	Routine	36556
	Emergency	30020
	Doppler (Routine + Casualty)	4043
6	<b>CT</b>	
	Body	18922
	Head	8122
7	<b>MRI (Main + NMR)</b>	6906
8	<b>Interventional Procedures</b>	
	Interventional Vascular Studies	3440
9	<b>Interventional Non-Vascular studies</b>	
	CT Guided	449
	Ultrasound Guided	5345
	Fluoroscopy Guided	2971
	Mammography Guided	08
	<b>Grand Total</b>	<b>3,69,507</b>

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Arun Kumar Gupta** was Executive committee member of 'Indian Journal of Pediatrics.

**Professor Deep Narayan Srivastava** was President of the section of Medical Sciences for 2019-2020 and also Council Member of the "Indian Science Congress Association (professional body under Ministry of Science and Technology, Government of India); Associate Editor, Annals of the National Academy of Medical Science (India) published by Thieme Medical & scientific publishers private limited, Noida, UP, India.

**Professor Raju Sharma** was Member of Selection Committee for Delhi IIT for Faculty in Department of Biomedical Engineering; Member of the selection committee for Institute of Liver & Biliary Sciences; Appointed the Resident Education Coordinator for the Indian Radiology & Imaging Association; Member of the American Roentgen Ray Society; Invited to be Guest Editor of Special Issue of Journal of Gastrointestinal and Abdominal Radiology on Pancreatic Imaging.

**Professor Sanjay Sharma** received Best reviewer award of the year 2019, from *Indian Journal of Urology* at Urological Society of India Conference (USICON 2020), at Kochi on 24 Jan 2020; Organising Secretary "4th AIIMS-MAMC-PGI IMAGING COURSE SERIES (Imaging Advances and Physics)" held at AIIMS, New Delhi (5 and 6 April 2019); Member National Cancer Grid (NCG) Synoptic Reporting Formats working group.

**Professor Ashu Seith Bhalla** was President Society of Imaging and Interventions SCII; Professor MVK Shetty Oration of Indian Society of Paediatric Radiology; Distinguished Service Award by the Delhi State Chapter of Indian Radiological and Imaging association-IRIA; Member National Cancer Grid (NCG) Synoptic Reporting Formats working group.

**Professor Atin Kumar** was Elected as President Elect of Delhi State Chapter of Indian Radiological and Imaging Association; Elected as Governing body member of Indian College of Radiology and Imaging; National Leadership Award by Delhi state chapter of Indian Radiological and Imaging Association; Joint Organizing Chairman, Delhi Imaging Update DIU 2020, Annual conference of Delhi state chapter of IRIA, held at AIIMS, New Delhi on 7th-9th February 2020; Organising Secretary of Advances in Imaging Technology - 4th AIIMS-MAMC-PGI Imaging Course Series held at AIIMS, New Delhi on 5 and 6 April 2019.

**Dr Shashi B Paul** was Member of the 'Task force on Hepatocellular carcinoma', formed by the Indian National Association for the study of Liver (INASL); Member of Society of Oncologic Imaging India; Member of Breast Imaging Society of India; Reviewer for various Medical Journals- Abdominal Radiology, European Radiology, Diagnostic and Interventional Radiology, Oncology, Indian Journal of Medical Research, Journal of Clinical and Experimental Hepatology.

**Dr Ankur Goyal** Was Joint Organizing Secretary, Delhi Imaging Update DIU 2020, Annual Conference of Delhi State Chapter of IRIA, held at AIIMS, New Delhi on 7-9 February 2020; Treasurer in of Advances in Imaging Technology - 4th AIIMS-MAMC-PGI Imaging Course Series held at AIIMS, New Delhi on 5 and 6 April 2019; Convenor and Joint Secretary in the Musculoskeletal Imaging conference held at ABVIMS, Dr RML Hospital, New Delhi on 20 October 2019; Joint Secretary, Delhi State Chapter of IRIA 2019-20; Awarded the prestigious Professor VP Laxhanpal Gold Medal for the best academic contribution in the year 2017 at the 73<sup>rd</sup> Annual conference of IRIA held at Gandhinagar (23-26 January 2020); Awarded the Fellowship of ICRI (Indian College of Radiology & Imaging) at the 73<sup>rd</sup> Annual Conference of IRIA held at Gandhinagar (23-26 January 2020).

**Dr Smita Manchanda** was Organizing Secretary "AIIMS Radiology Courses: Imaging of Chest Tumours 2019" held at AIIMS, New Delhi on 30 November and 1 December 2019; "President's Appreciation Award" by the Delhi State Chapter of IRIA at "DIU 2020"; Joint Secretary, Society of Chest Imaging and Interventions; Member National Cancer Grid (NCG) Synoptic Reporting Formats working group.

## 9.37. Reproductive Biology

### Professor and Head

Ashutosh Halder

### Professor and Officer In-charge CRIA facility

Pradeep Kumar Chaturvedi

### Associate Professors

Surabhi Gupta

Mona Sharma

### Scientist II

Deepak Pandey

Neeraj Kumar

### Scientist I

Manish Jain

### HIGHLIGHTS

Department is mainly involved in teaching, training and research works besides diagnostic services (reproductive hormones and cancer biomarkers) and reproductive genetic counseling. Most of reproductive genetic counseling was self-referral (cases were with reproductive disorders, malformation, cancer, infertility, etc.). CRIA facility (diagnostic section of the department) provided tests for more than 47 parameters including cancer markers, thyroid profile and reproductive hormones. Department has started online reporting for CRIA tests. CRIA facility has done 2,62,304 tests this year; an increase of approx. 24000 tests from last year. This year methotrexate test was introduced for in- and out-patients. Department is also providing semen analysis and various FISH and PCR related services (diagnostic, teaching, training, research, etc).

Training and teaching provided to our own PhD students, MSc students and various trainees of the department besides other departments of AIIMS. Faculty members of the department were invited by several national academics for different academic contributions (NII stem cell committee, NABL core accreditation committee, ICMR APS & SRF project review/selection committee, MCI assessment for DM (medical genetics) courses, PAC & IRB committee member of NIHF, taskforce member of various committee of DBT, Ayush, etc.). Dr. Ashutosh Halder received this year Dr. Subhash Mukherjee Oration Award of Endocrine Society of India and joined as Editorial Board of the official Journal of ISSRF (Journal of Reproductive Health & Medicine, published by Scientific Scholar LLC, USA).

### EDUCATION

- PhD students (Registered/Ongoing): 10
- MSc students (Reproductive Biology and Clinical Embryology): 11
- JRF/SRF/RA/RO: 2
- Weekly seminars and weekly journal club
- Biweekly laboratory data presentation
- Day to day case wise/laboratory work discussion
- Postgraduate: MD Laboratory Medicine Students (Laboratory training for 15 days)  
MD Biochemistry students (Laboratory training for 15 days)
- Summer training student from IIT Kharagpur

### CMEs/Workshops/Symposia/National and International Conferences

#### Lectures delivered

**Ashutosh Halder: 7**

**Mona Sharma: 1**

#### Oral papers/posters presented: 9



## RESEARCH

### Funded projects

#### *Ongoing*

1. An investigation to find out genetic factors in idiopathic familial ovarian failure, Ashutosh Halder, DST-SERB, 3 years, 2018-2021, Rs. 44 lakhs
2. An Investigation to find out reasons for Phenotypic Heterogeneity/Variability in 22q11.2 deletion Syndrome, Ashutosh Halder, ICMR, 3 years, 2015-2018, Rs. 41 lakhs
3. Effects of Non-ionizing Electro Magnetic Field (EMF) on Human Health, PK Chaturvedi, ICMR, 5 years, 2017-2022, Rs. 15 lakhs
4. Elucidating health-span regulatory modules by genome-wide combinatorial effects of transcription factors downstream of insulin signaling, Neeraj Kumar, DBT, 3 years, 2018-2021, Rs. 50 lakhs
5. Embryo-uterine cross-talk for implantation & beyond: Role for exosomal microRNAs, Surabhi Gupta, DST-SERB, 3 years, 2018–2021, Rs. 44.2 lakhs
6. Generation of genome-edited mice using CRISPR/Cas-9 based knock-out/knock-in technology to study mammalian sperm-egg fusion, Surabhi Gupta, DBT, 3 years, 2017-2020, Rs. 75.5 lakhs
7. High resolution Genomic Screening using SNP Microarray to find out Genomic Causes in Idiopathic Sertoli Cell Only Syndrome (SCOS) cases, Manish Jain, AIIMS, 3 years, 2017-2020, Rs. 10 lakhs
8. Idiopathic Sertoli Cell Only Syndrome (SCOS): An Investigation to find out Epigenomic Etiologies, Manish Jain, ICMR, 3 years, 2020-2023, Rs. 45 lakhs
9. In vitro evaluation of effects of electromagnetic field on male reproductive system, PK Chaturvedi, ICMR, 3 years, 2019-2022, Rs. 58.27 lakhs
10. Integrative analysis of ovarian cancer transcriptome to identify potential therapeutic targets & biomarker discovery, Ashutosh Halder, ICMR, 3 years, 2020-2023, Rs. 54 lakhs
11. Poly Cystic Ovarian Syndrome (PCOS): An investigation to find out reasons for discrepancy between hyperandrogenism (clinical) & hyperandrogenemia (biochemical) and underlying etiologic (epigenetic & genetic) factors, Ashutosh Halder, DST-SERB, 3 years, 2018-2021, Rs. 51 lakhs
12. Quality control for hCG kits, PK Chaturvedi, HLL Lifecare Limited/Ministry of Health and Family Welfare, Yearly, Yearly, Rs. 9 lakhs
13. Role of Mitochondrial Fatty Acid Shuttle System in Premature Ovarian Failure, Mona Sharma, ICMR, 3 years, 2020-23, Rs. 41 lakhs
14. Study of potential sperm factors and related signaling pathways in eliciting oocyte intracellular calcium rise, Mona Sharma, AIIMS, 2 years, 2018-2020, Rs. 10 lakhs
15. To decipher the functional interaction of reproductive longevity targets induced by TGF-beta and insulin signaling in gonads, Neeraj Kumar, ICMR, 3 years, 2020-2023, Rs. 50 lakhs
16. To elucidate the impact of micronutrients and vitamins on sex-steroid mediated stromal-epithelial interaction in prostate cells: role in maintenance of normal prostate physiology, Deepak Pandey, ICMR, 3 years, 2020-23, Rs. 42.3 lakhs

#### *Completed*

1. HDAC inhibitor(s) mediated genome-wide dynamics of healthy aging in *Caenorhabditis elegans*, Neeraj Kumar, DST-SERB, 3 years, 2017-2020, Rs. 50 lakhs
2. Role of 3,5,3'-L-triiodothyronine (T3) in the modulation of VEGF expression and leydig cell function, Surabhi Gupta, DBT, 3 years, 2016-2019, Rs. 39 lakhs
3. To elucidate the oxidative stress mediated regulation of turnover and translation regulatory mRNA binding proteins (TTR-RBPs) during embryo development, Neeraj Kumar, AIIMS, 2 years, 2017-2019, Rs. 10 lakhs
4. To study the effects of dietary flavonoids on prostate epithelial cells growing under the influence of prostate stromal cells, Deepak Pandey, AIIMS, 2 years, 2017-2019, Rs. 10 lakhs

### Departmental projects

#### *Ongoing*

1. An investigation to find out genetic factors in idiopathic familial ovarian failure
2. Analysis of anti-cancer activity of herbal extracts on prostate cancer cell lines

3. Characterization of TEX29 protein and its potential role in fertilization.
4. Effect of Human Sperm Vitrification on Phospholipase C zeta Expression
5. Effects of Selective Estrogen Receptor Modulators (SERMs) on stromal-epithelial interaction in prostate cells
6. Epigenetic changes during epithelial to mesenchymal transition in trophoblast cells under physiological and pathological conditions.
7. Etiology and Biomarker of Polycystic Ovarian Syndrome
8. Functional characterization of human ovarian orthologs regulating insulin signalling dependent reproductive longevity in *Caenorhabditis elegans*
9. Genetics of POF
10. Genomics and epigenomics of PCOS
11. MicroRNA expression profiles in Sertoli cell only syndrome (SCOS) cases
12. Role of Indoleamine 2,3-dioxygenase in Trophoblast Biology.
13. Role of L-Carnitine in oocyte activation
14. Role of microRNAs in regulation of angiogenic factors in trophoblast cells
15. Role of miR-143-3p in modulating Trophoblast cell invasion
16. Role of placenta derived exosomes in decidualization in Recurrent pregnancy loss patients.

### ***Completed***

1. Assessment of HDACi on embryo developmental competence during reproductive aging
2. Biological basis of skewed sex ratio
3. Chromosome mosaicism and aneuploidy in preimplantation mouse embryo
4. Citrate synthase expression in human sperm and oocyte activation in mice
5. Double blind randomized clinical trial of polyherbal preparation Ashokarista on post- menopausal women
6. Effects of dietary flavonoids on hormone mediated stromal-epithelial interaction in prostate cells
7. Etiopathology of Macroprolactinemia
8. Evaluation of molecular basis of clinical aggressiveness in cervical carcinoma of young age
9. Genetic Study on Sertoli Cell Only Syndrome (SCOS)
10. Genetics of primary testicular failure
11. Mutational Analysis of HS6ST2: A Candidate Gene In Idiopathic Premature Ovarian Failure
12. Rapid Detection of Chromosome 13 & 21 Aneuploidy by Primed In Situ Labeling
13. Role of Cytokines in Premature Ovarian Failure
14. Role of microRNAs in regulation of angiogenic factors in trophoblast cells
15. Spermiation defect: Role of heavy metal, vitamin A and sertoli cell maturity
16. Testicular Germ cell arrest (maturation arrest): An Investigation of Phenotype-Genotype Correlation
17. The Genetic Determinants of Premature Ovarian Failure
18. To study the effect of Oxidative stress on the expression of mRNA 3' UTR binding protein genes in early embryo development
19. To study the role of conserved RNA binding proteins (RBPs) in reproductive aging using *Caenorhabditis elegans* as model system

### **Collaborative projects**

#### ***Ongoing***

1. Age specific nomogram of Anti-mullerian Hormone and Antral follicle counts in infertile and fertile Indian women, Obstetrics and Gynecology
2. Clinico-genetic prognostic signatures for development of metastatic Castration Resistant Prostate Cancer, Urology
3. Effect of tyrosine kinase inhibitors on sperm parameters and pituitary gonadal axis in males with chronic myeloid leukemia, Haematology
4. Establishment of a normal reference range (nomogram) for Testosterone and Dihydrotestosterone in boys of age group 0– 14 years, Pediatric Surgery
5. Impact of Checkpoint inhibitors on suppressed state of immunity in tuberculosis, Transplantation Immunology & Immunogenetics

6. Impact of parental history of type 2 diabetes in Indian women with PCOS, Endocrinology
7. malignant lesions, Dental Science Centre
8. MicroRNA and hTERT gene profiles as biomarkers in oral potentially malignant and
9. Molecular Genetic Evaluation of Unexplained Stillbirths, Genetics Unit, Pediatrics
10. Reference range of serum alpha fetoprotein in Indian children below 3 years of age, Pediatric Surgery
11. Role of Bone Marrow Microenvironment in Multiple Myeloma, Medical Oncology, IRCH
12. Role of miRNA mediated modulation of signal transduction in pancreatic cancer, Gastroenterology
13. Therapeutic targeting of ER Chaperones exploiting Small Molecules: A Virtual Screening Approach to alleviate ER stress in Preeclampsia, Department of Bioinformatics, Bharathiar University, Coimbatore, Tamil Nadu
14. To study the long-term effects of disease and its treatment in survivors of pediatric solid tumors, Pediatric Surgery
15. Understanding the pathophysiology of endometriosis by protein profiling and correlation with stress, Physiology
16. Unique aspects of idiopathic hypoparathyroidism, Endocrinology

### **Completed**

1. A correlative study of fetomaternal hydrogen sulfide production with umbilical artery velocimetry in preeclampsia, Anatomy
2. Characterization of chromosomal anomalies in multiple myeloma using cytogenetics and FISH, Medical Oncology, IRCH
3. Effect of transabdominal inguinal hernia repair on semen analysis and sexual function, Surgery
4. Evaluation of C-MET gene expression in gastric adenocarcinoma & co-relation with conventional clinic-pathological parameters- A descriptive study, Pathology, UCMS/GTB, Delhi University
5. Evaluation of hTERT amplification in cervical cytology specimens as a marker of histologic grade of cervical intraepithelial neoplasia, Pathology, UCMS/GTB, Delhi University
6. Lymphocyte reconstitution and infectious morbidity post autologous hematopoietic stem cell transplantation, Medical Oncology, IRCH
7. Molecular biology of early immature T-cell acute lymphoblastic leukemia, Laboratory Oncology, IRCH
8. Molecular biology of Multiple Myeloma, Medical Oncology, IRCH
9. Role of microRNA in Spermatogenesis, National Institute of Immunology, Delhi
10. Study of clinico-dysmorphic profile and associated malformation in children with cardiac malformation, MAMC, Delhi University

### **PUBLICATIONS**

**Journals: 9**

**Chapters in Books: 1**

### **PATIENT CARE**

Over 100 cases were referred to Dr. Halder, mainly from other hospitals of Delhi or self-referral for Counseling/ Planning of Management/Advice and related to Reproductive Genetics in particular Male Primary Hypogonadism, Recurrent Abortion, Recurrent IVF failure, Genetic Disorders and Malformation Syndromes.

Workload in the form of laboratory service

Standardized additional molecular cytogenetic technique (in addition to ongoing fluorescent in situ hybridization services) using STR/microsatellite markers and used for patient care

### **Special laboratory facilities in Department of Reproductive Biology (Molecular Cytogenetics lab), AIIMS**

Microdeletion FISH on blood (Interphase/ Metaphase cell), buccal cell, urine cell, solid tissue etc.

Total 300 patients have been recruited which all are suspected microdeletion syndrome. We have done FISH & QF-PCR of all cases in our Molecular Cytogenetics lab and given report of all the patients. We have standardized Methyl Specific PCR for PWS cases and start facility of Methyl Specific PCR in our lab. We are going to start the facility of microarray of all microdeletion syndromes in our department as soon as possible (tender already uploaded).

### **List of Microdeletion Syndrome:**

- Digeorge syndrome (22q11.2)
- William syndrome (7q11.23)
- Prader willi syndrome (15q11.13)
- Retenoblastoma (13q)

- Miller decker syndrome (17p13.3)
- Langer Giedions syndrome (8q24.11)
- 1p36.13
- Wolff Hirschhorn (4p16.3)

**Prenatal FISH (Amniotic fluid cells/chorionic tissue)**

- Trisomy 21 (Down syndrome)
- Trisomy 18 (Edward Syndrome)
- Trisomy 13 (Patau Syndrome)
- Any autosomal aneuploidies (on request)

**Karyotyping** (only research use)

**Sex Chromosome FISH** (X, Y, SRY: only research & infertility)

**Yq Microdeletion PCR** (Cover app. 20 primer)

**PRINS** (Chromosome13, 18, 21, X, Y)

**QF-PCR** (DG, WS, PWS, RB, MD, Langer-Giedions, Trisomy 13, 18, 21, etc.)

**Methyl Specific PCR** (PWS)

**DNA Microarray** (Microdeletion Syndrome/ Primary Testicular Failure / POF/PCOS)

**CRIA Facility:**

Routine assays of 47 parameters for LH, FSH, Prolactin, T3, T4, TSH, Testosterone, Estradiol, Progesterone, alpha Feto-Protein, Prostate Specific Antigen (PSA), Beta hCG, CA-125, cortisol and vitamin D, Anti TPO, Anti Tg, free T3, free T4, BNP, Troponin I, CKMB, Homocysteine, SHBG, CEA, CA 19.9, CA 15.3, Free PSA, Pro Grp, HE4, Active B12, Ferritin, Folate, Insulin, PTH, C-peptide, HbA1c and anti CCP, DHT, 17 Hydroxy progesterone, ACTH, GH, Inhibin B and AMH and Procalcitonin (PCT) the blood samples of in- and out-patients were carried out in the facility. We have started new test—methotrexate.

S.No.	Name of Investigations	Total No.
1	17-OHP	471
2	ACTH	5
3	ACTIVE B12	19423
4	AFP	6231
5	AMH	5185
6	Anti-CCP	3858
7	Anti-tg	198
8	Anti-TPO	1348
9	BHCG	1546
10	BNP	1099
11	CA-125	2831
12	CA15.3	10
13	CA19.9	2607
14	CEA	2523
15	CKMB	6
16	CORTISOL	1616
17	C-Peptide	2
18	DHEAS	542
19	DHT	2
20	ESTRADIOL	1094

21	<b>Ferritin</b>	12022
22	<b>FOLATE</b>	13251
23	<b>Free PSA</b>	122
24	<b>Free T3</b>	843
25	<b>Free T4</b>	1092
26	<b>FSH</b>	7488
27	<b>Growth Hormone(GH)</b>	171
28	<b>Homocysteine</b>	34
29	<b>Inhibin B</b>	33
30	<b>INSULIN</b>	1804
32	<b>Intact PTH</b>	15086
33	<b>LH</b>	6660
34	<b>METHOTREXATE</b>	113
35	<b>PCT</b>	15141
36	<b>PROGESTERONE</b>	351
37	<b>PROLACTIN</b>	5951
38	<b>PSA</b>	3184
40	<b>SHBG</b>	7
41	<b>TESTOSTERONE</b>	2043
42	<b>TOTAL T3</b>	19961
43	<b>TOTAL T4</b>	22926
44	<b>Troponin-I</b>	526
45	<b>TSH</b>	50258
46	<b>TT4</b>	1
47	<b>Vitamin D,25 - hydroxy</b>	32639
	<b>TOTAL</b>	<b>262304</b>

#### Tests

**JSSK: 5900**

**BPL: 9200**

**AB-PMJAY: 395**

Number of tests performed has increased from 2,37,956 last year to 2,62,304 this year. In addition, more than 4000 various tests were done for research project studies. Andrology services were given to approx. 50 patients that included complete sperm parameters (sperm counts, motility, vitality, morphology).

#### AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor KR Laumas oration** of the department for the year 2019 was received by Professor AJ Rao, IISc, Bangalore. **Three Best Poster Awards** at World Congress on Reproductive Health with Emphasis on Reproductive Cancers Infertility and Assisted Reproduction and 30th Annual Meeting of the ISSRF held at Jammu, 14-16 February 2020: Palak Singh, Surabhi Gupta, Deepak Pandey, PK Chaturvedi. Potential Anti-cancer activity of Herbal seed extract for Prostate cancer; Rana R, Halder A, Gupta S, Sharma M. Role of l-carnitine in TNF-A induced mice oocyte apoptosis; Choudhury J, Kanika, Gupta S. Epigenetic Regulation of Epithelial to Mesenchymal Transition in Trophoblast Cells is Mediated by Il-6 Signaling.

**Professor Ashutosh Halder** received Dr. Subhash Mukharjee Oration Award of Endocrine Society of India 2019 during ESICON 2019; Chaired 3 sessions in 3 different conferences (ISSRF, SPEEDCON2020 & STOX); Judge for poster award

in various national conference (SIAMG, NIRRH, etc.); Task Force member of Human Developmental and Disease Biology - Maternal and Child Health Program of DBT; Task Force member of Medical Genetics of MCI; Advisory panel- expert member (Genetics) and Membership of the Advisory Panel (Biotechnology) of NAMS; Member of Program Advisory Committee (PAC) and Institutional Review Board (IRB) of NIHFW; Member of Institutional Committee-Stem Cell Research (IC-SCR) of NII; Executive Member of MP PCOS Society; Accreditation Committee Member of NABL on Genetics & Cytogenetics; Expert Committee Member of CCRAS (under ministry of AYUSH); External Examiner for DM (Medical Genetics; SGPGIMS, Lucknow) and PhD (thesis & viva) in various university (JNU, CDRI, DU, SGPGI, Bundelkhand University, Kerala University, etc.); Assessment Board Expert for promotion of ICMR scientists; PAC committee member, ICMR (SRF/RA projects); Selection Committee member for selection of Faculty, IGIMS, Patna; Reviewer for many international & national journals (mostly indexed peer reviewed) including Andrology, Molecular Genetics & Genomic Medicine, Reproductive Biology, Acta Obstetrica et Gynecologica Scandinavica, Molecular cytogenetics, Journal of Pediatric Genetics, Journal of Genetics, Toxin Reviews, Scholars Report, Science Alert, British Journal of Medicine and Medical Research, Clinical Medicine Insights: Reproductive Health, Case Reports in Genetics, Journal of Assisted Reproduction and Genetics, Peer J, Sciencedomain international, Indian Pediatrics, IJMR, etc.; New citations over 100 (total over 1000; google scholar citation 977); **Editorial/Advisory Board/Executive Member: *International Journals***—Open Journal of Clinical Diagnostics of Scientific Research (publishes more than 200 open access journals); Journal Clinical Case Reports and Reviews (CCRR); JBR Journal of Clinical Diagnosis and Research; Asian Journal of Medical Sciences (until 2012); Austin Journal of Reproductive Medicine & Infertility; Bioinfo Publications Journals; Global Journal of Human Genetics & Gene Therapy; Clinical Research and Development: Open Access; Asian journal of pharmaceutical and clinical research, etc. ***National Journals***—Journal of Reproductive Health & Medicine (ISSRF: ISSN: 2214-420X, published by Scientific Scholar LLC, USA), Journal of the Association of Physicians of India (Genetics section); Clinical Research and Development; Innovare Journal of Medical Science.

**Professor Pradeep Kumar Chaturvedi** was Course coordinator for MSc Reproductive Biology and clinical embryology; Attended the International conference 52nd Annual Meeting of Society for the study of Reproduction (USA) ‘Beyond Possible: Remarkable transformation of Reproductive Biology held at San Jose CA, USA, 18-21 July 2019; Chaired one Session in World Congress on Reproductive Health with Emphasis on Reproductive cancers Infertility and Assisted Reproduction and 30th Annual Meeting of the ISSRF held at Jammu, 14-16 February 2020; **Expert/Committee/Task Force Member of Government Institute/ Organization/ National Society:** Member of ethic committee for PG, AIIMS, Examiner for PhD and MSc\_PhD examiner IMTech Chandigarh, Gwahati University, Calcutta University, NDRI Karnal, Reviewer of projects of Department of Biotechnology (DBT), Member Selection Committee ICMR), Member expert committee ICMR for review projects on Centre for Advance Research and also Ad-hoc projects, Reviewer Journal of Andrologia.



## 9.38. Rheumatology

### Professor and Head

Uma Kumar

### Assistant Professors

Ranjan Gupta  
Rudra Prosad Goswami

Danveer Bhadu  
Brijnandan Gupta (Immunopathology)

### HIGHLIGHTS

Department of Rheumatology was created and notified in Aug 2015. This department is providing state-of-the-art patient care services and is also instrumental in building resources which are required to deal with tremendous load of patients with rheumatological illnesses. Because of space constraint department is able to conduct only two OPDs and one Rheumatology clinic. Its 6-bed Rheumatology Day Care service, which was started in 2012, first in India, is catering to the needs of patients requiring short admissions for various interventions, treatments and procedures. Various educational activities to increase awareness about arthritis and related disorders amongst the public and medical professionals are regular features. Department has been on the forefront in research also; it has research grant of Rs. 8,23,54,949.00 (Eight crores twenty-three lakhs fifty-four thousand nine hundred and ninety nine) and many collaborative projects are also running. Department faculty had numerous publications in reputed scientific journals. Departmental Clinical Immunology lab caters to whole hospital in terms of performing various immunological investigations which are phenomenal in numbers. Realizing the need for trained Rheumatology specialists, short-term training to medical specialists from various Government organizations is being provided on regular basis. Department has active teaching programme and it is trying to start super-specialty course 'DM' in Rheumatology.

### EDUCATION

#### Undergraduates

1. Scope of clinical Immunology, present concept in autoimmunity & autoimmune disorders; for semester 8; 19 March 2020
2. Systemic lupus erythematosus; for semester 8; 25 March 2020
3. Management of rheumatoid arthritis on 18 February 2020 for VIII semester
4. Inflammatory myositis on 20 February 2020 for VIII semester
5. Small vessel vasculitis on 26 February 2020 for VIII semester
6. Systemic sclerosis & Overlap syndromes on 18 February 2019 for VIII semester
7. Approach to a patient with polyarthritides on 19 March 2019 for VIII semester  
Bedside teaching for 4th, 6th, and 8th semester was regularly done

**Postgraduate Seminars, bedside teaching, mortalities reviews, Journal scan and Journal club, case discussions every week**

**Nursing lectures:** Lecture series on rheumatological disorders for various cadres of nursing staff

#### Short term training provided to physicians

1. Dr Md Alauddin All Mamun, Bangladesh, 18 February 2020-14 April 2019
2. Dr Chiranjeeta Phukan, Assam, 16 February 2020- 26 March 2020
3. Dr Ann Sebastian, UK, 30 May 2019-7 June 2019

**Telemedicine lectures** on 'Rheumatoid arthritis'.

#### CMEs/Workshops/Symposia/National and International Conferences

1. Organized a hands on workshop on "Common Immunological Investigations in Rheumatology: A primer for Residents" (10 November 2019)

#### Lectures delivered

**Uma Kumar: 18                      Danveer Bhadu: 4                      Ranjan Gupta: 4**  
**Rudra Prosad Goswami: 3**



**Oral papers/posters presented: 18 (Best Oral Presentation, Best Oral Presentation, Best Paper Award Swami Kuvalyananda Scholarship Award)**

**RESEARCH**

**Funded projects**

***Ongoing***

1. A Multicenter, Double-blind, long term extension study to assess the Safety and Efficacy of Filgotinib in subjects with Rheumatoid Arthritis, Uma Kumar, Gilead Pharmaceuticals, 6 years, 2019-2025, Rs. 21.29 lakhs
2. A Phase IV Clinical Trial to evaluate safety and efficacy of Glenmark Aprezo® (Apremilast) Tablets in subjects with Active Psoriatic Arthritis, Uma Kumar, Glenmark Pharmaceuticals, 2 years, 2019-2021, Rs 4.5 lakhs
3. A prospective, multicentre, post-marketing surveillance to monitor safety associated with usage of Simponi® (golimumab injection 50 mg) in Indian subjects with Rheumatoid Arthritis (RA) as per locally approved prescribing information. Uma Kumar, Siro Clinpharm, 2 years, 2019-2020, Rs 2.5 lakhs
4. A randomized, double-blind, active control, multicenter study to evaluate the efficacy at week 52 of subcutaneously administered secukinumab monotherapy compared with subcutaneously administered adalimumab monotherapy in patients with active psoriatic arthritis. Uma Kumar, Novartis India Ltd., 2 years, 2018-2020, Rs 9.39 lakhs
5. Endogenous TLR4 ligands MRP8/14 and Tenascin-C as biomarkers of lupus nephritis disease activity: Cross sectional and longitudinal assessment, Ranjan Gupta, AIIMS, 3 years, 2017-2020, Rs 10 lakhs
6. Markers of muscle senescence in inflammatory myositis, Danveer Bhadu, Indian Rheumatology Association, 1 year, 2020-2021, Rs. 2 lakhs
7. Prediction of response to methotrexate in rheumatoid arthritis: Role of adenosine ectoenzyme network on mononuclear cells, Ranjan Gupta, APLAR, 2 years, 2017-2020, Rs 7.5 lakhs
8. Role of TLR-4 in Acute Gouty Arthritis, Danveer Bhadu, AIIMS, 1 year, 2020-2021, Rs. 2.3 lakhs
9. SENSICISM- ON (Extension): An open-label extension trial to assess the long term safety of nintedanib in patients with 'Systemic Sclerosis associated Interstitial Lung Disease' (SSc-ILD), Uma Kumar, Boehringer Ingelheim, 3 years, 2018-2021, Rs 49.52 lakhs
10. Soluble Tumor Necrosis Factor (TNF) Receptors TNFRSF1B and TNFRSF6B in Lupus Nephritis as Biomarkers, Ranjan Gupta, Delhi Rheumatology Association, 1 year, 2018-2019, Rs 1 lakh
11. Systems biology of complex diseases: from genetic findings to lead molecule development for rheumatoid arthritis. Centre of Excellence on GENOME SCIENCES AND PREDICTIVE MEDICINE (GESPREM) PHASE II, Uma Kumar, DST, 5 years, 2015- 2020, Rs 59.6 lakhs
12. To study the interplay of air pollution with autoimmunity and inflammation, Uma Kumar, DST, 3 years, 2017-2020, Rs 49.3 lakhs

***Completed***

1. A Randomized, Double-blind, Placebo- and Active-controlled, Multicenter, Phase 3 Study to Assess the Efficacy and Safety of Filgotinib Administered for 52 weeks in Combination with Methotrexate to Subjects with Moderately to Severely Active Rheumatoid Arthritis Who Have an Inadequate Response to Methotrexate, Uma Kumar, Gilead Pharmaceutical, 2 years, 2018-2019, Rs 23.8 lakhs
2. A Randomized, Double-blind, Placebo- and Active-controlled, Multicenter, Phase 3 Study to Assess the Efficacy and Safety of Filgotinib Administered for 52 Weeks alone and in Combination with Methotrexate (MTX) to Subjects with Moderately to Severely Active Rheumatoid Arthritis Who Are Naïve to MTX Therapy, Uma Kumar, Gilead Pharmaceutical, 2 years, 2018-2019, Rs 15.86 lakhs
3. A Phase III, randomized, double-blind, placebo controlled multi-center study of subcutaneous secukinumab (150 mg and 300 mg) in prefilled syringe to demonstrate efficacy (including inhibition of structural damage), safety, and tolerability up to 2 years in subjects with active psoriatic arthritis (FUTURE 5), Uma Kumar, Novartis Pharmaceutical, 2 years, 2018-2020, Rs 19.44 lakhs

**Collaborative projects**

***Ongoing***

1. A combined metabolome and proteome profiling to develop a predictive biomarker set for Rheumatoid Arthritis assessment, Institute of Genomic and Integrative Biology, New Delhi

2. An Indian Initiative to Study Granulomatosis with Polyangiitis Through Clinical and Genomics Approach, Central University of Punjab, Bhatinda, Punjab
3. Clinical and Genetic Characterization of Patients presenting with Renal Tubular Acidosis in Primary Sjögren's syndrome, Department of Rheumatology, St. Stephen's Hospital, Delhi
4. Effects of antiphospholipid antibodies of varying specificities on inflammasome activation and NETosis in Antiphospholipid Syndrome and Rheumatoid Arthritis, National Institute of Immunology, New Delhi
5. Evaluation of the role of Salivary Scavenger and Agglutinin (SALSA) and lectin pathway components in Rheumatoid Arthritis (RA), Guru Govind Singh University, New Delhi
6. Identification of new and specific proteins biomarkers in rheumatoid arthritis using proteomic approach, Institute of Genomic and Integrative Biology, New Delhi
7. Impact of Yoga and Meditation on Epigenetic Profile in Rheumatoid Arthritis, Anatomy
8. Multi-institutional Network Program on Systemic lupus Erythematosus: Understanding the diversity of SLE, PGIMER, Chandigarh, SGPGIMS, Lucknow, NIMS, Hyderabad, JIPMER, Puducherry, CMC, Vellore, St. John's Medical College, Bangalore, Institute of Life Sciences, Bhubaneswar, SCB Medical College, Cuttack, IPGIMER, Kolkata
9. Musculoskeletal symptoms and their impact on physical and psychological health in adolescent school children, Department of Community Medicine, Santosh University, Ghaziabad, Uttar Pradesh

### **Completed**

1. Development of targeted Nano medicine for the treatment of Rheumatoid Arthritis, Pathology
2. Understanding biology of Rheumatoid arthritis: Functional characterization of some/novel genetic determinants, Department of Genetics, South Campus, Delhi University

### **PUBLICATIONS**

**Journals: 7**

**Abstracts: 2**

**Chapters in Books: 2**

### **PATIENT CARE**

**OPD:** Total number of patients seen: 28,641 (New 6939 & Follow up 21702)

#### **Rheumatology Day Care facility**

Biologics/immunosuppressive drug infusions: 1582

SC/IM injections (biologic, steroids, etc.): 845

Ultrasound: 417

**Total: 5031**

Intra-articular injection: 1186

Biopsies: 64

Others: 85

#### **Clinical Immunology Lab**

**Total blood and synovial samples analyzed: 42528**

**RF:** 7570

**ENA:** 351

**ASMA:** 2324

**C4:** 146

**Cryoglobulin & Cryofibrin:** 92

**ANA:** 11345

**ANCA:** 5461

**IgA IgG:** 1032

**ACL-IgG ACL-IgM:** 4544

**Synovial fluid for crystal:** 205

**dsDNA:** 4398

**LKM-1:** 2318

**C3:** 2742

#### **Public/Patient awareness activities**

##### **Community service**

1. Medical Camp at Leh, Ladakh & Pratapgarh
2. Organized public awareness programs on arthritis at AIIMS
3. Organized public awareness program on SLE at AIIMS
4. Writing in print media to increase awareness about rheumatological disorders
5. Participating in TV and Radio programs on arthritis
6. Published public awareness booklet on Poses & Postures (musculoskeletal health for all)
7. Published public awareness booklet on air pollution & autoimmunity: Are they related?

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Uma Kumar** received National award (2020) for outstanding efforts in popularizing science and technology communication amongst masses using electronic medium on 28 February 2020 (National Science Day); awarded Atal Swasthya Bhushan Samman (2019) in recognition of her services for the society by Savron Foundation, India; received 'Founder President Dr MC Gupta' oration for the year 2019; Guest of honour in an event organized by CSIR-NISTAD, Delhi on the occasion of International Women's Day; National health coordinator for Health Research Conclave, 5th India International Science Festival (IISF) flagship event of Ministry of Health & Family Welfare, GOI, held in Kolkata from 5 to 8 November 2020; appointed member of Programme Review & Monitoring Advisory Committee (PRMAC) on Science Channel Programme under NCSTS, DST, GOI; appointed expert member IND committee by DCGI, GOI; Member of various selection committees and expert groups; chaired sessions in various meetings like International Lupus Meet Kolkata, 2020; External Examiner for DM Rheumatology; Invited expert Geriatric, nutrition and functional foods for prevention of chronic disease Brainstorming meeting by DBT, GOI.

**Dr Ranjan Gupta** received Shakuntala Amirchand Prize, 2018 by ICMR for the best published research work in the field of biomedical science including clinical research; received IUIS-FIMSA Travel Bursary to attend the IIS-IUIS-FIMSA Immunology Course at Jaipur.

## **VISITING SCIENTIST**

Professor (Dr) Georg Schett, Professor and Head of Department of Medicine Rheumatology and Immunology, Universitätsklinikum Erlangen FAU Erlangen-Nurnberg, Austria

## 9.39. Surgical Disciplines

### Professor and Head

Anurag Srivastava

### Professors

Sunil Chumber  
Sandeep Aggarwal

Rajinder Parshad  
Virinder Kumar Bansal

V Seenu (on assignment)  
Anita Dhar

### Additional Professor

Hemanga K. Bhattacharjee

### Associate Professors

Asuri Krishna  
Mohit Joshi

Piyush Ranjan  
Yashwant Singh Rathore  
Suhani

Manjunath Maruti Pol  
Kamal Kataria

### Assistant Professor

Om Prakash

## HIGHLIGHTS

The department of Surgical Disciplines is involved in Minimal Invasive, Thoracic, Vascular, Renal transplant, Breast, Endocrine, Gastrointestinal, Bariatric and general Surgery. We are running specialized Breast cancer, Bariatric and Renal Transplant clinics. Apart from this, the department has been running a Minimal invasive training program for basic and advanced Laparoscopic training. The department also provides short term training to many surgeons from nearby countries. The department has organized regular academic events with emphasis on imparting knowledge in focused areas of surgical armamentarium such as breast, minimally invasive, bariatric, thoracic surgery. These activities include CME, conferences and wet lab workshops. Some of the key academic programs organized by the department include the AIIMS Breast course, BARICON and Symposium on Thoracic surgery. A cadaveric workshop was also organized on lung transplant to familiarize our team with the practical aspects of lung harvest and transplant. Our department faculty has been actively participating in various academic activities including development of simulation-based teaching and skill modules for improving various undergraduate and post-graduate teaching programs. Our residents and faculty have been regularly presenting research work at various national and international fora and have received awards as well as appreciation for the same. The past year also saw visit by some Eminent international faculty who shared their experiences. The department has received third prize for poster and video presentation at Institute Day Celebration held on 25 September 2019. We have also been awarded the rolling trophy for conducting the best monthly meet of Delhi state chapter of Association of Surgeons of India during the annual conference of the society held in November 2019. The department has actively participated in public awareness activities for diseases such as breast cancer, obesity and now COVID 19.

## EDUCATION

1. Postgraduate Seminar weekly
2. MCh seminar weekly
3. Mortality and mortality discussions by Junior/Senior Resident once in a week in each unit
4. Lectures, Teaching Schedule in OPD/Ward for MBBS students
5. Internal Assessment from time to time conducted for Junior and MCh Residents and MBBS students
6. Lectures for Nursing students
7. Lectures for BSc OT technicians
8. **CCRs** presented by the Department:
  - Unit I: What keeps cool angry
  - Unit II: Once in a blue moon
  - Unit III: A mysterious facet of Peau d' orange: An unsolved riddle
  - Unit IV: A tale of multiple VT-cured by surgery
9. **CGRs** by the Department:

- Unit III: Surging ahead into new horizons: Our experience with minimal access thoracic and upper GI surgeries
- Unit IV: Evolution of Laparoscopic surgery in a single unit: A journey of 3 decades
10. (During the COVID 19 pandemic, departmental academic activities were conducted as webinars and virtual meetings)

#### **CMEs/Workshops/Symposia/National and International Conferences**

1. Laparoscopic cadaver training course for MCh resident at SET Facility, AIIMS, New Delhi
2. Hands on training for residents: Cadaveric multiorgan retrieval in CAST 2019, from SET Facility, AIIMS New Delhi
3. Operative Laparoscopy (5-day course) – 4 courses in April, May, July and August 2019
4. Laparoscopic Suturing
5. Hands on training for residents: Cadaveric multiorgan retravel and Endo-training session
6. Laparoscopic Suturing Skills (3-day course) – 1 course in April 2019
7. Laparoscopic Hernia Surgery (3-day course) – 2 courses in April and July 2019
8. AIIMS Breast course, April 2019, AIIMS, New Delhi
9. Abdominal wall closure technique workshop at SET facility, February 2020, AIIMS, New Delhi
10. Workshop on Art of colorectal anastomosis, September 2019, AIIMS, New Delhi
11. Pre-Conference Cadaver Workshop on General Thoracic Surgery, September 2019, SET Facility, AIIMS, New Delhi
12. Contemporary practices in surgery: Symposium on Thoracic surgery, September 2019, AIIMS, New Delhi
13. Workshop on Uniportal VATS, September 2019, AIIMS, New Delhi
14. Workshop on colorectal anastomosis, September 2019, AIIMS, New Delhi
15. AIIMS BARICON 2019 – 2nd International Conference on Bariatric & Metabolic Surgery, November 2019, AIIMS, New Delhi
16. 1st Cadaver Hands on Course in Bariatric Surgery
17. 2nd Cadaver Hands-On-Course in Bariatric Surgery as a Part of SELSICON 2019 at SET Facility, September 2019, at AIIMS, New Delhi
18. 3rd Cadaver Hands on Course in Bariatric Surgery as a Part of Pre-Conference Workshop for OSSICON 2020 - 18th National Conference of Obesity and Metabolic Surgery Society of India, February 2020; SET Facility, AIIMS, New Delhi
19. 4th IAGES (Indian Association of Gastrointestinal Endoscopic Surgeons) Fellowship Course in Bariatric & Metabolic Surgery (FALS), November 2019, AIIMS, New Delhi
20. Lung Transplant with Cadaver Workshop, March 2020, at SET Facility, AIIMS
21. Operative workshop on newer minimally invasive incisional and ventral hernia repairs, December 2019, AIIMS, New Delhi

#### **Lectures Delivered**

<b>Anurag Srivastava: 6</b>	<b>Sunil Chumber: 3</b>	<b>Rajinder Parshad: 19</b>
<b>Sandeep Aggarwal: 22</b>	<b>Virinder Kumar Bansal: 16</b>	<b>Anita Dhar: 3</b>
<b>Hemanga K. Bhattacharjee: 5</b>	<b>Asuri Krishna: 4</b>	<b>Piyush Ranjan: 12</b>
<b>Manjunath Maruti Pol: 1</b>	<b>Mohit Joshi: 14</b>	<b>Yashwant Rathore: 1</b>
<b>Kamal Kataria: 2</b>	<b>Suhani: 17</b>	<b>Om Prakash: 5</b>

**Oral Papers/Posters Presented: 61 (C. Palanivelu award for best PG paper; Best Podium Presentation; Best paper award; WCS Travel Scholarship; Travel Scholarship; Best Podium Presentation)**

#### **RESEARCH**

##### **Funded projects**

##### **Ongoing**

1. A Label Extension, Single Arm Multicentric Phase III Study to Assess the Efficacy and Safety of Approved Product Stempeucel® in Patients with Critical Limb Ischemia Due to Buerger's Disease, Anita Dhar, Stempeutics Pvt. Ltd., 5 years, 2018-2023, Rs. 7 lakhs

2. A Label Extension, Single Arm Multicentric Phase III Study to Assess the Efficacy and Safety of Approved Product Stenpeucel® in Patients with Critical Limb Ischemia Due to Atherosclerotic Peripheral Arterial Disease, Anita Dhar, Stempeutics Pvt. Ltd., 5 years, 2019-2024 years, Rs 3 lakhs
3. A Study of gut microbiome in patients with gall bladder carcinoma, Asuri Krishna, AIIMS, 2 years, 2019-2021, Rs. 10 lakhs
4. Complete estrogen Blockade in recalcitrant mastalgia: A randomized clinical trial, Suhani, AIIMS, 2 years, 2018-2020, Rs 4.99 lakhs
5. Long Term Outcome of Patients with Walled off Necrosis/Pseudocyst of Pancreas in terms of Recurrence of Acute Pancreatitis, Fluid Collection and Functional Consequences following Internal Drainage by Laparoscopic or Endoscopic method. Om Prakash, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
6. To check the feasibility of aortic balloon dilatation catheter for endovascular occlusion of aorta- A cadaveric study, Mohit Kumar Joshi, AIIMS, 1 year, 2019, Rs 0.75 lakhs

### **Completed**

1. To study the pattern of FOXP3, OX40, PD1, and TIM-3 among renal allograft patients and its correlation with risk of kidney injury, Manjunath Maruti Pol, AIIMS, 2 years, 2017-2019

### **Departmental projects**

#### **Ongoing**

1. A prospective randomized control study to compare antral resection versus antral preservation during Laparoscopic Sleeve Gastrectomy for Morbidly Obese
2. A prospective randomized trial comparing laparoscopic versus endoscopic drainage for walled off necrosis following acute pancreatitis
3. A prospective study to evaluate the restoration of abdominal wall dynamics in patients with incisional hernia following laparoscopic IPOM plus repair in comparison to healthy controls using surface EMG
4. A randomized control study to evaluate the use of oral metronomic chemotherapy versus conventional systemic chemotherapy, and to further conduct a randomized control trial on patients amenable to breast conservation surgery after chemotherapy
5. A Randomized control trial to compare the safety and outcome of trans-oral vestibular vs axillo-breast approach for endoscopic hemi-thyroidectomy in patients with benign thyroid swellings
6. A Randomized controlled trial to compare efficacy of complete decongestive therapy vs complete decongestive therapy and placement of hydrophobic silicone tube and look for their long term patency by ICG in upper limb lymphedema following ALND in breast cancer
7. A study of fluorescein spectrometry, indocyanine green imaging, Raman spectrometry and Doppler flowmetry analysis comparing malignant and benign lesions of breast.
8. A study to evaluate the predictors of outcome in patients with blunt liver trauma Prospective Observational study
9. Abdominal wall incisions: A Double Blinded Randomized Control Trial
10. Analysis of genes related to metabolic flexibility in subjects undergoing weight reduction surgery
11. Assessment of post cholecystectomy symptoms and quality of life evaluation: A prospective cohort study
12. Association of different modalities of treatment with expression of various subsets of T lymphocytes in patients with breast cancer and their clinical outcome
13. Biochemistry PhD thesis: Investigation of the involvement of plasma membrane ATP binding transporter A1 (ABCA1) mediated insulin resistance
14. Comparison between banded and Non- Banded Laparoscopic Sleeve Gastrectomy for Weight Loss in Obese subjects: A Randomized Controlled Trial
15. Comparison of Cost Effectiveness and Quality of Life in patients undergoing a level 1 vs. Complete Axillary Lymph Node Dissection for operable breast cancer: An Ambispective study
16. Comparison of Early Outcomes of Interrupted Double 'X' suture vs Continuous Near Far- Far Near Method for closure of hernia
17. Comparison of Early Outcomes of Interrupted Double 'X' suture vs Continuous Near Far- Far Near Method for closure of abdominal wall incisions: A Double Blinded Randomised Control Trial
18. Comparison of eTEP vs IPOM for Management of Primary and Incisional Hernia in Terms of Early Outcomes and Cost Effectiveness – A Randomized Controlled Trail.

19. Comparison of identification rate and cost effectiveness of Indocyanine green vs fluorescein for sentinel lymph node detection in ladies with operable breast cancer - A randomized controlled trial
20. Comparison of learning curve on Two-Dimensional (2D) endo-vision system, Ultra-High Definition (HD) (4K) endo-vision system and three-dimensional (3D) HD endo-vision system for standardized phantom tasks: An ex-vivo study
21. Comparison of Quality of Life and oncological outcomes of Skin Sparing Mastectomy with Autologous Fat Grafting versus Skin Sparing Mastectomy with silicone implant versus Breast Conservative Therapy among ladies with Early Breast Cancer: A Randomized comparison
22. Comparison of quality of life between patients undergoing endoscopic thyroidectomy and open thyroid surgery.
23. Decision analysis approach in management of non lactational mastitis
24. Development of aptamer-based assay for diagnosis of breast tuberculosis (TB breast)
25. Diagnostic study evaluation in patients presenting with sign and symptoms of abdominal and inguinoscrotal region
26. Effect of Yoga Therapy on Quality of Life in Patients Undergoing Laparoscopic Incisional and Ventral Hernia Repair- A Randomized Control Trial
27. Electrolyte and acid-base disturbances in renal transplant patients – A prospective observational study
28. Evaluation of Dual dye technique for sentinel lymph node biopsy in breast cancer: Two arm open label parallel design Non-inferiority Randomized controlled trial
29. Feasibility of enhanced recovery after surgery protocol in general thoracic surgery: Prospective cohort study
30. Follow up Study to Evaluate Correlation of Imaging and Operative findings with Clinical and Biochemical Outcome in Patients with Primary Hyperparathyroidism
31. Improving Pain Management following Laparoscopic Surgery: A Randomized Quality Improvement Study
32. Incidence of Barrett's Esophagus in Morbidly Obese Patients after Laparoscopic Sleeve Gastrectomy
33. Incidence of Postoperative Hypocalcemia after Indocyanine Green Fluorescence guided Vs Conventional assessment of Parathyroid Function following Total thyroidectomy- A Randomized Controlled Trial
34. Long Term outcome of patients with Benign Breast Diseases An ambispective Study
35. Mesh fixation with penetrating fixation device versus fibrin sealant during laparoscopic repair of ventral hernia: A double blind randomised control trial
36. Neoadjuvant Chemotherapy with Short Course Radiotherapy for Locally Advanced rectal cancer: A Pilot Study
37. Nipple discharge in women; Evaluation and Randomized trial comparing limited length ductal cone excision (1.5 cm) with 3 cm ductal cone excision in women presenting with non-bloody nipple discharge
38. Omega loop gastric bypass (mini gastric bypass) versus Roux-en-Y gastric bypass for resolution of type-II diabetes Mellitus in obese subjects: A Prospective Randomized controlled trial
39. Oncological outcomes of breast conservation surgery in patients with locally advanced breast cancer post neoadjuvant chemotherapy
40. Outcomes of laparoscopic sleeve gastrectomy with or without hiatal hernia repair in terms of resolution of symptoms of GERD
41. Outcomes of Minimal Access Thymectomy of patient with Thymoma
42. Prospective Open Label clinical trial for evaluating the feasibility, safety and efficacy of left gastric artery embolization for reduction of the weight in class I obesity
43. Prospective randomized control trial comparing angle of his accentuation v/s Toupet fundoplication as a anti reflux procedure in patients of achalasia cardia undergoing Heller's Cardiomyotomy
44. Randomized controlled study comparing stainless steel clip with silicone tube tip for localization of breast cancer after neoadjuvant chemotherapy within patients with breast cancer. A Non-inferiority study
45. Randomized Trial to Compare Effectiveness of Vacuum Suction Drainage Versus Needle Aspiration in Lactational Breast Abscess: Superiority Hypothesis Trail
46. Short term and long term outcomes following laparoscopic donor nephrectomy and open donor nephrectomy: An Ambispective comparative study
47. Standardized umbilical hygiene to reduce port site complications in laparoscopic cholecystectomy –A prospective randomized controlled study
48. Study effect of Bariatric Surgery induced weight loss on urinary incontinence
49. Study the significance of tumor infiltrating lymphocytes in breast cancer
50. Symptomatic outcomes in patients of asymptomatic gall stones after laparoscopic cholecystectomy

51. To assess the cost effectiveness of laparoscopic standardized laparoscopic mesh repair in ventral hernia
52. To assess the functional outcomes in patients undergoing standardized laparoscopic mesh repair in small and medium ventral midline hernias
53. To determine the best non-invasive marker or a combination of them correlate the most with liver biopsy in extent of fibrosis in morbidly obese patients with non-alcoholic fatty liver disease undergoing bariatric surgery
54. To determine the non-invasive investigations which correlate with liver biopsy in extent of fibrosis in morbidly obese patients undergoing bariatric surgery
55. To establish an algorithm for the management of axilla in patients of early operable breast cancer with clinically negative axilla
56. To evaluate the role of age adjusted Charlson comorbidity index scoring in predicting 30 day postoperative outcomes in patients undergoing surgery under general and regional anaesthesia
57. To study causes of cancellation among patients scheduled for elective operations
58. To study the complications of laparoscopic inguinal repair
59. To study the correlation between pre operative pain threshold measured using Quantitative Sensory Testing with post operative pain scores using Visual Analogue Score in patients with laparoscopic groin hernia repair - A case control study
60. To study the usefulness of pre-operative USG guided FNAC in avoiding radical surgery in patients with gallbladder wall thickness or polyp associated with gall stone disease
61. Use of Platelet rich plasma in management of diabetes with PAD
62. Validation of a careful clinical examination with venous Doppler studies in the management of patients presenting with varicose veins

### **Completed**

1. A randomized controlled trial to compare decongestive compression therapy (DCT), DCT with inj. BPG and hydrophobic silicone tube placed drainage in lymphedema of upper limb post breast cancer treatment
2. A study of gut microbiome in patients with gallbladder cancer
3. A study of physiological outcome and correlation with symptomatic outcome following laparoscopic Heller cardiomyotomy in primary Achalasia cardia
4. A study to evaluate the predictors of outcome in patients with blunt liver trauma Prospective Observational study
5. A Three Arm Randomized Controlled Study to Compare Sexual Functions Following Open Mesh Hernioplasty, Laparoscopic Totally Extra Peritoneal (TEP) and Trans Abdominal Pre-Peritoneal (TAPP) Repair of Groin Hernia
6. A Two Arm Parallel Design Superiority Randomised Trial Comparing Penicillin +Standard of Care Vs Standard of Care Alone in Achieving Complete Healing of Leg Ulcers in Patients with Chronic Venous Hypertension
7. Comparison of efficacy of Ormeloxifene and Tamoxifen in the treatment of cyclical mastalgia: A five-armed double-blinded randomised controlled trial
8. Comparison of mesotherapy (non operative) with surgery in management of superficial lipoma
9. Comparison of Oncologic and Functional Outcomes in Ladies with Breast Cancer Treated with Breast Conservation Compared to Those Treated with Mastectomy: An Ambispective Study
10. Comparison of three-dimensional (3D) endo-vision system versus ultra-high definition (HD) (4K) endo-vision system in minimally invasive surgical procedures-An open labelled randomized study
11. Comparison of Two-Dimensional (2D) endovision system, Ultra-High Definition (HD) (4K) endovision system and three-dimensional (3D) HD endovision system on standardized phantom tasks: An ex-vivo study
12. Dosimetric Study in children and young adults with Differentiated Thyroid Cancer undergoing Radioiodine (<sup>131</sup>I-Na) therapy
13. Ergonomic analysis of muscle activity during laparoscopy and influence of training
14. Evaluation of gamma synuclein as a serum bio-marker in breast cancer
15. Follow up Study to Evaluate Correlation of Imaging and Operative findings with Clinical and Biochemical Outcome in Patients with Primary Hyperparathyroidism
16. ICG fluorescence imaging for identifying and assessing the perfusion of parathyroid gland during thyroid surgery
17. Impact of Nutritional & Lifestyle Modifications in Subjects with BMI 25-29.9 vs 30-34.9 kg/m<sup>2</sup> and Impact of Bariatric Surgery in BMI > 35 kg/m<sup>2</sup>
18. Isolation, identification and characterization of cancer stem cells from different histopathological grades of colorectal carcinoma



19. Omega Loop Gastric Bypass versus Roux En Y Gastric Bypass for type 2 diabetes mellitus in obese subjects: A Randomized Controlled Trial
20. Pilot study on parathyroid dissection and preservation from thyroidectomy specimen and correlation with postoperative calcium and parathormone levels
21. Prospective randomized control trial comparing angle of his accentuation v/s Toupet fundoplication as a anti reflux procedure in patients of achalasia cardia undergoing Hellers Cardiomyotomy
22. Stent vs no stent in ureteroneocystostomy in live related renal transplant: A prospective randomized controlled trial
23. Study of Androgen Receptors mediated events and molecular heterogeneity in Breast Cancer
24. Study port placement and ergonomics in laparoscopic splenectomy
25. Study the impact of Bariatric Surgery induced weight loss on cardiovascular disease risk reduction in morbid obese patients
26. Study the impact of Laparoscopic Mini Gastric Bypass on weight loss and co morbidities in morbidly obese patients undergoing Bariatric Surgery
27. Surgical outcome in geriatric population
28. The effect of 1cm vs. 2 cm resection margin and oncoplastic closure of breast parenchymal defect on oncological and aesthetic outcome in ladies with early breast cancer: A 2x2 factorial randomized controlled trial
29. The feasibility and safety of the sub-xiphoid video assisted thymectomy for myasthenia gravis: A pilot study
30. Three Arm Randomized Comparison of Laparoscopic Peritoneal Dialysis Catheter Insertion with or Without Omentectomy Versus Conventional Open Peritoneal Dialysis Catheter Insertion in Chronic Kidney Disease Stage 5 Patients in Terms of Catheter Malfunction and Post-operative Complications
31. To define surgical outcome in patients who are converted to minimally invasive surgery to open procedure
32. Validation of different methods of physical examination for swelling in thyroid region and sonographic correlation - a cross- sectional study
33. Validation of different methods of physical examination of breast and axilla in patients with breast diseases: a cross-sectional study

## **Collaborative Projects**

### ***Ongoing***

1. A molecular and immunohistochemical study of human colorectal carcinomas to classify them according to the consensus molecular subtypes and to evaluate its prognostic and therapeutic relevance, Pathology
2. A prospective randomized controlled study to compare the effectiveness of moist occlusive honey dressing Vs. JatyadiTaila dressing in complete healing of dushtavrana (Chronic Wound) Department of Shalya Tantra, All India Institute of Ayurveda
3. Development of labyrinth based mechanical and fast isolation technique for identifying circulating tumour cells of colorectal carcinomas for metastatic evaluation, Pathology
4. Efficacy and safety of Semaglutide 2.4 mg once weekly in subjects with overweight and obesity, Endocrinology
5. Elucidating the role of differentially expressed genes in colorectal cancer stem cells, Biochemistry
6. Extracellular Matrix Remodelling in Obesity Induced Adipose Tissue Dysfunctions and Insulin Resistance, Biochemistry
7. Immunohistochemical and quantitative analysis of cytokeratin and cKIT in gastrointestinal and respiratory neuroendocrine tumours, Anatomy
8. Role of T-Regulatory cells (T-regs) in obesity and their clinical correlation in obesity associated inflammation in type 2 diabetic and chronic kidney disease (CKD), Nephrology
9. Study of Vascular Endothelial Growth Factor (VEGF) and Its Isoforms in Obesity Associated Adipose Tissue Dysfunctions, Biochemistry
10. Studying the role of Wnt non-canonical pathway in sustaining colorectal cancer stem cells (CSC) and evaluating its role in cancer stem cell metabolism, Biochemistry
11. The Modulation of Insulin resistance and HDL quality by adipose tissue ABCA1 and metabolic status, Biochemistry
12. To study the role of regulatory T cells in immune suppression in patient with colorectal cancer, Transplant Immunology and Immunogenetics
13. Unravelling the role of novel proteins in gastroenteropancreatic and respiratory neuroendocrine tumours, Anatomy

## **Completed**

1. Endoplasmic Reticulum (ER) Stress in Obesity Induced Adipose Tissue Dysfunction and Inflammation, Biochemistry

## **PUBLICATIONS**

**Journals: 31**

**Abstracts: 20**

**Chapters in Books: 5**

## **PATIENT CARE**

The department is providing regular services in multiple fields including multimodality treatment for breast cancer patients, minimally invasive surgery, renal transplantation, hepatobiliary and pancreatic surgery, thoracic and thoracoscopic surgery, endocrine surgery, metabolic and bariatric surgery, vascular surgery including surgery for vascular access in end stage renal disease patients and cancer surgery. Our department is actively involved in indoor and outdoor patient management. The department runs the following special clinic besides regular General surgery OPD:

- Bariatric Clinic
- Breast Cancer clinic
- Follow up Clinics
- Combined pulmonary surgery clinic
- Renal Transplant clinic

The department holds regular patient support group meetings for various core areas like bariatric surgery, breast cancer. It has been actively participating in spreading awareness of these diseases in community settings via health awareness camps, delivering talks on national FM radio, writing articles in magazines and attending public awareness seminars organized by various organizations. Faculty members have also provided their services at Leh as part of the Ashoka Mission.

During the COVID 19 pandemic, the department has been providing telephonic consultations of various patients and emergent patient care as per the institutional SOPs.

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

### **Department**

- Third prize for poster and video presentation at Institute Day Celebration held on 25 September 2019.
- Awarded the rolling trophy for conducting the best monthly meet of Delhi state chapter of Association of Surgeons of India for the year 2018 during the annual conference of the society held in November 2019.

**Professor Anurag Srivastava** delivered oration at SURGICON 2019 – Manekshaw Centre, Delhi Cantt., New Delhi, 25 November 2019; Elected as the President Elect of the Delhi state chapter of Association of Surgeons of India.

**Professor Sunil Chumber** provided services at Leh as part of the Ashoka Mission.

**Professor Rajinder Parshad** delivered SK Sen memorial oration – “Changing trend in the management of breast cancer - an experience of 3 decades” - SURGICON 2019 – Manekshaw Centre, Delhi Cantt., New Delhi, 24 November 2019.

**Professor Sandeep Aggarwal** was invited as an Expert from India for a Course on Pediatric Obesity-Global Perspectives at the Obesity Week organized by The Obesity Society (TOS) and American Society of Metabolic and Bariatric Surgery (ASMBS).

**Professor Virinder Kumar Bansal** is Member, Institute Body, JIPMER, Puducherry May 2019 till May 2024; Co-Chairman, Surgery Expert Group for Standard Treatment Workflow for ICMR and National Health Authority, Ayushman Bharat, New Delhi, 2019; Member, Apex Technical Committee for Renal Transplantation under NOTTO, January 2020; Visiting Professor, Department of Organ Transplant, University of Michigan, USA, 15-23 October 2019; President, Society of Endoscopic and Laparoscopic surgeons of India, (SELSI), January 2020; Vice President, Indian Hernia Society, 2019; Secretary, International College of Laparoscopic Surgeons 2019, 2020.

**Professor Anita Dhar** was awarded PhD from AIIMS, New Delhi; Medical Board member, Constituted at AIIMS Hon'ble National Consumer Disputes Redressal Commission, New Delhi in Consumer Case.

**Dr Hemanga K. Bhattacharjee** received the Smith International Surgical Scholarship 2020 awarded by the Department of Colorectal Surgery, Cleveland Clinic Florida, Florida, USA; Awarded American Society of Colon and Rectal Surgeons'

(ASCRS) International Career Development Scholarship Award for the year 2019; The European Society of Coloproctology awarded International observership award; Received the award of certificate of appreciation for contribution to various academic activities at the SET Facility by Director, AIIMS.

**Dr Asuri Krishna** was elected Secretary Indian Hernia Society 2020-2022.

**Dr Piyush Ranjan** was awarded by Meadows foundation; National core group of experts for strengthening Emergency and Trauma Care services; Felicitated by DGHS on National Doctors Day; Resource person for developing Emergency and trauma care curriculum guideline; Attended as expert - WHO Bi-Regional (South East Asian & Western Pacific Regions) Drowning Prevention Status Report- Multi Stakeholder Meeting.

**Dr Suhani** was awarded for contribution in surgical education: by Delhi state chapter, Association of Surgeon's of India at SURGICON 2019; Recipient of "Betadine Young Surgeon Award 2019" at ASICON 2019 at Bhubaneswar; Received certificate of Appreciation for contribution towards content development at SET facility AIIMS by Honorable Director, AIIMS, Delhi; Member of the Expert group for developing National Guidelines on Patient safety for National Patient Safety Implementation framework of India (2018-25).

#### **Residents:**

- Dr. Vitish Singla received Presidents Medal from Delhi State chapter of ASI for best research paper publication.
- Dr. Eshan Verma received BSI travel award to attend the World Congress of Surgery in Krakow, Poland 2019.
- Dr. Neha Gupta was awarded fellowship from EORTC (European Organization for research treatment & Cancer) to visit and present the research work in March 2020 in EBCC (European Breast Cancer Conference).
- Dr. Adarsh Pratap Singh received the Presidential young lymphologist award during the 27th ISL World Congress of Lymphology held at Argentina, Europe
- Dr. Kush Raj Lohani received clinical scholar award at San Antonio breast cancer symposium, USA

#### **VISITING SCIENTISTS**

- Dr. Ismal Jatoti, chief of the division of surgical oncology and endocrine surgery at UT Health San Antonio visited the department on 4 and 5 April 2019 during the AIIMS Breast course.
- Dr. Dieugini, thoracic surgeon from Shanghai Pulmonary Hospital visited the department as part of operative workshop on uniportal VATS in September 2019.
- Dr. Khalid Mohammad Ali Amer, consultant thoracic surgeon, South Hampton, UK visited the department for two weeks in September 2019 for mentorship of residents and faculty in the field of thoracic surgery.
- Dr Reinhard Bittner and Dr Li Binggen from Rottenburg, Germany (Hernia Center) visited as part of Operative workshop on newer minimally invasive incisional and ventral hernia repairs on 14 and 15 December 2019.

## 9.40. Transfusion Medicine

### Professor and Head

DK Sharma

### Chief Medical Officer, Incharge

Poonam Coshic

### Assistant Professors

Hem Ch. Pandey  
(Main Hospital)

Gopal Patidar  
(CN Centre)

Rahul Chaurasia  
(JPNATC)

Diptiranjan Rout (from September 2019)  
(NCI, Jhajjar)

### HIGHLIGHTS

The department is committed to patient care and blood safety and works tirelessly to achieve its aim of providing “Right blood to right patient at right time”. The blood bank services are provided 24x7 throughout the year.

The MD Transfusion Medicine was started in 2017 with first student joining in Jan. 2017. Presently we have eleven students pursuing MD. One student, the first student in the programme graduated in 2019.

Sincere efforts have been made to boost the voluntary blood donation and as a result we were able to make a record of collecting 3000 blood units on 27 February 2020 in the “Mega Blood Donation Event!”

Donor education, motivation and recruitment are being strengthened in rural areas also which have added to the voluntary donation.

Blood safety is an ongoing effort and all blood units collected in the three existing blood banks 100% are tested with NAT, in addition to serologic testing thereby providing an additional layer of safety. NAT laboratory of Main Blood Bank is the central testing facility for infectious markers for CNC blood bank and JPNATC blood bank.

Testing facility of Antibody screening using extended panel has been extended to emergency patients also. Antibody identification in patients having irregular antibodies is now being done regularly as a routine procedure.

Blood bank is supporting ABO incompatible kidney transplants by performing plasmapheresis procedures and antibody titer testing for the patients. A storage centre has been started at NCI Jhajjar which receives blood component support from Main Blood bank as its mother blood bank. The setting up of the “Blood Center” at National Cancer Institute, AIIMS, Jhajjar campus is under process.

### EDUCATION

1. CMET course on “Good Transfusion Practices” for nursing staff.
2. MBBS UG classes on Blood banking.
3. Regular training of OT technicians (B.Sc. OTT) in various laboratory techniques related to safe blood transfusion practices.
4. Regular orientation and training programmes for AIIMS nursing students.
5. MD Transfusion Medicine has been started and presently eleven students are pursuing this programme.
6. Teaching of Postgraduate students from Deptt. of Pathology, Lab. Medicine and Hematology is being done during their posting.
7. Training classes for Nursing officers posted at National Cancer Institute, AIIMS, Jhajjar campus regarding “Safe Bed-side transfusion practices”

### CMEs/Workshops/Symposia/National and International Conferences

1. CME on Blood Safety and Quality: Infectious Diseases, 5 April 2019, AIIMS, New Delhi

### Lectures delivered

Poonam Coshic: 1

Hem Chandra Pandey: 11

Gopal Kumar Patidar: 4

Rahul Chaurasia: 1

Oral papers/posters presented: 11

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. A randomized control trial for evaluation of effects of leukoreduced blood transfusion on infection risk in severely injured trauma patients, Rahul Chaurasia, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
2. A Randomized Control Trial for evaluation of Transfusion Related Immuno-modulation in patients with meningioma, Gopal Kumar Patidar, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
3. Diagnostic accuracy of using cell free fetal DNA isolated from mother's plasma for determination of fetal Rh D status during antenatal period as compared to determination of D status using serological tests in cord blood, Hem Chandra Pandey, AIIMS, 2 years, 2019-2021, Rs 10 lakhs

### **Departmental projects**

#### ***Ongoing***

1. A cost descriptive study in the treatment of Guillain-Barré Syndrome and Myasthenia Gravis patients at tertiary level hospital
2. A randomized control trial for evaluation of effects of leukoreduced blood transfusion on infection risk in severely injured trauma patients
3. Analysis of ABO antibody titer in healthy blood donors
4. Assessment of ABO antibody titre and coagulation factors level after mixing and dilution with normal saline of A and B blood group donor plasma
5. Clinical and serological characterization of autoimmune hemolytic anemia
6. Evaluation of effect of early use of Cryoprecipitate on blood components usage in severely bleeding trauma patients
7. Prospective observational study to assess the prevalence of platelet refractoriness and its reasons in patients receiving multiple platelet transfusions
8. Reappraisal of the concept of massive transfusion in trauma patients presenting with hemorrhagic shock
9. Retrospective analysis of differences in red blood cell usage across different gender, age groups and specialties in a tertiary care hospital

#### ***Completed***

1. In vitro and in vivo assessment of platelets stored in pas at 22°C and 4°C: a pilot study.
2. Prospective observational study of transfusion practices in severely injured trauma patients in emergency department at level 1 trauma center
3. Prospective observational study to analyze incidence of different errors in analytical stage of transfusion chain
4. The outcomes of leukoreduced and non-leukoreduced blood component transfusion in patients undergoing cardiac surgery
5. To study the clinical and neurophysiological outcomes after using platelet rich plasma in acute peripheral nerve injury repair, Plastic Surgery, JPNATC, AIIMS

### **Collaborative projects**

#### ***Ongoing***

1. H1-MR Spectroscopy based evaluation of metabolic abnormalities in anterior cingulate cortex, hippocampus and amygdala in treatment naïve patients with unipolar and bipolar depression and its relationship with peripheral glutaminase, Psychiatry
2. Probing the biology of Toll-like receptor and Interleukin-1 Receptor in peripheral blood mononuclear cells of healthy donors using novel small molecule inhibitor, Biotechnology
3. A randomized control trial for evaluation of effects of leukoreduced bloodtransfusion on infection risk in severely injured trauma patients, Critical and intensive Care, Laboratory Medicine, Emergency Medicine, Surgery, JPNATC and Anesthesiology, Pain Medicine and Critical Care, AIIMS
4. Evaluation of effect of early use of Cryoprecipitate on blood components usage in severely bleeding trauma

patients, Laboratory Medicine, Emergency Medicine, Surgery, JPNATC

5. Complement factor H (CFH)-related protein 1 (CFHR1) and its role in maintenance of immunological tolerance, Regional Center for Biotechnology, Faridabad

## **PUBLICATIONS**

**Journals: 3**

**Abstracts: 7**

## **PATIENT CARE**

The following facilities are available in the department

- Autologous blood donation
- Autologous platelet donation
- Voluntary blood donation camp facility
- Apheresis procedures (SDP, TPE, PBSC)
- Automated blood grouping and serology
- Automated infectious markers testing
- 100% blood component preparation
- Irregular antibody identification
- Antibody screening
- Antibody titers
- Leucodepleted blood/components
- Irradiation facility
- ID-NAT testing of all donated units of three blood banks of AIIMS
  - (a) Apheresis: SDAP collection, TPE, PBSC, LDL apheresis and granulocyte harvesting. Registry created of voluntary SDP donors to support hemato-oncology patients.
  - (b) Community services/camps etc.:
    - Main blood bank organized total 115 voluntary donation camps in Delhi NCR and collected over 11000 units.
    - Carrying out motivational and educative programme for donors in rural areas in association with CHC Ballabgarh.
    - Main blood bank became a mother blood bank of blood storage centre at NCI Jhajjar providing blood components for use of cancer patients.

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

Second Prize for poster on Institute day 2019; Award of excellence from State Blood Transfusion Council for voluntary donation work 14<sup>th</sup> June 2019; ICMR International Travel Grant To Dr Romesh Jain (SR); Creating a record for collecting highest number of blood units in a single day by an Institute during “Mega Blood Donation Event” on 27 February 2020.

**Dr Poonam Coshic** was Member SBTC; Member Blood Cell-NHM Division for finalizing guidelines of Blood storage Centres

**Dr Gopal Patidar** was member of reviewing and analysis of reports of donor reaction submitted a Donor-Vigil software under National Blood Donor Hemovigilance Programme, India.



## 9.41. Transplant Immunology and Immunogenetics

	<b>Professor and Head</b> DK Mitra	
	<b>Assistant Professor</b>	
Uma Kanga		Rakesh Kumar Deepak
	<b>Scientist II</b>	
Sunil Kumar		Lata Kumari
	<b>Scientist I</b>	
Sanjeev Goswami		Sonia Verma

### EDUCATION

During the year 2019-20, our department trained 27 students/doctors from various hospitals and institutions from India and abroad. These candidates received training on laboratory techniques in Transplant Immunology, Immunogenetics-HLA testing, post-transplant monitoring and other immunological investigations for immune deficiency.

**Short-term training-AIIMS (1-2 weeks):** The Department provided short term training to the Junior residents from Pathology (5), Laboratory Medicine (3) and Senior Residents (DM Students) of Nephrology (1), Hematology (6), Biochemistry (3), Medical Oncology (3), Transfusion Medicine (3), Pediatrics (2) from AIIMS.

**Long-term training-National (6 months):** One candidate received Long-term training.

### Continuing Medical Education (CME)

During the year, the faculty and scientists of the department participated and delivered several lectures in National and International conferences. Our department regularly provides training on various cell culture assays, including flowcytometry based assays to students and visiting trainees. Our department coordinates a national level Quality Control exercise for DNA based typing of HLA genes for assessment of Quality of testing by other HLA laboratories in India. The Faculty also delivered special lectures in departments of Biotechnology and Pathology, AIIMS as part of the academic curriculum of these departments. Faculty/Scientists delivered lectures to MD/DM residents from Pediatrics, Hematology, Anatomy, Nephrology, Biochemistry, Medical Oncology, Pathology and Laboratory Medicine. Several lectures on Transplant Immunology were also delivered to Nursing students of the institute.

### Lectures delivered

**Uma Kanga: 10                      Rakesh Kumar Deepak: 1                      Lata Kumari: 1**  
**Sanjeev Goswami: 1**

### RESEARCH

#### Funded projects

#### Ongoing

1. Development of a Remote Healthcare Delivery System: Early Diagnosis, Therapy, follow-up and Preventive Care for NCDs (cardio-pulmonary), DK Mitra, IMPRINT (HRD+ICMR), 3 years, 2017-20, Rs 64.85 lakhs
2. Evaluation of donor specific antibodies (DSA), HLA typing and major histocompatibility complex (MHC) in the outcome of post heart transplant rejection status: Clinicopathological study, Rakesh Deepak, AIIMS, 2 years, 2019-21, Rs 10 lakhs
3. Functionalization and Validation of a Cloud based Integrated Medical Device (IMD): Delivery of Specialized diagnostic, therapeutic & follow up care to the remote underserved population, DK Mitra, Azure Software, 1 year, 2019-20, Rs 16.44 lakhs
4. Genome wide transcription analyses in DR Mtb: Identification and Immunomodulation of novel targets, DK Mitra, DBT, 3 years, 2018-21, Rs 148 lakhs



5. Genomic analysis of HLA and non-HLA genes and humoral profile of Type 1 Diabetes Mellitus in the population of North East India, Uma Kanga, DBT (BCIL), 3 years, 2017-20, Rs 127.8 lakhs
6. Identification of novel biomarkers for prediction of Renal Allograft Rejection, Uma Kanga, AIIMS-THSTI, 1 year, 2019-2020, Rs 5 lakhs
7. Immunogenetic correlates of Dengue infection: Analysis of HLA and KIR genes in North Indian Population, Uma Kanga, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
8. Impact of host T cell response on expression and function of drug efflux pumps: Relevance to drug resistant TB, DK Mitra, ICMR, 42 months, 2014-18, Rs 78.5 lakhs
9. In Silico Trial for Tuberculosis Vaccine Development (STriTuVaD), European Commission Horizon 2020, DK Mitra, DBT, 5 years, 2018-23, Rs 500 lakhs
10. Islet-antibody negative type 1 diabetes (type 1B) in north Indians: clinical implications and pathogenesis, Uma Kanga, ICMR, 3 years, 2019-2022, Rs 56 lakhs
11. Multivalent leishmania vaccine development, DK Mitra, BIRAC DBT, 3 years, 2015-19, Rs 397.57 lakhs
12. NKT cell subsets: Impact on Mycobacterium tuberculosis specific effectors T cell responses, DK Mitra, ICMR, 3 years, 2017-20, Rs 70.26 lakhs
13. Studies to delineate the Immunoregulatory role of PD-L1/PD-1 pathway and exploring it as a potential tool for vaccination strategies against Visceral Leishmaniasis, DK Mitra, DST, 3 years, 2018-21, Rs 70 lakhs
14. To study the relevance of Treg cells and immune suppressive milieu in patients with gall bladder cancer, Lata Kumari, AIIMS, 2 years, 2019-21, Rs 10 lakhs

#### **Completed**

1. Killer Immunoglobulin Receptor-Human Leukocyte Antigen (KIR-HLA) interactions: Significance in Hematopoietic Stem Cell Transplantation, Uma Kanga, AIIMS, 2 years, 2017-19, Rs 4 lakhs
2. Inphase polymorphism analysis of the HLA minigenome and its application of Next Generation Sequencing (Japanese Society for Promotion of Science), Uma Kanga, DST-JSPS Indo-Japanese, 2 years, 2016-18, Rs 6.8 lakhs

#### **Departmental projects**

##### **Ongoing**

1. Chronic Atherosclerosis Disease: Integrated analysis of stage-specific alterations in gene expression and miRNA profile of atherosclerotic plaques and correlation with plasma-derived extracellular vesicles in circulation
2. Clinical relevance of non-classical HLA, MICA and NKG2 receptors in HSCT
3. Development of cost effective inhouse assays for HLA diagnostic services
4. Establishment of heterogeneity in genetic markers: potential use in transplant monitoring
5. Genomic diversity of HLA genes in Kashmiri population – advantage of NGS technology
6. Identification of microRNA signature linked to AA and response to immunosuppressive therapy
7. Identification of Signatures for predicting rejection in Renal Transplantation
8. Immune reconstitution following haematopoietic stem cell transplantation.
9. Impact of checkpoint inhibitors on suppressed state of immunity in tuberculosis
10. NKT Cells in Tuberculosis: Impact on Protective T cell response.
11. Phenotypic and functional characterization of various T cell subsets in sarcoidosis.

#### **Collaborative projects**

1. Development of a Remote Healthcare Delivery System: Early Diagnosis, Therapy, follow-up and Preventive Care for NCDs (cardio-pulmonary), IIT, Kharagpur, IIT-Mumbai
2. Evaluation of novel forensic exhibits and informativity of Y-STR markers in chimerism situation, Forensic Medicine
3. Functionalization and Validation of a Cloud based Integrated Medical Device (IMD): Delivery of Specialized diagnostic, therapeutic & follow up care to the remote underserved population, Azure Software
4. Genetic Propensity to Nasopharyngeal Carcinoma in Nagas from North East India, Naga Hospital and Authority, Nagaland
5. Genomic analysis of HLA and Non-HLA genes and humoral profile of Type 1 Diabetes Mellitus in the population of North East India, Dept of Anatomy, Tezpur Medical College
6. Multivalent Leishmania vaccine development, Zydus Cadila

7. Potential role of HLA-G mediated immunomodulation by tissue specific human mesenchymal stem cell (hMSCs), Stem Cell Facility
8. The Role of HLA antigens in primary IgAN in Indian patients: a case control study, Nephrology

## PUBLICATIONS

**Journals: 18**

**Abstracts: 3**

## PATIENT CARE

### Renal Transplantation

Renal Transplant Service	Recipients	Donors	Total
Live Related	678	673	1351
Cadaver Transplantation (Kidney)	63	9	72
Cross Match Test - CDC (Serology)	1292		
Cross Match Test – (Flowcytometry)	411		
Luminex PRA	629		
Luminex (DSA monitoring)	531		

### Bone Marrow/Hematopoietic Stem Cell Transplantation

Hematology, AIIMS & Other Referrals

Diagnosis	Recipients	Donor	Total
Aplastic Anaemia	207	524	731
Acute Leukaemia (AML+ALL)	93	204	297
Thalassaemia	37	85	122
Chronic Leukaemia (CML+JMML)	34	86	120
Others	61	128	189
<b>Total</b>	<b>432</b>	<b>1027</b>	<b>1459</b>

S.No.	Diagnosis	No. of Tests done
<b>A</b>	<b>Low Resolution HLA Typing</b> (PCR-SSP or PCR-SSO Luminex based)	
1	HLA-A locus	1579
2	HLA-B locus	1579
3	HLA-C locus	47
3	HLA-DRB1 locus	451
4	HLA-DRB3/4/5 loci	101
<b>B</b>	<b>High Resolution HLA Typing</b> (Sequence Based Typing (SBT)/ Next Generation Sequencing (NGS) /-SSO Luminex)	
5	HLA-A locus	76
6	HLA-B locus	76

7	HLA-C locus	77
8	HLA-DRB1	81
9	HLA-DQB1	77
10	HLA-DQA1	76
<b>C</b>	<b>Donor Specific Antibody (DSA) Monitoring</b> Luminex based assays	
11	HLA class I	29
12	HLA class II	29
<b>D</b>	<b>Chimerism studies in BMT</b>	
13	Post HSCT recipients	24
14	Pre HSCT recipients	24
15	HSCT Donors	24
	<b>TOTAL TESTS</b>	<b>4350</b>
<b>E</b>	<b>Unrelated Donor searches for BMT</b> *During the year requests received by 'Asian Indian Donor Marrow Registry' for HLA matched donors	35*

## II. Disease Association HLA Screening tests

	Diseases	HLA test	No of tests
16	Ankylosing Spondylitis and other Spondyloarthropathies	HLA- B-27	863
17	Coeliac Disease	HLA-DQA1	64
18	Coeliac Disease	HLA-DQB1	64
19	Narcolepsy/Cataplexy	HLA-DQB1	12
20	Behcets' Disease	HLA-B*51	52
21	Drug hypersensitivity screening	HLA-B*57:01, B*15:02	4
	<b>Total</b>		<b>1059</b>

	All Patient care services	No. of tests
	HSCT related & Quality Assurance Program	4350
	Disease association screening	1059
	<b>Total</b>	<b>5409</b>

### Primary Immunodiagnosics

Free of cost service provided for Primary & Secondary Immunodeficiency Diseases

Total No. of Tests (2019-20)			
S. No.	Diagnosis	Markers/Assays	No. of Tests
1	T Cell Frequency	CD3 <sup>+</sup> /CD4 <sup>+</sup> /CD8 <sup>+</sup>	1046

2	B Cell Frequency	CD19 <sup>+</sup> /CD20 <sup>+</sup>	1170
3	NK Cell Frequency	CD3 <sup>-</sup> /CD16 <sup>+</sup> /CD56 <sup>+</sup>	647
4	NK Cell Activity	CD3 <sup>-</sup> /CD56 <sup>dim</sup> /Perforin <sup>+</sup>	315
5	NK Cell Activity	sIL2R	24
6	ALPS	CD3 <sup>+</sup> /CD4 <sup>+</sup> /8 <sup>-</sup> /TCR $\alpha\beta$ <sup>+</sup>	104
7	Leukocytes Adhesion Deficiency	CD18 <sup>+</sup> /CD11a <sup>+</sup> /CD11b <sup>+</sup>	355
8	Chronic Granulomatous Disease	DHR	1012
9	Hyper IgM	CD3 <sup>+</sup> /CD8 <sup>-</sup> /CD69 <sup>+</sup> /CD154 <sup>+</sup>	37
10	T cell function (IFN-gamma)	CD3 <sup>+</sup> /CD4 <sup>+</sup> /IFN- $\gamma$ <sup>+</sup> /IL-2 <sup>+</sup>	136
11	Class Switch Memory	CD19 <sup>+</sup> /CD27 <sup>+</sup> /IgD <sup>-</sup>	48
12	Degranulation Assay	CD3 <sup>-</sup> /CD56 <sup>dim</sup> /CD107a <sup>+</sup>	7
13	IL-12 Assay	CD14 <sup>+</sup> /IL-12 <sup>+</sup>	15
14	T cell Perforin	CD3 <sup>+</sup> /CD8 <sup>+</sup> /Perforin <sup>+</sup>	4
15	Memory T cell	CD3 <sup>+</sup> /CD45RA <sup>+</sup> /CD45RO <sup>+</sup>	12
16	Serum IgA		315
17	Serum IgM		316
18	Serum IgG		323
19	Serum IgE		62
<b>Total</b>			<b>5948</b>

#### **Bone Marrow Transplantation: IRCH, AIIMS Referrals**

<b>Diagnosis</b>	<b>Recipients</b>
AML	191
CML	55
ALL	97
Others	127
<b>Total</b>	<b>470</b>
Donors	443
<b>Total</b>	<b>913</b>

<b>S. No.</b>	<b>Diagnosis</b>	<b>No. of tests done</b>
<b>A</b>	<b>Low Resolution HLA Typing (PCR-SSP)</b>	
1	HLA-A locus	804
2	HLA-B locus	720
3	HLA-DRB1 locus	219
	<b>Total</b>	<b>1743</b>

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Dr Uma Kanga** continued as a member of the General Assembly of the International Union of Immunological Societies (IUIS) (November 2016- November 2019); as Asia Pacific Region Councillor of the Asia Pacific Histocompatibility and Immunogenetics Association (APHA) (2018 onwards- continuing); as Treasurer of Indian Immunology Society (IIS) - (2018-2020).

## 9.42. Urology

### Professor and Head

Amlesh Seth

### Professor

Rajeev Kumar

### Additional Professor

Prabhjot Singh

### Associate Professors

Rishi Nayyar

Brusabhanu Nayak

### Assistant Professors

Sanjay Kumar

Siddharth Jain

Manoj Kumar

### HIGHLIGHTS

- Dr Nikhil Vasdev, Consultant Urological Surgeon, Hertfordshire and Bedfordshire Urological Cancer Centre, Department of Urology, Lister Hospital (East and North Herts NHS Trust), Watford General Hospital (West Herts NHS Trust), UK visited the department and took a ward round and delivered a lecture on 'Status of robotic radical cystectomy' on 2 January 2020.
- The 4th Sarinder Man Singh Memorial Oration in Urology was delivered by Dr Ashok K Hemal, Director, Robotic Urologic Surgery and Minimally Invasive Surgery, Wake Forest Baptist Health Medical Center, Winston Salem, North Carolina, USA on 27 January 2020 at AIIMS, New Delhi.
- The department shifted OPD and Minor OT to 4th floor, A wing in new RAK OPD building w.e.f. 16 March 2020.



**Picture: Dr Nikhil Vasdev's visit in the department.**

### EDUCATION

The faculty of the department participated in and delivered lectures in continuing medical education programs, symposia, national and International conferences during the year. The senior faculty members are examiners for NBE and MCh Urology in various universities. The faculty of the department took active part in restructuring and reframing the curriculum for MCh and DNB training courses in Urology of other upcoming institutes. The faculty of the department is actively engaged in development of various Indian guidelines under aegis of Urological Society of India.

The Department delivered lectures for undergraduate and nursing students (BSc and MSc). The faculty is actively involved in curriculum revision for undergraduates. The department trains 11 postgraduates for the degree of MCh in

Urology over a 3-year period. Post MCh Fellowship training is available for sub-specialties including minimally invasive urology, uro-oncology, reconstructive urology and urogynecology. Two candidates successfully completed the 'minimally invasive urology' fellowship course, becoming the first set of fellows to pass out from the department in December 2019. The renal transplant program in the department has got held back due to operational reasons.

Faculty of the department have actively taken part in development of various modules of skill sets for students, which is a step forward towards e-learning. Faculty also took lectures for the SET facility towards their faculty development program. Training of interns and MBBS students for urethral catheterization: male and female on mannequin pelvis was done in the SET Facility and has been incorporated into their regular curriculum. Training on Skill Simulators (URO/PERC Mentor) is a part of regular curriculum of residents training.

The department also had two trainees from Afghanistan for short term observership.

#### **CMEs/Workshops/Symposia/National and International Conferences**

1. Monthly meeting of the Delhi Urological Society, 22nd February 2020, AIIMS

#### **Lectures delivered**

**Amlsh Seth: 24**

**Rajeev Kumar: 28**

**Prabhjot Singh: 14**

**Rishi Nayyar: 14**

**Brusabhanu Nayak: 7**

**Sanjay Kumar: 1**

**Oral papers/posters presented: 35 (Best Free Poster session 6 at NZUSICON 2019 – 2nd prize; Best Research Paper- Marudhara Jodhpur Prize session at NZUSICON 2019 – 1st prize; Best Free Poster session 3 at NZUSICON 2019 – 1st prize; Best Poster in CMC Ludhiana Poster Session at NZUSICON 2019 – 1st prize; Best Free Poster session 6 at NZUSICON 2019 – 1st prize; Best moderated poster at 39th SIU Congress 2019, Athens – 1st prize)**

#### **RESEARCH**

##### **Funded projects**

##### ***Ongoing***

1. Clinical value of patient-specific three-dimensional printing of kidney before partial nephrectomy: Quantitative and qualitative assessments, Rishi Nayyar, AIIMS, 2 years, 2018-20, Rs 5 lakhs
2. Clinico-genetic prognostic signatures for development of metastatic Castration Resistant Prostate Cancer, Prabhjot Singh, ICMR, 3 year, 2019-2022, Rs 100 lakhs
3. Environmental exposure of heavy metals, toxic elements and its impact on renal cell carcinoma induction and progression, Brusabhanu Nayak, ICMR, 3 years, 2019-2022, Rs 43.05 lakhs
4. Identification of Potential Molecular markers (PRL3 phosphatase, CAV2, LAMA4 and GRP78) in Renal Cell Carcinoma (RCC): Predicting tumour behaviour, Manoj Kumar, AIIMS, 2 years, 2019-2021, Rs 5 lakhs per year
5. The Role of 68Ga-PSMA-PET/CT Scan as a Staging Modality in Prostate Cancer, Sanjay Kumar, ICMR, 3 years, 2019-2022, Rs 48.85 lakhs
6. To evaluate the role of seminal miRNA's and inflammatory markers in cases of suspected prostate cancer and correlate with mpMRI and biopsy findings, Siddharth Jain, AIIMS, 1 year, 2019-2020, Rs 5 lakhs

##### ***Completed***

1. A multicenter, prospective, longitudinal registry of patients with prostate cancer in Asia, Amlsh Seth/Prabhjot Singh, Jansen, 3 years, 2016-2019, Rs 14 lakhs
2. Human papillomavirus status in penile carcinoma in Indian patients: Incidence, type distribution and correlation with Clinico-pathological staging, Prabhjot Singh, AIIMS, 3 year, 2016-2019, Rs 9.5 lakhs
3. Identification of Glucose related protein 78 (GRP78) as a biomarker for tumor behavior in patients of renal cell carcinoma (RCC), Manoj Kumar, AIIMS, 2 years, 2017-2019, Rs 10 lakhs
4. The prognostic role of circulating tumor cells (CTC) & CXCR1 expression in tumor tissue in patients with metastatic clear cell RCC: A prospective observational longitudinal cohort study, Brusabhanu Nayak, AIIMS, 2 years, 2018-2020, Rs 8.5 lakhs

##### **Departmental projects**

##### ***Ongoing***

1. Evaluation of seminal biomarkers for the diagnosis of obstruction as the cause of azoospermia in infertile men
2. Long-term outcomes of RARP

3. Long-term sexual and incontinence outcomes in patients undergoing VVF repair
4. Prospective study to evaluate the etiology of Voiding Lower tract symptoms in young male patients
5. Radiological anthropometric assessment of various bolster positions for PCNL
6. Randomized controlled trial to compare standard Mitomycin, HIVEC and BCG for intermediate risk bladder cancer
7. Role of mp MRI using VIRAD (Version 1) in predicting the stage and grade of disease in carcinoma urinary bladder
8. Role of redo/extended medical expulsive therapy in patients of ureteric calculus
9. Role of urethral povidone-iodine instillation before catheterization in routine urological surgery
10. Unilateral versus bilateral vasoepididymal anastomosis: prospective randomized trial

#### **Completed**

1. Clinicopathological profile of renal tumors in pediatric, adolescent and young adult population
2. Cold cup versus loop biopsy for restaging of cancer bladder during TURBT
3. Comparison of electrocautery versus ultrasonic shears in laparoscopic nephrectomy
4. Does intra-urethral flora have a role in post-procedural incidence of urinary tract infection in healthy males undergoing endourological procedure—a clinical study

#### **Collaborative projects**

##### **Ongoing**

1. A prospective randomized control trial to compare the efficacy of darifenacin versus mirabegron for treatment of overactive bladder, Obstetrics and Gynaecology
2. Characterization of Renal Cell Carcinoma with Dual Energy Computed Tomography and Multiparametric Magnetic Resonance Imaging and Correlation with Histopathology, Radiology
3. Clinico-microbiological profile and outcome of patients with Urosepsis, Microbiology
4. Evaluation of incontinence in patients undergoing bariatric surgery, Surgery
5. Hemodynamic profile in the perioperative period in patients undergoing pheochromocytoma and paraganglioma surgery with and without low dose diltiazem infusion, Anaesthesiology
6. Incidence of various urogynecological problems in post-partum patients and its relation to the mode of delivery, Obstetrics and Gynaecology
7. In-vitro urinary and serum NMR based metabolomics in prostate cancer, NMR
8. Molecular profiling and phenotype-genotype correlation of patients with pheochromocytoma/paraganglioma: Deciphering implications in management and prognostication, Pathology
9. Preoperative intravascular volume status measured by inferior vena cava collapsibility index in patients with Pheochromocytoma and paraganglioma undergoing surgical tumor removal: a prospective observational cohort study, Anaesthesia
10. Role of Gene Xpert urine in GUTB patients, Medicine
11. Role of In-bore MR guided Biopsy in detection of Prostate Cancer, NMR
12. Study of Association of Methylenetetrahydrofolate Reductase (MTHFR) Polymorphisms in Infertile Men, Anatomy
13. Telomere status and DNA repair mechanisms in idiopathic male infertility, Anatomy
14. Ultrasound Guided Erector Spinae Plane Block for Postoperative Analgesia in Patients undergoing Percutaneous Nephrolithotomy – A double-blinded, randomized controlled trial, Anesthesia

##### **Completed**

1. Comparison of 18f-fluoromethylcholine and 68ga-PSMA PET/CT in restaging of patients with adenocarcinoma prostate, Nuclear Medicine
2. Comparison of 68Ga-PSMA PET/CT and 18F-NaF PET/CT for detection of bone metastases in high risk prostate cancer patients, Nuclear Medicine
3. Comparison of urodynamic study and vaginal pessary test to unmask occult SUI in patients undergoing vaginal surgery for uterine prolapse, Obstetrics and Gynaecology
4. Use of PET-CT with Gallium-68 Labeled Prostate Specific Membrane Antigen in the Diagnosis and Follow-up of Patients with Prostate Cancer, Nuclear Medicine

#### **PUBLICATIONS**

**Journals: 27**

**Abstracts: 14**

**Chapters in Books: 6**



**PATIENT CARE****Main Hospital OPD**

New cases: 14282 Old cases: 41284

**BRAIRCH Uro-malignancy clinic**

New cases: 24 Old Cases: 3090

**Andrology and Infertility Clinic**

New cases: 825 Old cases: 1125

**Admissions**

Long Admissions: 1622 Short Admission: 1038

Discharges: 2449

**Main OT Surgical Procedures: 2127****Open surgery: 447**

Radical cystectomy	33	Radical or cytoreductive nephrectomy	39+5
Simple nephrectomy	15	Radical nephrectomy with IVC thrombectomy	5
Salvage cystectomy	1	Radical Nephroureterectomy	8
Partial cystectomy	1	Radical cystectomy with nephroureterectomy	3
End To End Urethroplasty	17	Partial nephrectomy	14
Anterior lay open	4	RPLND	5
Augmentation Cystoplasty	5	Graft urethroplasty	22
Adrenalectomy	2	Second stage closure	5
Paraganglioma excision	1	Pyeloplasty	7
Ureteric Reimplant	16	Boari flap	2
VVF repair	23	Total penectomy	2
Partial Penectomy	14	Orchidopexy/orchiectomy (undescended testis)	3
Hypospadias repair	4	AUS implantation/Penile prosthesis	6
Cystolithotomy	2	TVT/TOT	2
Perineal urethrostomy	6	Ilioinguinal lymph node dissection	10
High Inguinal Orchiectomy	14	Circumcision	33
Simple orchidectomy	64	Others	54

**Endourology: 1379**

<b>Upper tract: 410</b>		<b>Lower tract : 969</b>					
PCNL	191	TURP/TUIP/TUEB	89	CLT	32	DJS	292
URS	154	TURBT	282	PCCLT	1	DJR	44
RIRS	56	TUR fulguration	23	HOLEP	3	OIU/BNI/ Endodilatation	30
PCNUL	6	TURED	1	HOLCT	0	Deflux injection	1
Endopyelotomy	3	Clot evacuation	0	PVP	4	Laser welding	0
		Endoevaluation	54	Ureterocele incision	2	Others	111

**Laparoscopic: 166**

Radical nephrectomy	36	Partial nephrectomy	4
Simple nephrectomy	57	Adrenalectomy	19
Retroperitoneoscopic nephrectomy/nephroureterectomy	10	Radical Nephroureterectomy	8
Pyeloplasty	14	Ureterolithotomy	8
Pyelolithotomy	3	Paraganglioma excision	2
Simple nephroureterectomy	2	Others	3

**Robotic: 109**

Radical prostatectomy	34	Pyeloplasty	35	Others	2
Partial nephrectomy	37	Simple prostatectomy	1		

**Microsurgery: 26**

VEA	15	VVA	1	MVL	6	Scrotal exploration	4
-----	----	-----	---	-----	---	---------------------	---

**Minor OT: 14424**

Endoscopic	3138
Open	1
Minor cases	4811
Uroflowmetry	6111
Urodynamic Study	363

**ESWL: 1042**

New cases	316	Old cases	726
-----------	-----	-----------	-----

**Ultrasound procedures: 225**

Prostate TRUS biopsy	149	SPC	3
MRI- TRUS Fusion biopsy	44	PCN	5
In Bore biopsy	18	USG	6

**Community services/camps**

1. Several health talk shows on Doordarshan (Amlesh Seth)
2. Participated in Health camp at Naudera, Pratapgarh, UP, 7 December 2019 (Prabhjot Singh)
3. Good evening India-Health talk on Urological diseases: prevention and general treatment measures, DD National, 2 May 2019 (Rishi Nayyar)
4. Participated in medical camp at Leh, Ladakh, 30 September to 4 October 2019 (Brusabhanu Nayak)

**AWARDS, HONOURS AND SIGNIFICANT EVENTS****Residents**

- 'USI Olympus Travel Fellowship Award' 2020, for Harshit Garg from USI
- 'DUSCON Achiever's Award' 2019, for Rohit Dadhwal and Harshit Garg from NZUSI
- 'SIU Resident Scholarship 2019' for Dr Harshit Garg from SIU

**Professor Amlesh Seth** is Executive council member—World Uro-Oncology forum; President-North Zone Chapter Urology Society of India; Chairman—Committee of ICMR for Standard Treatment Workflows in Urology; Chairman- Urology Expert Group for consultation on Health Benefit Packages with NHA under PM JAY; Member- Subject Expert Committee on Urology and Reproduction under DCGI; Interviewed by Rajya Sabha TV for their special series called “Eureka” for encouraging young students in the field of science, technology and research; Invited Lecturer- SIU at Athens Greece, October 2019; Invited Lecturer- EAU at Amsterdam, Netherlands, March 2020.

**Professor Rajeev Kumar** participated in PinnamaneniVenkateswara Rao Oration, Urological Society of India (2020), SIU Lecture, USANZ Annual Scientific Meeting, April 2019, Brisbane, Australia; is Faculty for workshops on Scientific medical writing: (a) Scientific medical writing: Pre-conference workshop, IPHACON, AIIMS New Delhi, 28 February 2020 and (b) Workshop on Peer Review, Indian Pedodontics Society, AIIMS, New Delhi: 19 May, 2019. He is also Associate Dean (Academics), AIIMS, New Delhi; Co-Chair Scientific Committee and Member, Board of Directors, *Société Internationale d’Urologie*; Chairman Scientific Committee and Co-opt executive member, *Urological Association of Asia*; Chief editor, *Indian Journal of Urology*; Associate editor, *National Medical Journal of India*; International consulting editor, *Journal of Urology*; Editorial board member, *Indian Journal of Medical Research*; Editorial board member, *Journal of Endourology*; Executive member, *British Journal of Urology International*; Associate editor, *International Journal of Urology*; Editorial board member, *Investigative and Clinical Urology*; Editorial board member, *Asian Journal of Urology*; Secretary, *World Association of Medical Editors (WAME)*; Honorary secretary, *Indian Association of Medical Journal Editors*

**Dr Prabhjot Singh** was awarded Achiever’s award 2019 from Delhi Urological Society, December 2019; Panel member as subject expert (Urology) for development of modules for diagnosis and management of extra-pulmonary TB; Certificate of appreciation for academic contributions to the SET facility, at AIIMS, New Delhi, Jan 2020

**Dr Rishi Nayyar** is certified as ‘Robotic console surgeon’ by Intuitive surgical, USA; Best moderated e-poster (MP02: Basic science/Infections) at 39th Congress of SIU at Athens, Greece, October 2019; Panel member as subject expert (Urology) for development of modules for diagnosis and management of extra-pulmonary TB; First description of ‘Nayyar’s Smiley bladder sign and Stagnate in bladder’, November 2019; First description of ‘Nayyar’s tubed Bladder flap repair’, December 2019; First retroperitoneoscopic partial nephrectomy at AIIMS, New Delhi ; First robotic retroperitoneoscopic partial nephrectomy at AIIMS, New Delhi; Achiever’s award 2019 from Delhi Urological Society, December 2019; Certificate of appreciation for academic contributions to the SET facility, at AIIMS, New Delhi, January 2020; Certificate of Appreciation in the 1st International Cartoon Contest on Liver Health Awareness, ILBS, 2019; Awarded Scroll of honour for being a Mentor in ‘UroEducation and UROMET’ for ISU-USI, January 2020; Awarded MIUC International Fellowship 2020 by USI (to be presented at USICON 2021); Co-opted member and subject expert (Urology) for DTAB under DGHS, Office of DCGI; Semi-Live Surgical Demonstration of ‘Lap sigmoid Vaginoplasty’ at UAUCON, Orchha, March 2020; Core Faculty for the Board of Education of Urological Society of India UROMET program; Faculty for the SET (Skill-e Learning-Telemedicine) Facility; Member of the Subject Expert Committee (SEC) (Reproductive and Urology) under DGHSs, Office of DCGI (India); Editorial committee member, *Indian Journal of Urology*.

**Dr Brusabhanu Nayak** was awarded 2020 JUA Asian Scholarship; Certificate of appreciation for academic contributions to the SET facility, at AIIMS, New Delhi, January 2020

#### VISITING SCIENTISTS

1. Dr Nikhil Vasdev, Consultant Urological Surgeon, UK.
2. Dr Ashok K Hemal, Director, Robotic Urologic Surgery and Minimally Invasive Surgery, Wake Forest Baptist Health Medical Center, Winston Salem, North Carolina, USA.

## 10.1. Cardiothoracic Centre

**Cardiology**  
**Professor and Head**  
VK Bahl

Anita Saxena  
KC Goswami  
Rakesh Yadav  
Gautam Sharma

**Professors**  
SS Kothari  
S Seth  
N Naik  
S Singh  
S Ramakrishnan

Balram Bhargava (on deputation)  
Sandeep Mishra  
G Karthikeyan  
Ambuj Roy

**Additional Professors**  
Saurabh K Gupta

Deepti Siddharthan

**Associate Professors**  
Satyavir Yadav

Raghav Bansal

**Cardiothoracic and Vascular Surgery**  
**Professor and Head**  
SK Choudhary

UK Chowdhury  
Milind P Hote

**Professors**  
AK Bisoi

V Devagourou  
Sachin Talwar

Manoj Kumar Sahu

**Additional Professors**

P Rajashekar

Sarvesh Pal Singh

**Associate Professors**

Ramesh P Menon

Pradeep Ramakrishnan

**Assistant Professors**  
Ummed Singh Dhatteerwal

Sukhjeet Singh (On Contract)

**Cardiac Anaesthesiology**  
**Professor and Head**  
Sandeep Chauhan

Neeti Makhija  
Sambhunath Das

**Professors**  
Poonam Malhotra Kapoor  
Parag Gharde

Minati Choudhury  
Vishwas Malik

Suruchi Hasija

**Associate Professors**

Arindam Choudhury

**Cardiac Biochemistry**  
**Professor**  
Lakshmy Ramakrishnan

**Scientist I**  
Manoj Kumar Tembhre

**Cardiac Nuclear Medicine**  
**Professor**  
Chetan D Patel

**Cardiac Pathology**  
**Professor**  
Ruma Ray

**Additional Professor**  
Sudheer Kumar Arava

**Cardiovascular Radiology and Endovascular Interventions**

**Professor and Head**  
Sanjiv Sharma

**Professor**  
Priya Jagia

**Associate Professor**  
Sanjeev Kumar

**Stem Cell Facility**  
**Professor**  
Sujata Mohanty

**Blood Transfusion Services**  
**Chief Medical Officer**  
Anjali Hazarika

**Assistant Professor**  
Gopal Kumar Patidar

**Sup. Medical Social Service Officer**  
Mrs Veena Belani

**Chief Technical Officer**  
Gulshan Mehta

Bijay Majhi

Gajendra Singh Chauhan

## **HIGHLIGHTS**

### **Cardiology**

During this year the Department catered to nearly 1,40,000 outpatient visits. Over 35,000 patients underwent echocardiography and about 3000 diagnostic cardiac catheterizations were performed. More than 3000 patients underwent interventional procedures including angioplasty, device implantations and balloon valvoplasties.

During this period, the Department participated in several research projects studying patients across a wide spectrum of cardiac disease. Important publications relating to STEMI, hypertension, heart failure, rheumatic heart disease, and congenital heart disease were published in high-impact scientific journals. We organized major cardiology meetings including CSI National Conference 2019 and India Live 2020. The faculty of the Department are part of major cardiology journals including Heart Asia, Indian Heart Journal, Annals of Pediatric Cardiology and JPCVS. Various faculty members were part of important committees.

In addition to patient care, research and teaching, the department was involved in a major way in furthering the academic discourse in cardiology in the country. Faculty members from the Department have been elected to executive positions in the national and regional cardiology bodies and have helped refocus on the academic agenda.

### **Cardiothoracic and Vascular Surgery**

The entire spectrum of patients encompassing the field of Cardiothoracic and Vascular surgery and comprising surgery for congenital heart defects, acquired cardiovascular diseases were catered to in the outpatient clinic, three days a week and the aortic clinic two days a week. With the department of Cardiology, more than 10,500 patients were treated on an inpatient basis and close to 200,000 patients were attended to in the outpatient services. More than 3500 patients suffering from all types of congenital and acquired cardiac defects underwent surgery with results comparable to the best centres in the world. Another focus was on research, publications and collaboration with national and international centres. The departmental faculty delivered 55 invited lectures and had more than 25 plus publications in peer reviewed national and international journals. In the field of intensive care, the department conducted several seminars and guest lectures. Four workshops including 1 wet lab were conducted encompassing lung transplantation and other topics. The department and

intensive care team were actively involved in the field of infection control practices and developed post-cardiac surgery ICU care protocols. The department was actively involved in the longest run VV ECMO (92 days) unsuccessfully in a 120-kg female patient with ARDS following H1N1 pneumonia in Pulmonary Medicine ICU, a first in India. The physiotherapy unit of the department was actively involved in organizing many physiotherapy workshops and was actively involved in the conduct of funded and collaborative projects.

### **Cardiac Anaesthesiology**

The Faculty and Residents from the department were awarded during National and International Conferences. All Professors and Additional Professors were examiners for DM Cardiac Anaesthesia, MD Anesthesia and DNB Anaesthesia courses all over India. The department has been a pioneer in starting a Fellowship in Pediatric Cardiac Anaesthesia and was sanctioned to start Fellowship in Vascular Anaesthesia soon. All faculty in the department are Editors, Editorial board/ Review members of various national and international Cardiac Anaesthesia, Anaesthesia and Echocardiography journals. Dr Poonam Malhotra has completed her term as President of IACTA (non-elected), is continuing as President of SCA-Delhi and NCR Branch (non-elected) and became Past President of ECMO Society of India (non-elected). She is Editor-in-chief of Journal of Cardiac Critical Care (JCCC).

### **Cardiac Biochemistry**

The department caters to inpatients and outpatients of cardiothoracic center. For several investigations done in the department, patients are referred from other departments as well as other institutions. Quality of analysis is being ensured in the department through participation in several EQAS programs. The department is active in research as evidenced by seven extramural grants as chief investigator and many collaborative projects involving several departments. Two students are currently pursuing PhD and faculty from cardiac biochemistry is involved in five other PhD theses as co-guide. Faculty of the department is involved as technical advisory committee member for a nutrition survey being conducted by UNICEF and health ministry. The faculty from the department is also part of the technical advisory committee for Andhra Pradesh government for a project on chronic kidney disease. This is in addition to being an expert member of project review committee for ICMR in the area of non-communicable diseases and endocrinology.

### **Cardiac Nuclear Medicine**

Nuclear Medicine in Cardiothoracic Centre is equipped with a Dual Head SPECT-CT Gamma Camera on which diagnostic nuclear cardiological procedures are performed. The unit is also actively involved in teaching and research work. Postgraduate students in Nuclear Medicine MD and MSc are trained on rotational basis in nuclear cardiology procedures. The unit is involved in thesis or research work of 8 DM, MD, PhD and MSc students where nuclear cardiology is part of their research work. Myocardial SPECT studies with Tc99m-labeled tracers and PET studies with F-18 FDG are routinely performed. We started the use of other PET radiotracers such as Gallium-68 DOTANOC for cardiac sarcoidosis, cardiac infective and inflammatory pathologies. We have assessed the feasibility of F-18 FDOPA for evaluation of cardiac sympathetic innervations. Recently we started imaging for detection of cardiac amyloidosis using Tc99m PYP. The unit is involved in an international multi-center research project titled "International study on imaging in Cardio-Oncology Study (iCOS)", funded by International Atomic Energy Agency, Vienna, Austria. We have been collaborating with other departments in funded project, one of which is funded by International Atomic Energy Agency.

### **Cardiovascular Radiology and Endovascular Interventions**

The faculty of the department delivered lectures at various national and international scientific meetings. The department hosted observers from various places in India and abroad. They received training in various aspects of cardiovascular imaging and endovascular interventions. The faculty are members of editorial boards and reviewers for numerous scientific journals.

### **Stem Cell Facility**

The Department of Biotechnology (DBT), Government of India has extended its financial support in Phase II, for the next 3 years towards developing the Facility as a Centre of Excellence in Stem Cell Research. The Facility is currently engaged in 9 projects in collaboration with other departments of AIIMS and funded by DBT, ICMR, DST, IUSSTF, AIIMS, etc. 16 PhD researchers and 7 MD, DM students are registered for degree, along with a 4 Scientists and 1 DST-Young Scientist are currently recruited in government funded projects at the Facility. Research scholars from other reputed institutes of India such as IISER Mohali, IIT Delhi, IIT Guwahati, IIT Kharagpur, Delhi University-South Campus, IGIB, NII, THSTI, NBRC, ICPO have also been co-supervised in their PhD work. The facility has published 16 papers in high impact peer reviewed journals and presented at various scientific forums (meetings, conferences). Faculty is involved in several reputed international scientific organizations as a member of the editorial board committee in Scientific Reports (Nature publishing group), Translational Surgery, current Trends in Stem cells and Regenerative Medicine, Insights in Stem Cells, etc. Faculty is also an active member of various International & National bodies like International Society for Cellular

Therapy (ISCT), International Society for Stem Cell Research (ISSCR) and International Society of Biological Chemists, Indian Science Congress (ISC), Indian Immunology Society (IIS). The facility has initiated scientific collaborations with five international universities (University of Michigan, Bridgeport University, Indiana University and Purdue University, USA and Iran University of Medical Sciences, Iran).

### **Blood Transfusion Services**

The round-the-clock transfusion needs of patients admitted in the Centre by collecting, processing and providing safe and quality blood and blood components. The activities include both inhouse and outdoor blood collection, blood donor motivation and pre-donation and post-donation counseling, blood component preparation, various serological tests and special procedures like apheresis and therapeutic phlebotomy. Components such as packed red cells, plasma, fresh frozen plasma, platelet rich plasma, platelet concentrate, cryoprecipitate, leucodepleted red cells and platelets are available at all times. Facility for Apheresis procedures and autologous donation is available. Surplus plasma is being sent for plasma product fractionation. Blood components are subjected to irradiation for heart transplant patients.

Serological tests performed in the BTS include tests for blood grouping, screening for irregular antibodies, compatibility tests using latest technology like column agglutination and SPRCA assay. Every unit of blood collected is tested for transfusion transmissible infections like Hepatitis B, Hepatitis C, HIV-1 and 2, syphilis, Malaria. Automation is used in most of the laboratories in the department for better output and quality. Donor blood samples are also being subjected to NAT (Nucleic Acid Amplification test) screening as an additional screening test to detect HIV/HCV/HBV and thus improve blood safety. **Pneumatic Tube System** is available for transporting Patient blood samples and forms. Computerisation of the Blood Bank procedures through e-blood bank software module by NIC, for real time data generation and integration with the HIS is in place.

## **EDUCATION**

### **Cardiology**

Department of Cardiology is involved in the education and training of undergraduate, postgraduates. The daily academic activities include journal club, mortality meeting, cath conferences, short and long seminars, debates, clinical case discussion and spotters by faculty. The departmental faculty also organized ACLS training Courses for undergraduates, postgraduate and paramedics, short term/long term training and various innovative educational activities.

### **CMEs/Workshops/Symposia/National and International Conferences**

1. CSI 2019, 5-8 December 2019, New Delhi
2. India Live 2020, 27 February-3 March 2020, New Delhi
3. Arrhythmia and electrophysiology ISHR, 22 and 23 February 2020, New Delhi

### **Lectures delivered**

**VK Bahl: 8**

**Sandeep Mishra: 20**

**S Ramakrishna: 14**

**Anita Saxena: 16**

**N Naik: 4**

**Saurabh K Gupta: 8**

**SS Kothari: 5**

**Ambuj Roy: 11**

### **Oral papers/posters presented: 4**

### **Cardiothoracic and Vascular Surgery**

The Department was actively involved in the teaching of undergraduates, post-graduates, MCh students, MSc (Perfusion technology) students and nurses. Currently 27 students are pursuing MCh in CTVS, four are pursuing DM in cardiac surgical intensive care, two are pursuing fellowship in aortic surgery and six are pursuing MSc (Perfusion technology). 11 students have completed and passed in MCh in CTVS, one has completed and passed in the aortic fellowship and six have completed MSc perfusion in the said period. The Department imparted short term training to 17 postgraduates and six postdoctoral students from within AIIMS New Delhi, one from Jammu and Kashmir, one from Varanasi and six from outside India (two from UK, one from Australia and one from Nigeria).

### **CMEs/Workshops/Symposia/National and International Conferences**

1. Lung transplant Cadaver Workshop-Hands on training, 20 April 2019, New Delhi
2. "ECMO workshop" conducted at 7th Annual Congress of the Society for Heart Failure and Transplantation (SFHFT2019), 23 August 2019, Mumbai
3. Cardio-pulmonary physiotherapy update in CTVS patients, 5 October 2019, New Delhi

4. Cardio-pulmonary physiotherapy update in CTVS patients at AIIMS, December 2019, New Delhi
5. CME on Cardio-pulmonary physiotherapy in Intensive care, 25 January 2020, New Delhi
6. Operative Workshop on “Ozaki Procedure”, 27 and 28 February 2020, New Delhi
7. Wetlab on “Ozaki Procedure”, 29 February 2020, New Delhi

**Lectures delivered**

**SK Choudhary: 16**

**V Devagourou: 11**

**Milind Hote: 7**

**Sachin Talwar: 7**

**P Rajashekar: 9**

**Manoj Kumar Sahu: 5**

**Sarvesh Pal Singh: 6**

**Oral papers/posters presented: 2**

**Cardiac Anaesthesiology**

- Six DM candidates including one sponsored and nine other MD-Junior resident doctors from Main Anesthesia department have undergone super specialty training in Cardiac-Thoracic-Anesthesia.
- Six MD candidates from Lady Harding Medical College and two from Kolkata were imparted short term training in the specialty of Cardiac-Anesthesia.
- Short term training imparted to four DM candidates from Shree Chitra Tirunal Institute, Trivandrum.

**CME/Workshops/Symposia/National and International Conferences Organized**

1. Webinar on ECMO Simulator, 14 July 2019, New Delhi
2. CME on “3D Echocardiography”, 12 November 2019, New Delhi
3. 13th Quarterly Scientific Meeting - under the banner of SCA-Delhi & NCR Branch
4. Theme: Comprehensive Perioperative ECHO Workshop, 16 and 17 November 2019, Gurugram
5. National Hands-on workshop on Cardiac Critical Care and Ultrasound 8 December 2019, New Delhi
6. Transthoracic Echocardiography workshop, 28 December 2019, New Delhi

**Lectures delivered**

**Sandeep Chauhan: 2**

**Neeti Makhija: 4**

**Poonam Malhotra Kapoor: 35**

**Minati Choudhury: 6**

**Vishwas Malik: 5**

**Suruchi Hasija: 1**

**Arindam Choudhury: 2**

**Oral papers/posters presented: 4**

**Cardiac Biochemistry**

- Guided 2 PhD students as chief guide and 5 as co-guide
- Chief guide for two MD student
- Co-guide for 10/DM MD thesis projects
- Member of doctoral committee for 5 PhD thesis

**CME/Workshops/Symposia/National and International Conferences Organized**

1. STA Compact test parameters (Basics principal and its clinical implication), Conference room, CNC, AIIMS, New Delhi, 6 August 2019, New Delhi

**Oral papers/posters presented: 1**

**Cardiac Nuclear Medicine**

No. of Postgraduate students: 40 (22 MD Nuclear Medicine students & 18 MSc Nuclear Medicine Technology students on rotational basis in Nuclear Cardiology)

No. of Thesis/research papers completed: 8

Moderator in Journal Club/Seminars/Intra-department lectures: 8

No. of new thesis started: 5

‘On site’ teaching of MD students while reporting clinical studies



**Lectures delivered**

**Chetan D Patel: 3**

**Oral papers/poster presented: 12**

**Cardiac Pathology**

**Lectures delivered**

**Sudheer Kumar Arava: 7**

**Cardiovascular Radiology and Endovascular Interventions**

**Teaching**

**Extra-departmental**

Undergraduates: Lectures on basics of cardiovascular imaging and vascular interventions

Postgraduates: Cardiac Radiology quiz, moderating seminars in departments of allied specialties viz. Medicine, Surgery, Gastroenterology, Cardiology and Cardiothoracic Surgery

Clinico-radiology meetings with Department of Cardiology and CTVS.

Participation in Clinical Combined Rounds and Clinical Grand Rounds with Allied specialties

**Intra-departmental**

Daily case presentations

Weekly journal clubs and seminars

**Training**

Training of junior and senior radiology residents, senior residents in Cardiology, CTVS and Cardiac Anaesthesia, and external observers in techniques of cardiovascular imaging and vascular interventions

**CMEs/Workshops/Symposia/National and International Conferences**

1. Advanced Cardiovascular MR Workshop, 7 and 8 November 2019, Delhi

**Lectures delivered**

**Sanjiv Sharma: 9**

**Priya Jagia: 11**

**Sanjeev Kumar:14**

**Oral papers/poster presented: 11**

**Stem Cell Facility**

It participates in **PhD, DM & MD** programs

S. No.	Program	Number of Students
1	PhD	16
2	DM & MD	7
3	Short term training	7

**Lectures delivered**

**Sujata Mohanty: 6**

**Oral papers/poster presented: 7**

**Blood Transfusion Services**

**Lectures delivered**

**Anjali Hazarika: 7**

**Gopal Kumar Patidar: 2**

**Oral papers/posters presented: 5**

## RESEARCH

### Cardiology

#### Funded projects

##### *Ongoing*

1. A global registry to study the demographics, socioeconomic and clinical factors, etiologies, pathophysiology, management, barriers to outcomes of heart failure patients (G-CHF), Ambuj Roy, Population Health Research Institute, Canada, 7 years, 2016-2023, Rs 65 lakhs
2. A randomized controlled trial of influenza vaccine to prevent adverse vascular events (IVVE), Ambuj Roy, MRC (UK)/McMaster University, Canada, 4 years, 2016-2020, Rs 2.16 lakhs
3. Assessment of HDL quality in Healthy Adult Indians and Impact of High Altitude A collaboration project with Defense Institute of Physiology & Allied Sciences, 3 years, 2017- 2019, Rs 51.23 lakhs
4. Childhood and young adult predictors of myocardial structure and function at age 45 years in the New Delhi and Vellore Birth Cohorts, India, Ambuj Roy, British Heart Foundation, 4 years, 2016-2020, Rs 20 lakhs
5. Developing and testing a Collaborative Quality Improvement initiative for prevention of cardiovascular disease in India (C-QIP study), Ambuj Roy, NIH, USA, 5 years, 2019-2024, Rs 10.05 lakhs
6. Impact of Myocardial Scarring on Clinical Outcomes in Patients with Non ischemic Dilated Cardiomyopathy, Nitish Naik, ICMR, 3 years, 2019-2022, Rs 67.14 lakhs
7. INVICTUS (*IN*vest/*g*ation of rheumatiCAFTreatment Using vitamin K antagonists, rivaroxaban or aspirin Studies), G Karthikeyan, Population Health Research Institute, Canada, 4 years, 2016-2020, Rs 16.7 Crores
8. National Heart Failure Registry (NHF), Dr Ambuj Roy, Indian Council of Medical Research, 3 Years, 2018-2021, Rs 24 lakhs
9. Prognostic role of proteomics and other biomarkers in heart failure, Sandeep Seth, DHR ICMR, 3 years, 2018-2020, Rs 79 lakhs
10. Semaglutide effects on cardiovascular outcomes in people with overweight or obesity. (SELECT), Ambuj Roy, Novo Nordisk, 5 years, 2019-2024, Rs. 2 lakhs
11. Semaglutide Effects on Heart Disease and Stroke in Patients With Overweight or Obesity (SELECT) Trial An international multicentric trial, Ambuj Roy, Novo Nordisk, 5 years, 2018- 2023, Rs 3.8 lakhs per patient (Total 20 patients)
12. Value of Gated-SPECT MPI for Ischemia-Guided PCI of non-culprit vessels in STEMI Patients with Multivessel Disease after primary PCI, G Karthikeyan, International Atomic Energy Agency, 3 years, 2018-2020, Rs 13.5 lakhs
13. Yoga for ICD patients: A Randomized Controlled Trial to evaluate the Efficacy of Yoga on Psychological and Arrhythmic outcomes in patients with Implantable Cardioverter Defibrillators, Nitish Naik, Ministry of AYUSH, 2 years, 2018-2020, Rs 26.08 lakhs
14. Yoga life style changes in heart failure, Sandeep Seth, DST, 3 years, 2018-2020, Rs 46 lakhs
15. Yoga-CaRe Trial. Effects of a yoga-based cardiac rehabilitation programme (Yoga-CaRe) on cardiovascular health: a clinical trial (India) and mechanistic study (UK). Ambuj Roy, A ICMR-MRC (UK) funded trial, 2014, Rs 24.06 lakhs

##### *Completed*

1. Development of guidelines for management of common cardiac emergencies and related complications at district hospital intensive care units under NPCDS, Ambuj Roy, WHO, 7 months, 2019, Rs 6.15 lakhs
2. Pilot Study For Establishing Nationwide Network Of Registries On Management Of Acute Coronary Event (MACE Registries), Nitish Naik, ICMR, 4 years, 2015-2019, Rs 62.35 lakhs
3. Surgery compared to fibrinolytic therapy for left-sided valve thrombosis (SAFE-PVT), G Karthikeyan, ICMR, 2 years, 2017-2019, Rs 69 lakhs
4. To study the prevalence of rheumatic heart disease among adults 18-25 years age group in Ballabgarh block of Haryana using echocardiography with Doppler, Anita Saxena, DHR, 3 years, 2016–2019, Rs 38.83 lakhs

#### Departmental projects

##### *Ongoing*

1. A prospective randomized comparison of incidence of atrial fibrillation and stroke in patients undergoing coronary artery bypass grafting with or without left atrial appendage ligation

2. Comparison of different anti-platelet drug regimens on platelet aggregation and urinary 11-dehydro-thromboxane B2 levels in stable ischemic heart disease patients
3. Effect of stellate ganglion block for cerebral vasospasm treatment following aneurysmal subarachnoid haemorrhage on cardiac rhythm: a holter-based study
4. Neurodevelopmental Outcomes in children with Cyanotic Congenital Heart Disease following Open Heart Surgery
5. Worsening of PAH with lung infection in infants with VSD

#### **Completed**

1. Clarifying morphoanatomy of superior sinus venosus interatrial communication—a computed tomographic study of 100 patients
2. Fibrillin gene mutation and markers of inflammation in RSOV
3. Ivabradine versus Amiodarone for conversion of Junctional ectopic tachycardia to sinus rhythm in post-operative cardiac surgical patients – a Randomized, Open label, Non-inferiority trial
4. Prevalence of asymptomatic myocardial ischemia among patients with chronic kidney disease
5. Prevalence of cardiac channelopathies in children aged 5-18 years undergoing treatment for epilepsy
6. Streptococcal PCR in valve tissues of RHD

#### **Collaborative projects**

1. A Population based prospective cohort study to unravel the causes of stroke and cognitive decline Neurology
2. Identification of delays and barriers to acute cardiac care in NCR. (Co-PI) Dept. of Community medicine, AIIMS, New Delhi
3. The Integrated Tracking, Referral, and Electronic Decision Support, and Care Coordination (I-TREC) Platform (Co-PI) Dept. of Endocrinology, AIIMS, New Delhi, Emory University, Atlanta, USA

#### **Cardiac Thoracic Vascular Surgery**

##### **Funded projects**

##### **Ongoing**

1. An assessment of neurodevelopmental outcome with transposition of great arteries with intact ventricular septum who underwent primary arterial switch operation in infancy with integrated ECMO support compared to children who underwent surgery without integrated ECMO support
2. Analysis of outcome of Fontan procedure over Last 10 years and factors affecting them.
3. Assessment of Myocardial Mechanics in patients Undergoing Pericardiectomy Forchronic Constrictive Pericarditis by 2D Speckled Tracking Echocardiography.
4. BNP as a predictor of Atrial Fibrillation in patients undergoing Off-Pump CABG patients- A prospective observational study
5. Clinical and radiological features of Type A Aortic Dissection A Retrospective Observational Study From 2009 – 2019
6. Clinicopathological study and long-term surgical results of right atrial mass
7. Comparing Biomarker levels and recovery of Ventricular function in patients undergoing operation to the heart (CABG) having unstable Angina Vs Stable Angina
8. Comparison of early outcomes of Mechanical versus Bioprosthetic Valve in Pulmonary Position in TOF and Corrected TOF
9. Detection of silent cardiac allograft vasculopathy with speckle tracking echocardiography in heart transplant recipients: a comparative study with conventional endomyocardial biopsy
10. Graft patency in patients undergoing CABG after Coronary Endarterectomy
11. Impact of age, LV Mass Index, thickness of IVS, direction of movement of IVS on early recovery: Morbidity and mortality in ASO in TGA
12. Long Term Fate of Neoaorta post arterial switch operation patients
13. Long Term Sequences Of Sinus Venosus ASD with rerooting Of Pulmonary Veins (UKC Modification)-Sinus Nodal Dysfunction and Pulmonary and Systemic Vein Obstruction
14. One Year Outcomes Following Orthotopic Heart Transplantation at a Tertiary Care Centre In India
15. Outcome of TAPVC repair done in last 10 Years in AIIMS

16. Outcome of Ventilator-associated pneumonia in children after cardiac Surgery – A Prospective observational study
17. Serum vitamin D Levels in Patients Undergoing CABG: Correlation with Sternal Healing after 2 months
18. Surgical outcome and perioperative management strategies of TAPVC Repair in children less than 2 years
19. Tracheostomy in paediatric surgery patients
20. Use of Allopurinol in Paediatric Cardiac Surgery

### **Completed**

1. A randomized open label controlled trial Comparing ST. Thomas and del Nido cardioplegia to study electrolyte abnormalities following Cardiopulmonary Bypass
2. A randomized open label-controlled trial to evaluate the effectiveness of Combined Conventional and Modified ultrafiltration over Conventional Ultrafiltration in Infants undergoing Congenital Heart Surgery
3. A study of effect of Hemodilution on adequacy of tissue Perfusion and Coagulopathy, in patients undergoing Tetralogy of Fallot repair
4. Acute Type A Dissection complicated by Stroke: Optimum Strategy?
5. Aneurysm of Sinus of Valsalva dissecting into interventricular septum
6. Assessment of Circle of Willis in Indian population.
7. Coarctation of aorta in adults
8. Comparative study of exercise performance after total correction with trans annular patch (TAP) versus non trans annular patch (Non-TAP) after repair of Tetralogy of Fallot
9. Comparison of Plasmalyte – A based Del Nido Cardioplegia solution in Paediatric patient undergoing Open Heart Surgery
10. Comparison of Pleural Effusion in Fenestrated and Non-Fenestrated Fontan- A Prospective Randomized Study
11. Delayed sternal closure in Pediatric Cardiac Surgical Patients
12. Demographic, clinical, and radiological profile of patients with Acute Type A dissection.
13. Early outcome of Ozaki procedure
14. Efficacy of Yoga based Cardiac Rehabilitation after Coronary Artery Bypass Surgery in Patients of Coronary Artery Disease with Moderate to Severe Left Ventricular Dysfunction- A Post Surgery Follow-up, arandomized Control Study
15. Genetic screening in patients with Bicuspid Aortic Valve
16. Histopathological study of extent of degenerative changes in ascending aorta of patients with bicuspid aortic valve
17. Management of coarctation of aorta with ascending aortic aneurysm.
18. Morphology of Sinus of Valsalva aneurysms in Indian patients
19. Mycobacterial Aortopathy: An institutional review of its presentation and management.
20. Neurological outcome of aortic arch replacement surgery without hypothermic circulatory arrest
21. Non-invasive assessment of hepatic fibrosis in post Fontan surgery patients
22. Oral sildenafil administration in patients undergoing extra cardiac Fontan procedure- A double blinded randomized study
23. Outcome of Cardiac ECMO in children undergoing corrective Cardiac Surgery
24. Outcome of post cardiac surgery patients with sepsis
25. Outcomes of Aortic valve replacement/ Bentall operation in cases of chronic severe Aortic Regurgitation with severe left ventricular dysfunction
26. Perfusion strategies for Mitral Valve Replacement surgery in patients of more than 50 years old
27. Perfusion Strategies in patients undergoing Coronary Artery Bypass Graft Surgery
28. Prevalence of Bicuspid Aortic Valve (BAV) and Ascending Aortic Dilatation in First Degree Relatives (FDR) of Patients with BAV
29. Surgical audit and outcome of patients who underwent Bentall's procedure with hemiarch procedure
30. Tetralogy of Fallot Repair in first decade of life: Perfusion strategies
31. The satisfaction levels of heart transplant recipients seeking post-transplant medical care at a tertiary care government hospital: A questionnaire based study
32. Trans-aortic mitral valve repair for functional MR in patients undergoing aortic root / valve procedure

## **Collaborative projects**

### ***Ongoing***

1. Comparative Proteomic analysis to discover novel plasma biomarkers for early detection, surveillance and prognostication of Atrial fibrillation in patients with Rheumatic heart disease, Cardiology, AIIMS and National Institute of Pathology
2. Early Enteral Feeding with supplemented mother's milk in post-operative Pediatric cardiac surgical patients: A randomized controlled trial Institute of Home Economics, Delhi University
3. Fabrication of biocompatible scaffolds for delivery of stem cells in myocardial infarct model – In search of an ideal cardiac patch, Stem Cell Facility
4. Identifying different stages of endothelial dysfunction in vitro and validating them in individuals exposed to cardiovascular risk factors, Biochemistry, AIIMS
5. Proteomic analysis of cardiac tissue of Rheumatic heart disease patients with Atrial Fibrillation to understand the pathophysiology and to identify candidate biomarkers for diagnostic and therapeutic applications, Cardiology, AIIMS and National Institute of Pathology, New Delhi
6. SAFE PHT – Randomised study to compare thrombolysis vs surgery in patients with prosthetic heart valve thrombosis, Cardiology
7. Study of plaque biology in CAD patients Cardiology and Institute of Genomics and Integrated Biology, New Delhi
8. Study of proteomics in rheumatic mitral valve tissue in patients undergoing mitral valve replacement. Cardiology

## **Cardiac Anaesthesiology**

### **Funded projects**

#### ***Ongoing***

1. A single blind randomized controlled study to evaluate the effect of Rajyoga Meditation on Biochemical and cognitive co-relates of cardiac rehabilitation in patients of surgical repair of congenital heart disease, Usha Kiran, DST, 2 years, 2017-2019, Rs 23 lakhs
2. Bivalirudin anticoagulation in neonates and infants undergoing cardiac surgery, Suruchi Hasija, AIIMS, 2 years, 2019-2020, Rs 5 lakhs
3. Evaluation of efficacy of the point-of-care guided hemostatic management in cyanotic congenital cardiac surgery patients using AIIMS algorithm: A prospective randomized study, 2 years, Poonam Malhotra Kapoor, JCCC Research Grant, 2 years, 2018-2020, Rs 12 lakhs
4. Platelet aggregometry in cyanotic vs acyanotic paediatric patients, Poonam Malhotra Kapoor, JCCC Research Grant, 2 years, 2019-2021, Rs 15 lakhs

#### ***Completed***

1. Evaluation of coagulopathy on veno-arterial (VA) Extracorporeal Membrane Oxygenation (ECMO) using Platelet Aggregometry and Standard Tests, Poonam Malhotra Kapoor, JCCC Research Grant, 2 years, 2019

## **Departmental projects**

### ***Ongoing***

1. Comparison of haemodynamic and ABG parameters after transport of children on manual vs mechanical ventilation post cardiac surgery
2. Comparison of plasmalyte-a based del nido Cardioplegia solution with plain ringer Based del nido cardioplegia solution in Pediatric patients undergoing open heart Surgeries: A prospective double blind Randomized controlled trial
3. Comparison of thoracic fluid content in off pump and on pump coronary artery bypass graft surgery by impedance cardiometry
4. Effects of vasopressin infusion on early pleural effusions following the Fontan procedure-a double blind randomized clinical trial
5. Evaluation of blood loss in menstruating women undergoing cardiac surgery
6. Right atrial speckle tracking echocardiographic indices as a method for assessing pulmonary arterial pressures in patients with left sided valvular heart disease'
7. To assess the change in lung compliance during surgery and progressive change in pulmonary function of infants with congenital heart disease undergoing open heart surgical repair, over a period of one year

### **Completed**

1. Dexmedetomidine in prevention of atrial fibrillation in patient's undergoing valve surgery.
2. Induction effect of Anesthetic agents on ventricular function of congenital heart disease children by speckle tracking echocardiograph.
3. Osteopenin, RV function & clinical outcome in tetralogy of Fallots.

### **Collaborative projects**

#### **Ongoing**

1. Intraoperatively comparing 2D and 3D TEE to assess the prosthetic valve mismatch, University of Alabama at Birmingham, Alabama, USA

### **Cardiac Biochemistry**

#### **Funded projects**

#### **Ongoing**

1. Deciphering the mechanism of alarmin induced necroptosis and its role in immune homeostasis and inflammation in atherosclerosis, Manoj K Tembhe, DST-SERB (Early career research grant award), 3 years, 2017-2020, Rs 50 lakhs
2. Defining the role of Neutrophil Extracellular Traps (NETs) in immune regulation and inflammation, Manoj K Tembhe, AIIMS, 2 years, 2017-2019, Rs 8.5 lakhs
3. Double blind randomized control trial to study the effects of probiotic supplement, bacillus coagulans unique is and bacillus clausii on protein absorption, body composition, muscular strength, and immunity in resistance trained adult males. R Lakshmy, Unique Biotech, 20 months, 2016-2019, Rs 37 lakhs
4. Endothelial colony forming cells (ECFC) functionality in adults born small for gestational age as compared to those born appropriate for gestational age in the New Delhi Birth Cohort: A possible mechanism linking fetal growth restriction with adult chronic diseases, R Lakshmy, ICMR, 2 years, 2019-2021, Rs 35 lakhs
5. Estimating biomarkers in DBS for cardiovascular risk assessment in geriatric population, R Lakshmy, ICMR, 12 months, 2018-2019, Rs 28 lakhs
6. Proposal for engagement of All India Institute for Medical Sciences to serve as qc lab for comprehensive national nutrition survey, R Lakshmy, UNICEF, 2 years, 2016-2020, Rs 233.67 lakhs
7. To study the association of tetrahydrobiopterin (BH4) levels in endothelial progenitor cell (EPC) with the functional activity of EPC in coronary artery disease (CAD) patients, R Lakshmy, ICMR, 2 years, 2017-2019, Rs 39 lakhs

### **Departmental projects**

#### **Ongoing**

1. Assessment of ABO antibody titer and coagulation factor level after mixing and dilution with normal saline of A and B group donor plasma
2. Comparing biomarker levels and recovery of ventricular function in patients undergoing CABG, having unstable angina vs stable angina
3. Optimizing Blood Inventory in a Blood Bank at a Super-speciality Centre in India
4. Outcome of leuco-reduced and non leuco-reduced blood components transfused in patients undergoing cardiac surgery
5. Study of endothelial progenitor cell (EPC) tetrahydrobiopterin (BH4) levels and its association with EPC number and function in coronary artery disease (CAD) patients

### **Collaborative projects**

#### **Ongoing**

1. A Randomized Control Trial to assess the effectiveness of Nurse-Led Structured Telephonic Heart Failure Management Programme on selected health related outcome variables at 3 months. College of Nursing, AIIMS, New Delhi
2. A single blinded randomized control study to evaluate the effect of rajyoga meditation on biochemical and cognitive correlates of cardiac rehabilitation in patients of surgical repair for congenital heart disease. DBT funded, Cardiac Anesthesia, AIIMS
3. Association of Common Mental Disorders with Diabetes Mellitus-A Community based Case-control Study in north India Intramural, CCM, AIIMS

4. Cellular and molecular heterogeneity of normal superior and inferior parathyroid glands at different ages. Intramural, Pathology, AIIMS
5. Effect of Vitamin D supplementation on outcome in children undergoing open heart surgery: A Randomized Controlled Trial Intramural, CTVS, AIIMS
6. Elucidating the role of TNIP1, IL2B and NFkBIA and their target micro RNA in regulating the inflammation and skin homeostasis in psoriasis, Dermatology and Venereology
7. Evaluation of human Epididymis Protein 4 (HNE) in the diagnosis of ovarian cancer level in Laboratory Oncology
8. Intraoperative lung protective ventilation in peritonitis patients undergoing emergency laparotomy: A randomized controlled trial Intramural, Anesthesiology, AIIMS
9. Prevalence of Non-Alcoholic Fatty Liver Disease (NAFLD) and its association with cardio-metabolic disease risk factors in North India, ICMR funded, Endocrinology, AIIMS
10. Study of inner ear protein Otolin-1, Vitamin D and ionized calcium in circulation as a biomarker in non-Meniere's disease vertigo patients, Intramural, Otorhinolaryngology
11. Th2/Th17 inflammation modulating filaggrin expression and disease severity in children with moderate atopic dermatitis, Dermatology and Venereology
12. The modulation of insulin resistance and HDL quality by adipose tissue ABCA1 and metabolic status DST funded, Biochemistry, AIIMS

#### ***Completed***

1. Defining miRNA signatures in vitiligo and skin pigmentation, (L'Oreal funded IADVL project)
2. Defining miRNA signatures in vitiligo and skin pigmentation, Dermatology and Venereology
3. Defining the role of genetic, epigenetic and immunological components involved in the pathogenesis of Alopecia areata, ICMR, New Delhi
4. Impact of supplementation of package of iron and folic acid (IFA) with Vitamin B12 on Hemoglobin Levels amongst Adolescent Girls (12-19 years), DBT funded, Human Nutrition Unit

#### **Cardiac Nuclear Medicine**

##### **Funded projects**

##### ***Ongoing***

1. International study on imaging in Cardio-Oncology Study (iCOS), Dr Chetan D. Patel, International Atomic Energy Agency (IAEA), 5 years, September 2019 -ongoing, 1st year 2000 Euros

##### **Department projects**

##### ***Ongoing***

1. Design and methods of the YOGICAD study- A probe trial to evaluate the efficacy of yoga based cardiac rehabilitation in Post PCI patients
2. Non invasive tissue diagnosis – A comparison of the accuracy of parametric mapping on MRI with cardiac PET scan in determining the response to therapy in cardiac sarcoidosis
3. Role of F-18 FDG PET-CT in assessment of initial chemotherapy response in Pediatric Langerhan's cell histiocytosis
4. Role of Ga68-NOTA-MSA PET-CT in identifying vulnerable carotid plaques
5. Scintigraphic Image Restoration using Constrained least square filtering
6. Scintigraphic images Restoration using Richardson Lucy Algorithm
7. To assess the feasibility of Fluorine-18 Fluoro L-Dihydroxyphenylalanine (F-18 FDOPA) PET-CT for evaluation of cardiac sympathetic innervation in Heart Failure. Comparison with Carbon-11 Hydroxyephedrine (C-11 HED) PET-CT
8. To study the role of vascular function and pain sensitivity in microvascular angina

##### ***Completed***

1. Interim treatment response evaluation of high grade lymphoma using texture analysis on F-18 FDG PET-CT
2. Comparison of 68Ga PSMA PET/CT and 18F Fluoride PET/CT in high risk prostate cancer
3. Comprehensive assessment of right ventricle function and pulmonary perfusion in patients
4. Effect of dietary intervention in reducing interfering infra-cardiac activity in patients undergoing Tc99m-MIBI Myocardial Perfusion SPECT
5. Optimisation and validation of input parameters for scintigraphic image deionising using Wavelet Transform

6. Prevalence of asymptomatic stress induced myocardial ischemia in patients with advanced CKD by stress myocardial perfusion scintigraphy
7. Role of F-18 FDG PET-CT in staging and early treatment response evaluation in patients of soft tissue sarcoma
8. Role of Ga68-DOTANOC PET/CT in Cardiac Sarcoidosis; Comparison with Cardiac MRI with Eisenmenger syndrome using multi-modality imaging

#### **Collaborative projects**

##### ***Ongoing***

1. Value of Gated-SPECT MPI for Ischemia-Guided PCI of non-culprit vessels in STEMI Patients with Multivessel Disease after primary PCI, Cardiology

#### **Cardiac Pathology**

##### **Funded projects**

##### ***Ongoing***

1. Immunohistochemical characterization of four common viruses in clinically suspected cases of viral myocarditis, Sudheer, AIIMS, 2 years, 2018-2019, Rs 10 lakhs
2. Sudden cardiac death; Histopathological and molecular study to identify the Cause, Sudheer, ICMR, 3 years, 2019-2021, Rs 69 lakhs

#### **Collaborative projects**

##### ***Ongoing***

1. Autologous non cultured dermal cell suspension transplantation in treatment of facial volume loss Dermatology
2. Comparative evaluation of MicroRNA profiling and cytokine profiling analysis in patients with Pulmonary Sarcoidosis and Mediastinal tuberculosis, Pulmonary Medicine
3. Detection of streptococcal bacterial DNA with polymerase chain reaction in excised valvular tissue of RHD patients
4. Development of a new formulation and packaging for reducing adverse effects and injection pain of Mycobacterium vaccine and its clinical trial in recalcitrant anogenital and extra-genital (common) warts, Dermatology
5. Exploring the phenotypic and functional role of  $\gamma\delta$  T cell subsets along with Pattern recognition receptors (PRRs) in the immunopathogenesis of Pemphigus Vulgaris, Pharmacology
6. Finding the correlation of toll like receptors (TLRs) with inflammation in patients with chronic heart failure, Cardiology, Safdarjung
7. Histopathological evaluation of surgically excised rheumatic heart valves
8. Study of cardiac markers, gross findings and histopathological Changes in heart in cases of suspected cardiac death, Forensic Medicine
9. Study of Sesamol in Bleomycin induced pulmonary toxicity in rat, Pharmacology
10. Sudden cardiac death in young: A histopathological and molecular study to identify the cause

##### ***Completed***

1. A comparative study of efficacy and composition of various cell populations of extracted hair follicle outer root sheath cell suspension prepared using a single enzyme (trypsin) and multiple enzymes (trypsin, collagenase and dispase) for transplantation in vitiligo
2. Expression of Matrix Metalloproteinase-2, Matrix Metalloproteinase-9, Tissue Inhibitor Metalloproteinase-1, Tissue Inhibitor Metalloproteinase-2, Collagen I and IV Expression in Thoracic Aortic Aneurysms
3. Fibrillin 1 gene mutation and TGF beta in TAAA of non marfanoid individuals

#### **Cardiovascular Radiology and Endovascular Interventions**

##### **Funded projects**

##### ***Ongoing***

1. Evaluation of therapeutic angiogenesis induced by intramuscular autologous platelet rich plasma in non revascularisable critical limb ischemia due to peripheral artery disease, Sanjeev kumar, AIIMS, 2 years, 2019-2020, Rs 4.9 lakhs

#### **Departmental projects**

##### ***Ongoing***

1. "Non-invasive tissue diagnosis"- A comparison of the accuracy of parametric mapping on MRI with cardiac PET



- scan in determining the response to therapy in cardiac sarcoidosis
2. A cross sectional study to determine the role of P-31 MR Spectroscopy analysis of PCr-ATP ratio in differentiating Left Ventricular Hypertrophy and Hypertrophic Cardiomyopathy
  3. A single center randomized control trial to compare the efficacy of radiofrequency ablation with that of ultrasound guided foam sclerotherapy (polidocanol) for incompetent perforators in patients with varicose vein
  4. Comparison of the Left Ventricular strain, native T1 & T2 Mapping parameters in Patients with High normal blood pressure vs. Normotensive patients (Controls)
  5. Comparison of the outcomes of concomitant truncal laser ablation and tributary foam sclerotherapy versus truncal laser ablation alone in patients with lower extremity venous reflux-A single centre randomized controlled trial
  6. Detection of cardiac allograft vasculopathy with dual source computed tomography and MRI in heart transplant recipients: a comparative study with conventional coronary angiography and biopsy
  7. Improving Maturation Rates of Haemodialysis Access Arterio-venous Fistula in Chronic Kidney Disease V Patients Using Autologous Adipose Tissue Derived Mesenchymal Stem Cells: A Double Blind, Randomised Placebo-Controlled Trial
  8. Quantitative multivariate analysis of morphological features of the left atrium, left atrial appendage, pulmonary veins and epicardial fat in recurrence of atrial fibrillation after catheter ablation: A retrospective and prospective study
  9. Safety and efficacy of genicular artery embolization in patients with moderate knee pain
  10. Stent graft migration after thoracic endovascular repair (TEVAR) for thoracic aortic pseudoaneurysm and type B dissection

### ***Completed***

1. Comparison of non contrast MRA to contrast enhanced MRA in patient of PVD
2. Correlation of Epicardial Fat Volume with Severity of Coronary Artery Disease and Coronary Plaque Morphology
3. Derivation of nomograms for aortic and iliofemoral dimensions using multidetector computed tomography in the Indian population
4. Prognostic value of Decrease in Corrected Coronary Opacification in predicting Major Adverse Cardiovascular Events in Patients of Coronary Artery Disease
5. Quantification of Aortic Valve Calcification on Computed Tomography Angiography in patients of Aortic Stenosis
6. Renal morphological changes after successful renal angioplasty in young patients with uncontrolled hypertension due to Takayasu arteritis
7. Role of cardiac magnetic resonance imaging in identification of myocardial fibrosis and wall morphology in patients of nonischemic dilated cardiomyopathy
8. Role of cardiac MRI in diagnosis, prognosis and treatment response in patients of cardiac sarcoidosis using T1 mapping, T2 mapping and Late Gadolinium Enhancement (LGE)
9. Role of cardiac MRI in patients of nonspecific Aorto-arteritis and its value in prognostication and assessment of treatment response
10. Role of CEUS in activity in NSAA
11. Role of dual energy CT in tissue iron identification quantification in iron overload syndrome
12. Role of dual energy CT pulmonary perfusion in evaluation of chronic obstructive pulmonary artery disease and its value in assessing treatment outcome
13. Role of MDCT in the evaluation of systemic and pulmonary venous anomalies in heterotaxy syndrome

### **Collaborative projects**

#### ***Ongoing***

1. Applied novel statistical learning and modeling techniques on CT imaging features for prediction of growth of Stanford Type B Aortic Dissection and real options financial assessment of such health care technology, AIIMS-IIT Project
2. DE-CMR compared with FDG-PET for assessment of viability and prediction of functional improvement in patients with CAD and LV dysfunction, Cardiology
3. Impact of bariatric surgery in reduction of cardiovascular risk in morbid obesity. Surgery
4. Preparation and study of radiochromic film as radiation dosimeter for medical applications. Radiation Physics
5. Role of 68 Ga-DOTANOC PET/CT in cardiac sarcoidosis; comparison with cardiac MR, Nuclear Medicine

### ***Completed***

1. Role of cardiac magnetic resonance imaging in identification of myocardial fibrosis and wall morphology in patients of nonischemic dilated cardiomyopathy, Cardiology

### **Stem Cell Facility**

#### **Funded Projects**

#### ***Ongoing***

1. 3D Printed Tracheal Grafts For Regenerative Applications, Sujata Mohanty, AIIMS, 2 years, 2018-2021, Rs 5 lakhs
2. Bio fabrication of skin tissue substitutes using functionalized materials, Sujata Mohanty, DST, 2 years, 2018-2020, Rs 15 lakhs
3. DBT- Centre of Excellence for Stem Cell Research: Basic and Translational (Phase-II), Sujata Mohanty, DBT, 3 years, 2017-2020, Rs 298 lakhs
4. Development of a Carrier Dressing Capable of Supporting the Transfer of Melanocytes & Keratinocytes onto an in vitro Wound Bed Model, Sujata Mohanty, DBT, 3 years, 2017-2020, Rs 59.37 lakhs
5. Fabrication of Biocompatible Scaffolds for Delivery of Stem Cells in Myocardial Infarct Model: In Search of an Ideal Cardiac Patch, Sujata Mohanty, NER-DBT, 3 years, 2018-2021, Rs 28 lakhs
6. Immunomodulatory property of Human Mesenchymal Stem Cell: Assessment of their therapeutic potential in GvHD model, Sujata Mohanty, DST, 3 years, 2018-2021, Rs 42 lakhs
7. Indo-US joint Centre: Cellular Reprogramming in Regenerative Medicine, Sujata Mohanty, IUSSTF, 2 years, 2019-2021, Rs 35 lakhs
8. Strategies to enhance stem cell delivery to the retina using iron oxide nanoparticle, Sujata Mohanty, DBT, 3 years, 2018-2021, Rs 82 lakhs
9. Understanding the therapeutic role of adult stem cell derived exosome in combating virus induced neurodegenerative disease, Sujata Mohanty, DBT, 3 years, 2018-2021, Rs 22 lakhs

### ***Completed***

1. 3D Bioprinting for patient-specific joint tissue constructs and in vitro model system, Dr. Sujata Mohanty, DST, 3 years, 2017-2020, Rs 30 lakhs
2. Comparing the vascularization potential of MSCs and MAPCs in monoculture and coculture systems with human OECs under normoxia and hypoxia, Dr Sujata Mohanty, DBT, 3 years, 2018-2020, Rs 46.26 lakhs
3. SOPs to Study Very small embryonic-like stem cells (VSELs) in various adult tissues, Dr Sujata Mohanty, ICMR, 1 years, 2017-2018, Rs 4 lakhs
4. Targeting Telomerase Reverse Transcriptase (TERT) gene to immortalize Peripheral Blood Mononuclear Cells of patients with coronary artery disease, Dr Sujata Mohanty, ICMR, 3 years, 2014-2017, Rs 56 lakhs

### **Departmental projects**

#### ***Ongoing***

1. Autologous Non-Cultured Dermal Cell Suspension Transplantation for Correction of Volume Loss
2. Comparative evaluation of cellular responses and osteogenic potential of undifferentiated mesenchymal stem cells induced by calcium-silicate based cements- A histochemical study
3. Detection and quantification of circulating tumour cells in oral cavity squamous cell carcinoma
4. Imaging and molecular characterization of differentiated thyroid cancer
5. Immunomodulatory Potential of Tissue Specific Human MSC through HLA-G and other soluble factors
6. In vitro and in vivo stabilization of endothelial tubes from HUVEC micro tissues using human bone marrow derived hMSCs and its application in bone tissue engineering
7. In-vitro studies to explore strategies for extended utilization of donor corneal tissues by harnessing their full clinical potential
8. Optical characterization of breast cancer
9. Role of micro RNA as biomarker in hepato-cellular carcinoma
10. To evaluate the role of tissue specific MSC derived exosomes in drug induced liver injury model

### ***Completed***

1. A comparative study to assess the efficacy, viability and composition of various cell populations of extracted hair follicle outer root sheath cell suspensions (EHF ORS CS) prepared using a single enzyme (trypsin) and multiple

- enzymes (trypsin, collagenase and dispase) for transplantation in vitiligo
2. Molecular Characterization of Steve Johnson Syndrome and its Ocular Sequelae
  3. Role of stem cell therapy to decrease pacing requirements in complete heart block
  4. T cells subsets and their functions in aplastic anemia
  5. To explore differentiation potential of bone marrow derived Mesenchymal stem cells into functional cardiomyocytes

### **Collaborative projects**

#### ***Ongoing***

1. A double-blind randomized trial of transplantation of cultured melanocytes from outer root sheath of plucked hair follicles vs. cultured melanocytes from epidermis, Dermatology
2. A Multi-center, Randomized, Double-blind, Placebo controlled Trial to Evaluate the effects of Intra Erythrocyte Dexamethasone Sodium Phosphate on Neurological Symptoms in Patients with Ataxia Telangiectasia, Pediatrics
3. Assessment of the effect of various storage media on viability, proliferative ability and differentiation potential of human periodontal ligament stem cells (hpdscs): An in-vitro study, CDER
4. Comparative evaluation of efficacy of conjunctival stem cell transplantation with cultivated oral mucosal epithelial transplantation in patients with bilateral cicatrizing ocular surface diseases (i.e. Stevens Johnson syndrome & Chemical burns), RP Centre
5. Evaluations of efficacy of therapeutic angiogenesis induced by intramuscular autologous platelet rich plasma in non revascularizable critical limb ischemia due to peripheral artery diseases, Cardiac Radiology
6. Generation of 3D breast tumor organoids as an invitro drug screening model, Medical Oncology
7. IUSSTF Reducing cancer mortality through cancer prevention, Gastroenterology
8. Solid Tumor targeting using Homing Peptide and Plasmonic Photothermal Technique, Surgery
9. Study of paracrine mechanism of autologous stem cell transplantation in stroke using bifunctional markers, Neurology
10. To evaluate the role of autologous BMSC for premature ovarian aging, Gynecology
11. To study efficacy of amniotic membrane as an alternative wound dressing in patients with post traumatic raw area admitted in trauma surgery unit, Trauma Surgery, JPNATC
12. Utilization of intra arterial injections of autologous bone-marrow derived mononuclear cells for treatment of spinal injury, Cardiac Radiology

#### ***Completed***

1. Comparison of autologous cultured limbal stem cells on amniotic membrane transplant versus limbal lenticule transplantation alone in the management total limbal stem cell deficiency due to ocular burns: A Randomized Controlled Clinical Trial, RP Centre
2. Evaluation of autologous bone marrow derived stem cells in dry age related macular degeneration, RP Centre

### **Blood Transfusion Services**

#### **Funded project**

#### ***Completed***

1. A Randomized Control Trial for evaluation of Transfusion Related Immuno-modulation in patients with meningioma, Gopal Kumar Patidar, AIIMS, 2 years, 2019–2020, Rs 10 lakhs

### **Departmental projects**

#### ***Ongoing***

1. A cost descriptive study in the treatment of Guillain barre syndrome and Myasthenia gravis patients at a tertiary level hospital
2. A Randomised Control Trial for Evaluation of Transfusion related Immuno-modulation in patients undergoing Neurosurgery
3. Analysis of ABO antibody titre in healthy blood donors
4. Assessment of ABO Antibody titre and Coagulation Factors level after mixing and dilution with Normal saline of A and B blood group donor plasma
5. Optimizing Blood Inventory Management at a Super-specialty Blood Centre in India- A Case Study
6. The outcomes of Leukoreduced and Non Leukoreduced Blood Component Transfusion in patients with Meningioma

## Collaborative projects

### Ongoing

1. Comparing the Vascularising potential of MSCs and MAPCs in monoculture and coculture systems with human OECs under normoxia and hypoxia, Stem Cell Facility
2. Complement factor H (CFH)-related protein 1 (CFHR1) and its role in maintenance of immunological tolerance". Regional Centre for Biotechnology, Faridabad
3. Development of diagnostic and experimental therapeutics using CRISPR-based technologies, Biochemistry
4. Effect of Hyperglycaemia on Macrophage Function in Pathophysiology of Pulmonary TB, Biochemistry
5. Evaluation of Mesenchymal Stem Cell derived exosomes on neutrophil-induced tissue damage in the animal models of liver and heart disease, Stem cell Facility
6. Exploring the potential of Exosomes derived from Endothelial Colony forming Cells (ECFC) primed with Mesenchymal Stromal Cells (MSCs) as a cell-free therapy for Cardio-vascular Diseases (CVDs), Cardiac Biochemistry, Stem Cell Facility
7. Host-Parasite interaction in Malaria, Biochemistry
8. Regulation of HIV Reservoirs through Autophagy, Biochemistry
9. Study the Potential Role of HLA-G mediated Immunomodulation by Tissue Specific Human Mesenchymal Stem Cells, Stem Cell Facility
10. Targeting Telomerase Reverse Transcriptase (TERT) gene to immortalize Peripheral Blood Mononuclear Cells of patients with coronary artery disease, Stem Cell Facility

## PUBLICATIONS

### Cardiology

Journals: 58

Abstracts: 3

Chapters in Books: 5

### Cardiothoracic and Vascular Surgery

Journals: 21

Chapters in Books: 1

### Cardiac Anaesthesiology

Journals: 39

Abstracts: 2

Chapters in Books: 5

### Cardiac Biochemistry

Journals: 12

### Cardiac Nuclear Medicine

Journals: 3

Abstracts: 12

### Cardiac Pathology

Journals: 20

### Cardiovascular and Interventional Radiology

Journals: 30

Abstracts: 2

Chapters in Books: 1

### Stem Cell Facility

Journals: 8

Chapters in Books: 3

### Blood Transfusion Services

Journals: 4

## PATIENT CARE

### Cardiology

New OPD cases

37566

Old cases

114829

### *Patient Services*

- TMT 2800
- Holter 3326
- Echocardiography 35388

• ECG	45632
• ABP	88
• TEE	70
• HUTT	220

#### ***Cath Lab Services***

• CART	2009
• Cath	800
• Balloon dilatation	113
• PTMC	212
• PDA	122
• ASD device	74
• VSD device	5
• PTCA	1106
• Pacemakers	365
• ICD	58
• CRT	52
• RFA	112
• CARTO	14
• DSA	264
• Coil embolization	91
• BAS	85
• EM Biopsy	40

### **Cardiothoracic and Vascular Surgery**

#### **Workload**

At the department of CTVS, one of the largest numbers of numbers of adult, aortic and paediatric cardiac surgery for congenital heart defects were performed in the country. Between 1 April 2019 to 31 March 2020, 3625 surgeries of all types were performed in the department. Along with Department of Cardiology (1,34,700) and CTVS (55,788), a total number of 1,90,488 new and follow patients were seen in the OPD. The number of indoor admissions was 10,939 (3064 in CTVS & 7875 in Cardiology).

#### **The facilities and infrastructure**

- Operating Rooms (OR's):** There are eight fully functional operating rooms in the Department of CTVS. Each one of these is equipped with all the necessary equipment required for performing the entire range of adult, aortic and paediatric cardiac surgery. These include state-of-the-art monitoring system and anesthesia station, NIRS, BIS, EEG, 3-D echocardiography, cell saver, CPB machines, vacuum assisted venous drainage, centrifugal pump, bronchoscope, and intra-operative neuromonitoring.
- ICU Beds:** The Department has 4 ICUs (54 beds) fully equipped with all advanced facilities for postoperative cardiovascular surgical care.
  - ICU-A: 16 Beds
  - ICU –B: 18 Beds
  - Neonatal ICU: 8 Beds
  - CT-5 ICU: 12 Beds
- General Beds:** The bed strength in the wards is follows:
  - **CT-4 Ward:** 42 Beds + 2 Isolation beds
  - **CT-5 Ward:** 24 Beds (In addition, 12 beds in CT5 ICU as above) + 2 Isolation beds
  - **CT-6 Ward:** 12 Beds
- CN Tower (Private Ward):** Thirty-two (32) beds in private/paying ward, shared with Department of Cardiology
- Homograft Valve Bank:** The Department runs the most successful valve bank of the country. This ensures adequate supply of homografts to manage complex paediatric cardiac surgical problems.
- Supportive services:** Five cardiac catheterization labs including, advanced CT scan, MRI, nuclear medicine, ultrasound, and echocardiography lab, state of the art blood bank, and laboratory services.

#### **Cardiac Anaesthesiology**

1. Advanced monitoring facilities (TEE, TTE, NIRS, NICO monitoring) for management of routine, emergency and

high risk cardiac surgical patients belongs to all spectrum

2. Specialized cognitive rehabilitation programme for heart failure, heart transplant and LVAD patients
3. Routine stress management programme both for pre- and post-operative patients
4. Different community programme by the faculties
5. Special involvement with anesthesia for complex congenital heart surgery
6. Team member of heart failure treatment like heart transplant & LVAD
7. Transesophageal Echocardiography
8. Community Service- Charitable health camps and health education
9. Special involvement with anesthesia for complex congenital heart surgery and OPCAB
10. Team member of heart failure treatment like heart transplant & LVAD
11. Transesophageal Echocardiography
12. Community Service- Charitable health camps and health education

### **Cardiac Biochemistry**

The Cardiac Biochemistry laboratory offering state-of-the-art diagnostic test facilities in patient care services and the test facilities are catering to patients of CN Centre as well as to other departments of the Institutes and also serves as referral lab for outside patients. The Lab operates as combined centralized laboratory for CN Centre and offers blood biochemistry (Blood sugar (fasting, PP, Random), LFT, KFT), hematology (hemogram, PT/INR, ESR), lipid profile, hormone (T3, T4, TSH, Testosterone, FSH, LH, Prolactin, Renin, Aldosterone) and vitamin profile (Vitamin D, B12, folate), drug testing (Cyclosporin, Tacrolimus, anti-epileptic drug testing (valproic acid, Carbamazepine, phenytoin, Phenobarbital, digoxin)) and various other specialized tests (Iron profile (serum iron, UIBC, TIBC, ferritin, catecholamine)) in the centralized lab.

### **Annual Statement of approximate number of tests done in Centralised Lab CNC**

S. No.	Description	No. of Tests (Ward)	No. of Tests (OPD)
<b>Clinical Chemistry</b>			
1	Glucose	32400	45000
2	Urea	55000	45000
3	Creatinine	55000	46750
4	Calcium	54000	44500
5	Phosphorous	54000	44000
6	Uric Acid	56750	44420
7	Sodium	56750	45650
8	Potassium	65098	45400
9	Bilirubin	54000	45450
10	Direct Bilirubin	54000	45340
11	Total Protein	56000	45110
12	Albumin	54897	45340
13	AST	59010	45900
14	ALT	59010	45000
15	ALP	57,190	45000
16	Cholesterol	36,180	8000
17	Amylase	25,150	8900
18	Cyclosporin	200	NA
19	Tacrolimus	600	NA

<b>Haematology and coagulation</b>			
1	Hb, TLC, DLC, Platelets, ESR	56780	39690
2	PT	14060	56500
3	APTT	1340	6700
<b>Hormones</b>			
1	T3	13000	8500
2	T4	13000	8500
3	TSH	14350	10500
4	Prolactin	2920	1300
5	Cortisol	2450	1950
6	Vit B12	9700	3670
7	Folate	3000	2500
8	Homocysteine	2300	1500
9	Ferritin	2450	400
10	Iron	2450	400
11	UIBC	2450	400
<b>Catecholamines/VMA</b>			
1	Adrenaline/Noradrenaline	450	135
2	VMA	490	135
<b>PTH/Vitamin D</b>			
1.	Vitamin D	5640	1340
2	PTH	45	0
<b>Lipids/Cardiac Enzymes/HbA1c</b>			
1	Lipid profile	55000	55000
2	CK-NAC	15460	4090
3	CK-MB	4000	3000
4	LDH	12000	11000
5	ASLO	1500	3900
6	CRP	50500	28000
7	Digoxin	500	500

### **Cardiac Nuclear Medicine**

The Department routinely performs myocardial perfusion SPECT imaging which is an integral investigation in the diagnosis and management of patients with coronary artery disease. We also perform cardiac PET imaging with PET tracer F-18 FDG for assessment of myocardial viability and for cardiac infective pathologies. New diagnostic techniques for non-CAD indications are now performed like Gallium-68 DOTANOC and Tc99 m PYP for cardiac sarcoidosis and infiltrative/inflammatory pathologies, respectively. We have also assessed the feasibility of F-18 FDOPA for evaluation of cardiac sympathetic innervations and in an ongoing study evaluating its role in Heart failure patients. The department also performs radionuclide ventriculography for assessment of left ventricular function in CAD patients referred from the center and from IRCH for cardiac evaluation in patients receiving chemotherapy.

Total Number of patients investigated in Nuclear Cardiology

Myocardial perfusion study:	1795	RNV study:	563
Cardiac PET:	162	Misc. (V/Q scan, 1st pass):	218
Total studies performed: 2738			

### **Cardiac Pathology**

#### **Specimens**

Routine: 310 cases                      Research: 163 cases

#### **Other work**

Immunohistochemistry: 392 slides                      H & E stain: 305 slides

Special stains: 102 slides                      Cutting of blocks (unstained sections): 631 slides

Rapid processing of post-transplant biopsies: 29 cases

### **Cardiovascular Radiology and Endovascular Interventions**

Facility	No. of Procedures	Facility	No. of Procedures
MRI	961	DSA/ Venogram	675
CT	6080	Doppler & Ultrasound	8543

### **Stem Cell Facility**

S.No.	Service Provided	Samples processed (n)
	Stem Cell Isolation from Bone Marrow	34
	Stem Cell Isolation from Adipose Tissue	10
	Stem Cell Isolation from Wharton's Jelly	12
	Stem Cell Isolation from Dental Pulp	2
	MNC Isolation from Bone Marrow	2
	MNC Isolation and Cryopreservation from Umbilical Cord Blood	4
	Cryopreservation of Apheresis sample	9
	Cultured Oral Mucosa Epithelial Transplantation	4
	Culture Limbal Epithelial Transplant	3
	Hair Follicle derived Stem Cells	20
	Skin Epidermis derived Stem Cells	20
	Viability of stem cells (pre & post transplantation/infusion)	15
	Amniotic Membrane preparation for grafting	19 Batches (468 Vials)
	Stem Cell Enumeration (CD34+ count)	6

### **Blood Transfusion Services**

Blood units collected	2019-20
Replacement donors	10438
Voluntary donors in the department	347
Voluntary through blood mobile	896
Family Voluntary Donors	8273
Blood received from IRCS	9
Blood received from Hosp. Blood Bank, AIIMS	142
Blood received from JPNATC, AIIMS	85
Blood received from other hospital	5
<b>Total No. of Blood units collected</b>	<b>20195</b>
<b>Blood units issued</b>	



Blood units issued to CTVS/NS	24061
Blood issued to Hosp. Blood Bank, AIIMS	505
Blood issued to JPNATC	164
Blood issued to other hospitals	2284
HIV/HBsAg/HCV reactive units discard	477
<b>Total No. of blood units issued</b>	<b>27041</b>
<b>Laboratory procedures</b>	
Total no. of Blood grouping (ABO)	84112
Total no. of Blood grouping (Rh)	84112
Total no. of cross matching done	128512
<b>Infectious markers</b>	
HIV Testing	23688
HBV Testing	23688
HCV Testing	23712
VDRL Testing	21944
MP testing	21944
<b>Total</b>	<b>114976</b>
<b>Number of blood components issued</b>	
Fresh Frozen Plasma (FFP)	20894
Platelet Concentrate	12770
Cryoprecipitate	1517
Packed Red Cells	27014
Single Donor Plateletpheresis	58
<b>Total</b>	<b>62253</b>

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

### Cardiology

**Professor VK Bahl** is Course director, India Live.

**Professor Anita Saxena** is President of National rheumatic heart consortium.

**Professor SS Kothari** has been in Ethics Sub-Committee of Medical Council of India (MCI)- 2019-2020; Member (Expert) – Drug Controller Govt. of India (DCGI)-2019-2020; Member of Standing Selection Committee meeting for selection of regular Faculty Posts, 21 October 2019, Puducherry.

**Professor Balram Bhargava** is DG, ICMR; Secretary, DHR.

**Professor KC Goswami** is President, Cardiological Society of India.

**Professor S Seth** is Editor in Chief, JPCS.

**Professor Sandeep Mishra** is Member, Internal Affairs Committee, SCAI; International Editor, Sri Lanka Journal of Cardiology; Editorial Board of European Medical Journal; Organizing Chair, SCAI 2019 Annual Meeting; International Examiner, National Academy of Medical Sciences.

**Professor Rakesh Yadav** is Treasurer, CSI Delhi branch; Editor, Indian Heart Journal.

**Professor G Karthikeyan** is Editor-in-Chief of *Heart Asia* which is one of the three heart journals published by the BMJ Group.

**Professor Ambuj Roy** is Member, Institute Body, JIPMER, Puducherry; Convener, Heart Failure Council, Cardiological Society of India (2018-2020); Member, Technical Expert Committee for National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS); Member, Task Force Committee of ICMR for Cardiovascular Research in India; Chairperson, Project Review Committee (Cardiovascular Diseases) of ICMR, New Delhi; Members of the Task Group on Health Services for Haryana Governance Reforms Authority; Facility Coordinator In-charge, Skill, e-Learning & Telemedicine (SET) Facility, AIIMS, New Delhi; Member, Institute Ethics Committee (Post Graduates) at All India Institute of Medical Sciences; Member, AIIMS Institute Ethics Committee- Subcommittee for Serious Adverse Events in clinical trials; Member, Managing Committee, CMET, AIIMS; Prof J P Das Oration at Indian College of Cardiology -26th Annual Conference 20 Sep 2019, Kochi-Looming Burden of Heart Failure in India: Can we Reduce it? Collaborator, Global Burden of Disease; Member of the GBD India Cardiovascular Disease Expert Group.

**Professor S Ramakrishnan** is Assistant editor of Annals of pediatric cardiology; Treasurer of national rheumatic heart consortium; Associate editor of JPCS.

**Dr Saurabh K Gupta** won Savitri Srivastava Imaging award PCSI 2019; CSI Indian innovation award 2019; IJMR Clinical image competition award 2019.

### **Cardiothoracic and vascular surgery**

**Professor SK Choudhary** was nominated as the member of American Association of Thoracic Surgeons; Conferred HonoraryDSc degree (Honris Causa) by JRD University, Chitrakoot, December 2019; Awarded “Leadership Award (2019-20)” by Sambadh Health Foundation for outstanding contribution to the Tobacco Control Campaign in India. Delivered Dr Denton A Cooley Oration (Annual Oration of Sajja Heart Foundation), titled “Courage in Cardiovascular Research” on 22 August 2019, Hyderabad. Delivered Annual Oration at Deshbandhu College (Delhi University), New Delhi, titled “The Killer Number One” on 4 September 2019. Nominated as subject expert for selection of faculty in super specialty, Directorate of Research & Medical Education, Government of Punjab, 22 September 2019, Chandigarh. Nominated as subject expert for selection of faculty in super specialty, Janakpuri Super Speciality Hospital Society (Jsshs) Janakpuri, 4 March 2020, New Delhi. Nominated as an external examiner for MCh (CTVS) 16 March 2020 at Pt. B.D. Sharma University of Health Sciences, Rohtak. Nominated in Specialists Board in specialty of Cardiothoracic Surgery, National Board of Examinations. 2019. Nominated as expert to review the draft white paper on Electronic nicotine delivery systems (ENDS), also called electronic cigarettes, e-cigarettes, Indian Council of Medical Research, New Delhi. Nominated as member of “Standing Technical Committee”, DGHS, Government of India, 26 December 2019, New Delhi. Nominated as Chairperson of Expert Group to conduct inspection at SMS Hospital, Jaipur for Heart Transplantation facilities under Transplantation of Human Organs Act, 1995, November 2019. Nominated as a member in Expert group to conduct inspection of Indraprastha Apollo Hospital, New Delhi for Lung Transplantation facilities under Transplantation of Human organs act, 1995 by the DGHS, December 2019, New Delhi. Nominated as a member in Expert group to start robotic surgery program at National Institute of Thoracic and Respiratory Diseases, 12 February 2020, Mehrauli, New Delhi.

**Professor Sachin Talwar** was Governing Council Member of WSPCHS for 4 years. Editor, Congenital Section, Asian Cardiovascular annals Thoracic annals. Theory examiner, PGI Chandigarh, 24-27 April 2019. Theory examiner, KGMC Lucknow, April 2019. Expert for Selection / Promotion of Faculty Members at King George’s Medical University: 30 July 2019. Expert for Selection / Promotion of Faculty Members at SCTIMST Trivendrum 30 August 2019. Expert for Selection / Promotion of Faculty Members at PGI Chandigarh 23 August 2019. MCh examiner SCTIMST Trivendrum, 7 December 2019. Selected External expert for PhD viva-voce for Phd (computational fluid dynamics). Keynote lecture on “arterial switch operation: what can we learn from the Indian experience” at Summit on the arterial switch operation-A to Z, 27-29 November 2020, Bali, Indonesia.

### **Cardiac Anaesthesiology**

**Professor Neeti Makhija** chaired a session in the 14th Annual Perioperative and Critical Care Transesophageal Echocardiography Workshop from 6-8 March 2020 at PGIMER, Chandigarh on Pediatric Imaging that included the following topics: Assessing PAH in CHS and its implications–non invasive, Complex cardiac anomalies – single vs double ventricle repair, Pre op and Post op echo assessment of D- TGA, Congenital mitral valve abnormalities – Pre and post-op echo assessment; Chaired the session on workshop on Lung Isolation Techniques in The Airway -2020, The Airway Congress of Airway Management Foundation from 22.02.2020 to 23.02.2020 at New Delhi. Chaired the session in 23rd National Conference of Indian Association of Cardiovascular and Thoracic Anesthesiologists 2020 at Goa organized by the Mumbai Branch from 7 February 2020-9 February 2020 on “Paediatric Cardiac Intensive Care” that included the following

topics: Ivabradin: New kid on the block in Congenital Hearts, How to plan peri-operative nutrition in children?, Near misses in Paediatric Cardiac Anaesthesia/ICU-My Experience, Approach to Post op Fever-Wait OR Escalate Antibiotics; Chaired the Session in the 8th Comprehensive Perioperative Echo Workshop on 16 November 2019 At Medanta, The Medicity, Gurgaon on “Decision Making in Valve Disease – II” which included the following lectures: Should the Tricuspid Be Repaired? On which Echo Criteria should you rely?, Aortic Regurgitation: Pitfalls in Assessment, Aortic Stenosis: Gradients Vs Valve Area?, Prosthetic Valves: Type and Echo Assessment of the Newly Seated Valve, Assessment of the Thoracic Aorta: TEE and Epiaortic Views, TAVR: Imaging and beyond. These lectures were followed by Panel Discussion and interaction with Audience. Also mentored the participants in the Hands-on Sessions & Wet Lab: Porcine Heart Dissection.

**Professor Poonam Malhotra Kapoor** has completed her 1 year tenure as the President of IACTA ( non elected). Continuing as the President of SCA-Delhi and NCR Branch ( non elected). Continuing as Founding Secretary and Chairman Academics of “The Simulation Society”. She has become the Past President of ECMO Society of India (non elected). She has nominated as Senior member –The AAPI Global Resuscitation Ad hoc Committee (2019-20). Editor-In-Chief. Journal of Cardiac Critical Care, 3rd and 4th issues of JCCC 2019. Principal Editor of Book entitled “Hypertension: New Frontiers – textbook of Cardiology” Edited by Dr HK Chopra published by Jaypee Publishers. Received “Award of Honour –for Contribution in ECMO and Echocardiography” at CSI meeting held at EROS Hotel on 10 November 2019. She was Examiner for: DNB Cardiac Anaesthesia, Kolkata; DNB Cardiac Anaesthesia, Ahmedabad; DNB Cardiac Anaesthesia, SGRH, Delhi; FTEE examination conducted by IACTA at Bengaluru. She was content provider for online Fellowship in Cardiac critical care (FICCC), Fellowship in Advanced Echocardiography (FIAE) and Fellowship in Basic Echocardiography (FIBE) online Examination, conducted by The Simulation Society (TSS) and Journal of Cardiac Critical Care (JCCC). The Exams were online conducted by Tata Consultancy Services. Co-Editor: ISCCM Manual of RRT and ECMO in ICU (A Reference Book for Practicing Intensivists) Author: Editor: Rajesh Chandra Mishra, Co-Editors: Kanwalpreet Sodhi, KC Prakash, Poonam Malhotra Kapoor. Attended as Invited Faculty, 1st CytoSorb Advisory Board Meeting on Cardiovascular Surgeries, 22 May 2019, New Delhi. Editor in Chief – Journal of Cardiac Critical Care, Knowledge sharing Session on “Understanding Lifestyle Diseases”, 4 May 2019, New Delhi; Conducted ECMO workshop and hands-on Session, TSS-APVIC Vascular ECMO Course, 29 June 2019, New Delhi. Course Director to conduct Vascula ECMO Workshop, 11th Asia Pacific Vascular Intervention Course, 28-30 June 2019, New Delhi; Publishing Workshop Jointly by B.B. Dikshit Library, AIIMS and Wolters Kluwer, 11 July 2019, New Delhi.

**Professor Minati Choudhury** was awarded for the paper “Correlation between thoracic fluid content (TFC), total leukocyte count (TLC) and C-reactive protein in patients undergoing pediatric cardiac surgery. (Co investigators.... S Aggarwal, Devagourou V), At World congress of cardiology, Barcelona, Spain 23 and 24 September 2019.

**Devishree Das and Minati Choudhury** won Award for the paper.....” A case of Hedinger syndrome secondary to carcinoid tumor of ovary. 14th perioperative and critical care workshop,6-8 March 2019, PGIMER, Chandigarh.

**Dr Arindam Choudhury** received Best paper award (First prize) by the European Association of Cardiothoracic Anaesthesiologists during their annual meeting in September 2019 at Ghent, Belgium for presenting the above mentioned paper. It was judged the best oral presentation out of all the international papers presented during the EACTACON 2019 (Abstract and the award certificate attached). Received Certificate of appreciation awarded for academic contribution to the SET facility programs by Director, AIIMS New Delhi during a faculty felicitation ceremony on November 2019.

### **Cardiac Biochemistry**

**Professor Lakshmy Ramakrishnan** chaired a session on “Pathology and epidemiology of atherosclerosis”, 5th Annual Conference of the Delhi Chapter of Indian Society of atherosclerosis research (ISAR-DCCON-2019), 3 August 2019, New Delhi; Member of technical advisory group constituted by Ministry of Health and Family Welfare for conducting Comprehensive national Nutrition Survey (CNNS); Expert member of project review committee of Indian Council of Medical Research in the area of Endocrinology; Also an expert member of ICMR in the area of Non Communicable Diseases; Expert member for the Task Force Project on “ICMR-India Diabetes [INDIAB] study for estimating prevalence of Diabetes and Pre- Diabetes in different states of India; Member of CKD project monitoring technical advisory committee constituted by Health and Family welfare ministry, Government of AP; Member of research area panel on diabetes at NCDIR, Bengaluru; Member of Expert Committee for Lab and Blood bank Equipment purchase in NHSRC; Member of expert group for preparation of revised GCLP guideline by ICMR; Examiner for 2 PhD thesis from Osmania University, Hyderabad; Member of research group committee for DBS study in NFHS 4 and 5; National editor, J of Practice of Cardiovascular Sciences; Reviewed articles for Therapeutic advances in Endocrinology and metabolism, International J of diabetes in developing countries, IJMR, Clinical chemistry and laboratory medicine, J of diabetes research.

### **Cardiac Nuclear Medicine**

**Dr Chetan Patel** was Chairperson in Nuclear Cardiology session, Panel discussion, 51st Annual Conference of Society of Nuclear Medicine, 12-14 December 2019, Mumbai. Reviewer for National and International Academic Journals. Vice President, Nuclear Cardiological Society of India; Member of Executive Committee, Society of Nuclear Medicine, India; Member of Executive Committee, Association of Nuclear Medicine Physicians of India; Subject expert for faculty interview 10 May at AIIMS, Jodhpur; Subject expert for faculty interview 8 September at AIIMS, Jodhpur; External examiner for MD Nuclear Medicine, at Sri Venkateshwara Institute of Medical Sciences, Tirupati on 1 May 2019; Reviewed thesis of MD Nuclear Medicine students, AIIMS, Rishikesh; Reviewed thesis of MD Nuclear Medicine students, TMH, Mumbai; Internal Examiner for MD Nuclear Medicine, MSc Nuclear Medicine Technology and DM Nuclear Medicine Therapy Practical Examinations held in December 2019; Reviewer of Adhoc Extramural Proposal of ICMR; Member Store Purchase Committee of Center for Integrative Medicine & Research (CIMR); Chairman, Selection Committee for recruitments in research projects at CIMR; Chairman, Selection Committee for recruitment of core staff at CIMR under COE Scheme, AYUSH; Training: DM cardiology students: Dr Ashish Hota & Dr Tejvir Singh, NEIGRIHMS, Shillong- One month experience in Nuclear cardiology, AIIMS; Training: MD Nuclear Medicine students from Sri Venkateswara Institute of Medical Sciences, Tirupati.

### **Cardiovascular Radiology and Endovascular Interventions**

**Professor Sanjiv Sharma** was Reviewer for many national and international radiology and cardiology journals; President of society of emergency radiology.

**Dr Priya Jagia** was reviewer for many national and international radiology and cardiology journals.

**Dr Sanjeev Kumar** was Reviewer for many national and international radiology and cardiology journals; Nominated as Secretary of Delhi ISVIR; APCIO Young investigator Scholarship; Winner of 'Clinical Images competition 2019' under the IJMR Symposium.

### **Residents**

1. Dr Vineeta Ojha: CIRSE International Young Fellow Travel Award for CIRSE 2019.
2. Dr Rengarajan Rajagopal: First place in residents fellows quiz in CIRSE Annual Congress 2019.

### **Blood Transfusion Services**

**Dr Anjali Hazarika** chaired a scientific session during CME on Transfusion Medicine at AIIMS, New Delhi- 5 April 2019; Organized a Donor felicitation programme with an Awareness Walk on Voluntary Blood Donation On World Blood Donors Day, 14 June 2019; Technical Expert during "Review of Technical Specifications of Medical Devices required in Lab and Blood Banks"- at NHSRC, Munirka Delhi – 5 July 2019; Chaired scientific session of in CME on Thalassaemia by Thalassaemic Society of India- 18 August 2019; Chaired scientific session at BAHMC, Rohini during CME on "An update on Perinatal, Neonatal and Pediatric Transfusion Practices", 31 August 2019; Observer during inspection of Blood Bank for NABH accreditation, 27 and 28 September 2019; Nominated as Nodal officer for Fire Safety, BB CNC – 29 September 2019; On occasion of National Voluntary Blood Donation Day, organized month long activities like inhouse and outdoor blood donation camps, Puppet shows and Nukkad Natak in collaboration with DSACS at CNC to create awareness about Voluntary blood donation-3 October - 3 November 2019; Technical expert-Meeting and demonstration of about Good Governance Mobile app for blood donors at IRCS - 9 January 2020; Technical expert during meeting at Health Ministers office in Nirman Bhavan for suggestions regarding improving availability and accessibility of Blood in Delhi,- 9 January 2020; Chaired a scientific session on "Immunohaematological case presentation in multiple transfused pts" during CME on "Current trends & Challenges Immunohaematology & Transfusion Medicine" in Deen Dayal Upadhyay Hospital, Delhi, 20 February 2020; Mega Blood Donation Camp by the 3 blood Banks of AIIMS with a single day collection of a record 3000 voluntary blood donation, 27 February 2020

### **VISITING SCIENTISTS**

#### **Cardiothoracic and Vascular Surgery**

1. Dr Kaushik Mandal, Hershey Medical Center, Hershey, USA
2. Dr Roberto Bortolomeo, University of Bologna, Bologna, Italy
3. Dr Sivakumar Sivalingum, National Heart Institute, Kuala Lumpur, Malaysia
4. Dr Catherine Sudarshan, Papaworth hospital, Cambridge, UK

#### **Cardiovascular Radiology and Endovascular Interventions**

1. Dr ChantsalsurenGalbaatar, The intermed Hospital, Ulaanbaatar, Mangolia

2. Dr Khishigjargal Erdene, The intermed Hospital, Ulaanbaatar, Mangolia
3. Dr Mohammad Anwar Hossain, Department of Radiology and Imaging, Dhaka, Bangladesh
4. Dr Wahiduzzaman, National institute of Cardiovascular Diseases, Dhaka, Bangladesh
5. Dr Shikha Sood, Indira Gandhi Medical College, Shimla, Himachal Pradesh
6. Dr Harshit, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala

**Stem Cell Facility**

1. Dr Chandan Sen, Indian University, Indianapolis, USA
2. Cato T Laurencin, University of Connecticut, Storrs, USA

## 10.2. Centre for Dental Education and Research

### Chief

OP Kharbanda  
(up to 29 February 2020)

Ritu Duggal  
(Orthodontics and Dentofacial Deformities)  
(from 1 March 2020)

### Professors

Ajoy Roychoudhury  
(Oral and Maxillofacial Surgery)  
Ongkila Bhutia  
(Oral and Maxillofacial Surgery)

Ajay Logani  
(Conservative Dentistry and Endodontics)

Veena Jain  
(Prosthodontics)  
Vijay Prakash Mathur  
(Paediatric and Preventive Dentistry)

### Additional Professors

Dalim Kumar Baidya  
(Anaesthesia)

Devlina Goswami  
(Anaesthesia)

### Associate Professors

Amrita Chawla  
(Conservative Dentistry and Endodontics)

Vijay Kumar  
(Conservative Dentistry and Endodontics)

Rahul Yadav  
(Oral and Maxillofacial Surgery)

Vilas Samrit  
(Orthodontics and Dentofacial Deformities)

Prabhat Kumar Chaudhari  
(Orthodontics and Dentofacial Deformities)

Kunaal Dhingra  
(Periodontics)

Kalpna Bansal  
(Paediatric and Preventive Dentistry)

Nitesh Tewari  
(Paediatric and Preventive Dentistry)

Dheeraj Kumar Koli  
(Prosthodontics)

Shalini Gupta  
(Oral Medicine)

Deepika Mishra  
(Oral Pathology and Microbiology)

Harsh Priya  
(Public Health Dentistry)

### Assistant Professors

Krushna Bhatt  
(Oral and Maxillofacial Surgery)

Aditi Nanda  
(Prosthodontics)

Rahul Morankar G  
(Paediatric and Preventive Dentistry)

Sidhartha Sharma  
(Conservative Dentistry and Endodontics)

Vikender Singh  
(Periodontics)

Anika Daing  
(Periodontics)

Bharathi M Purohit  
(Public Health Dentistry)

### Senior Administrative Officer

Smt. Renu Bhrdwaj

### Store Officer

Bhawani Singh

### Senior ANS, Officer

Alka Jhadhav

Neelam Sood

## HIGHLIGHTS

Centre for Dental Education and Research (CDER) has continued its leadership role in the region by being WHO Collaborating Centre for Oral Health Promotion since 2014 and discharging its functions as technical expert and for capacity building in neighboring countries. It is also a national leader and has been continuing as National Centre of Excellence for Implementation of National Oral Health Program for Ministry of Health and Family Welfare, Government of India. It helps the Government and ICMR in various policy matters, technical expertise, capacity building and quality control by conducting various events and the expertise of its faculty members.

The faculty of the department has organized 23 national conferences, workshops, symposia and hands-on programmes for faculty members and students of other dental and medical institutes in the country.

The faculty members are serving as office bearers and editors of prestigious professional organizations and journals, and have been delivering orations, keynote addresses and guest lectures across the world. The faculty have also received two awards and fellowships in international and six awards and fellowships at national events during this year. During this year a state-of-the-art cleft lip and palate clinic, and histopathology laboratory were inaugurated.

## EDUCATION

Centre for Dental Education and Research has been conducting postgraduate courses in Orthodontics, Prosthodontics, Conservative Dentistry & Endodontics, Oral & Maxillofacial surgery and Pediatric & Preventive Dentistry. This year the centre has enrolled PhD candidates in Orthodontics, Oral & Maxillofacial surgery and Pediatric & Preventive Dentistry. The Centre is also conducting the teaching programme for Dental Operating Room Assistant (DORA) and BSc Dental Hygiene Courses in collaboration with other departments in the Institute. The centre also continues to teach Undergraduate students (MBBS and BSc Hons. Nursing). Apart from this, short term trainees and observers have been visiting the centre.

## CMEs/Workshops/Symposia/National and International Conferences Organized by the Centre

1. How to Make Best of the Postgraduate Years, Symposium, 1-2 April 2019, CDER AIIMS, New Delhi
2. Hands on workshop on oral cancer screening, National Institute of Cancer Prevention and Research, 10 April 2019, Noida
3. Workshop on National Level Oral and Disease Burden Survey in India, 12 July 2019
4. CME on Laser-assisted tongue tie management, 16 July 2019, AIIMS, New Delhi
5. AOCMF Seminar—Advances in Orthognathic Surgery, New Delhi, India, 19 and 20 July 2019
6. NTPC Programme, 19-21 August 2019, AIIMS, New Delhi
7. Training Programme for KV School teachers, 2 batches, 26 August and 3 December 2019, CDER, AIIMS, New Delhi
8. Oral Healthcare Innovations Conference 2019, 16 September 2019, AIIMS, New Delhi
9. Faculty International: AOCMF Seminar Advances in Management of Temporomandibular Joint Reconstruction, Changsha, China, 20 and 21 September 2019
10. 1st AIIMS Periodontal & Peri-implant Plastic Surgery Symposium, 2 and 3 October 2019, New Delhi
11. Pre-conference Workshop of Cast Partial Denture – Clinical and Laboratory Steps, 47th Indian Prosthodontics Society Conferences, 29 November 2019, Raipur, India
12. Efficient Orthodontic Techniques for Best Facial Esthetics, 11 December 2019, AIIMS, New Delhi.
13. CME, Advances in Pediatric dentistry, 24 Dec 2019, AIIMS, New Delhi
14. Advancing Dental Research in India: National Brainstorming Meeting, 17 January 2020, New Delhi
15. Oral health promotion and oral cancer prevention for ORBO Nurses, AIIMS, New Delhi, 20 January 2020, AIIMS, New Delhi
16. Faculty International: AOCMF Lighthouse Course TMJ Surgery (with Human Anatomical Specimens), 26-28 January 2020, Leiden, Netherlands
17. Second TMJ Replacement live surgery and cadaver course, 16-18 February 2020, AIIMS, New Delhi
18. Training of Nursing Professionals on Oral Health Promotion under National Oral Health Programme, 18 February 2020, Centre for Dental Education and Research, AIIMS, New Delhi

## Lectures delivered

**OP Kharbanda: 9**

**Veena Jain: 2**

**Vijay Prakash Mathur: 13**

**Ritu Duggal: 3**

**Ongkila Bhutia: 3**

**Prabhat Kumar Choudhari: 1**

**Ajoy Roychoudhury: 10**

**Ajay Logani: 13**

**Vijay Kumar: 2**

**Amrita Chawla: 3**  
**Kalpna Bansal: 2**  
**Vikender Singh: 8**  
**Devalina Goswami** (*Please see 9.1 Anaesthesiology*)  
**Dalim Kumar Baidya** (*Please see 9.1 Anaesthesiology*)  
**Deepika Mishra: 6**  
**Aditi Nanda: 1**

**Sidhartha Sharma: 1**  
**Dheeraj Kumar Koli: 3**  
**Shalini Gupta: 7**  
**Harsh Priya: 10**

**Nitesh Tewari: 12**  
**Kunaal Dhingra: 2**  
**Krushna V Bhatt: 1**

**Oral Papers/ Posters presented: 81**

## RESEARCH

### Funded projects

#### *Ongoing*

1. A Prospective Pilot study to evaluate the clinical success of a Tooth Colored metal free Self-Curing Resin-based material as an alternate to silver amalgam for Class-II Posterior Restoration, Amrita Chawla, AIIMS, 2 years, 2017-2019, Rs 3.71 lakhs
2. A study validating the efficacy of a herbal mouthwash in reduction of plaque and gingivitis: An in vitro evaluation and a randomized controlled clinical trial, Vikender Singh, National Innovation Foundation, Govt. of India, 2 years, 2019-2021, Rs 30.47 lakhs
3. Analysis of the opinions and beliefs associated with the use of tobacco dentifrice among the Individuals attending a Dental Hospital, Harsh Priya, Self-Funded, 1 year, 2020-2021, Rs 0.05 lakhs
4. Association of Candida and antifungal therapy with pro-inflammatory cytokines in oral leukoplakia-A pilot study, Shalini Gupta, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
5. Automatic diagnosis and monitoring for orthodontic invisible appliance cases using artificial neural network (ANN), OP Kharbanda/Prabhat, India-Taiwan S&T Cooperation Programme–Global Innovation & Technology Alliance (GITA), 2 years 10 months, 2018-2021, Rs 16.63 lakhs (India); NT\$ 600,000 (Taiwan)
6. Biomechanical evaluation of patient-specific alloplastic temporomandibular joint replacement among Indian population-Single Centre Prospective Observational Study, Ajoy Roychoudhury, IIT Mumbai, 2 years, 2019-20, Rs 25 lakhs
7. Building research capacity in India: Identifying barriers and enablers to oral health research, Kunaal Dhingra, International Association for Dental Research (IADR), USA, 3 years, 2017-20, Rs 26 lakhs
8. Cleft Lip and Palate anomaly in India: Clinical profile Risk factors and current status of treatment: A hospital-based study-Main phase, OP Kharbanda/Vilas Samrith, ICMR, 3 years, 2017-2020, Rs 316.69 lakhs
9. Clinical, Histomorphometric and 3-Dimensional Cone Beam Computed Tomographic Analysis of Autogenous Tooth Bone Graft Mixed with Injectable Platelet Rich Fibrin for Ridge Preservation, Vikender Singh, AIIMS, 2 years, 2019-2021, Rs 8.89 lakhs
10. Cluster randomized controlled superiority trial to evaluate the growth outcomes and jaw functions after interposition arthroplasty with constochondral graft versus gap arthroplasty in the management of temporomandibular ankylosis, Ajoy Roychoudhury, ICMR, 3 years, 2018-21, Rs 15.46 lakh
11. Comparative evaluation of Module for Sports Dental Injury Prevention (MSIP) and combination of MSIP with custom-fabricated mouth-guard for prevention of traumatic dental injuries in 10-18 years old Kabaddi Players of Delhi-NCR region in a sports season: a cluster randomized controlled trial, Nitesh Tewari, ICMR, 3 years, 2020-2023, Rs 42 lakhs
12. Cone Beam Computed Tomographic evaluation of two novel techniques as adjuncts for non surgical management of large periapical lesions of endodontic origin –Prospective randomized double blind controlled trial, Ajay Logani, ICMR, 3 years, 2016-20, Rs 30 lakhs
13. Development and laboratory testing of a Self-adhesive Stainless-steel dental splint Prototype, Ajay Logani, AIIMS-IIT Delhi collaborative fund, 2 years, 2020-2022, Rs 10 lakhs
14. Development and validation of Dental Trauma Awareness Tool for School Teachers, Nitesh Tewari, ICMR, 3 years, 2019-2022, Rs 15 lakhs
15. Development of e DantSeva, an Oral Health Website and Mobile Application, Harsh Priya, e Health Division, MoHFW, 1 year, 2018-2019, Rs 35.5 lakhs
16. Effect of systemic and local antibiotic therapies on clinical and patient reported outcomes in healthy, partially



- dentate patients undergoing dental implant placement- a preliminary study, Veena Jain, AIIMS, 2 years, 2016-2018, Rs 3.98 lakh
17. Effectiveness of a Cranberry Extract Mouth-rinse Vs a Sodium Fluoride Mouth Rinse on Microbial Counts in Caries Active Children- A Double Blind Randomized Controlled Trial, Kalpana Bansal, ICMR, 2 years, 2019-2021, Rs 27 lakhs
  18. Effectiveness of an Oral Health Toolkit for Pediatric Oncology Patient against standard of care in the improvement of oral health status in 2-14 years old pediatric cancer patients, Harsh Priya, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
  19. Evaluation of inflammatory markers metalloproteinase-8 (MMP-8) and cathepsin- k (CTSK) levels in immediate loaded and delayed loaded dental implants: a randomized controlled trial and pilot study. Dheeraj Kumar Koli, AIIMS, 2 years, 2017-2020, Rs 7.5 lakhs
  20. Explore the novel use of florescence based microendoscopy and Raman spectroscopy for detection of oral cancer and dysplasia, Deepika Mishra, AIIMS–IIT Delhi Collaborative Research Project, 1 year, 2019-2020, Rs 5 lakhs
  21. Fabrication and in-vivo (rat model) evaluation of novel local drug delivery system based on polymer nanocomposite for treatment of periodontitis, Kunaal Dhingra, ICMR, New Delhi, 3 years, 2019-22, Rs 41 lakhs
  22. Functional collagen nanoparticle impregnated silk nano-ceramic composite 3D matrices for flat bone regeneration, OP Kharbanda, DBT, 3 years, 2018-2021, Rs 9.86 lakhs
  23. Low intensity pulsed ultrasound (LIPUS) as a therapeutic adjunct to enhance periodontal healing subsequent to luxation dental injuries, Vijay Kumar, AIIMS, Rs 3.86 lakhs
  24. Maxillofacial Planning and simulation system, Ajoy Roychoudhury, Ministry of Electronics and Information technology, 3 years, 2016-19, Rs 131.93 lakhs
  25. Molecular and immunological characterization of fibro-osseous lesions affecting oral and maxillofacial region, Deepika Mishra, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
  26. Retrospective study of oral pathology specimens: incisional vs excisional specimens and cytopathology vs histopathology, Deepika Mishra, Self, 1 year, 2019-2020

#### **Completed**

1. Association between serological levels and genetic polymorphisms of VEGF A and C with clinicopathological characteristics in oral squamous cell carcinoma and oral submucous fibrosis - A pilot study, Shalini Gupta, AIIMS, 2 years, 2016-2018, Rs 9.99 lakhs
2. Effect of nonsurgical periodontal therapy on metallothionein expression and levels in serum, saliva and gingival crevicular fluid: An interventional study, Vikender Singh, AIIMS, 1.5 years, 2017-2019, Rs 4.59 lakhs
3. Effect of various tooth storage media on viability, proliferative ability and differentiation of human periodontal ligament stem cells- an in-vitro preliminary study, Nitesh Tiwari, AIIMS, 1 year, 2016-2017, Rs 4 lakhs
4. Etiology of oral cancer in Indian population younger than 30 years, Deepika Mishra, Self-funded, 2 years, 2016-2018
5. Genetic profiling of non-syndromic Pierre Robin Sequence patients by whole exome sequencing and microarray, Deepika Mishra, AIIMS, 1 year, 2016-2017, Rs 5 lakhs
6. In-vitro efficacy and safety evaluation of novel mucoadhesive silver nanoparticle based local drug delivery system for treatment of periodontitis, Kunaal Dhingra, AIIMS, 1 year, 2016-17, Rs 5 lakhs

#### **Collaborative projects**

##### **Ongoing**

1. A Population based prospective cohort study to unravel the causes of stroke and cognitive decline: A cross cultural perspective, Neurology–Clinical Epidemiology
2. A prospective, active controlled, randomised, double blind, multicentre, phase III study to compare the safety and efficacy of biosimilar denosumab of Enzine Biosciences Limited Versus innovator denosumab in the treatment of postmenopausal osteoporosis, Orthopedics, Endocrinology, Radiology
3. A study of offset analgesia in Trigeminal Neuralgia, Physiology
4. Assessment of oral hygiene status in HIV positive patients: a cross sectional study
5. Cleft Lip and Palate anomaly in India: Clinical profile Risk factors and current status of treatment: A hospital-based study, Main Phase, Genetics and CSIR-IGIB
6. Clinical, histomorphometric and 3-Dimensional Cone Beam Tomographic analysis of Autogenous Tooth Bone Graft mixed with Injectable Platelet Rich Fibrin for ridge preservation, Periodontics, Oral Medicine and Radiology

7. Design and testing of orthodontic mini-screw embedded with sensors to detect inflammation – Phase I, Deptt. of Biomedical Engg, Indian Institute of Technology, New Delhi
8. Development of Flip Chart on Oral Health among other NCDs in SEARO, Centre for Community Medicine
9. Development of MOOCs on Oral Health and Oral Cancer, World Health Organisation
10. Development of Training Modules for MPWs, CHOs and ASHAs on Primary Oral Health Ca, National Health Systems Resource Centre, Govt. of India
11. Functional collagen nanoparticle impregnated silk nano ceramic composite 3D matrices for flat bone regeneration, IIT Guwahati
12. Incidence and risk factors of back pain after cesarean section: A prospective observational study, Gynaecology and Obstetrics
13. National Level Oral and Dental Disease Burden Survey in India—Concept and methodology, Ministry of Health and Family Welfare
14. Perioperative Music Therapy in Addition to standard treatment for the Improvement of Quality of Recovery after Anesthesia Following Maxillofacial Surgeries: A Randomized Controlled Study, Anaesthesia.
15. Role of human Heterogeneous Nuclear Ribonucleoprotein D (hnRNP D) in oral cancer, Biochemistry
16. Role of Negative Regulators of EGFR in Malignant Transformations of Oral Dysplasia, Biochemistry
17. To assess the potential ability of Cathepsin L and Cathepsin B as universal biomarkers of cancer, Biochemistry

### **Completed**

1. A study to assess the effectiveness of a planned simulation teaching on the knowledge and skill of nurses working in critical care unit of AIIMS, College of Nursing
2. An exploratory study to assess the association between Nicotine Metabolite Ratio (NMR) and Smokeless Tobacco Use parameters, Psychiatry and NDDTC
3. Association between serological levels and genetic polymorphisms of VEGF A and C with clinicopathological characteristics in oral squamous cell carcinoma and oral submucous fibrosis - A pilot study, Biochemistry
4. Effect of repetitive Trans cranial Magnetic Stimulation on pain status, thermal sensitivity and motor activity in Myofascial Pain Dysfunction Syndrome, Physiology
5. Effect of various tooth storage media on viability, proliferative ability and differentiation of human periodontal ligament stem cells- an in-vitro preliminary study, Stem cell facility
6. Estimate the oral cancer conversion risk with long term follow up (10-15 years) of patients with precancerous lesions- leukoplakia, submucous fibrosis, lichen planus among patients included in a ICMR tobacco task force project, General Surgery, NICPR, Noida
7. Interdisciplinary variations in spectrum of oral mucosal lesions, Dermatology
8. To assess the potential ability of Cathepsin L and Cathepsin B as universal biomarkers of cancer, Biochemistry

### **Departmental projects**

#### **Ongoing**

1. A clinical study to compare the effect of two methods of forced eruption on alveolar bone width and height of permanent maxillary incisor tooth with complicated crown-root fracture
2. A preliminary study to evaluate the outcome of combination of non-surgical endodontics and vital pulp therapy for management of mature permanent molar teeth with symptomatic irreversible pulpitis and periapical rarefaction
3. A prospective study to evaluate improvement in posterior airway volume and lengthening of mandible in simultaneous release of Ankylosis and mandibular distraction.
4. A study to identify the risk factors and prevalence of oral cancer through screening among security personnel working at AIIMS, New Delhi.
5. Ambispective study to evaluate the fate of Costochondral Graft in TMJ ankylosis patients from January 2014 to April 2018
6. An observational cross-sectional analytical study to evaluate the effects of Anti-cancer therapy on developing dentition in long term survivors of childhood cancers
7. Assessment of inferior vena cava collapsibility index (IVCCI) and variation of carotid artery peak velocity (CAPV) as predictor of post-spinal hypotension
8. Association of intraoperative blood glucose variability with postoperative outcomes in emergency laparotomy
9. Change in food consumption pattern with calorie, sugar and fat labels: A Systematic Review
10. Comparative evaluation of color change in restorative material is due to common eatables consumed by Indian children

11. Comparative evaluation of different root surface biomodification methods in teeth with extraoral dry times more than 60 minutes
12. Comparative evaluation of simvastatin gel and diode laser in pulpotomy of primary molars
13. Comparative evaluation of two rehydration protocols in fragment reattachment
14. Comparison of 5 factor modified frailty index and ASA classification to predict morbidity and mortality in patients undergoing arthroplasty – A prospective observational study
15. Comparison of blind intubation success rates through AirQ and LMA Blockbuster in adult patients
16. Comparison of clinical efficacy of Intrathecal 0.75% isobaric ropivacaine with fentanyl versus clonidine as adjuvant in caesarean section: A prospective randomised controlled trial.
17. Comparison of efficacy of Mitek mini anchor suture technique with conventional technique for TMJ disc placation procedure in Wilkes class III patients: A randomized controlled trial
18. Comparison of lactate clearance and neutrophil lymphocyte ratio as predictor of mortality in patients with sepsis
19. Comparison of opioid based anesthesia technique and opioid free anesthesia technique in patients undergoing laparotomy for gynecological malignancy: randomized controlled trial
20. Comparison of treatment outcomes subcondylar fracture of mandible, managed using one trapezoidal plate vs two nonparallel straight miniplate
21. Comparison of urinary and salivary metal levels in long term fixed appliance therapy: A prospective study
22. Correlation between Doppler derived carotid artery corrected flow time, pressure transducer derived radial artery flow time and pulse pressure variation: A prospective observational study
23. Designing, Development and in-vitro/ex-vivo Testing of a Prototype Flexible Pre-loaded Self-adhesive Stainless-steel Splint for Stabilisation of Traumatized Anterior Teeth: A Pilot Interventional Study
24. Effect of 940 nm diode laser irradiation and dentin bonding agent on permeability of furcation area in primary molars
25. Effect of addition of dexamethasone to ropivacaine for extra oral mandibular nerve block in patients undergoing mandibular surgeries under general anesthesia
26. Effect of E-Cigarette on Periodontal structures - Meta Analysis
27. Effect of incremental PEEP titration on postoperative lung atelectasis in adult patients undergoing elective major abdominal surgery: A randomized controlled trial
28. Effectiveness of a Training Package in assessing oral health knowledge, attitude, approach and actions change among School Teachers in India: An interventional study
29. Effectiveness of an oral health training program for nursing professionals in India: An interventional study
30. Evaluation and analysis of an oral health promoting website and mobile application
31. Evaluation of fit feasibility of TJR standard stock prosthesis in TMJ ankylosis patients of Indian population – ambispective observational study Investigator.
32. Evaluation of immediate skeletal and occlusal pattern changes and their influence on electromyographic activity of jaw muscles in growing patients treated with rapid maxillary expansion for posterior crossbite – A prospective clinical study
33. Evaluation of the effect of one versus two step technique on the outcome of mineral trioxide aggregate pulpotomy in mature permanent teeth with symptomatic irreversible pulpitis- A prospective clinical study
34. Evaluation of the success rate of one piece yttrium – stabilized zirconia root analogue (RAI) Dental Implants- A pilot study
35. Exploring the usage of ultrasonography in assessing mid palatal suture opening with hyrax appliance: A Pilot study
36. Feasibility of anterior temporalis muscle ultrasound as a method to assess muscle wasting in ICU
37. Feasibility of the International Caries Classification and Management System (ICCMS) protocol in a hospital-based setting
38. Interleukin 1B levels around orthodontic mini implants during direct loading
39. Oral health status of participants visiting a dental exhibition at a tertiary care center.
40. Orthodontic white spot lesion Index: a novel tool for assessment of white spot lesion induced in orthodontic patients.
41. Outcome of full pulpotomy performed with or without calcium silicate based cement in mature permanent teeth with mechanical pulp exposure - a split mouth study
42. Predictors of Intensive Care Unit Admission and Mortality In Acute Febrile Illness: A Prospective Observational Study
43. Prognostic significance of preoperative blood lactate and lactate clearance in patients undergoing emergency

- laparotomy for perforation peritonitis: A prospective observational study
44. Prognostic significance of red blood cell transfusion trigger in critically ill patients with sepsis and septic shock: prospective observational study
  45. Prospective study for the evaluation of change in 3D airway volume and improvement in quality of life after distraction osteogenesis of mandible in obstructive sleep apnea (OSA) patients secondary to retrognathia in TMJ ankylosis
  46. Prospective study to evaluate the stability after zygomatic osteotomy in patients with post traumatic residual deformity of Zygomatico Maxillary Complex
  47. Randomized control trial: Comparative analysis of orbital volume in 3D model assisted mesh adaptation versus conventional technique in reconstruction of orbital floor fracture
  48. Randomized controlled trial to evaluate the treatment outcomes of transparotid and transmasseteric anterior parotid approached to treat mandibular subcondylar fractures
  49. Role of spot urine sodium in furosemide stress test in volume overloaded critically ill patients with acute kidney injury - A prospective study
  50. Sternocleidomastoid and trapezius muscle activity before and after Twin block therapy in skeletal class II growing patients
  51. The effect of inciso-cervical position of wire-composite splint on the mobility of the avulsed permanent tooth: A cadaveric model study
  52. The Effect of Rapid maxillary expansion on hearing in patients having Cleft Palate with conductive Hearing loss – A Pilot Study.
  53. The Effect of Sequentially locally Injected Platelet Rich Plasma on the rate of tooth movement during maxillary canine retraction.
  54. The effect of sodium fluoride mouth rinse on surface morphology and elemental composition of orthodontic brackets in three different pH conditions- an in vitro study.
  55. The levels of Matrix Metalloproteinase-9(MMP9) as a prognostic biomarker for the outcome of pulpotomy in mature permanent teeth with symptomatic irreversible pulpitis- A clinical prospective study
  56. To evaluate and compare bite force and chewing efficiency in patients of TMJ amyloses treated by alloplastic total joint replacement, gap arthroplasty with normal individuals.
  57. To evaluate neck muscle activity after mandibular postural changes in growing class II high angle patients with Twin Block therapy- An EMG study
  58. To evaluate the applicability Artificial Intelligence (AI) for categorizing the radiographic periapical lesions based on the periapical apical index (PAI) scoring system- A method comparison study
  59. Treatment outcome of composite restoration performed with either indirect pulp therapy or full pulpotomy in deep proximal carious lesion- A clinical study
  60. Ultrasonography assessment of brachial artery reactivity as predictor of adverse outcome in patients undergoing emergency laparotomy for perforation peritonitis: Prospective observational study

### ***Completed***

1. A 3D study of treatment changes following maxillary protraction protocol in growing class III patients using digital models
2. A comparative study to evaluate the crestal bone level around immediate implant placed using socket shield technique and conventional technique – A pilot study
3. A comparative study to evaluate the soft tissue and volumetric changes around immediate implants placed using socket shield technique and conventional technique – A pilot study
4. A prospective study to observe the influence of immediate functional versus non-functional loading of full coverage prosthesis on the outcome of non-surgical endodontic therapy (NSET) performed on posterior teeth with periapical pathology
5. Ambispective study to evaluate the fate of Costochondral Graft in TMJ ankylosis patients from January 2014 to April 2018
6. Assessment of single versus subsequent Micro osteoperforation stimulated expression of IL-1 $\beta$  levels during Orthodontic Tooth Movement – A pilot study
7. Carotid artery corrected flow time & respiratory variations of peak blood flow velocity for prediction of hypotension after induction of general anaesthesia in adult patients undergoing elective surgery: A prospective observational study

8. Comparison of efficacy of dexmedetomidine and clonidine infusions to produce hypotensive anesthesia in patients undergoing orthognathic surgery: A randomized controlled trial
9. Comparison of efficacy of Mitek mini anchor suture technique with conventional technique for TMJ disc placcation procedure in Wilkes class III patients—A randomized controlled trial
10. Comparison of intraocular pressure change with facemask vs laryngeal mask airway in anaesthetised children
11. Comparison of post extraction bleeding complication in patients taking oral anticoagulants, with and without bridging therapy: A pilot study
12. Effect of addition of dexamethasone to ropivacaine for extraoral mandibular nerve block in patients undergoing mandibular surgeries under general anaesthesia
13. Effect of dexmedetomidine on emergence delirium and recovery parameters after desflurane or sevoflurane anesthesia in children: A prospective double randomized study
14. Effect of systemic and local antibiotics therapies on clinical and patient reported outcomes in healthy, partially dentate patients undergoing dental implant placement – A preliminary study
15. Efficacy of decremental PEEP trial on postoperative oxygenation status in adult patients undergoing emergency laparotomy: A pilot randomized controlled trial
16. Efficacy of left ventricular outflow tract velocity time integral (LVOT VTI) and carotid artery VTI as predictor of volume responsiveness to passive leg raising (PLR) in sepsis and septic shock patients by correlation with Echocardiography guided stroke volume change (delta SV%) to PLR
17. Epidemiology and prognostic utility of cellular components of hematological system in sepsis
18. Evaluation of diaphragmatic muscle mass in patients receiving pressure regulated volume controlled ventilation and synchronized intermittent mandatory ventilation for acute respiratory failure: A randomized controlled trial
19. Evaluation of rank1 in gcF and rate of tooth movement during canine retraction assisted with low level laser therapy – A randomized control trial
20. Evaluation of the effect of prosthodontic rehabilitation on quality of life and psychological distress in maxillectomy patients: A preliminary study
21. Fentanyl versus Dexmedetomidine infusion in head and neck free flap surgery for comparison of hemodynamics and anesthetic requirements
22. Integrated Ultrasound Protocol in predicting Weaning Success and Extubation Failure: A Prospective Observational Study
23. Stress distribution pattern in two different types of removable partial dentures on the supporting structures - A 3D finite element analysis and a clinical study
24. The effect of locally injected platelet rich plasma on the rate of tooth movement during maxillary canine retraction – A Pilot study
25. The effect of mandibular single implant supported overdenture on residual ridge resorption
26. The effect of prosthodontic rehabilitation of completely edentulous geriatric patients with mild cognitive impairment on their memory process - A functional MRI based pilot study
27. The influence of the severity of periodontal disease on periapical healing after non-surgical endodontic therapy in teeth with concomitant endodontic periodontal lesions without communication – A prospective study
28. To assess the efficacy of local anesthetic wound infiltration in temporomandibular joint ankylosis surgery for control of post-operative pain: A randomized controlled trial
29. To compare the effect of l-prf or alloplastic graft material on crestal bone levels around immediate implant placed in mandibular molar region
30. To compare the functioning of delayed surgical obturate fabricated using conventional and vacuum formed method in maxillectomy patients: A randomized control study
31. To correlate the level of osteocalcin in peri-implant crevicular fluid with crestal bone loss at different time intervals in immediate and delayed loaded dental implants. A randomized control pilot study
32. To determine whether implementation of a new ICU delirium prevention bundle will reduce the incidence of delirium compared to standard of care protocol in mechanically ventilated patients
33. To study the efficacy of clonidine as an adjuvant to ropivacaine in ultrasound guided transversus abdominis plane block in adult renal transplant recipients – A double blinded randomised controlled trial

## **PUBLICATIONS**

**Journals: 33   Abstracts: 5   Chapters in Books: 1   Books: 1**

## **PATIENT CARE**

### **Orthodontics and Dentofacial Deformities**

During the year under review we have provided greater emphasis on Interdisciplinary treatment of patients with Cleft Lip and Palate and combined orthognetic surgery patients suffering from facial deformities.

### **Oral and Maxillofacial Surgery**

The division is a pioneer and leader in TMJ replacement surgeries, Temporomandibular Joint Surgery, Craniofacial trauma and Orthognathic and Aesthetic Surgery of face. The division has been efficiently running Oral and Maxillofacial Surgery OPD and Inpatient services with Exodontia, simple and complicated, Oral and Maxillofacial Pathology, managing Maxillofacial Infections, Surgery for Obstructive sleep apnea, Trigeminal neuralgia Clinic and Osteodontokeratoplasty.

### **Prosthodontics**

We have been managing outpatient duties for dental rehabilitation of complete and partially edentulous patients. We are running specialty clinic on Oral and Maxillofacial Prosthodontics, implant dentistry and temporomandibular disorders. Different types of prosthesis which we are fabricating for the patients are Complete denture, Removable Partial Denture, Crown and Bridge work, Laminates, Occlusal splints, Implant supported Prosthesis (Removable & Fixed), and Maxillofacial Prosthesis (Extra oral/ Facial & Intra oral). At the department, we are running two labs to fabricate removable and fixed Prosthodontic appliances.

### **Conservative Dentistry and Endodontics**

The specialty clinic of Conservative Dentistry & Endodontics is held twice a week. A non-surgical and surgical endodontic retreatment clinic has been initiated and is held once a week.

### **Pedodontics and Preventive Dentistry**

Division of Pedodontics and Preventive Dentistry deals with diagnosis and treatment of oral and dental diseases in children up to 14 years of age and those with special healthcare needs. On an average the division carries out about 20,000 procedures in children which range from simple to advanced paediatric dentistry procedures. We stress upon holistic and interdisciplinary care of all our patients by collaborating with other medical and dental specialties. We follow preventive protocol in almost all the patients and perform simple procedures as restorations, extractions to complex procedures as deciduous and permanent endodontic treatments, stainless steel crowns, space maintainers, habit breaking appliances and minor surgeries. Full mouth rehabilitation in children with early childhood caries, having severely mutilated multiple carious teeth is frequently done. Our division is also one of the pioneers of starting use of soft tissue lasers for surgical and biostimulation procedures in Paediatric Dentistry in India.

### **Oral Medicine and Radiology**

The division has been running regular OPD and Specialty Clinics for oral ulcers every week. The division also provides radiological support and Cone-Beam Computed Tomography facility to other divisions at CDER.

### **Periodontics**

Various treatment procedures carried out in the division are conventional non-surgical and surgical periodontal therapy, periodontal plastic surgery, soft and hard tissue regenerative procedures, diode laser-assisted soft tissue excision and adjunctive pocket debridement procedures.

### **Public Health Dentistry**

The division has been supporting regular OPD services and community outreach for AIIMS, running tobacco-use cessation clinics in CDER, Oral Health Screening in collaboration with Department of Community Ophthalmology, RPC, AIIMS for Blind School Children and Oral Health Screening among Paediatric Oncology patients in collaboration with Division of Paediatric Oncology, Paediatrics Department, AIIMS.

## **COMMUNITY ACTIVITIES**

Undertaken school-based Pit and Fissure Sealant Programme, MoHFW.

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor OP Kharbanda** delivered the prestigious Indian Orthodontic Society Oration during 54<sup>th</sup> Indian Orthodontic Conference at Bhubaneswar. He has also been appointed Chairman for the Pierre Fauchard Academy Oration at Kochi. He is on the International Editorial Board of British Journal of Orthodontics and Australian Orthodontic Journal. He has also served as Expert to ICMR to review the research projects in the field of Oral Health and postgraduate research grants. Prof. Kharbanda also served as Chairman to the Ethics Committee of Manav Rachna Dental College (MRDC) Faridabad.

**Professor Ritu Duggal** is a member of the Board of Research Study of the SGT University and Chairman to the Ethics Committee of SGT University Gurugram. She also served as expert to ICMR to review the research projects in the field of Oral Health and postgraduate research grants. She is on the Editorial Board of Indian Orthodontic Journal of Orthodontics. She was also invited as 'Guest of Honor' on the occasion of convocation at ITS Dental College, Greater Noida and invited as 'Guest Speaker' on the Orientation programme for postgraduates at SGT University Gurugram.

**Professor Ajoy Roychoudhury** has been Dental Council Inspector to verify the teaching, infrastructure facility of various dental colleges in India providing postgraduate education. He has also been in the committee of MOH&FW to review the decisions of Dental Council of India pertaining to recognition to various Dental Colleges in India. He has also served as an expert at selection committee at SGPGI Lucknow. He delivered the Tajuddin Oration lecture at the 5<sup>th</sup> Annual Conference of Association of Oral & Maxillofacial Surgeons of India. He is also a reviewer for indexed journals like British Journal of Oral and Maxillofacial Surgery, National Medical Journal of India, Dental Traumatology, National Journal of Oral and Maxillofacial Surgery.

**Professor Ongkila Bhutia** has been chairperson HICC (Hospital infection control committee) CDER. She was also nominated for Nodal Officer, Covid 19, CDER, AIIMS. She is also a member of Institutional anti-ragging squad of undergraduate girl's hostel. She was the Scientific Chairperson and course faculty 2nd AIMS total TMJ replacement live surgical workshop and is a member of main screening committee from CDER for various faculty posts at the AIIMS.

**Professor Ajay Logani** was elected President of the Indian Society of Traumatology (2017-2020).

**Professor Vijay Prakash Mathur** is faculty coordinator for Clinical Research Unit, Research Section, AIIMS and is also serving as member of Institute Ethics Subcommittee for monitoring of adverse events in clinical trials. This is year he was re-elected as Vice President- Indian Society for Dental Research (IADR- India Division) (2019-2021) and Vice President - Indian Society for Dental Traumatology. He was also nominated as Hon. Treasurer- Indian Society of Pedodontics and Preventive Dentistry (2019-2021) and Scientific Editor- Journal of International College of Dentists (Section VI) (2019-2021). He continues to serve as of Editor in Chief - Journal of South Asian Association of Pediatric Dentistry (2018-2021).

**Dr Prabhat Kumar Chaudhari** received Fellow-Membership of World Federation of Orthodontists.

**Dr Nitesh Tewari** received the prestigious JO Andreasen Award for Best Poster in Dental Traumatology in 27<sup>th</sup> Conference of International Association of Pediatric Dentistry held in Cancun, Mexico.

**Dr Kalpana Bansal** received the Distinguished Woman's award 2020 from Indian Society of Pedodontics and Preventive Dentistry.

**Dr Shalini Gupta** received commemoration and felicitation by NICPR ICMR for collaborative work done in development of Oral cancer screening national guidelines, framework, software application ECHO programme and conducting training workshop for medical officers and dentists. She is also a member of the Project Advisory Committee (PAC) of the ICMR Task Force study titled 'Screening and early detection of cervical, breast and oral cancer in the Dibrugarh, Assam: a demonstration project in TATA Tea gardens' by ICMR. She is a technical expert for 'Oral cancer Screening APP development' by Ministry of Health and Family Welfare (MoHFW) a Non-Communicable Disease' Technical Advisory Group (NCD TAG) and an expert for Oral cancer screening in GoI MoHFW programme for the Cancer strengthening Project that piloted in 6 districts of India. She was also appointed as Chairperson of the Selection Committee for the Positions of Dentist (SC) and Dentist (OBC). In the project entitled "WHO FCTC Global Knowledge Hub on Smokeless Tobacco at NICPR. She is also a reviewer for Journal of Indian Society of Periodontology.

**Dr Kunaal Dhingra** was awarded the prestigious Membership MFDS RCPS (Glasg) of Faculty of Dental Surgery of the Royal College of Physicians and Surgeons of Glasgow, UK in 2019

**Dr Vikender Singh** was elected as Vice President of Dental Surgeons Association of India, Gurugram Branch in April, 2019. He is also a reviewer for the Journal of Indian Society of Periodontology and Frontiers in Dentistry.

**Dr Deepika Mishra** was awarded the best poster award in XXVIII Conference of Indian Association of Oral and Maxillofacial Pathologists held in Kerala, 2020 and best paper award at 18th National Triple O symposium and 4th International Oral Precancer and cancer congress held in Delhi March 2020. She also had the second best paper award at 18th National Triple O symposium and 4th International Oral Precancer and cancer congress. Dr Mishra is also a member of e-newsletter committee of the Research Section at AIIMS.

**Dr Harsh Priya** has served as an External Expert for Development of Training Modules for MPWs, CHOs and ASHAs on Primary Oral Health Care at the National Health Systems Resource Centre, Govt. of India. She was also elected as Councilor for the IADR e-Oral Health Network group for the year 2020-2022 for International Association of Dental Research (IADR).

**VISITING SCIENTIST**

1. Dr Kishan Gauba, Head, Department of Oral Health Sciences
2. Dr Rajeev Agarwal, Pediatrics Consultant, Agave Pediatrics, Arizona, USA, July 2019
3. Dr Shukan Parikh Kanuga, MS, Consultant Pediatric Dentist, USA, December 2019





## 10.3. Dr. BR Ambedkar Institute Rotary Cancer Hospital

### Professor and Chief

GK Rath  
(Radiation Oncology)

### Professors

Subhash Chander (Radiation Oncology)	Lalit Kumar (Medical Oncology)	Sidhartha Satpathy (Hospital Administration)	SVS Deo (Surgical Oncology)
Sanjay Thulkar (Radio Diagnosis)	Sushma Bhatnagar (Anaesthesiology)	Atul Sharma (Medical Oncology)	Sameer Bakshi (Medical Oncology)
Seema Mishra (Anaesthesiology)	DN Sharma (Radiation Oncology)	Suman Bhaskar (Radiation Oncology)	Pratik Kumar (Medical Physics)
Sushmita Pathy (Radiation Oncology)	Ritu Gupta (Laboratory Oncology)		

### Additional Professors

Haresh KP (Radiation Oncology)	Subhash Gupta (Radiation Oncology)	Sanjeev Kumar Gupta (Laboratory Oncology)	Anita Chopra (Laboratory Oncology)
Pranay Tanwar (Laboratory Oncology)	Rakesh Garg (Anaesthesiology)	Nishkarsh Gupta (Anaesthesiology)	Vinod Kumar (Anaesthesiology)
Sachitanand Jee Bharti (Anaesthesiology)	Chandershekhara SH (Radio Diagnosis)	Sunil Kumar (Surgical Oncology)	Major MD Ray (Surgical Oncology)
Amar Ranjan Singh (Laboratory Oncology)			

### Associate Professors

Ajay Kumar Gogia (Medical Oncology)	Ranjit Kumar Sahoo (Medical Oncology)	Prabhat Singh Malik (Medical Oncology)	Sameer Rastogi (Medical Oncology)
Rambha Pandey (Radiation Oncology)	Ahitagni Biswas (Radiation Oncology)	Ritesh Kumar (Radiation Oncology)	Mukesh Yadav (Radio Diagnosis)
Ekta Dhamija (Radio Diagnosis)			

### Assistant Professors

Raja Pramanik (Medical Oncology)	Atul Batra (Medical Oncology)	Sachin Khurana (Medical Oncology)	Chandra Prakash Prasad (Medical Oncology)
Thoudam Debraj Singh (Medical Oncology)	Mayank Singh (Medical Oncology)	Surender Kumar Saini (Radiation Oncology)	Sandeep Kr Bhorawal (Surgical Oncology)
Ashutosh Mishra (Surgical Oncology)	Chitresh Kumar (Surgical Oncology)	Jyoti Sharma (Surgical Oncology)	Brajesh Kr Ratre (Anaesthesiology)
Krithika Rangarajan (Radio Diagnosis)	G Smeeta (Laboratory Oncology)	Pallavi Shukla (Preventive Oncology)	Aman Sharma (Radiation Oncology)
Supriya Malik (Radiation Oncology)	Pritee Chaudhari (Radiation Oncology)	Anuja Pandit (Anaesthesiology)	Saurabh Vig (Anaesthesiology)
Shweta Bhopale (Anaesthesiology)	Balbir Kumar (Anaesthesiology)		

### Administrative Officer

BK Singh

### Finance and Chief Accounts Officer

Padam Singh

### Assistant Stores Officer

Hemant Kumar

## Total number of faculty and officials

Faculty Members	56
Resident Doctors	103
Group 'A' Officials	33
Group 'B' Officials	408
Group 'C' Officials	123
Part Time Social Guide	6
Outsourced House Keeping Staff	161
Outsourced Security Staff	81
Outsourced Data Entry Operators	36
Outsourced Sanitation Staff	81
Outsourced Fire Staff	3

### HIGHLIGHTS

#### Onco-Anaesthesia and Palliative Medicine

The Department of Onco-Anaesthesia and Palliative Medicine has seven well trained faculties at Dr BRAIRCH (Dr Sushma Bhatnagar, Dr Seema Mishra, Dr Rakesh Garg, Dr Nishkarsh Gupta, Dr Vinod Kumar, Dr Sachidanand Jee Bharati, Dr Brajesh Kumar Ratre) and four faculties at NCI (Dr Anuja Pandit, Dr Saurabh Vig, Dr Balbir Kumar and Dr Shweta Bhopale). They provide services to anesthesiology, critical care, pain and palliative medicine. All of them are professionally qualified anesthesiologists and critical care physicians and have gained experience as palliative care personnel in the advanced cancer patients referred for pain and other symptom management.

The mission of our department is to provide state-of-art and comprehensive care for patients with cancer with both curative and palliative intent. It includes services for various diagnostic interventions, surgical procedures, pain and palliative procedures. The department provides round the clock services for acute and chronic pain management. The department has six bedded intensive care unit which provides care for critically ill patients and six bedded palliative care ward for palliative care of oncology patients. The department has its regular academic activities and also pursuing various research activities in the fields of Cancer Pain, Palliative Care and Perioperative Medicine for proposed benefits for the patient. The department has developed protocol and has structured SOPs for better patient management. The department organizes CMEs, conferences and workshops on regular basis.

#### Delhi Cancer Registry

The Delhi Cancer Registry (DCR) is a population based cancer registry which collects cancer patient's data from more than 172 government or private hospitals/centers and 250 nursing homes and vital statistics division of MCD and NDMC and reports the incidence of various cancers among Delhi urban residents. When the registry was established in 1988 it has registered 5854 new cancer cases and over the years the new cancer incidence has been increasing and in 2014 the registered incidence was 20446 cases. The common sites of cancer among Delhi males are lung, mouth, prostate, tongue and larynx and in females the common sites of cancer are breast, cervix, ovary, gallbladder and corpus uteri. The reports prepared by registry are being widely used by researchers, govt. organization etc.

#### Laboratory Oncology

Laboratory Oncology Molecular Unit organized a live hands-on demonstration of 1) automated nucleic acid isolation from a variety of starting materials and 2) Droplet digital PCR. Hands-on-training on Real time qPCR (November 2019) and Sanger Sequencer (September, 2019) was conducted for the technical staff and scientists of the department.

#### Medical Oncology

The department of Medical Oncology is known for its high-level academic program, busy clinical service (inpatients and out patients) and research activity. Its academic program PhD, DM and BMT Fellowship are very competitive and sought after. Department also attracts students from national science academies and universities for summer training. In addition to academic presence in various national and international scientific meetings, department faculty members are regularly invited as an expert member to various government funding agencies for review of research proposals and opinions. 'Cancer Genetics service' is the new initiative started in past two years and has already made its presence. Recently award of a big grant by ICMR to establish a 'Cancer Genetics Registry' is the testimony to this recognition. Other important achievements in the past one year are development of infrastructure in medical oncology lab, establishment of new lab services directly related to patients care as well as research and organising national level meetings. In addition to handling huge clinical

load here at the IRCH, faculty members are also providing their services and mentorship to newly established National Cancer Institute at Jhajjar. Publications in high impact journals, research grants and recognition of our scientists and faculty members by various agencies are witness to their quality contribution. Our department has successfully organized National Conference on “Emerging Trends in Translational Oncology” and “Onco-Emergency Submit 2019”. All this was possible with hard work, and sincere efforts put up by all the members of the department. Space crunch continues to be a limitation for clinical research staff and for the lab.

The number of patients treated in our department during 2019-2020:

1. Patients treated as in-patient	11290
2. Patients treated in day care facility	: 34435
3. Medical Procedures	6267
4. Outpatient chemotherapy	14680
5. Outpatient IV antibiotics	34190
6. Hematopoietic Stem Cell Transplantation	125

#### ***Aphaeresis lab (2019-2020)***

1. PBSC harvests	201
2. SDP apheresis	2818
3. Granulocyte apheresis	101
4. Hemogram	23868

#### **Medical Physics**

Medical Physics unit looks after radiation safety, radiation education, and radiation research and quality assurance of radiation emitting imaging and therapeutic equipment in about 15 departments of AIIMS including the department which uses radioactivity for laboratory investigations. It procures the mandatory licenses from Atomic Energy Regulatory Board. We carry out radiation protection surveys of radiation installation and radioactivity labs, along with periodic checks of radiation safety gadgets like lead apron, thyroid collar, lead goggles, lead viewing windows etc. and impart radiation safety training. We provide consultations in case of inadvertent exposure to pregnancy occurred during x-ray investigations. During 2019-2020 we carried out 4339 measurements, tests, experiments and radiation sterilization of blood bags for blood transfusion.

#### **Preventive Oncology**

Preventive Oncology unit-initiated cancer awareness programmes for patients and attendants visiting Dr BRAIRCH after joining of Dr Pallavi Shukla as Assistant Professor. We also started cancer awareness programmes for college students as a part of health promotion drive. Through interdepartmental and multicentric collaborations various research projects were started for understanding the epidemiology and genetics of cancers like gall bladder, cervical, breast, prostate and ovarian.

#### **Radiodiagnosis**

A new faculty member (Dr Krithika Rangarajan) joined the department as Assistant Professor. Apart from the patient care, research and teaching work at BRAIRCH, our faculty is taking care of day to day functioning of radiology department of National Cancer Institute, Jhajjar. Faculty members visit daily to NCI Jhajjar on rotation basis. They were also involved in procurement, installation and functioning of Ultrasonography, DSA, fluoroscopy machines as well as CT and MRI machines at NCI Jhajjar. The department held multidisciplinary discussions/ tumor boards specifically addressing gastrointestinal malignancies, lung cancer and sarcoma on Saturday and Wednesday (forenoon and afternoon), respectively at BRAIRCH and daily DMG meetings at NCI.

#### **Surgical Oncology**

The year 2019-2020 was eventful and productive academic year for the department with significant achievements in teaching, research and patient care domains. The department has expanded clinical services at NCI Jhajjar, initiated a number of collaborative research projects, and organized international and national conferences and workshops. All the faculty members of the department participated in the under graduate and post graduate teaching and structured training of 27 Senior Residents including 16 M.Ch student and 11 non-academic senior resident. The departmental faculty is involved in M.Ch teaching, training and guiding in their thesis work. The faculty acts as co-guide in thesis work of various department including Radiation Oncology, Medical Oncology, Biochemistry, Biotechnology, Geriatric Medicine etc. The department successfully organized a number of scientific conferences and workshops including AIIMS-UK Cadaver course on breast oncoplasty and reconstruction, MIS in colorectal cancer surgery video workshop and a high level multi-institutional meeting to standardize curriculum and training in surgical oncology along with Society of Surgical oncology, USA. The faculty participated in a number of national and international conferences by giving lecture, participating in panel discussion and presenting educational videos. The faculty and residents of the department have presented 22 papers in national and international conferences. The department is involved in 9 funded research projects and 12 departmental projects and 10 collaborative research projects. A total of 30 original articles were published by the faculty and residents. The faculty

and residents are participating in special cancer clinics for breast cancer, gastro intestinal cancer, head and neck cancer, gynecological cancer, bone and soft tissue tumors, thoracic cancer, Hepatobiliary-pancreatic cancer and genitourinary cancer. The department is providing major and minor operation facilities to patients of cancer. A total of 1374 complex major operations and 10493 diagnostic and therapeutic endoscopy procedures and minor cancer surgeries were performed during the year. Faculty participated in community services by giving advice to ostomats, giving talk in All India Radio, television and participating in cancer awareness camps organized by NGO's. The faculty members were involved as members of editorial boards, reviewer of research papers and members of National and International bodies. The faculty members acted as examiner for M.Ch Surgical Oncology and MS Surgery examinations of various medical colleges and institutions.

## EDUCATION

### Onco-Anaesthesia and Palliative Medicine

The Department is successfully running two academic courses: DM and MD First batch was admitted in January 2016. The Department also organizes certificate course in Palliative Care twice a year in the month of June and November and foundation course on palliative care once in a year in the month of March.

- Departmental Seminar Every Monday and Friday at 8-9 AM
- IRCH Seminar Every Thursday at 8.30-9.30 AM
- Tutorials Every Tuesday 3-5 PM
- Radio Conference Every Saturday at 9-10 AM
- Journal Club/Audit/Case discussion Every Saturday at 10-12 Noon.

### Laboratory Oncology

Laboratory Oncology provides specialized training on the laboratory aspects of Hemato-Oncopathology including but not limited to morphology, flow cytometry (including minimal residual studies), multiple myeloma diagnostics and advanced molecular biology testing and interpretations. The training is imparted to MD and DM resident doctors from Departments of Medical Oncology, Pathology, Hematology and Laboratory Medicine. The department also imparts short term training to medical professionals including faculty, students and technical staff from various medical colleges all over India.

### Medical Oncology

The department of Medical Oncology is running successfully the following programs

1. DM Program
2. PhD in Medical Oncology
3. BMT Fellowship
4. Summer internship/training

#### Regular classes and seminars

- Departmental Faculty Seminar Every Monday at 8.30 AM-9.30 AM
- Journal Club/Case discussion Every Wednesday at 8.30 AM-9.30 AM
- IRCH Seminar Every Thursday at 8.30 AM -9.30 AM
- Molecular Oncology Class Every Tuesday at 2.00 PM-3.00 PM

### Departmental Projects

#### Ongoing

1. The role of the PARP – 1 &  $\beta$ - Catenin in cisplatin resistance in cervical cancer
2. Minimal Residual Disease in Multiple Myeloma
3. Stop Imatinib study in CML patients
4. Role of PARP1 and  $\gamma$ -Glutamyl Cysteine Synthetase (GCS) Inhibitors on cisplatin sensitivity and DNA Methylation in ovarian cancer
5. Gene expression profile & its correlation with mitochondrial energy metabolism in pediatric Acute myeloid leukemia
6. NRd vs UPd transduction therapy for newly diagnosed symptomatic Multiple Myeloma: A Phase 3, non-inferiority trial

### Medical Physics

Medical Physics Unit carried out teaching assignments regarding radiation physics of medical imaging, radiation protection during their operation, radiation dose measurement and quality assurance in medical imaging to the students of MD Radiology, MD Radiotherapy, MBBS, and BSc (Hons.) in Radiography and Nursing. At present 3 PhD students are carrying out their

research work in the Department.

### **Preventive Oncology**

#### **Teaching**

1. Intra-departmental seminars: 12
2. Lecture for DM students of IRCH: Breast cancer screening in India
3. Nursing Lecture: Early detection and screening of cancers
4. Development of IEC (Information, Education and Communication) material on common cancers
5. Development of module on chest X-Ray interpretation for undergraduate teaching at SET facility

#### **Workshop/Events organized**

1. Celebrated “World cancer day” on 4 February 2020 by organizing a sensitization for nurses on their role in Oncology
2. “Tobacco cessation interventions in Oncology practice” for faculty members and residents in Oncology specialties on 11 March 2020

#### **Surgical Oncology**

1. Undergraduate teaching: The faculty was involved in undergraduate teaching by giving didactic lectures and by participating/ moderating seminars on oncological topics
2. Post graduate teaching: The faculty was involved in teaching and training of 16 MCh surgical oncology students and 11 surgical oncology senior residents, DM medical oncology residents and MD radiotherapy junior residents by giving didactic lectures, moderating seminars, journal clubs etc. & clinical teaching during ward rounds and in special cancer clinics of IRCH. The faculty acted as guide and co-guide for M.Ch Surgical oncology, DM medical oncology, MD radio diagnosis, MD radiation oncology thesis projects and PhD projects from various dept. of BRA- IRCH & AIIMS. The faculty was also involved in teaching & training of dental surgery residents and M.Ch Gynecology Oncology trainees on rotation
3. Para clinical teaching/training: The faculty was involved in the teaching of the M.Sc. nursing oncology students

#### **CME /Workshop/Symposia/National and International Conference**

##### **Onco-Anesthesia and Palliative Medicine**

1. IAPCON, 2020, 14-16 February 2020, Guwahati, Assam
2. Palliative Care Training Programme for cancer treatment centers in India, 12-16 January 2019, 15-19 January 2020, Delhi
3. 17th Foundation Course on Palliative Care, March and November 2019, Dr BRAIRCH, AIIMS, New Delhi
4. IAPC Certificate course in Palliative Care, June and November 2019, Dr BRAIRCH, AIIMS, New Delhi
5. World Hospice Day, October 2019, Dr BRAIRCH, AIIMS, New Delhi
6. ELNEC Nursing Programme, June 2019, Dr BRAIRCH, AIIMS, New Delhi
7. ELNEC Nursing Programme, February 2020, NCI, AIIMS, New Delhi
8. World Cancer Day, February 2020, NCI AIIMS Jhajjar
9. Tobacco Cessation Interventions in Oncology, March 2020, NCI AIIMS Jhajjar

##### **Laboratory Oncology**

Professor Ritu Gupta organized a Cancer imaging challenge at IEEE ISBI 2019 in Venice, Italy along with IIIT-Delhi on “C-NMC challenge: Classification of Normal vs Malignant Cells in B-ALL White Blood Cancer Microscopic Image” as part of the IEEE International Symposium on Biomedical Imaging (IEEE-ISBI, 2019) Conference held in Venice, Italy from 8-11 April 2019. The challenge was technically co-sponsored by IBM India Pvt. Ltd.

##### **Surgical Oncology**

1. CME on Research Methodology in Cancer on 10 April 2019 in collaboration with NCR Oncology forum, New Delhi
2. Surgical Workshop on “ICG Fluorescence guided Surgery at AIIMS, New Delhi, on 10 July 2019
3. Second AIIMS-UK Cadaver Course on Breast Oncoplasty and Reconstruction at AIIMS, New Delhi, 28 and 29 August 2019
4. CME and Video workshop on MIS for Colorectal cancers at AIIMS, New Delhi, on 23 November 2019
5. Robotic Surgery Training Workshop on 15 January in SET Facility, AIIMS, New Delhi

## Lectures delivered

### Onco-Anesthesia and Palliative Medicine

Sushma Bhatnagar: 26

Nishkarsh Gupta: 10

Brajesh Kumar Ratre: 3

Balbir Kumar: 2

Seema Mishra: 13

Vinod Kumar: 8

Anuja Pandit: 1

Rakesh Garg: 5

Sachidanand Jee Bharati: 5

Shweta Bhopale: 1

### Laboratory Oncology

Ritu Gupta: 12

Pranay Tanwar: 6

Deepshi Thakral: 2

Sanjeev Kumar Gupta: 6

Amar Ranjan: 1

Anita Chopra: 3

Gurvinder Kaur: 1

### Medical Oncology

Lalit Kumar: 5

Ranjit Kumar Sahoo: 12

Raja Pramanik: 13

Mayank Singh: 3

Atul Sharma: 9

Sameer Rastogi: 3

Chandra Prakash Prasad: 5

Sameer Bakhshi: 29

Prabhat Singh Malik: 4

Thoudam Debraj Singh: 4

### Medical Physics

Pratik Kumar: 3

### Preventive Oncology

Pallavi Shukla: 3

### Radiodiagnosis

Chandrashekhar SH: 6

Krithika Rangrajan: 2

Mukesh Kumar: 4

Ekta Dhamija: 19

### Radiation Oncology

GK Rath: 11

Suman Bhasker: 1

Rambha Pandey: 5

Gopishankar Natanasabapathi: 2

Subhash Chander: 5

Subhash Gupta: 3

Ahitagni Biswas: 5

DN Sharma: 17

Haresh KP: 6

Supriya Mallick: 1

### Surgical Oncology

SVS Deo: 13

Sandeep Kumar Bhorawal: 4

Chitresh Kumar: 2

Sunil Kumar: 2

Jyoti Sharma: 4

MD Ray: 5

Ashutosh Mishra: 1

### Oral papers/posters presented

Onco-Anesthesia and Palliative Medicine: 9

Laboratory Oncology: 30

Medical Physics: 5

Radiation Oncology: 18

Delhi Cancer Registry: 4

Medical Oncology: 18

Radiodiagnosis: 7

Surgical Oncology: 22

(Third Prize in ISPSM-ESSO-AGOI on 18-20 April 2019 at TMH, Mumbai; Third prize in ISO-ISMPPO, on November 2019, Indore, India; Second Prize in Quiz Competition at World Congress of Surgery, Krakow Poland; awarded 3rd Best Paper at ABSICON, Jaipur, India, 2019; International travel award to Jyotishman Saikia from Department of Science and Technology; Awarded 3 rd best paper presentation to Dr Raghuram K; International travel award to Dr Raghuram K by Indian Council for Medical Research; International travel award to Dr Navin K by Indian Council for Medical Research; First prize for best paper presentation to Dr Navin Kumar during “Annual oncology forum meeting, New Delhi)

## RESEARCH

### Onco-Anesthesia and Palliative Medicine

#### Funded projects

##### *Ongoing*

1. Spiritual problems and concerns faced by Indian palliative care patients. Sushma Bhatnagar, ICMR, 3 years, 2017-2019, Rs1.32 lakhs

2. Study of Pain attributes to Design a Pain Measurement Device for the cancer and injured Patients, Sushma Bhatnagar, DRDO, 2 years 10 months, 2017-2020, Rs 24.88 lakhs.
3. Clinical Validation of Iontophoretic Delivery of Lidocaine as an Alternative to EMLA Cream, Sushma Bhatnagar, AIIMS, 2 years, 2019-2021, Rs 5 lakhs.
4. Novel Video Laryngoscope for Endotracheal Intubation in Patients with Reduced Mouth Opening approved for AIIMS-IIT project, Nishkarsh, AIIMS, 2 years, 2019-2021, Rs 5 lakhs/year
5. Comparison of King Vision Video laryngoscope channeled and non-channeled blades with direct Laryngoscope for intubation in mannequin by medical students: a randomized mannequin study. Nishkarsh, AIIMS, 2019-2021, Rs 2 lakhs

#### **Completed**

1. Prevalence and factors associated with cancer related neuropathic pain in India: A cross sectional study”, ICMR, 2 years, 10 lakhs, Sushma Bhatnagar
2. A Double Blind, Double-Dummy, Randomized, Prospective, Two Arm, Parallel, Multicenter, Phase IV Clinical Trial To Evaluate Efficacy And Safety Of Gaba-NT (Fixed-Dose Combination Of Gabapentin And Nortriptyline) In Comparison With Gabapentin In Patients With Neuropathic Pain, ICMR, 2 years, Rs 3 lakhs, Sushma Bhatnagar
3. Molecular Determinates of Response to opioids in cancer patients: Indian Scenario, ICMR, 3 years, Rs 28 lakhs, Sushma Bhatnagar.
4. Comparison of two techniques (bolus morphine vs. infusion morphine) of analgesic titration with intravenous morphine in palliative cancer patient - a prospective randomized study, AIIMS, 2 years, Rs 3 lakhs, Vinod Kumar

#### **Departmental projects**

##### **Ongoing**

1. Prevalence and risk factors of acute neuropathic pain following oncological surgeries: a prospective study at a tertiary cancer center
2. Prevalence and predictors of insomnia in cancer patients presented to palliative care unit of a tertiary care center in India
3. Prospective Evaluation Of Social Support, Depression and Quality of Life in Advanced Cancer Patients Attending The Palliative Care Clinic Of A Tertiary Care Centre
4. Knowledge, attitude and perception regarding morphine use in Indian cancer patients
5. Intraoperative celiac plexus neurolysis for pain relief in unresectable pancreatic, gastric and gall bladder cancer
6. Comparison of dexmedetomidine vs. midazolam in conscious sedation for patients undergoing medical thoracoscopy- a randomized controlled pilot study
7. Effect of adding dexamethasone to ropivacaine on ultrasound guided serratus anterior plane block for modified radical mastectomy: A Prospective randomized controlled pilot study
8. Comparative evaluation of Nasotracheal intubation with C Mac Videolaryngoscope conventional blade vs. D blade using cuff inflation technique in patients undergoing head and neck cancer surgeries: A prospective randomized study
9. Prevalence and risk factors of cognitive dysfunction in advanced cancer patients admitted in palliative care unit
10. Effectiveness of Intercostal Radiofrequency Ablation in the management of chronic pain after thoracic surgery

##### **Completed**

1. To evaluate the comparative efficacy and safety of Gabapentin, Duloxetine and Pregabalin in patients with Chemotherapy Induced Painful Neuropathy (CIPN): A Randomized Controlled Pilot trial
2. Prevalence of chemotherapy induced peripheral neuropathy in a palliative care setup and its impact on the quality of life of cancer patients
3. Effect of patient controlled epidural analgesia (PCEA) and intravenous patient-controlled analgesia (IVPCA) on postoperative inflammatory response and cancer recurrence in patients undergoing abdominal oncosurgery - a prospective randomized controlled trial
4. Cardiopulmonary exercise testing as a predictor of morbidity after major gastrointestinal cancer surgeries in patients at nutritional risk: A prospective observational pilot study
5. Comparison of two different doses of intrathecal bupivacaine for intracavitary radiotherapy in patients with carcinoma cervix – A randomised control trial
6. Comparative evaluation of efficacy of intravenous infusion of Dexmedetomidine with Morphine for postoperative



analgesia & sedation in head and neck cancer surgery

7. To study the impact of nutritional intervention in delaying the progression of cachexia to refractory cachexia in female cancer patients: A study based in India

## **Delhi Cancer Registry**

### **Funded projects**

#### ***Ongoing***

1. Establishment of Hospital based Cancer Registries and patterns of care and survival studies on Cancer Breast, Cancer Cervix and Head and Neck Cancers, SVS Deo, National Cancer Registry Programme, National Centre for Disease Informatics and Research, Indian Council of Medical Research, Bangalore, 6 years, 2014-2020, Rs 38 lakhs per annum
2. Patterns of Care and Survival Studies on childhood, lymphoid and hematopoietic malignancies. SVS Deo, National Cancer Registry Programme, National Centre for Disease Informatics and Research, Indian Council of Medical Research, Bangalore, 5 years, 2017-2021, Rs 1 lakh per annum (approx.)
3. Population Based Survival Studies on Cancer Breast, Cervix and Head & Neck Cancers, SVS Deo, National Cancer Registry Programme, National Centre for Disease Informatics and Research, Indian Council of Medical Research, Bangalore, 5 years, 2017-2021, Rs 6.8 lakhs per annum (approx.)

## **Laboratory Oncology**

### **Funded projects**

#### ***Ongoing***

1. Centre for Advanced Research & Excellence in Leukemic Stem Cells (LSC) for Prognosis and Treatment (CARE-LSCPT) in Acute Myeloid Leukemia. Ritu Gupta, ICMR, 5 years, 2019-2024, Rs 490.82 lakhs
2. Unit of Excellence on Cancer Research on Multiple Myeloma. Ritu Gupta, DBT, 5 years, 2016-2021, Rs 314 lakhs
3. Evaluation of DRY Multi-Color Panels for Lymphoma & Leukemia Diagnosis and Monitoring on a Flow Cytometer. Ritu Gupta, Beckman Coulter, 2 years, 2018-2020, Rs 9.46 lakhs
4. Identification of network pathways for drug targeting in Multiple Myeloma from NGS data using Deep Learning. Ritu Gupta, DST, 3 Years, 2019-2022, Rs 35 lakhs
5. Minimal Residual Disease Estimation in Multiple Myeloma using Image Processing: Design and Development of Myelomaimager - an Automated Computer Assisted Tool. Ritu Gupta, DST, 3 Years, 2018-2021, Rs 45 lakhs
6. Elucidation of circulating cell free miRNA in pathogenesis, disease progression and outcome in multiple myeloma using integrated bioinformatics and experimental approach, Ritu Gupta, AIIMS, New Delhi, 2 years, 2018-2020, Rs 20 lakhs
7. Digital Holographic Microscopy of acute leukemic cell for 3D morphology-based classification, Ritu Gupta, AIIMS, New Delhi, 2 years, 2018-2020, Rs 20 lakhs
8. Prevalence and significance of ETS related gene deletions in Acute Lymphoblastic Leukemia, Sanjeev Kumar Gupta, AIIMS, New Delhi, 2 years, 2018-2020, Rs 10 lakhs
9. Development of risk-stratification algorithm to select BCR-ABL1 negative pediatric B-ALL patients for detailed genetic analysis- a step towards optimum use of next generation sequencing platform, Sanjeev Kumar Gupta, ICMR, 3 years, 2020-2023, Rs 49.50 lakhs
10. Early immature T-lymphoblastic leukemia (ALL): Evaluation of early thymic precursor T-ALL immunophenotype, absence of biallelic deletion of TCR  $\gamma$  chains (ABD) and expression of MEF2C as predictors of treatment response as assessed by minimal residual disease determination., Anita Chopra, DST, 3 years, 2015-2019, Rs 20.16 lakhs
11. Elucidation of role of TOX in T-ALL. Anita Chopra, DHR, 3 years, 2020-2023, Rs 30 lakhs
12. Identification of tyrosine kinases in Indian pediatric Ph-like Acute lymphoblastic Leukemia, Anita Chopra, DHR, 3 years, 2018-2021, Rs 30 lakhs
13. DBT-Wellcome trust intermediate career fellowship. Anita Chopra, DBT Wellcome India Alliance, 5 years, 2018-2023, Rs 386 lakhs
14. ICMR TASK Force Comparative study of Genetic, Clinical and Epidemiological factors of Breast Cancer in Indian population, Pranay Tanwar, ICMR, 5 years, 2017-2022, Rs 122 lakhs
15. A prospective study to evaluate WT1 gene expression as predictive molecular marker of disease progression in

- de novo cases of Acute myeloid Leukemia, Pranay Tanwar. DST, 4 years, 2017-2021, Rs 52 lakhs
16. ICMR TASK Force Genomics of gallbladder carcinoma in Indian Patients. Pranay Tanwar, ICMR, 4 years, 2017-2022, Rs 199 lakhs
  17. Human Papilloma Virus (HPV): Relevance in etiology of oral squamous cell carcinoma in Indian Population, Pranay Tanwar, DHR, 3 years, 2017-2021, Rs 45 lakhs
  18. Generation of 3D Breast Tumor Organoids as an in vitro Drug Screening Study Model, Pranay Tanwar, AIIMS New Delhi, 2 years, 2020-2022, Rs 8.91 lakhs
  19. Evaluation of HE4 level in epithelial ovarian cancer for diagnosis & monitoring of therapy, Amar Ranjan, ICMR, 3 years, 2017-2020, Rs 25 lakhs
  20. Analysis of expression of biomarkers in ovarian cancer, Amar Ranjan, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
  21. Impact of TCR  $\alpha\beta$  sequence repertoire in CML blasts, Gurvinder Kaur, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
  22. Characterization of circulating cell free Nucleic acids for identification of leukemia-specific genetic alterations in early recurrence monitoring of Acute Myeloid Leukemia. Deepshi Thakral, AIIMS, 2 years, 2018-2020, Rs 10 lakhs

### **Completed**

1. Molecular determinants of prednisolone sensitivity in pediatric acute lymphoblastic leukemia, Anita Chopra, AIIMS, 2 years, 2016-2019, Rs 8 lakhs
2. A prospective study to evaluate Wilm's tumor 1 (WT1) mutation in de novo cases of Acute myeloid Leukemia and correlating their outcome with treatment response, Pranay Tanwar, AIIMS, 4 years, 2015-2019, Rs 4 lakhs
3. Prognostic evaluation of thrombopoietin following surgery in gastrointestinal cancer patients, Amar Ranjan, Oncology Forum, 1 year, 2019, Rs 1.5 lakhs

### **Medical Oncology**

#### **Ongoing**

1. Risk of cancer in mobile phones users: a prospective study under ICMR task force. Effect of Non-ionizing electromagnetic field (EMF) on human health, Lalit Kumar, ICMR, 10 years, 2012-2022, Rs 142.19 lakhs.
2. Pazopanib based combination oral metronomic therapy in platinum resistant, platinum refractory and advanced and advanced ovarian cancer: a randomized phase II study. Lalit Kumar, ICMR, 3 years, 2018-2021, Rs 49.51 lakhs.
3. Aspirin for Dukes C and High Risk Dukes B Colorectal Cancers - An International, Multi-centre, Double Blind, Randomised Placebo Controlled Phase III Trial, Atul Sharma, Singapore Clinical Research Institute, Singapore, 10 Years, 2013-2018, 500 USD per patient
4. CANscript™ Clinical Outcomes in a Real-World Setting (ANCERS-1): A Prospective, Multicenter, Observational Study Examining the Clinical Utility of CANscript™ in Routine Clinical Practice, Atul Sharma, Catalyst (CRO), 5 Years, 2017-2020, Rs 0.2 lakhs
5. A single arm, multicentric, open label, efficacy and safety study of Doceaqualip (Docetaxel Lipid Suspension for Injection of Intas Pharmaceuticals Limited, India) based regimens in metastatic gastric adenocarcinoma patients. Atul Sharma, Lambda Therapeutics Research Limited, 2 Years, 2018-2020, Rs 4.79 lakhs + 1.72 lakhs per patient
6. An Open Label, Multicenter, Non-Comparative, Phase IV Study of Panitumumab to Characterize its Safety, Tolerability and Activity in Indian Subjects with Previously Treated Wild-Type RAS (KRAS and NRAS), Metastatic Colorectal Cancer, Atul Sharma, Dr Reddy's Lab and PPD, 2 Years, 2019-2021, Rs 4 lakhs
7. Establishing a nutritional counseling program and developing a nutritional database in pediatric patients with cancer, Sameer Bakhshi, Cuddle Foundation, 3 Years, 2016-2019, Rs 13.37 lakhs
8. Role of mitochondrial heterogeneity in the progression and prognosis of Acute Myeloid Leukemia (AML), Sameer Bakhshi, DST, 3 Years, 2017-2020, Rs 50.7 lakhs
9. Indian Childhood collaborative leukaemia group multicentre national standardisation study for newly diagnosed acute lymphoblastic leukemia (ALL), Sameer Bakhshi, National Cancer Grid, 3 Years, 2016-2019, Rs 35 lakhs
10. SADAL: A Phase IIb Open label Study of Selinexor (KPT-330) in Patients with Relapsed/Refractory Diffuse Large B-Cell Lymphoma (DLBCL), Sameer Bakhshi, Excel Life Sciences, 5 Years, 2018-2023, Rs 11 lakhs
11. A Phase II, Open-Label Trial Evaluating the Efficacy and Safety of Two Dosages of Once Daily Oral CA-170 in Patients with Selected Relapsed Advanced Tumors (ASIAD), Sameer Bakhshi, Veeda Clinical Research Pvt. Ltd, 5 years, 2018-2023, Rs 3.8 lakhs per patient
12. A Phase IV Multi-Centric Post-Marketing Study Evaluating the Safety, Immunogenicity and Efficacy of the Marketed Formulation of Hetero – Rituximab, Sameer Bakhshi, Hetro Pharma Ltd., 2 years, 2018-2020, Rs 12 lakhs

13. Single-day Intravenous Fosaprepitant vs. 3-day oral Aprepitant anti-emetic regimen in pediatric patients receiving highly-emetogenic chemotherapy: An Investigator-initiated, Randomized, Open-label, Non-inferiority trial, Sameer Bakhshi, Glenmark Pharmaceuticals, 3 Years, 2020-2023, Rs 5.52 lakhs.
14. Lymphocyte reconstitution following Autologous Stem Cell Transplantation in myeloma and lymphoma, Ranjit Kumar Sahoo, DST, 3 years, 2018-20, Rs 39.08 lakhs.
15. Safety study of Nivolumab for selected advanced malignancies in India, Prabhat Singh Malik, Bristol-Myers Squibb, 2 years, 2018-2020, Rs 39.72 lakhs
16. A prospective, multicenter, Phase-IV clinical trial to assess safety of TAGRISSO TM (Osimertinib) in Indian adult patients with metastatic epidermal growth factor receptor (EGFR) T790M mutation-positive non-small cell lung cancer (NSCLC), Prabhat Singh Malik, AstraZeneca Pharma India, 1 year, 2019-2020, Rs 506 lakhs
17. AIIMS-IIT Delhi collaborative research Proposal on Liquid Biopsy: An exploratory study on exosome-based diagnostics for lung cancer, Prabhat Singh Malik, IIT & AIIMS, Delhi, 2 Years, 2019-2020, Rs 10 lakhs (For IITD), Rs 10 lakhs (AIIMS)
18. Expression of NOTCH1,2,3, HES-1 and p21 in esophageal squamous cell carcinoma, Raja Pramanik, AIIMS, 1 year, 2017-2018, Rs 5 lakhs
19. Exploring how  $\beta$ -catenin induced metabolic changes can be exploited for Triple Negative Breast cancer (TNBC) prognosis and therapeutics, Chandra Prakash Prasad, ICMR, 3 Years, 2019-2022, Rs 21.65 lakhs
20. Exploring how Phosphofructokinase-1 (PFK-1) induced metabolic changes can be exploited for Triple Negative Breast cancer (TNBC) prognosis and therapeutics, Chandra Prakash Prasad, SERB, 3 Years, 2018-2021, Rs 46.65 lakhs
21. Estrogen Related Receptor Gamma ( $ERR\gamma$ ) as a potential biomarker and therapeutic target for thyroid cancer and its correlation with iodine handling genes in thyroid, Thoudam Debraj Singh, DST-SERB Core, 3 years, 2020-2023, Rs 49 lakhs
22. Multivalent targeting-based delivery of paclitaxel using elastin like polypeptide containing IL-4 receptor targeting peptide (API-ELP) for ovarian cancer therapy, Thoudam Debraj Singh, ICMR, 3 years, 2019-2022, Rs 36 lakhs
23. To study the role of USP37 in oncogenesis of ovarian cancer by using carbon nanodots embedded 3D cell culture platform, Mayank Singh, AIIMS IITD, 2 years, 2019-2021, Rs 10 lakhs
24. Elimination of leukemic and angiogenesis ability with altered macrophages plasticity in Acute Myeloid Leukemia, Sampa Ghose, AIIMS, 2 years, 2019-2021, Rs 10 Lakhs
25. Studies of therapeutic potential of endothelial cells and angiogenic properties in hepatocellular carcinoma, Sampa Ghose, DST, 3 years, 2016-2019, Rs 30 Lakhs.

### **Completed**

1. Role of mitochondrial complex encoding genes in Pediatric AML, Sameer Bakhshi, AIIMS, 2 Years, 2016-2019, Rs 10 lakhs
2. National Multicentre Childhood Leukemia Programme, Sameer Bakhshi, ICMR, 2 Years, 2017-2019, Rs 32 lakhs
3. Improving Refusal, Non-Compliance, Abandonment and Outpatient Infection Treatment in Pediatric and Adolescent Cancers, Sameer Bakhshi, Lebara Foundation, 3 Years, 2015-2020, Rs 93.33 lakhs
4. MGMT methylation in primary CNS lymphoma, Ranjit Kumar Sahoo, AIIMS, 3 years, 2015-2017, Rs 3.15 lakhs
5. Role of RRM1, RRM2, hENT1 and ERCC1 expression in Advanced Carcinoma of Gall Bladder treated with Gemcitabine-Platinum Doublet. Ranjit Kumar Sahoo, Nag Foundation, Pune, 3 years, 2016-2018, Rs 5 lakhs
6. Effect of food on pharmacokinetics of abiraterone in metastatic CRPC, DS Arya, AIIMS, 2 years, 2019-2020, Rs 10 lakhs
7. Validation of Thymidylate Synthetase and Folate Receptor alpha expression as predictive biomarkers for efficacy of pemetrexed based chemotherapy in advanced non squamous NSCLC, Prabhat Singh Malik, AIIMS, 2 Years, 2016-2018, Rs 9 lakhs

### **Medical Physics**

#### **Funded projects**

##### **Ongoing**

1. Development of tissue equivalent optically stimulated luminescent materials for radiation dosimetric applications in low and high doses of medical radiation, Pratik Kumar, DHR, 3 years, 2017-2020, Rs 15.53 lakhs
2. Preparation and study of radiochromic film as radiation dosimeter for medical applications, Pratik Kumar, ICMR, 3 years, 2018-2021, Rs 16.69 lakhs

3. Development of new and novel radiation dosimetric OSL materials by ion implantation technique and chemical methods for improved dosimetry, Pratik Kumar, DRDO, 3 years, 2019-2022, Rs 23.65 lakhs

## **Preventive Oncology**

### ***Ongoing***

1. Detection of HPV circulating tumor DNA in cervical cancer patients before and after chemoradiotherapy by droplet digital PCR, Sujata Pathak, AIIMS, 2 years, 2019-2021, Rs 9.5 lakhs
2. Early and Late development of Castration Resistant Prostate Cancer and its correlation with Androgen Receptor Ligand Binding Domain Mutations, Sandeep Kumar, AIIMS, 2 years, 2017-2020, Rs 6.75 lakhs
3. In vitro evaluation of chloroquine and artemisinin for sensitization effect on multidrug-resistant small cell lung cancer cells, Asrar Alam, AIIMS, 2 years, 2019-20, Rs 10 lakhs
4. Identification of immunogenic regions from SARS-CoV-2 spike protein capable of eliciting robust humoral response, Asrar Alam, AIIMS, 1 year, 2020-2020, Rs 10 lakhs
5. Development of a novel cancer immunotherapeutic agent by integrating tumour antigen TRP-2 with Mycobacterium indicus pranii and analysis of its antitumour efficacy and immune-mechanisms using a mouse model, Pawan Kumar, AIIMS, 2 years, 2019-2021, Rs 10 Lakhs

## **Radiodiagnosis**

### **Funded projects**

#### ***Ongoing***

1. Diagnostic accuracy of Contrast enhanced Ultrasound in detecting early response to Neoadjuvant Chemotherapy in Breast cancer patients, Ekta Dhamija, AIIMS. 2 years, 2019- 2021, Rs 8,00,000
2. Use of Artificial Intelligence to detect breast cancer on mammogram and its use in the Indian population, Krithika Rangarajan, DBT, 3 year, 2020-2023, Rs 85.19 lakhs

#### ***Completed***

1. Metallic tumour marker clip for breast cancer: design, development and clinical implications, Sanjay Thulkar, SERB-DST, 5 years, 2014-2019, Rs 23.27 lakhs
2. Comparative evaluation of Nasoenteric feeding and Percutaneous Radiologic Gastrostomy for enteric support in patients with moderate and severe dysphagia due to neoplasms of oropharynx or esophagus: A Pilot Randomized controlled trial, Mukesh Kumar, AIIMS, 2 years, 2018-2020, Rs 5 lakhs

## **Radiation Oncology**

### ***Ongoing***

1. ICMR Task Force Genomics of gallbladder carcinoma in Indian Patients, GK Rath, ICMR, 5 years, 2018–2023, Rs 199 lakhs
2. ICMR Task Force Comparative study of Genetic, Clinical and Epidemiological factors of Breast Cancer in Indian population, GK Rath, ICMR, 4 years, 2017–2021, Rs 122 lakhs
3. A prospective study to elucidate genetics, clinical and molecular factors in gall bladder carcinoma in Indian patients, GK Rath, Cancer Foundation, 4 years, 2017-2021, Rs 40 lakhs
4. To Investigate the role of HPV infection and its association with breast cancer in India: A patient-based exploration study, GK Rath, ICMR, 2 years, 2020-2021, Rs 10 lakhs
5. Identification of Hereditary Breast and Ovarian Cancer (HBOC) syndrome families with breast cancer and their BRCA1 & BRCA2” gene mutation profiling in NER population, GK Rath, NCDIR-ICMR, 3years, 2020-2023, Rs 98 lakhs
6. Mycidac C in Lung cancer, Subhash Gupta, Cadila, 3 years, 2017-2019, Free drugs.
7. A study of Palbociclib in combination with Letrozole as treatment of postmenopausal women with hormone receptor positive, Her 2 new negative advanced breast cancer for whom Letrozole therapy is deemed appropriate, Haresh KP, Pfizer India, 3 years, 2017-2019, Rs 10 Lakhs
8. A Randomized, Multiple-dose, Multicenter, Comparative, Parallel Study to Evaluate the Efficacy, Safety and Pharmacokinetic Characteristics of Intravenous Infusion of Trastuzumab (Test, Hetero) and Reference Medicinal Product (Reference, Roche) in combination with standard chemotherapy in Patients of HER2-positive Metastatic

- breast cancer (TRUMAB Study), Haresh KP, Hetero Pharma, 3 years, 2019-2021, Rs 17 Lakhs
9. A prospective pilot study to evaluate the effectiveness and toxicity of Stereotactic body radiotherapy (SBRT) for Portal Vein Thrombosis in patients with advanced Hepatocellular carcinoma (HCC) (DHR Grant), Haresh KP, DHR, 3 years, 2019-2021, Rs 31 Lakhs
  10. A Randomized, double blind, multicentre, multinational comparative clinical study to compare the efficacy and safety of INTP24 against Avastin, Rambha Pandey, Rs 5.86 Lakhs
  11. Prospective pilot study of endobronchial brachytherapy for palliation of malignant airway obstruction, Rambha Pandey, Rs 10 Lakhs
  12. Prospective assessment of radiation induced lung injury (RILI) in breast cancer patients undergoing adjuvant post-operative three-dimensional conformal radiotherapy (3DCRT), Ritesh Kumar, AIIMS, 2 years, 2017 – 2019, Rs 4 Lakhs

## **Surgical Oncology**

### **Funded projects**

#### ***Ongoing***

1. HBCR & Pattern of care and survival studies in breast, head & neck and cervical cancer. SVS Deo, ICMR, 6 years, 2014-2020, Rs 35 lakhs
2. Patterns of care and survival studies on cancer in childhood, lymphoid and hematopoietic malignancies. SVS Deo, ICMR, 4 years, 2017-2021, Rs 5 lakhs
3. Comparative Sphingolipid profiling of breast cancer cell and tissue types for identification of Potential Metastatic biomarkers, SVS Deo, DST, 4 years, 2016-2020, Rs 47.15 lakhs
4. Patterns of Care and Survival Studies on Gall Bladder Cancer under ICMR- National Cancer Registry Programme (NCRP), Sunil Kumar, ICMR, 5 years, 2019-2023, Rs 13 lakhs
5. Clinical significance of cell-free DNA in intraoperative pleural lavage fluid and plasma in patients undergoing pulmonary metastasectomy: A pilot study, Sunil Kumar, AIIMS, 2 years, 2018-20, Rs 10 lakhs
6. Development of Standard Operating Procedures (SOP) of Hyperthermic Intraperitoneal Chemotherapy (HIPEC) in peritoneal surface malignancies for Public set up in India., MD Ray, DST, 3 years, 2017-2019, Rs 50 lakhs
7. Association of HIPEC treatment with expression of T regulatory cells (FOXP3) in epithelial ovarian cancer and its clinical significance, MD Ray, AIIMS, 2 years, 2018-2019, Rs 8 Lakh

#### **Completed**

1. An economic analysis of alternative treatment methods of ovarian cancer in India, Neerja Bhatla. MD Ray, Multi institutional Collaboration, 3-5 years, 2018-2022
2. Evaluation of Human Epididymis Protein 4 (HE4) level in the diagnosis of ovarian cancer, Amar Ranjan. MD Ray, ICMR, New Delhi, 3 years, 2018-2021, 30 lakhs

## **Departmental projects**

### **Onco-Anesthesia and Palliative Medicine**

#### ***Ongoing***

1. A comparison of effect of Desflurane vs. Sevoflurane on arterial oxygenation during one lung ventilation for thoracotomies in oncosurgical patients: - a randomized control trial
2. A comparison of two techniques of postoperative analgesia: lignocaine-fentanyl intravenous infusion and ropivacaine-fentanyl epidural infusion in patients undergoing cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) – prospective randomized control study
3. A cross-sectional survey of medical professionals in India to assess their prescription practices, knowledge, attitude, and barriers towards opioid analgesic prescriptions
4. A Prospective Observational Study to Assess the Effect of Palliative Care Consultation on the Palliative Care Needs of Patients Suffering from Advanced Lung Cancer, in a Tertiary Care Hospital in India
5. A Prospective Randomized Control Trial of Goal directed Vs Standard Fluid Therapy in Cytoreductive Surgery with Hyperthermic Intraperitoneal Chemotherapy
6. A survey of medical professionals in an apex tertiary care hospital to assess awareness, interest, practices and

- knowledge in palliative care: A descriptive cross-sectional study”
7. An observational study to elucidate the reasons for non compliance to home treatment for breast cancer related lymphedema in a tertiary care hospital
  8. Asian patient’s perspective regarding oncology awareness, care and health (APPROACH)
  9. Assessment of palliative care outcomes in patients of gastrointestinal malignancies attending the palliative care clinic of a tertiary care centre: a prospective observational study
  10. Assessment of quality of life in breast cancer patients receiving hormonal therapy
  11. Assessment of Symptom Burden and Quality of Life in Paediatric Cancer Patients in a Tertiary Care Centre In India: A prospective study
  12. Assessment of Symptom Burden and Quality of Life in Patients of Advanced Breast Cancer in Indian Population: A Cross-Sectional study
  13. Assessment of Symptom Burden and Quality of Life in Patients of Lung Cancer Attending The Palliative Care Clinic of a Tertiary Care Centre: A Prospective Observational Study.
  14. Assessment of Symptom Burden In Patients of Malignant Bowel Obstruction In A Tertiary Care Centre In India
  15. Association of Vitamin D deficiency with opioid consumption, quality of life and progression free survival in metastatic breast cancer patients: An Observational descriptive prospective study
  16. Cardiopulmonary exercise testing as a predictor of postoperative outcome in patients undergoing esophageal cancer surgery following neoadjuvant chemotherapy - A prospective observational study
  17. Comparison between C-arm fluoroscopic guided posterior versus Percutaneous Ultrasound-guided anterior approach for celiac plexus neurolysis in patients with upper abdominal cancer in terms of pain relief and quality of life-A Prospective randomized comparative study
  18. Comparison of efficacy of Ultrasound guided Paravertebral Block versus Erector Spinae Plane block for Postoperative Analgesia in Modified Radical Mastectomy: A Randomized Controlled Trial
  19. Comparison of efficacy of ultrasound guided paravertebral block versus complete antethoracic block for postoperative analgesia in
  20. Comparison of intervention with analgesics versus analgesics alone in patients with upper abdominal malignancy in terms of pain relief and quality of life at 3 months follow up : A Prospective randomized study
  21. Comparison of lung aeration loss in open abdominal oncologic surgeries after ventilation with Electrical Impedance Tomography guided PEEP versus conventional PEEP – A pilot randomized control trial
  22. Comparison of total intravenous anaesthesia and inhalational anesthesia for development of postoperative pulmonary complications in oral cancer resection surgery with pectoralis major myocutaneous (PMMC) flap reconstruction: A prospective, randomized control trial.
  23. Comparison of WHO step 2 analgesic drug versus step 3 analgesic drug in Stage 4 opioid-naive lung cancer patients presenting to pain clinic with moderate to severe pain in terms of pain relief and quality of life at 3 weeks follow up: A randomized prospective study
  24. Early pain intervention in cancer pain patients improves quality of pain relief, decreases analgesic requirement and thus improves quality of life
  25. Effectiveness of the Certificate Course in Essentials of Palliative Care programme on the knowledge in palliative care among the participants: A cross-sectional interventional study
  26. Effects of physiotherapy on neck and shoulder movements and mouth opening in patients operated for oral cancer and their quality of life. A Pilot Study
  27. End of Life care practice at a Tertiary Cancer Centre in India: An Observational study
  28. Incidence and risk factors for post-operative nausea vomiting in cancer surgeries: a prospective observational study
  29. modified radical mastectomy: a randomized controlled trial
  30. Nasotracheal intubation in patients with oropharyngeal carcinoma under general anaesthesia: A comparative evaluation between fiberoptic bronchoscope and C-MAC D blade video laryngoscope
  31. Palliative Care Needs Assessment in Patients Suffering from Advanced Chronic Obstructive Pulmonary Disease (COPD)/ Interstitial Lung Disease (ILD): A Prospective Study
  32. Palliative Care: Promoting Access & International Cancer Experience in India Collaborative (PC-PAICE India Collaborative)
  33. Pattern of Patients Presenting with Malignant Spinal cord Compression in Palliative Care Unit at a Tertiary Care Centre of India-An Observational Study
  34. Pattern of presentation of breast cancer related lymphedema and its impact on quality of life of breast cancer

patients attending pain and palliative care clinic.

35. Prevalence and factors associated with cancer related neuropathic pain in India: A cross sectional study
36. Prevalence of Pain Among Inpatients at All India Institute of Medical Sciences- New Delhi
37. Quality of life and symptom burden in patients with hematological malignancies receiving hematopoietic stem cell transplantation- a prospective observational study
38. The journey of cancer patients from symptom onset to the beginning of treatment in a cancer hospital in India
39. To compare the effectiveness of Duloxetine vs. Gabapentin on neuropathic pain intensity in patients with chemotherapy-induced peripheral neuropathy: A double-blind randomized controlled trial
40. To compare the efficacy of opioid free general anesthesia with opioid based general anesthesia on postoperative morphine consumption in patients undergoing breast cancer surgery: A prospective randomized control study.
41. To study the clinical correlation between chemotherapy induced peripheral neuropathy (CIPN) and deficiency of vitamin b12, vitamin d3, calcium and omega 3 fatty acids.
42. Validation of an Indian Palliative Care Spiritual Distress Scale

### **Completed**

1. Prevalence and factors affecting anxiety and depression in cancer patients in palliative care setup at tertiary care center.
2. Assessment of care giver burden in palliative care
3. Validity and reliability of the Hindi version of the Patient Assessment of Constipation Quality of Life questionnaire in cancer patients on opioids for pain management at tertiary care center, India
4. Validation of the Hindi version of the EORTC QLQ-C15-PAL questionnaire for the evaluation of quality of life of advanced cancer patients at tertiary care center, India”
5. Prevalence of postoperative morbidity in patients undergoing elective major thoraco-abdominal oncosurgery and their correlation with anaesthetic technique
6. Strong opioids and its impact on QOL in chemotherapy induced oral mucositis: A prospective observational study
7. Prevalence and predictors of postoperative fatigue and its impact on the quality of life patients after gastrointestinal cancer surgeries : A prospective observational study
8. Comparative evaluation of Intravenous infusion of dexmedetomidine vs. Morphine for postoperative analgesia and sedation in Commando surgeries

### **Laboratory Oncology**

#### **Ongoing**

1. A study of plasma cell and B-cell compartment in plasma cell proliferative disorders (PCPD)
2. Establishment of Standard and the state-of-the-art molecular procedures for Monitoring Minimal Residual Disease (MRD) and identification of ABL kinase domain mutations in Chronic Myeloid Leukemia (CML)
4. Non-invasive evaluation of genomic aberrations in multiple myeloma
5. To evaluate the safety and feasibility of hematopoietic stem cell micro transplantation in relapsed and refractory acute myeloid leukemia (AML) patients who do not have a matched sibling donor
6. Treatment versus observation in patients with biochemical relapse of multiple myeloma, a phase III, randomized controlled trial.
7. Investigation on immunotherapeutic approaches to breast cancer in a murine
8. Molecular biology of immature T-ALL
9. Identification of tyrosine kinase lesions in B-ALL

### **Medical Oncology**

#### **Ongoing**

1. “EMF (Erlotinib/Methotrexate/5-FU) regimen as an efficacious therapy in unresectable or recurrent/metastatic Head Neck Squamous cell carcinoma after platinum failure: Investigator initiated, single arm, phase II trial”
2. A Phase II Study of Gemcitabine Docetaxel Combination in Metastatic Relapsed Synovial Sarcoma
3. A phase II study of Metformin plus Pemetrexed/Carboplatin in patients with Non-squamous non-small cell lung cancer.

4. A pilot study to assess safety and efficacy of modified FOLFIRINOX in unresectable Gall Bladder Cancer
5. A Prospective Randomized Control Trial of Goal directed Vs Standard Fluid Therapy in Cytoreductive Surgery with Hyperthermic Intraperitoneal Chemotherapy
6. A Prospective, Single-Arm, Multicenter, Pragmatic Phase-IV Trial Investigating Safety and Effectiveness of DARZALEX (Daratumumab) In Indian Subjects With Relapsed and Refractory Multiple Myeloma, Whose Prior Therapy Included a Proteasome Inhibitor and an Immunomodulatory Agent Funded by Johnson & Johnson
7. A retrospective study of early stage epithelial ovarian cancer
8. A single arm feasibility phase II study of EMF (erlotinib/mtx/5-FU) in platinum refractory R/M HNSCC
9. A single arm feasibility phase II study of EMF regime in platinum refractory recurrent metastatic head and neck squamous cell carcinoma
10. A two-arm randomized open label prospective parallel design superiority Phase II multicentric clinical trial to evaluate the efficacy of a doublet second line chemotherapy versus monotherapy in advanced unresectable or metastatic gall bladder cancer progressing on first line chemotherapy
11. Adjuvant chemoradiation and chemotherapy in resected gastric cancer
12. Adjuvant Chemotherapy or Chemo-radiation in Gall Bladder Cancer: A Phase III Randomized Controlled Study (ACCeleRate trial)
13. An ambispective cohort study of clinicopathological characteristics in patients of locally advanced breast cancer
14. An audit of clinic-pathological characteristics and outcome to therapy in high risk endometrial cancer treated at tertiary cancer centre: Retrospective analysis
15. Analysis of clinic pathological features, molecular profile and survival outcome of lung cancer patients below 40 years
16. Assessment of brain metastases (Incidence, clinic-pathological, molecular correlation and outcome) in Non-small cell Lung cancer (NSCLC) patients: A single arm prospective observational study
17. Assessment of Knowledge and attitude of breast and ovarian cancer patients regarding
18. Assessment of Sexual health and intimacy related problems in cancer patients undergoing chemotherapy
19. Bendamustine, Pomalidomide and Dexamethasone in relapsed and/or refractory multiple myeloma
20. Bortezomib, lenalidomide and dexamethasone-based consolidation therapy after Autologous
21. Clinicopathological features and outcome of DLBCL patients treated in tertiary health setting
22. Clinicopathological features and outcome of patients with Hodgkin's lymphoma
23. Comparison of "Multigene hereditary panel testing" profiles in breast cancer patients qualifying and not qualifying the NCCN 2018 criteria for genetic testing: a prospective study in North Indian population
24. Concurrent Chemotherapy and External Radiation Therapy: An Open Label Non-Inferiority Phase III Randomized Controlled Trial of Weekly versus Three Weekly Cisplatin and Radical Radiotherapy in Locally Advanced Head and Neck Squamous Cell Carcinoma
25. Cost effectiveness of early stoppage of early antibiotic therapy at clinical recovery in pediatric cancer patients with high risk febrile neutropenia compared to delayed stoppage of early antibiotic therapy
26. DNA Methylation in Ovarian Cancer
27. Early integrated palliative care versus routine oncological care for advanced adult sarcoma patient in tertiary care centre in India: a randomized phase II trial
28. Early stoppage of empirical antibiotic therapy at clinical improvement in pediatric cancer patients with high risk febrile neutropenia. A randomized open label clinical trial
29. Effect of Non-ionizing electromagnetic field (EMF) on human health funded by ICMR
30. Estimation of quality of anti-cancer drugs in marketed formulation
31. Gene expression profile and its correlation with mitochondrial energy metabolism in pediatric AML
32. Hematopoietic Stem Cell Transplantation in multiple myeloma: A single arm prospective study
33. Hereditary breast and ovarian cancer syndrome (HBOC) at a tertiary care institute
34. Incidence and impact of gut colonization by multi-drug resistant organism in patients receiving high intensity chemotherapy for AML or autologous HSCT
35. Minimal Residual Disease in Multiple Myeloma
36. Outcome analysis of triple negative breast cancer
37. Pazopanib based combination oral Metronomic therapy in Platinum Resistance, Platinum Refractory and advanced Ovarian Cancer: A randomized phase II Study



38. Pazopanib based oral metronomic therapy in Platinum refractory and relapsed ovarian cancer: a randomized phase II study
39. Pre and Post-transplant evaluation of natural killer T cells in multiple myeloma
40. Retrospective analysis of patterns and outcomes in Relapsed Multiple Myeloma
41. Retrospective analysis of RRMI, RRM2, ERCC1 and hENT1 expression in predicting treatment outcomes in advanced/recurrent CaGB who treated with gemcitabine and platinum-based chemotherapy
42. Retrospective study of Engraftment Kinetics and Cost-Effectiveness Analysis of a Risk-Adapted Algorithm of Plerixafor Use for Autologous Peripheral Blood Stem Cell Mobilization in Multiple Myeloma
43. Role of PARP1 and  $\gamma$ -Glutamyl cysteine synthetase (GCS) Inhibitors on cisplatin: AIIMS sensitivity and DNA Methylation in ovarian cancer
44. Single-day intravenous Fosaprepitant vs. 3-day oral Aprepitant anti-emetic regimen in pediatric patients receiving highly-emetogenic chemotherapy: An Investigator-initiated, randomized, open-label, non-inferiority trial
45. Stoppage of empirical antibiotic therapy in pediatric high-risk febrile neutropenia: A randomized open label Phase III clinical trial.
46. Study of efficacy and safety of neo adjuvant chemotherapy in patients with stage II B and III NSCLC
47. Study of Nilotinib drugs levels with foods and their clinical outcome in patients of chronic myeloid leukemia
48. The Feasibility of weekly paclitaxel in improving performance status of advanced NSCLC patients with poor performance status: A single arm phase II trial
49. To study the effect of fatty meals on nilotinib drug levels in blood in newly diagnosed patients of CML-CP

### **Completed**

1. The role of the PARP – 1 & B- Catenin in cisplatin resistance in cervical cancer
2. Pazopanib based oral metronomic therapy in Platinum relapsed, Platinum Refractory and Advanced ovarian cancer: a randomized phase 2 study
3. Impact of serum galactomannan assay on diagnosis and outcome of invasive fungal infections in high risk febrile neutropenia
4. Bortezomib, lenalidomide and dexamethasone (VRd) versus bortezomib, cyclophosphamide and dexamethasone (VCd) as induction therapy in untreated multiple myeloma: A phase III randomized Study
5. A prospective, Interventional study assessing response to Cytarabine, Daunorubicin and Etoposide (ADE) for first relapse of paediatric Acute Myeloid Leukemia
6. Olanzapine for prevention of nausea and vomiting in children and adolescents receiving highly emetogenic chemotherapy (HEC): An investigator initiated, randomized, open-label trial
7. To study clinical and biological significance of mutations in mitochondrial DNA regulatory region in acute myeloid leukemia
8. Retrospective analysis of testicular Germ cell tumours treated at IRCH, AIIMS
9. Role of RRM1, RRM2, hENT1 and ERCC1 expression in Advanced Carcinoma of Gall Bladder treated with Gemcitabine-Platinum Doublet
10. A phase III open label randomized control study to compare efficacy and safety of pemetrexed-Carboplatin versus Paclitaxel- Carboplatin as induction regimen in advanced Non-Squamous NSCLC
11. To assess the frequency, clinicopathological, molecular correlation and outcome of brain metastasis in NSCLC patients
12. A study to determine the association of trace elements and heavy metals with lung cancer and their correlation with smoking

### **Medical Physics**

#### **Ongoing**

1. Development of new luminescence material for dosimetry purpose
2. Calibration and use of optically stimulated luminescence dosimeter
3. Development of protocol for quality assurance of lead apron and thyroid collar
4. Development of radiochromic film dosimeter

## **Radiodiagnosis**

### ***Ongoing***

1. Assessment of the effectiveness of Transversus abdominis plane (TAP) block for pain relief in percutaneous transhepatic biliary drainage in gall bladder cancer patients- A randomized control trial
2. Role of Multiparametric MRI in predicting the grade of adult Peripheral Soft tissue sarcomas

## **Radiation Oncology**

### ***Ongoing***

1. Preparation and study of radiochromic film as radiation dosimeter for medical applications
2. Pilot study to compare moderate hypofractionated radiotherapy versus stereotactic body radiotherapy (SBRT) in intermediate and high risk prostate cancer, a toxicity and quality of life comparison
3. A pilot study to evaluate the feasibility, toxicity profile and quality of life in patients with newly diagnosed glioblastoma, receiving adjuvant chemoradiation using stereotactic radiotherapy in comparison to conventional radiotherapy
4. Adaptive Radiotherapy in Head and Neck Cancer- A Prospective study

### ***Completed***

1. A phase II study to assess the feasibility of involved site radiotherapy for consolidation after chemo-immunotherapy in newly diagnosed patients of stage I-II nodal diffuse large B-cell lymphoma
2. A pilot study to compare interstitial multicatheter brachytherapy vs VMAT for APBI in early breast cancer: An adaptation, toxicity, and cosmesis comparison
3. Comparative evaluation of acute toxicity, cosmesis and quality of life in hypofractionation versus conventional fractionation radiotherapy to whole breast and regional nodes after breast conservation surgery in breast cancer patients

## **Surgical Oncology**

### ***Ongoing***

1. Evaluation of Indocyanine green dye based navigation surgery in optimizing axillary management of carcinoma breast
2. Learning Basic Lab Techniques and Analysis of Colorectal cancer data base
3. Prevalence of sarcopenia in patients with upper gastrointestinal and lung malignancy undergoing surgical resection and its impact on immediate postoperative outcomes: A prospective observational study
4. Efficacy of Neoadjuvant chemotherapy in carcinoma esophagus- A pilot study comparing Cisplatin+5-FU with Paclitaxel+Carboplatin
5. A prospective assessment of quality indicators of peri-operative outcomes in major oncological surgeries at a high volume tertiary care center
6. A prospective comparative study between HIPEC and EPIC and a Retrospective analytic survey of HIPEC patients
7. A Study Of Colorectal Cancer Patients – Clinical Profile, Treatment And Relapse Patterns And Learning Basic Laboratory Techniques Of Molecular Biology For miRNA Extraction In Colon And Rectal Cancer Patients
8. Prospective assessment of quality indicators of perioperative outcomes in major oncological surgeries at a high volume tertiary care center
9. Validation of role of PET-CT and Diagnostic Laparoscopy in the gall bladder cancer patients – A prospective study
10. Feasibility study of dual technique- blue dye and fluorescence imaging for detection of sentinel node in oral cavity cancer – a prospective validation study

### ***Completed***

1. Efficacy of Neoadjuvant chemotherapy in carcinoma Esophagus-A pilot study comparing Cisplatin+5-FU with Paclitaxel+ Carboplatin
2. Awareness and Knowledge of Indian Breast Cancer patients pertaining to genetic aspect of Breast cancer
3. Clinical Utility of cell-free DNA in intraoperative pleural lavage fluid and plasma for patients with resectable primary pulmonary malignancies – A pilot study

4. Evaluation of peritoneal cancer index (PCI) in primary advanced ovarian epithelial carcinoma amongst Indian population.”
5. A prospective observational study comparing CT scan vs PET CT scan in carcinoma ovary for determining the preoperative disease burden and resectability”
6. Clinical significance of cell-free DNA in intraoperative pleural lavage fluid and plasma in patients with Non-small cell Lung cancer: A pilot study
7. Validation of the role of PET-CT and diagnostic laparoscopy in assessing the staging of gall bladder cancer patients: a single arm prospective study

## **Collaborative projects**

### **Onco-Anesthesia and Palliative Medicine**

#### ***Ongoing***

1. A cross-sectional survey of medical professionals in India to assess their prescription practices, knowledge, attitude, and barriers towards opioid analgesic prescriptions- National Drug Dependence Treatment Centre
2. A Prospective Observational Study to Assess the Effect of Palliative Care Consultation on the Palliative Care Needs of Patients Suffering from Advanced Lung Cancer, in a Tertiary Care Hospital in India, Pulmonary medicine
3. A prospective randomized control trial comparing intracostal with pericostal thoracotomy closure to evaluate post thoracotomy pain syndromes-Surgical Oncology
4. A survey of medical professionals in an apex tertiary care hospital to assess awareness, interest, practices and knowledge in palliative care: A descriptive cross-sectional study.-Surgical Oncology
5. An observational study to elucidate the reasons for noncompliance to home treatment for breast cancer related lymphedema in a tertiary care hospital-Physiotherapy
6. Asian patient’s perspective regarding oncology awareness, care and health (APPROACH).-Radiation Oncology, Psychiatry
7. Assessment of quality of life in breast cancer patients receiving hormonal therapy, Medical oncology, surgical oncology
8. Association of Vitamin D deficiency with opioid consumption, quality of life and progression free survival in metastatic breast cancer patients: An Observational descriptive prospective study, Medical Oncology
9. Comparison between C-arm fluoroscopic guided posterior versus Percutaneous Ultrasound-guided anterior approach for celiac plexus neurolysis in patients with upper abdominal cancer in terms of pain relief and quality of life-A Prospective randomized comparative study, Radiodiagnosis/ IRCH AIIMS
10. Early pain intervention in cancer pain patients improves quality of pain relief, decreases analgesic requirement and thus improves quality of life, Radiodiagnosis IRCH
11. Effects of physiotherapy on neck and shoulder movements and mouth opening in patients operated for oral cancer and their quality of life. A Pilot Study. -Surgical Oncology, Physiotherapy, IRCH
12. Palliative Care Needs Assessment in Patients Suffering from Advanced Chronic Obstructive Pulmonary Disease (COPD)/ Interstitial Lung Disease (ILD): A Prospective Study, Pulmonary medicine
13. Palliative Care: Promoting Access & International Cancer Experience in India Collaborative (PC-PAICE India Collaborative)-Surgical Oncology
14. Pattern of presentation of breast cancer related lymphedema and its impact on quality of life of breast cancer patients attending pain and palliative care clinic. Medical oncology, surgical oncology, Physiotherapy, IRCH
15. Prediction of infection in postoperative cases of gastrointestinal malignancy by analysis of thrombopoetin-Laboratory Oncology
16. Prevalence of pain among inpatients at All India Institute of Medical Sciences- New Delhi, Pulmonary medicine
17. Safety and efficacy of neoadjuvant chemotherapy in stage IIB and IIIA NSCLC: Single arm phase II study-Medical Oncology
18. To compare the effectiveness of Duloxetine vs Gabapentin on neuropathic pain intensity in patients with chemotherapy-induced peripheral neuropathy: A double-blind randomized controlled trial-Medical Oncology
19. Validation of an Indian Palliative Care Spiritual Distress Scale Duquesne University, Pittsburgh-Surgical Oncology, AIIMS

## **Laboratory Oncology**

### ***Ongoing***

1. Elucidation of circulating cell free miRNA in pathogenesis, disease progression and outcome in multiple myeloma using integrated bioinformatics and experimental approach, Biophysics
2. Identification of network pathways for drug targeting in Multiple Myeloma from NGS data using Deep Learning, IIT, Delhi
3. Digital Holographic Microscopy of acute leukemic cell for 3D morphology based classification, IIT, Delhi
4. Minimal Residual Disease Estimation in Multiple Myeloma using Image Processing: Design and Development of Myelomaimager - an Automated Computer Assisted Tool. IIT, Delhi
5. ICMR TASK Force Comparative study of Genetic, Clinical and Epidemiological factors of Breast Cancer in Indian population” as ICMR Task Force, NIOP, New Delhi, RCC Trivandrum, NICPR, Noida
6. ICMR TASK Force Genomics of gallbladder carcinoma in Indian Patients, NIOP, New Delhi, NICPR, Noida, GB Pant Hospital, New Delhi

## **Medical Oncology**

### ***Ongoing***

1. Elucidation of role of TOX in T-cell acute lymphoblastic leukemia. Funded by DHR 2019-2021 (30 lakhs), Laboratory Oncology
2. Identification and in-vitro functional assay of novel driving tyrosine kinases in Indian BCR-ABL- like ALL
3. Internal sponsor for DBT-Wellcome trust India Alliance intermediate career fellowship for Dr. Anita Chopra
4. Centre of Advanced Research and Excellence in AML, Lab Oncology
5. 225Ac-DOTATATE therapy in metastatic CRPC, Nuclear Medicine
6. Lenvatinib in advanced thyroid cancer, Nuclear Medicine
7. Effect of food on pharmacokinetics of abiraterone in metastatic CRPC, Pharmacology
8. 225Ac-DOTATATE therapy in GEP-NET, Nuclear Medicine
9. Cellular and immunological role of DPP3 in esophageal cancer., Biochemistry, Pathology, Medical Oncology, Surgical Oncology
10. Evaluation of Neoadjuvant chemotherapy in esophageal squamous cell carcinoma: a RCT comparing Paclitaxel and Carboplatin Versus Cisplatin and 5Fluorouracil, Surgical Oncology, Medical Oncology, Radiology, Nuclear Medicine, Radiation Oncology
11. p53 in regulation of Epithelial-Mesenchymal Transition in breast cancer: role of micro-RNA, IIT Delhi, Institute of Cytology, St Petersburg, Russia
12. CRISPR-based editing of regulatory region and expanded triplet repeats as therapeutic approach in India’s most common hereditary Ataxias. Neurology

### ***Completed***

1. Lu177-PSMA therapy in metastatic CRPC, Nuclear Medicine
2. A prospective study to evaluate the efficacy of PET-CT Scan in detecting residual disease in locally advanced head and neck cancers after primary treatment with definitive chemoradiotherapy, Nuclear Medicine, ENT, Radiation Oncology, Medical Oncology.
3. EBV DNA PCR in clinically suspected nasopharyngeal cancer, Microbiology, ENT, Radiation oncology, Medical Oncology
4. Expression and Significance of Notch signaling -associated proteins, Notch 1, Notch 2, Notch 3, Hes1 and p21 in esophageal squamous cell carcinoma: A retrospective Study., Medical Oncology, Pathology, Surgical Oncology, Radiation Oncology

## **Preventive Oncology**

### ***Ongoing***

1. A Study of Gut (oral, fecal and bile) Microbiome in Patients with Gallbladder Cancer, Surgical Disciplines, Gastroenterology, Translational Health Science and Technology Institute, Faridabad
2. Clinico-genetic prognostic signatures for development of metastatic Castration Resistant Prostate Cancer., Urology, Laboratory Oncology

3. Genomics of Gall Bladder Carcinoma in Indian patients, Laboratory Oncology, National Institute of Cancer Prevention and Research, Noida, IGIB, New Delhi
4. Comparative study of Genetics, Clinical and Epidemiological factors of breast cancer in Indian Population, Laboratory Oncology, National Institute of Pathology, Delhi National Institute of Cancer Prevention and Research, Noida
5. To study the Interplay between Cancer-Testis germline POTE antigen and Notch signaling and its association with global DNA methylation in Ovarian Cancer, Biochemistry

## **Radiodiagnosis**

### ***Ongoing***

1. To establish algorithm for management of axilla in patients with axillary lymph node negative early operable breast cancer, Surgery
2. Development of an instrument to Evaluate total pain in cancer Patients in indian context, Oncoanesthesia and palliative care
3. A cross-sectional study to identify the social context of pain in cancer patients, Onco-Anesthesia and Palliative Medicine
4. A single arm feasibility phase ii study of emf (erlotinib+methotrexate+5-fu) regimen in platinum refractory recurrent/metastatic hnscc, Medical oncology
5. Comparison between Ropivacaine/dexamethasone and 10% Lignocaine injection in distal glossopharyngeal nerve block for intractable cancer pain- A randomized Trial, Onco-Anesthesia and Palliative Medicine.
6. Outcome of advanced unresectable synovial cell sarcoma from and Indian tertiary care center: retrospective study, Medical Oncology
7. A Phase II Study of Gemcitabine/Docetaxel in Patients with Relapsed Metastatic Synovial Sarcoma, Medical Oncology
8. Evaluation of tumor microenvironment in Osteogenic Sarcoma, Orthopedics
9. Clinico-radiological correlation of the breast diseases, Radiodiagnosis
10. Computational analysis of CT images, Department of Biotechnology, IIT Roorkee
11. Early pain interventions in cancer pain patients improves quality of pain relief, decreases analgesic requirement and thus improves quality of life, Onco-Anaesthesia and Palliative Medicine
12. Role of MR guided biopsy in detecting prostate cancer, NMR
13. Assessment of brain metastases in advanced NSCLC, Medical Oncology
14. Development of tissue equivalent optically stimulated luminescent materials for measurement of low doses of medical radiation., Medical physics unit, and Department of Health physics inter university accelerator centre, New Delhi

### ***Completed***

1. Comparison of CT vs PET CT in Ca ovary for accuracy of staging, disease burden and prediction of resectability and determination of PCI, a prospective study, Surgical Oncology
2. A Prospective study to determine the efficacy of Positron Emission Tomography/Computed Tomography (PET/CT) in detecting residual disease in Locally Advanced Head & Neck Squamous Cell Carcinoma managed with primary Chemo- Radiation Therapy, Nuclear Medicine
3. Three arm phase II/III RCT comparing erlotinib plus best supportive care (BSC), capecitabim plus BSC and BSC only in unresectable / metastatic CAGB patients with poor performance status (ECOG PS-III), Medical Oncology
4. Clinical Outcome of MRI-CT based Intracavitary brachytherapy in cervical cancer: A retrospective Clinical Study, Radiation Oncology
5. Multimodality Imaging Evaluation of Chronic mass forming mastitis and role of ultrasound guided vacuum assisted biopsy in determining its etiology, Radio-diagnosis
6. A pilot study to compare Interstitial Multicatheter Brachytherapy (IMB) versus Volumetric modulated ARC therapy for APBI in early breast cancer: An adaptation, toxicity and cosmesis comparison, Radiation Oncology
7. Assessment of Early Treatment Response And Dosimetric Evaluation In Locally Advanced Cervical Cancer Treated With 3d Conformal Radiation Therapy Along With Concurrent Cisplatin And Image Guided High Dose Rate Brachytherapy, Radiation Oncology
8. Correlation of Barrel Index determined by MRI in early cervical cancer with operability, lymph node status and

local extension of the disease, Obstetrics and Gynaecology

9. A Prospective Study to evaluate the accuracy of Axillary Staging using Ultrasound guided FNAC in early Breast cancer Patients, Surgical Oncology
10. Evaluation of peritoneal cancer index (PCI) in primary advanced ovarian epithelial carcinoma amongst Indian population, Surgical Oncology

## **Radiation Oncology**

### ***Ongoing***

1. Artificial intelligence in Oncology: Harnessing big data and advanced computing to provide personalized diagnosis and treatment for Cancer patients, Biochemistry
2. Role of Nuclear Receptor network signaling in pathogenesis of Gallbladder cancer, Biochemistry
3. The role of novel self-assembling peptide matrix (SAPM) in prevention of post radiation caries in head and neck cancer patients: Randomized clinical trial, Conservative Dentistry and Endodontics, Centre for Dental Education and Research (CDER)
4. Can pre-session intra-ductal administration of N acetyl-cysteine in each wharton duct decrease xerostomia and improve quality of life in adult patients of oropharyngeal squamous cell carcinoma treated by single modality of radical external beam radiotherapy treatment?, Otorhinolaryngology, Pharmacology,
5. Formulation of Phantom brain to obtain & establish dosimetry of magnetic fields following repetitive transcranial magnetic field stimulation, Physiology

### ***Completed***

1. Prospective pilot study for evaluating incidence of occult lymph node metastasis in patients with olfactory neuroblastoma, Departments of Otorhinolaryngology & head-neck surgery, Radiation Oncology, Medical Oncology, Pathology, Radiology & Nuclear Medicine
2. A Prospective study to determine the efficacy of Positron Emission Tomography-Computed Tomography (18F-FDG PET-CT) scan in detecting residual disease in Locally Advanced Head & Neck Squamous Cell Carcinoma managed with primary Chemo-Radiation Therapy and its comparison with CECT, Nuclear Medicine, Radiation Oncology, Medical Oncology, Otorhinolaryngology & head-neck surgery, Pathology & Radiology
3. MGMT promoter methylation in primary CNS lymphoma, Medical Oncology, Pathology & Radiation Oncology
4. Clinicopathological features and outcome of diffuse large B cell lymphoma- an ambispective analysis, Medical Oncology and Pathology

## **Surgical Oncology**

### ***Ongoing***

1. A comprehensive analysis of mammalian target of rapamycin (mTOR) and mitogen activated protein (MAP) Kinase signaling pathways in non- small cell lung carcinoma, Pathology
2. Differentiating inflammatory and metastatic mediastinal lymphadenopathy on 18-FDG- PET/CT in lung cancer: Role of steroid suppression, Nuclear Medicine
3. Role of nuclear receptors in pathogenesis of carcinoma gall bladder, Biochemistry
4. A prospective study to elucidate molecular genetic risk factors of gallbladder carcinoma in Indian Population, Lab Oncology
5. Evaluation of Human Epididymis Protein 4 (HE4) level in the diagnosis of ovarian cancer. Lab Oncology
6. The phase II study of HIPEC and the proposed phase III RCT comparing between HIPEC and IP chemotherapy, TMC, Kolkata
7. Hyperthermia and immune modulation in homologous recombination stratified epithelial ovarian cancer: Development of targeted therapeutic approaches, TMC, Kolkata
8. An economic analysis of alternative treatment methods of ovarian cancer in India: An appraisal of economic burden, quality of life and mortality risk, Obst & Gynae
9. Determining Surgical Resection Margin of Cancer by Rapid Molecular Assessment Using Mass Spectrometric Imaging. Department of Chemistry, IISER Tirupati, Andhra Pradesh
10. Evaluation of Human Epididymis Protein 4 (HE4) level in the diagnosis of ovarian cancer. Lab Oncology.

### Completed

1. Comparison of analgesic efficacy of Ultrasound guided thoracic Paravertebral block versus surgeon guided Serratus Anterior Plane block for acute postoperative pain in patients undergoing thoracotomy for lung surgery-A prospective randomized study, Onco-Anesthesia
2. Outcomes of Metastatic Colorectal cancers over 15 years at a tertiary care cancer centre-A retrospective analysis, Medical Oncology

### PUBLICATIONS

Journals: 259

Abstracts: 55

Chapters in Books: 42

Books: 4

### PATIENT CARE

1. **TOTAL BED STRENGTH** = 182
  - a. Medical Oncology = 78
  - b. Radiation Oncology = 37
  - c. Surgical Oncology = 61
  - d. Palliative Care Unit = 06
2. **TOTAL OPD ATTENDANCE – (2019-20)(TOTAL = 178700 )**
  - a. New Patient's Registered = 13008
  - b. Revisits = 165692

### 3. DESCRIPTION OF VARIOUS OPD/CLINICS AT DR. BRAIRCH (YEAR 2019-2020)

S No.	Name of the OPD/Clinic	New patients			Revisits		
		Male	Female	Total	Male	Female	Total
1.	Adult Medical Oncology	1028	831	1859	16233	27462	43695
2.	Adult Lymphoma Leukemia	-	-	-	-	-	-
3.	AML/HL	127	70	197	3173	2217	5390
4.	ALL/CML	227	119	346	3260	2451	5711
5.	Breast Cancer	35	631	666	526	8527	9053
6.	Bone & Soft (Tissue)	147	99	246	899	709	1608
7.	Cancer Prevention and Screening	02	08	10	-	-	-
8.	Familial Cancer	2	2	4	-	-	-
9.	Gastrointestinal	408	294	702	1278	1021	2299
10.	Gynaecology - 'A'	-	125	125	-	855	855
11.	Gynaecology - 'B'	-	354	354	-	1849	1849
12.	Gynaecology - 'C'	-	258	258	-	1037	1037
13.	Genitourinary & Gynae	102	183	285	729	1949	2678
14.	Head & Neck (Surgery) - A	231	85	316	1409	549	1958
15.	Head & Neck (Ent) – B	1038	170	1208	3486	1029	4515
16.	Hepatobiliary & Pancreatic	146	110	256	874	640	1514
17.	Lung Cancer	532	196	728	4845	2816	7661
18.	NHL/MM/CLL	79	55	134	1851	1133	2984
19.	Neuro Oncology	278	133	411	1699	837	2536
21.	Ophthalmic Tumour	24	15	39	30	45	75
22.	Paediatric Medical Oncology	251	117	368	8351	5399	13750
23.	Paediatric Lymphoma Leukemia	98	25	123	4978	2744	7722
24.	Paediatric (Surgery)	67	49	116	1943	1697	3640

25.	Pain Relief	689	431	1120	8389	8348	16737
26.	Pain & Palliative Care (RT-Ii)	-	-	-	-	-	-
27.	Paediatric Palliative Care	-	-	-	-	-	-
28.	Radiotherapy	658	892	1550	6059	8123	14182
29.	Surgical Oncology	360	340	700	1917	2328	4245
30.	Thoracic Oncology	198	166	364	1171	916	2087
31.	Transplant	13	11	24	904	582	1486
32.	Urology Malignancy	389	30	419	4266	1397	5663
33.	Endo Malignancy	49	31	80	389	373	762
	Total	7178	5830	13008	78659	87033	165692

**G.TOTAL = 13008 + 165692 = 178700**

<b>ADMISSIONS (2019-2020)</b>	
REGULAR ADMISSIONSS	11290
SHORT/DAY CARE ADMISSIONS	34435
TOTAL ADMISSIONS	45725

<b>DISCHARGES (2019-2020)</b>	
REGULAR DISCHARGES	11072
SHORT/DAY CARE DISCHARGES	34130
TOTAL DISCHARGES	45202
TOTAL DEATHS – (2019-2020)	281

<b>OPERATION THEATRE SERVICES – (2019-2020)</b>	
MAJOR OPERATIONS	1342
MINOR OPERATIONS	10318
TOTAL OPERATIONS	11660

<b>ELECTRO-CARDIOGRAM (ECG)</b>	<b>4681</b>
---------------------------------	-------------

<b>OPD PROCEDURES (TREATMENT ROOM NO.15)</b>	<b>6267</b>
--	-------------

<b>OPD CHEMOTHERAPY SERVICES (TREATMENT ROOM NO. 15)</b>	
MALE CT	4599
FEMALE CT	2436
MALE CHILD CT (PAED.)	5677
FEMALE CHILD CT (PAED.)	1968
TOTAL CASES	14680



**OPD ATTENDANCE NEW PATIENT'S REGISTERED (MALE & FEMALE) – (2019-2020)**

NEW PATIENT'S REGISTERED	MALE	FEMALE	TOTAL
APRIL-2019	640	520	1160
MAY-2019	707	611	1318
JUNE-2019	630	432	1062
JULY-2019	753	596	1349
AUGUST-2019	602	512	1114
SEPTEMBER-2019	594	486	1080
OCTOBER-2019	546	479	1025
NOVEMBER-2019	615	443	1058
DECEMBER-2019	576	426	1002
JANUARY-2020	628	540	1168
FEBRUARY-2020	518	484	1002
MARCH-2020	369	301	670
TOTAL	7178	5830	13008

**TOTAL (MALE & FEMALE) = 13008****OPD ATTENDANCE REVISITS (MALE & FEMALE) – (2019-2020)**

REVISITS	MALE	FEMALE	TOTAL
APRIL = 2019	7014	8107	15121
MAY-2019	7460	7840	15300
JUNE-2019	5749	6677	12426
JULY-2019	6930	8138	15068
AUGUST-2019	6627	7413	14040
SEPTEMBER-2019	7205	7222	14427
OCTOBER-2019	7041	6719	13760
NOVEMBER-2019	6739	7323	14062
DECEMBER-2019	6603	7194	13797
JANUARY-2020	6494	7542	14036
FEBRUARY-2020	5958	7232	13190
MARCH-2020	4839	5626	10465
TOTAL	78659	87033	165692

**TOTAL (MALE & FEMALE) = 165692****GEOGRAPHICAL DISTRIBUTION ACCORDING TO THEIR RESIDENCE = 13008**

S.NO	State	TOTAL
1.	Andhra Pradesh	05
2.	Andman Nicobar	03
3.	Assam	24
4.	Arunachal Pradesh	04

5.	Bihar	1753
6.	Chandigarh	02
7.	Chhattisgarh	16
8.	Dadar & Nagar Haveli	-
9.	Daman & Diu	-
10.	Delhi	3998
11.	Goa	-
12.	Gujrat	08
13.	Haryana	1355
14.	Himachal Pradesh	43
15.	Jammu & Kashmir	121
16.	Jharkhand	160
17.	Kerala	22
18.	Karnataka	08
19.	Ladakh	11
20.	Lakshdeep	-
21.	Madhya Pradesh	247
22.	Maharashtra	24
23.	Meghalaya	04
24.	Manipur	29
25.	Mizoram	10
26.	Nagaland	02
27.	Orissa	47
28.	Pondicherry	01
29.	Punjab	73
30.	Rajasthan	282
31.	Sikkim	13
32.	Tamilnadu	09
33.	Telangana	03
34.	Tripura	09
35.	Uttar Pradesh	4165
36.	Uttaranchal	395
37.	West Bengal	103
	TOTAL	12949

#### OTHER COUNTRIES

1.	Afghanistan	04
2.	Bangladesh	07
3.	Cameroon	01
4.	Congo (Democratic Republic)	01

5.	Nepal	45
6.	Republic Armenia	01
	TOTAL	59

**GRAND TOTAL = 13008**

**LABORATORY ONCOLOGY SERVICES – (2019-2020)**

1.	HEMOGRAM (HMG)–(HB, TLC, PLATELETS)	52077
2.	PERIPHERAL BLOOD SMEAR (PBS)	6826
3.	BONE MARROW ASPIRATION (BM)	4613
4.	CYTO-CHEMISTRY	1018
5.	SERUM PROTEIN ELECTROPHORESIS (SPE)	5060
6.	IMMUNOFIXATION (IFX)	3177
7.	URINE ELECTROPHORESIS (UE)	1406
8.	TUMOR MARKER	3431
9.	FLOWCYTOMETRY	40465
10.	C.S.F.	2133
11.	ESR	329
12.	MOLECULAR BIOLOGY	6707
13.	SERUM FREELIGHT CHAIN	96
14.	CYTOPATHOLOGY	44
15.	BETA 2 – MICROGLOBULIN	597
16.	CYTOLOGY	514
17.	HPB DNA	1537
	Total	130030

**G.TOTAL = 130030**

**APHERESIS – (2019-2020)**

1.	SINGLE DONOR PLATELETS (SDP)	2818
2.	PERIPHERAL BLOOD STEM CELL – HARVEST (PBSC)	201
3.	HEMOGRAM	23868
4.	PLASMA	-
5.	NO. OF GRANULOCYTES	101
6.	PLASMA EXCHANGE	01
	TOTAL	26989

**G. TOTAL = 26989**

**MEDICAL ONCOLOGY LABORATORY SERVICES- (2019-2020)**

1.	CYTOGENETICS FOR DETECTION OF PHILDELPHIA CHROMOSOME	294
2.	CYTOGENETICS FOR CHIMERISM	01
3.	RT-PCR FOR DETECTION OF P210 AND P190 TRANSLOCATION IN CML (QUALITATIVE)	532
4.	RQ-PCR FOR DETECTION OF P210 AND P190 TRANSLOCATION IN CML (QUANTITATIVE)	512

5.	CD 34 COUNTS BY FLOW CYTOMETRY	319
6.	CD 3 COUNTS BY FLOW CYTOMETRY	25
7.	IMMUNO PHENOTYPING FOR LEUKEMIA	-
8.	MNC COUNTS	189
9.	CRYOPRESERVATION OF STEM CELLS – 80	132
10.	STORAGE OF STEM CELLS AT 4	68
11.	BONE MARROW TRANSPLANT	02
12.	INFUSION OF STEM CELLS	140
13.	VIABILITY OF STEM CELL	159
14.	ELISA FOR ASPERGILLOSIS DETECTION	2658
15.	SCREENING OF FLT-3 MUTATIONS IN AML	-
16.	LDH	483
17.	Magnesium	109
18.	Acute Leukemia Cytogenetics	05
	Total	5628

**G.TOTAL = 5628**

**MEDICAL PHYSICS SERVICES (2019-2020)**

	No. of blood bags irradiated	1235
	Quality Assurance test done on X-Ray machines	2561
	Quality Assurance test done on film processor at DR. BRAIRCH, AIIMS	-
	Quality Assurance test on film processor at Radiology (Main)	-
	Radiation output measurements in X-Ray units	416
	Quality Assurance test done on film processor at AIIMS	-
	Radiation protection survey measurements	-
	Advise in inadvertent exposure to pregnancy	09
9.	Q.C. test fluoroscopy done at AIIMS	-
10.	Q.A. test done on Lead apron	118
	Total	4339

**G. TOTAL = 4339**

**RADIOTHERAPY SERVICES –(2019-2020)**

1.	CASES ON RADIOTHERAPY	61937
2.	TOTAL FIELD ON RADIOTHERAPY	-
3.	CASES ON BRACHYTHERAPY	930
4.	TREATMENT PLANNING AND SIMULATIONS	3782
5.	TWO AND THREE DIMENSIONAL DOSE DISTRIBUTIONS	727
6.	COMPENSATORS	382
7.	SHIELDING BLOCKS IMMOBILIZATION DEVICES AND ORIFITS	2099

8.	RADIATION REVIEW CLINIC	3051
9.	PLANNING C.T.	1406
	TOTAL	74314

**G.TOTAL = 74314**

#### **RADIO-DIAGNOSIS SERVICES (2019-2020)**

1.	C.T. SCAN	7641
2.	ULTRA-SOUND	6710
3.	MAMMOGRAPHY	2302
4.	X-RAYS (ROUTINE)	15370
5.	DOPPLER	329
6.	INTERVENTION	1560
7.	SPECIAL INVESTIGATION (BA,I)	851
	TOTAL	34763

**G.TOTAL = 34763**

#### **Onco-Anesthesia and Palliative Medicine**

##### **Facilities available in the Department**

1. 'Pain Policy' at IRCH, AIIMS. The aim of the policy is, IRCH is committed to treat pain of all registered patients
2. Continue to run two new course at AIIMS, MD, Palliative Medicine and DM, Onco-Anesthesia at Department of Onco-Anesthesia and Palliative Medicine
3. Structured Pain and Palliative care Program for whole of the hospital
4. Running Pain and Palliative care clinics all six days in a week at IRCH, AIIMS
5. Advance Interventional Pain Management techniques like PNFS (Peripheral Nerve Field Stimulator) and Programmable Intrathecal Implant
6. USG guided nerve blocks in supine position for Gastro intestinal and Gynecological Malignancy
7. Ultrasound guided line central venous line placements
8. Radiofrequency ablation for Cancer Pain Patients
9. Scrambler Therapy in Cancer Pain Patients
10. Indian Association of Palliative Care's Certificate Course in Palliative Care Unit of Anesthesiology, Dr BRA, IRCH is Nodal Center for conducting Indian Association of Palliative Care's Certificate Course in Palliative Care twice in a year
11. Research on psychosocial and spiritual aspect of pain in Cancer patients International collaborative research started in area of Pain and Palliative Care

##### **Laboratory Oncology**

<b>S.No.</b>	<b>Investigation</b>	<b>Number</b>
1.	Hemogram	52077
2.	Bone Marrow	4613
3.	Peripheral blood smear	6826
4.	Serum Protein Electrophoresis	5060
5.	Urine Electrophoresis	1406
6.	Immunofixation	3177
7.	Serum Free Light Chain	96
8.	ESR	329

9.	Cytochemistry	1018
10.	Cytospin	2133
11.	Flowcytometry	40465
12.	Molecular Studies	6707
13.	Beta 2 microglobulin	597
14.	Tumor Marker	3184
15.	HPV DNA Test	1537
16.	Guided Cytopathology	514

### Medical Oncology

#### Dr Chandra Prakash Prasad

Started two biochemical assays for cancer patients in Department from April 2018 onwards

1. Serum LDH Assay
2. Serum Mg<sup>2+</sup> Assay

#### Dr Mayank Singh

1. PCR based services (Real time and Nested PCR) for Cancer patients for quantification of BcrAbl transcript for CML patients from last one year with a patient load of 527 patients for Quantitative PCR and 427 patients for nested PCR for year 2019-2020 (Total patient load =956 for year 2019-2021).
2. Started ELISA based VEGF estimation services for patients which we are providing today as a regular patient service (No charge)

### Medical Physics

1. No. of blood bags irradiated	1235
2. Quality Assurance tests done on x-ray machines	2561
3. Radiation output measurements in x-ray units	416
4. <i>Advices in inadvertent exposure in pregnancy</i>	09
5. QA tests done on lead apron at AIIMS	118
<b>Total</b>	<b>4339</b>

### Preventive Oncology

#### Community Services

Health awareness camps outside AIIMS

1. Female Cancer Awareness Programme for girls of Government College at Nehru College, Faridabad on 21 January 2020
2. Cancer prevention awareness event at Kirori Mal College on 27 February 2020.

#### Health awareness camps in AIIMS

1. Lung Cancer Awareness Programme in collaboration with Department of Pulmonary Medicine and Sleep Disorders and National Drug Dependence and Treatment Centre, Ghaziabad.
2. Cervical Cancer Awareness Programme in collaboration with Department of Obstetrics and Gynaecology.

### Radiodiagnosis

S. No.	Name of Investigations	Number
1.	X-ray	15370
2.	Ultrasound	6710
3.	Doppler	329
4.	CT	7641
5.	Mammography	2302
6.	Special investigations (fluoroscopy)	851
7.	Interventions	1560
	<b>GRAND TOTAL</b>	<b>34763</b>

## Radiation Oncology

### A. DEPARTMENTAL STATISTICS (IRCH)

1. Total cases of external beam radiotherapy	61937
2. Total cases of brachytherapy	930
3. Treatment Planning and Simulations	3782
4. 2D and 3D distribution	727
5. Compensators	382
6. Shielding blocks, immobilization devices, molds	2099
7. Radiation Review clinic	3051
8. Planning CT	1406

### B. DEPARTMENTAL STATISTICS (NCI-AIIMS, Jhajjar)

1. Total cases of external beam radiotherapy	6197
2. Total cases of brachytherapy	453
3. Planning CT	463
4. Total Registration with RT	1534
5. Total OT performed	299

## Surgical Oncology

### Facilities available in department

- 1. Minor Operation Theater:-** Diagnostic and minor therapeutic procedures including Lymph node biopsy, punch/trucut biopsy, excision of Skin/Oral tumors, soft tissue tumors, feeding jejunostomy, colostomy, insertion of Hickman's catheter/ chemo ports for long term Chemotherapy are available in the Minor OT
- 2. Endoscopy Services (Diagnostic & Therapeutic):**
  - **Diagnostic Endoscopy:** Video and Fibre optic upper GI endoscopy, side viewing duodenoscopy, Colonoscopy, Sigmoidoscopy, Bronchoscopy, Cystoscopy, Nasopharyngo laryngoscopy and laparoscopy
  - **Therapeutic Endoscopy:** Stricture dilatation, Intraluminal Radiotherapy, Stenting and Percutaneous Endoscopic Gastrostomy
- 3. Major Operation Theater:** Facilities available for all major cancer Surgeries including radical resection and reconstruction of tumors involving Head & Neck, GI tract, Breast, Bone and Soft tissue, Gynaecological malignancies, Hepato-Biliary-Pancreatic malignancies and Thoracic tumors. Advanced reconstructive surgical procedures are under taken to reconstruct the defects after resection

In addition advanced state of art surgical oncology services are being offered including Minimally Invasive Surgery for GI cancers, Thoracic cancers and Gynae cancers, HIPEC for peritoneal surface malignancies, complex Limb salvage procedures for sarcomas and Risk reducing surgery for hereditary cancers

**Total no. of Minor Operations & Endoscopic procedures performed: 10,493**

**Total no. of Major Cancer Operations performed: 1374**

### Surgical Audit & Quality Metrics

- Overall Bed Occupancy – 100%
- Operative Mortality – 0.8%
- Peri- Operative Morbidity (C.D-Grade III &IV) – 7 %
- Re-operation Rate - 1.06 %
- Re-Admission rates - 0.5%

### Other salient initiatives:

NCI –AIIMS- The department of Surgical Oncology has actively contributed for planning, procurement and commissioning of Surgical Oncology services at NCI Jhajjar. Oncology OPD services started in February 2019 and major OT services in May 2019.

### Community service

1. Dr Sunil Kumar. Providing free cancer care services and student awareness for Cancer in Bihar & Jharkhand through an NGO, Chandrakanti Devi Cancer Foundation
2. Dr. Sunil Kumar. Provided services as Surgical Oncologist as a part of the AIIMS team providing clinical care and personal training in Leh (Laddakh) through Ashoka Mission, September 2019

### AWARDS, HONOURS AND SIGNIFICANT EVENTS

With the inauguration of National cancer Institute at Jhajjar, Haryana in 2019 as the second campus of AIIMS, New

Delhi in 2019, the Chief Dr BRAIRCH and Heads of Departments/Units were assigned mentoring role and over-sight of the National Cancer Institute for the proper development in consonance with the objectives of AIIMS and NCI under the overall guidance of Director AIIMS.

### **Onco-Anesthesia and Palliative Medicine**

**Professor Sushma Bhatnagar** was president of Indian Association of Palliative Care, 2018, member of Scientific Committee of World Congress on Pain to be held at Amsterdam in August 2020, scientific Committee of World Congress on Pain to be held at Boston during 12-16 September 2018; Implementation Group - Lancet Commission Global Access to Pain Control and Palliative Care, 2018. She was recipient of 2018 International Innovation Grant (Project ID 12554) from Conquer Cancer Foundation by American Society of Clinical Oncology; council member' International Association of Study of Pain (IASP) Council for a period of 6 years till 2023; Chief Editor' of Indian Journal of Palliative Care since 2009. She was appointed as Board of Directors of International Association of Hospice and Palliative Care (IAHPC) in 2014 for 3 years; Master mentor' of Palliative care program in India. She was 'Deputy Team leader' of Training-of-Trainers in Palliative Care Programme by Asia Pacific Hospice Palliative Care Network, 2012-2018. She is reviewer of articles for Lancet Oncology and British Journal of Anaesthesia.

**Dr Rakesh Garg** was awarded Proficiency Award 2019 for invaluable contribution and outstanding services to the society, Awarded with award certificate of Appreciation at ISACON 2019- 67th Annual National Conference of ISA, Bangalore; November 2019. He was invited as judge for Paper presentation at AIDAA national Conference. He was invited at an observer at ILCOR task force meeting for development of Resuscitation guidelines. Became task force member for contributing CPR guidelines framework for resource constraints settings at ILCOR. He received certificate of recognition as a reviewer for the year 2019 from the Editorial Board of JNACC (Journal of Neuroanaesthesiology and Critical Care). He was selected for the Singapore Medical Journal reviewer recognition awards 2019. He received letter of appreciation and certificate of merit for outstanding work as Associate Editor for Indian Journal of Anaesthesia in the year 2019-2020. He is Associate Editor of Indian Journal of Anaesthesia; Journal of Anesthesiology and Clinical Pharmacology and BMC Emergency Medicine, pubmed indexed journal.

**Dr Nishkarsh Gupta** is reviewer of IJA, BMJ open, JOAPC, Iranian Journal of Pediatrics, Indian Journal of Cancer and editorial board member of Medical Journal of Dr DY Patil Vidyapeeth

**Dr Balbir Kumar** was awarded BLS & ACLS Provider AHA Certificate after successful completion of BLS & ACLS Course from 11-14 November, 2019 at Venkateshwar Hospital Dwarka New Delhi.

### **DCR**

**Dr Rajeev Kumar Malhotra** received highest citation award to our paper title "Receiver Operating Characteristic (ROC) Curve for Medical Research" Indian Pediatric journal published in 2011 at Noida on 8 December 2019.

### **Laboratory Oncology**

**Professor Ritu Gupta** received award for paper on "Estimation of CNVs In Multiple Myeloma by Next Generation Sequencing Based Digital MLPA" at the 2nd Annual Conference of the Indian Myeloma Academic Group (11 and 12 May 2019)

**Dr Sanjeev Kumar Gupta** was awarded 6 months Fellowship in Genomics at MD Anderson Cancer Centre, Houston, Texas, USA (June 2019- December 2019) by Dept. of Health Research (DHR), Govt. of India.

**Dr Anita Chopra** received travel award of Japanese Society of Hematology annual meeting 2019.

**Dr Pranay Tanwar** received travel Grant award from ABPMT & ICBMT-2019 and award from 61st Annual Meeting 2020 Korean Society of Hematology International Conference

**Dr Amar Ranjan** was invited at 24th Annual Congress of Korean Society of Blood & Marrow Transplantation, 30th August -1 September 2019, Busan, Korea; Bengal Society of Hematology, Kolkata, BeSHCON 2020, 14-16 February, 2020 and represented at 1st Highlights of Past EHA (HOPE) in Asia from 23-25 August 2019 in Kolkata.

**Dr Gurvinder Kaur** received IUIS GECD-FOCIS Travel award 2020 for Advanced Course in Basic and Clinical Immunology, held on 1-4 March 2020 in San Diego, California, USA

### **Medical Oncology**

**Professor Lalit Kumar** was invited Faculty for 2020 Clinical Research Training institute in Asia Pacific (CRTI-APAC) Region by the American Society of Hematology (ASH), Washington. He delivered Padmashri Sh. Advani Oration' during the Precision Oncology and Annual International Breast Cancer Conference 2019 on 12 October 2019 at Jaipur. He served as



Ambassador of the Society of Hematologic Oncology (SOHO) Annual Meeting, Houston, USA (2017-Contd). He is Associate Editor (Asia) for Current Problems in Cancer (Elsevier) and member Editorial Board 'ONCOLOGY (Karger), Clinical Hematology International (Atlantis Press) and Indian Journal of Medical Research (IJMR). He was the member of expert committee to evaluate the extension proposal on Chemical Biology & Therapeutics (CBT), Bangalore, (DBT, Govt. of India) date: 27 March 2020; Data Safety Management Board A Phase II/III, partially double blind, randomized, active controlled, multi centric study to assess immunogenicity and safety of SIIPL'S qHPV vaccine; Standing Committee on Tertiary Cancer Care Programme, DGHS, NCD Section, Govt. of India, New Delhi; expert committee for IJMR, 'Clinical Image Competition (December 2019); faculty Selection Board for Medical Oncology VMMC and Safdarjung Hospital, New Delhi- 110029 (31 July 2019). He was examiner for Ph.D to the University of Madras and JNCSR (Jawahar Lal Nehru Centre for Advanced Scientific Research, Bangalore)

**Professor Atul Sharma** was awarded ISMPO oration during biennial ISO – ISMPO joint meeting at Indore on 1 November 2019. He visited Bhutan in August 2019 as part of delegation of Government of India for establishing a cancer hospital in Bhutan and Princess Margaret Hospital, Toronto, Canada avail of Short-Term Training/Observership in Bone Marrow Transplantation (for unrelated and haploidentical allogenic stem cell), Canada, 2019.

**Professor Sameer Bakhshi** was awarded "Atal Swasthya Bhushan Samman" in Memory of Bharat Ratna Atal Bihari Vajpayee Ji 2019 for extraordinary services and dedication towards profession by Sevron foundation.

**Dr Ranjit Kumar Sahoo** organized "Oncologic Emergencies" at Ramlingaswamy Board Room, AIIMS, New Delhi on 9 November 2019. He was visiting Fellow at Peking University Institute of Hematology (PUIH) for a period of 3 months between May-August 2019.

**Dr Raja Pramanik** participated as an expert at the meeting of experts for developing a consensus statement for genetic testing & management of Hereditary Breast and Ovarian Cancers [HBOC] in India; Indian Society of Medical and Pediatric Oncology; Mumbai, took various public awareness programmes at Saket bar association; Public awareness lecture on HBOC; ONAI, oncology Nurses association of India; New Delhi. He participated at medical camp organised by AIIMS and Patient Care Trust; Oncology services to Tibetan Refugees AIIMS Community Service and Patient; Dalai Lama; Temple, McLeod Ganj, India.

**Dr Chandra Prakash Prasad** received 'Dr Bhagwati Prasad Innovative Research Award' at 6th International Conference on 'Translational Approaches in Clinical, Environmental and Biotechnological Research, 'GenoPro-2019' 11-12 October, Invertis University, Bareilly; 1st Poster Prize to Mr. Umar Sheikh, PhD Student at 'GenoPro-2019' 11-12 October 2019 Invertis University, Bareilly; II Poster Prize to Mr. Umar Sheikh, PhD Student at "Emerging Trends in Translational Oncology, on February 14-15, 2020 at AIIMS, New Delhi and NCI-AIIMS Jhajjar. He is member of scientific Organizations -EURAXESS membership from Aug 2019- till now and IACR (Indian Association of Cancer Res.); *Life Membership* from September 2019. He is working group committee member at NIEPA on Two-day Workshop on finalization of Teaching Learning Resources for Life-science Teachers, on 16-17 January 2020 at NIEPA, New Delhi. He organized first basic conference in Medical Oncology, AIIMS i.e. "Emerging Trends in Translational Oncology, on 14-15 February, 2020 at AIIMS, New Delhi and NCI-AIIMS Jhajjar. He was chairperson for Biotechnology Session at 'GenoPro-2019' 11-12 October 2019 Invertis University, Bareilly. He was external Expert for Practical Exam/Viva voice for MSc Microbiology on 21 May 2019 at Invertis University, Bareilly. He was reviewers for various Peer-Reviewed journals i.e. Front. Oncol, J of Exp. Clin. Can. Res, Life Sci., Cell. Physio etc. He designed & Initiated 'Cancer Biology Course for MSc Nursing' in September-2019 at Dr. BRA IRCH, AIIMS, New Delhi.

**Dr Thoudam Debraj Singh** was the organizing secretary for first Conference on "Emerging Trends in Translational Oncology": AIIMS, New Delhi and NCI-AIIMS, Jhajjar; 14 and 15 February 2020; New Delhi. He was expert Project Review committee (PRC); Nanotechnology/ Nanomedicine (ICMR); 2019 onwards; New Delhi. He organized a Guest Lecture by Dr. Parijat Bhatnagar, Program Director (Asc.), Cell Based Medicine, California, US; IRCH AIIMS, New Delhi; 24 December 2019; New Delhi. He designed and Initiated 'Cancer Biology Course for M.Sc. Nursing'; I.R.C.H. AIIMS, New Delhi; September- November 2019; New Delhi. He is life membership ISNM (Indian Society of Nano Medicine) and IACR (Indian Association of Cancer Res.).

**Dr Mayank Singh** organized first Conference on "Emerging trends in translational Oncology" from 14-15 February at AIIMS New Delhi and NCI Jhajjar. He was panelist at "3rd Annual International Precision Oncology & Breast Cancer Conference" from 11 to 13 October at Hotel Marriott, Jaipur. His PhD Student Ravi Chauhan won the 3rd best poster award at "Emerging trends in translational Oncology" at AIIMS New Delhi

**Dr Sachin Kumar** received young Investigator Award for the Best Oral Presentation in NALCCON 2019: 10th Annual Conference of Indian Society for Study of Lung Cancer (ISSLC) organized at KGMU, Lucknow on 14 and 15 December

2019. He received extramural grant entitled “Evaluation of regulation of programmed death-ligand 1 (PD-L1) expression by microRNA in lung cancer” awarded by ICMR, New Delhi. Grant amount: Rs 47,64,984.00, Duration: 3 years (2019-2020) and poster presented on Diagnostic and prognostic utility of differentially expressed circulating microRNAs in Indian NSCLC patients (EP1.03-20). E-poster presented in IASLC 2019 World Conference on Lung Cancer held at Barcelona, Spain from 7 to 10 September 2019.

### **Medical Physics**

**Professor Pratik Kumar** was invited to become member, education and training committee, international organisation of medical physics (IOMP); Was invited by Tamil nadu and Puducherry chapter of Association of Medical Physicists of India (TN&PY-AMPI) to deliver Dr Cyril Albert Jayachandran Endowment Oration entitled “Practical aspects of quality in medical imaging: Summary of experience of 25 years” at Kanyakumari during TN&PY-AMPI Conference, 7 and 8 September, 2019; Was invited as technical expert for diagnostic radiology x-ray equipment by National Accreditation Board for Testing and Calibration Laboratories (NABL), Ministry of Commerce & Industry, Govt. of India; Was invited by Central Pollution Control Board (CPCB), Govt. of India as member, technical committee to evaluate the performance of ion generator with respect to two projects awarded to IIT Delhi and Science and Technology Park, Pune; Member, project monitoring committee, Technology Development Board (TDB), Deptt. of Science and Technology (DST), Govt. of India; Member, area review panel related to devices and diagnostics constituted by Biotechnology Industry Research Assistance Council (BIRAC), Deptt. of Biotechnology (DBT), Govt. of India; Got invited as expert for high level committee constituted by Min. of Environment, Forest & Climate Change on the order of Hon’ble Supreme Court on 25 November 2019 to discuss the feasibility of technologies to control air pollution in Delhi and NCR; Member, project review committee, Industry Innovation Program on Medical Electronics (IIPME), BIRAC, DBT & MeitY, Govt. of India; Member Secretary, Radiation Safety Committee, AIIMS; Examiner for PhD thesis from Tata Memorial Hospital, Mumbai entitled “Dosimetric and quality assurance studies in high dose diagnostic imaging modalities to establish national radiation protection programme” and by University of Kerala, Thiruvananthapuram, for another PhD. Thesis entitled “Evaluation of radiotherapy treatment planning techniques and different dose calculation algorithms for the management of breast cancer”; External expert, standing selection committee, PGIMER, Chandigarh for faculty of medical physics, Department of Radiotherapy and the post of medical physicist, LHMC, Delhi; Was invited by Institute of Nuclear Medicine and Allied Sciences (INMAS), DRDO, Ministry of Defence to become chairman, project review committee to monitor a project entitled “Three dimensional radiation dosimetry with radiochromic gel system”; Referee for Journal of Medical Physics, Journal of Luminescence (Elsevier), Indian Journal of Radiological Imaging, Radiation and Environmental Biophysics (Springer), Physical & Engineering Sciences in Medicine (Springer), European J of Medical Physics (Elsevier), Radiation Physics Chemistry (Elsevier The Netherland); Australasian Physical and Engineering Sciences in Medicine (Springer), Radiation and Environmental Biophysics (Springer Berlin Heidelberg); Question setter for the selection of medical physicist, AIIMS, Bhubaneswar and BSc radiotherapy technology, KGMU; Examiner, BSc and MSc medical imaging technology radiodiagnosis, PGIMER, Chandigarh; Got invited by INMAS, DRDO to evaluate the mobile app Vikiran Prahri; Chaired meetings of Exposure Investigation Committee for Radiation Facilities of Northern Region (EIC-NR) at Northern Regional Regulatory Centre (NRRRC), AERB, New Delhi; Was editor, Medical Physics Gazette, newsletter of Association of Medical Physicists of India (AMPI); Member, Editorial Board, Journal of Medical Physics; Member Electro-medical Equipment Sectional Committee, Bureau of Indian Standards (BIS), New Delhi.

### **Preventive Oncology**

**Dr Pallavi Shukla** was awarded the “AIOS - Community / Social Ophthalmology Award” on 14 February 2020 in 78th Annual Conference of All India Ophthalmological Society at Gurugram, Haryana and awarded best PhD Award at 53rd RPC foundation day on 14 March 2020

### **Radiodiagnosis**

**Dr Mukesh Kumar** was appointed as treasurer for Society for Emergency Radiology India for 2020-2021

**Dr Ekta Dhamija** was appointed as governing council member of Breast Imaging society of India for term of 2 years (2019-2021) and editorial team member of the Asia Pacific Journal of Cancer Care.

**Dr Krithika Rangarajan** was appointed to Digital Committee of Indian Radiology and Imaging Association for 2020 and received Albert L Baert Editorial Fellowship, European Society of Radiology for 2019-2020.

### **Radiation Oncology**

**Professor GK Rath** inaugurated the NCD screening programme and delivered a lecture on Prevention and early diagnosis of cancers for the Pourakarmikas at Bengaluru on 30 July 2019, was Chief Guest at the Cancer Conclave in Bhopal on 2 July 2019. He delivered the plenary lecture at the 1st TCGA conference and hands on workshop in India on ‘Multi-Omics studies in cancer-Learnings from TCGA’ at IISER, Pune on 21 September 2019 and keynote address- ‘Inception, Evolution and Future in Oncology’ at the AROICON 2019 at Ahmedabad on 30 November 2019. Dr GK Rath is the Chairman of Research Area Panel (RAP) on Cancer at NCDIR-ICMR, Bengaluru; MCI committee of experts to consider the issues

relating to the academic qualifications and teaching experience for Department of nuclear medicine on 30 April 2019; High power committee for the 2nd Campus, CNCI, Kolkata; Chairman, PRSG of the Ministry of Electronics and Information Technology for the project»Development of low cost automated screening system for cervical cancer (Cervi SCAN-II)” implemented by CDAC, Thiruvananthapuram; Chairman, of the committee to oversee the technology transfer process of Dual energy medical LINAC being developed by SAMEER, Mumbai by Ministry of Electronics and Information Technology. He is scientific Advisory Committee (SAC) of National Centre for Disease Informatics and Research (NCDIR), Indian Council of Medical Research, Bangalore and Chairman of the National Steering Committee for the project entitled» Research and development of high energy electron linear accelerator technology for medical and other applications” being implemented by SAMEER, Mumbai and INMAS, DRDO, New Delhi. Dr GK Rath is a member of expert Committees/ Bodies of Indo US Advanced Radiotherapy Consortium (IUS-ARC) Working Group; expert group meeting on Cancer in North East region NCDIR, Bengaluru on 3 June 2019; expert group for the finalising the proforma for ‘Patterns of care and survival studies of Gall bladder cancer in HBCR under ICMR-NCRP, Bengaluru on 8 May 2019. He was invited to participate in the meeting for ‘Setting up of TCCC at Ambala Cantt, Govt of Haryana Chandigarh on 6 May 2019. He is chairman of Standing Selection Committee of Faculty at AIIMS Bhopal on 17-19 December 2019, expert in the meeting of the ‘Personal Promotion Assessment Board’ for promotion of faculty members in the Department of Radiation Oncology at IGIMS, Patna on 19 November 2019; member, Atomic Energy Regulatory Board (AERB), Govt of India; BARC committee to evaluate the Development of Reactor for Isotope Production on 7 October 2019 at Mumbai. He was examiner for MD (RT) practical examination at KGMU & Dr RMLIMS, KGMU, Lucknow on 20 and 21 June 2019. He is member of Institute body of AIIMS Bhopal, Governing Body of AIPH university, Bhubaneswar & Super Speciality Cancer institute and Hospital, Lucknow; Governing Bodies of 4 Regional cancer centers (RCC): Acharya Tulsi RCC, Bikaner, Acharya Harihara RCC, Cuttack and RCC, Agartala, and RCC, Allahabad; and Standing Academic and Research Council (SARC) of CNCI, Kolkata.

**Professor Subhash Gupta** was associated with the cancer screening activities of ICPO, Noida; active support to patient care activities by Ashoka mission, associated with patient care Trust at Dharamshala. He was external examiner to conduct the thesis evaluation at Dr SN Medical College Jodhpur on 5 April 2019 and thesis evaluation at Dr SN Medical College Jodhpur on 31 January 2020.

**Dr KP Haresh** is associated with the cancer screening activities of ICPO, Noida; active support to patient care activities by Ashoka mission. He was external examiner to conduct the Thesis evaluation at RNT Medical College, Udaipur on 26 February 2020, DNB Final Practical examination in Radiotherapy at Cancer Institute, Adayar on 9 and 10 May 2019; and evaluation of DNB thesis in Radiotherapy for the year 2019. He was member of Project review committee (PRC) in Oncology of Indian Council of Medical Research (ICMR), New Delhi; Project review committee (PRC) of Research Methodology Cell at ICMR, New Delhi; member of the Thematic Group ‘Diagnostics’ of the India Cancer Research Consortium (ICMR-ICRC) call for proposals 2019 for Detailed Proposal Shortlisting Meeting at DHR, New Delhi on 13 January 2020; member of the thematic group ‘Diagnostics’ for the India Cancer Research Consortium (ICMR-ICRC) for Concept Proposal Shortlisting Meeting under ICMR-ICRC at the Department of Health Research (DHR) on 5 November 2019. He was member of the panel for the walk-in-Interview for filling up of one post of Scientist ‘C’ (Medical) in the project entitled, “Indian Cancer Research Consortium (ICRC) under Division of NCD, ICMR Hqrs., New Delhi on 8 July 2019; for the walk-in-Interview for filling up of one position of Research Assistant in the project entitled, “India Cancer Research Consortium (ICRC)” at DHR under Division of NCD, ICMR Hqrs., New Delhi on 31 October 2019 at Department of Health Research (DHR), New Delhi

**Dr Ahitagni Biswas** was invited as national expert in Pediatric malignancies in the first National Cancer Grid (NCG) research and guideline meeting at Tata Memorial Centre, Parel, Mumbai on 26 and 27 September 2019. He was awarded ICMR travel grant for presenting an oral abstract at the 51st Congress of the International Society of Paediatric Oncology (SIOP) from 23-26 October 2019 at Lyon, France, travel scholarship from Society for Neuro-Oncology (SNO) for attending the SNO 24th Annual Scientific Meeting and Education Day in Phoenix, Arizona, on 20-24 November 2019. He is member of the abstract review committee for the 13th SIOP Asia conference at Mumbai, India, September 2020

**Dr Supriya Mallick** received AROI fellowship of 35-40-years age group in Ahmedabad. 28 November-1 December 2019

### **Surgical Oncology**

**Professor SVS Deo** was elected as Treasurer, Breast Surgery International, Switzerland; President Indian Society of Peritoneal Surface Malignancies; President of Association of Breast Surgeons of India; Vice President NCR oncology forum; nominated as visiting professor by AIIMS, Rishikesh. He was invited by National cancer Grid, TMH as subject expert for National guideline development for breast cancer; subject expert for faculty selection by NEIGRIMS, AIIMS Rishikesh and AIIMS Bhubaneswar. He organized a joint meeting with Society of Surgical Oncology, USA and AIIMS – Delhi, Rishikesh, Patna & Bhubaneswar on for standardizing surgical oncology curriculum and training in India. Various awards were received-Sudhakar G: Awarded first prize in quiz in Delhi Oncology forum Annual Meet, 2019; Jyotishman Saikia: Second Best Prize in Quiz Competition

at World Congress of Surgery, Krakow Poland 11-15 August 2019; Jyotishman Saikia: International travel award from the Department of Science and Technology, India for presenting poster titled “Operated Stages I-IIIB NSCLC among Young Indian Cohorts-Clinical Profile and Outcomes” at World Conference on Lung Cancer, IASLC, Barcelona, Spain from 7 to 10 September 2019 and Manoj Gowda awarded Gita Mittal Prize for Best Thesis. Visting scientist under his headship were Prof. David Wintreat, Professor of Surgical Oncology, University of Wiscocin, USA; Professor Chandrakant Are, Division of Surgical oncology, University of Nebraska, Omaha, USA; Dr Geeta Shetty, Senior Consultant, Breast Surgery, Birmingham, UK; Professor James Howe, President, Society of Surgical oncology, Washington, USA and Dr GarimellaV, Senior Consultant, Colorectal Surgery, UHNM, Stoke-Trent, UK.



## 10.4. Dr Rajendra Prasad Centre for Ophthalmic Sciences

	<b>Chief</b> Atul Kumar	
	<b>Professors</b>	
Pradeep Sharma	Ramanjit Sihota	Gita Satpathy (Ocular Microbiology)
JS Titiyal	Radhika Tandon	SK Khokhar
Shakti Kumar Gupta (Medical Supdt.)	Mahesh Chandra	Dilip R Shende (Ocular Anesthesia)
Mandeep Singh Bajaj	Rajpal Vohra	Seema Sen (Ocular Pathology)
Sanjay Sharma (Radiodiagnosis)	Seema Kashyap (Ocular Pathology)	Namrata Sharma
Tanuj Dada	Pradeep Venkatesh	Neelam Pushker
T Velpandian (Ocular Pharmacology)	Praveen Vashist (Community Ophthalmology)	Jasbir Kaur (Ocular Biochemistry)
Rohit Saxena	Viney Gupta	Renu Sinha (Ocular Anaesthesia)
Tushar Agarwal	M Vanathi	Rajesh Sinha
Bhavna Chawla (On leave)		Parijat Chandra
<b>Suraj Singh Senjam</b> (Community Ophthalmology)	<b>Additional Professors</b> Alok Kumar Ravi (Ocular Biochemistry)	Nabanita Halder (Ocular Pharmacology)
Noopur Gupta Rohan Chawla	<b>Associate Professors</b> Rachna Meel Swati Phuljhele Nishat Hussain Ahmed (Ocular Microbiology)	Vinod Kumar Vivek Gupta (Community Ophthalmology)
Shikha Gupta Prafulla Maharana	<b>Assistant Professors</b> Neiwete Lomi Shorya Vardhan Azad	Dewang Angmo Kanil Ranjith Kumar (Ocular Anesthesia)
Arshad Ayub	Amar Pujari Manpreet Kaur	Rebika (Ocular Anesthesia)

### HIGHLIGHTS

Dr Rajendra Prasad Centre for Ophthalmic Sciences, AIIMS, the apex centre for ophthalmic care in the country, is recognized as a premier super-specialty institute with state-of-the-art equipment and world class facilities for patient care, teaching and research. Some of the key highlights of Dr RP Centre include:

1. WHO Collaborating Centre for Prevention of Blindness.
1. Largest Postgraduate Teaching Program in the world with over 100 PG residents and over 50 senior residents being trained at any time.
2. Plays a major role in planning and policy development of eye care activities under the National Programme for Control

of Blindness and Visual Impairment, Ministry of Health & Family Welfare, India. The Chief, RP Centre is Advisor to the ministry for the program.

3. Conducted 26 scientific workshops on sub-specialties of Ophthalmology including live interactive surgical sessions and individualized wet lab sessions with hands on training.
4. **Retina and Uvea Services:** Apex referral centre for the management of various sight threatening vitreo-retinal disorders.
5. RP Centre introduced new facilities of Plaque brachytherapy in collaboration of IRCH for treatment of ocular malignancies. Upgradation of Low Vision Services with additional rehabilitation services with support of CBM Christoffel Blinden Mission. New Collaboration for research as requested by Director, AIIMS, by official circular, in keeping with President Obama and PM Modi Vision for Indo-US collaboration, collaborative links have been established with various Institutes of higher learning and excellence that includes Jules Stein Institute, Tufts University, UT Western University of Texas, Massachusetts Eye and Ear Infirmary, Harvard Medical School, NEI, NIH, Bethesda, MD, USA, Sightlife, Seattle, USA, Cleveland Clinic, USA. Assisted ICMR in preparation of Standard Treatment Workflows in Ophthalmology. Assisted National Health Authority in formulating guideline for ABPMJAY packages for Ophthalmology. Community Survey in Leh, Ladakh for eye diseases in the population at high altitude. Multi Centre Community Survey on urban blindness and environment.
6. **Glaucoma Services:** Initiated the National Training Programme for Upgrading Glaucoma Training in the country in collaboration with National Programme for Control of Blindness.
7. **Cornea, Cataract and Refractive Services:** Innovative techniques such as implantation of specialized intraocular lenses for improved visual outcomes for patients with dry AMD have been initiated. Bioengineering on artificial cornea research is going on.
8. **National Eye Bank (NEB):** Actively involved in teaching, research and patient care. Till date, NEB has collected over 30,000 corneas and conducted more than 21,000 corneal transplants. Certain milestones which NEB have achieved while working towards our target of eliminating corneal blindness include 10,500 pledges in north India in a single day, 22 corneal transplantation in a single day and 21 modern corneal surgeries (DSAEK) in a single day. NEB Utilization rate is consistently greater than 70% over the last 10 years. For the last consecutive 4 years more than 1000 corneal transplantation have been performed annually. NEB activities include tissue retrieval, serological investigations (HIV-1, HIV-2, HCV, HBV and Syphilis), tissue processing, tissue storage, tissue evaluation, specular microscopy, slit-lamp microscopy, training and workshop, eye donation promotion, teaching, research and education.
9. **Strabismus and Pediatric Ophthalmology:** Dedicated Strabismus, pediatric ophthalmology, neuro ophthalmology, oculoplasty and ocular oncology services continued to provide compassionate patient care during the year 2019-20. In addition, during the academic year our unit faculty delivered noteworthy amount of expert clinical talks on various topics at various national and international conferences. Throughout the academic year good quality scientific papers were published in various international journal from all our subspecialties with key clinical relevances in mind. Our unit faculty are now conducting various funded, non-funded thesis projects as well as other clinical research work. To conclude, keeping quality clinical work, research and patient care as our high morals the unit faculty continues serve for the better of future.
10. **Ocular Pathology:** Research being done in Role of NF $\kappa$ B (NF $\kappa$ B) pathway in uveal melanoma, Targeting PD-1/PD-L1 Pathway in tumor microenvironment - new immunotherapeutic paradigm for ocular malignancies, Study of lipid metabolism in Ocular Malignancies, Molecular characterization of malignant lacrimal gland tumors, Antiretinal antibodies in autoimmune retinitis, Identification and characterization of molecular targets in orbital tumors: Basis of innovative therapeutic strategies, Study of variable gene expression of collagen and associated degradative enzymes present in human vitreous in patients with myopia, Pigmentation marker in uveal melanoma, Tumor DNA sampling from aqueous humour in retinoblastoma.
11. **Ocular Pharmacology & Pharmacy Division:** Providing disposable face shield (sterile and non-sterile both) to protect frontline corona warriors at Dr RP Centre and also has been donated to other centres/departments of our Institute and to Delhi Police in fight against COVID-19. Received BIG GRANT (BIRAC) for the project entitled "Development and validation of TransRecon Technique for sterile pharmaceutical preparation" on 2019. Received Grand Challenges Award for the project entitled 'Pre-clinical safety and efficacy studies for using polyvalent bacteriophage and endolysin therapy for intraocular infections with AMR' towards the call 'Under approaches to address antimicrobial resistance' jointly funded by Bill & Melinda Gates Foundation (BMGF) and DBT. Practicing high sterile dispensing of injectable/topical drug formulations for RPC and various other Departments of AIIMS. Analysis of drugs for research and patient care for RPC and AIIMS. A scientific analysis of bioactive compounds including antibiotics in surface and ground water in Delhi and NCR has been undergoing which is part of the initiative of National Mission for Clean Ganga. This environmental contamination is because of the non-segregated disposal of expired drugs in landfill. Standardized Corneal Storage Media (to enable corneal transplant for Govt. Ophthalmology hospitals in India) and serving it to 79 eye banks across 24 states of India (MHFW-AIIMS) from 2010 till date (enabled more than 15,000 eye donations across the country). Recently longer storage media has been introduced which can preserve donor cornea for a week.
12. **Ocular Microbiology:** The section processed approximately **26,000** specimens during the last year (from April 2019 to March 2020) for various investigations like Bacterial culture and antimicrobial sensitivity testing; Fungal culture; Culture and PCR for *Acanthamoeba* eye and CNS infections; Chlamydia antigen detection, serology, PCR assay from

eye infections and male and female genital tract infections; Herpes simplex virus antigen detection; PCR assays for bacteria, fungi, viruses, *Chlamydia* and *Acanthamoeba* etc. from indoor and outdoor patients of Dr RP Centre for Ophthalmic Sciences. The investigations for Chlamydial infections, viral infections and *Acanthamoeba* infections were also provided to other clinical department of AIIMS on request

13. **Ocular Biochemistry:** Ocular Biochemistry is continuing to provide services in teaching, research and patient care. Clinical Biochemistry laboratory and Research laboratory facility have been upgraded with state-of-the-art equipment. More than 20 parameters are being done in Ocular Biochemistry laboratory which involves lipid profile, LFT, KFT and other specific investigations such as hormones and vitamin B12 etc. The thrust focus is to identify non-invasive/minimal invasive biomarkers for early detection and prognosis of ocular diseases. Identified some of the biomarkers which could be used as prognostic/ therapeutic targets of ocular tumors.
14. **Community Ophthalmology:** Community Ophthalmology is involved in the activities like comprehensive primary eye care services, outreach eye camps in community as well as schools for the blind, school vision screening, low vision rehabilitation, and in epidemiological research and surveys, training and capacity building, community awareness and mobilization apart from academic activities. Outreach services also include screening of diabetic retinopathy in the underserved populations. Community ophthalmology is currently running 20 projects on eye care research & services in partnership with National agencies like NPCB&VI, DHR, ICMR, DST. Close collaborations have been developed with international agencies like World Health Organization, London School of Hygiene and Tropical Medicine UK, ORBIS, Sightsavers, VisionSpring, Operation Eyesight Universal, CBM etc. Community Ophthalmology completed in National Blindness and Visual Impairment (NB&VI) Survey-2018 in 31 districts across the country with support from National Programme for Control Blindness and Visual Impairment (NPCB & VI), Government of India. The executive summaries of the National Blindness and Visual Impairment Survey reports were released by the Hon'ble Minister of Health and Family Welfare of India, Dr Harsh Vardhan on 10 and 11 October 2019. Community Ophthalmology is collaborating with CARE department, IIT-Delhi for developing artificial intelligence, neural network, and vision computing based tools to detect glaucoma and diabetic retinopathy in patients receiving primary eye care services. Conducted an operational research on involvement of Accredited Social Health Activists (ASHA) in delivery of primary eye care amongst urban poor population.
15. **Primary eye care services:** As a part of routine outreach eye care services, it runs 28 Primary Eye Care Clinics in urban slums and underprivileged community of Delhi and National Capital Region in collaboration with Delhi Government and various NGOs. primary eye care services to poor and vulnerable communities as identified locations in Delhi. Patients requiring cataract surgery are transported to RP Centre and get admitted and operated free of charge.
16. **Low Vision Rehabilitation Services:** Under this initiative, vision rehabilitation services are being provided to people with visual disability by a team rehabilitation of Community Ophthalmology. Orientation & Mobility, Reading and writing rehabilitation services, Low vision evaluation, counselling on vocational training, activities of daily living (ADL), Instrumental ADL, issuance of disability certificates, advice for environmental and lighting modification are various components of services being offered to the needy patients and family members etc. All the information about various government scheme and assistance to avail are also provide. Young patients needing admission to schools for the blind are also helped. Community based rehabilitation is also run through networking system with various NGOs. Patients are being referred vocation training to such NGOs.
17. **Health education activities:** Community Ophthalmology has been conducting health education activities for patients utilizing out-patient and inpatient services at the institute. This is in addition to the already ongoing health education activities at the primary eye care clinics. The topics includes as general eye care, care of spectacles, refractive error, care after cataract surgery, glaucoma, retinoblastoma, retinopathy of prematurity etc.
18. Conducted survey in Leh, Ladakh under the project entitled "Multi Centric Study of Impact of exposure of Ultra Violet Radiation (UVR) & aerosol exposure on ocular health in India"

## EDUCATION

The centre is actively involved in teaching and training of undergraduate MBBS, BSc (optometry) and postgraduate in Ophthalmology.

Ophthalmologists and other trainees in RP Centre 2019-20	Number
Senior resident doctors	58
Post graduate students in Ophthalmology	112
Number of MD Passed out	27
BSc Optometrist students- passed out	15
Number of PhD students – Passed out	4
Details of short term/long term trainees in RP Centre	9



## **CMEs/Workshops/Symposia/National and International Conferences**

1. Phacoemulsification and Refractive Surgery update, January 2020. RP Centre for Ophthalmic Sciences, AIIMS, New Delhi
2. Cornea workshop. October 2019. RP Centre for Ophthalmic Sciences, AIIMS, New Delhi
3. Indian Society of Cornea & Keratorefractive surgeons (ISCKRS) 4th Annual ISCKRS Meet, August 2019, New Delhi
4. Strabismus Workshop, Dr RP Centre for Ophthalmic Sciences, AIIMS, 21 July 2019, New Delhi
5. Glaucoma Workshop, Dr RP Centre for Ophthalmic Sciences, AIIMS, 18 August 2019, New Delhi
6. WHO-SEARO meet aimed at preventing glaucoma blindness in South East Asia, 22 and 23 November 2019
7. Annual conference of Indian Neuro-ophthalmological Society (INOS), 30 November-1 December 2019, New Delhi.
8. Glaucoma week, 8-14 March 2020
9. Oculoplasty workshop in November 2019
10. 34th Eye Donation Fortnight, National Eye Bank, Dr RP Centre for Ophthalmic Sciences, JL Auditorium, AIIMS, 3 September 2019
11. A Low Vision Meeting, Low Vision Services Lab, Room No. 133, Dr RP Centre, AIIMS, 12 September 2019
12. Cornea Workshop, Lecture Theatre, 6th & 7th Floor, Dr RP Centre for Ophthalmic Sciences, AIIMS, 20 October 2019
13. Phacoemulsification & Refractive Surgery Update, Lecture Theatre, 6th Floor, Dr RP Centre, AIIMS, 19 January 2020
14. 2nd Investigator Meeting under the project entitled “Multi Centric study of impact of exposure to Ultra Violet Radiation (UVR) and aerosols exposure on ocular health in India”, Seminar Room Community Ophthalmology, 7th Floor, Dr RP Centre, AIIMS, 20 February 2020
15. 53rd Annual Day Celebrations Congress of Dr RP Centre for Ophthalmic Sciences, JL Auditorium, AIIMS, 14 March 2020
16. NPCB&VI National workshops (Two) for orientation of state programme officers on SAFE strategy implementation for Elimination of Trachoma in India on 22 April 2019 and 4 May 2019 at Dr RP Centre, AIIMS
17. Seven workshops in partnership with NPCB&VI for implementation of SAFE strategies for elimination of Trachoma in Gujarat (9-10 May 2019), Rajasthan Haryana & Punjab, Uttaranchal, UP and Himachal Pradesh for training of District Ophthalmologists and District Program Officers
18. Organized an Orientation & Mobility” training program for people with blindness & low vision at Community Ophthalmology, Dr Rajendra Prasad Centre for Ophthalmic Sciences on 26 and 27 September 2019
19. Organized workshop on “Clear Vision India for Strengthening Refractive error and presbyopia programs” on 6 March 2020 at Seminar Room, Community Ophthalmology Dr R P Centre, AIIMS

## **Lectures delivered**

**Atul Kumar: 20**

**Gita Satpathy: 2**

**S.K. Khokhar: 26**

**Rajpal Vohra: 3**

**Seema Kashyap: 2**

**Neelam Pushker: 4**

**Rohit Saxena: 13**

**M. Vanathi: 31**

**Nabanita Halder: 2**

**Vinod Kumar: 10**

**Vivek Gupta: 12**

**Neiwete Lomi: 3**

**Shorya Vardhan Azad: 4**

**Rebika: 5**

**Pradeep Sharma: 58**

**J.S. Titiyal: 11**

**Dilip R Shende: 11**

**Seema Sen: 1**

**Namrata Sharma: 37**

**T. Velpandian: 4**

**Viney Gupta: 6**

**Parijat Chandra: 13**

**Noopur Gupta: 24**

**Rohan Chawla: 12**

**Nishat Hussain Ahmed: 1**

**Dewang Angmo: 13**

**Kanil Ranjith Kumar: 3**

**Manpreet Kaur: 4**

**Ramanjit Sihota: 11**

**Radhika Tandon: 29**

**Mandeep Singh Bajaj: 4**

**Sanjay Sharma: 1**

**Tanuj Dada: 5**

**Praveen Vashist: 24**

**Renu Sinha: 4**

**Senjam Suraj Singh: 12**

**Rachna Meel: 1**

**Swati Phuljhele: 11**

**Shikha Gupta: 4**

**Prafulla Maharana: 4**

**Amar Pujari: 2**

**Oral papers/posters presented: 121 (Awarded Best video presentation; 2nd Best Paper Presentation; Merit Award; Best Paper: Poster Podium Presentation; 2nd Best Award)**

## **RESEARCH**

### **Funded projects**

#### ***Ongoing***

1. A Comparative Study of Efficacy and Acceptability of a New Paradigm Foldscopy & Conventional Microscopy for analysis of Goblet Cells in patients with Limbal stem cell deficiency, JS Titiyal, DBT, 2019-2022, Rs 14 lakhs
2. A comparative study to evaluate the efficacy of Idebenone in comparison with placebo in Leber's Hereditary Optic Neuropathy patients-A Pilot study, Swati Phuljhele Aalok, AIIMS, 2 years, 2018-2020, Rs 4.32 lakhs per year
3. A Multicentre, randomized, double masked, active-controlled, comparative clinical study to evaluate the efficacy

- and safety of MYL-1701P and Eylea in Subject with Diabetic Macular Edema MYL-1701P-3001, Rajpal, Mylan Inc, September 2019
4. A Phase IV Controlled Clinical Study to Compare the Efficacy and Safety of Cyclosporine (0.05%) Ophthalmic Emulsion against RESTASIS® in Subjects with Moderate to Severe Keratoconjunctivitis Sicca. Namrata Sharma, New India Biopharma, 1 year, 2019-2020, Rs 4.83 lakhs
  5. A pivotal Phase II/III- Randomized double masked sham controlled trial of QPI-007, Rohit Saxena, Quark Pharma, 2017-2019, Rs 32 lakhs
  6. A Study of Demographic, Familial, Biochemical & Genetic Pattern of Keratoconus patients in a hospital based Indian Population. JS Titiyal, CSIR, 2020-2022 Rs 30 lakhs
  7. A Sustainable Model for Comprehensive Outreach Eye Care Service for underserved population in Delhi Slums and resettlement colonies, Praveen Vashist, Deepalaya, 5 years, 2018-2022, Rs 125.1 lakhs
  8. A Sustainable Model for Comprehensive Outreach Eye Care Service in NCR, Praveen Vashist, Deepalaya, 5 years, 2017-2022, Rs 77.12 lakhs
  9. A Sustainable Model for Comprehensive Outreach Eye Care Service in NCR, Praveen Vashist, Hero Motocorp, 5 years, 2018-2021, Rs 37.04 lakhs
  10. An Operational Research on Developing Disability Inclusive Eye Health Program in India, Radhika Tandon, Christoffel Blind Mission (CBM), 3 years, 2019-20, Rs 37.61 lakhs
  11. An Operational Research on Developing Disability Inclusive Eye Health Program in India, Suraj Singh Senjam, Christoffel Blinden mission (CBM), 3 years, 2015-2021, Rs 22.54 lakhs
  12. Association of Novel genetic variations with Juvenile onset open angle glaucoma Viney Gupta, ICMR, 2018-2021, Rs 38 lakhs
  13. CBM-RPC Disability Eye Health Programme and Strengthening of LV and rehabilitation services, Rohit Saxena, CBM, 2015-2020, Rs 12.42 lakhs
  14. Clinical and Epidemiological Profile of Polypoidal Choroidal Vasculopathy (PCV) in a Tertiary Centre, Atul Kumar, AIIMS-IIT, 2 years, 2018-2020
  15. Clinical Evaluation and Efficacy for study of Early Generation Gas Permeable Corneal Refractive Therapy Contact Lens for Myopia in Indian Population. JS Titiyal, Vsquare Medi Enterprises, India, 2018-2021, Rs 16 lakhs
  16. Comparative evaluation of 0.1% Sodium Hyaluronate drops versus 0.5% carboxy methyl cellulose (CMC) in cases of Steven Johnson Syndrome (SJS) ocular sequelae: A randomized controlled pilot study. Namrata Sharma Microlabs 1 year 2019-2020, Rs 2.67 lakhs
  17. Comparative evaluation of 0.1% Sodium Hyaluronate drops versus 0.5% carboxy methyl cellulose (CMC) in cases of Dry eye Disease: A randomized controlled pilot study. Namrata Sharma, Microlabs, 1 year, 2019, Rs 1.22 lakhs
  18. Comparative evaluation of combined 0.03% chloroquine phosphate with 0.1% olopatidine drops versus 0.1% olopatidine drops alone in cases of allergic keratoconjunctivitis, Namrata Sharma, FDC Ltd, 1 year, 2018-2019, Rs 10.50 lakhs
  19. Comparative evaluation of efficacy of conjunctival stem cell transplantation with cultivated oral mucosal epithelial transplantation in patients with bilateral cicatrizing ocular surface diseases” i.e Steven Johnson syndrome & chemical burns, Radhika Tandon, DBT, 3 years, 2017-2020, Rs 21.05 lakhs
  20. Comprehensive primary eye care services in rural areas of Delhi/DJJS, Praveen Vashist, Divya Jyoti Jagrati Sansthan, 4 years, 2016-2020, Rs 34.74 lakhs
  21. Correlation between outdoor activity as measured by UV radiation exposure and myopic refractive error in school going children in New Delhi, Rohit Saxena, Orbis, 1.5 years, 2019-2020, Rs 10 lakhs
  22. Correlation between outdoor activity as measured by UV radiation exposure and myopic refractive error in school going children in New Delhi, Rohit Saxena, ORBIS, 1 year, 2019-2020, Rs 10 lakhs
  23. Descemet’s membrane and trabecular meshwork properties of Primary Congenital Glaucoma (PCG) with respect to Axenfeld Rieger Syndrome (ARS), Shikha Gupta, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
  24. Developing quality control parameters and dispensing MK Media for corneal Transplant preservation for Indian Eye banks under ministry of health, T Velpandian, MoHFW, 11 years, 2009-2020, Rs 129 lakhs
  25. Development and validation of TransReCon technique for sterile pharmaceutical preparation, T Velpandian, BIRAC (BIG GRANT), Venture Centre, 18 months, 2019-2021, Rs 28.3 lakhs
  26. Development of a culturally appropriate health literacy instrument and assessing its validity in Hindi speaking patients receiving general and primary eye care services in New Delhi, Vivek Gupta, AIIMS, 4 years, 2016-2020, Rs 9.96 lakhs
  27. Differential role of Pigmentation Markers with the Tumor- Associated Macrophages in Uveal Melanoma, Seema

- Kashyap, ICMR, 3 years, 2019-2022, Rs 35 Lacs
28. Disability Inclusive eye health program in Strengthening of Low Vision and Rehabilitation Services, Radhika Tandon, Christoffel Blind Mission (CBM), 5 years, 2019-20, Rs 10 lakhs
  29. Early Macular Reconstruction in Proliferative Diabetic Retinopathy, Atul Kumar, 2 years, 2018-2020
  30. Efficacy of prophylactic use of Intracameral Moxifloxacin 0.5% in prevention of post-cataract surgery endophthalmitis in North India: A randomized Control trial. Namrata Sharma, Cipla Ltd, 1 year 2 months, 2018-2020, Rs 24.5 lakhs
  31. Epidemiological Study of avoidable blindness in India, Praveen Vashist, MoHFW, 5 years, 2015-2020, Rs 528 lakhs
  32. Evaluation of Genetic basis of Congenital Hereditary Endothelial Dystrophy (CHED) by characterization of the effect of homozygous and compound heterozygous SLC4A11 mutations in CHED patients and clinical phenotyping of mutation positive and negative cases, Radhika Tandon, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
  33. Exome sequencing based detection of novel and causal mutation(s) associated with juvenile onset open angle glaucoma (JOAG), Viney Gupta, DRDO, 3 years, 2017-2020, Rs 68 Lakhs
  34. Exploring the role of endocannabinoids in primary adult glaucoma, Dewang Angmo, AIIMS, 2 years, 2017-2019, Rs 9 lakhs
  35. Identification and Characterization of Molecular Targets in Orbital Tumors: Basis of innovative therapeutic strategies, Seema Sen, UGC, 5 years, 2017-2022, Rs 33 lacs
  36. Identification of Novel Transcripts and Non-Coding RNA in Fuchs' Endothelium Corneal Dystrophy (FECD). JS Titiyal, SERB-DST, 2017-2020 Rs72,00,000/-
  37. Mapping of Human Resource & Infrastructure for Pediatric eye care services in India, Praveen Vashist, ORBIS, 9 months, 2020, Rs 25 lakhs
  38. Mitochondrial Genome Variants and Maternal Inheritance in the Pathogenesis of Juvenile-onset Primary Open Angle Glaucoma, Jasbir Kaur, SERB, DST, 3 years
  39. Multi Centric Study of Impact of exposure of Ultra Violet Radiation (UVR) & aerosol exposure on ocular health in India Phase-II, Radhika Tandon, ICMR, 5 years, 2018-2023, Rs 90 lakhs
  40. Multi Centric study of Impact of exposure of Ultra Violet Radiation (UVR) & aerosol exposure on ocular health in India, Radhika Tandon, ICMR, 5 years, 2018-2022, Rs 428.42 lakhs
  41. Novel chemoport for ocular drug delivery, Rohan Chawla, AIIMS-IIT, 2 years, 2019-2021, Rs 10 lakhs
  42. Patterns and pathways of care seeking for cataract and common ocular morbidities and impact of local volunteers on the pathways among urban vulnerable population settings of West Delhi, Vivek Gupta, Swami Sivananda Memorial, 2 years, 2017-2020, Rs 20 lakhs
  43. Prospective audits of the phenotype, causes and correlates of Trichiasis: A WHO Trachoma Collaborative Study, Noopur Gupta, WHO, 1 year, 2019-2020, Rs 5.92 lakhs
  44. Prospective audits of the phenotypes, causes, correlates of trichiasis-WHO Trachoma Collaborative Study, Noopur Gupta, WHO, 1 year, 2019-2020, Rs 5.2 Lakhs
  45. Prospective Long-Term Evaluation of Posterior Capsule and Intraocular Lens Dynamics with IOL Vivinex Iser XY1, Hoya Surgical Ltd, 3 years, 2018-2021, Rs 17.10 lakhs
  46. Rationalizing the development of newer intravitreal agents/formulations for diabetic neovascular conditions, T Velpandian, Saksin Lifesciences, 1 year, 2018-2019, Rs 18 lakhs
  47. Rationalizing the usage of extemporaneously prepared topical solution of piperacillin and tazobactam combination based on their ocular kinetics, Nabanita Halder, AIIMS, 1 year, 2018-2019, Rs 4.5 lakhs
  48. Role of 3D Heads-up Digitally Assisted Vitreoretinal Surgery (DAVS) in Primary and Recurrent Rhegmatogenous Retinal Detachment with Proliferative Vitreoretinopathy - A Prospective Randomised Trial. Atul Kumar, AIIMS-IIT, 2 years, 2018-2020
  49. Role of circulating endothelial progenitor cell markers in human retinoblastoma, Jasbir Kaur, AIIMS, 2 years
  50. Role of Low dose heparin eye drops in chronic ocular cases of Steven Johnson Syndrome (SJS) and its correlation with immune pathway gene expression: A randomized controlled trial, Namrata Sharma, ICMR, 3 years, 2019-2022, Rs 47 lakhs
  51. Role of miRNA in corneal graft rejection, Namrata Sharma, CSIR, 3 years, 2019-2020, Rs 25 lakhs
  52. Safety and Efficacy of the Presbyopia IPCL for correction of Presbyopia with Moderate Myopia and Hyperopia, JS Titiyal, Care Group, 2018-2021, Rs 41.95 lakhs
  53. Species identification, antifungal susceptibility profile and biofilm formation of Rhodotorula species isolates from ocular infections, Nishat Hussain Ahmed, AIIMS, 1 year, 2019-20, Rs 5 lakhs
  54. Strengthening of Low Vision and Rehabilitation Services, Suraj Singh Senjam/Praveen Vashist, Christoffel Blindenmission (CBM), 1 year, 2018-2021, Rs 15.45 lakhs

55. TB DNA RNA in presumed ocular tuberculosis, Rohan Chawla, AIIMS, 2 years, 2018-2020, Rs 9 lakhs
56. To evaluate the effect of increased outdoor activity on the incidence and progression of myopia in school children, Rohit Saxena, DST, 4 years, 2016-2020, Rs 31.10 lakhs
57. To evaluate the effect of increased outdoor activity on the incidence and progression of myopia in school children, Praveen Vashist, DST, 4 years, 2016-2020, Rs 48.63 lakhs
58. To evaluate the effect of low dose atropine eye drops for childhood myopia, Rohit Saxena, Entod Pharma, 3 years, 2019-2022, Rs 16 lakhs
59. To generate feasibility data (for human clinical trial) of Bio engineered cornea (for potential clinical application in keratitis patients-An In-Vitro Study, Radhika Tandon, AIIMS, 2 years, 2019-20, Rs 5 lakhs
60. To Investigate the Molecular Mechanisms of Keratoconus amongst Indian Subjects. Prof. JS Titiyal, ICMR, 2018-2021, Rs 70 lakhs
61. Transcriptome profiling in Trabecular meshwork of Juvenile onset Open Angle glaucoma patients by RNA Sequencing Viney Gupta, ICMR, 3 years, 2019-2022. Rs 111 lakhs
62. Tumor DNA Sampling From Aqueous Humor In Retinoblastoma, Rachna Meel, AIIMS, 1 year, 2019-2020, Rs 5 lacs
63. Vision Screening and Eyeglasses Dispensing Program for Students in Delhi Schools, Praveen Vashist, Vision Spring, 1 year, 2017-2019, Rs 6.4 lakhs

### **Completed**

1. A 12 months, phase III, randomized, double-masked, multi-centre active-controlled study to evaluate the efficacy and safety of two individualized regimens of 0.5 mg ranibizumab vs. Verteporfin PDTG in patients with visual impairment due to choroidal neovascularization secondary to pathologic myopia, Rajpal, Novartis Health Care Private Limited, 2 years, 2015-2017
2. A Sustainable Model for Comprehensive Outreach Eye Care Service for underserved population, Praveen Vashist, Sparsh, 3 years, 2018-2020, Rs 39.42 lakhs
3. Assistive Technology Study, Senjam Suraj singh, Commonwealth Eye Health Consortium UK, 1 year, 2017-2018, Rs 2lakhs
4. Cascade screening of family members of JOAG patients, Viney Gupta, ICMR, 3 years 2015-2018, Rs 45 lakhs
5. Diabetic Retinopathy: An Epidemiological Study of its Risk Factors and Biological Markers in Delhi, Atul Kumar/Praveen Vashist, MoHFW, 2 years, 2017-2020, Rs 109.25 lakhs
6. Establishment of Multiplex PCR for Detection of Herpes Simplex Viruses Type 1 and Type 2, Cytomegalovirus, Varicella-Zoster Virus and Adenovirus in Ocular Viral Infections, Nishat Hussain Ahmed, AIIMS, 2016-2018, Rs 7.7 lakhs
7. Evaluation of role Eplerenone as an adjunct to Photodynamic therapy in Central Serous Chorioretinopathy: An open label randomized control trial, Atul Kumar, AIIMS, 2 years, 2017-2019
8. Exploring the role of tumor microenvironment in retinoblastoma, Rachna Meel, AIIMS, 1 year, 2018-2019, Rs 5 lakhs
9. High-resolution Photoreceptor and Microvascular Imaging Using Adaptive Optics Fundus Camera and OCT-angiography in Early Stages of Diabetic Retinopathy, Atul Kumar, AIIMS, 2 years, 2017-2019
10. In vivo Based QSPR model for the In-Silico Prediction of Drugs Penetrating Through Blood Retinal Barriers for High-throughput Ocular Drug Development, T Velpandian, DBT, 3 years, 2015-2019, Rs 51 lakhs
11. Molecular and mutational studies in the uveal melanoma and their correlation with clinicopathological parameters, Neelam Pushker, ICMR, 3 years, 2018-2020, Rs 30 lakhs
12. Operational Research project on strengthening integrated primary eye care in urban vulnerable populations of Delhi, Praveen Vashist, Sightsavers, 3 years, 2016-2019, Rs 163.74 lakhs
13. RAINBOW Study: A randomized, controlled study evaluating the efficacy and safety of RAinbizumb compared with laser therapy for the treatment of INFants BOrn prematurely with retinopathy of prematurity, Rajpal, Novartis Health Care Private Limited, 2016-2018
14. TB DNA RNA in presumed ocular tuberculosis, Rohan Chawla, AIIMS, 2 years, 2018-2020, Rs 9 lakhs

### **Departmental projects**

#### **Ongoing**

1. Community based operational research study on involvement of Accredited Social Health Activists (ASHAs) in strengthening Primary Eye Care services for Urban Vulnerable Population of Delhi

2. Epidemiological Study on Childhood Visual Impairment in Delhi
3. A comparative double-arm randomized controlled study to assess the effect of Evolve™ Pure Eyelid wipes in subjects with meibomian gland dysfunction
4. A Multicentre, randomized, double masked, active-controlled, comparative clinical study to evaluate the efficacy and safety of MYL-1701P and Eylea in Subject with Diabetic Macular Edema
5. A Population based study to assess the prevalence of glaucoma in Delhi
6. An ambispective study of profile, gaps in care and outcomes in Stage 5 Retinopathy of prematurity
7. An ambispective study of profile, gaps in care and outcomes in stage 5 ROP.
8. Anatomical and functional outcomes of drainage through posterior retinotomy versus PFCL assisted drainage through pre-existing break in vitrectomy for rhegmatogenous Retinal detachment.
9. Anatomical and functional outcomes of drainage through posterior retinotomy versus PFCL assisted drainage through pre-existing break in vitrectomy for rhegmatogenous Retinal detachment.
10. Anti-Fungal susceptibility testing in fungal keratitis
11. Assessment of different tonometers for IOP measurement in Post LASIK patients
12. Assessment of Outdoor Ultraviolet Light Exposure and Serum Melatonin levels in Young Myopes
13. Assessment of the extent of environmental exposure of potential endocrine disruptor (Bisphenols) in the waters of Delhi/NCR
14. Association of Hippo pathway with pigmentation in the tumor microenvironment of uveal melanoma and its clinical relevance
15. Automated detection of ROP and Quantification of Plus Disease
16. Bacteriological profile of Central Line Associated Blood Stream Infections, with specific reference to biofilm formation and resistance pattern, and their correlation with response and outcome.
17. Baseline and Post Neoadjuvant Chemotherapy Imaging of Optic Nerve in Extraocular Retinoblastoma. Can MRI Predict Prognosis?
18. Characterization of Renal Cell Carcinoma with Dual Energy Computed Tomography and Multiparametric Magnetic Resonance Imaging and Correlation with Histopathology.
19. Clinical and epidemiological profile of PCV in a tertiary centre.
20. Clinical outcomes of retropupillary Iris claw IOL fixation in pediatric age group.
21. Clinical performance and ocular surface homeostasis study with gas permeable scleral contact lens for ocular surface disease.
22. Community based assessment of disability among adult population of Delhi using WHO-ICF
23. Comparative evaluation of corneal biomechanical aberrations following corneal cross linking between thin corneas vs corneas with thickness >400 microns in patients with keratoconus
24. Comparative evaluation of corneal characteristics in eyes of Primary Congenital Glaucoma and Axenfeld-Rieger Syndrome.
25. Comparative evaluations of different formulations of liposomal amphotericin B for the treatment of fungal keratitis
26. Comparative profile of early vs late onset primary angle closure glaucoma
27. Comparing the efficacy and safety of ketamine and dexmedetomidine in bariatric surgery without the use of opioids; A randomized clinical trial.
28. Comparison of iCare ic200 and Perkin tonometry in paediatric glaucomas
29. Comparison of Recovery Characteristics With Desflurane And Sevoflurane In Preterm And Ex-Preterm Infants Undergoing Retinopathy Of Prematurity Surgery: A Prospective Randomized Study
30. Comparison of serum and vitreous biomarker in patients of Type-1 and Type-2 Diabetes Mellitus with Diabetic Retinopathy.
31. Correlation of AS OCT changes in trabecular meshwork with SLT outcomes among JOAG
32. Correlation of light microscopic features of the trabecular meshwork in different glaucomas with baseline IOP
33. Determinants of Optic disc morphometry among JOAG patients
34. Dual energy computed tomography and magnetic resonance imaging in the evaluation of chronic pancreatitis.
35. Effect Of Low Dose Ketamine On Inflammatory Markers and On Perioperative Analgesia In Patients Undergoing Laparoscopic hernia surgery -A prospective, randomized, comparative study
36. Endocyclophotocoagulation in refractory glaucoma

37. Epidemiology of Pediatric Blindness
38. Estimation of rate of progression and projected life time risk of blindness among JOAG patients
39. Evaluation of anisometropia & amblyopia risk factor in congenital nasolacrimal duct
40. Evaluation of combined resection & recession of same muscles in patient with near distance disparity.
41. Evaluation of corneal tomography and Biomechanics following Intrastromal Lamellar Keratoplasty in Keratoconus
42. Evaluation of Donor characteristics and Graft Outcomes of corneal transplant from multi organ donors and cadaveric donors under hospital cornea retrieval program
43. Evaluation of effect of refractive error correction on quality of life in school going children
44. Evaluation of Frontalis Sling Surgery using Silicone Rod in Single Triangle versus Pentagonal configuration for the correction of Congenital Ptosis
45. Evaluation of levator plication as compared to frontalis sling surgery in severe congenital ptosis
46. Evaluation of levels of topical atropine in aqueous humour and vitreous humour- A pilot study
47. Evaluation of medical therapy vs surgical therapy in primary adult glaucomas
48. Evaluation of Optical Coherence Tomography-Angiography (OCT-A) Changes in Non Arteritic Anterior Ischemic Optic Neuropathy (NAION)
49. Evaluation of PPMB in various types of optic neuropathy
50. Evaluation of risk factors causing Residual Refractive Error in Corneal Refractive Surgery.
51. Evaluation of the effects of Trabeculectomy on Corneal Topography, aberrometry, Biomechanics, and Ocular Surface
52. Evaluation of the involvement of phthalates in the development of insulin resistance using cell culture experiments
53. Evaluation of the role of Intralesional Bleomycin in Periocular and adnexal vascular lesions.
54. Evaluation of the role of RPE/BM angle as a definitive marker of true papilledema using spectral domain OCT
55. Exploring the application of artificial intelligence in differentiating developmental variants of Anterior Segment Dysgenesis presenting with infantile corneal opacities
56. Gene expression profiling in retinopathy of prematurity
57. Genomic alterations among JOAG patients
58. Genomic alterations in juvenile open angle glaucoma
59. Imaging and functional outcomes post vitrectomy at differential Air infusion pressure
60. Intra-operative monitoring of cerebral oxygen saturation using Near Infra-Red Spectroscopy (NIRS) and Assessment of risk factors for Low cerebral oxygen saturation in preterm and very preterm infants with Retinopathy of prematurity during Vitreo retinal surgeries: An observational prospective study.
61. Intraoperative monitoring of cerebral oxygen saturation using near infrared spectroscopy (NIRS) and assessment of risk factors for low cerebral oxygen saturation in preterm and very preterm infants with retinopathy of prematurity during vitreoretinal surgeries: an observational prospective study.
62. In-vivo Based QSPR model for the In-Silico Prediction of Drugs Penetrating Through Blood Retinal Barriers for High-throughput Ocular Drug Development
63. Lenticular changes with use of statins- A Hospital based prospective cohort study
64. Long term outcomes of Optic Capture in Pediatric Traumatic Cataracts due to Open Globe Injuries.
65. Longitudinal Comparison of Tablet based perimetry with Humphery Analyser among Paediatric glaucomas
66. Macular imaging in Glaucoma suspects and Early glaucoma
67. Metabolomic and pharmacogenomic evaluation of glaucoma therapy
68. Molecular alterations in Glaucoma
69. Molecular Characterization of Malignant Lacrimal Gland Tumors
70. Molecular Characterization of NFκB pathway in Uveal Melanoma.
71. Molecular insights into complications of Basal Ganglia Calcification with respect to Idiopathic Hypoparathyroidism
72. Molecular mechanism of melanogenesis pathway in uveal melanoma
73. Notch signalling deregulation in lacrimal gland tumors.
74. OCT angiography in POAG and PACG
75. Ocular Surface evaluation in Vernal Keratoconjunctivitis

76. Optic disc Morphometry among eyes with BRVO
77. Optical coherence tomography angiography in primary open angle glaucoma and primary angle closure glaucoma
78. Outcomes of keratoplasty in trachomatous keratopathy
79. Outcomes of primary ranibizumab vs laser for treatment of zone 2 Type 1 ROP
80. Pilot study to evaluate efficacy of subthreshold micropulse laser (577nm) in cases of central serous chorioretinopathy.
81. Pilot study to evaluate efficacy of subthreshold micropulse laser (577nm) in cases of non-resolving centre involving DME
82. Pneumatic vitreolysis vs pars plana vitrectomy in vitreomacular traction syndrome.
83. Predicting visual field deterioration based on progression analysis
84. Prevalence of glaucoma in patients having diabetic retinopathy
85. Prevalence of Visual disability among juvenile onset open angle glaucoma patients
86. Prospective pilot study comparing subtenon triamcinolone and intravitreal Methotrexate in Uveitis
87. Psychosocial impact of paediatric strabismus on caregivers and the effect of strabismus
88. Pulmonary arterial velocity time integral and effect of sigh breaths in predicting fluid responsiveness in acute circulatory failure
89. Role of 3D Heads up Digitally Assisted Vitreoretinal surgery in primary and recurrent rhegmatogenous retinal detachment with proliferative vitreoretinopathy – a prospective randomized trial
90. Role of anti-VEGF post vitrectomy in stage 4 ROP
91. Role of tacrolimus eye ointment in chronic VKC
92. Role of ultrasound and advanced MRI in evaluation of prostate cancer
93. Severity of Congenital glaucoma among Consanguineous births
94. Steroids in persistent diabetic macular edema
95. STL for CSR
96. STL for diabetic macular oedema
97. Study of Congenital Hereditary Endothelial Dystrophy Patients with and without SLC4A11 gene mutation
98. Study of Tear Film and Ocular Surface Changes after long term use of rose K lenses in patients with keratoconus
99. Study of the effect of red tinted filters on colour discrimination in congenital colour vision deficiency
100. Surgical outcomes of Anti-VEGF with vitrectomy in stage 4 ROP
101. To comparatively evaluate corneal characteristics in eyes of Primary Congenital Glaucoma and Axenfeld-Rieger Syndrome
102. To compare the Extrusion Rate of Silicone implant Versus PMMA (Mule's) Implant following Myoconjunctival Technique of Eucleation - A Randomised Control Trial.
103. To compare the outcomes of 0.1mg vs 0.25mg Intravitreal Ranibizumab in Aggressive Posterior Retinopathy of Prematurity.
104. To Compare the Outcomes of Laser vs Combined Laser & Ranibizumab in Threshold Retinopathy of Prematurity
105. To determine the association between altered cerebral blood flow in the frontal cortex during sevoflurane anaesthesia and incidence of postoperative emergence delirium in children: an fNIRS based observational study.
106. To study the outcomes of immediate sequential bilateral vitreo retinal surgery (isbvs) in advanced ROP
107. To study variable gene expression of collagen and associated degradative enzymes present in human vitreous in patient with myopia worth is normal population
108. Topical autologous platelet lysate drops for severe dry eye disease in chronic ocular graft versus host disease (GVHD)
109. Topo guided custom ablation treatment in the management of post keratoplasty astigmatism
110. Ultrasound guided costoclavicular block in paediatric population: A prospective observational study
111. Ultra-wide field Indocyanine green angiography in central serous Chorioretinopathy
112. Understanding the drug transporter functions in blood ocular barriers during ocular inflammation in the experimental model of uveitis.

### **Completed**

1. A comparative study of Panretinal photocoagulation using PASCAL and conventional Laser
2. Bleb morphology among JOAG patients

3. Characterization of secondary/ idiopathic choroidal neovascular membranes and their response to anti- VEGF therapy using optical coherence tomography angiography.
4. Clinical Profile of Normal pressure juvenile glaucomas
5. Combined mechanism glaucoma: A Comparative evaluation with POAG and PACG
6. Combined resection-recession in true divergence excess sensory exotropia.
7. Comparative Evaluation of Levels of Dopamine in Vitreous and Tears among Cases of Myopic Retinal Detachment and Non Myopic Retinal Detachment- A Pilot Study
8. Comparative evaluation of SF6 versus partial air tamponade on structural and functional outcomes of epiretinal membrane surgery.
9. Comparison of 3 intravitreal drugs for endophthalmitis
10. Comparison of OCTA and fluorescein angiography in patient of diabetic retinopathy
11. Comparison of time to intubate and intubation conditions with CMAC Miller blade size1 and CMAC Macintosh blade size 2 in paediatric patients– A Prospective randomized controlled study
12. Comparison of Ultrasound guided femoro-sciatic nerve block versus epidural analgesia for post-operative analgesia following excision of knee tumours- A randomized control study
13. Corneal Changes in Diabetes
14. Correlation of 360 degrees Cassia ASOCT parameters with clinical parameters in PAC and PACG
15. Correlation of Antibiotic Resistance patterns of Ocular bacterial isolates and Antibiotic use in patients admitted to hospital- A step towards Antimicrobial Stewardship
16. Effect of Valproic acid in end stage glaucomas
17. Effectiveness of Citicoline as adjuvant therapy to patching in the management of amblyopia
18. Efficacy of Eplerenone in polypoidal choroidal vasculopathy.
19. Evaluating vitreous seed regression using intravitreal melphalan in combination with standard intravenous chemotherapy for persistent/partially regressing vitreous seeds in group c and d retinoblastoma
20. Evaluation of efficacy of silicone intubation after probing with adjunctive mitomycin-c in adults with primary acquired nasolacrimal duct obstruction
21. Evaluation of medical therapy vs surgical therapy in chronic primary adult glaucomas
22. Evaluation of Mitomycin-c in Anophthalmic contracted socket reconstruction with Mucous membrane grafting
23. Evaluation of the role of Intralesional Bleomycin in Orbital Lymphangioma
24. Imaging and Intervention in Pediatric Budd Chiari Syndrome
25. In vivo Trabecular meshwork morphology in congenital glaucoma, juvenile and adult onset open angle glaucoma
26. Multimodal retinal imaging of eyes with metamorphopsia after retinal detachment surgery.
27. Outcomes of selective laser trabeculoplasty among juvenile open angle glaucoma
28. Predicting visual field deterioration based in progression analysis
29. Prognostic predictor and surgical outcomes of cataract surgery in pediatric uveitis
30. Prospective Observational Study of Cases of Aggressive Posterior Retinopathy of Prematurity (APROP) and Zone 1 Retinopathy of Prematurity.
31. Prospective observational study of cases of APROP and zone 1 ROP.
32. Prospective observational study to validate IOL power using optiwave refractive analysis (ORA) system & compare it with conventional IOL power calculation methods
33. Serum Procalcitonin, Interleukin-6 and sTREM-1 as diagnostic and prognostic markers in sepsis in Intensive Care unit
34. Species identification and determination of virulence factors of Coagulase negative Staphylococci in ocular infections
35. Study of posterior corneal astigmatism in normal and post refractive surgery corneas
36. Surgical outcomes of sutureless clear corneal microincision vitrectomy surgery in end stage 5 ROP
37. To characterize treatment Naive Choroidal Neovascular Membranes Using Optical Coherence Tomography-angiography
38. To study the outcomes of immediate sequential Bilateral ROP surgery
39. To study the predictors for surgical outcomes in stage 4A retinopathy of prematurity
40. Use of advanced genomics in Microbiology of culture negative infections



## Collaborative projects

### Ongoing

1. A comparative study to evaluate the efficacy of idebenone in comparison with placebo in Leber's Hereditary Optic Neuropathy patients-A pilot study', Ophthalmology
2. A Randomized controlled trial to evaluate the effect of low dose atropine eye drops for childhood myopia, Ophthalmology
3. Analysing levels of cytokines in tears of keratoconus patient population. Ophthalmology
4. Antifungal susceptibility testing in fungal keratitis Ophthalmology
5. Autologous fat grafting for the correction of cicatricial ectropion, Dermatology
6. Baseline and Post Neoadjuvant Chemotherapy Imaging of Optic Nerve in Extraocular Retinoblastoma. Can MRI Predict Prognosis? IRCH
7. Bortezomib in plasma with multiple myeloma, Pharmacology
8. Clinical Significance cancer stem cell markers and its proteins in different grades of Astrocytoma Ophthalmology
9. Clinicopathological Significance of Melanogenesis in Uveal Melanoma Ophthalmology
10. Community based assessment of disability among adult population of Delhi using WHO International Classification of Functioning, Physical Medicine, ENT
11. Comparative Evaluation of 0.1% Sodium Hyaluronate Drops Versus 0.5% Carboxy Methyl Cellulose (CMC) in chronic ocular sequelae of SJS: A randomized Controlled Pilot Study Ophthalmology
12. Comparative evaluation of 26 gauge needle versus Kimura spatula for corneal scraping in infective keratitis: a randomized controlled trial Ophthalmology
13. Comparative evaluation of different formulations namely sonicated gel form, unsonicated drop and sonicated drop of liposomal Amphotericin B for the Treatment of Fungal Keratitis. Ophthalmology
14. Comparative evaluation of dopamine levels in vitreous humor and tears among the cases of myopic retinal detachment and non-myopic retinal detachment- A pilot study (Dr Rohit Saxena) Ophthalmology/AIIMS
15. Comparison of nucleosomes and tissue inhibitor of metalloproteinase 1 in predicting sepsis severity and mortality in adult critically ill patients: a pilot study, Anesthesiology
16. Correlation of Levator Muscle Thickness on UBM with response to Botulinum toxin injection in patients with Severe Eyelid Retraction due to Thyroid Eye Disease, Endocrinology
17. C-phycoerythrin from Spirulina using LC-MS/MS, DRDO
18. Detection of Mycobacterium Tuberculosis DNA and RNA from Vitreous/aqueous of cases of Definite and Presumed Ocular Tuberculosis Ophthalmology
19. Effect of ACE inhibitor on plasma levels of norepinephrine, Physiology
20. Effect of Garlic extract in mice model of chronic pancreatitis, Anatomy
21. Efficacy of low dose versus standard regimen of oral betamethasone pulse therapy in rapidly progressive vitiligo: A randomized controlled trial. Dermatology
22. Efficacy of Pulse Dexamethasone in addition to standard therapy alone in children with Juvenile Idiopathic Arthritis: A double blind randomised controlled trial Pediatrics
23. Efficacy of three different antiseptic solutions in neonates admitted in NICU: A randomised non-inferiority trial, Pediatrics
24. Efficacy of two different Chlorhexidine Gluconate Preparation for skin antisepsis in neonates, Pediatrics
25. Establishing a Technical Support Unit (TSU) for Verbal Autopsy based Cause of Death Ascertainment in the Sample Registration System, Registrar General of India, Registrar General of India
26. Estimation of ceramides in autosomal recessive congenital ichthyosis, Dermatology
27. Estimation of Drug Quantity of anticancer drugs/antibiotics in marketed formulations, IRCH
28. Estimation of Neurotransmitters & Metabolites in epileptic brain tissues, Neurosurgery
29. Estimation of neurotransmitters, metabolites and phospholipids from epileptic brain tissues, Neurosurgery
30. Evaluating ocular motion as a tool for characterizing visual field defects, IIT Delhi
31. Evaluation of Corneal Concentration of Antifungal Drugs and Its Correlation with Minimum Inhibitory Concentration (MIC) Values in Cases Undergoing Therapeutic Penetrating Keratoplasty Ophthalmology
32. Evaluation of cystinosis by estimating leukocyte cystine, Pediatrics
33. Evaluation of donor characteristics and graft outcomes of cornea transplant from multi-organ donors and cadaveric donors under HCRP Ophthalmology

34. Evaluation Of Factors Affecting the Outcome Of Optic Nerve Sheath Fenestration Surgery (ONSF) In Patients With Idiopathic Intracranial Hypertension (IIH), Neurology
35. Evaluation of Genetic basis of Congenital Hereditary Endothelial Dystrophy (CHED) by characterization of the effect of homozygous and compound heterozygous SLC4A11 mutations in CHED patients and clinical phenotyping of mutation positive and negative cases
36. Evaluation of the outcome of Intralesional Bleomycin in orbital lymphangioma Ophthalmology
37. Exploring the role of endocannabinoids in primary glaucoma, Ophthalmology
38. Exploring the Role of Tumor Microenvironment in Retinoblastoma Ophthalmology
39. Exploring the tryptophan metabolism via kynurenine pathway and correlation with clinical outcome in keratoconus and Fuchs corneal dystrophy patients undergoing corneal transplantation Ophthalmology
40. Hormonal response during oscillatory lower body negative pressure, Physiology
41. Identification of endothelial progenitor cell markers in RB Ocular Biochemistry
42. Identification of endothelial progenitor cell markers in RB Ophthalmology
43. Micro RNAs as Novel Biomarkers for the prediction of corneal graft rejection. Ophthalmology
44. Molecular and Mutational Studies in the Uveal Melanoma and their correlation with Clinicopathological Parameters Ophthalmology
45. Pharmacokinetics of Abiraterone levels with food, Pharmacology
46. Pharmacokinetics of second-line anti-tubercular drugs in children, Pediatrics
47. Phospholipids estimation resected brain tissue samples, Biophysics
48. Plasma Drug levels of Isoniazid, Ethambutol, Rifampicin and Pyrizinamide, Microbiology
49. Psychosocial factors among patients undergoing orbital exenteration, Psychology and Dental
50. Quantification of Sphingolipids in Human umbilical veins, Biochemistry
51. Serum Benzathine Penicillin G levels in Indian Children and adolescence with Rheumatic heart disease, Pediatric Cardiology
52. SNOMED-CT: NRCeS – Development of National Drug Repository database, MoHFW & C-DAC Pune
53. Study of endothelial progenitor cell (EPC) tetrahydrobiopterin (BH4) levels and its association with EPC number and function in coronary artery disease (CAD) patients. Cardiac Biochemistry
54. Study of Lipid Metabolism in Ocular Malignancies Jamia Milia
55. Study of Ocular Microbial flora in contact lens wearers using metagenomics Ophthalmology
56. Study on Health-Related Quality of Life and Costing of cataract surgery for treatment of age-related cataract in India, DHR, ICMR
57. Sustainable model for orientation and mobility among students with visual disability in schools for the blind, PMR
58. Targeting PD-1/PD-L1 Pathway in Ocular Malignancies as a New Paradigm for Immunotherapy Jamia Milia
59. The pattern of visual impairment in spectrum of hypoxic ischaemic encephalopathy Ophthalmology
60. To estimate the 8-Oxo-dg and 8-Oxo-Guo in plasma, Pulmonary Medicine
61. To estimate the levels of N-Carboxymethyl lysine, arginine and Di-tyrosine in autistic children, Pediatrics
62. To Evaluate the effects of a preoperative carbohydrate drink on postoperative vomiting in paediatric strabismus surgery: A randomised controlled observer blinded trial, Anaesthesiology
63. To generate feasibility data (for human clinical trial) of Bio engineered cornea (for potential clinical application in keratitis patients) - An In-Vitro Study, IIT Delhi
64. To study Nilotinib Drug interaction with fatty acid meal, IRCH
65. To study the association of tetrahydrobiopterin (BH4) levels in endothelial progenitor cell (EPC) with the functional activity of EPC in coronary artery disease (CAD) patients. Cardiac Biochemistry
66. To study the effect of Vitamin C and Thiamine in patients with sepsis in Indian Population, Medicine
67. To study variable gene expression of collagen and associated degradative enzymes present in human vitreous in patients with myopia vs. normal population Ophthalmology
68. Tools to Diagnose-Eye-Development and assessment of image analysis tools for identification of retinal disorders-Diabetic Retinopathy, IIT Delhi
69. Tools to Diagnose-Eye-Development and assessment of image analysis tool for identification of glaucoma, IIT Delhi
70. Traditional medicine in India and South Africa: A comparative Study. University of Delhi

71. Ultrasound Assessment of Gastric Emptying of Clear Fluids with Different Energy Content in Children: A Crossover Pilot Study. Anesthesiology

### Completed

1. Autologous fat transfer for orbital volume augmentation in sockets with small non-seeing eye, Dermatology
2. Assessment of outdoor ultraviolet light exposure and serum melatonin levels in young myopes, Ophthalmology
3. Comparison of three antibiotic drug regimens, Ophthalmology/AIIMS
4. Ocular Pharmacokinetics of topical Bromofenac 0.09% in cataract surgery patients, Ophthalmology
5. Pharmacological evaluation of selected Ayurvedic formulation, NMR
6. Toxicological analysis and distribution pattern of alcohol and different drugs in various biological samples and their neurobiological effects in suicidal deaths, Forensic medicine and technology
7. Therapeutic drug monitoring & evaluation of clinical response in abdominal tuberculosis, Microbiology
8. Serum & Bal Colistin Levels, Medicine
9. Estimation of Aspirin and salicylic acid in plasma of ischemic stroke patients, Neurology
10. To analyze cell bacteria lipid mixture 1 and 2, Biomedical Engineering/IIT Delhi
11. To study the microsomal stability of GDS-390S, Dept. of Chemistry /Delhi University
12. A temporal evaluation of structural and functional changes of optic nerve in acute cases of idiopathic intracranial hypertension and the impact of weight reduction on the same, Neurology
13. The spectrum of visual impairment in Hypoxic Ischemic Encephalopathy and their relationship with clinical classification, Paediatric Neurology
14. Evaluating vitreous seed regression using intravitreal melphalan in combination with standard intravenous chemotherapy for persistent/partially regressing vitreous seeds in group c and d retinoblastoma, IRCH
15. Study of Tear Film and Ocular Surface Changes after Long Term use of Rose K Lenses in Patients with Keratoconus, Ophthalmology
16. Baseline and post neoadjuvant chemotherapy imaging of optic nerve in extraocular retinoblastoma. Can MRI Predict Prognosis? (RPC), Ophthalmology
17. Role of MR guided biopsy in detection of prostate cancer, NMR
18. Retrospective Study Evaluating Correlation between Proposed MRI based Optic Nerve Staging in Extraocular Retinoblastoma with Clinical Outcome and Prospective Evaluation of Optic Nerve Enhancement without Optic Nerve Thickening, Ophthalmology
19. Effects of use of bolster and its orientation on kidney position in reference to prone percutaneous nephrolithotomy Urology

### PUBLICATIONS

**Journals: 390**

**Abstracts: 3**

**Chapters in Books: 15**

**Books: 4**

### PATIENT CARE

		New Cases	Old Cases	Total
1.	General O.P.D.	159709	172803	332512
2.	Emergency	11697	47701	59398
3	Specialty Clinics	40428	138832	179260
	<b>Total</b>	<b>211834</b>	<b>359336</b>	<b>571170</b>
<b>Details of Specialty Clinics</b>				
1.	Cornea Clinic	6560	12126	18686
2.	Lens Clinic	1076	2947	4023
3.	Uvea Clinic	1133	5134	6267
4.	Contact Lens Clinic	792	1870	2662
5.	Glaucoma Clinic	3711	9280	12991

6.	Oculoplasty Clinic	4796	3924	8720
7.	Paed. Ophthalmology Clinic	11	4	15
8.	Retina Clinic	4166	6350	10516
9.	Neuro-Ophthalmology	3156	3422	6578
10.	Clinic	3949	5171	9120
11.	Vitreo Retinal Clinic	1225	4040	5265
12.	ROP	250	633	883
13.	Ocular Oncology Clinic	3500	1715	5215
14.	Low Visual Aid	505	21920	22425
	a) Orthoptic Clinic	5598	20396	25994
15.	b) Squint Clinic	0	39900	39900
	<b>Total Cases</b>	40428	138832	179260
<b>Admissions</b>				
1.	General Admissions			16896
2.	Casualty Admissions			3504
3.	Private Admissions			1278
4.	Short Admissions			15541
5.	Day Care Admissions			11064
	<b>Total</b>			<b>48283</b>
<b>Operations</b>				
1.	Major			20004
2.	Day Care			10029
	<b>Total</b>			30033
3.	Minor			20477
	<b>Grand Total</b>			<b>50510</b>
	<b>Deaths</b>			01
<b>Other figures</b>				
1.	Average Bed occupancy Ratio			82%
2.	Average length of stay			04 days
3.	Average OPD Attendance per working day			1904
4.	Average No. of Indoor Admission per day			132 per day
5.	Average No. of Surgeries per day			138 per day

#### Casualty services

Total number of new cases seen in casualty	7494
Number of patients admitted in emergency ward	3321
Minor procedures done in casualty operating room	434
Intravitreal injections	7906
Examination under anesthesia	2513

**Investigative Laboratories:**

<b>Investigations</b>	<b>Total No</b>
Pupillometry + MRI Scanning + ON Clinic	1405
Schirmer + BUT + Flaremeter	2080
Contact lens work up	2752
ROP Clinic	4469
Anterior Segment Photography	4701
Contrast Sensitivity	4980
Colour Vision	4989
ECG	5562
HRT 3 + GDx ECC	6126
Corneal Topography	7126
Electrophysiology	8654
Laser Procedures	8705
OCT Angiography	9990
Laser Interferometry	10105
FFA + ICG+FAF	10251
Low Vision Aid Services	10565
Fundus Photo + AF+ Adaptive Optics	10605
Specular Microscopy	11568
Pentacam + CORVIS	17465
Perimetry (HVF+GVF+Micro)	18565
Pachymetry	24256
Axial Length	26056
UBM +USG B Scan	28708
Keratometry	30869
Autoclenometry	33769
101. Master + Lens Star	38261
OCT (AS + PS)	77925
Refraction	106985
Auto Refraction	123982
Tonometry	157963
<b>Grand Total</b>	<b>809437</b>

**Community Ophthalmology:**

<b>Primary Eye Care Services through Vision Centres</b>	
Number of Vision Centres	28
Attendees at Vision Centres	82166
Refractions Conducted	
Spectacles prescribed	33497

Patients referred to RP Centre	9816
<b>Primary Eye Care Volunteer training events</b>	
Volunteers Training Programmes organized	42
Volunteers Trained	414
<b>Eye Health Education Events</b>	
Eye Health Education Events conducted in Vision Centres	1106
Eye Health Education Events conducted in RPC	184
<b>Reach-in-Programme for cataract surgery in Rural and remote areas</b>	
Cataract screening camps organized	Nil
People examined	Nil
Refraction	Nil
Patients referred to RP Centre	Nil
<b>School Eye Screening (SES) Programme</b>	
Schools covered under SES Programme	67
Numbers of Children screened	58110
Refractions Conducted	5838
Spectacles Prescribed	5142
Spectacles Booked	5142
<b>Diabetic Retinopathy Screening Camps</b>	
Total number of DR screening camps organized	257
Diabetic patients screened in camps	3405
Total DR Patients identified	409
Total DR Patients referred to R.P Centre	405
<b>Patient Reported for treatment at Dr RP Centre under Community Ophthalmology</b>	
Total Patient Reported under community ophthalmology:	5251
Total Patient Operated for cataract surgeries under community ophthalmology	2156
Follow-up camps organized	48
Patients examined in Follow-up camps	1437
Total Patient Reported under community ophthalmology:	5251
<b>Low Vision Rehabilitation</b>	
Total Enrolled	1207
Mobility Training	581
ADL Counselling	1085
Visual Disability Certification	388
Vocational Training	45
Special School Admission	49

#### Ocular Biochemistry:

Sl.No.	Tests Name	IPD	OPD	Total
1.	Sugar (R,F,PP, GTT)	7105	6196	13301
2.	HbA1c	1424	1970	3394
3.	TBIL	8428	4570	12998
4.	DBIL	8427	4570	12997
5.	ALT or SGPT	8427	4570	12997
6.	AST or SGOT	8427	4570	12997

7.	ALP	8427	4570	12997
8.	TP	3265	4380	7645
9.	ALB	3265	4380	7645
10.	Creatinine (CRE)	8566	4836	13402
11.	Urea (UREA)	8566	4836	13402
12.	Uric Acid (UA)	8565	4836	13401
13.	Sodium (Na <sup>+</sup> )	8566	4836	13402
14.	Potassium (K <sup>+</sup> )	8567	4836	13403
15.	Chloride (Cl <sup>-</sup> )	8565	4836	13401
16.	TCHOL	956	1607	2563
17.	LDL-C	956	1607	2563
18.	HDL-C	956	1607	2563
19.	Triglyceride (TRIG)	956	1607	2563
20.	Free T3	379	732	1111
21.	Free T4	380	738	1118
22.	TSH	390	798	1188
23.	Vitamin B12	71	379	450
	<b>TOTAL</b>	<b>113634</b>	<b>77867</b>	<b>191501</b>

#### Ocular Microbiology

S. No.	SAMPLES PROCESSED FROM 1.4.2018 TO 31.03.2019	
1	Bacterial culture & sensitivity	18131
2	Fungal culture	4892
3	Specimens processed for cytology	2570
4	Specimens processed for Chlamydia Ag detection using DFA	28
5	Specimens processed for HSV ag detection using DFA	2
6	Viral PCR for herpes simplex virus, adeno & coxsackie virus (conjunctivitis/corneal ulcer)	132
7	Specimens processed for microsporidia	17
8	Specimens processed for mycobacteria	22
9	Culture for acanthamoeba	26
10	Automated (BACTEC) culture for endophthalmitis	14
11	Broad range PCR for endophthalmitis	13
	<b>TOTAL</b>	<b>25,877</b>

#### Ocular Pathology:

Blood	1,16,870
Urine	4,787
Cyto + Cyto research	2,114
Histo + Histo research	26,714
<b>Total number of Investigations</b>	<b>1,50,505</b>

**Ocular Pharmacology:**  
**Drugs Supplied/ Dispensed through Ocular Pharmacy during the year**

<u>Drug Dispensed</u>	<u>Total Vials (5ml)</u>
<b><u>1. Drugs purchased by the patient &amp; fortified at the pharmacy</u></b>	
Capsfungine acetate 0.5%	41 vials
Colisthemate	01 vial
Acetyl Cysteine (10, 20%, 2.5%, 5%)	252 vials
Amikacin (1.3%, 2.5%,1%,5%)	22 vials
Amphotericin B (0.25, 0.15%)	57 vials
Betaxolol (0.25%)	365 vials
Cefazolin (5%)	3027 vials
Conc. Tobramycin (1.3%)	6183 vials
Mitomycin (0.02%, 0.04%)	120 vials
Pilocarpine (.125%, 0.5% , 0.25%, 1%)	89 vials
Polymixin B (20,000µ-30,000µ/ml, 50,000µ/ml) 174 vials	174 vials
Chlorhexidine	10 vials
Glycerin 10%	01 vial
Cefuroxime 5%	04 vials
PovidoneIodine 5%	01 vial
Vancomycin (5%)	3653 vials
Timolol 0.25	14 vials
Ceftazidime	48 Vials
Bevacizumab/Avastin	5928 Ampules
Interferon	239 vials
Voriconazole (1%)	1102 vials
Gentamycin 1.3%	01 vial
Cefpodoxime 100mg/kg/day sachet	14 vials
Cefuroxime 5%-	04 vials
Proparacaine (0.5%, preservative free)	03 vials
Heparin (1300 IU/ml)	03 vials
<b><u>2. Dispensed from pharmacy free of cost</u></b>	
Autologous Serum	92 vials
Artificial Tears	47977 vials
Ciprofloxacin (0.3%)	10460 vials
Corneal storage media (M.K. Media )	4222 vials
Cyclosporine2%, 1%	106 vials
EDTA (1.1%)	73 vials
Homatropine (2%)	12726 vials
Hypertonic Saline (5%)	5531 vials
Methyl Cellulose (2%)	72 L (for manf. AT + Cipro + methylcellulose)



Methyl Cellulose (2%)	595 vials
Pilocarpine (2%)	141 vials
Acetazolamide 30Mg, 10, 25, 40, 50, 60, 80mg	1055 Pkt
Sodium Ascorbate (10%)	316 vials
Sodium Citrate (10%)	354 vials
Thimerosal Solution (0.005%)	74 Lits
Tropicamide (1%)	29269 vials
Pipracillin	73 vials
Tropac+ Phenylepherine(0.5%+2.5% (ROP)	8095 Vials
Gancyclovair vials 100mg	48 vials
Gancyclovair ampoules 20mg/ml-	
PHMB	116 vials
Meropenam 5mg/ml	58 vials
Piloclonidine	198 vials
Atropine 1%	-
Atropine 2%	-
Atropine 0.01%	-
Mycophenolatemofetil-	
Sodium benzoate	28
Propranolol (Ciplar) 4mg -	
Pyroximate-	
Isoniazis-	
Ethambutol-	
Isomac-	
Diazoxide 10 mg, 12.5mg	69
Amlodipine	-
Hisone	-
Albumin	-
Glycerin 20%	1
Olopatadin	8117
RPC CMC	10
RPC Pred	10
Sodium hypochlorite (1:10)	500ml
Glycerin 50%	2 vials
<b>3. Kit items dispensed</b>	
Botox	332 ampules
Ethyl alcohol 20%	462 x 5ml
Gold chloride	91
Hydrazine Hydrate	91
Sod. Chloride 20% solution	25 ml X 2 vials
Intraocular Injection (Buffy coat)	6 vials

PRP (Autologous serum eye drops)	450 vials
Tab. Citrizen 2.5 mg	4 sachets
Tab. Acyclovir 1/8	16 sachets
Liposomal Amphoterecin B (0.15%)	03 vials
Linezolid 2%	2
Azathiaptine	-
Donalac	-
2% Sodium offoside	-
Voriconazole 25mg	63 sachets
Bind power 1gm	-
TPA (Injection, 1mg/ml)	28 ampoules
Tissue plasminogen Activator	
Infliximab Inj 10mg	-
Nasal wash (sod. Chloride 4mg)	-
K-Bind Powder (1packet)	-
Limezolin 5%	02 vials
Folicacid 0.5%	04 vials
Cilastin 5%	-
Ethyl alcohol 100%	5ml x 3vials
Xylistin 0.15%	01 vial
Formalin 10%	3 litres
Imeperam 5%	05 vials
Timolol Maleate Point 0.5%	66 ointments
Augmentin Tab. In parts	8 sachets
Cap Idebenon	180
Acyclovir 120 mg	12 sachets
Valganciclovir Tablet	85 sachets
Sirolimus Powder	28 sachets
Glibenclamide	-
Indomethacintab	-
Nitisinone Capsule	-
Lanzoprazol Tablet	-
Spiranolactone Tablet	-
L-Arginine	38 sachets
Sodium Banzoates	30 sachets
Lanolidomide Powder	20 sachets
Cindamycin 40 mg	28 sachets
Voriconazole in parts	13 pkt
Propanolol in parts	28 pkt
Valgancyclovir	39 sachets

**Ocular Radiology:**

Total number of patients for X rays:	8695
Total number of patients for CTs:	1472

**Ocular Anesthesia:**

S. No.	G.A. CASES	Number
1	Routine + EUA	5720
2	Emergency	1667
3	Monitored Anaesthesia Care	485
4	DR RPC Casualty-O.T.	3137
	<b>TOTAL</b>	<b>11009</b>

**National Eye Bank**

National Eye Bank (Neb):-	
Total Collection of Cornea	2138
Total Utilization for Cornea Transplantation	1530
Other Eye Bank (Oeb):-	
Total Collection of Cornea	329
Total Utilization for Cornea Transplantation	312
Total Number of Peoples Pledged For Eye Donation At Neb:-	
Total Number of People Pledged For Eye Donation	137

**AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Rajpal Vohra** was member of expert's panel of National retinopathy of prematurity Task force with collaboration of PHFI; Member of Task Force to suggest a concrete Action Plan for early diagnosis and prompt treatment of retinal diseases in the country under National Programme for Control of Blindness (NPCB); Invited as Faculty in various National Conferences. Member of Editorial Board. DOS & DJO; Examiner for MBBS and MS for Delhi University and DNB, Examiner of Vitreo-retina Fellowship. Appointed assessor for accreditation of hospital by NBE; Member of selection board of ESIC Hospital; Chairman of Pediatric high dependency unit (IVA ward); Administrative Activities:- Member of selection Committee & DPC appointed by the Director, AIIMS, National Board of Examination. Liaison Officer SC and ST cell at AIIMS; Member of Vigilance and inquiry Committee, Store Purchase Committee, Sub- Technical committee., standing medical board, main technical evaluation committee; Co-chairman of Annual Report committee, Budget & Accounts; Chairman-Free Paper Retina Session 70th Annual DOS Conference 13th to 14th April 2019 New Delhi; Chairman-Retina Session Dos Winter conference 2018 2 and 3 November 2019 New Delhi; Co-chairman in Retina Session 1. Free Paper - Diabetic Retinopathy & Medical Retina – I 2. Free Paper - Vitreo Retinal Diseases – I 78th AIOS Conference 13 and 16 February 2020 Gurugram; Chairing Session IROP 2019 21 and 22 June 2019 Chandigarh

**Dr Vinod Kumar** was elected as Editor Delhi Journal of Ophthalmology; Assistant editor Indian Journal of Ophthalmology; IJO honor award at AIOC 2020 Gurugram; Participated in OPL and won best educational video award Annual Conference of Delhi Ophthalmological Society, 12-14 April 2019, New Delhi; Co-author of the case intraocular cyst with pearls, which was awarded case of the year Retina workshop 5-8 December, VRSI, Lucknow, UP

**Dr Shorya Vardhan Azad** was awarded International APAO Fellowship – National University Hospital, Singapore

**Unit-II**

**Professor Atul Kumar** was Guest Faculty POS Annual Meeting “Dr Rajan Akhaury Oration, Patna 7 April 2019; Delivered Dr Narendra Swarup Oration by Hyderabad Ophthalmic Association “Anti-VEGF’s in DME, 21 December 2019

**Professor Parijat Chandra** was Convener. IC Retina Grand Rounds. 70th Annual Conference of Delhi Ophthalmological Society, Delhi [13 and 14 April 2019]; Chair. Session: ROP Basics for Beginners, 4th Annual iROP Meeting, Chandigarh, [21-23 June 2019]; Chair. Session: Treatment of ROP - How I do it, 4th Annual iROP Meeting. Chandigarh, [21-23 June 2019]; Judge- Poster Session - Pediatric Retina Summit, Chennai, [12-13 July 2019]; Judge – Free Papers (Misc); Winter Conference of Delhi Ophthalmological Society, [2 and 3 November 2019]; Panelist. Cases Presentations. iROP Meeting, Lucknow, [5 December 2019]; Convener, Free Paper - Vitreo Retinal Diseases – III, AIOC 2020 Gurugram, [13-16 February 2020]; Member - Technical Expert Group for development of clinical practice guidelines, National Neonatology Forum, (July 2019); Examiner FAICO (Retina), (2 January 2020), AIIMS, New Delhi

**Dr Rohan Chawla** was Chair instruction course on advanced retinal imaging at AIOS, February 2020 held at Gurgaon.

#### **Unit-III**

**Professor JS Titiyal** received T Agarwal Gold Medal by Intra ocular implant and refractive surgery society of India, (IIRSI) Meeting, September 2019, Delhi; Dr MM Joshi Oration, Belgavi, Karnataka. KOSCON Annual Meeting, 8 November 2019; Best Paper/Poster/Video award: Titiyal JS, Kaur M. Intraoperative OCT-Guided Management of Intumescent White Cataract. American Academy of Ophthalmology Annual Meeting, San Francisco (USA), October 2019; Community Work & Honours: “Arogya Bharat” Holi colours and its effects on eyes, March 2020, Door Darshan, National, Mandi House, New Delhi and “Arogya Bharat” “Diwali pollution and effect on Eyes October 2019, Door Darshan, National, Mandi House, New Delhi; Guest of honor at iBeach Film Festival, August 2019, Goa

**Professor Namrata Sharma** was awarded “IIRSI GOLD MEDAL” for contribution in American Academy of Ophthalmology; “Best Scientific Video” by judges at AAO 2019; “Best Scientific Video” by audience at AAO 2019; Awarded “3rd OSA Oration” by Ophthalmological Society of Assam at Guwahati; Awarded “Cure Sight Laser Center ORATION” at the Annual Gujarat State Conference held at Mahsana, Gujarat on 29 September 2019; “Best Scientific Video” at OPL titled “Hey there is an eye”, Depicting SLET: Simple limbal epithelial transplantation- IIRSI 2019 at Pullman, Aerocity; “AIOS HERO AWARD” at the iBeach Ophthalmic Film Festival at Goa; “The best video award for scientific content” at OPL in BOA Focus; Awarded “Best Surgical Video medal” in OPL- The audience choice at IIRSI Chennai 2019; Awarded “Reviewer Certificate” for reviewing 3 Manuscripts in 2019 of Stem Cells Translational Medicine; Awarded “Dr AM Gokhale Oration Award: Phacoemulsification in Corneal Haze” at NIO PUNE EYECON-2019 held at Pune on 21 April 2019

**Dr Manpreet Kaur** received Achievement Award- American Academy of Ophthalmology (AAO) 2019; International Heroes Award 2019- All India Ophthalmological Society Annual Meeting 2019, Gurgaon, India

#### **Unit-IV**

**Professor Tanuj Dada** Oration – Vidharbha Ophthalmic Society: Looking beyond IOP. October 2019

**Professor Rohit Saxena** was Best of Show Video at American Academy of Ophthalmology 11-14 November 2019; Best video presentation award SPOSI Annual Conference 7 and 8 December 2019

**Dr Shikha Gupta** was best of paper Session at AIOS 2020 in glaucoma for “Efficacy and safety of incisional goniotomy and phacoemulsification in adult angle closure glaucomas”

**Dr Dewang Angmo** chaired and delivered successful Instruction Course in AIOS 2020 Lasers in Glaucoma; Elected as Youngest Executive member in DOS; Actively participated in WHO SEARO meet 2019; Glaucoma section editor for IJO; Glaucoma section editor for RPC Newsletter; Assistant Editor in DOS Times; Editor for INOS newsletter

#### **Unit-V**

**Professor Pradeep Sharma** was Awarded the Prof. S K Lal oration Gold Medal by Haryana Ophthalmological Society on 22nd Sept. 2019; awarded with the Prestigious Prof. Siva Reddy Oration Gold Medal on 28 September 2019; Visiting Professor and Speaker by National Institute of Ophthalmology, Dhaka, Bangladesh 15-17 November 2019; Invited Speaker for Inaugural address by Bangladesh Society of PedOphthalmology and Strabismus, Dhaka, Bangladesh 28– and 29th February 2020; Installed as the President of Strabismus and Pediatric Ophthalmological Society of India, SPOSI December 2018-December 2019.

**Professor Neelam Pushker** was Co-chairman in a session on, ‘Oculoplasty’ – ‘Tackling the adnexal problems tips’ in the 15th Annual Conference of HOS, 2019, held from 21-22 September 2019 at Sirsa, Haryana; Co-instructor in 2 Instruction Courses, ‘A Quick appraisal of recent trends for common ophthalmic tumors’ & ‘The oculoplasty tutorial – step by step approach’, respectively, in 78th AIOS Annual conference, February 2020, Gurugram.

**Dr Swati Phuljhele** was Joint organizing secretary for Annual Conference of Indian Neuro-Ophthalmology Society; Best Paper: Poster Podium Presentation Titled “Effectiveness of Various Surgical Procedures For Correction Of Monocular El-

evation Deficit [Fp108]” At The Squint Session On 14.02.2020, Annual Conference of All India ophthalmology Society 13-16th February 2020, Gurgaon

**Dr Rachna Meel** was Awarded best Video presentation in Winter Conference of DOS 2019 held on 2 and 3 November 2019; Chief instructor for Instruction course titled: A Quick Appraisal of Recent Trends for Common Ophthalmic Tumors; conducted at AIOC 2020 14 February 2020, Gurugram; Co instructor for Instruction course titled: The Oculoplasty Tutorial – Step by step approach; conducted at AIOC 2020 14 February 2020, Gurugram

**Dr Amar Pujari received** AC Agarwal trophy Award for best Delhi state Paper, DOSCON 2019, Delhi; Professor Pradeep Sharma International hero at SPOSI Annual Conference, Chennai 2019; AIOS- Vision-Sante Award at AIOC 2020, Best paper in Cataract section

#### **Unit-VI**

**Professor Radhika Tandon** was Immediate Past President of Eye Bank Association of India; Immediate Past Vice - President of Association of Eye Banks of Asia; Member of Apex Technical Committed of National Organ and Tissue Transplant Organization, Govt. of India; Advisory Member for the Global Alliance of Eye Bank Associations (GAEBA); Appointed as Chairperson of the Committee for Standard Treatment Workflows (STWs) conferred by ICMR; Invited to participate in the framing of Barcelona principles for Ethical Practices in Usage of donated tissue released in collaboration with Global Alliance of Eye Bank Associations and WHO; Appointed as Member of the Advisory Committee for National Programme for Control of Blindness & Visual Impairment (NPCB&VI), Ministry of Health and Family Welfare, Government of India; Appointed as Chairperson of the Inspection Team of Delhi Organ Transplant Cell; Appointed as an Expert for Project Review Committee (PRC) conferred by ICMR; Nominated as Member for DBT Bioengineering Task Force, Department of Biotechnology, Ministry of Science & Technology, Govt. of India; Appointed as Member for Reconstitution of the Dean’s Research Committee (DRC); Nominated as a Member of the Editorial Board of the Indian Journal of Medical Research (IJMR) from July 2018; Nominated as Member of a Task Force for Women Safety and Gender Sensitization at AIIMS, New Delhi; Nominated as Faculty Member of Committee to oversee the sanitation and hygiene at AIIMS Campus (Asiad Village); Nominated as Member of the AIIMS Endowment Fund Scientific Advisory Committee; Nominated as Chairperson of Committee for compilation of information and coordination with various agencies for National/International Institutional Rankings/Awards/Honours etc.; Appointed as an External Expert for Standing Selection Committee Meeting of AIIMS Jodhpur, Jodhpur on 10 May 2019; Appointed as an External Expert for National Board of Examinations; Nominated as a Subject Expert of Sub-Committee’s on Medicines, Medical Devices, Medical Consumables/Disposables and Hygeine and other Health Care Products. The Standing National Committee on Medicine (SNCM) – Sub-Committee – Medical Devices Meeting on 6 August 2019 in Committee Room, 2nd Floor, DHR, Red Cross Building, New Delhi; Appointed as an External Expert for Standing Selection Committee Meeting of AIIMS Jodhpur; Appointed as Examiner to evaluate the thesis of the Degree of MS-Ophthalmology of Delhi University; Nominated as Member of Committee of Special Medical Board to ascertain suitability of qualified PWBD candidates for the post of Nursing Officer under PWBD category at the AIIMS, New Delhi; Appointed as a Subject Expert in Standing Selection Committee Meeting of AIIMS Patna organized AIIMS Patna at the Institute of Liver and Billiary Sciences (ILBS); Nominated as Member of Internal Committee comprising for taking care of day to day needs of differently-abled persons as well as for implementation of Schemes passed in the W.P. (C) No.292/06, titled “Disabled Rights Group and Anr. Vs. UOI & Ors.”; Nominated as Co-Chairperson of Ocular Brachytherapy Committee at Dr RP Centre, AIIMS, New Delhi.

**Professor M Vanathi** was internal Examiner for MD-Ophthalmology exams May 2019; Expert on Technical Specifications Vetting Committee–Dept of Ophthalmology, JIPMER 2020; Elected as DOS representative to AIOS 2-19 – 202; Completed 3 years term as AIOS Jt Treasurer and Scientific Committee Member 2017 -2020

**Dr Noopur Gupta** was invited by WHO SEARO as WHO Regional Eye Expert for developing recommendations for promoting eye health and elimination of blindness and visual impairment; Nominated as Ophthalmology Expert for Project Review Committee Meeting for the field of Ophthalmology for reviewing extramural projects at ICMR headquarters; Invited as Expert for developing Standard Treatment Workflow for Ophthalmology under Ayushman Bharat Scheme, Govt. of India; Nominated by Vision 2020-Right to Sight-India to develop national guidelines for cataract management in the country; Invited as Evaluator for Cataract Free Papers at AIOC 2020; Winner at the AIOS ARC Young researcher’s award for the second-best thesis at AIOC 2020 (Chief Guide: Noopur Gupta); Awarded the Best of best poster podium presentation at AIOC 2020, Gurugram; Awarded the best poster podium presentation at the Comprehensive Ophthalmology Session at AIOC 2020; Invited as Consulting Editor for Community Eye Health Journal for SEARO; Invited as Consulting Advisor for Community Eye health Journal for the SEARO Region as a Board Member of South Asia Advisory Committee; Lead Cornea expert at the WHO SEARO IAPB-Technical Expert Group Meeting on Eye Care aligned with the Universal Eye Health at Nepal; Invited as Resource Faculty at the workshop on Trachoma elimination- way forward with international Trachoma Expert, Dr Solomon from WHO, Geneva; Invited as an expert for WHO’s Working Group on Monitoring, Evaluation and Research (WG-MER) for neglected tropical diseases; Invited as Cornea expert For Vn2020 SightLife panel

on outreach models for awareness and screening for corneal opacity

**Dr Neiwete Lomi** was awarded best free paper presentation at DOS Winter Conference 2019, New Delhi on “Interesting cases” titled- Conjunctivo- Iridociliary Melanocytoma: An usual presentation. Vatika Jain (Presenting author), Neiwete Lomi (Co-author)

**Dr Nishat Hussain Ahmed** of Diagnostic services at Ocular Microbiology are accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories), in accordance to ISO 15189:2012; Certificate no. MC-3267

**Professor Seema Sen and Professor Seema Kashyap**, Mithalesh Singh and Neelam Pushker “BAP-1 protein as an indicator of metastasis in uveal melanoma” Presented a PPP in AIOC 2020 February at Gurugram. This was awarded Best Poster award in the Poster Podium Presentation session; Mithalesh Kumar Singh, Seema Kashyap, Neelam Pushker, Seema Sen, Kunzang Chosdol Poster presentation at ESMO Immuno-Oncology 2019 held in Geneva, Switzerland from 11-14 December 2019. Abstract entitled ‘ Loss of BAP-1 influences the activation of p52 and RelB proteins in the Inflammatory microenvironment of Uveal Melanoma’ ESMO Merit Award; Jha Jayanti, Pushker Neelam, Singh Kumar Mithalesh, Singh Lata, Sen Seema. *Association of BAP1 with ATR protein and their clinical significance with patient outcome in uveal melanoma*. ESMO Asia 2019 22-24 November 2019 Singapore. (Received Merit Award); Expression Profiling of Receptor Tyrosine Kinases in Orbital Rhabdomyosarcoma. Molecular Pathology Association of India 8th Annual Conference. 10-12 January 2020 January Jaipur (2nd best paper award)

**Professor Jasbir Kaur** was Examiner, PhD: University of Madras and Sher-i-Kashmir Institute of Medical Sciences (SKIMS); Editorial Board Member: Journal of Ophthalmology: Open Access; Journal of Ophthalmology and Vision; Annals of Clinical Oncology; Journal of Ocular Diseases and Therapeutics; International Journal of Hematology and Blood Research; Annals of Stem Cell Research; Reviewer: DNA and Cell Biology; Genomics; Executive Council Member of Biotechnology Society of India; Member, Institutional Ethical Committee, CARICD (CCRAS, Ministry of AYUSH, Govt. of India), New Delhi

**Professor Sanjay Sharma** received ‘Best reviewer award’ of the year 2019, for *Indian Journal of Urology*. Urological Society of India Conference (USICON 2020), at Kochi on 24 January 2020; Editorial Board Member J Clin Interv Radiol: Uro-Radiology Section; Editorial Board Member Ind J Radiol Imaging: Uro-Radiology Section; Consulting Editor (Radiology), Ind J Urology; Subject Expert (Radiodiagnosis) for faculty Selection at AIIMS Patna and Bhopal 2019; External Expert (Radiodiagnosis) the faculty selection at Super Specialty Cancer Institute & Hospital, Lucknow (November 2019, February 2020)

**Professor T Velpandian** received Prof. VN Reddy Oration award in 26th Annual Meeting of IERG ARVO India Chapter in 28th July 2019, Chennai; Received Best Poster Award at 65th Annual meeting of Association of Physiologists and Pharmacologists of India (APPI), APPICON at, Guwahati, Assam, 2019; Received Grand Challenges Award for the project entitled ‘Pre-clinical safety and efficacy studies for using polyvalent bacteriophage and endolysin therapy for intraocular infections with AMR’ towards the call ‘Under approaches to address antimicrobial resistance’ jointly funded by Bill & Melinda Gates Foundation (BMGF) and DBT; Member Secretary of IPR and Technology Transfer Division; Member Secretary, AIIMS Innovation Facilitation Division, New Delhi; Member, Dean research Committee, AIIMS, New Delhi; Chairman of The CCRF Bioanalytical Subcommittee and member of CCRF committee, AIIMS, New Delhi; Member of Innovation Committee of ICMR, Govt of India; Member of Biohazard panel of FSSI, Govt of India; Member Human Ethics Board , Institute of Home Economics, Delhi University; Member of project monitoring committee, Grand Challenges, BIRAC, Govt of India; Member human ethics committee in INMAS, DRDO, Govt. of India

**Dr Nabanita** was Member of CCRF Bioanalytical Subcommittee

**Professor Praveen Vashist** was selected as Chairman Research and Academic Committee in Association of Community Ophthalmologist in India for the period 2019-2021; Invited by WHO SEARO South Asia Eye Health Experts Meeting as a technical expert and representative of Dr RP Centre, AIIMS at Kathmandu, Nepal; Felicitated by CBM, an International NGO for achievements under the project on disability inclusive eye health; Delivered Prof Vinita – Prof. Girija Endowment ACOIN UP State Chapter Oration 2019 at Varanasi Uttar Pradesh; Awarded by MoHF&W, Nirman Bhawan for taking “Initiatives for eye care awareness for MOH&FW; Received “Ophthalmic Ratna award” by Manthan Eye Healthcare Foundation at Gurgaon; Member of the AIIMS Intramural project review committees for the faculty members in clinical research. Member of the AIIMS Research section selection committee; Nodal person of the annual report committee for R P Centre and WHO Collaborating Centre for Prevention of Blindness. Nodal person for R P Centre for the Institute Hindi Rajbhasha committee; Appointed as member of Vision 2020-Right to Sight India- Governing body member to represent R P Centre, AIIMS for the year 2020-2023; Chairperson, Scientific Committee in the 15th Annual Conference organized by Vision 2020- The Right to Sight India on 7-9 June 2019 at Arvind Eye Hospital Chennai. Also Chaired three ses-

sions on Models for community outreach, Public private partnership in eye care and RIOs recent initiative for low vision rehabilitation under CBM-RPC disability inclusive eye health program; Invited in 2nd Meeting of WHO Alliance for the global Elimination of Trachoma by 2020 (GET 2020) from 23-29 June 2019 attended Trachoma scientific workshop on 24 June in Hotel Radisson, Maputo, Attended the WHO Global Elimination of Trachoma meeting from 26-28 June 2019. It was attended by representatives of nearly 50 countries and Participated in the workshop of country representatives to discuss strategies for elimination of trachoma; Member NPCB&VI committee for provide technical assistance in developing benchmarks for States/UTs wise cataract burden and designing protocol for evaluation process for verification cataract backlog free claims of states/districts for awards and incentivization; Involved in organization of WHO SEARO Consensus Meeting on Prevention Glaucoma Blindness in South East Asia at Community Ophthalmology, R P Centre, AIIMS on 22-23 November 2019; Submitted final report for the “PCB&VI-National Blindness Survey (2015-18)” conducted by Dr R P Centre for Ophthalmic Sciences, AIIMS, New Delhi to MoH&FW, Govt of India. Report on National Blindness and Visual Impairment survey was released by Honorable Health Minister of India Shri; Harshvardhan ji in the 13th Conference of Central council of Health & family Welfare on 10 October 2019; Felicitated by Arunodaya Charitable trust, Gurgaon on occasion of World Sight day on 10 October 2019; Chairperson of the Venue committee for the IPHA National Conference (IPHACON 2020) organized in AIIMS from 28 February-2 March 2020; Chaired session on Neuro Optometry in Neuro Ophthalmology conference on 2 December 2019 at India Habitat Centre, Lodhi Road; Participated in WHO IAPB expert group meeting on “Eye care aligned with Universal Eye Health” at Tilganga Institute of Ophthalmology in Kathmandu, Nepal from 9- 12 December 2019.

**Dr Suraj Singh Senjam** was Member of Technical Working Group for Vision Rehabilitation, WHO, Geneva, Rehabilitation 2030: Action Plan 2019; Awarded MSc in Public Health for Eye Care at London School of Hygiene Tropical Medicine for the year in March 2019; Achieved a recommendation from WHO SEARO and ICEH, LSHTM London on the book published on Assistive technology for people with visual disability to use across SEARO; Chosen a sole Editor by Nova Science Publisher USA for the book An Introduction to Assistive Technology 2019; Nominated as expert member in revision of Indian Public Health Standard Guideline sub-committee meeting in AIIMS Bhopal and National Health Systems Resource Centre (NHSRC); Dr Sanjay Kumar Oration in Association of Community Ophthalmology of India, Telangana state chapter 2019; Participated in the Training programme of Trachoma Elimination activities for district Ophthalmologist DPMs in State Institute of H&FW on 16-17 May 2019 at Sitapur Eye Hospital Uttar Pradesh and Shimla on 23 May 2019; Organized an Orientation and Mobility Training program on Low Vision and Rehabilitation (LVR) Service at Community Ophthalmology Dr RP Centre, AIIMS on 26 and 27 September 2019; Organized a function to release a handbook of Assistive Technology for people with visual disability at Chief board room on 26 September 2019; Visited RIO Ahmedabad to discuss setting up Low Vision Rehabilitation Services in Ahmedabad on 31 October 2019 with Director RIO followed by interactive session with PG students; Participated in Eye care partners meet “Sustainability strategies and practices for inclusive eye Health” on invitation of CBM on 15 and 16 November 2019 at Bengaluru; Involved in organization of WHO SEARO Consensus Meeting on Prevention Glaucoma Blindness in South East Asia at Community Ophthalmology, R P Centre, AIIMS on 22-23 November 2019; Organized a Program for Handing over Smartphones and Tablets from CBM to RPC for Vision Rehabilitation Training held on 11 February 2020 at Community Ophthalmology, 7th Floor, Dr R P Centre, AIIMS

**Dr Vivek Gupta** participated in the Training programme of Trachoma Elimination activities for district Ophthalmologist DPMs in State Institute of H&FW in Shimla, Himachal Pradesh on 13 May 2019, in Panchkula Haryana on 14 May 2019, in AIIMS Jodhpur & SMS Medical College, Jaipur, Rajasthan from 15-17 May 2019; Constituted as a member of sub-committee on legal and policy frameworks for the utilisation of artificial intelligence in public health under the Chairmanship of Dr Savita Davar, DDG, NIC. The role of this committee is to assess global precedents in legal and policy frameworks as well as contracts for data management (privacy, sharing) for research and product development in AI for healthcare

**Professor SK Khokhar** was Chairperson Session on “Refractive: Learning the Tricks” Annual Conference of Indian Society of Cornea & Kerato-Refractive Surgeons (ISCKRS Meet 2019) 3 and 4 August 2019 Le Meridien, New Delhi; As Chairman session “Orations” 70th Annual DOS Conference 12-14 April 2019 at Ashok Hotel Chanakyapuri, New Delhi; As Chairman Session “Managing complications of phaco surgery” 70th Annual DOS Conference 12-14 April 2019 at Ashok Hotel Chanakyapuri, New Delhi; As Chairman Session “Master class” 70th Annual DOS Conference 12-14 April 2019 at Ashok Hotel Chanakyapuri, New Delhi; As a Chairperson Strabismus and Pediatric Ophthalmological Society of India (SPOSI) 1 and 2 June 2019 Hubli, Karnataka; Chairman, Session “Cataract & IOLs-1” DOS (Delhi Ophthalmological Society) Winter Conference 2019 2 and 3 November 2019 The Ashok Hotel, Chanakyapuri, New Delhi. Pediatric cataract surgery with PCCC and anterior Vitrectomy (as chairperson) Phacoemulsification & Refractive Surgery Update 19 January 2020, AIIMS, New Delhi; Small pupil & floppy iris (as chairperson) Phacoemulsification & Refractive Surgery Update 19 January 2020 AIIMS, New Delhi; Post-RK Cataract (as chairperson) Phacoemulsification & Refractive Surgery Update 19 January 2020 AIIMS, New Delhi

**VISITING SCIENTIST**

1. Guest Lecture by Dr Shigero Kinoshita of Japan on 22 February 2020
2. Guest Lecture by Dr Arun D Singh, Cole Eye Institute, Cleveland Clinic, Cleveland, Ohio, USA on 10 February 2020
3. Guest Lecture by Dr V K Raju, West Virginia University, USA on 30 December 2019
4. Guest Lecture by Dr Shree Kurup, University Hospitals Cleveland Medical Center on 07 January 2020
5. Guest Lecture by Professor Algis Vingrys, University of Melbourne on 3 December 2019





## 10.5. Jai Prakash Narayan Apex Trauma Centre

### Chief

Rajesh Malhotra

### Additional Medical Superintendent

Amit Lathwal

### Professors

#### Anaesthesiology

Babita Gupta  
Chhavi Sawhney

#### Emergency Medicine

Sanjeev K Bhoi

#### Forensic Medicine

Sanjeev Lalwani  
Adarsh Kumar

#### Laboratory Medicine

Arulsevi S  
Purva Mathur

#### Neurosurgery

Deepak Aggarwal  
Deepak K Gupta

#### Orthopaedics

Kamran Farooque  
Vijay Sharma  
Buddhadev Chowdhry  
Vivek Trikha

#### Radiodiagnosis

Shivanand G.  
Atin Kumar

#### Trauma Surgery

Sushma Sagar  
Subodh Kumar  
Amit Gupta  
Biplab Mishra

#### Burns and Plastic

Maneesh Singhal

#### Obstetrics and Gynaecology

Garima Kachawa

#### Associate Professors

##### Cardiology

Neeraj Parakh

##### Critical Care

Kapil Dev Soni  
Richa Aggarwal

#### Nephrology

Soumita Bagchi

#### Neuroanaesthesia

Keshav Goyal  
Navdeep Sokhal  
Ashish Bindra  
Gyanendra Pal Singh  
Neeraj Kumar

#### Neurosurgery

GD Satyarthee  
Pankaj K Singh

#### Paediatric Surgery

Shilpa Sharma

#### Trauma Surgery

Pratyusha Priyadarshini  
Abhinav Kumar  
Narendra Choudhary  
Dinesh Kumar Bagaria

#### Assistant Professors

##### Transfusion Medicine

Rahul Chaurasia

##### Emergency Medicine

Tej Prakash Sinha  
Junaid Alam

#### Orthopaedics

Samarth Mittal

#### Neurosurgery

Kokkula Praneeth

#### Anaesthesia

Yudhvir Singh

### HIGHLIGHTS

Jai Prakash Narayan Apex Trauma Centre, AIIMS continues to provide holistic care to the victims of trauma. It continues to be flag bearer in quality patient care services, research, teaching and training. Trauma center constitutes dedicated team of doctors, paramedics and other supporting staff whose prime motto is to achieve excellence and develop novel ideas and techniques in field of trauma managements.

A total no. of 71476 patients visited casualty in the year 2019-2020. Among these, 7532 patients were admitted with an increase of 452 patients compared to the previous year. A total of 7458 surgical operations were performed. The follow up clinic/OPD attendance of trauma patients was 47310.

A new emergency section (ED) was inaugurated, with provision to cater to more patients in the trauma emergency. This new ED has the provision of an operation theatre and a seminar hall for academic activities.

Faculty members and residents are involved in various research projects, with 33 ongoing research projects and over 300 research papers published in national and international journals.

This year an international academic program was started with Japan under the “Human resources Exchange Project in Trauma and Acute Medicine” with an aim to enhance our trauma systems. This year six trauma surgeons from Japan has visited our centre and four surgeons of our institute has visited various trauma hospital of Japan.

Towards the end of March, the Trauma Centre was geared up to become a dedicated Covid treatment Centre. The New ED on the ground floor was converted to a dedicated COVID ICU, with facilities for ventilation and dialysis.

A dedicated Central Trauma research Facility was also commissioned this year. This would help in state-of-the-art integrated and translational trauma research.



Inauguration of the New ED at JPNA Trauma Center



Inauguration of the Central Trauma Research Facility



Central Trauma Research Facility

## **EDUCATION**

### **CMEs/National/International Conferences**

#### **Organized by the Centre**

1. 10th International Conference "MeLeCoN-2019" joint collaboration with Medicolegal Society of Nepal held at Kathmandu, Nepal on 12-15 September 2019 and also organized CME on "Medical Negligence" during conference
2. 5th world academics congress for emergency medicine, 20-24 October 2019, Dubai, UAE
3. Acute Critical Care Course, 30-31 October 2019
4. Advanced point of care ultrasound course held from 5-6 December 2019 at Texas, USA
5. AIIMS Basic Emergency Care course (AIIMS-BECC)
6. AIIMS Basic Ultrasound for Surgeons
7. AIIMS Disaster Ultrasound Course for doctors, nurses and paramedics
8. AIIMS EM-SONO Workshop on Emergency & Point of care Ultrasonography, 14-15 September 2019, LHMC, New Delhi
9. AIIMS First Responder Course for paramedics and lay persons
10. AIIMS Pediatric Ultrasound Course for Pediatricians and Emergency Physicians
11. AIIMS Trauma Life Support with Power of Ultrasound for doctors
12. AIIMS Triage Protocol Workshop for doctors, nurses and paramedics
13. AIIMS Ultrasound Trauma Life Support (AUTLS)
14. AIIMS Ultrasound Trauma Life Support course for nurses (AUTLSN)
15. AUTLS (Advanced Ultrasound and Trauma life support) Workshop, 6-7 September 2019, Pune
16. Basic ECG Workshop for Nurses
17. Cadaveric Airway management workshop, 18 October 2019
18. Cadaveric workshop, Advanced Surgical skill module for residents in surgical disciplines, on 10 August 2019, SET facility AIIMS, New Delhi
19. Cadaveric workshop, Advanced Surgical skill module for residents in surgical disciplines, 21 December 2019, SET facility, AIIMS, New Delhi
20. Cadaveric Workshop as part of National Conference of American College of Surgeons – India Chapter (ACSCON 2020) on 1 January 2020, New Delhi
21. Capacity Building for the Strengthening Emergency Care in Primary Health Care Setting for doctors, nurses and paramedics
22. CBI: Investigation of crime against Women and Children from 11-15 February 2020, Olsolan
23. CDTI: Post Blast Investigation w.e.f. 13-17 January 2020
24. CME on Advances in Imaging Technology, 4th AIIMS MAMC PGI Imaging Course Series, 5-6 April 2019, AIIMS, New Delhi
25. CME on Blood Safety & Quality: Infectious Diseases, 5 April 2019, New Delhi

26. CME on Trauma Update and AUTLS workshop, 9-10 April 2019, AIIMS, Jodhpur
27. Compressive life support course for (CRPF), 26-27 November 2019, AIIMS
28. Compressive life support course for (CRPF), 20-21 November 2019, AIIMS
29. Delhi University: 4 September 2019, Add on course: Medical Biotechnology, 2019-2010, Miranda House, Delhi University
30. Disaster Ultrasound, 6th International conference on preparedness & response to emergency & disaster, 12-15 January 2020, Tel Aviv Israel
31. DOA Basic Spine Cadaveric Workshop, 12 April 2019, JPNATC, AIIMS, New Delhi
32. DOA Hands on Microscopic Spine Cadaveric Workshop, JPNATC, AIIMS, New Delhi, 14 September 2019
33. Emergency Sonography Workshop from 12 to 13 April 2019 at AIIMS, Rishikesh
34. Emergency Sonography Workshop from 6 to 7 May 2019 at AIIMS, Rishikesh
35. First Amputee peer mentor program on 20 May 2019, JPNATC, AIIMS, New Delhi
36. Global experts Emergency Network conference held from 11 to 13 May 2019 at Ann Arbor, Michigan USA
37. Haryana Institute of Public Administration: For public prosecutors of Haryana from 19 to 30 August 2019: DNA technology and evidentiary value of DNA reports
38. In Hospital management of Mass Casualty Incidents (A module for disaster responsiveness and mitigation prepared by us in collaboration with CDC Atlanta)
39. International workshop on strengthening trauma and emergency in Southeast Asian region held from 25 to 29 November 2019 at Khon Kaen, Thailand
40. ISTAC Consensus Meeting for formulation of management guidelines for Solid Organ Injuries on 19 January 2020, New Delhi
41. LNIN-NICFS: Advancing justice through DNA technology w.e.f. 16-19 December 2019
42. MASHAV meeting, 21 June 2019, JPNATC, AIIMS
43. MILAP (Multi Institutional Learning and Practice), 5 September 2019, New Delhi.
44. National Emergency Medicine Conference, 31 July to 4 August 2019, AIIMS, New Delhi
45. Pre conference workshop, Trauma Master Class: Gutsy Decision Making Under pressure, 10th Asian Conference on Emergency Medicine (ACEM 2019), 5-6 November 2019, New Delhi.
46. Spine intervention and pain management international conference and workshop, 20-22 December 2019
47. Tactical combat course for CRPF, 5 April 2019, JPNATC, AIIMS
48. Triage workshop, 2 August 2019, JPNATC, AIIMS
49. Ultrasound Guided Nerve Block in Emergency for doctors
50. Ultrasound Guided Vascular Access for doctors
51. Ultrasound in Primary Health Care for Primary care Physicians
52. Workshop on basic ECG on 2 August 2019 at new seminar room 1st floor JPNATC, AIIMS
53. Workshop on Yoga for Amputees on the occasion of World Yoga Day on 21 June 2019, JPNATC, AIIMS, New Delhi

#### **AIIMS CADAVERIC SURIGICAL SKILLS TRAINING**

Chair: Rajesh Malhotra

Professor Incharge: Sanjeev Lalwani

Members: Babita Gupta, Deepak Gupta, Vijay Sharma

Coordinator: Nasim Mansoori

Total Participants: 706 Courses conducted: 37

#### **Lectures delivered**

<b>Rajesh Malhotra: 40</b>	<b>Narendra Choudhary: 06</b>	<b>Abhinav Kumar: 07</b>	<b>Navdeep Sokhal: 08</b>
<b>Adarsh Kumar: 11</b>	<b>Niraj Kumar: 11</b>	<b>Amit Gupta: 30</b>	<b>Pankaj Singh: 02</b>
<b>Ashish Bindra: 08</b>	<b>Purva Mathur: 13</b>	<b>Babita Gupta: 02</b>	<b>Richa Aggarwal: 14</b>
<b>Biplab Mishra: 11</b>	<b>Rahul Chaurasia: 01</b>	<b>Chhavi Sawhney: 05</b>	<b>S Arulsevi: 04</b>
<b>Deepak Gupta: 03</b>	<b>Samarth Mittal: 16</b>	<b>Dinesh K Bagadia: 10</b>	<b>Soumita Bagchi: 04</b>
<b>Gyaninder P Singh: 09</b>	<b>Subodh Kumar: 16</b>	<b>Junaid Alam: 02</b>	<b>ushma Sagar: 12</b>
<b>Kamran Farooque: 09</b>	<b>Vijay Sharma: 14</b>	<b>Kapil Dev Soni: 12</b>	<b>Vivek Trikha: 54</b>
<b>Keshav Goyal: 13</b>	<b>Yudhvir Singh: 02</b>		

**Oral papers/posters presented: 87**

## RESEARCH

### Funded projects

#### Ongoing

1. Comparative Evaluation of Genetic and Biochemical profile in postmenopausal osteoporotic and age matched healthy women, Rajesh Malhotra, ICMR, 3 years, 2019- 2022, Rs 139.03 lakhs
2. A prospective randomized study to compare the systemic emboli in computer assisted navigation Vs conventional surgical technique of knee replacement, Rajesh Malhotra, ICMR, 3 years, 2019-2022, Rs 50 lakhs
3. Prospective, Multi-centre Outcomes Study of Persona Knee System in Total Knee Arthroplasty, Rajesh Malhotra, Zimmer, 7 years, 2015-2022, Rs 24 lakhs
4. To study efficacy of amniotic membrane as an alternative wound dressing in patients with post traumatic raw area admitted in trauma surgery unit, Abhinav Kumar, AIIMS, 1 year, 2018-2019, Rs 5 lakhs
5. Metabolomic Profiling and Serial Changes in Patients with Isolated Blunt Chest Trauma– A Prospective, cohort, feasible and exploratory study, Abhinav Kumar, AIIMS, 2 years, 2019-2021, Rs 5 lakhs
6. An Intervention Study on Comprehensive Emergency Care and Trauma Registry for Road Traffic Injuries in India. ICMR-National Task Force Project, Amit Gupta, ICMR, 2 ½ years, 2017-2019, Rs 75 lakhs
7. An interventional study of developing robust trauma care systems in India, Amit Gupta, ICMR, 3 years, 2019-2022, Rs 53 lakhs
8. Enhancing the success and safety of endotracheal intubation by development of an innovative intubation system: A Pilot Project, Babita Gupta, ICMR, 2 years, 2020-2022, Rs 55 lakhs
9. ADAPT, Deepak Gupta, National Institute of Health, 5 years, 2015-2022, Rs 105.49 lakhs
10. CENTER-TBI, Deepak Gupta, Universitair Ziekenhuis Antwerpen (UZA), Belgium, 2 years, 2016-2020, Rs 3.75 lakhs
11. RESCUE ASDH, Deepak Gupta, Cambridge University, 3 years, 2017-2020, Rs 9.52 lakhs
12. Estimation of occurrence of intra abdominal hypertension and its implication on Non operative management protocol in patients with solid organ injury following blunt trauma abdomen, Dinesh Bagaria, AIIMS, 1 year, 2019-2020, Rs 4.8 lakhs
13. Epigenetic regulation of pro-inflammatory and anti-inflammatory cytokine gene in posttraumatic sepsis and septic shock-defined by sepsis-3 classification A exploratory study in major trauma patients, Kapil Dev Soni, AIIMS, 1 year, 2019, Rs 5 lakhs
14. Comparison of laparoscopic feeding gastrostomy versus Percutaneous endoscopic gastrostomy for long term assisted enteral feed in trauma patients – A randomized pilot study, Narendra Choudhary, AIIMS, 2 years, 2019-2021, Rs 4.75 lakhs
15. Effect of Decompressive Craniectomy on Jugular Venous Oximetry in Patients With Severe Traumatic Brain Injury, Navdeep Sokhal, AIIMS, 3 years, 2018-2020, Rs 2.5 lakhs
16. Development and validation of novel pressure measuring device for measuring the collapsing pressure of internal Jugular vein during an ultrasound examination, Niraj Kumar, AIIMS+IIT Delhi, 2 years, 2019-2020, Rs 20 lakhs
17. Capacity Building and Strengthening of Hospital Infection Control to detect and prevent antimicrobial resistance in India, Purva Mathur, Centers for Disease Control and Prevention, 5 years, 2015-2020, Rs 882.59 lakhs
18. Development and Validation of an Electronic Surveillance System for Surgical Site Infections Developing During Hospital Stay and After Discharge: A Multi-Centric Study, Purva Mathur, ICMR, 3 years, 2017-2020, Rs 131.58 lakhs
19. Role of Post-Trauma Lymphocyte - Monocyte Response and Programmed Death- 1 Levels in Early Diagnosis of Sepsis and Prognosticating Outcome in Trauma Patients, Purva Mathur, ICMR, 3 years, 2018-2021, Rs 45.10 lakhs
20. A randomized control trial for evaluation of effects of leukoreduced blood transfusion on infection risk in severely injured trauma patients, Rahul Chaurasia, AIIMS, 2 years, 2019-2020, Rs 10 lakhs
21. Evaluation of cytokines IL17 and IL 22 in polytrauma patients with ventilator associated pneumonia admitted in Trauma ICU, Richa Aggarwal, AIIMS, 2 years, 2019-2021, Rs 9.0 lakhs
22. Translational application of novel clinically accessible biological predictors to improved identification of mild and moderate Traumatic Brain Injury (TBI) induced neuro psychological impairment, S Arulselvi, ICMR, 2 years, 2019-21, Rs 42.23 lakhs
23. Evaluation of Cathepsin B in peripheral blood of Isolated Traumatic Brain Injury patients and its correlation, S Arulselvi, ICMR, 3 years, 2020-2023, Rs 50.64 lakhs
24. Correlation between preoperative CSF melatonin levels and post operative delirium in geriatric hip fractures,

- Samarth Mittal, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
25. Incidence of Heterotropic Ossification in Pelvi - Acetabular fractures – Can It be predicted and prevented? A prospective, clinical research, Samarth Mittal, AO Trauma, 2 years, 2018-2020, Swiss Francs 8000.
  26. The association of HLA antigens with primary IgA nephropathy in Indian patients, Soumita Bagchi, AIIMS, 1 year, 2019-2020, Rs 5 lakhs
  27. An adaptive seamless randomized, double blind, placebo-controlled, dose ranging study to investigate the efficacy and safety of LNP023 in primary IgA nephropathy patients, Soumita Bagchi, Novartis Ltd, 2 years, 2019-2021, Rs 1.98 lakhs per patient
  28. A randomized, treatment open-label, dose-blinded parallel group, three arm, proof-of-concept clinical trial to investigate the efficacy and safety of LNP023 compared with rituximab in the treatment of subjects with idiopathic membranous nephropathy, Soumita Bagchi, Novartis Ltd, 3 years, 2019-2022, Rs 2 lakhs per patient
  29. To study the impact of Yoga on Pulmonary Functions, Immune Response & Quality of Life in Chest trauma patients at Level-1 Trauma Center, Subodh Kumar, DST, 3 years, 2016-19, Rs 40 lakhs
  30. Role of neutrophils and new immune cells in the outcome of Chest trauma patients, Subodh Kumar, ICMR, 3 years, 2019-2022, Rs 36 lakhs
  31. A Randomized Control Trial to study the impact of Yoga Intervention in lower limb amputees following trauma in relation to postsurgical outcome, behavior and quality of life at Level-I Trauma Center, Sushma Sagar, DST, 3 years, 2017-2020, Rs 54 lakhs

### **Completed**

1. CV185-158: Phase IV, Open-Label, Multi-center Study to Evaluate the Safety of Apixaban in Indian Subjects Undergoing Elective Total Knee Replacement or Total Hip Replacement Surgery, Rajesh Malhotra, PPD, 4 years, 2015-2019, Rs 33 lakhs
2. Comparison of yearly zoledronic acid Versus Weekly Alendronate in Preference, Convenience, compliance, persistence and Bone Turnover Markers in Indian Postmenopausal Osteoporotic Women, Rajesh Malhotra, ICMR, 3 years, 2016-2019, Rs 39 lakhs
3. A system biology approach using Proteomic, metabolomics and metagenomics of saliva of oral cancer patients for identification of potential biomarkers, Abhinav Kumar, ICGEB core Fund, 3 year, 2015-2018, Rs 25 lakhs
4. Assessment of effect of cerebral perfusion pressure augmentation in severe head injuries by monitoring of regional energy metabolism by cerebral microdialysis, Ashish Bindra, AIIMS, 2 years, 2016-2018, Rs 4.95 lakhs
5. Cerebroprotective role of Dexmedetomidine in Epilepsy Surgery, Ashish Bindra, AIIMS, 2 years, 2012-2014, Rs 2.62 lakhs
6. A randomized controlled study of the effects of single dose preoperative vitamin C versus placebo on postoperative morphine consumption after spine surgery, Niraj Kumar, AIIMS, 3 years, 2014-2017, Rs 2.8 lakhs
7. Incidence of posterior vessel wall punctures during ultrasound guided vascular access: short axis versus long axis approach, Niraj Kumar, AIIMS, 2 years, 2015-2017, Rs 3.7 lakhs
8. Evaluation of Urinary Biomarkers TIMP-2 and IGFBP7 for early prediction of acute kidney injury after traumatic crush injuries, Richa Aggarwal, AIIMS, 2 years, 2017-2019, Rs 3.5 lakhs
9. Utility on novel Coated Platelets as a marker for early prognostication of neurocognitive impairment following traumatic injury, S Arulselvi, DST–CSIR, 3 years, 2016-19, Rs 37.11 lakhs
10. Prospective monitoring of BK virus replication in the first year following renal transplantation in Indian patients, Soumita Bagchi, AIIMS, 2 years, 2014-2016, Rs 6.2 lakhs
11. Prevalence and significance of serum galactose deficient IgA1 in Indian patients with IgA nephropathy: a case control study, Soumita Bagchi, AIIMS, 1 year, 2017-2018, Rs 5 lakhs
12. To evaluate Results of Soft Tissue Reconstruction and Augmentation with Structural Fat Grafting in Patients with Post Traumatic Facial Disfigurement, Sushma Sagar, DST (Women Scientist), 3 years, 2015-2018, Rs 30 lakhs

### **Departmental projects**

#### **Ongoing**

1. A pilot study to evaluate the need of post operative systemic anticoagulation in patients with post traumatic medium size peripheral artery repair: A randomized control trial
2. A prospective randomized controlled trial to study the effect of two different tidal volumes (6-8 mL/kg vs 12-15 mL/kg) on the time to wean from ventilator in patients with cervical spine injury (C1-C5)
3. A Quality Improvement Initiative to Reduce Fibrin Clot Formation in Blood Collection Tubes Received in the Clinical Laboratory

4. A Randomised pilot study comparing surgical stabilization of rib fractures with standard non-operative management among mechanically ventilated patient with severe rib fractures
5. A randomized control trial for evaluation of effects of leukoreduced blood transfusion on infection risk in severely injured trauma patients
6. A Randomized Controlled Trial to Study the Clinical And Radiological Outcomes of Single Lag Screw Versus Helical Blade Cephalomedullary Nailing in the Treatment of Intertrochanteric Femur Fractures (Commenced in January 2019)
7. A Randomized Pilot study comparing surgical stabilization of Rib Fractures with standard non-operative management among mechanically ventilated patients with severe rib fractures
8. A study comparing contrast enhanced computed tomography abdomen versus diagnostic laparoscopy in patients with penetrating abdominal trauma: A randomized controlled trial
9. A study to evaluate the predictors of outcome in patients with blunt liver trauma
10. A study to Evaluate Utility of Routine use of contrast enhanced computed tomography scan torso in patients presenting with dangerous mechanism of injury in level I trauma centre
11. A study to find minimum effective volume of 0.5% ropivacaine for ultrasound guided costoclavicular block
12. A study to grade management related complications in acutely injured patients and their correlation with the outcomes at a level 1 trauma centre
13. Abbreviated Discharge Protocol in patients with Blunt Liver and Splenic Injury- A pilot Study
14. Altered microRNA expression in peripheral blood and brain following severe traumatic brain injury
15. An Ambispective observational study to evaluate the outcomes of management of traumatic pancreatic injuries at a level I trauma center
16. An Exploratory Study to Evaluate Surgical Outcome and Financial Burden in Patients Treated with 3D Printing Technology Assisted Surgery versus Conventional Surgery for Facial Fractures at Level 1 Trauma Centre, AIIMS, New Delhi
17. Assessment of physician satisfaction for the laboratory services in JPNATC, AIIMS, New Delhi
18. Assessment of post-trauma cytokine producing potential of monocytes for early diagnosis of organ dysfunction and sepsis
19. Assessment of splenic function in blunt splenic injury: prospective observational study
20. Assessment of splenic immune function in patients with blunt splenic injury
21. Association Between Perioperative Hypertension, Length of Hospital Stay And Perioperative Cardiovascular Complications: A Prospective Observational Study From Tertiary Care Centre
22. Bilateral Ultrasound guided erector spinae plane block for postoperative pain relief in traumatic spine surgery: A randomised controlled trial
23. Cardiovascular complications after traumatic spinal cord injury
24. Cellular prion protein as a potential bio-marker of traumatic brain injury and its co-relation with the severity of traumatic brain injury
25. A Prospective Randomized Study to compare Computer Assisted Navigation Vs Free Hand Surgical Technique of Total Hip Replacement
26. Delay in Surgery after Hip Fracture: Reasons and Impacts on Outcomes
27. Double Blind Randomized Control Trial to Assess the Outcome of Open Vs. Arthroscopic Excision of Dorsal Wrist Ganglion
28. Prospective Observational study of Transfusion Practices in Severely injured Trauma Patients in Emergency department at Level 1 Trauma Centre
29. Comparison of C-MAC video-laryngoscope with D-Blade, C-MAC video-laryngoscope with standard blade, and Macintosh Laryngoscopes for intubation with cervical spine immobilization: A randomized study
30. Comparison of ultrasound guided cannulation of subclavian vein (supraclavicular approach) versus internal jugular vein in neuro-intensive care patients on mechanical ventilation. A randomized study
31. Correlation of NIRS With Intraoperative Transfusion Trigger in Pediatric Patients Posted For Posterior Fossa Tumour Excision
32. Correlation of serum Immunoglobulin A/complement factor 3 (IgA/C3) with the clinical and histologic severity in patients with IgA nephropathy
33. Effect of decompressive craniectomy on jugular venous oximetry (SJVO<sub>2</sub>) in patients with severe Traumatic brain injury (TBI)- Funded by AIIMS, Rs 5 lakhs



34. Effect of Different Dose Regimens of Tranexamic Acid on blood loss in Pelviacetabular Fracture Surgery: A Randomized Clinical Trial
35. Effect of Neuroradiologic interventions on regional cerebral oxygenation in patients with anterior circulation aneurysms: An observational Study
36. Effect Of phrenic nerve stimulation on diaphragmatic strength and thickness in mechanically ventilated patients
37. Effect of Virtual Reality Therapy (VRT) in improving Balance and Quality of life among the lower limb amputees- A Randomized Control Trial
38. Effects of regional anesthesia on perioperative inflammatory cytokines alteration and clinical complications
39. Effects of Severity of injury on the Dynamics of Immune Effector Cells (Th1, Th2, Th9, Th7, Th22) and neutrophils and their Correlation with Outcome in Patients with Blunt Thoracic Trauma
40. Electrolyte and acid base disturbances in post renal transplant patients: prospective study
41. Epigenetic regulation of pro-inflammatory and anti-inflammatory cytokine gene in posttraumatic sepsis and septic shock-defined by sepsis-3 classification: A exploratory study in major trauma patients
42. Evaluation of diagnostic characteristics of point of care ultrasound in identification of Maxillofacial fractures as compared to CT scan
43. Evaluation of effect of early use of Cryoprecipitate on blood components usage in severely bleeding trauma patients
44. Evaluation of effect of early use of Cryoprecipitate on blood components usage in trauma patients with haemorrhagic shock
45. Evaluation of the role of a Capacity building program for initial assessment and management of trauma patients in Emergency Department in improving knowledge, skills and attitude of Doctors and Nurses
46. Feasibility and Implementation of Hospital based Trauma Registry for Road Traffic Injuries at different levels of healthcare settings and its effect on quality of care
47. Focused airway sonography for evaluation of laryngeal mask airway placement: an observational study
48. Frailty as a predictor of adverse discharge outcomes in geriatric trauma patients undergoing surgery: A prospective Case Control Study
49. Impact of enhanced recovery after emergency surgery - A study comparing enhanced recovery protocol versus standard care inpatients undergoing laparotomy following trauma
50. Incidence and risk factors of deep vein thrombosis in patients undergoing intracranial tumor surgeries – A prospective study
51. Intraoperative somatic site near infrared spectroscopy changes in supratentorial craniotomy: A prospective study
52. Isolation of Characterization of Leishmania or Leishmania like parasite(s) from seropositive goat (printed but not submitted/viva cond)
53. Multipara metric approach to identify a predictive Biomarkers of sepsis and septic shock in trauma patients
54. Outcome correlation of initial arterial blood gas analysis in isolated thoracic injury
55. Outcome of Transjugular Intrahepatic Portosystemic Shunt in Budd Chiari Syndrome: An Ambispective Study
56. Postural Impact on Gastric Ultrasound assessment in pregnancy: An observational study
57. Predicting increased length of stay and adverse outcome in Indian Geriatric patients coming for surgery: A prospective case control study
58. Prevalence of Beijing & Non-Beijing genotypes of Mycobacterium tuberculosis isolated from different human body sites submitted but defence is pending
59. Primary versus Delayed Primary Closure in patients undergoing lower limb amputation following trauma: A Randomized control study
60. Raising mono & polyclonal antibodies against novel antigens of Mycobacterium tuberculosis and their diagnostic value in clinical samples 1st draft submitted
61. Randomized Control Trial comparing Radiological, Clinical and Functional Outcomes following Uniaxial vs Polyaxial Plating in Management of Tibial Plateau Fractures and CT Guided Mapping of Proximal Tibial Fractures in Indian Population
62. Randomized Control Trial: Comparative analysis of orbital volume in 3D-model assisted mesh adaptation versus conventional technique in reconstruction of orbital floor fracture
63. Reappraisal of the concept of massive transfusion in trauma patients presenting with hemorrhagic shock
64. Role Interventional radiology in Obstetric related Hemorrhage
65. Role of imaging for clinical outcome evaluation in pelvic fracture patients.

66. Role of lung ultrasound in estimating extravascular lung water as an early predictor of sepsis in Neurotrauma patients- An observational study
67. Role of Microdialysis in accurate and early detection of a compromised free flap
68. Role of T-Helper Cells and Neutrophils in the Outcome of Patients with Chest Trauma
69. Serum lactate, base deficit and glucose levels as prognostic markers of severe traumatic brain injury
70. Significance of Severe Thrombocytosis in North Indian Trauma Patients
71. Study of Oligodendroglial Linage, Myelination and remyelination in brain tissue in head injury cases
72. Study of role of biochemical parameters to determine outcome in elderly hip fracture patients
73. Study of the parameters, intervention and outcome in cases of Genito urinary injuries at level 1 trauma centre
74. Supportive management of IgA nephropathy-a prospective study
75. The Study of Feasibility of Ultrasound Guided Catheterization of Right Brachiocephalic Vein in Adult Patients
76. To compare the efficacy of Air- Q versus proseal in children (1-18 years) undergoing elective ophthalmic procedures – A randomized clinical trial
77. To establish sexual dimorphism & estimate age from Hyoid bone using anthropological and radiological techniques
78. To evaluate the effect of change in end tidal carbon dioxide on optic nerve sheath diameter under general anaesthesia
79. To evaluate the role of age-adjusted Charlson Comorbidity index in predicting 30 day postoperative outcome in patients undergoing surgery under general and regional anaesthesia
80. To see the prevalence of microsporidia in stool samples of HIV sero negative adults, pediatric patient with diarrhoea May 2018 submitted
81. To study splenic functions & complications in patients with blunt splenic injury at level -I trauma
82. To study the correlation between clinical parameters, and intra-abdominal pressure and their effect on the non-operative managements of patients with blunt abdominal trauma at Level I trauma center
83. To study the diagnostic characteristics of point of care ultrasound in blunt trauma chest patients
84. To study the effect of external pelvic fixation on the outcome of patients with pelvic fractures undergoing damage control surgery
85. To Study the effect of Yoga on Pulmonary functions, Respiratory muscle strength and endurance, chest wall mobility, inflammatory markers and Quality of life in blunt chest trauma patients and their correlation with thoracic trauma severity score at level-I Trauma Centre
86. To Study the management, outcome and Quality of life in patients with pelvic trauma at A level 1 Trauma Center
87. To study the risk factors and causes of extubation failure in head injury patients
88. To Study the Role of Prophylactic Antibiotics in patients with chest trauma at a level 1 Trauma Centre: A Pilot Randomized trial
89. To study the role of T helper-9, T helper-17, T helper-22, T- Regulatory lymphocytes in Post-Trauma Immunopathogenesis
90. To study the role of Vitamin D levels on disease severity and outcome in Indian patients with primary IgA nephropathy from the AIIMS Primary IgA Nephropathy(APIgAN) cohort

### **Completed**

1. A Prospective Randomized Study to Evaluate Kinematic and Mechanical Alignment in Total Knee Arthroplasty
2. A study comparing enhanced recovery protocol versus standard care in patients undergoing laparotomy following trauma- A randomized controlled trial
3. A study to Analyse CD27 expression on T cells to differentiate active and latent Tuberculosis
4. A Study to assess the Impact of Educational Interventions on the Incidence of Central Line Associated Blood Stream Infections (CLABSI) at an Intensive Care Unit of Jai Prakash Narayan Apex Trauma Centre of AIIMS, New Delhi
5. A Study to Grade management related complications in Acutely injured patients and their correlation with the outcomes at a level 1 Trauma Center
6. Abbreviated discharge protocol in patients with blunt liver and splenic injury: a pilot study
7. Age Estimation Between age 1-18 years by radiological study of Epiphyseal Union around Elbow & Wrist joints
8. Assessment of the Critical value notification Process in a Clinical Laboratory for Quality Improvement
9. Assessment of the Handover Process in a Clinical Laboratory for Quality Improvement
10. Characterization of analytical errors in classical thromboelastography (TEG) interpretation
11. Chief Guide in A prospective randomized clinical trial to compare clinical, fluoroscopic and radiological outcome

- between medial pivot and lateral pivot knee
12. Clinical characteristics and outcome of patients with fat embolism syndrome in level- 1 Apex Trauma Centre – A prospective observational study
  13. Clinico-radiological assessment of arthroscopic repair for recurrent anterior shoulder instability – A pilot study
  14. Comparison of propofol and ketofol on transcranial motor evoked potentials in patients undergoing thoracolumbar spine surgery
  15. Correlation between invasive and non-invasive technique of intracranial pressure measurement in children with traumatic brain injury: an observational study
  16. Development of new molecular test(s) for rapid diagnosis of India specific Pre-XDR/XDR-TB
  17. Diagnostic and prognostic role of MRI in acute cervical cord trauma
  18. Evaluation of the role of a Capacity building program for initial assessment and management of trauma patients in Emergency Department in improving knowledge, skills and attitude of Doctors and Nurses
  19. Functional and radiological outcomes following plating for displaced fractures of patella
  20. Histology of Lumbar Inter Vertebral Disc in Degenerative Disc Disease and its Correlation with Clinical and Radiological Findings
  21. Outcome correlation of initial arterial blood gas analysis in isolated thoracic injury
  22. Outcome of trauma patients with acute kidney injury with renal replacement therapy in surgical ICU: Our experience
  23. Primary versus Delayed Primary Closure in patients undergoing lower limb amputation following trauma: A Randomized control study
  24. Prospective observational study of transfusion practices in severely injured trauma patients in emergency Department in level 1 Trauma Center
  25. QI project – to improve the CLABSI rate in ICU
  26. Role of T-Helper Cells and Neutrophils in the Outcome of Patients with Chest Trauma
  27. Serum Procalcitonin, Interleukin-6 and sTREM-1 as diagnostic and prognostic markers in sepsis in critically ill patients
  28. To compare the effect of goal directed fluid therapy versus standard fluid regimen on the cuff leak volume in patients undergoing spine surgery
  29. To study management, outcomes and quality of life in patients with pelvic fractures at level 1 trauma center
  30. To study the clinical and neurophysiological outcomes after using platelet rich plasma in acute peripheral nerve injury repair, Plastic Surgery, JPNATC, AIIMS
  31. To study the correlation between clinical parameters and Intra-abdominal pressure and their effect on the non-operative management of patients with blunt trauma abdomen at level 1 trauma centre
  32. To study the efficacy of serratus anterior plane block in patients undergoing trunk based flap surgeries-a pilot study
  33. To Study the management, outcome and Quality of life in patients with pelvic trauma at A level 1 Trauma Center
  34. Use of intratracheal lignocaine to reduce emergence reaction in the patients undergoing endoscopic transphenoidal pituitary surgery: a randomized controlled study

## **Collaborative projects**

### ***Ongoing***

1. Ultrasound guided suprainguinal fascia iliaca block in ace tabular fracture surgery- randomized controlled pilot study
2. Understanding Differences in the Patterns of Osteoarthritis in Indian and Western Population: Impact on Symptoms, Treatment Options and Their Outcome, UKIERI-DST
3. Morphometric and Morphoscopic Study of Ear & Nose in Brahmin & Rajput population of Mandi, Himachal Pradesh- A Forensic Anthropological Investigation, Department of Anthropology, Panjab University, Chandigarh
4. To study the extent of variation in ridge characteristics and determining gender among twins using their fingerprint characteristics, Dept. of Forensic Medicine & Toxicology, KMC, Manipal
5. Estimating Post- Crash Accessibility to Trauma care Facility in Delhi, Transport Research and Injury Prevention Program (TRIPP), Indian Institute of Technology, Delhi
6. Effect of Lidocaine infusion on hemodynamics and recovery in patients undergoing endoscopic pituitary surgery: A multicentre, randomized control trial, Department of Anaesthesiology, Health Sciences Centre, University of Manitoba, Winnipeg, Canada
7. To study the usefulness of pre-operative USG guided FNAC in avoiding radical surgery in patients with gallbladder

- wall thickness or polyp associated with gall stone disease, Surgery
8. Sensitivity and specificity of Focussed Assessment with Sonography for Trauma (FAST) in determining pediatric solid organ injury following blunt trauma abdomen, Pediatric Surgery
  9. A study to evaluate the predictors of outcome in patients with Blunt Liver Trauma, Trauma Surgery
  10. Etiological Evaluation of Microcephaly in Young Patients, Pediatrics
  11. Diagnostic Accuracy of Transcranial Ultrasound to Detect Clinically Significant Condition in post Craniectomy Patient, Emergency Medicine
  12. Prospective study on the effectiveness of chlorhexidine gluconate impregnated patch (BIOPATCH<sup>®</sup>) in reducing the incidence of central line associated blood stream infection (CLABSI), Microbiology, JPNATC, AIIMS
  13. Surveillance of blood stream infections (BSI) at a referral Indian hospital Surveillance of blood stream infections (BSI) at a referral Indian hospital, Microbiology, JPNTC, AIIMS
  14. Development and validation of novel pressure measuring device for measuring the collapsing pressure of internal Jugular vein during an ultrasound examination, AIIMS+ IIT Delhi
  15. A randomized control trial for evaluation of effects of leukoreduced blood transfusion on infection risk in severely injured trauma patients, Critical and intensive Care, Anesthesiology, Pain Medicine and Critical Care, Laboratory Medicine, Emergency Medicine, Surgery, JPNATC
  16. Evaluation of effect of early use of Cryoprecipitate on blood components usage in severely bleeding trauma patients, Laboratory Medicine, Emergency Medicine, Surgery JPNATC
  17. Comparison of C-MAC video-laryngoscope with D-Blade, C-MAC video-laryngoscope with standard blade, and Macintosh Laryngoscopes for intubation with cervical spine immobilization: a randomized study, Neuroanesthesiology and critical care
  18. Risk factors and outcome of patients with ventilator associated events and complications in trauma ICU, Anaesthesia and critical care
  19. Abbreviated discharge protocol in patients with liver and or splenic injury following blunt trauma abdomen, Trauma surgery and critical care
  20. Correlation of the gastric residual volume determined by ultrasound and acceptance of enteral tube feed in medical /surgical ICU – an observational study, Anaesthesia and critical care
  21. Outcome correlation of initial arterial blood gas analysis in isolated thoracic injury, Trauma surgery and critical care
  22. comparison of positive pressure extubation with traditional extubation in critically ill patients- a randomised control study, Anaesthesia and critical care
  23. Role of T-helper cells and neutrophils in the outcome of patients with chest trauma, Trauma Surgery
  24. To study the effect of Yoga on Pulmonary functions, Respiratory muscle strength and endurance, Chest wall mobility, Inflammatory markers and Quality of life in blunt chest trauma patients and their correlation with Thoracic Trauma Severity Score at level-I trauma centre, Trauma Surgery
  25. To study clinical and immunological parameters in predicting short term outcomes in polytrauma patients admitted to Trauma Surgery, Trauma Surgery
  26. To study splenic functions and complications following blunt splenic trauma at level -Itrauma centre, Trauma Surgery
  27. To study the impact of Yoga on pulmonary functions, immune response and quality of life in chest trauma patients at level-I trauma Centre, Trauma Surgery
  28. Histology of Lumbar Inter Vertebral Disc in Degenerative Disc Disease and its Correlation with Clinical and Radiological Findings, Orthopedics
  29. Detection and genotype distribution of BK polyomavirus in renal transplant recipients, Microbiology
  30. Study of muscle enzyme elevation in neurosurgery and its relevance in postop acute kidney injury: a pilot study, Neuroanaesthesia
  31. An immunohistochemical and ultrastructural study of glomerular capillary endothelial injury in cellular rejection, Pathology
  32. Prospective observational study of transfusion practices in severely injured trauma patients in Emergency Department at level 1 Trauma Center, Lab Medicine

### **Completed**

1. Histology of Lumbar Inter Vertebral Disc in Degenerative Disc Disease and its Correlation with Clinical and Radiological Findings, Orthopaedics
2. Age Estimation Between Age 1-18 years by Radiological Study of Epiphyseal Union Around the Elbow and Wrist

Joints, Forensic Medicine

3. Utility on novel Coated Platelets as a marker for early prognostication of neurocognitive impairment following traumatic injury, Neurosurgery, Neuropsychology, Psychiatry
4. Prognostic Significance of Cytokines and Biomarkers in Patients with Traumatic Lung Injuries, Lab. Medicine
5. Primary versus delayed primary closure in patients undergoing lower limb amputation following trauma, a randomized controlled trial, Trauma surgery and critical care
6. Membranous nephropathy: A study of immunofluorescence, electron microscopy and PLA2R profile with clinical correlation, Pathology

#### PATIENT CARE

<b>I.</b>	Total Bed Strength of facility:	278	Total Admission beds:	248
	Ward beds:	194		
	ICU beds 2nd floor:	12	ICU beds 3rd floor:	20
	Private ward:	22	Emergency (Triage):	30
<b>II</b>	<b>Statistics at a Glance</b>			
	Total attendance at ED:	71476	Average patients per day:	195
	Total admissions:	7532	Average admissions per day:	21
	Average Length of Stay:	10 days	Total follow-up OPD cases:	47310
	Average follow up OPD cases/day:	159		
	Total Deaths Registered:	868	Brought Dead Cases:	324
	Total Death (Registered–Brought Dead):	544 (868–324)		
	Deaths under 48 hours:	196	Deaths over 48 hours:	348
	Gross death rate:	12%	Net Death Rate:	5%
	Bed occupancy rate:	84%	Bed Turnover rate: 29 patients/bed	
<b>III</b>	<b>Total cases in ED:</b>			<b>71476</b>
	Males:	46287	Females:	17381
	Male Child:	5075	Female Child:	2697
	MLC:	39768	Non-MLC:	31708
	Other:	36		
	<i>Triage category</i>			
	Green:	38630	Yellow:	23544
	Red:	5506	Black:	73
	OPD:	3684	Radiology:	39
<b>IV</b>	<b>Total Follow-up OPD Cases :</b>			<b>47310</b>
	New:	18482	Old (Re-visit):	28828
	Male:	31662	Female:	10273
	Male Child:	3625	Female Child:	1750
	<i>Specialty-wise break-up</i>			
	Orthopaedics:	27400	Surgery:	4844
	Neurosurgery:	6829	PRS:	8141
	BPI:	96		
<b>V</b>	<b>Total Admissions:</b>			<b>7532</b>
	Regular:	7407	Short admissions:	125
	MLC:	5367		53
	Non-MLC:	2040		72
	Male:	5406		84
	Female:	1246		28
	Male Child:	461		7
	Female Child:	292		6
	Other:	2		

	<i>Specialty-wise break-up</i>		
	Orthopaedics:	2620	7
	Surgery:	1860	38
	Neurosurgery:	2049	2
	PRS:	746	77
	Paediatrics:	132	1
<b>VI</b>	<b>Total Operations performed:</b>	<b>7458</b>	
	Major:	7297	Minor: 161
	Male:	5678	Female: 1149
	Male Child:	421	Female Child: 210
	<i>Specialty-wise break-up</i>		
	Orthopaedics:	3236	Surgery: 1825
	Neurosurgery:	1294	PRS: 1103
<b>VII</b>	<b>Total Discharges:</b>	<b>7323</b>	
	MLC:	4970	Non-MLC: 2353
	Male:	5115	Female: 1169
	Male Child:	703	Female Child: 335
	Others:	1	
	<i>Department wise distribution</i>		
	Orthopaedics:	2602	Surgery: 1840
	Neurosurgery:	1943	PRS: 806
	Paediatrics:	132	
<b>VIII</b>	<b>Days of Care:</b>	<b>76685</b>	
	Orthopaedics:	22116	Surgery: 20440
	Neurosurgery:	26618	PRS: 6241
	Paediatrics:	1270	

### Main Medical Records Division

In addition to above, Medical Record Section (MRS) of JPNATC which is the FIRST Govt. Hospital that started Online Registration of Deaths at NDMC since year 2008 is running successfully and also coordinating the amendments pertaining to deceased/ discharged and admitted patient after due legal procedure (name correction - 664). ICD-10 coding of all deaths reported at JPNATC which was started earlier was done online. MRS is regularly disposing of summons from various Hon'ble Courts in Delhi as well as other neighbouring states. Total 1769 (Within Delhi – 1519 and 250-outside Delhi, for Doctors & Record Clerk 1467, for Record Clerk only - 302) summons were disposed during this period. MRS is also handling various Insurance Policy matters of patients who attended JPNATC in both cases—alive or dead. Total 53 such cases were disposed during this period. During the preceding year MRS has entertained 836 police requests for Discharge records/ Bed Head Ticket and also issuing X-rays; coordinating for collection of X-rays from Radio-diagnosis unit & handing over to police. Total 978 such cases were disposed during this period. MRS is furthermore involved in issuing information (for assistance/compensation etc.) to Delhi State/ Central Govt. pertaining to the patients/victims attended JPNATC during the year. The replies of questions raised under Right to Information Act 2005 by various applicants, were also provided by MRS in 48 cases. MRS has provided the basic framework as well as continuous inputs to computer facility; so as to computerize whole registration process in a phased manner. Retrieval of case files for research purpose to faculties/residents/nursing staff/lab staff/computer facility as and when requested. Total 1167 cases were disposed.

### Critical & Intensive Care

Approximately 700 patients were admitted in Trauma 2 ICU (including readmissions) and 104 haemodialysis sessions were performed. A 6-bedded high dependency unit is also run which provides additional ventilated beds in times of disaster and mass casualty event.

### Forensic Pathology and Molecular DNA Laboratory

#### A. Emergency Services:

Division of Forensic Pathology and Molecular DNA Laboratory at JPNATC is providing round-the-clock medico-legal services like in cases of injury, sexual offences etc reported to Emergency Services of JPNATC.

## B. Autopsy Services

A total of **818** medico-legal autopsies were conducted at mortuary of JPNATC.

## C. Clinical Forensic Medicine

Subsequent opinions in complicated cases including reference from Casualty etc. were **335** cases at JPNATC.

## D. Summons

Doctors of the Division attended court of law in cases from Delhi and other states.

## E. Medical Toxicology

About **67 sample** tests were performed for blood alcohol referred from the Emergency Department in academic/research cases.

## F. Forensic Pathology in collaboration with Department of Laboratory Medicine

Total samples of **75** cases were processed and reported during this period.

## G. Community Services

The Division continues to participate in training program for CBI officials, police officers and public prosecutors from all over the country.

## H. Organ Retrieval for Therapeutic Transplantation

The Division of JPNATC facilitated eye donation, heart valve donation and organ retrieval in brain dead trauma patients for transplantation by National Eye Bank and ORBO.

## I. DNA Laboratory

The division is in process of Establishing Molecular DNA Laboratory at JPNATC as a part of Disaster Victim Identification.

### Laboratory medicine

**Total Tests done: 13,06,229**

#### 1. Haematology

Hemoglobin, TLC, Differential Count, HCT, RBC, MCH, MCHC, MCV, RDW, Platelet Count:			51924 each
Reticulocyte count:	32	ESR:	4727
Peripheral smear and MP:	3811		
<b>Total:</b>	<b>5,27,806</b>		

#### Coagulation

PT and APTT:	29532 each	TT:	10
Fibrinogen:	20	D-dimer:	45
Thromboelastography (TEG):	597		
<b>Total:</b>	<b>59,736</b>		

#### Clinical pathology

Urine routine and Microscopy:	3460	Urine myoglobin:	927
CSF microscopy:	938	Fat globules:	20
<b>Total:</b>	<b>5345</b>		

**Total tests done in haematology section: 5,92,887**

#### 2. Biochemistry

Sugar:	16006	Urea:	53253
Creatinine:	53540	Calcium:	52251
Phosphorous:	51732	Uric Acid:	48841
Total and direct bilirubin:	44261 each	Sodium and potassium:	53511 each
Total protein, albumin, SGOT, SGPT and ALP:	43586 each		
Cholesterol:	6904	Amylase:	5825
HDL:	641	LDL:	543
TG:	1049	VLDL:	1049
CK:	30	CRP:	3666
Mg:	3586	Lipase:	50

CK-MB:	10	CSF Sugar and protein: 644 each	
Peritoneal fluid sugar:	8	Peritoneal fluid Protein:	3
Ascitic Fluid Protein:	6	Pleural Fluid Sugar:	1
Pleural fluid Amylase:	2	Pleural Fluid Protein:	2
Urinary spot sodium:	292	Urine Ca:	3
Urinary creatinine:	70	Peritoneal fluid amylase:	11
24 hours urine protein:	14	24 hours urine sugar:	14
Urine osmolality:	162	Serum osmolality:	68
Drain fluid amylase:	45	Lactate :	14
Phenytoin:	5		

#### ABG

PO<sub>2</sub>, PCO<sub>2</sub>, PH, H<sup>+</sup>, Potassium (K), Sodium (Na), Calcium (Ca), CL: 5500 each

**Total tests done in Biochemistry section: 7,13,405**

#### 3. Histopathology

Specimens processed:	837	No. of blocks:	1772
No. of histopathology slides:	1817	Immunohistochemistry slides:	711
Cytology slides:	155		

#### 4. Microbiology

Total Culture	19,984	HIV (Spot+Vidas)	4,341
Positive	5,842	HBsAg (Spot+Vidas)	4,345
Sensitivity	5,842	HCV	2,178
Procalcitonin	2,206	Hospital Infection Control	5,739

#### Blood Bank

Month	Donor screened	Donor bled	Replacement donors			Voluntary donors			Indoor voluntary donor	Outdoor voluntary donor
			Males	Females	Total	Males	Females	Total		
Apr 19	882	675	574	4	578	93	4	97	97	Nil
May 19	1063	836	731	8	739	90	7	97	97	Nil
June 19	998	794	672	2	674	112	8	120	120	Nil
July 19	1405	1147	857	20	877	245	24	269	123	146
Aug 19	1054	856	635	9	644	207	5	212	111	101
Sep 19	953	723	644	3	647	81	35	116	77	39
Oct 19	1128	891	767	9	778	103	3	106	106	Nil
Nov 19	1032	855	693	8	701	145	9	154	119	35
Dec 19	1018	843	730	12	742	96	5	101	101	Nil
Jan 2020	1060	886	740	7	747	134	5	139	96	43
Feb 2020	1067	853	737	8	745	104	4	108	108	Nil
Mar 2020	748	578	503	5	508	65	5	70	70	Nil
<b>Total</b>	<b>12408</b>	<b>9937</b>	<b>8283</b>	<b>95</b>	<b>8380</b>	<b>1475</b>	<b>114</b>	<b>1589</b>	<b>1225</b>	<b>364</b>

**No. of voluntary blood donation camps: 5**



**Component Separation Laboratory**

Item prepared	Units
Total packed RBC prepared	9937
Total fresh frozen plasma prepared	9659
Total platelets prepared	8746
Total cryoprecipitate prepared	662

**Infectious Marker Laboratory and Donor Counselling**

Month	HIV		HBsAg		HCV		VDRL		MP	
	Done	reactive	done	reactive	Done	reactive	Done	reactive	done	reactive
Apr 19	637	0	642	13	641	4	636	0	636	0
May 19	872	0	878	12	878	4	870	3	870	1
June 19	775	3	780	9	780	7	776	3	773	0
July 19	1164	1	1176	10	1172	9	1162	1	1160	1
Aug 19	869	1	875	8	875	6	863	4	863	0
Sep 19	767	2	767	9	771	2	762	2	759	0
Oct 19	898	1	902	12	903	8	893	2	893	0
Nov 19	874	1	880	12	879	7	874	4	870	0
Dec 19	832	1	838	22	842	10	832	0	831	0
Jan 2020	990	1	941	17	947	4	910	2	858	0
Feb 2020	1202	0	1156	9	1166	9	1075	3	976	1
Mar 2020	669	1	629	7	634	4	607	4	562	0
<b>Total</b>	<b>10549</b>	<b>12</b>	<b>10464</b>	<b>140</b>	<b>10488</b>	<b>74</b>	<b>10260</b>	<b>28</b>	<b>10051</b>	<b>3</b>

**Emergency Issue Counter**

Month	No. of PRBC issued	FFP Issued	PRC Issued	Cryo Issued
Apr 19	890	632	585	59
May 19	792	517	598	43
June 19	938	739	683	82
July 19	1012	614	841	73
Aug 19	910	515	711	42
Sep 19	812	389	560	42
Oct 19	925	551	651	42
Nov 19	853	1221	701	28
Dec 19	857	779	713	17
Jan 2020	898	650	603	22
Feb 2020	954	574	774	81
Mar 2020	1161	1132	578	16
<b>Total</b>	<b>11002</b>	<b>8313</b>	<b>7998</b>	<b>547</b>

**Blood and Components issued to other Hospital Blood Bank (Main AIIMS, CNC, GB Pant, LNJP Hospital, ESI Hospital, Dr. Hedgewar)**

Month	Blood		FFP		PRC		Cryoprecipitate	
	Issued	Received	Issued	Received	Issued	Received	Issued	Received
Apr 19	127	35	170	0	0	49	0	0
May 19	15	11	60	0	0	0	0	0
June 19	15	11	230	0	0	32	0	0
July 19	38	0	60	0	0	0	0	0
Aug 19	0	45	0	0	0	56	0	0
Sep 19	77	0	0	0	0	20	0	0
Oct 19	0	33	40	0	15	0	3	0
Nov 19	19	19	764	0	34	79	0	0
Dec 19	20	28	75	0	40	10	0	0
Jan 20	30	38	190	0	50	0	0	0
Feb 20	78	496	50	0	108	172	0	0
Mar 20	495	3	865	0	260	0	0	0
<b>Total</b>	<b>1589</b>	<b>719</b>	<b>2504</b>	<b>0</b>	<b>507</b>	<b>418</b>	<b>3</b>	<b>0</b>

**Investigations done in Radiology**

Month	CT Scan	USG	MRI	Casualty X-Ray (NMLC)	Casualty X-Ray (MLC)	OPD X-Ray	Ward X-Ray	Portable X-Ray	Fluoro	DSA
<b>April, 2019</b>	1939	2229	89	3121	2157	1409	143	1342	25	6
<b>May, 2019</b>	2421	2738	97	3415	2717	1332	195	1682	22	20
<b>June, 2019</b>	2136	2445	83	3415	2582	1170	179	1540	11	9
<b>July, 2019</b>	2107	2362	99	3785	2473	1271	284	1578	21	10
<b>Aug, 2019</b>	2018	2717	98	3777	2772	1020	215	1576	32	14
<b>Sept, 2019</b>	2212	3056	111	4349	2753	1245	189	1488	10	5
<b>Oct, 2019</b>	2551	3272	122	4242	2997	1337	209	1686	15	15
<b>Nov, 2019</b>	2247	3081	123	3661	2670	1266	232	1667	32	17
<b>Dec, 2019</b>	2192	2751	92	3477	2305	1345	246	1751	21	7
<b>Jan, 2020</b>	2475	2920	111	3786	2282	1405	246	1684	19	12
<b>Feb, 2020</b>	2406	2944	94	3829	2520	1234	241	1777	21	7
<b>March 2020</b>	1741	2210	80	3550	2500	841	132	1521	12	5
<b>Total</b>	<b>26445</b>	<b>32725</b>	<b>1199</b>	<b>44407</b>	<b>30728</b>	<b>14875</b>	<b>2511</b>	<b>19292</b>	<b>241</b>	<b>127</b>

**AWARDS, HONOURS & SIGNIFICANT EVENTS**

**Professor Rajesh Malhotra** received best paper award for the paper entitled: "Influence of Etiology and Onset of Deformity on 3D Gait Pattern of Patients with Complex Spinal Deformity" during the 3rd International Conference on Spine & Orthopaedic Biomechanics on 26-28 April 2019 at New Delhi; Awarded IMA Doctor's Day Award 2019 for Most Distinguished Services during the Doctor's Day Celebration on 1 July 2019 at IMA, New Delhi; Awarded the CME Educator Award (Individual) during CME Excellence Summit and Awards with media partner CNN News 18 at New Delhi on 7 August 2019; Awarded First Prize in the Exhibition Category- Universal Healthcare during 64th Foundation Day Celebration at AIIMS, New Delhi on 25 September, 2019; Awarded First Prize for Hindi Dictation during the Hindi Week Celebration at AIIMS, New Delhi from 2 September to 14 September 2019.

**Dr Abhinav Kumar** chaired the session in “Trauma 2019” 9th National Conference of Indian Society for Trauma & Acute Care, organized by Department of Trauma Surgery, King George Medical University, Lucknow (29-30 August 2019); Participated as Faculty at pre conference workshop on “Essential Surgical Skills to Manage Acutely Injured Patient” organized by Department of Trauma Surgery, King George Medical University, Lucknow (30 August 2019); Conducted workshop as faculty on “Basic Skills in Ultrasound for Surgeons” during Annual Conference of ASI – Rajasthan Chapter on 18 October 2019; Conducted workshop as faculty on “VATS for General Surgeons” during Annual Conference of ASI – Rajasthan Chapter on 18 October 2019; Successfully Completed ATLS Instructor Course of American College of Surgeons on 3-4 November 2019; Organized Pre conference “Trauma Mater Class: Gustly Decision Making Under pressure” for 10th Asian Conference on Emergency Medicine (ACEM 2019) on 5-6 November 2019; Conducted Cadaveric Workshop as part of National Conference of American College of Surgeons – India Chapter (ACSCON 2020) on 1 January 2020; Awarded as the Fellow of American college of Surgeons (FACS) in 2019; Instructor faculty of EUSIM. SAFER Netherland; Developed a training skill module “Advanced Surgical skill module” for residents in surgical disciplines and successfully conducted two rounds of the module at SET facility AIIMS, ND; National Coordinator of the Multi Institutional Learning and practice (MILAP) academic session; Member of Ethical Committee of International Center for Genetic Engineering & Biotechnology (ICGEB) ND.

**Professor Amit Gupta** was Awarded the Donald D Trunkey Oration of the International Association of Trauma Surgery & Intensive Care (IATSIC): Delivered at the 48th World Surgery Congress on 14 August 2019 at Krakow, Poland; Awarded the JAST 2019 International Invited Lecture: Delivered at the 33rd Annual meeting of Japanese Association for the Surgery of Trauma on 6 June 2019 held at Aomori, Japan; Re-elected Honorary Secretary: Indian Society for Trauma and Acute Care – ISTAC®. August 2019 – 2021; Visiting Professor: Department of Trauma Surgery and Critical Care, All India Institute of Medical Sciences, Rishikesh. July 2019 – till date; Expert: To develop future Trauma Education Programs at All India Institute of Medical Sciences, Raipur. March 2020 – to date; Member, International Relations Committee: American Association for Surgery of Trauma (AAST), American College of Surgeons – Committee on Trauma, USA 2018 – Till date; Member: Technical sub-committee for developing National Trauma System Plan, Dte. General of Health Services, MoHFW, Govt. of India. 2014 – till date; Regular Member: H-1 Committee: Transport Planning, Traffic Engineering of the Indian Roads Congress 2015-till date; Member Technical Resource Group: for Finalization of Minimum Standards for Trauma Care Facilities in India. Trauma & Burns Care Division, Ministry of Health and Family Welfare, Govt. of India. 2018 – till date; Member Expert Group: For development of materials under the IEC activities of National Programme for Trauma Care, Ministry of Health and Family Welfare, Govt. of India. 2018 – till date; Member: Steering Committee for commissioning of Trauma Centre at SGPGI Lucknow. 2018 Onwards – till date; Member: Experts Group NIHFW, for the Course on Hospital preparedness for Health Emergencies for Senior Hospital Administrators. 2018 – till date; Member: Experts Group NIHFW, for the Training on Hospital preparedness for Health Emergencies for District Health Officers. 2018 – till date; Member, Medical board for Medical/Psychological Examination at AIIMS for Antarctic Expedition Team. 2016 – till date; Member, Committee on Hindi Rajbhasha at Jai Prakash Narayan Apex Trauma Centre, AIIMS, New Delhi. 2016 – till date.

**Dr Ashish Bindra** is Organizing Secretary for AIIMS Neuroanesthesia Neurocritical Care Update from 18th to 20th October 2019 at JL Auditorium, All India Institute of Medical Sciences, New Delhi; Organized AIIMS- AIM P, Cadaveric Interventional Pain Management Workshop on 22 October 2019 at Cadaveric Training and Research Facility, JPNA Trauma Centre, New Delhi.

**Professor Atin Kumar** was Elected as President Elect of Delhi State Chapter of Indian Radiological and Imaging Association; Elected as Governing body member of Indian College of Radiology and Imaging; National Leadership Award by Delhi state chapter of Indian Radiological and Imaging Association; Organising Secretary of AIIMS-MAMC-PGI Imaging Course Seried on Advances in Imaging Technology held at AIIMS, New Delhi from 5 to 6 April 2019.

**Professor Biplab Mishra** is External Expert & Visiting Professor in Capacity building collaborative programme for General Thoracic Surgery with AIIMS, Rishikesh; Internal examiner for MCh examination of Trauma Surgery and Critical Care at AIIMS, New Delhi; Internal examiner for MBBS examination (Pre-professional and final) at AIIMS, New Delhi; Reviewer of articles for BMC-Emergency Medicine journal; Reviewer of articles for Case reports in Radiology.

**Professor Deepak Gupta** received PhD degree for: Development and Validation of Finite Element Analysis Model (FEM) of Craniovertebral Junction: Experimental Biomechanical Cadaveric Study ( AIIMS-IIT Joint study) : First faculty member (in service) from Dept of Neurosurgery to receive PhD in Neurosurgery; Elected as Member of National Academy of Medical Sciences (NAMS) September 2019; Jaga Balia Craniopagus twins were successfully discharged after 2 years of stay at AIIMS and sent back to their home state in Odisha on 6th Sept 2019: This was first successfully surgery on Craniopagus twins from India wherein both children survived. Surgical team of 125 members for separation surgery was led by Dr Deepak Gupta and Dr AK Mahapatra jointly; Featured in featured in the 2020 edition of Limca Book of Records. First craniopagus surgery: A team of 125 doctors and paramedical staff, led by Dr Deepak Kumar Gupta and Dr Ashok

Kumar Mahapatra, from the Department of Neurosurgery at AIIMS, New Delhi, successfully separated 28-month-old twins Jagga and Kalia, who were joined to each other at the cranium. The complex surgery was conducted in two stages, on 28 August 2017 and 25 October 2017. [Hachette Book Publishing India Pvt Ltd, lbr.entries@hachetteindia.com]; Invited as Guest for Swearing-in Ceremony of the Hon'ble Chief Minister, Odisha and the members of the Council of Ministers, on 29.05.2019 at 10.30 AM at the IDCO Exhibition Ground, Unit-3, Bhubaneswar, Odisha; Selected as Adjunct Professor for Indian Institute of Technology ( IIT, Delhi) 2020-2022.

**Dr Dinesh Kr Bagadia** is International Member: Eastern Association for the Surgery of Trauma (EAST); Member: Doctoral Committee for Ph. D. thesis in Div. of Trauma Surgery & Critical Care; Medical expert: faculty meets on basic training on CBRN Emergency Management (EM) for airports and seaports by NDMA; Medical Expert: 31st National Road Safety Week Paper Presentation by Ministry of Road Transport and Highways (MoRTH) and Indian Road Safety Campaign, Solve; Faculty: Trauma First Responder training at National Road Safety Week organised by Ministry of Road Transport and Highways and Indian Road Safety Campaign; Medical expert: Paper Presentation on road safety organized by World Health Organization and Indian Road Safety Campaign; Faculty: Trauma Master Class in 10th Asian conference of emergency medicine; Faculty: Annual Conference of the Association of Surgeons of India - Rajasthan Chapter, at AIIMS, Jodhpur; Medical expert: Shanghai cooperation organization (SCO) joint exercise on urban earthquake search and rescue for all SCO member countries by NDRF; Participated in endoscopy workshop in IASGCON 2019; Participated in ATLS Instructor course, at Dr. RML Hospital & ABVIMS, New Delhi; Faculty: Trauma First Responder training at Road safety stalls at "Paryatan Parv" installed by Ministry of Road Transport and Highways; National Convener: Multi Institutional Learning and Practice (MILAP) academic session; Completed BLS and ACLS Provider Course; Member: Association of Surgeons of India; Participated in Basic Course Workshop in Medical Education & Health Profession's Education at CMET, AIIMS, New Delhi.

**Dr Gyaninder P Singh** was awarded the "Outstanding Scientist Award in Anaesthesiology" by Venus International Research Award (VIRA-2019) at Chennai on 3 August 2019; Awarded Certificate of Appreciation for contribution in the e-skill modules development at SET Facility, AIIMS; Appointed Assistant Editor for Journal of Neuroanaesthesiology and Critical Care.

**Dr Keshav Goyal** was appointed as External Examiner of Madhya Pradesh medical Science University, Jabalpur (MP) for MD anesthesiology; Advanced Trauma Life support (ATLS) Instructor Recertification, April 2019; Emergency Neurological Life Support (ENLS) Instructor Recertification; Course director cum National Coordinator of 1st Acute Neuro Care (ANC) affiliated by National society (ISNACC) 2019 at PGIMER Chandigarh and Yashoda Hospital, Hyderabad; Member of Trainee Engagement Committee of SNACC, USA; Reviewer of International Journal of Respiratory and Pulmonary Medicine.

**Dr Narender Choudhary** chaired the session in "Trauma 2019" 9th National Conference of Indian Society for Trauma & Acute Care, organized by Department of Trauma Surgery, King George Medical University, Lucknow. (29-30 August 2019); Participated as Faculty at pre conference workshop on "Essential Surgical Skills to Manage Acutely Injured Patient" organized by Department of Trauma Surgery, King George Medical University, Lucknow. (30 August 2019); Participated as a member of Urban Research and Rescue (USAR) INDIA Team capacity assessment mission under National Disaster Response Force (NDRF) from 24 to 27 September 2019; Conducted workshop as faculty on "Basic Skills in Ultrasound for Surgeons" during Annual Conference of ASI – Rajasthan Chapter on 18 October 2019; Successfully Completed ATLS Instructor Course of American College of Surgeons on 3-4 November 2019; Organized Pre conference "Trauma Mater Class: Gusty Decision Making Under Pressure" for 10th Asian Conference on Emergency Medicine (ACEM 2019) on 5-6 November 2019; Conducted Cadaveric Workshop as part of National Conference of American College of Surgeons – India Chapter (ACSCON 2020) on 1 January 2020.

**Dr Navdeep Sokhal** received Best paper award for the poster "Comparison of propofol and ketofol on transcranial motor evoked potentials (TcMEPs) in patients undergoing thoracolumbar surgery" presented by a student in ISNACC 2020 in Chennai; Course Director-Successfully organized "AIIMS Critical Care Course for Interns" as Course Director on 8-9th December 2018. In this course interns and residents were trained for various lifesaving skills like basic and advanced cardiac life support, airway management, vascular access and cricothyrotomy on mannequins and were taught basic concept of critical care management.

**Dr Niraj Kumar** is pursuing fellowship Program: (CMETI – Part Time Clinical Research Methodology and Evidence Based Medicine) at AIIMS, New Delhi for the session January 2019; Instructor (Faculty) of –ATLS, ANC, ACCC, AIIMS – EM-SONO, AUTLS, AIIMS cadaver airway; As a faculty of ORBO team facilitates knowledge, awareness amongst the hospital staff and also actively involved in procedures related to organ procurement.

**Professor Purva Mathur** won First Prize in Best Free poster Award of Indian Association of Medical Microbiologist: "Antimicrobial consumption in intensive care unit patients at Level-1 trauma in India". Singh P, Katyal S, Pandey S, Dhyani

N, Khatri S, Walia K, *Mathur Pat* 2nd Chapter meeting of IAMM 2019, Delhi Chapter, India Habitat Center, New Delhi on 20 July 2019; Won Dr. Shrinivas Award for outstanding scientific work in antibiotic susceptibility testing in Oral & Poster presentations: “Molecular & Clinical Epidemiology of Colistin Resistant *Klebsiella pneumoniae* at an Apex Trauma Patients”. Khurana S, *Mathur P*, Veeraraghavan B, Kumar S, Sagar S, Aggarwal R, Soni K D, Malhotra R at 2nd Chapter meeting of IAMM 2019, Delhi Chapter, India Habitat Center, New Delhi on 20 July 2019; Won 2nd Prize in Abstract presentation: “Trends of Infection control Measures and their Impact on Incidence of Ventilator Associated Pneumonia in a Neuro-Trauma ICU over a period of 5 year”. Dhakal R, Victor D, Gunjyal J, Singh P, Bajpai P, Lathwal A, *Mathur P*, Malhotra R at AIIMS Neuroanesthesia & Neurocritical care update 2019 on 19 October 2019.

**Dr Pratyusha Priyadarshini** is Faculty incharge of Academic roster of residents in division of trauma surgery and critical care; Also faculty incharge of internal assessment of residents in division of trauma surgery and critical care; Developed a training skill module “Advanced Surgical skill module” for residents in surgical disciplines and successfully conducted two rounds of the module at SET facility AIIMS, ND; National Coordinator of the Multi Institutional Learning and practice (MILAP) academic session; Participated as faculty in consensus meeting to formulate ISTAC guidelines for solid organ injury management in New Delhi.

**Professor S Arulselvi** received Patient safety champion award for “*Quality Improvement of the Laboratory Handover Process to Improve Patient Care*” on occasion of Quality & Accreditation Institute Celebrating: “1st World Patient Safety Day: SPEAK UP FOR PATIENT SAFETY!” on 17 September 2019 for demonstrating patient safety culture in actions. (Certificate No.: QAI-WPSD-017); Co-authored a Paper presentation on a study “TEG Versus Conventional Coagulation Tests in Liver Trauma: A comparison of TEG in cases.” in ISTH-ILBS Symposium on coagulopathy in liver disease 2019 organized by International Society of Thrombosis and Hemostasis and Department of Hematology, Institute of Liver and Biliary Sciences, A.P.J. Abdul Kalam Auditorium, ILBS, New Delhi on 2nd and 3rd March 2019 and won the first Paper award; Co-authored a Paper presentation on a study “Comparison of conventional coagulation parameters, thromboelastography and flow cytometry methods to study the improvement in platelet function in thrombocytopenic trauma patients post platelet transfusion” in 30th Annual Conference, Delhi Society of Hematology (DSH), Hotel Holiday Inn New Delhi - 110037, India on 15 September 2019 and won the second best paper award.

**Dr Samarth Mittal** was elected as the Executive committee member of Indian Orthopaedic Association which is the national Orthopaedic association of India; Elected as executive member of Delhi Orthopaedic Association for representing south Delhi; Elected as Treasurer of APOA (Asia Pacific Orthopaedic Association) YSF India Chapter; Selected as a part of delegation from AIIMS to study Trauma systems in Japan; Continued as Associate Editor of JCOT (Journal of Clinical Orthopaedics and Trauma) which is the official journal of Delhi Orthopaedic society and is a Pubmed Indexed journal; Awarded the 2nd Prize for best podium presentation at BIOS (British Indian Orthopaedic Society) conference held in Leicester, UK on 28-29 June 2020; Completed the prestigious IOA- BIOS – UK Junior fellowship in June 2019 in London, UK; Nominated for Imparting first aid training under national Programme for trauma care; Awarded second prize in the prestigious DR ROBERT BAUZE TRAUMA GOLD MEDAL for best paper presentation in 7th Congress of the Asia Pacific Trauma Society & 1st Scientific Meeting of the APOA Foot & Ankle in Bangkok, Thailand; Won best prize for best Oral presentation at APOA Young Surgeon’s Forum 2020 in Varanasi, UP, India on 19 January 2020.

**Professor Subodh Kumar** was awarded International Fellowship of American Association for the Surgery of Trauma (AAST), USA 2019; Nominated as Vice President of Indian Society for Trauma & Acute Care (ISTAC) 2019 during TRAUMA 2019 at Lucknow; Nominated as Visiting Professor in Department of Trauma Surgery at All India Institute of Medical Sciences, Rishikesh 2019; Nominated as the Co-Chair of the Trauma/ ICU specialty committee for seamless implementation of AB PM-Jay Scheme by the National Health Authority, Govt. of India; Invited as visiting faculty for delivering a lecture on the occasion of first anniversary of Apex Trauma Centre, SGPGI on 31 July 2019 by Sanjay Gandhi Post Graduate Institute of Medical Science (SGPGIMS) Lucknow; Nominated as member of Institute Ethics Committee of All India Institute of Medical sciences, New Delhi, 2019; Invited as member of Scientific Advisory Group (SAG) of National Biopharma Mission (NBM) by Department of Biotechnology, Govt. of India; Appointed as Managing Editor of Indian Journal of Surgery official journal of Association of Surgeons of India; publisher Springer.

**Professor Sushma Sagar** was Member of Expert Group, “Development of First Aid for the Community”, a WHO project in association with the Ministry of Health and Family Welfare; Invited as Judge for Paper Presentation on Road Safety on 27 December 2019 at IIT, New Delhi; Appointed as Visiting Professor in Department of Trauma Surgery at AIIMS, Rishikesh, 2019 onwards; Appointed as Principal Secretary’s nominee for hospital based authorization committee of Transplantation of organs and tissues, Govt. of NCT Delhi 2019-2020.

**Professor Vivek Trikha** was awarded the Prestigious Dr Balu Sankaran Oration for Basic Science and Orthopaedics Research in IOACON 2019 November, at Kolkata; Member Editorial Board of Indian Journal of Orthopedics national Journal of Indian Orthopedic Association; Associate Editor of Journal of Clinical Orthopedics & Trauma.

## 10.6. National Drug Dependence Treatment Centre

<b>Professor and Chief</b>		
Rakesh K Chadda		
<b>Professor</b>		
Raka Jain Sonali Jhanjee	Rakesh Lal	Anju Dhawan Atul Ambekar
<b>Additional Professors</b>		
Yatan Pal Singh Balhara Rachna Bhargava	Ravindra Rao Gauri Shanker Kaloiya	Ashwani K Mishra Prabhoo Dayal
<b>Associate Professors</b>		
Biswadip Chatterjee Siddharth Sarkar	Alok Agrawal	Rizwana Quraishi Piyali Mandal
<b>Assistant Professors</b>		
Roshan Bhad		Shalini Singh
<b>Scientist</b>		
Monica Mongia		
<b>Medical Social Service Officer</b>		
Braham Prakash Ratnesh Kumar		Deepak Yadav Dinesh Kumar
<b>Senior Administrative Officer</b>		
Renu Bharadwaj		
<b>Accounts Officer</b>		
Meenakshi Dabral (up to June 2019)		Prem Pal (from June 2019)
<b>Medical Records Officer</b>		
Harish Chander		
<b>Assistant Nursing Superintendent</b>		
Beena Rawat		
<b>Assistant Store Officer</b>		
Yatendra Kumar Meena		

### HIGHLIGHTS

NDDTC continues to be the WHO Collaborating Centre on Substance Abuse since 2012. In addition to patient care, the centre has progressed with regard to treatment, training and research in area of substance use disorder. A total of 3,02,416 patients were seen: 13,413 new patients and 2,89,003 old patients inclusive of regular OPD, 3 community clinics, Mobile Methadone Clinic and 5 speciality clinics. The NDDTC laboratory attended to more than 150,000 tests during the year in its toxicology, haematology, biochemistry and HIV screening labs. The laboratory has currently the facility to detect 14 types of addictive substances.

From 25 November 2019 NDDTC has initiated 'Consultation Liaison Addiction Psychiatry' services to improve services for addictive disorders in medically ill patients. The CL Addiction Psychiatry services have started an exclusive outpatient service from psychiatry OPD every day in the forenoon where all patients of addictive disorders referred from other departments would be seen. Similarly, inpatient services are provided through management of addictive disorders in patients admitted in other departments of AIIMS.

Some major ongoing activities of NDDTC involve: Detection of New Psychoactive Substances among Substance Abuse Treatment Seekers in India, funded by the Department of Revenue, Ministry of Finance, Government of India, conducting "training of trainers" workshops for nursing personnel in Delhi and other regions of India funded by MOH & FW. NDDTC continued with the Adverse Drug Reactions Monitoring Centre for the Pharmacovigilance Programme of India.

Many faculty members are technical experts and also holding key positions in national and international professional bodies and editorial boards in prestigious peer reviewed journals. Several faculty members are recipient of professional honors and awards.

The faculty of the Centre are actively involved in research. Currently, many National and International agencies are funding ongoing research projects in the centre. More than 69 research articles and 8 abstracts in peer reviewed national and international journals of repute and chapters in various books/reports have been published during this period.

NDDTC also offers PhD in Addiction Psychiatry. One student was awarded PhD in Addiction Psychiatry in April 2019. The centre is also running Doctorate of Medicine (DM) course in Addiction Psychiatry. Currently, 6 PhD students and 13 DM students are enrolled for the degree.

The 16th Annual Day of National Drug Dependence Treatment Centre was celebrated at NDDTC, Ghaziabad on 16th April 2019. The findings of the recently conducted “2nd National Drug Use Survey of India” were presented and a book entitled “Basics of Addiction Psychology” was also released on this occasion.

Shri Jai Pratap Singh, Minister of Excise & Liquor Prohibition, UP State, visited the Centre on 26 June 2019, **International Day Against Drug Abuse.**

A public lecture “Dealing with Addiction” was organized on 26 June 2019 on the occasion of the **International Day Against Drug Abuse.**

NDDTC day care exhibit got the third prize on the occasion of 64th Institute Day Exhibition and Award function 2019.

National Drug Dependence Treatment Centre (NDDTC) and the Department of Psychiatry organized the 21st Annual Conference of the International Society of Addiction Medicine (ISAM 2019), New Delhi (13-16 November 2019). The Theme of the conference was “Addiction in a Rapidly Changing World”. The conference was attended by more than 500 delegates from 37 countries.

## **EDUCATION**

### ***Undergraduate***

MBBS students are posted for a day in the centre during their Psychiatry posting.

### ***Postgraduate***

Residents doing MD (Psychiatry) are posted in the centre for 6 months. Eleven candidates are doing DM in Addiction Psychiatry.

### ***PhD and Postgraduate teaching***

- \*Journal club -Weekly joint activity with psychiatry
- \*CCR and CGR two in every semester at AIIMS
- Seminar- Weekly
- Case Conference- Weekly
- Seminars/ Journal Club

*\*Joint activities of the Department of Psychiatry and the Centre*

### **CMEs/Workshops/Symposia/National and International Conferences**

1. NDDTC and Department of Psychiatry, AIIMS, New Delhi organized an International Conference titled “21st Annual Conference of the International Society of Addiction Medicine (ISAM 2019)”, New Delhi, 13-16 November 2019.
2. NDDTC conducted three National workshops “Training of Trainers” for nursing personnel in Delhi and other regions of India funded by MoHFW (28 September-5 October 2019 and 28 November-5 December 2019 at AIIMS, New Delhi and 20-27 January 2020 at LHMC & Kalawati Hospital, New Delhi).
3. NDDTC also organized two one-day workshops, first on 17 February 2020 for delegates from Holy Family Hospital, Defence Ministry and RAK College of Nursing, and second on 9 March 2020 for PG students Nursing from AIIMS at NDDTC Ghaziabad.



SURUCHI PANT, ASHA VISWAKSARI, RAJESH ASTHANA, JAGJIT PAUJIA

**Addiction Medicine**  
 Theme: "Addiction in a Rapidly Changing World"  
 13-16 November 2019 | Pullman Aerocity, New Delhi



ALEX BALDACCCHINO, D. K. SHARMA, R. K. CHADDA, ANJU DHAWAN



**Addiction Medicine**  
 Theme: "Addiction in a Rapidly Changing World"  
 13-16 November 2019 | Pullman Aerocity, New Delhi



KATHLEEN BRADY, RANDEEP GULERIA, ALEX BALDACCCHINO, ANJU DHAWAN







#### Lectures delivered

**Raka Jain: 11**

**Sonali Jhanjee: 5**

**Gauri Shanker Kaloyia: 10**

**Rachna Bhargava: 9**

**Alok Agrawal: 8**

**Piyali Mandal: 5**

**Rakesh Lal: 9**

**Atul Ambekar: 32**

**Ravindra V Rao: 5**

**Prabhoo Dayal: 3**

**Rizwana Quraishi: 3**

**Roshan Bhad: 6**

**Anju Dhawan: 4**

**YPS Balhara: 27**

**Ashwani Kumar Mishra: 8**

**Biswadip Chatterjee: 1**

**Siddharth Sarkar: 2**

**Shalini Singh: 6**

**Oral papers/posters presented: 26**

#### RESEARCH

##### Funded projects

##### *Ongoing*

1. NIHR Global Health Research Group on Psychosis Outcomes: the Warwick – India - Canada (WIC) Network, RK Chadda, National Institute of Health Research, UK, 3 years, 2017-2020, Rs 252 lakhs
2. Detection of New Psychoactive Substances among Substance Abuse Treatment Seekers in India – Multi Centric Study, RK Chadda, Department of Revenue, Govt of India, 4.5 years, 2017-2022, Rs 651 lakhs
3. Role of Delphinium denudatum (Jadwar) in a Rat Model of Nicotine Dependence, Raka Jain, AYUSH, 3 years, 2017-2020, Rs 29.16 lakhs
4. Naltrexone Implant, Rakesh Lal, Rusan Pharma, 5 years, 2017-2022, Rs 38.84 Lakhs
5. Extent of Mental Health issues & Addictive Behavior among Adolescents seeking help in Adolescent Friendly Health Clinics in Delhi, Anju Dhawan, Adolescent Health Division, Directorate of Family Welfare, Govt of NCT of Delhi, 1 year, 2019-2020, Rs 18.85 lakhs
6. Survey on Substance use among School and College Students, Anju Dhawan, Ministry of Social Justice and Empowerment, Government of India, 6 months, 2019-20, Rs 14.85 lakhs
7. Screening and Intervention for Drug/Substance Use among Secondary School going Children, Anju Dhawan, UEE Mission, Education Department Delhi, 1 year, 2020-21, Rs 40 lakhs
8. National Survey on Extent and Pattern of Substance Use in India, Atul Ambekar, Ministry of Social Justice and Empowerment, Government of India, 4 years, 2016-2020, Rs 2241 lakh
9. Field Testing of ICD-11 Classification for Disorders related to Substance Use and Addictive Behaviours, Atul Ambekar, WHO, 3 years, 2017-2020, Rs 3.25 lakhs
10. Developing Training Mechanisms for use of Essential Narcotic Drugs (Methadone) for the treatment of Opioid Dependence, Atul Ambekar, Department of Revenue, Ministry of Finance, Government of India, 3 years, 2017-2020, Rs 76.21 lakhs
11. Bone mineral density and chronic alcoholism and changes following disulfiram deaddiction therapy, Yatan Pal Singh Balhara, DBT, 3 years, 2017-2019, Rs 83 lakhs
12. Use of online web-based applications as a platform to strengthen the services for management of addictive disorders in the state of Odisha, Yatan Pal Singh Balhara, Department of Health, Government of Odisha, 1 year, 2019-2020, Rs 12 lakhs
13. Rates and pattern of psychoactive substance use among prisoners in India, Ravindra Rao, Ministry of Social Justice and Empowerment, Government of India, 6 months, 2019, Rs 30 lakhs

14. Developing and testing an online training programme for medical officers on treatment of substance use disorders, Ravindra Rao, Ministry of Social Justice and Empowerment, Government of India, 14 months, January 2019-March 2020, Rs 14.59 lakhs
15. Screening and intervention in school students of elementary classes for substance use in Delhi, Rachna Bhargava, Samagra Shiksha, DOE, 2019-2020, Rs 40 lakhs
16. Development of Cognitive Retraining Module for Improving Cognitive Deficits of Abstinent Patients with Alcohol Dependence Syndrome, Cannabis Dependence Syndrome and Opioid Dependence Syndrome in a Tertiary Care De-Addiction Centre of Northern India, Gauri Shanker Kaloiya, DST, 3 years, 2017-2020, Rs 20.45 Lakhs
17. Internal Consistency and Divergent Validity of the Hindi Version of the Addiction Severity Index-Lite among Individuals with Alcohol and Opioid Dependence Syndrome, Ashwani Kumar Mishra, AIIMS, 2 years, 2019-2021, Rs 3.25 lakhs
18. Development of Indian Anxiety and Mania Questionnaire, Ashwani Kumar Mishra, ICMR, 3 years, 2018-2021, Rs 62.29 lakhs
19. Brain Stimulation as a Novel Technique for Cognitive Dysfunction and Craving Management to Enhance Treatment Outcome in Patients with Alcohol Dependence: a Prospective, Randomized Controlled Trial, Prabhoo Dayal, DST, 3 years, 2018-2021, Rs 25.80 lakhs
20. Role of genetic polymorphism in determining risk and severity of opioid dependence: A case-control study, Biswadip Chatterjee, AIIMS, 2 years, 2019-2021, Rs 10 lakhs
21. Study on substance use among homeless population in India, Alok Agrawal, Ministry of Social Justice & Empowerment, Government of India, 2 years, 2018-2020, Rs 52 lakhs
22. A study among emerging opioid using populations in India, Alok Agrawal, The Colombo Plan, 5 years, 2018-2023, Rs 350 lakhs
23. A functional polymorphism of dopamine beta-hydroxylase gene and disulfiram treatment response in patients with alcohol dependence: A pilot exploratory study, Rizwana Quraishi, AIIMS, 2 years, 2018-2020, Rs 4.5 lakhs
24. An evaluation of mu-opioid receptor gene polymorphism (A118G) and long term naltrexone treatment response in North Indian Alcohol dependent patients, Rizwana Quraishi, ICMR, 3 years, 2019-2022, Rs 26 lakhs
25. Development of an Indian Scale to Assess Substance Related Problems, Siddharth Sarkar, ICMR, 3 years, 2019-2022, Rs 42 lakhs
26. Barriers and Facilitators of Addiction Treatment: A qualitative study, Siddharth Sarkar, ICSSR, 2 years, 2019-2021, Rs 4 lakhs
27. An explorative study of knowledge, perceived attitude and risk of addiction potential among different stakeholders concerning recreational cannabis use among youth in India, Roshan Bhad, AIIMS, 2 years, 2019-2021, Rs 8 lakhs

### **Completed**

1. Portrayal of psychoactive substance use in Bollywood movies: a mixed methods study, Ravindra Rao, AIIMS, 1.5 years, 2016-2019, Rs 1.44l lakhs
2. Assessment of HIV, other Blood-borne Viruses, TB and Risk Behaviours among Prison Inmates in Gujarat, Ravindra Rao, UNODC, Regional Office for South Asia, 7 months, 2018-2019, Rs 21 lakhs
3. Comparison of serum Corticotrophin Releasing Factor (CRF) level in detoxified Opioid-dependent subjects with healthy controls. Biswadip Chatterjee, AIIMS, 2 years, 2017-2020, Rs 2 lakhs
4. Development of National Suicide Prevention Strategy for the Maldives, Yatan Pal Singh Balhara, WHO SEARO, 4 months, 2019, Rs 4 lakhs
5. Review of Mental Health Services in Sri Lanka, Yatan Pal Singh Balhara, WHO SEARO, 3 months, 2019, Rs 4 lakhs
6. Relationship of serotonin pathway polymorphisms with self-harm behaviour among patients with opioid dependence, Siddharth Sarkar, DST, 2 years, 2017-2019, Rs 20.68 lakhs
7. Peripheral Blood Inflammatory Cytokines and Markers of Neuroinflammation in Alcohol Dependence and Their Association with Behavioural Markers and Alcohol Dependence Treatment Outcome, Prabhoo Dayal, AIIMS, 1 year, 2018-2019, Rs 4.63 lakhs
8. Psycho-social correlates of drug use among attendees of Women's Clinic of National Drug Dependence Treatment Centre, Piyali Mandal, AIIMS, 3 years, 2017-2020, Rs 0.5 lakhs

### **Departmental projects**

#### **Ongoing**

1. A clinical trial to find the effect of transcranial direct current stimulation (tDCS) on craving to smoke tobacco

- among opioid dependent smokers maintained on Buprenorphine
2. A Comparative Study of Alcohol Biomarkers & Their Clinical Applicability in Alcohol Dependence a Comparative Study of Alcohol Biomarkers and their Clinical Applicability in Alcohol Dependence
  3. A comparative study of Ethyl glucuronide (EtG) and Fatty acid ethyl ester (FAEE) with other conventional biomarkers in Alcohol Dependent subjects.
  4. A comparative study of serum brain-derived neurotrophic factors levels in-patients with alcohol dependence, depression and co-morbid alcohol dependence and depression.
  5. A comparative study to assess the psycho-social correlates of gaming disorder among college students
  6. A Pilot Follow-up Study on Retention and Outcome of Patients with Opioid Dependence after Discharge from Treatment Centre
  7. A prospective study to assess the factors associated with short term retention of opioid dependent syndrome on oral Naltrexone
  8. A Study to Assess Effectiveness of Advocacy Skill Building Programme on Prevention of Tobacco Use among Adolescents in selected schools of Delhi
  9. As Assessment of Stress Biomarkers in Opioid Dependent Youth and its association with stress and coping: An exploratory study.
  10. Assessing client related factors influencing initiation of opioid substitution therapy among Injecting Drug Users: A Community based, Cross Sectional, Comparative Study
  11. Assessment of clinical and neuroendocrine response to induced stress in detoxified opioid dependent subjects.
  12. Assessment of sexual behavior among patients seeking treatment for opioid dependence at NDDTC
  13. Assessment of treatment response, inflammatory cytokine (TNF-alpha) and mtDNA 10398A/G polymorphism in Familial Bipolar Disorder.
  14. Association of Tobacco Smoking with Psychiatric Co-morbidities among Patients with Chronic Obstructive Pulmonary Disease
  15. Brain Derived Neurotrophic Factor gene polymorphism (Val66Met) association with peripheral BDNF levels and clinical variables in major Depressive Disorder Patients.
  16. Clinical and Biochemical Assessment of Compliance to Disulfiram and Abstinence for Alcohol: A Longitudinal Study in Alcohol Dependent Subjects
  17. Clinical laboratory profile of opioid dependent patients: A retrospective chart review study.
  18. Cognitive functioning in buprenorphine maintained opioid dependent patients at peak and trough buprenorphine levels: an experimental study
  19. Concordance of ICD 11, ICD 10 and DSM 5 Diagnostic Guidelines for Alcohol and Opioid Use Disorders
  20. Correlates of family functioning in adolescent substance users
  21. Correlates of Recovery Capital in patients with dual diagnosis – an explorative study
  22. Course of depressive symptoms in patients with alcohol dependence undergoing detoxification.
  23. Development of Cognitive Behavioral Based psychological intervention module for adolescents in conflict with law
  24. Development of Psychological Intervention Module among adolescents with Dissociative Disorder
  25. Effect of Cannabis on serum Brain Derived Neurotrophic Factor level and its relation with psychosis – A cross-sectional exploratory study.
  26. Effectiveness of reminders using Phone call versus Short Message Service on treatment retention in patients with Substance Use Disorders: An open label randomised trial
  27. Endorsement and Concordance of ICD 11, ICD 10 and DSM 5 Diagnostic Guidelines for Alcohol and Opioid Use Disorders
  28. Experience with Treatment among patients with substance use disorders
  29. Factors associated with treatment retention amongst alcohol dependent patients
  30. Family Interventions Addressing Expressed Emotions in Treatment Seeking Men with Opioid Dependence
  31. Indigenously produced psychoactive substances in India: Patterns of use and Profile of users
  32. Knowledge, Risk factors and experience of non-fatal overdose among Injecting Drug Users: A community-based, cross-sectional study
  33. Outcomes in Treatment with Tramadol for Opioid Use Disorder over 12 weeks: A Prospective Observational Study
  34. Rates and Pattern of Psychoactive Substance use among Prison inmates in India
  35. Substance use among homeless men receiving services from shelter homes in Delhi

36. Substance use among school and College students
37. Substance use among Transport Workers
38. Substance Use in Children and Adolescents with Attention Deficit Hyperactive Disorder: An Exploratory Study
39. The clinical and laboratory predictors of Alcohol withdrawal syndrome
40. Tobacco use in alcohol dependent patients

### ***Completed***

1. A comparative study to assess the psycho-social correlates of gaming disorder among college students
2. A Longitudinal Observational Study to Assess Treatment Retention Rate & Predictors of Treatment Retention among Patients with Opioid Use Disorder
3. A pilot follow-up study on retention and outcome of patients with Opioid Dependence
4. Adult ADHD in patients with opioid dependence: An exploratory study
5. Assessing client perceived barriers to initiate opioid substitution therapy among Injecting Drug Users a cross-sectional, comparative, community-based study
6. Assessment of Biochemical Measures in Adolescent Inhalant users.
7. Assessment of Cannabis use among Alcohol and Opioid Dependent subjects based on Urinalysis- A Retrospective Chart Review
8. Association between serum C-reactive protein level and alcohol consumption among patients of Alcohol Use Disorders: a cross-sectional, exploratory study
9. Behavioral and Biological Assessment of Vulnerabilities to acquisition of HIV, Blood Borne viruses and Tuberculosis among Prison Inmates of Gujarat
10. Cognitive Functioning in Buprenorphine maintained Opioid Dependent Patients at Peak and Trough Blood Buprenorphine Levels: An Experimental Study
11. Cognitive Representations and Feasibility of Cognitive Therapy among Individuals with Alcohol Dependence Syndrome
12. Delay Discounting Rates among Patients with Alcohol and Opioids Dependence: A Cross Sectional Comparative Study
13. Effectiveness of Intravenous Naloxone in Attenuating Agonist Effects of Intravenous Buprenorphine: A Double blind, Within-subject, Randomized, Cross-over Study in Opioid Dependent Subjects
14. Gambling disorder and its socio- demographic correlates among treatment seeking patients with alcohol use disorders
15. Neurological soft signs and their correlates among patients with cannabis use disorder with and without psychosis: a cross-sectional comparative study
16. Out-patient Management of Acute Opioid Withdrawal with Buprenorphine in Community-Based Setting: A Retrospective Chart Review
17. Prevalence and characteristics of self-harm and suicidal attempts among patients with substance use disorder at a tertiary care hospital
18. Psychological Correlates of Caregiving among the caregivers of patients with Schizophrenia
19. Psychosocial factors associated with Internet Use Behavior among Medical & Engineering Undergraduate Students: A comparative study
20. Stigma among men and women seeking treatment for substance use disorder and their family members: a cross-sectional comparative study
21. Trazodone for sleep disturbance in opioid dependent patients maintained on buprenorphine: a double-blind placebo control trial

### **Collaborative projects**

#### ***Ongoing***

1. A hermeneutic phenomenological study on experiences of living donors post kidney transplant at AIIMS New Delhi, College of Nursing
2. A study to compare the anxiety, depression and quality of life (QOL) among caregivers of children with cerebral palsy and those with typically developing children attending Paediatric Neuro OPD at AIIMS, New Delhi, College of Nursing
3. Comparison of Different Anti-platelet Drug Regimes on Platelets Aggregation and Urinary 11-Dehydrothromboxane B2 levels in Stable Ischemic Heart Disease Patients, Cardiology

4. Comparison of Double “J” and infant feeding tubes as stents in open Cohen’s ureteric reimplantation in terms of hospital stay - a Randomized study, Pediatric Surgery
5. HRV and autonomic parameters for supplementing clinical assessment of opioid withdrawal, Physiology
6. Study on the association of polymorphism, methylation and expression status of the genes of monoamine pathways in Alcohol dependence, Anatomy

**Completed**

1. A vignette based cross-sectional study to assess health care professional’s perspective on various ethical dilemma clinical situation, Medical Oncology
2. Default Mode Network of addictive disorders: A Quantitative EEG study, Physiology
3. The Effect of Prosthodontic Rehabilitation of Completely Edentulous Geriatric Patients on Their Working Memory Process - A Functional MRI Based Pilot Study, CDER
4. Evaluation of Eating Disorders and their Association with Metabolic Parameters and Glycemic Control in Adult Patients with Diabetes Mellitus Type 2, Endocrinology

**PUBLICATIONS**

**Journals: 55                      Abstracts: 8                      Chapters in Books: 3                      Books: 1**

**PATIENT CARE**

**Biochemistry Laboratory**

Total biochemistry tests: 81269

Total Serum Electrolytes tests: 5135

Total haematology tests: 48995

Total HIV screened: 735

**Drug Screen Laboratory**

**Total number of drugs of abuse screened in urine= 29606**

S. No.	Drug	Nos.
1	Morphine	3626
2	Codeine	2606
3	Buprenorphine	3106
4	Pheniramine	2964
5	Tramadol	3294
6	Pentazocine	2964
7	Benzodiazepines	5992
8	Cannabis	1020
9	Cotinine	358
10	Barbiturate	340
11	Amphetamine	340
12	Cocaine	380
13	Naltrexone	2606
14	Inhalants	10
	<b>Total number of drugs tested in urine</b>	<b>29606</b>

**OUT-PATIENT SERVICES**

GENERAL OPD	New Cases	Old Cases	Total
NDDTC	11874	76187	88061

Trilok Puri (Community clinic)	263	33904	34167
Sunder Nagri (Community clinic)	846	153907	154753
Kotla Mubarakpur (Community clinic)	136	22236	22372
<b>Total cases</b>	<b>13119</b>	<b>286234</b>	<b>299353</b>

<b>SPECIALITY CLINIC</b>			
Adolescent	90	558	648
Dual diagnosis	110	1202	1312
Tobacco cessation	61	674	735
Women	19	291	310
Family empowerment	14	44	58
<b>Total cases</b>	<b>294</b>	<b>2769</b>	<b>3063</b>
<b>Grand total of cases</b>	<b>13413</b>	<b>289003</b>	<b>302416</b>

#### **OTHER PATIENT CARE STATISTICS**

Total no. of admissions	1224
Total no. of operation theatre/ operation cases	NIL
Total no. of patients visited at Day care ward	2132
Total no. of deaths	NIL
Average no. of admissions per working day	04
Average no. of OPD attendance per working day at NDDTC (new patients)	41
Average no. of OPD attendance per working day at NDDTC (old patients)	255
Average no. of OPD attendance per working day at Trilok Puri community clinic (new patients)	1
Average no. of OPD attendance per working day at Trilok Puri community clinic (old patients)	113
Average no. of OPD attendance per working day at Sunder Nagri community clinic (new patients)	3
Average no. of OPD attendance per working day at Sunder Nagri community clinic (old patients)	515
Average no. of OPD attendance per working day at Kotla Mubarakpur Community clinic (new patients)	0.46
Average no. of OPD attendance per working day at Kotla Mubarakpur Community clinic (old patients)	74
Bed occupancy in a year	87%
Average length of stay	14 days

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Rakesh Chadda** (*please see Chapter 9.34*)

**Professor Raka Jain** was appointed as steering Committee member of the Guru Gobind Singh Indraprastha University, Govt. of Delhi (July, 2019-2021); Special Invitee for Center research and Consultancy (CRC) Committee meeting Guru Gobind Singh Indraprastha University, Govt. of Delhi (July 2019); Organizing Co-Chair for the 21st Annual Conference of

International Society of Addiction Medicine, 13-16 November 2019, Hotel Pullman, New Delhi. Chaired a session in 21st International Society of Addiction Medicine New Delhi, India (13-16 November 2019); Chaired a session in INPALMS Congress 2019 Dhaka, Bangladesh (9-13 December 2019); Re-appointed as a member of the WHO Expert Advisory Panel on Drug Dependence (Dependence Liability Evaluation): World Health Organization, Geneva, November 2019-2023; As an Expert Committee member of the WHO Expert Advisory Panel on Drug Dependence (Dependence Liability Evaluation), attended and participated in the 6th Working Group of the Expert Committee on Drug Dependence (ECDD) WHO Headquarters Geneva, Switzerland, 5-7 June 2019; As an Expert Committee member of the WHO Expert Advisory Panel on Drug Dependence (Dependence Liability Evaluation), attended and participated in the World Health Organization (WHO) "42nd Expert Committee Meeting on Drug Dependence (42nd ECDD, 21-25 October 2019, WHO Headquarters, Geneva, Switzerland. As an Expert Committee member of the WHO Expert Advisory Panel on Drug Dependence (Dependence Liability Evaluation), attended and participated in the 7 Working Group of the Expert Committee on Drug Dependence (ECDD) WHO Headquarters Geneva, Switzerland, 10-21 February 2020.

**Professor Anju Dhawan** was Organizing Secretary for the 21st Annual Conference of the International Society of Addiction Medicine, 13-16 November 2019 at Hotel Pullman, New Delhi; Membership International Society of Addiction Medicine (ISAM) Training and Education Committee; Conducted DM Addiction Psychiatry examination in NIMHANS on 21 November 2019.

**Professor Sonali Jhanjee** got Luke Clack award for presentation of paper titled: Tobacco use in children and adolescent in Attention deficit hyperactive disorder: An exploratory study in the 15th Biennial National Conference of Indian Association of Child and Adolescent Mental Health (IACAM) in which I was co-author; Part of a meeting group for drafting White paper on Alcohol and cancer under ICMR-ICR India Cancer Research Consortium (ICMR-ICRC). Red Cross Road, New Delhi; Part of a Sub Group for Health Effects on Electronic Nicotine Delivery Systems (ENDS) constituted by MOH& FW; Part of a Committee for finalization of draft 'Guidebook for Nurses on Tobacco Cessation and Drug Dependence Treatment' constituted by MOH& FW.

**Professor Atul Ambekar** represented Ministry of Health and Family Welfare, Government of India as a part of Indian delegation at the 63rd session of the Commission on Narcotic Drugs (CND), Vienna, 2-6 March 2020; Awarded "Venus International Medical Award 2019 (VIMA 2019)" for Excellence in Psychiatry, April 2019; Provided expert advice to World Health Organization (Geneva) on Public Health Issues related to Addictive Behaviours and attended the Expert Group Meeting at Abu Dhabi, UAE (November 2019); Nominated as member Scientific Committee, Asia Regional Meeting of International Society for Study of Drug Policy Conference, October 2019, Hong Kong; Nominated as member Scientific Committee – INEBRIA (International Network on Brief Interventions for Alcohol & Other Drugs) International Conference, September 2020 (Goa); Engaged as an Expert to provide technical assistance to Ministry of Health, Myanmar in collaboration with Community Partners International and UNAIDS for Demonstration Project on 'Opioid Substitution Treatment with Buprenorphine' (December 2019 – ongoing)

**Dr Yatan Pal Singh Balhara** is Technical Reviewer. Standard Treatment Guidelines for the Management of Substance Use Disorders & Behavioural Addictions, 2020. Developed by Ministry of Health and Family Welfare, Government of India, 2020. Member, Expert Working Group for finalising the Advanced Level Universal Treatment Curriculum (UTC) for Substance Use Disorders of the Colombo Plan Drug Advisory Programme (CPDAP); Member, WPA Committee on Psychiatric Education for Medical Students; Nominated as Zonal Representative of World Association of Dual Disorders (WADD). Elected Member, Advisory Committee of World Association of Dual Disorders (WADD), 2018-2021.

**Dr Ashwani K Mishra** is external examiner for paper of Research Methodology for examination of MPhil course in Clinical Psychology, Institute of Human Behavior and Allied Sciences (IHBAS); Continuing as the Elected Member of International Institute; Continuing as the Elected Member of International Association for Statistical Education; Continuing as Member–International Society for Clinical Biostatistics; Scientific Reviewer – Indian Journal of Medical Research, National Medical Journal of India, Health, the American Journal of Alcohol and Drug Abuse.

**Dr Rachna Bhargava** was Associate-cum-Speciality Editor in Journal of Indian Association of Social Psychiatry; Attended Regional Workshop on UNFT organized by UNODC at Maldives between 23-27 September 2019; Jury member for eRaksha Contest 6 September 2019.

**Dr Prabhoo Dayal** was nominated expert member, speciality sub-group TB-Tobacco & Substance abuse, National Technical working group on TB-Co-morbidities for development of framework, guidelines on management and capacity building materials for India, Ministry of Health and Family Welfare, Government of India; Technical expert to provide technical support and facilitate on-site training for strengthening services on management of addictive disorders in Sri Lanka, Ministry of Health, Nutrition & Indigenous Medicine, Sri Lanka with the support of WHO country office, Sri Lanka; Successfully Completed course on Buprenorphine and Office-Based Treatment of Opioid Use Disorder, conducted by American Psy-

chiatric Association 2019 IPS: Mental Health Services Conference from 3-6 October 2019 at New York USA. Member – Organizing Sub-Committee: 21st Annual Meeting of the International Society of Addiction Medicine –ISAM 2019 on “Addiction in a Rapidly Changing World” held at Hotel Pullman, New Delhi, India from 13-16 November 2019; Involved in Training of Trainers’ workshop for training senior nurses and nursing teachers on “Substance Use disorder Nursing” from 28 November to 5 December 2019: Funded by MOH & FW, Govt. of India; Conducted workshop on Tobacco cessation and Substance use on 14 December 2019 at VMMC & Safdarjung Hospital: Sponsored by MOH & FW, Govt. of India.

**Dr Alok Agrawal** got Tilak Venkoba Rao Oration Award by the Indian Psychiatric Society; Provided expert advice to Ministry of Health and Sports, Government of Myanmar for implementation of Buprenorphine maintenance treatment for management of opioid dependence in the country; Conducted two training workshops on management of substance use disorders for doctors and nurses working in government healthcare facilities on invitation of the Government of Himachal Pradesh; Provided expert advice to Ministry of Social Justice and Empowerment, Government of India for accreditation of Integrated Rehabilitation Centres for Addicts through National Accreditation Board for Hospitals and Healthcare Providers (NABH); Provide expert advice to State AIDS Control Societies of Punjab, Haryana and Chandigarh on improving quality of harm reduction services for Injecting Drug Users; Member, Editorial Board, National Journal of Social Defense, National Institute of Social Defense, Ministry of Social Justice & Empowerment, Government of India.\_





## 10.7. Neurosciences Centre

### Chief

MV Padma Srivastava

### Neurology

#### Professor and Head

MV Padma Srivastava

### Professors

Kameshwar Prasad  
Achal Kumar Srivastava

Manjari Tripathi  
Garima Shukla (on leave)  
Mamta Bhushan Singh

Vinay Goyal (upto January 2020)  
Rohit Bhatia

### Additional Professor

Deepti Vibha

### Assistant Professors

Vishnu VY  
Awadh Kishor Pandit  
Elavarasi

Roopa Rajan  
Rajesh Kumar Singh  
Animesh Das  
Bhargavi Ramanujam

Deepa Dash (upto July 2019)  
Anu Gupta  
Divya MR

### Neurosurgery

#### Professor and Head

Shashank Sharad Kale

### Emeritus Professors

Prakash Narain Tandon                      Ajit K Banerji

### Professors

P Sarat Chandra  
Manmohan Singh

Ashish Suri  
Deepak Agrawal (JPNATC)  
Gurudutt Satyarthee (JPNATC)

Rajinder Kumar  
Deepak Gupta (JPNATC)

### Additional Professors

Pankaj Kumar Singh (JPNATC)

Vivek Tandon

Sachin Borkar

### Associate Professors

Hitesh Gurjar  
Rajeev Sharma  
Dattaraj Sawarkar

Amandeep Kumar  
Shweta Kedia  
Kanwaljeet Garg

Shashwat Mishra  
Ramesh Doddamani  
Manoj Phalak

### Assistant Professors

Amol Raheja  
Santanu Kumar Bora

Satish Verma

Rajesh Meena  
Kolulla Praneeth

### Neuroimaging and Interventional Neuroradiology

#### Professor and Head

SB Gaikwad

### Professor

Ajay Garg

### Additional Professor

S Leve Joseph Devarajan

### Neuroanaesthesiology

#### Professor and Head

Arvind Chaturvedi

<b>Professors</b>		
Mihir Prakash Pandia Girija Prasad Rath		Rajendra Singh Chouhan Hemanshu Prabhakar
<b>Additional Professors</b>		
Gyaninder Pal Singh (JPNATC) Keshav Goyal (JPNATC)	Ashish Bindra (JPNATC)	Niraj Kumar (JPNATC) Navdeep Sokhal (JPNATC)
<b>Associate Professors</b>		
Charu Mahajan	Indu Kapoor	Surya Kumar Dube
<b>Assistant Professors</b>		
Vanitha Rajgopalan		Suman Sokhal
<b>Clinical Neuro-psychology</b>		
<b>Additional Professor</b>		
Ashima Nehra		
<b>Neurobiochemistry</b>		
<b>Associate Professor</b>		
Ashok Sharma		
<b>Neuropathology</b>		
Chitra Sarkar	Mihir Chand Sharma	Vaishali Suri
<b>Hospital Administration</b>		
IB Singh		
<b>Chief Medical Officer</b>		
Anjali Hazarika		

### Neurology

#### **HIGHLIGHTS**

In the year 2019-20, the Neurosciences center continued to scale newer heights in the domains of patient care, research and training. This year was notable for the initiation of Tele OPD services for follow up patients amidst the COVID-19 crisis in March 2020. Department of Neurology was the first department in AIIMS to do so. Two major publications on CONSENSUS statements on management of Multiple Sclerosis and other primary demyelinating disorder and on STROKE were published by the department of Neurology.

Stalwarts like Professor Fred Gentili (Canada), an expert in neuro-endoscopic procedures and Professor Ali Krisht (US) an expert in skull base and vascular microneurosurgery came to perform surgeries during 22nd AIIMS Microneurosurgery workshop. Professor Alexi Peleganchuk and Professor Alexander Krutko (Russia) both experts in spine surgery demonstrated their surgical skills during successfully conducted 9th AIIMS complex spine surgery workshop. Department of neurosurgery featured in 2020 edition of *Limca book of records* for performing first craniopagus surgery in which a team of 125 doctors and paramedical staff led by Professor Ashok K. Mahapatra (former Head of Department).

A state-of-the-art 128 slice dual energy CT scanner installed in the department of Neuroimaging and Interventional Neuroradiology. The existing 1.5T MR was upgraded to 'silent MR' system.

Neuro-anesthesiology department managed a record number of 4063 (2760 at the Neurosciences Centre and 1303 at the JPNATC) neurosurgical procedures and 662 neuroradiological procedures (378 in Angiography lab and 284 in MRI suite).

Neuropathology department has added new facilities for the molecular diagnosis and cytogenetic work-up in routine work up in neuro-oncology.

#### **HIGHLIGHTS**

In the year 2019-20, the Department of Neurology continued to scale new heights in patient care, research and training. This year was notable for the initiation of Tele OPD services for follow up patients amidst the COVID-19 crisis in March 2020. Department of Neurology was the first department in AIIMS to do so. Using the module of **teleneurology OPD** services, publications were sent on the experience, the utility and satisfaction index of the users on the novel aspect of

TELE OPD in Neurology. Under the lock down period due to COVID pandemic, several webinars were conducted nationally for educational purpose. Two major publications on consensus statements on management of Multiple Sclerosis and other primary demyelinating disorder and on stroke were published recently, from the department under the aegis of Indian Academy of Neurology and Indian Stroke Association. In the research arena, the department continued to excel with several other publications in high impact factor journals.

## **EDUCATION**

### **Change brought about in academic activities**

1. **Fellowship in Stroke:** Running successfully. We have trained 4 fellows in Stroke till now and the last Stroke Fellow has been inducted into contract faculty in the department in the month of April 2020.
2. Under **short term and long-term Dissertation program with MSc Nursing**, KAP studies and awareness and educational protocols have been made and conducted successfully amongst ER personnel, care givers for stroke patients and for stroke patients.
3. Under **DM Dissertation, Awareness and Educational program for Stroke Triage** and acute management has been conducted successfully with ER personnel and Stroke Nursing staff.

### **Innovative educational activities**

1. Under the lock down period due to COVID pandemic, a number of webinars have been conducted nationally for educational purposed dealing in the following subjects:
  - a) Tele neurology
  - b) Various aspects of stroke and its management issues.
  - c) Various aspects of epilepsy
  - d) Various aspects of EEG and other electrophysiological monitoring.
  - e) COVID and Neurology
  - f) COVID and Stroke
2. Two major publications on CONSENSUS statements on management of Multiple Sclerosis and other primary demyelinating disorder and on STROKE have been published recently, from the department under the aegis of Indian Academy of Neurology and Indian Stroke Association.
3. Using the module of Teleneurology OPD services initiated in the month of March 2020, publications have been sent on the experience, the utility and satisfaction index of the users on the novel aspect of TELE OPD in Neurology.
4. Department of Neurology is the first department in AIIMS to have initiated the Tele OPD services.
5. One senior resident published a systematic review and meta-analysis on effects of tenecteplase in acute ischemic stroke, which prompted 'Up to date' and 'Dynamed' to change its recommendation along with citation of the publication.
6. Organized half day workshops on 'Diagnosis and Management of Epilepsy' for undergraduates and postgraduates through the CMETi training program on 27 August 2019

### **Lectures delivered**

<b>M.V. Padma Srivasatava: 15</b>	<b>Kameshwar Prasad: 21</b>	<b>Manjari Tripathi: 1</b>
<b>Achal Kumar Srivastava: 11</b>	<b>Rohit Bhatia: 16</b>	<b>Mamta Bhushan Singh: 4</b>
<b>Deepti Vibha:10</b>	<b>Vishnu VY: 1</b>	<b>Roopa Rajan: 6</b>
<b>Awadh Kishore Pandit: 3</b>	<b>Rajesh Kumar Singh: 2</b>	<b>Anu Gupta: 1</b>
<b>Animesh Das: 1</b>	<b>Bhargavi: 2</b>	

**Oral papers/posters presented: 37 (Best Paper Award in Movement Disorder Category at IANCON 2019; Best Paper Award in Movement Disorder Category at IANCON 2019; Travel fellowship award for the PhD student)**

## **RESEARCH**

### **Funded projects**

#### **Ongoing**

1. Mapping, Researching and Addressing The Gaps In Scientific Awareness and Health Practices Regarding Stroke In HP: Applying Novel, Interactive/Demonstrative Science Communication MV Padma Srivastava, DST, 3 years, 2016-2019, Rs 40.45 lakhs

2. Effect of Dual-Task Exercise in Conjunction with Fluoxetine and Transcranial Direct Current Stimulation (tDCS) on Postural Stability and Gait in Stroke Patients. MV Padma Srivastava ICMR, 3 years, 2017-2020, Rs 50.6 lakhs
3. Elucidating the Pathobiology of Classical Ayurvedic Interventions in Post Stroke Recovery Using Magnetic Resonance and Other Techniques Based Structural, Functional and Chemical Biomarkers, MV Padma Srivastava DST, 3 years, 2018-2021, Rs. 31.33 lakhs
4. Secondary Prevention by Structured Semi-Interactive Stroke Prevention Package in India (SPRINT INDIA), Study and Establishment of the Indian Stroke Clinical Trial Network (INSTRuCT), MV Padma Srivastava, ICMR, 3 years, 2017-2020, Rs 15.4 lakhs
5. Role of Normobaric Oxygen Therapy, Fluoxetine and Transcranial Direct Current Stimulation (rTCDS) in Hypoxic Ischemic Brain Injury – HIBInitiative, MV Padma Srivastava, DBT, 5 years, 2018-2023, Rs 106 lakhs
6. Randomised, double-blind, placebo-controlled, international, multicenter, phase III study to investigate the efficacy and safety of ticagrelor and ASA in the prevention of stroke and death in patients with acute ischemic stroke or transient ischemic attack (THALES-Acute stroke or transient ischemic attack treated with Ticagrelor or and ASA for prevention of stroke and death, MV Padma Srivastava, ASTRA-ZENACA, 1 year, 2018-2019, Rs 3.92 lakhs
7. Is Air Pollution and climate change a Stroke Risk Factor? with special reference to Stroke in Young Indians and ischemic stroke subtypes: A multi-center study, MV Padma Srivastava, DST, 3 years, 2018-2021, Rs 59.11 lakhs
8. A 12 Week double blind, randomized multi-centric study comparing the efficacy and safety of once monthly subcutaneous AMG 334 against placebo in adult episodic migraine patients (EMPOWER), MV Padma Srivastava, NOVARTIS, 1 year, 2018-2019, Rs 0.9 lakhs
9. The National Institute for Health Research Global Health Research Group on improving stroke care in India at The University of Central Lancashire. IMPROVing Stroke CarE in India (IMPROVISE). MV Padma Srivastava, NIHR-UCLAN-UK, 2 years, 2018-2020, Rs 42 lakhs
10. Understanding and facilitation of neural plasticity for enhancing post stroke recovery using low cost non-invasive brain stimulation techniques, MV Padma Srivastava, DHR, 3 years, 2017-2020, Rs. 48 lakhs
11. A Population Based Prospective Cohort Study to Unravel the Causes of Stroke and Cognitive Decline: A cross-cultural perspective. Kameshwar Prasad, DBT, 8 years, 2014-2022, Rs. 3200 lakhs
12. Identification of brain imaging quantitative traits loci for cerebral small vessel disease among AIIMS cohort participants using genome wide association study, Kameshwar Prasad, DHR, 3 years, 2018-2021, Rs 280 lakhs
13. Next Generation gene sequencing to determine the association between certain functional exonic variations and young onset Ischemic stroke. Kameshwar Prasad, ICMR, 3 years, 2017-2020, Rs 53 lakhs
14. Identification of genetic risk factors of stroke in Indian population. Kameshwar Prasad, DBT, 3 years, 2013-2019, Rs 64 lakhs
15. Biomarkers to enhance predictive power for short-term and long term outcome after spontaneous intracerebral haemorrhage. Kameshwar Prasad, DBT, 6 years, 2013-2019, Rs 119 lakhs
16. Identification of genetic contribution to ischemic stroke by screening single nucleotide polymorphism of genes associated with inflammation: a case-control study. Kameshwar Prasad, ICMR, 2 years, 2017-2019, Rs. 17 lakhs
17. Fever, Hyperglycemia, Swallowing, and Hypertension Management in Acute Stroke: A Cluster Randomized Trial (Indian Quality Improvement in Stroke Care Study) under “India Stroke Research Network”. Kameshwar Prasad, ICMR, 1 year, 2018-2019, Rs. 78 Lakhs
18. Clinical and genetic factors for aspirin resistance in Indian patients with ischemic stroke, Rohit Bhatia, DBT, 3 years, 2017-2020, Rs 85 lakhs
19. Pathobiology of Multiple sclerosis: phenotypic, biomarker and genetic signatures, Rohit Bhatia, ICMR, 3 years, 2018-2021, Rs 120 lakhs
20. Aspirin or clopidogrel in patients with TB Meningitis, Rohit Bhatia, ICMR, 3 years, 2019-2022, Rs 75 lakhs
21. Genomic and Proteomic Characterization of Indian Amyotrophic Lateral Sclerosis, Rohit Bhatia, AIIMS, IIT, 2 years, 2019-2021, Rs. 10 lakhs
22. CRISPR-based Editing of Regulatory Region and Expanded Triplet repeats as Therapeutic Approach in India’s Most Common Hereditary Ataxias, Achal K Srivastava, DBT, 3 years, 2018-2021, Rs 125.35 lakhs
23. Targeting Repressor Sites in fxn Gene and Associated Transcription Factors as Potential Therapeutic Approach in Friedreich’s Ataxia, Achal K Srivastava, ICMR, 3 years, 2019-2022, Rs 62.27 lakhs
24. A prospective, multicentric, randomized, double-blind, parallel, phase III clinical study to assess efficacy of PMZ-1620 along with standard treatment in patients of acute ischemic stroke. Deepti Vibha, Pharmazz India Pvt Ltd., 1 year, 2019-2020, Rs 7.48 lakhs
25. Determination of efficacy of 9 months, 12 months and 18 months of Anti-Tubercular Treatment (ATT) for Tuberculous Meningitis (TBM): A randomized controlled, non-inferiority trial, Deepti Vibha, DHR, 3 years,

- 2019-2022, Rs 40.52 lakhs
26. Blood based protein biomarkers for the prediction of stroke outcome using high through output proteomics approach. Deepti Vibha, AIIMS, 3 years, 2019-2022, Rs 10 lakhs
  27. Clinical and genetics characterization of dystonia using deep targeted sequencing, Achal K Srivastava, ICMR, 3 years, 2019-2022, Rs 6 lakhs
  28. A randomised double blind study of prophylactic levetiracetam for the prevention of post stroke seizures (PROLEVIS), Vishnu VY, DST-SERB, 3 years, 2018-2020, Rs 29 lakh
  29. Machine Learning model for early diagnosis of stroke in resource limited settings: Pilot study: A collaborative project with IIT Delhi, Vishnu VY, DBT, 2 years, 2020-2022, Rs 70 lakhs
  30. Citicoline in Acute Ischemic Stroke undergoing revascularisation therapy- Investigator initiated academic trial, Vishnu VY, AIIMS, 2 years, 2018-2020, Rs. 5 lakhs
  31. BRAHMI (Bacopa Monnieri) for Dementia due to Alzheimer's Disease- Systematic Review and Meta-analysis, Vishnu VY, ICMR, 1 year, 2020, Rs 10 lakhs
  32. Identification of pathobiological and disease activity markers in Primary CNS Vasculitis, Vishnu VY, ICMR, 3 years, 2020-2022, Rs 50 lakhs
  33. Genetic Architecture of Parkinsons Disease in India (GAP-India), Roopa Rajan, Michael J Fox Foundation, 3 years, 2019-202, Rs 36.93 lakhs
  34. The Indian Movement Disorder Registry and Biobank: clinical and genetic evaluation in Indian patients with movement disorders, Roopa Rajan, DBT, 3 years, 2018-2021, Rs 287,72 lakhs
  35. Automated hand-drawn spiral analysis platform as a tool to differentiate tremor syndromes, Roopa Rajan, DST-SERB, 3 years, 2017-2020, Rs 42 lakhs
  36. Botulinum Toxin injection for treatment of dystonic hand tremor: a randomized, placebo-controlled, parallel group trial, Roopa Rajan, AIIMS, 2 years, 2018-2020, Rs 4.82 lakhs
  37. Deciphering the role of ATF3 and TGF  $\beta$  signaling in Mesial Temporal lobe epilepsy (MTLE) patients, Rajesh Kumar Singh, AIIMS, New Delhi, 2 years, 2018-2020, Rs 9.44 lakhs
  38. To evaluate the prevalence and incidence of cognitive deficits, in relation to glycaemic control and other metabolic risk factors, in elderly patients with type 2 diabetes mellitus who are at high risk of dementia in comparison to age and gender matched normoglycemic subjects: prospective observational multicentre cohort study, Anu Gupta, ICMR, 3 years, 2019-2022, Rs 46 lakhs
  39. Awareness of head injury while driving in patients with epilepsy (PWE): A preventive and public educational study, Divya MR, ICMR, 3 years, 2019-2022, Rs 26.14 lakhs

## **Departmental projects**

### ***Ongoing***

1. Randomized controlled trial comparing efficacy and basal bolus insulin regimen versus sliding scale insulin regimen in patients with acute stroke
2. Rivastigmine for Cognitive impairment in Multiple Sclerosis: A Parallel Group Randomised Open Label Study with Blinded End point Assessment
3. Designing and validation of evidence-based questionnaire in English and Hindi for a population-based cohort study in North India
4. Prevalence and determinants of cerebral micro bleeds among community dwelling people aged 50 years or older: A population based cross sectional study
5. Association of Vascular Risk Factors, Brain MRI Measures, Cognition and Gait in Community Dwelling adults aged 50 years and above: A Population Based Cross-Sectional Study
6. Identifying the rare genetic variant in stroke by whole exome sequencing
7. Clinical trial to evaluate the role of education to care givers in reducing complications and improving outcomes of hospitalized stroke patients
8. N-acetyl cysteine in patient with acute ischemic stroke. Randomised controlled trial.
9. Linezolid as an add on therapy in the intensive phase of TBM. Randomised controlled trial
10. Clinical and genetic factors for aspirin resistance in Indian patients with ischemic stroke
11. Pathobiology of Multiple sclerosis: biomarker and genetic signatures
12. Utility of 8-channel EEG in detecting interictal generalised spike and wave discharges in generalized epilepsy – A diagnostic study
13. Development and Use of an Instrument for Assessing Competence of Trainee Doctors in Providing Epilepsy

#### Primary Care

14. Role microRNAs in pathophysiology of neurodegenerative disorder: spinocerebellar ataxia type 2 (SCA2)
15. Characterization of tremor and gait in spinocerebellar ataxia type 12
16. To study the molecular correlation of Friedreich's ataxia (FRDA) phenotype through mitochondrial genome and transcriptome analysis
17. To identify functional genetic elements in triplet repeats flanked haplotype region and mitochondrial genome in spinocerebellar ataxias
18. Identification of novel unstable tandem nucleotide repeat loci by genome wide screening and their implication in the pathogenesis of genetically uncharacterized progressive cerebellar ataxias.
19. Assessment of sleep dysfunction and its correlation with autonomic function test and severity of disease in apparently idiopathic sporadic progressive cerebellar ataxia
20. Non ataxic manifestations of spinocerebellar ataxia
21. Validation of FXTAS rating scale in SCA 12 patients
22. An ambispective cohort study of idiopathic inflammatory myopathies to understand the clinical profile and temporal trends in management
23. An ambispective cohort study of chronic inflammatory demyelinating neuropathy and its variants
24. Repetitive Transcranial Magnetic Stimulation to the Inferior Parietal Cortex in Task Specific Focal Hand Dystonia: A Cross over, Sham-control, Blinded Outcome Assessment Study
25. Social Cognition in Parkinson's Disease
26. Institutional registry of patients with hypertrophic pachymeningitis
27. Clinico-radiological spectrum of patient presenting with acute myelitis - A prospective study
28. Clinical and radiological spectrum of Anti Myelin oligodendrocyte glycoprotein (MOG) antibody related neurological disorders — An ambispective observational study.
29. Randomised controlled trial comparing efficacy of intranasal versus intramuscular midazolam in terminating seizures during pre surgical epilepsy- VEEG monitoring
30. Assessment of Impact of Physical Exercise as Complementary Management Strategy in People with Epilepsy
31. To Study the Effects of Antidepressant Therapy on Mild and Moderate Depression in Patients with Epilepsy: A Randomized Controlled Trial
32. Study of efficacy of Fluoxetine in post-stroke anxiety-A Randomized Controlled Trial
33. To Determine the Diagnostic Performance Characteristics of Blood Based Protein Biomarkers for The Differentiation of Stroke Using High-Throughput Proteomics Approach
34. Occurrence of Hemorrhagic Transformation in patients with Acute Ischemic Stroke (AIS) using Transcranial Doppler (TCD) – A Prospective, Observational Study

#### **Completed**

1. Yoga as an add on therapy in migraine. (CONTAIN). A Randomised clinical trial.
2. Customized vs regular testing battery during ictal phase in localizing seizures in epilepsy monitoring unit (EMU)
3. Comparison of regimens of dexamethasone in tubercular meningitis- A randomized control trial

#### **Collaborative projects**

##### **Ongoing**

1. A Population Based Prospective Cohort Study to Unravel the Causes of Stroke and Cognitive Decline: A cross-cultural perspective, Erasmus Medical Centre, The Netherlands
2. Outcome of Myasthenia Gravis patients after thymectomy, Surgery
3. Intracranial atherosclerotic disease imaging and outcome, Neuroradiology
4. Targeting Repressor Sites in fxn Gene and Associated Transcription Factors as Potential Therapeutic Approach in Friedreich's Ataxia, CSIR-IGIB
5. CRISPR-based Editing of Regulatory Region and Expanded Triplet repeats as Therapeutic Approach in India's Most Common Hereditary Ataxias, CSIR-IGIB
6. Machine Learning model for early diagnosis of stroke in resource limited settings: Pilot study, IIT Delhi
7. Cochrane review: Disease-modifying therapy for human immunodeficiency virus-related distal symmetrical polyneuropathy, National Hospital for Neurology and Neurosurgery, UK Sing Health Duke NUS, Academic Medical Centre, Singapore Cochrane South Asia, CMC Vellore, Tamil Nadu PIMS, Puducherry, India

8. Cochrane Review: Treatment for pain in human immunodeficiency virus-related distal symmetrical polyneuropathy, National Hospital for Neurology and Neurosurgery, UK Sing Health Duke NUS, Academic Medical Centre, Singapore Cochrane South Asia, CMC Vellore, Tamil Nadu PIMS, Puducherry, India
9. A cost benefit analysis comparing therapeutic plasma exchange and intravenous immunoglobulin in the treatment of guillain-barré syndrome and myasthenia gravis patients at a tertiary level hospital, Transfusion medicine
10. Exosome based non-invasive (saliva and urine) detection technique development for early Parkinson's disease, Biophysics
11. Assessment of cognitive, neuroanatomical, and neurofunctional abnormalities in adults with T1D Endocrinology
12. Effect of yoga on psychological, cognitive and glycemic control in patients with T2D and depression: 2 arm parallel RCT, Endocrinology
13. A multicenter open label parallel arm RCT evaluating whether yoga can prevent worsening of glycemic control in patients with T2D on oral drugs Endocrinology, MDRF, Chennai

### **Completed**

1. Effectiveness of neuro-feedback using NIRS to enhance motor imagery based rehabilitation in stroke patients - A pilot study, Physiology

### **PUBLICATIONS**

**Journals: 105**

**Abstracts: 32**

**Chapters in Books: 4**

**Books: 2**

### **PATIENT CARE**

#### **Special clinics**

1. Stroke clinic
2. MS, Demyelinating disorders and Neuroimmunology clinic
3. Headache clinic
4. Neuromuscular clinic
5. Ataxia Clinic
6. Movement Disorder Clinic
7. Botulinum toxin clinic
8. Intractable Epilepsy Clinic

#### **Special lab facility**

Neurosonology facility

Movement disorder electrophysiology

#### **Community services/camps**

1. World Stroke day organised in October 2019 at AIIMS, Delhi
2. World MS Day organised in May 2019 at AIIMS, Delhi
3. Epilepsy clinics organized on the Lifeline Express at:
  - Sahibganj Jharkhand 14 and 15 September 2019
  - Korba, Chhattisgarh 26 and 27 October 2019
  - Forbesganj, Bihar 30 November and 1 December 2019
  - Subedarganj, Prayagraj (UP) 28 and 29 December 2019
  - Dhubri, Assam 1 February 2020
  - Naharlagun, Agartala, 29 February and 1 March 2020
4. Health Camp at Naudera, Pratapgarh UP 7-9 December 2019
5. Lecture on 'Public awareness of Parkinson's disease and Social Dimensions' on PD Day at Indian Spinal Injury Center, New Delhi
6. 'World Mental Health Day' celebration at SRM University, Delhi NCR, Sonapat October 2019.
7. AIIMS Superspeciality medical camp, Ladakh

### **Neurology OPD**

New Case					Old Case					Grand total	Total working days	Daily Average
Male	Female	Male child	Female child	Total	Male	Female	Male child	Female child	Total			
17494	12169	440	244	30347	38199	25653	1375	633	65860	96207	301	320



<b>Clinical Neurophysiology Lab</b>	
<b>Lab Procedure</b>	<b>Numbers</b>
EEG	3575
ECG	1570
LTVEEG	315
STVEEG	117
EP	552
EPS	5431
SLEEP	174

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor MV Padma Srivastava** is Member of Institute Body of PGIMER Chandigarh: From Jan. 2020, onwards; Member of Institute Body of AIIMS, Rae Bareli: January 2020, onwards; Member of Governing Body of AIIMS, Rae Bareli: January 2020, onwards; Member of Governing Body of Ambedkar Institute of Medical Sciences under Govt. of Punjab from January 2020, onwards; Member SEC, DGHS, Govt. of India; External expert for DHR, Govt. of India; Member, Task Force, SATYAM, DST, Govt. Of India; Member Task Force for NSCRT, DST, Govt. of India, 2018; Member Task Force for MSU for North-East, under ICMR; Member, Scientific Committee for ESO-WSO, to be held in November 2020; External examiner for DM Neurology Exam held in PGIMER, Chandigarh in May 2019; External Expert for selection of faculty for AIIMS, Jodhpur in May 2019; External Expert for assessment of DNB NEUROLOGY IN Tanda, HP, in July 2019; External expert for selection of faculty for AIIMS, Rishikesh in July 2019; External examiner for DM exit exam in MAHE in July 2019; Board member meeting for the DST-FIST in Pune in August 2019; External expert for the Senior Staff Selection Committee Meeting in SCTIMS in Trivandrum in August 2019; External expert for faculty in Selection committee meeting in NIMHANS, Bengaluru in August 2019; External expert for faculty selection in Selection Committee meeting in BHU, Varanasi in September 2019; External examiner for DM Exit exam in Chettinad University in Tamil Nadu in September 2019; Visiting Professor for the University of Cincinnati, USA, as part of the IUSSTF meeting in November 2019; Visiting faculty for the Meeting on use of Alemtuzumab in RRMS held in Lugano, Switzerland in November 2019; Expert for monitoring of PBSR under aegis of ICMR meeting in Bengaluru in December 2019; Expert for PBSR monitoring in Varanasi and UP under aegis of ICMR held in BHU in January 2020; Invited faculty and co PI for the IUUSTF project on Homocysteine lowering trials for stroke held in University of Iowa, USA from 20 to 27 January 2019; Invited faculty and co PI for IMPROVISE, the multicenter, international collaboration on improving stroke care in India with UCLAN, UK, NIHR-GHRA, held in Dubai in June 2019; Invited faculty and board member for DST-PAC meeting in Mumbai, in September 2019; Invited faculty and deliver the Baldev Singh Oration in NAMSCON held in AIIMS, Bhopal in October 2019; FRCP (Edin).

**Professor Kameshwar Prasad** is continuing as: Fellow, Royal College of Physicians, Edinburgh; Member of the World Stroke Organization; Member of the World Federation of Neurology; Member of the Infectious Diseases and ARI Review Group of the International Cochrane Collaboration; Member of the International Clinical Epidemiology Network; Member of the New York Academy of Sciences; Member of the American Academy of Neurology; Member, Cochrane Epilepsy Review Group; Member, Cochrane Neurological Network; Editor, Edinburgh-based Cochrane Stroke Group and Amsterdam-based Cochrane AR; Group Editorial Board Member - *British Medical Journal*, *Practical Neurology*, *Cochrane ARI Review Group*, *Australia*; Reviewer for the medical journals - *British Medical Journal*, *Stroke*, *Canadian Medical Association Journal*, *Journal of Epidemiology and Community Health*, *Journal of Antimicrobials and Chemotherapy*, *CNS Drugs*, *Cochrane Stroke*, *Neurology India*, *Annals of Indian Academy of Neurology*, *Journal of Association of Physicians of India*, *National Medical Journal of India*, *Circulation (USA)*, *Neurological Research*, *Neurological Sciences*, *Brain and Behaviour*, *Lancet*, *BMJ*; Visiting Faculty (Adjunct Affiliation) with the Department of Epidemiology, Erasmus MC, The Netherlands from May 2017-May 2019.

**Professor Manjari Tripathi** delivered Oration at the annual Indian Epilepsy Society meeting January Ahmedabad - 360 degree care in epilepsy.

**Professor Achal Srivastava** is Associate Editor of Annals of Indian of Neurology; Associate Editor of Annals of Movement Disorder; Executive Committee member of Neurological Society of India; Executive Member of Delhi Neurological Association; Executive Member of Nerve Muscle Society of India.

**Professor Rohit Bhatia** is Invited to deliver a lecture at the prestigious International Stroke Conference, American Heart Association meeting February 2020; Elected as the President of the Indian Stroke Association. March 2020; Elected as the Chairman of the Autoimmune Subsection of the Indian Academy Neurology. March 2020.

**Professor Mamta Bhushan Singh** was Appointed member International Subcommittee of American Academy of Neurology.

**Dr Deepti Vibha** was in Traineeship in Neurosonology at Yong Loo Lin School of Medicine, National University of Singapore in May 2019; Indian Academy of Neurology-Association of Indian Neurologists in America (IAN-AINA) observer fellowship for stroke at Stroke Services, University of Pittsburgh Medical Center (UPMC) in September 2019; Member of the institute annual report committee; Member of technical committee at Institute of Liver and Biliary Sciences, New Delhi.

**Dr Vishnu VY** was Selected for split-site fellowship programme: International Fellow in Neuromuscular Genomic Medicine; International Centre for Genomic Medicine in Neuromuscular Diseases (ICGNMD); Funded by the Medical Research Council, UK.

**Dr Roopa Rajan** was Selected for MDS-LEAP (Leadership program) class of 2019 Gold medal at 5 AOPMC quiz, Hangzhou, China; Steering Committee Member, International Parkinson's and Movement Disorder Society (MDS) Young Members Group; Member, MDS Tremor Study Group; Member, MDS Task Force on management of PD: integrated and interdisciplinary care.

**Dr Awadh Kishor Pandit** got awarded Fellowship in Neuroendovascular therapy for Neurological disorders particularly Stroke Management at Aichi Medical University, Aichi, Japan for six months (15 January 2020 to 30 June 2020).

**Dr Elavarasi** is Assistant Editor, Annals of Indian Academy of Neurology.

**Dr Bhargavi Ramanujam** is Assistant Editor in the Editorial board of the journal - Neurology India.

#### **Awards won by students/trainees**

1. Best paper award in Movement Disorder Category at IANCON 2019 (DM student)
2. Best Paper Award in Poser Category at DNACON 2020 (Ex DM student)
3. International Travel Grant to attend International Parkinson's disease and Movement disorder society (PhD students)
4. International Travel Grant to attend International Association of Parkinsonism and Related Disorder (PhD Student)
5. The international scholarship award. American Academy Neurology, 2020 (DM Student)
6. International travel scholarship award: World stroke organization meeting 2019 (PhD student)
7. International travel bursary: World Congress neurology, 2019, PhD student.
8. PHD student Ms. Jyoti Sharma received ICMR fellowship

#### **VISITING SCIENTIST**

A team of scientists visited the Department of Neurology in October 2019 to discuss collaborative academic research as part of the 'International Centre For Genomic Medicine in Neuromuscular Diseases' project.

Dr. Robert David Stuart Pitceathly, MRC clinician scientist and Honorary consultant, UCL.

Professor Michael Gergis Hanna, Director of the UCL Institute of Neurology and Director of the MRC Centre for the neuromuscular diseases, UCL

Dr. Lindsay Anne Wilson, Centre Research Manager for the International Centre for Genomic Medicine in Neuromuscular diseases at UCL

Dr. Jana Vandrovцова, Senior Research Associate, UCL

## Neurosurgery

### HIGHLIGHTS

In the year 2019-20, Department of Neurosurgery organised many workshops and CME's focused on learning newer advances in the field of neurosurgery. Stalwarts like Prof. Fred Gentili (Canada), an expert in neuro-endoscopic procedures and Prof. Ali Krisht (US) an expert in skull base and vascular microneurosurgery came to perform surgeries with us during 22nd AIIMS Microneurosurgery workshop. This year's microneurosurgery workshop was a great success with a very good participation and was much appreciated for its scientific content.

Prof Alexi Peleganchuk and Prof Alexander Krutko (Russia) both experts in spine surgery demonstrated their surgical skills during successfully conducted 9th AIIMS complex spine surgery workshop which was also well attended and appreciated.

Department of neurosurgery featured in 2020 edition of *Limca book of records* for performing first craniopagus surgery in which a team of 125 doctors and paramedical staff led by Professor Ashok K. Mahapatra (former Head of Department) and Professor Deepak Gupta successfully separated twins joined at cranium.

Professor Ashish Suri and Professor Deepak Gupta were both selected as Adjunct Professors for Indian Institute of Technology (IIT), New Delhi.

### EDUCATION

On weekly basis, seminar/journal club/case presentation/mortality presentations were organized for the MCh residents.

Neurosurgery Simulation-based Short Term Skills Training Program: Neurosurgery Skills Training Facility (NSTF) and Neurosurgery Education and Training School (NETS)

Simulation-based neurosurgery skills training sessions: 1248

Cadaver-based skull base dissection: 11 sessions and 158 participants

Simulation-based short term neurosurgery skills training = 39

4 weeks short term training = 21

2 weeks short term training = 19

*E-learning in neurosurgery skills training*

Surgical videos = 1,11,118 views (945 Subscribers)

Website views = 11,899 views      Discussion forum = 8,677 likes

### CMEs/Workshops/Symposia/National and International Conferences Conferences Organized

1. 9th International CME and Workshop on Cost Effective Use of Technology in e-health care held at Goa in March 2019
2. Cranial endoscopy cadaver workshop (6-7 April 2019), AIIMS Cadaver Surgical Skill Training facility (ACSST)
3. Open skull base cadaver workshop (20-21 April), AIIMS Cadaver Surgical Skill Training facility (ACSST)
4. MIS Spine Cadaver workshop (4-5 May 2019), AIIMS Cadaver Surgical Skill Training facility (ACSST)
5. Spine pre-conference cadaver workshop (19-23 October 2019), AIIMS Cadaver Surgical Skill Training facility (ACSST)
6. Endoscopic endonasal skull base workshop (22-23 November 2019), AIIMS Cadaver Surgical Skill Training facility (ACSST)
7. Open skull base cadaver workshop (30 November-1 December 2019), AIIMS Cadaver Surgical Skill Training facility (ACSST)
8. MIS Spine Cadaver workshop ( 16-17 January 2020), AIIMS Cadaver Surgical Skill Training facility (ACSST)
9. Open Spine Cadaver Workshop (24-25 January 2020), AIIMS Cadaver Surgical Skill Training facility (ACSST)
10. 6<sup>th</sup> ANTC 2020 (AIIMS Neurotrauma Conference) 20-22 March 2020: Postponed in view of Covid Pandemic
11. AIIMS annual spinal surgery workshop as an organizing committee member
12. AIIMS annual microneurosurgery workshop as an organizing secretary
13. Pre-conference spine workshop, NTSI 2019
14. Annual AIIMS COE Epilepsy workshop on StereoElectroEncephalography: 12-13 November 2019

### Lectures delivered

SS Kale: 11

Manmohan Singh: 13

Vivek Tandon: 10

Shashwat Mishra: 3

Ashish Suri: 10

Deepak Gupta: 3

Sachin Borkar: 12

Shweta Kedia: 9

Rajinder Kumar: 3

Pankaj Kumar Singh: 2

Hitesh Kumar Gurjar: 1

Dattaraj Sawarkar: 2

**Manoj Phalak: 5**  
**Rajesh Kumar Meena: 1**

**Ramesh Doddamani: 2**  
**Shantanu Kumar Bora: 1**

**Amol Raheja: 2**

**Oral papers/posters presented: 48**

## **RESEARCH**

### **Funded projects**

#### *Ongoing*

1. Centre of Excellence for Epilepsy-Phase II. P Sarat Chandra, DBT, 5 years, 2018-2023, Rs 4500 lakhs
2. Role of Kynurenic acid, a glutamate receptor inhibitor, in hyperexcitability associated with mesial temporal lobe epilepsy,, P Sarat Chandra, DBT, 3 years, 2017-2020, Rs 53.75 lakhs
3. Collaborative Neuro-engineering platform for excellence in innovation and translational research, Ashish Suri, DBT, AIIMS+IIT-D, 3 years, 2018-2021, Rs 657 Lakhs
4. Support to Indian Institutes to Conduct Training Programme in the area of Operational Research Neurosurgery Skills Training, Ashish Suri, DHR, ICMR, MoHFW, AIIMS+IIT-D, 5 years, 2016-2020, Rs 99 Lakhs
5. TATA Innovation Fellowship Award 2015, Ashish Suri, DBT, 5 years, 2016-2020, Rs 45 Lakhs
6. Multiple Degrees of Freedom Robotic Manipulator for Minimally Invasive Neurosurgery, Ashish Suri, AIIMS + IIT-D, 2 years, 2020-2022, Rs 10 Lakhs
7. Computational Modeling of Cerebral Blood Flow in Moya Moya Disease, Ashish Suri, AIIMS+UCL-London, 1 year, 2020-2021, Rs 5 Lakhs
8. ADAPT, Deepak Gupta, National Institute of Health, 5 years, 2015-2022, Rs 105.49 lakhs
9. CENTER-TBI, Deepak Gupta, Universitair Ziekenhuis Antwerpen (UZA), Belgium, 2 years, 2016-2020, Rs 3.75 lakhs
10. RESCUE ASDH, Deepak Gupta, Cambridge University, 3 years, 2017-2020, Consumables: 144 pounds per randomised patient CRF completion costs: 213 pounds per randomised patient Rs 9.52 lakhs
11. Paroxysmal Sympathetic Activity and its role in severe TBI, Deepak Agrawal, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
12. Lateral approaches to Lumbar Spine: Cadaveric Feasibility study in Indian population, Sachin Borkar, AIIMS, 1 year, 2018-2020, Rs 5 lakhs
13. Investigating the Role of GABA A Receptor Subunits Alteration in Focal Cortical Dysplasia, Hitesh Kumar, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
14. Predictability of intraoperative tumour characteristics on the basis of pre-operative MRI imaging features in extra-axial brain tumours, Shashwat Mishra, AIIMS, 2 years, 2019-2021, Rs 1.4 lakhs
15. Feasibility study of endoscopic minimally invasive odontoid screw fixation in cadavers, Shweta Kedia, AO Spine, 2 years, 2018-2020, Rs 6 lakhs
16. Microsurgical comparison of operative exposure of IAC through middle fossa and retrosigmoid hearing preservation skull base approaches - a laboratory investigation, Amol Raheja, AIIMS, 2 years, 2018-2020, Rs 5 lakhs
17. Quantitative analysis of the variants of the Far Lateral Condylar approaches, Rajesh Kumar Meena, AIIMS, 3 years, 2017-2020, Rs 4.75 lakhs

#### *Completed*

1. The feasibility of endoscopic Anterior Odontoid screw fixation- A Cadaveric pilot study, Shweta Kedia, AO Spine Asia Pacific, 1 year, 2019-2020, 6000 CHF

### **Departmental projects**

#### *Ongoing*

1. Role of MRI in predicting outcome in Cervical Spondylotic myelopathy
2. Surgical outcome of Bony CVJ Anomalies
3. Investigating the role of GABAA receptor subunits alterations in cortical dysplasia.
4. Role of Surgical Technique in the Clinical Outcome of patients with Subcortical Lesions: A Randomized Controlled Trial
5. Role of Gamma Knife radiosurgery in Trigeminal Neuralgia
6. Spinal Alignment After Fixation In Trauma Patients

7. Role of skull base endoscopy in management of giant pituitary tumours
8. Outcome and complications of brain AVMs planned with DSA/MRI vs MRI alone
9. Target accuracy of different imaging techniques in stereotactic functional neurosurgery
10. Gamma-Knife for giant intracranial (>20cc) lesions
11. Role of Gamma Knife in Craniopharyngiomas
12. CVJ anomalies with Chiari malformation
13. Clinical and radiological outcomes of microsurgical excision of clinoidal meningiomas
14. Preoperative and postoperative evaluation of radiographic features in Chiari type I malformation with special emphasis on perimeter and diameter at C1 level and evaluation of cervical instability
15. Assessment of secondary spinal curvatures in patients with cranio-vertebral junction anomaly and their changes following single stage correcting surgery (DCER)
16. Outcome of surgically clipped anterior circulation aneurysms with good SAH
17. Radiosurgical outcome of AVM planned on DSA and MRI versus MRI alone
18. Randomized trial to compare the utility of Intraoperative MRI and intraoperative USG for knowing the extent of resection in glioma surgery
19. Molecular analysis of tissue with patient with cortical dysplasia
20. Combined approach in surgery of Juvenile nasopharyngeal angiofibroma and role of Dotanoc scan
21. Outcome of Microvascular decompression in compressive vascular neuropathies.
22. A study on the effect of GABA A receptor alterations in cortical dysplasia.
23. Prospective study to evaluate the role of bevacizumab in treatment of vestibular schwannoma in patients with neurofibromatosis type 2
24. Impact of cervical decompression on typical and atypical symptoms of cervical spondylotic myelopathy
25. Lateral and Third Ventricle Tumors: Incidence, clinical, radiological and histopathological evaluation- an Ambispective study
26. A retrospective analysis of atlantoaxial fusion with C1-C2 transarticular screws
27. Prospective randomized trial to compare the efficacy of foramen magnum decompression with duroplasty vs posterior instrumented fixation for chiari malformation
28. Traumatic Injury to CVJ and posterior fossa: A single-institution study of the Demographic profile, mechanism of Injury and outcome
29. Significance of granulation patterns and immunohistochemistry markers in predicting clinical behavior in Cushing's disease

### ***Completed***

1. Effect of kynurenic acid on modulation of synaptic transmission in patients with mesial temporal lobe epilepsy
2. Deciphering the role of transforming growth factor beta signaling and matrix metalloproteinase-9 in epileptogenesis in mesial temporal lobe epilepsy
3. Retrospective analysis of role of gamma knife in glomus jugulare tumors
4. Therapeutic Application of Bone Marrow Derived Stem Cell in Complete Spinal Cord Injury
5. Study of Traumatic brain injury induced secondary gastrointestinal changes
6. Pituitary dysfunction following stereotactic radiosurgery for secretory pituitary adenomas
7. Primary Gamma-Knife with concurrent Temozolomide for GBM
8. Cervical alignment following cervical laminoplasty
9. Factors predicting loss of cervical lordosis following laminoplasty
10. Evaluation of endoscopic uni-nostril Transseptal surgery for pituitary adenoma and its outcomes
11. Tumor control and hearing preservation after gamma knife radio surgery for vestibular schwannoma in NF2
12. Surgical outcome of aneurysm clipping via keyhole supraorbital approach
13. Utility of Postoperative CT scans in Elective Postoperative Neurosurgical Patients.
14. Standard MRI Imaging is inadequate in drug resistant epilepsy” Retrospective analysis.
15. Retrospective analysis of surgical outcomes in recurrent and residual pituitary adenoma
16. Analysis of PDL-1 expression and T-cell infiltration in different molecular subgroups of midline gliomas and the clinical outcome

17. Midline gliomas: A study of clinical outcome and associated molecular alterations

**Collaborative projects**

**Ongoing**

1. Development of micro plasma jet for study of plasma interaction with tumor tissues resected from patients with tumor associated drug resistant epilepsy (DRE) pathologies, Biophysics
2. Collaborative Neuro-engineering platform for excellence in innovation and translational research, Anatomy, Forensic Medicine, Neuroradiology, Neuropathology, IIT-D: CSE
3. Intramural multi-institutional grant Multiple Degrees of Freedom Robotic Manipulator for Minimally Invasive Neurosurgery, IIT-D: Mechanical Engineering
4. Collaborative Research Grant Computational Modeling of Cerebral Blood Flow in Moya Moya Disease, Neuroradiology UCL: Mathematics, Healthcare Engineering
5. Fluoride levels in the body fluids and tissues in patients of the cervical ossified posterior longitudinal ligament, Anatomy
6. RELA fusion in Supratentorial Ependymomas, Neuropathology

**Completed**

1. Deciphering the role of ATF3 and TGF beta signaling in Mesial Temporal Lobe Epilepsy (MTLE) patients, Neurology
2. Deciphering the role of GABAA receptor alterations in pediatric and adult patients with Focal Cortical Dysplasia, Neurosurgery
3. Role of  $\alpha 7$  and  $\alpha 4\beta 2$  subtypes of nicotinic receptors in abnormal synaptic transmission associated with hippocampal sclerosis, Biophysics
4. BIRAC BIG project 2018-2020; Development of a surgical suction cannula with an integrated surgeon controlled touch activated irrigation system for use in surgeries performed under the surgical microscope, IIT Delhi, Dept of Mechanical Engineering

**PUBLICATIONS**

**Journals: 121**

**Chapters in Books: 11**

**Books: 1**

**PATIENT CARE**

Department of Neurosurgery has two units with general neurosurgical ward under each unit (35X2 beds). There are two ICUs with 23 beds. There are now 7 elective operation theatres and two exclusive operation theatre in trauma centre. We offer world class neurosurgical facilities in all neurosurgical sub-specialties, which include- vascular surgery, epilepsy surgery, minimally invasive cranial and spinal neurosurgery, pediatric neurosurgery, functional neurosurgery, neuro-oncosurgery, skull base and complex spinal surgeries. We have advanced imaging modalities (intraoperative MRI and O-arm) and navigational devices (like Stealth Station and ROSA). Department of Neurosurgery has also started an outpatient Spine clinic which deals with all diseases related to spine including degenerative, deformity, tumors, etc. It is held on Saturdays from 9 am to 12 pm. Prof. Deepak Agrawal was instrumental in setting up Stem Cell Translational and Neurosciences Laboratory (STN Lab) 100 square feet of laboratory space at Jai Prakash Apex Trauma Center, All India Institute of Medical Sciences, New Delhi, India. This includes a neurotrauma translational lab, molecular lab, stem cell processing lab and immunology lab. PhD Scholars, Graduate students and research associates and nurses have separate desks in the main laboratory area

**Number of patients treated during 2019-2020**

S. No.	Treatment facility	Number
1.	Outpatient department	
	a) Total New Cases	16575
	b) Total Old cases	35784
	c) Pediatric new cases	2000
	d) Pediatric old cases	4499
	e) Total cases	52359
2.	Gamma knife performed	669

3.	Total number of surgeries CNC	3135
4.	Total Number of cases in Brain Suite	300
5.	Number of elective surgeries (JPNATC)	1303
6.	Total number of surgeries	4438

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**Professor Ashish Suri** is Adjunct Professor, School of Information Technology, Indian Institute of Technology- Delhi; Executive Member: World Federation of Neurosurgical Societies, Skull Base Committee; Secretary General: Skull Base Surgery Society of India.

**Professor Rajinder Kumar** is Executive member of organizing committee of 22nd AIIMS Microneurosurgery ‘Live Operative Workshop’, 13-15 February 2020; AIIMS Cranial endoscopy workshop, 22-23 November 2019; Cadaveric Spine surgery workshop, October, 2019, AIIMS, New Delhi.

**Professor Deepak Agrawal** is Elected Editor-in-Chief of **Journal of Peripheral Nerve Surgery (JPNS)**; Made Editor-in-Chief of **Indian Journal of neurotrauma (IJNT)**.

**Professor Deepak Gupta** received PhD degree for: Development and Validation of Finite Element Analysis Model (FEM) of Craniovertebral Junction: Experimental Biomechanical Cadaveric Study (AIIMS-IIT Joint study); First faculty member (in service) from Dept of Neurosurgery to receive PhD in Neurosurgery; Elected as Member of National Academy of Medical Sciences (NAMS) September 2019; Jaga Balia Craniopagus twins were successfully discharged after 2 years of stay at AIIMS and sent back to their homestate in Odisha on 6 September 2019; This was first successfully surgery on Craniopagus twins from India wherein both children survived. Surgical team of 125 members for separation surgery was led by Dr Deepak Gupta and Dr AK Mahapatra jointly; Featured in featured in the 2020, edition of *Limca Book of Records*. First craniopagus surgery: A team of 125 doctors and paramedical staff, led by Dr Deepak Kumar Gupta and Dr Ashok Kumar Mahapatra, from the Department of Neurosurgery at AIIMS, New Delhi, successfully separated 28-month-old twins Jagga and Kalia, who were joined to each other at the cranium. The complex surgery was conducted in two stages, on 28 August 2017 and 25 October 2017. [Hachette Book Publishing India Pvt Ltd, lbr.entries@hachetteindia.com]; Invited as Guest for Swearing-in Ceremony of the Hon’ble Chief Minister, Odisha and the members of the Council of Ministers, on 29 May 2019 at 10.30 AM at the IDCO Exhibition Ground, Unit-3, Bhubaneswar, Odisha; Selected as Adjunct Professor for Indian Institute of Technology ( IIT, Delhi) 2020-2022.

**Dr Pankaj Kumar Singh** was in 9th AIIMS complex spine live operative workshop 21 and 22 October 2019

**Dr Vivek Tandon** organized the AIIMS annual Microneurosurgery workshop which was well attended and much appreciated for the scientific content.

**Dr Rajeev Sharma** is Faculty for AIIMS MBBS Online CBT entrance exam in May 2019; took active interest in various conferences organized by the Department; looked after the responsibilities of Co-ordinator for “Microneurosurgery Workshop” held on 13-15 February 2020, held at AIIMS, New Delhi during ANTC 2018.

**Dr Shweta Kedia** was in 1st AIIMS Faculty Development Programme, AIIMS, New Delhi, 14-15 March 2020; Coordinated Talk in Gamma Knife by esteemed faculty Prof Arjun Sehgal “Radiosurgery in brain Metastasis and advances with Gamma Knife ICON, on 17 February 2020, AIIMS, New Delhi; Annual AIIMS COE Epilepsy Workshop on SEEG, 12-13 November 2019; Member of Selection Committee of contractual faculty in the Department of Neurosurgery, LHMC and associated hospitals, 4 October 2019; Member of NSI course, 17th Instructional and 11th Foundation, 28-29 September 2019, GB Pant Hospital, New Delhi; Executive member of organizing committee of 22nd AIIMS Microneurosurgery ‘Live Operative Workshop’ 13-15 February 2020; AIIMS Cranial endoscopy workshop, 22-23 November 2019; Cadaveric Spine surgery workshop, October, 2019, AIIMS, New Delhi.

**Dr Dattaraj Sawarkar** received ‘AASAN Ambassadorship Award’ from AASAN society of USA for MIS Spine training in 2019; Completed Scoliosis Complex spine fellowship at Washington university, St louis under Dr Munish Gupta (15 May -30 may 2019) and scoliosis spine surgery fellowship at New York under Dr Lawrence Lenke (1 June- 15 June 2019); Successfully coordinated the AIIMS Spinecon 2019 operative and pre-conference cadaver workshop 19-23 October 2019; As a course coordinator and course faculty, successfully coordinated Cranial endoscopy cadaver workshop (6-7 April 2019), Open skull base cadaver workshop (20-21 April), Endoscopic endonasal skull base workshop (22-23 November

2019), Open skull base cadaver workshop (30 Nov-1st Dec2019), MIS Spine Cadaver workshop (16-17 January 2020), Open Spine Cadaver Workshop (24-25 January 2020) in the AIIMS organized by department of , Neurosurgery in AIIMS Cadaver Surgical Skill Training facility (ACSST); Coordinated the Pre- AIIMS Microneurosurgery cadaver workshop on 12<sup>th</sup> February 2020, on Endoscopic skull base; Managing package stores responsibilities as a member of package store committee.

**Dr Manoj Phalak** earned AOspine ASIA PACIFIC fellowship 2019-2020, for 1 month training (January 2020) at AOSPINE asia pacific centre- Ganga Hospital, Coimbatore, India; Expert group meeting- member/expert for EPTB(extra pulmonary tuberculosis) training module October 2019; Chaired session on spine deformities, Brain and spine 2019, Male, Maldives.

**Dr Ramesh Doddamani** was awarded AASPN travel Fellowship for attending AASPN-2019, meeting held at Inchion, South Korea; Participated as one of the faculty Incharge in hands-on cadaveric skull base workshop conducted at CTRF laboratory.

**Dr Satish Verma** participated in Short term training course - On Microneurovascular techniques under Japan MicroVascular Anastomosis training course (J-MOVA) at Toyama Health University, Toyama, Japan under Professor Satoshi Kuroda from 26/8/2019 - 6/9/2019.

**Dr Amol Raheja** was awarded 1st prize for best platform presentation for presenting original work in the field of Skull Base surgery, entitled “Long-term surgical outcome for petroclival meningiomas using modified Dolenc-Kawase approach” at Skullbasecon 2019, Coimbatore, Tamil Nadu; awarded *NSI international travelling fellowship* for presenting original work in the field of traumatic spinal cord injury, entitled “Serum biomarkers as predictors of severity of injury and functional outcome after acute traumatic spinal cord injury” at WFNS 2019, Special World Congress, Beijing, China.

**Dr Rajesh Meena** participated as one of the faculty In-charge in hands-on cadaveric skull base workshop conducted at CTRF, laboratory;

**Dr Shashwat Mishra** was Honoured Guest at the **Mayo Clinic Annual Bypass Course, 7-9 November 2019**, Rochester, Minnesota, USA.



## Neuroimaging and Interventional Neuroradiology

### HIGHLIGHTS

1. A state-of-the-art 128 slice dual energy CT scanner installed replacing the 10-year-old 6-slice CT scanner.
2. With the new CT low-dose CT protocols with modelled iterative reconstruction, a dose reduction potential of up to 60% and faster acquisition in clinical routine are now possible with the best image quality ensured. This has enhanced patient compliance, especially in children and where breath hold acquisition is required.
3. CT Fluoroscopy to help guided-biopsies and CT perfusion to assess cerebral perfusion especially in acute stroke have been started with the installation of the new CT scanner.
4. The existing 1.5T MR was upgraded to 'silent MR' system which has helped perform silent MR protocols which reduce patient's anxiety during scan; reduce scan time and incidence of rescans as the patients are relaxed and cooperate to stay still during long examinations. The high gradient coil switching noise of previous system was a serious bother for many patients, especially during high-end acquisition techniques. With the upgrade, this irritant is largely removed and wide bore of the magnet has reduced claustrophobia in patients significantly.
5. PACS network operational in wards and OPD rooms of NSC with upgrade of the PACS server and installation of viewing stations in wards, ICUs and thin clients in OPD rooms with Wi-Fi access. Reporting of all neuro-imaging procedures made on-line with improved organization of the reporting room, making it easier to report, edit, sign out and network all studies on-line. Auto-requisitioning enabled from NSC wards on-line for CTs, MRIs, US and DSAs etc. Auto fetching of case records from PACS enabled for neuroradiology conferences. Private imaging films digitized and integrated into PACS on registration of patient UHID.

### EDUCATION

**Undergraduates:** Provided materials and guidance to faculty for UG lectures and seminars for 6th semester MBBS students on topics: Introduction to Neuroradiology techniques, basics of brain tumour imaging, stroke imaging and congenital anomalies of the CNS. Basics of neuro imaging interpretation taught during their elective posting in neuroradiology.

**Postgraduates:** Post graduate students of M.D. Radiology posted in the department of Neuroradiology on rotation are trained on reporting neuroimaging (CT and MRI) and introduced to all neuroimaging protocols and are encouraged to perform them under supervision of the faculty. DM (Neuroradiology) students are trained to perform all neuroimaging procedures and assist in interventional therapeutic neuroradiology procedures, which are then discussed with them on daily basis. They are also trained to take post procedure care and management of patients undergoing neuro-interventional therapeutic procedures in the ICUs and wards. Seminars, journal clubs and case discussions are organized routinely for their orientation to the current developments and improve their iterative skills. Senior residents regularly present neuro-radiological findings in interdepartmental conferences with Neurology and Neurosurgery departments daily which allow them to understand clinical neuroimaging interpretation skills and the art of presentation. They are posted in the biplane Neuro-interventional suites for at least one year on a rotational basis and are trained on neuro-angiographic and neuro-interventional skills.

### CMEs/Workshops/Symposia/National and International Conferences

#### Lectures delivered

**SB Gaikwad: 16 Ajay Garg: 13**

**Leve Joseph Devarajan: 2**

**Oral papers/posters presented: 4**

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Correlation of Imaging traits with region-specific gene expression profiles in Glioblastoma Multiforme, Ajay Garg, DST, 3 years, 2018-21,
2. Computer Aided Diagnostic System for the Detection and Evaluation of Intracranial Atherosclerotic Disease using Computed Tomography Angiography, S. Leve Joseph, DBT, 2 years, 2020-2022, Rs 26.08 lakhs

#### Departmental projects

##### *Ongoing*

1. Characterization of Geometry of Intracranial Atherosclerotic Lesions Using Computed Tomographic Angiography and it's Clinic-Imaging Correlations
2. Efficiency of Intravenous Milrinone Versus Intra-arterial Nimodipine in the Management of Clinical Vasospasm Secondary to Aneurysmal Sub-arachnoid Hemorrhage

## Collaborative projects

### Ongoing

1. Elucidating the Science of Yoga As a Therapeutic Intervention in Post Stroke Recovery: Study of Brain Using the Technique of Magnetic Resonance, Neurology, NMR

## PATIENT CARE

The department works 24x7, 365 days for patient care work and regularly attends to emergencies like subarachnoid haemorrhage, stroke, acute encephalopathies, myelopathies, traumatic or iatrogenic cerebro-vascular injuries etc. All requests for CT scan from out patients and in-patients are done the same day and often immediately, so that decision can be promptly taken for patient management. There is no waiting for CT scans in this department. DSAs are regularly done for cerebral and spinal vascular studies for patients attending the Neurosciences Centre and also other departments like ENT and Ophthalmology. Similarly Neurointerventional therapeutic management is routinely carried out for patients of the Neurosciences Centre as well as those referred from ENT, Ophthalmology, Paediatrics, Cardiology, Orthopaedics amongst others. Besides, CT scans are done in the ICUs for patients on life support or ventilator using the mobile CT scanner. Bedside x-rays are routinely done using digital portable x-ray unit or CR unit and images are uploaded to the PACS network. Portable Ultrasound is done whenever required for sick and immobile patients in the wards and ICUs of the Neurosciences Centre. All consultants and residents access PACS images through IP enabled protocol and hence can view the images from home or anywhere using internet or even using their smart phones. The departmental conference room has been upgraded for multimodality image viewing using high resolution Dicom compatible projection system, so that clinical consultants and residents can easily see their patient's images in chronological sequence and in comparison mode on the large projection screen. Even old images and scanned private images can be viewed efficiently instantaneously which helps quick decision making.

## Neuroimaging and Interventional procedures performed during 2019-20

CT Scans		21929
Digital Subtraction Angiography	Therapeutic Neuro-Interventional procedures: (Cerebra Aneurysms, Cerebral and Spinal AVM embolizations, Carotid revascularization etc.)	370
	Diagnostic DSA	945
	<b>Total</b>	<b>1315</b>
Ultrasound Examinations / Doppler studies		<b>2899</b>
MRI		6121
X Rays		<b>8017</b>
Portable x-rays		<b>6857</b>
Vidar		<b>18502</b>
Data Migration		<b>4060</b>

**Total for the year = 69700**

## Cases discussed and reviewed in Neuroradiology conferences for patient care decision making

	No. of cases	Weekly Frequency	Total
<b>Epilepsy Case Conference</b>	10@	2	20/week
<b>Neurosurgery conferences</b>	40@	4	160/ week
<b>Neurology conferences</b>	25@	6	150/ week
<b>Neuropathology conference</b>	4@	biweekly	8/ week
		<b>Total</b>	<b>338/ week</b>

**Total = 17,576 cases per year**

## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Shailesh B Gaikwad** was invited to moderate two sessions in the recently concluded 15 Conference of World Federation of Therapeutic and Interventional Neuroradiology (WFITN), 21st -24 October 2019, Naples, Italy; 21st Annual of Conference of Indian Society of Neuroradiology, hosted again by the department, 31st October- 3rd November 2019 at Holiday Inn, Aerocity, New Delhi. 20 international (representing 14 countries) and 68 national faculty members including 305 delegates attended the congress. Inauguration function was graced by Dr. Harsh Vardhan Ji, Hon'ble Union Minister of Health and Family Welfare, Science and Technology and Earth Sciences; Apart from didactic lectures, hands-on-workshops on neuroimaging and neurointervention techniques were taught to the participants: Special focus was given to Artificial intelligence and Machine learning during Session 9, 6 lectures from eminent speakers, 2-1/2 hrs duration, Professor Adnan Siddique from USA and Dr Iris Grunwald, Dr Gyula Gal from Europe. This meeting was granted 27 CME credit points by Delhi Medical Council; It is for the third consecutive year that Dr. Shailesh Gaikwad hosted these prestigious ISNR annual conferences as per the mandate given by the general body of ISNR, showing the trust and faith reposed by the founder members of the society in organizing three conferences in a row, which is unprecedented in the history of ISNR; Chief Coodinator to conduct "2nd International Neuroradiology workshop", 18-20 May 2019, National Institute of Neurosciences and Hospital, Dhaka, Bangladesh; Chief Coodinator to conduct 3rd International Neuroradiology workshop, 24-25 February 2020, National Institute of Neurosciences and Hospital, Dhaka, Bangladesh: was invited to conduct the "International Neuroradiology workshops" at the prestigious institute in Bangladesh, National Institute of Neurosciences and Hospital, Dhaka, Role was that of the principle coordinator for the workshop. Total four faculties attended this meeting from India-USA and each one of us delivered 4 lectures with total of 16 lectures during the workshop, Over 150 delegates attended this meeting. The Director of the institute felicitated the speakers with mementos and citations. Feedback from the meeting surpassed our expectations. A dedicated stroke unit of 100 bedded has been working sucessfully at the hospital; Skill Development Initiative for Emerging World Countries. CME on image guided therapies in clinical medicine, Republic of Maldives: 20-21 January 2020.

## Neuroanaesthesiology

### HIGHLIGHTS

Anaesthetic management for 4063 (2760 at the Neurosciences Centre and 1303 at the JPNATC) neurosurgical procedures was performed. Anaesthetic management for 662 neuroradiological procedures (378 in Angiography lab and 284 in MRI suite) was performed. Anaesthetic management for 1 patient receiving gamma knife therapy was performed. Intensive care management of 5711 ICU patients (4393-NSC; 1318-TC3 ICU, JPNATC) was performed. A total of 5683 patients were seen in Pre-Anaesthesia Check-up (PAC) clinic OPD at NSC. A total of 737 patients (153 new and 584 old) were seen in pain clinic OPD, NSC and 372 of them were treated with Nerve blocks procedures...

Five candidates were awarded DM (Neuroanaesthesiology) degree and three candidates were awarded fellowship in Neurocritical care. Seven new candidates joined DM course and one candidate joined the Neurocritical care fellowship courses. Thirty six senior residents (both academic and non-academic) received training in the department. Twenty two postgraduate students (including 10 from Lady Harding Medical College) and 24 senior residents from other anaesthesia departments received neuro-anaesthesia training.

### EDUCATION

We have regular classes (Seminars, Journal Club, Case presentation) on Monday, Tuesday and Friday between 8 and 9 am.

### CMEs/Workshops/Symposia/National and International Conferences Organized,

AIIMS Neuroanaesthesia Update-2019 during 18 October 2019-20 October 2019 at AIIMS, New Delhi

AIIMS Cadaveric Airway workshop on 22 October 2019 at AIIMS, New Delhi

1. Percutaneous Tracheostomy Airway management Workshop 18 October 2019, New Delhi
2. Vascular Access Acute Critical Care Course 30 October 2019, New Delhi
3. Basic and advanced airway management ATLS 2019, 19 December 2019, Rishikesh
4. Secondary survey ATLS 2019, 20 December 2019, Rishikesh

### Lectures delivered

Arvind Chaturvedi: 1

MP Pandia: 1

Girija Prasad Rath: 8

Hemanshu Prabhakar: 2

Gyaninder Pal Singh: 9

Ashish Bindra: 7

Niraj Kumar: 11

Keshav Goyal: 9

Navdeep Sokhal: 6

Charu Mahajan: 2

Indu Kapoor: 7

Surya Kumar Dube: 5

Vanitha Rajagopalan: 2

**Oral papers/posters presented: 26**

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Development and validation of novel pressure measuring device for measuring the collapsing pressure of internal Jugular vein during an ultrasound examination, Niraj Kumar, AIIMS + IIT Delhi, 2 years, 2019, Rs 20 lakhs
2. Effect of Decompressive Craniectomy on Jugular Venous Oximetry In Patients With Severe Traumatic Brain Injury, Navdeep Sokhal, AIIMS, 3 years, 2018-2020, Rs 2.5 lakhs
3. Impact of intra-operative jugular venous oximetry based management on outcome in patients undergoing excision of intracranial meningiomas: a preliminary study, Charu Mahajan, AIIMS, 1 year, 2019-2020, Rs 4.15 lakhs
4. Study of muscle enzyme elevation in neurosurgery and its relevance in postoperative acute kidney injury: A Pilot Study, Surya Kumar Dube, AIIMS, 2 years, 2018-2020, Rs 3 lakhs
5. Comparison of Fiber-optic Endotracheal Intubation with and without the use of air-Q as a conduit in patients with cervical spine injury: A pilot Study, Gyaninder Pal Singh, AIIMS, 4 years, 2016-2020, Rs 2.16 lakhs

#### Departmental projects

##### *Ongoing*

1. Correlation of NIRS with intraoperative transfusion trigger in paediatric patients posted for posterior fossa tumour excision
2. Goal-directed intraoperative fluid therapy in Aneurysmal SAH patients: a prospective randomized study
3. Incidence and risk factors for delayed extubation after posterior fossa surgery- A prospective study
4. Changes in somatic NIRS values during major hemorrhage with craniotomy and tumorexcision: an observational study

5. Comparison of functional neurological outcome with propofol total intravenous anesthesia or sevoflurane balanced anesthesia in adult patients undergoing decompressive craniectomy for supratentorial acute ischemic infarct: A randomized, controlled pilot study.
6. Incidence and Risk Factors for Delayed Extubation After Posterior Fossa Surgery: A Prospective Observational Study
7. Effect of surgical revascularization on regional cerebral oxygenation in patients with Moyamoya disease
8. Near infrared spectroscopy as a predictor of evaluation towards brain death following severe brain damage
9. Comparison of 0.9% normal saline, stereofundin, and plasmalyte with respect to metabolic parameters and brain relaxation in patients undergoing supratentorial craniotomy
10. To evaluate the effect of change in end tidal carbon dioxide on optic nerve sheath diameter under general anaesthesia
11. Intraoperative somatic site near infrared spectroscopy changes in supratentorial craniotomy: A prospective study
12. Comparison of C-MAC video-laryngoscope with D-Blade, C-MAC video-laryngoscope with standard blade, and Macintosh Laryngoscopes for intubation with cervical spine immobilization: a randomized study.
13. Comparison of ultrasound guided cannulation of subclavian vein (supraclavicular approach) versus internal jugular vein in neuro-intensive care patients on mechanical ventilation. A randomized study.
14. To evaluate the effect of change in end tidal carbon dioxide on optic nerve sheath diameter under general anaesthesia” (Guide)
15. Effect of ketamine infusion as neuroprotective agent on neurological outcome in patients with severe traumatic brain injury: a randomized controlled pilot study. (co-guide)
16. Effect of Neuroradiologic interventions on regional cerebral oxygenation in patients with anterior circulation aneurysms: An observational Study
17. Serum lactate, base deficit and glucose levels as prognostic markers of severe traumatic brain injury
18. Correlation of NIRS With Intraoperative Transfusion Trigger In Pediatric Patients Posted For Posterior Fossa Tumour Excision
19. Cardiovascular complications after traumatic spinal cord injury
20. To study the risk factors and causes of extubation failure in head injury patients
21. Effect of decompressive craniectomy on jugular venous oximetry (SJVO2) in patients with severe Traumatic brain injury (TBI) - Funded by AIIMS, Rs 5 lakhs
22. Incidence and risk factors of deep vein thrombosis in patients undergoing intracranial tumor surgeries – a prospective study
23. Evaluation of the GCS-Pupils Score for Prognostication in traumatic brain injury- The COMA study
24. Effect of intraoperative neurophysiological monitoring on clinical outcome in patients undergoing spinal instrumentation surgery - A retrospective analysis
25. A prospective randomized controlled trial to study the effect of two different tidal volumes (6-8mL/kg vs 12-15mL/kg) on the time to wean patients from ventilator having cervical spine injury (C1-C5)
26. Rate of multidrug resistance to antimicrobial drugs in paediatric neurointensive care patients
27. Effect of propofol versus sevoflurane on cerebral oxygenation in childhood Moyamoya Disease- a near infrared spectroscopy [NIRS] study
28. Use of non-invasive hemoglobin estimation for blood transfusion in spine surgeries; a comparison with conventional hemoglobin estimation method –A Pilot study
29. Comparison between transcranial sonography [TCS] and computerized tomography [CT] scan to assess the midline shift [MLS] in traumatic brain injury patients
30. Evaluation of the GCS-Pupils score for prognosis in traumatic brain injury- the COMA study
31. The effect on Dexmedetomidine on ECoG in patients undergoing epilepsy surgery under desflurane anesthesia. (Co-Guide). Completed
32. Goal Directed Intraoperative Fluid Therapy in Aneurysmal SAH patients: A Prospective Randomized Study (Co-Guide). On Going
33. A comparison of the effectiveness of dexmedetomidine versus propofol infusion for sedation during awake craniotomy
34. Outcome predictors of giant intracranial aneurysms undergoing surgical management: A retrospective analysis
35. Can change in 3 Ventricle width predict post-operative cognitive dysfunction in elderly patients undergoing spine surgeries under general anaesthesia: A Prospective Observational Pilot Study
36. Red blood cell distribution width as prognostic marker in aneurysmal subarachnoid hemorrhage

37. Red cell distribution width as prognostic marker in Acute traumatic brain injury

### **Completed**

1. Comparison of Propofol and Ketofol on Transcranial motor evoked potential in patients undergoing Thoracolumbar spine surgery
2. Evaluation of intratracheal lignocaine as compared to normal saline for reducing emergence reactions in patients undergoing endoscopic transsphenoidal pituitary surgery
3. Correlation between invasive and non-invasive technique of intracranial pressure measurement in children with traumatic brain injury: an observational study
4. To compare the effect of goal directed fluid therapy versus standard fluid regimen on the cuff leak volume in patients undergoing spine surgery.
5. Use of intratracheal lignocaine to reduce emergence reaction in the patients undergoing endoscopic transphenoidal pituitary surgery: a randomized controlled study ( co-guide)
6. Comparison of propofol and ketofol on transcranial motor evoked potentials in patients undergoing thoracolumbar spine surgery
7. Effect of percutaneous Tracheostomy on Optic Nerve Sheath diameter [TONS Trial]
8. Perioperative anesthetic management and factors affecting outcome in robotized stereotactic assisted (ROSA) intracranial procedures: A retrospective analysis.

### **Collaborative projects**

#### **Ongoing**

1. Effect of stellate ganglion block for cerebral vasospasm following aneurysmal subarachnoid haemorrhage on cardiac rhythm, A holter-based study, Cardiology
2. Development and validation of novel pressure measuring device for measuring the collapsing pressure of internal Jugular vein during an ultrasound examination AIIMS+ IIT Delhi
3. Effect of Lidocaine infusion on hemodynamics and recovery in patients undergoing endoscopic pituitary surgery: A multicentre, randomized control trial. Department of Anaesthesiology, Health Sciences Centre, University of Manitoba, Winnipeg, Canada
4. Prospective study on the effectiveness of chlorhexidine gluconate impregnated patch (BIOPATCH R) in reducing the incidence of central line associated blood stream infection (CLABSI). Microbiology, JPNATC, AIIMS
5. Surveillance of blood stream infections (BSI) at a referral Indian hospital Surveillance of blood stream infections (BSI) at a referral Indian hospital, Microbiology, JPNATC, AIIMS

### **PUBLICATIONS**

**Journals: 55**

**Abstracts: 12**

**Chapters in Books: 19**

**Books: 8**

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Arvind Chaturvedi** was Organizing Chairman of Annual Neuroanaesthesia and Neurocritical care Update 2019 and Organizing Chairman of USG and Cadaveric Pain workshop in Advanced Interventional Management of Pain conference 2019; Selected as MCI Inspector for Inspection and Accreditation of DM Neuroanaesthesiology course in India; Reviewer of Sultan Quaboos university Medical journal SQUMJ, Oman, JOACP, JNSA.

**Professor Mihir Prakash Pandia** is continuing as the Chairman of the research committee of ISNACC (Indian Society of Neuroanaesthesiology and Critical Care); Appointed as a committee member for the inspection for accreditation of ISNACC PDF course in Neuroanaesthesiology at SRMC, Porur, Chennai on 19 December 2019.

**Professor RS Chouhan** chaired a scientific sessions in AIIMS Neuroanaesthesia Neurocritical Care Update held at New Delhi, India from 18-20 October 2019; Co-chaired the prestigious GR Gode Oration in the ISNACC 2020, at Mahabalipuram, Tamil Nadu, held from 31 January 2020 to 2 February 2020.

**Professor GP Rath** was elected as Director in the Society for Neuroscience in Anesthesiology and Critical Care (SNACC, USA) Board of Directors; continued to contribute as the Member of Scientific and Communication Committees of the SNACC and Assistant Editor of SNACC Newsletters. Conducted Transcranial Doppler (TCD) workshop at SNACC Annual Meeting 2019 at Phoenix, USA. Continue to contribute as EXCO member (India) for Asian Society of Neuroanaesthesia and Critical Care (ASNACC) and its web editor. Organized the “Neuroanaesthesia and Neurocritical Care (NANC) Refresher Course”, and actively contributed for the ‘AIIMS Neuroanaesthesia Neurocritical Care Update 2019’ as Member of Organizing (Scientific) Committee. Continue to hold the post of Executive Editor, Journal of Neuroanaesthesiology

and Critical Care (JNACC), Editorial Board Member of Indian Journal of Anaesthesia (IJA), Neurology India, The Indian Anesthetists' Forum, Associate Editor of Indian Journal of Clinical Anaesthesia (IJCA), and Web Editor, Indian Society of Neuroanaesthesiology and Critical Care (ISNACC). Continue to serve as the International Advisory Board Member of Anesthesia Essays and Researches (AER) and Anesthesiology and Pain Medicine (AAPM), and peer-reviewer of reputed international journals such as *Minerva Anestesiologica*, *Journal of Neurosurgical Anesthesiology*, *Neurocritical Care*, *BMC Anesthesiology*, and *Journal of Clinical Anesthesia*. Continued to be involved (Core faculty) in the In-service training programme (Organized by ORBO, AIIMS) of nurses and resident doctors for deceased organ and tissue donation.

**Dr GP Singh** was awarded the “**Outstanding Scientist Award in Anaesthesiology**” by Venus International Research Award (VIRA-2019) at Chennai on 3 August 2019; **Associate Editor** for *Journal of Neuroanaesthesiology and Critical Care*.

**Dr Ashish Bindra** was Organizing Secretary for AIIMS Neuroanesthesia Neurocritical Care Update from 18 to 20 October 2019 at JL Auditorium, All India Institute of Medical Sciences, New Delhi; Organized AIIMS- AIM P, Cadaveric Interventional Pain Management Workshop on 22 October 2019 at Cadaveric Training and Research Facility, JPNA Trauma Centre, New Delhi.

**Dr Niraj Kumar** is pursuing fellowship Program: (CMETI – Part Time Clinical Research Methodology and Evidence Based Medicine) at AIIMS, New Delhi for the session, January 2019. Based Medicine; **Instructor (Faculty) of** –ATLS, ANC, ACCC, AIIMS – EM-SONO, AUTLS, AIIMS cadaver airway; As a faculty of ORBO team facilitates knowledge, awareness amongst the hospital staff and also actively involved in procedures related to organ procurement; **Course director of** Cadaveric Airway Management Course – (18 October 2019) at JPNATC, New Delhi; **Executive member of organizing committee** AIIMS Neuranaesthesia update 2019.

**Dr Keshav Goyal** was appointed as External Examiner of Madhya Pradesh medical Science University, Jabalpur (MP) for MD anesthesiology; Advanced Trauma Life support (ATLS) Instructor Recertification, April 2019; Emergency Neurological Life Support (ENLS) Instructor Recertification; Course director cum National Coordinator of 1st Acute Neuro Care (ANC) affiliated by National society (ISNACC) 2019 at PGIMER Chandigarh and Yashoda Hospital, Hyderabad; Member of Trainee Engagement Committee of SNACC, USA; Reviewer of International Journal of Respiratory and Pulmonary Medicine; Executive member of organizing committee of: AIIMS Neuroanaesthesia and Neurocritical Care update 2019, 2nd and 3rd Acute Neuro care (ANC); Course Director and Coordinator, Cadaveric Airway Workshop, Quiz master in AIIMS Neuroanaesthesia and Neurocritical Update 2019.

**Dr Navdeep Sokhal** received Best paper award -One of my poster “Comparison of propofol and ketofol on transcranial motor evoked potentials (TcMEPs) in patients undergoing thoracolumbar surgery” presented by our student has won best paper award in ISNACC 2020, in Chennai; Course Director -Successfully organized “AIIMS Critical Care Course for Interns” as Course Director on 8-9 December 2018. In this course interns and residents were trained for various lifesaving skills like basic and advanced cardiac life support, airway management, vascular access and cricothyrotomy on mannequins and were taught basic concept of critical care management.

**Dr Vanitha Rajagopalan** completed the Point of Care Quality Improvement online course offered by AIIMS, New Delhi; Completed the Certificate course in Medicine and Law for Doctors offered by Institute of Medicine and Law; Completed the Comprehensive Critical Care e- Course (4C) offered by Indian Society of Critical Care Medicine; Reviewed articles for: *Journal of Neuroanaesthesiology and Critical Care*, *Journal of Anaesthesiology Clinical Pharmacology*, *Indian Journal of Clinical Anaesthesia*, *Neurology India*.

## Clinical Neuropsychology

### **HIGHLIGHTS**

Division of Neuropsychology, Neurosciences Center, got National and International recognition. The enthusiasm and willingness of students has played a major part in delivering 'standard of care'. Outcome from such a service with the support of their teams further helped in getting this recognition. The Neuropsychology faculty was nominated and selected to become a member of the Development Group for Traumatic Brain Injury (Non-Pharmacology Section). This nomination is for the World Health Organization (WHO) TBI Rehabilitation Working Group Member: under the aegis: Rehabilitation 2030- a call for action. The nomination was done by the Indian Federation of Neurorehabilitation (IFNR) and further supported by World Federation of Neurorehabilitation (WFNR). The faculty also worked as Member: Institute's Ethics Committee. Institute of Home Economics, (University of Delhi), 2017-2019.

Neuropsychology has actively participated in research as a part of esteemed interdisciplinary team. Have been involved in teaching clinical psychology to students (undergraduate, post graduate, and PhD).

### **EDUCATION**

- Undergraduate Teaching / BSc
  - B.Sc (Hons/Post Certificate) Nursing
  - Post Certificate 1st year
- Post Graduate Teaching
  - Clinical teaching /tutorials (about 12-16 hours/week)
  - Short Term Training (Clinical Neuro Psychology): AIIMS: 2

### **CMEs, National and International conferences**

#### **Lectures delivered**

**Ashima Nehra: 5**

**Oral papers/posters presented: 2**

### **RESEARCH**

#### **Funded projects**

##### ***Ongoing***

1. To study the effectiveness of Repetitive Transcranial Magnetic Stimulation (rTMS) on Activities of Daily Living, Behavioral and Cognitive ability (A-B-C) of Parkinson disease Patients, Ashima Nehra, DST, 2021,

#### **Departmental projects**

##### ***Ongoing***

1. To study the effectiveness of Repetitive Transcranial Magnetic Stimulation (rTMS) on Activities of Daily Living, Behavioral and Cognitive ability (A-B-C) of Parkinson disease Patients.
2. Development And Efficacy of Comprehensive Neuropsychological Rehabilitation for Improving Cognition and Quality Of Life in persons with Drug Refractory Epilepsy: A Randomized Controlled Clinical Trial

##### ***Completed***

1. Development of a Computerized Neurocognitive Remediation Package and Phase II Trial for Assessing its Efficacy in Cognitive Functioning among Patients with Schizophrenia

#### **Collaborative projects**

##### ***Ongoing***

1. A Population Based Prospective Cohort study to Unravel the Causes of Stroke and Cognitive Decline: A cross-cultural perspective AIIMS-ERASMUS COHORT STUDY. (An international collaborative project) Neurology, Cardiology, Community Medicine, Neuroradiology, Oral Health Sciences, Neuropsychology, Bio-Statistics etc.
2. To study the effectiveness of Repetitive Transcranial Magnetic Stimulation (rTMS) on Activities of Daily Living, Behavioral and Cognitive ability (A-B-C) of Parkinson disease Patients., Neuropsychology, Neurology, Bio-Statistics
3. Development And Efficacy of Comprehensive Neuropsychological Rehabilitation for Improving Cognition and Quality Of Life in persons with Drug Refractory Epilepsy: A Randomized Controlled Clinical Trial, Neuropsychology, Neurology, Neurosurgery, Neuroradiology, Bio-Statistics



### Completed

1. Development of a Computerized Neurocognitive Remediation Package and Phase II Trial for Assessing its Efficacy in Cognitive Functioning among Patients with Schizophrenia
2. Neuropsychology, Neurology, Psychiatry, Bio-Statistic

### PUBLICATIONS

**Journals: 7**

### PATIENT CARE

**Clinical Neuropsychology** is a specialized referral service which focuses on clinical application, including diagnostic formulation, assessment, cognitive retraining in brain functioning following brain attack/ insult/ injury. Psychological assessment includes neuropsychological assessment/ evaluation including clinical diagnosis (as per the Gold Standards), comprehensive interview; behavioural observations, assessment with series of neuropsychological tests, interpretation, report writing neuropsychological formulation including General Intellect (hemispheric assessment), Cognition, Higher Level Executive Skills (e.g. problem solving, reasoning) Attention and Concentration, Memory and Learning, Motor and Sensory Skills, Perceptuo-motor Functioning/Visuo-spatial skills, Mood and Personality (Orbito Frontal Functions), Language/ Aphasia Assessment. Neuropsychological retraining including basic function approach to improve the functional skills improving basic pre morbid functions of persons daily life; neuropsychological reorganization including compensation for the deficit when deficient function can neither be reorganized nor restored, clinic based therapy; home based therapy. Neuropsychological retraining including basic function approach to improve the functional skills improving basic pre morbid functions of persons daily life; neuropsychological reorganization including compensation for the deficit when deficient function can neither be reorganized nor restored, clinic based therapy; home based therapy.

Neuropsychological Rehabilitation, Vocational Guidance, Supportive Psychotherapy, Directive Counselling to the patients and family members which is an important aspect of patient care in terms of management of any neurological condition. All these services are covered under the specialized clinics of Neuropsychological Rehabilitation (NR) and Cognitive Disorders and Memory Clinic (CD&M)

**Outpatient service (OPD):** There are 4 Clinical Neuropsychology OPDs/week, with 3 registries:

#### Specialized Clinics

##### *Neuropsychological Rehabilitation (NR) Clinic*

Cognitive Retraining/Restructuring
Basics Skill Training
Functional Re-training
Speech and Language Rehabilitation
Psychosocial Therapy
Guidance and Counselling
Individual Therapy
Family Therapy
Vocational Guidance
Holistic/eclectic Approach Therapy (depending on the patient's needs)

##### *Cognitive Disorders and Memory (CDM) Clinic*

Memory Assessment
Screening for Cognitive Decline
Cognitive Rehabilitation for Dementia/ Alzheimer's Dementia
Cognitive Re-training for decline in Memory/Executive Functioning
Management of Cognitive/ Memory Disorders
Identify and treat pseudo-dementia

Education: patients, carers, trainees, colleagues, and the general public.
Family guidance
Monitoring of progress and response to therapy

### **REFERRALS**

Patients are referred from Neurology, Paediatric Neurology, Neurosurgery, Psychiatry, JPN Trauma Centre, Neuroanaesthesia, Physical rehabilitation and medicine (PMR), ENT, Endocrinology, Nuclear Medicine, Medical superintendent's office (for medico legal cases), etc.

Referrals are given to establish a 'baseline' of skills/weaknesses in order to measure change in the future, to identify strengths and weaknesses in specific areas, to differentiate among illnesses, which can then direct appropriate treatment, to plan for treatment to use strengths to compensate for weaknesses, to assess everyday functional skills to plan for assistance or treatment, etc.

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

Dr Ashima Nehra was nominated for World Health Organization (WHO) WHO-TBI Rehabilitation Working Group Member (for Non-Pharmacological Intervention): under the aegis: Rehabilitation 2030- a call for action (Nominated by Indian Federation of Neuro-Rehabilitation and supported by World Federation of Neuro-Rehabilitation). Nominated for World Health Organization (WHO) WHO-TBI Rehabilitation Working Group Member

**Kaur H.** (Former Student), at present Assistant Professor at TISS, Mumbai: International Neuropsychological Society: Travel Bursary Award \$1500 : Denver, USA. February 2020 (Award won on the work done as a part of her PhD.

## Neurobiochemistry

### HIGHLIGHTS

Introduced new MLPA based genetic diagnostic test: Duchenne Muscular Dystrophy-1 (DMD-1), Duchenne Muscular Dystrophy-2 (DMD-2), Spinal Muscular Atrophy (SMA), Wilson's test. BRCA1, BRCA2/CHEK2 screening, Wilson, EGFR, and TP53 in Biochemistry, NSC.

### CMEs, National and International Conferences

#### Lectures delivered

**Ashok Sharma: 5**

**Oral papers/posters presented: 2**

### RESEARCH

#### Funded projects

##### *Ongoing*

1. Artificial intelligence in Oncology: Harnessing big data and advanced computing to provide personalized diagnosis and treatment for Cancer patients. Ashok Sharma, MEITY, 2 years, 2020-2022, Rs 292 lakhs
2. Interplay between Cancer Testis/ Germline POTE antigen and NOTCH Signaling and its association with Global DNA Methylation in Ovarian Cancer, Ashok Sharma, ICMR- MOHFW, 3 years, 2019-2022, Rs 42.5 lakhs.
3. Genome-Wide DNA Methylation and Genomic Instability Profiling and Evaluating Its Potential as a Biomarker and Immunotherapeutic Target for Ovarian Cancer. Ashok Sharma, DBT-Ramalingaswami Project, 5 years, 2015-2020, Rs 32.5 lakhs
4. Nuclear Architecture as an Epigenetic Regulator in Pericentromeric localized Cancer-Testis/Germline Antigen POTE Expression in Ovarian Cancer, Ashok Sharma, DST, 3 years, 2017-2020, Rs 55 lakhs
5. A pilot study to analyze serum levels and intra-tumour expression of cancer-testis antigen POTEE as a new biomarker for ovarian cancer, Ashok Sharma, DHR-ICMR, 2 years, 2018-2020, Rs 25 lakhs
6. Molecular Characterization of Endometrial Cancer and its correlation with clinicopathological Features, Ashok Sharma, AIIMS, 2 years, 2018-2020, Rs 10 lakhs
7. Estimate the Serum Levels of Cancer-Testis Antigen POTE as a Biomarker in Epithelial Ovarian Cancer, Ashok Sharma, AIIMS, 2 years, 2016-2018, Rs 10 lakhs

#### Departmental projects

##### *Ongoing*

1. Functional Characterization, Expression, and Clinical Significance of Cancer-Testis/ Germline Antigen POTE in Ovarian Cancer
2. Role of 3D Genome Architecture as Epigenetic Regulator of Pericentromeric localized Cancer-Testis/Germline Antigen POTE in Cancer

##### *Completed*

1. Cloning and Functional analysis of Cancer Testis Antigen POTEE in Epithelial Ovarian Cancer
2. Effect of DNA Methylation in Expression of Cancer-Testis/Germline Gene POTEE in Ovarian Cancer
3. DNA Methylation Effect on POTE Expression in Epithelial Ovarian Cancer

#### Collaborative projects

##### *Ongoing*

1. Role of PARP1 and  $\gamma$ -Glutamylcysteine Synthetase Inhibitor in Cisplatin Sensitivity and Correlation With DNA Methylation in Ovarian Cancer, IRCH, AIIMS
2. Impact of Yoga and Meditation on Epigenetic Profile in Rheumatoid Arthritis, Anatomy
3. The Role of Leukotriene A4 hydrolase gene Polymorphism and Clinical outcome correlate in Corticosteroids treated Tubercular Meningitis Patients, Neurology
4. One carbon metabolism and cognitive impairment in older Indians, Geriatric Medicine
5. Estimation of novel Proteins among Older Subjects as biomarker for cognitive impairment, Geriatric Medicine
6. To evaluate the effect of intralipid supplementation on implantation rate in women with two or more failed IVF/ ICSI with elevated natural killer cell levels – A pilot randomized controlled trial, Obstetrics and Gynaecology
7. Expression of Cancer Testis Antigen POTE in Ovarian Tumors and its Clinical Significance: A Pilot Study, Obstetrics and Gynaecology

8. Molecular Characterization of Endometrial Cancer and its correlation with clinicopathological Features, Pathology

**Completed**

1. Role of peroxisome proliferator activated receptor alpha (ppar alpha) in trophoblast invasion, Biochemistry

**PUBLICATIONS**

**Journals: 3**

**PATIENT CARE**

**Haematology laboratory**

S. No.	Description	No. of tests
1	Ward haematology	64997
2	OPD Haematology	38687
3	PT	72712
4	APTT	8165

**Ward/OPD Chemistry tests**

S. No.	Description	No. of Tests Ward	No. of Tests OPD
1	Glucose	35,205	51,534
2	Urea	63,892	50,656
3	Creatinine	64,320	51,340
4	Calcium	63,777	50,278
5	Phosphorous	61,343	49,267
6	Uric acid	64,243	50,767
7	Sodium	62,765	51,678
8	Potassium	65,118	52569
9	Bilirubin	62,178	50,112
10	Direct bilirubin	63,321	52,432
11	Total protein	61,989	51,999
12	Albumin	63221	51264
13	AST	66795	50,989
14	ALT	66752	51,098
15	ALP	64281	50,108
16	Cholesterol	40522	8139
17	Amylase	29323	8408
18	Cyclosporin	247	–
19	Tacrolimus	543	–

**Hormone tests**

S. No.	Description	No. of Tests
1	T3	14,959
2	T4	15,665
3	TSH	16,532

4	Prolactin	1881
5	Cortisol	1972
6	LH	2098
7	FSH	1930

#### Lipids and Enzymes

S. No.	Description	No. of Tests
1	Lipid profile	111979
2	CK-NAC	19631
3	CK-MB	6097
4	LDH	23377
5	ASLO	5781
6	Digoxin	978

#### Drug tests

S. No.	Description	No. of Tests
1	Phenytoin	1628
2	Valporate	1543
3	Phenobarbitone	244
4	Carbamazepine	926

#### Special tests

S. No.	Description	No. of Tests
1	Vit B12	5912
2	Folate	3572
3	Homocysteine	1823
4	Ferritin	1534
5	Ceruloplasmin	308
6	Serum Copper	217
7	Urine Copper	250
8.	ACHR	59
9	Neuronal Ag	51
10	Ganglioside	16

#### Others

S. No.	Description	No. of Tests
1	Catecholamines	519
2	VMA	585

3	Vitamin D	4563
4	PTH	150
5	HbA1c	8260
6	NMO	661

**Sanger-Sequencing based genetic testing:**

S. No.	Description	No. of Tests
1.	TPMT assay	112
2.	BRCA (MLPA) + (3 founder mutation Sequencing)	10 +9
3.	DMD (MLPA)	01
4.	Wilson (MLPA)	01

**AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Dr Ashok Sharma** was Invited by Department of Biotechnology's for the Nobel Prize Series 2019; Invited by Ministry of Health and Family Welfare and DBT India Jointly for colloquial lecture in the Young Achiever's, Young Scientists' Conference (YSC), 5th India International Science Festival (IISF 2019) held at Biswa Bangla Convention Centre (BBCC), Kolkata; role in establishing the Indian Council of Medical Research-Indian Cancer Research Consortium (ICMR-ICRC), New Delhi as a member of committee; guest to deliver a talk in Sri Aurobindo College on 'Epigenetics and Human Diseases' in Science Fest dated on dated on 4 September 2019; Distinguish speaker in National Conference on Cancer Biology and Therapeutics held at Institute of Life Sciences, Bhubaneswar, Odisha, during 29-30 November 2019; **Editorial and Review Work:** Member of the Editorial Board of Cancer science and Cell Biology, Member of the Editorial Board of International Journal of Integrative sciences, Innovation and Technology (IJIT); **Reviewer for:** Molecular Report, PLOS ONE, PLOS Genetics, PLOS Biology, BMC Cancer, Carcinogenesis- Oxford Journals, Laboratory Investigation- Nature, Molecular BioSystems- RSC Publishing, Molecular Biotechnology, Molecular and Cellular Biochemistry- Springer.

## Neuropathology

### HIGHLIGHTS

In the year 2019-2020, unit of Neuropathology has been able to maintain high standard academics and state of art clinical services. The unit is engaged in routine diagnostic services (total of 2106 cases), teaching of undergraduate, postgraduate, DM and Mch students; as well as high quality research in various subspecialities of Neuropathology. In this year trained one faculty in muscle pathology from Jaipur and two technicians from Jaipur and DMC Ludhiana.

New facilities have been added for the molecular diagnosis and cytogenetic work-up in routine work up in neurooncology, which include *in-situ* hybridization, capillary electrophoresis, real-time PCR etc. The diagnostic immunohistochemical panel has been expanded and a total of 8375 slides have been stained and studied during this period. The unit is regularly integrating molecular makers of clinical significance in the histopathological reports of neurooncology and myopathology.

The Neuropathology faculty have received funding for 3 extramural projects. A total of 40 papers have been published in peer reviewed national and international journals. Research work was presented at various national and international platforms. Professor Chitra Sarkar received the Lifetime Achievement Award from the Delhi Neurological Association for her contributions in Neuropathology.

Professor Chitra Sarkar has been nominated as a member of working committee of CIMPACT-NOW (Consortium to Inform Molecular and Practical Approaches to CNS tumor Taxonomy) under the aegis of WHO. Professor Chitra Sarkar has been invited to be a co-author in upcoming 2020, WHO classification of CNS tumors and Updates of CIMPACT-NOW. Professor MC Sharma and Dr. Kavneet Kaur have also been invited co-author chapters in the upcoming 2020, WHO Classification of CNS Tumors.

### EDUCATION

Undergraduate lectures and seminars	9 per year
Undergraduate practical classes	3 per year
Postgraduate (MD pathology) teaching during reporting sessions	10 hours per week
Postgraduate Teaching in Friday conferences	2 hours per week
Neuropathology/ Neurology/Neurosurgery conference	1.5 hours every Friday
Training of postgraduate graduate (MD pathology) students on FISH platform	Twice a year
15 days teaching and training of DM Neurology candidates	On rotation basis

### CMEs/Workshops/Symposia/National and International Conferences

- **Conference Organized**

10th Annual Conference of the Indian Society of Neuro-Oncology (ISNOCON 2018) held at AIIMS, New Delhi from 6-8 April 2018.

Also organized Pre-conference workshop on Molecular Neuro-Oncology.

### Lectures delivered

**Chitra Sarkar: 5      Mehar C Sharma: 10      Vaishali Suri: 3**

### Oral papers/posters presented :5

### RESEARCH

#### Funded projects

#### Ongoing

1. DHR-ICMR Advance Medical Oncology Diagnostic Services (DIAMONDS) under HTA in pilot research project, Chitra Sarkar,, DHR-ICMR, 3 years, 2020-2023, Rs 170 lakhs
2. A multi-centric study to develop comprehensive molecular genetic panels for glioblastoma personalized therapy. Chitra Sarkar, DBT, 5 years, 2016-2021, Rs 50 Lakhs
3. JC Bose Research Fellowship, Chitra Sarkar, DST, 5 years, 2016-2020, Rs 15 lakhs per year
4. Unraveling the role of miRNA clusters (C14MC and C19MC) in oligodendrogliomas: Study using genetic and functional approach with clinicopathological correlations, Chitra Sarkar, ICMR, 3 years, 2017-2020, Rs 10 lakhs per year
5. Unravelling the functional relevance of Snail paralogs in the pathogenesis of pediatric ependymomas, MC Sharma, DST, 3 years, 2018-2020, Rs 45 lakhs

6. Sequencing Target genes aimed at Neuromuscular disorders in India (STAND-INDIA), MC Sharma, ICMR, 3 years, 2018-2021, Rs 50 lakhs
7. Tumor Immune landscape: PDL1 expression and evaluation of tumor immune interplay by investigating the immune cell infiltration in supratentorial ependymoma and its correlation with survival outcomes, MC Sharma, ICMR, 3 years, 2020-2023, Rs 35 lakhs
8. Clinicopathological and serological assessment of adult-onset idiopathic inflammatory myopathies (IIM) aimed at improved characterization of sporadic inclusion body myositis, MC Sharma, ICMR, 3 years, 2020-2023, Rs 50 lakhs
9. Targeted genomic-epigenomic analysis to develop a novel approach for routine molecular subgrouping and identification of actionable targets in meningioma, V. Suri, DST, 3 years, 2018-2021, Rs 42 lakhs
10. Identification of non-coding RNA panel as novel biomarker for stratification of meningiomas and evaluation of its prognostic therapeutic significant, V. Suri, Rs 10 lakhs
11. Molecular signature of protumorigenic inflammation in the context of the WHO 2016 classification of glioma, V. Suri, AIIMS, 3 years, 2018-2020, Rs 20 lakhs
12. Integrative transcriptome analyses of different histological and molecular subgroups of meningiomas to identify prognostic signature and therapeutics, V. Suri, ICMR, 2019-2022, Rs 62 lakhs

### Departmental projects

#### *Ongoing*

1. Study of EGFR-MAPK, NFKB and SHH pathway activation in corticotroph pituitary adenomas
2. Comparison of molecular and immune profile of Epithelioid GBMs and PXA
3. Analysis of immune check point markers in gliomas
4. EMT pathway in meningioma
5. Molecular profiling of Epithelioid Glioblastoma

#### *Completed*

1. DNA methylation array for molecular subgrouping of medulloblastomas
2. Targeted sequencing of IDH negative gliomas
3. Clinicopathological study of infant gliomas
4. EZH2-WNT expression and correlation in tumor invasiveness, stem cell phenotype and progression in pituitary adenomas

### Collaborative projects

#### *Ongoing*

1. Fat gene in gliomas, Biochemistry
2. Molecular and immune profile of midline gliomas, Neurosurgery

### PUBLICATIONS

**Journals: 34**

#### PATIENT CARE

##### Neuropathology Lab

Total Specimen	2106	Frozen Section	359
----------------	------	----------------	-----

##### Immunohistochemistry

Routine IHC	8375	Research IHC	523
-------------	------	--------------	-----

Muscle IHC	1699	Total Muscle Received	291
------------	------	-----------------------	-----

Muscle Enzyme-histochemistry	658		
------------------------------	-----	--	--

##### Fluorescence in situ hybridization

Diagnostic	349	Research	272
------------	-----	----------	-----

##### EM Facility

Total muscle sample	288	Total nerve sample	37
---------------------	-----	--------------------	----

Immunoblot sample	55		
-------------------	----	--	--



## **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor Chitra Sarkar** was appointed as President, AIIMS, Kalyani by Ministry of Health and Family Welfare; Chairperson of the Committee constituted by Ministry of Health and FW to suggest recommendations regarding Bhopal Memorial Hospital and Research Centre (BMHRC); Member, Governing Body of Institute of Medical Sciences, Banaras Hindu University; Member, THSTI Society Committee; Nominated Member of DST-INSPIRE Fellowship Standing Committee; Nominated Member of Expert Evaluation Committee of DST-INSPIRE Fellowship; Organizing Chair of 10th Annual Conference of the Indian Society of Neuro-Oncology (ISNOCON 2018) held at AIIMS, New Delhi from 6 to 8 April 2018. Also organized Pre-conference workshop on Molecular Neuro-Oncology; Chairperson, Women's grievance cell, AIIMS; Chairperson, Prevention of Sexual Harassment of Women at AIIMS; Coordinator for Memorandum of Understanding between AIIMS and other Institutions for collaborative research; Member of Nano Mission Council (NMC) of Department of Science and Technology, Govt. of India; Member, Apex Committee for North Eastern Region Biotechnology Programmes of Department of Biotechnology; Vice President of the International Society of Neuropathology; Secretary, Neuropathology Society of India; Selection committee member for Ranbaxy Awards; Member of Sectional committee (Health Sciences) of INSA; Member, Editorial Board of journal Neuropathology (published from Japan); Member, Assessment Committee for scientists' promotions of ICMR; Member of the Governing Body and Scientific Advisory Committee of National Brain Research Centre, Manesar; Member of the Scientific Advisory Committee of Institute of Pathology, New Delhi; Co-chairperson of Human Ethics Committee of National Institute of Immunology, New Delhi; Member, Oncology Sub-Committee of NCD-III, ICMR.

## 11.1. BB Dikshit Library

### Chairperson, Library Committee

S Rajeshwari

### Professor in-charge, Library

SS Chauhan

### Chief Librarian

S Siva Chidambaram (up to 26.12.2019)

### HIGHLIGHTS

The central library provides information service to all the teaching departments and centres. The library is open 24x7 (356 days) and it has more than 1,50,257 books and other documents such as bound journals, pamphlets, etc. The library also has a collection of 2,298 Hindi books for readers and employees, both technical and non-technical. An average of 320 readers visit the library everyday. The library is well equipped with modern facilities to support biomedical education and research. The library has predominantly e-resources (80%) which are provided with anytime anywhere access for doctors and faculty members for their scholarly activities. The collection of various E-Resources access and service credential available through the library is given below:

Types of E-Resource	Description
E-Journals	1493 Scholarly Journals, Dentistry and Oral Sciences Source (DOSS Aggregator), NEJM Journal Watch
E-Books	Access Medicine, Oxford Medicine Online (53 textbooks), OVID
Point of Care databases	Up-to-date (Anytime anywhere), BMJ Best Practice, BMJ Case Reports, Acland Anatomy, MedOne Surgery
E-Learning packages	JAMA Evidence, BMJ Research to Publications, HSTalk Lecture Series
Abstracting and Indexing databases	EMBASE, Web of Science (Citation Analysis Database), Journal Citation Report
Access Facility Software on Services	LibSys Premia (Version10) Library automation EBSCO Discovery service (Single Point Search for all subscribed E-Resources). All E-Resources are accessed through IP enable in the Campus RemoteXs, OpenAthens facility for out-of-campus access
Plagiarism verification service	iThenticate web enabled

These online databases, E-Journals and E-Learning packages can be accessed through the library by Web-scale Discovery Service (Single Point Search), IP enabled access and RemoteXs facility. During the year, 272 new RemoteXs accounts were created for remote access facility. Few society-based journals may be accessed through username and password. Necessary access information is disseminated through the library webpage: <http://www.aiims.edu/en/library.html>. The RemoteXs facility to faculty members and academic resident doctors is provided through: <http://elibraryaiimsdelhi.remotexs.in> to access E-resources even outside the campus and the country. The library has a plagiarism verification facility for its readers and total number of submissions is 1992 (documents are 2084). The library has its own search engine called 'Single Point Search' web-scale discovery service to retrieve library subscribed electronic resources plus library holdings effectively. It also acts as a tool for a bibliographic management system for doctors. The Library Committee is an advisory body for the management of the library. It advises the Chief Librarian regarding the procurement of books and subscription of periodicals and databases. The present committee consists of the Professor in-charge as Chairperson, 7 Professors, 2 Associate Professors and 1 Assistant Professor from various departments as members, and the Chief Librarian as the Coordinator. The committee meets regularly.

The Library has an in-house information communication and management system comprising of 3 servers and 49 computers. The library has its own Wi-Fi service, and about 1,000 users are benefited during the year. The library uses Libsys Premia automation software system that supports data entry and retrieval of books and other documents. All documentation/bibliographic services, as well as certain library operations have been computerized, using integrated library management software. The circulation section of the library is computerized through RFID smart card system and online issue return of books with automatic reminder systems through e-mail. The total RFID Smart Cards issued to the library's readers are 608. The library provides Current Awareness Service and Reference Services. The library publishes E-Resources Bulletin, AIIMS Institutional Repository Bulletin and the New Books Bulletin, etc. It also provides services such as web-based Open Access Public Catalogue (Web OPAC), Reprography and printout of academic literature. Library imparts orientation and information literacy programs to students, research scholars and doctors regularly.

This year library spent around `1,850 lakhs for procurement of E-Journals, Databases, Books and other documents, IT equipment and services, etc. It added around 257 new books, 1493 E-Journals, 13 Databases and 4 Access Facility services, etc. This year, the library has launched its ETD (Electronic Thesis and Dissertation) facility through online platform successfully. Now, the theses and dissertations are available for library's readers in printed/CD formats/online platform.

#### **CME/Workshop/Seminar/Conferences Organized**

1. Orientation Program for AIIMS Resident Doctors, 9 April 2019.
2. Scholarly Communication, OVID Day Workshop, 11 July 2019.
3. Utilization of E-Resources in Scholarly Communication, Librarians' Day Seminar, 9 August 2019.
4. Access and Availability of Medical Literature in Electronic Environment (AMLEE-2019), National Conference, 2-3 September 2019, AIIMS, New Delhi.

#### **Lectures delivered**

**Dr S Siva Chidambaram: 7**

#### **Workshop/Conference/Seminars Attended**

**Dr S Siva Chidambaram**

1. Research Data and Statistical Analysis using R Programing, National Workshop, UGC INFLIBNET Centre, 6-11 May 2019, Gandhinagar.
2. Knowledge Engineering for Digital Library Design (KEDL 2019), International Symposium, IIT Delhi organized by National Digital Library of India (NDLI), 9-11 December 2019, IIT Kharagpur in collaboration with UNESCO,

**Jahangir Khan**

1. National Convention on Emerging Trends in Medical Information and Technologies Conduct by Medical Library Association of India at Manav Rachna International Institute of Research and Studies, 2-4 March 2020, Faridabad.

**Prashant Srivastava**

1. Workshop on Procurement and General Finance Rules, All India Institute of Medical Sciences, New Delhi K.L. Wig Centre for Medical Education Technology & Innovation (CEMETi), 25-26 July 2019.
2. International Conference on Digital Landscape (ICDL 2019), Indian Habitat Center, TERI, 6-8 November 2019, New Delhi.
3. MLAI-19, National Convention on Emerging Trends in Medical Information and Technologies, Medical Library Association of India at Manav Rachna International Institute of Research and Studies, 2-4 March 2020, Faridabad.

**Umesh Kumar**

1. Workshop on Procurement and General Finance Rules, All India Institute of Medical Sciences, New Delhi K.L. Wig Centre for Medical Education Technology & Innovation (CEMETi), 25-26 July 2019.
2. Workshop on How Indian Libraries can get benefited by associating with OCLC, organized by Delhi Public Library in association with OCLC and Edutech, 24 October 2019.
3. International Conference on Digital Landscape: Digital Transformation for an Agile Environment (ICDL-2019), 6-8 November 2019, New Delhi.

**Neetu Priya**

1. National Workshop on Research Data and Statistical Analysis using R Programming, INFLIBNET Centre, 6-11 May 2019, Gandhinagar.

#### **PUBLICATIONS**

**Journals: 1**

**Chapters in Books: 6**

**Books: 1**

#### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Dr S Siva Chidambaram** honoured as Guest Speaker and committee member of the International Conference on Digital Libraries 2019 on Digital Transformation for an Agile Environment (ICDL 2019) organized by TERI, India Habitat Centre, New Delhi, 6-8 November 2019; participated and shared Digital Libraries experience with Dr Michael Keller (Vice Provost & University Librarian, Stanford University) during Digital Library Workshop held at Jio Institute, Ahmedabad, 24-25 October 2019.

**MK Vishwakarma** was Member of Institutional Annual Report Committee, AIIMS New Delhi.

**Jahangir Khan** was Chair of Technical Session at National Convention on Emerging Trends in Medical Information and Technologies Conduct by Medical Library Association of India, Manav Rachna International Institute of Research and Studies, Faridabad, 3 March 2020.

**Prashant Srivastava** worked as Rapporteur General of MLAI-19, National Convention on Emerging Trends in Medical Information and Technologies conducted by Medical Library Association of India at Manav Rachna International Institute of Research and Studies, Faridabad, 2-4 March 2020.

**Neetu Priya** was Member, Institutional Annual Report Committee, AIIMS, New Delhi and worked as Rapporteur in National Seminar on Access & Availability of Medical Literature in Electronic Environment—Digital Transformation in Medical Libraries (AMLEE-2019), 2-3 September 2019 organised by BB Dikshit Library, AIIMS, New Delhi.



## 11.2. Cafeteria

**Chairperson**

Subhasish Panda  
Deputy Director (Administration)

**Member Secretary**

Rakesh Kumar Sharma, Senior Stores Officer

**Accounts Officer**

Meenakshi Dabral

**General Manager**

SK Kaushik (up to 31 July 2019)

KK Sharma (from 13 August 2019)

AIIMS Cafeteria was established as a departmental canteen with the objective of providing wholesome food, prepared under healthy hygienic condition at reasonable prices to the employees of AIIMS. The Cafeteria caters to the needs of over 14,000 employees including Faculty Members, Doctors, Nursing Staff, Students and other Staff members. A cafeteria service is being provided round the clock at different places/centres under the supervision of the Cafeteria Management Committee. Cafeteria also meets the need of Hospitality Services of all higher offices of AIIMS during important official meetings, workshops, symposia etc.

Considering the massive expansion in the requirement of catering services at AIIMS as a result of additional AIIMS staff strength at upcoming blocks in AIIMS campus, patients and their relatives the need of highly skilled professional services has been felt. The area of Cafeteria services has been identified in two parts and the services were outsourced to professional agencies through an open QCBS tendering process. Currently the Main cafeteria is being run by in-house staff of AIIMS. M/s JS Hospitality Services Pvt. Ltd. has been awarded the contract to provide kitchen and cafeteria services in the other facilities of AIIMS. The cafeteria/kitchen services currently are being provided at 11 outlets in different parts of the campus.



## 11.3. Central Animal Facility

### Professor-in-Charge

SK Maulik

### Sr Veterinary Officer

PK Yadav

During the year 2019-20, only rats, mice, rabbits, guinea pigs and hamsters were maintained in our Central Animal Facility (CAF).

#### Small Animal (Rodents):

The average number of different laboratory animals maintained during the year were:

1. Rats (Wistar):	1454
2. Rats (Sprague Dawley):	499
3. Mice (Swiss):	644
4. Mice Balb/c:	638
5. Mice C57 BL/6:	315
6. Rabbits (New Zealand):	81
7. Guinea pigs (Dunkin Hartley):	42

A total of 3732 small animals (Rats 2710, Mice Swiss 727, Mice Balb/c 118, Mice C57BL/6 126, Rabbits 42 and Guinea pigs 9) were supplied to various departments of AIIMS. A number of animals (1921) were also sold to other academic and research institutions in Delhi and outside Delhi (Rat 1328, Mice 500, Rabbits 85 and Guinea pigs 8).

#### Experimental Surgery

Fifty-four surgical procedures were performed by faculty, investigators and students from various departments in the Central Animal Facility of AIIMS. The departments included Anatomy, Biochemistry, Biomedical Engineering in collaboration with IIT Delhi, Biophysics, Biotechnology, Gastroenterology, Laboratory Medicine, Neurosurgery, Nuclear Magnetic Resonance, Paediatric Surgery, Pharmacology, Psychiatry, Reproductive Biology and Stem Cell Facility.

#### Institutional Animal Ethics Committee

The Institutional Animal Ethics Committee (IAEC) is approved by the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Ministry of Fisheries, Animal Husbandry and Dairying Department of Animal Husbandry and Dairying, Government of India. The AIIMS CPCSEA registration no. is 10/GO/ReBiBt/S/99/CPCSEA "Research for Education Purpose, Breeding for in house use and Breeding for the purpose of trade of small animals (Rat, Mice, Rabbit, Guinea Pigs and Hamsters)". The IAEC cleared 70 new projects and 8 projects were given extension for studies using small animals (Rodents) of various investigators.

#### Services provided

The Central Animal Facility has been maintaining animals belonging to the departments of Anatomy, Biochemistry, Biomedical Engineering in collaboration with IIT New Delhi, Biophysics, Biotechnology, Gastroenterology, Laboratory Medicine, Neurosurgery, Nuclear Magnetic Resonance (NMR), Paediatric Surgery, Pharmacology, Psychiatry, Reproductive Biology and Stem Cell Facility. The facility maintained experimental laboratory animals (Rats 100, Mice 164, Rabbit 1 and Guinea pigs 2) belonging to the above departments throughout the year.

The facilities for research with immunodeficient animals (Nude and SCID Mice) are in progress and will be functional at the earliest.

The IAEC has given permission to Department of Physiology and Pharmacology, and Ocular Pharmacology and Pharmacy at the Dr RP Centre for Ophthalmic Sciences to maintain laboratory animals in the department. The above departments maintain laboratory animals in the department under the supervision of the Central Animal Facility.

#### Educational programmes

1. Dr PK Yadav, Senior Veterinary Officer at the Central Animal Facility, AIIMS, New Delhi was nominated as National Committee Member of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Ministry of Fisheries, Animal Husbandry and Dairying Department of Animal Husbandry and Dairying Government of India for three years.
2. Dr PK Yadav attended the 9th International Conference of LASA India, 'Laboratory Animals in Biomedical Research—The Way Forward', 21–23 November 2019 at Indian Institute of Science Education and Research (IISER), Pune and National Centre for Cell Science (NCCS), Pune.





## 11.4. Central Workshop

### Faculty Coordinator

Dr Ganga Prasad

(Professor, Department of Anaesthesiology, Pain Medicine and Critical Care)

### Chief Technical Officer

Kalu Ram

### Senior Technical Officers

Harinder Pal

(Mechanical Section)

Nitin Srivastava

(Electrical & Electronics)

### OBJECTIVES

It is necessary to have well-functioning equipment for smooth delivery of quality health services in a Hospital. However, many patient care centres purchase (or receive as a donation) expensive and delicate equipment which, because of poor maintenance, breaks down. If there is no system in place to report breakdowns and to plan or carry out repairs, equipment can remain unusable for long period of time. Sometimes, this equipment ends up being condemned. An effective repair system will minimize the time period when equipment is unusable and decreases financial burden.

The Central Workshop was established in 1964 to repair and maintain medical equipment, including surgical instruments and diagnostic devices. The Workshop not only does repair and maintenance of various equipment but also fabricates items to be used for education and scientific research. Thus, it plays an important role in aiding smooth and complete patient care at AIIMS. Being the only technical department, it also provides technical guidance to various procurement committees of AIIMS.

### Strength of the employees

A skilled team of technicians and officers is available to provide the above stated operations. The team provides skilled support to keep various equipment in the hospital in good working condition. There are various sections in the Central Workshop headed by a Senior Technical Officer/Technical Officer with supporting staff members. The strength of group B and C staff in the Central Workshop is as follows:

- Technical Officer: 3
- Technician (Grade I): 5
- Technician (Grade II): 8
- Workshop Assistant: 3
- Assistant Administrative Officer: 1
- Store Clerk (JAA): 1
- Operator (E&M): 4
- Khalasi: 1

### Services available

The workshop provides following services:

#### 1. Repair and Maintenance

There are different sections in the Central Workshop to carry out repair and maintenance of various equipment. A total of **7087 (Seven Thousand Eighty-Seven only)** jobs/works were received and completed during the year 2019-20. Some section wise examples of repaired items are given below:

S.No.	Section	Number of Jobs	Item Description
1	Electronics	467	Patient monitors, Infusion pumps, Regulated power supplies, Electronic weighing machines, Light sources, EEG machines, Sealing machines, Ultrasonic nebulizer, DVT pumps, CVT/Stabilizers, Induction hot plate, Nebulizers, Public address systems, Operation table (Remote controlled), Microscopes, Microwave ovens, Colour televisions, Studio light, Patient warmer, LED view box, Elisa washer and reader, Reaction timer, Air mattress pump, etc.

2	Electrical	880	Autoclave machine, Gynae examination/Gooze Neck/Bull eye lamps, Boiler, Centrifuge machines, Suction machines, Fly killer machines, Fumigator, Gauge/Plaster cutters, Grinders, Hot case, Hot air ovens, Hot display counter, Hot plates, Incubators, Laminar flow, Mayo stand, Mixer grinder, Magnetic stirrer, Needle destroyers, OT lights, Spot light, Steam bath, Sterilizers, UV lights, Vacuum cleaners, X-ray view box, Vortex shaker, Water bath, Wax bath, Electric kettle, etc.
3	Mechanical	2742	Surgical instruments, Tracheostomy tubes, Spray pumps, Vapour jet cleaning machines, Scissors (Gauge cutting), Bedside lockers, Intravenous stands, Patient trolleys, Patient beds, Wheel chairs, Loading trolleys, Food trolleys, Side screens, Instrument trolleys, Basin stand, Foot step, Surgical drums, Push cart, Patient examination tables, Hydraulic trolleys, Test tube stands, Revolving stools, etc.
4	Fine Instrument	2322	Digital BP instruments, Micro balances, Dial BP instruments, Stethoscopes, Weighing machines, Compressors, Flowmeters, Oxygen regulators, Hydraulic tables, Laryngoscopes, etc.
5	Refrigeration	259	Visi coolers, Deep freezers, Chilling unit, Ice cream cabinet, Refrigerators, Cold display counters, Minicold, Refrigerated BOD incubator, etc.
6	Painting	417	All office and hospital furniture items like beds, intravenous stands, all types of trolleys, wheelchairs, benches, footsteps, patient side lockers, pigeon lockers, patient examination tables, push carts, almirahs, racks, etc.
	<b>Total</b>	<b>7087</b>	

## 2. Fabrication and Guidance

Despite the gradually increasing load of repair and maintenance activities, the Central Workshop has been able to help in design and fabrication of gadgets useful in patient care or scientific research, as per specifications provided by the various departments.

The **584 (Five hundred eighty-four)** items have been fabricated by the Central Workshop during the year 2019-20. These are listed below:

S. No.	Item Description	Quantity	Department
1	Handle for Surgical Instruments	40	Orthopaedics OT, JPNA Trauma Centre OT
2	Temp Chart Holder	80	Main Hospital
3	Roster Chart Holder	2	Main Hospital
4	MS Box	1	CDER
5	Wooden Splint	314	JPNA Trauma Centre, Emergency
6	Aluminum Plate	1	CTVS OT
7	Rat Cage	1	Physiology
8	Probe	10	Surgery OT
9	Probe Holder	1	Physiology
10	Sample Tray	2	New Private Ward
11	Finger Stabilization Plates	2	Physiology
12	Forearm Braces	2	Physiology
13	OT Table Mattress	5	Main OT
14	Sweat Testing Device	5	Paediatrics

15	Air Sampler	1	Anatomy
16	Donation Tag	100	Anatomy
17	Aluminum Tube L piece	5	Main OT
18	Mesh Stand	1	Anatomy
19	Rat Mobile	1	Physiology
20	Laparoscopic Precision Training Module	10	Surgery
	<b>Total</b>	<b>584</b>	

### 3. Short-term training

The Workshop is actively involved in providing short-term training (4-6 weeks) to diploma/undergraduate students of various engineering colleges.

### 4. Teaching activity

The Workshop has been involved in teaching activity of BSc OT technology students. The classes and demonstration have been taken on various electric and mechanical topics as per their curriculum.

### Achievements

1. The Workshop has received appreciation letters from Departments of Physiology and Surgical Disciplines, AIIMS, New Delhi for technical support provided in the design and fabrication of **Finger Stabilization Plate** and **Laparoscopic Precision Training Module**, respectively.
2. The Central Workshop also participated in the Annual exhibition organized at AIIMS on the Institute Day celebrations. Some of the items fabricated by Central Workshop were displayed at the event and appreciated by many visitors.



## 11.5. Computer Facility

### Professor-in-charge

A Shariff

### Deputy Director (Computer Facility)

SN Ragu Kumar

### Systems Analysts

Satish Prasad

Sushil Kumar Meher

Sanjay Gupta

### Senior Programmers

Vinay Pande  
Pawan Sharma

Hari Shankar

Shyamal Barua  
Tripta Sharma

### Programmers

Sanjeev Kumar  
Harish Saini

Amit Bhati  
Priyanka Singh

Ankita Saini

Geetika Gupta  
Sushma Sharma

### Nursing Informatics Specialist

Preethi S and Team

### EDUCATION

#### Postgraduate

Computer programming classes, covering both theory and practical aspects, were conducted for postgraduate students of the Department of Biotechnology and College of Nursing.

#### Undergraduate

A three-month course on basics of computer, internet, windows applications, computer-aided learning, database, etc. was held for first year students of BSc (Hons) Nursing and BSc Nursing (Post-certificate), BSc Dental Operating Room Assistant course, BSc Dental Hygiene course, BSc OT Technology. A Computer Orientation Program for MBBS students was also organized.

#### Continuing Medical Education

Officials of the facility participated and delivered lectures in continuing medical education programs, symposia, international and national conferences.

#### Services

**SNOMED CT: 62,728** SNOWMED CT compliant entries have been recorded in HIS (eHospital) during April 2019-March 2020.

#### Hospital Computerization

**Hospital Information System (HIS)** is implemented using eHopsital@NIC software for management of Appointment and OPD Registration, Admission, Discharge and Transfers, MRD, Patient Billing, Stores, Laboratory Information System, Dietary, and Blood Bank. The details for 2019-20 are:

#### LIS Implementations

Integration of Laboratory equipment and eHospital are done through HL7 standard. Analyzer reads the Sample Identification Number (SID No.) from the barcode, which is pasted on the test tube. Then it requests the LIS for the tests which are to be performed. The Laboratory Information System (LIS) responds with the test to be done for the specific SID No. to the analyzer. Analyzer conducts the specified tests, when the tests have been completed, only the relevant and required result values are transferred to LIS. The selection of data to be transferred to LIS will be specific to Bi-directional/Unidirectional Analyzers. The Laboratory Instruments that have been connected are:

S. No.	Laboratory	Equipment	Number	Machine Type
1	CNC	Beckman 5 Plot cell Counter	1	Uni-directional
2	CNC	IRIS iCount3	1	Uni-directional

S. No.	Laboratory	Equipment	Number	Machine Type
3	CNC	Immulite1000	1	Uni-directional
4	CNC	Bio-Rad10	1	Uni-directional
5	CNC	Alifex R20 ESR Machine	1	Uni-directional
6	CNC	Beckman 3 Plot cell Counter	1	Uni-directional
7	RPC Haematology (7th Floor)	Beckman Coulter 5 Plot Act Diff Cell Counter	1	Uni-directional
8	RPC Haematology (7th Floor)	Sysmex KX21	1	Uni-directional
9	RPC Haematology (6th Floor)	Beckman AU680	1	Bi-directional
10	Endocrinology-1	Bio-rad D10	1	Uni-directional
11	CCF Ground Floor	Cobas 6000	1	Bi-directional
12	CCF Ground Floor	Urin Analyzer	1	Uni-directional
13	Renal	Cobas C3 11	1	Bi-directional
14	Renal	Abott Architect 1000	1	Bi-directional
15	Renal	IONS	2	Uni-directional
16	Emergency Department	AQT 90	1	Uni-directional
17	Emergency Department	ABL 800	1	Uni-directional
18	Emergency Department	Pentra XL	1	Uni-directional
19	New Private Ward 2nd Floor	Mini Cap	1	Uni-directional
20	Paediatric Endocrinology	Cobas e411	1	Bi-directional
21	CNC	Beckman Coulter AU680	1	Bi-directional
22	CNC	Beckman Coulter 480	1	Bi-directional
23	Reproductive Biology	Abbott Architect1000	1	Bi-directional
24	IRCH 1st Floor	MS4 Cell Counter	1	Uni-directional
25	IRCH 1st Floor	MS9 Cell Counter	1	Uni-directional
26	IRCH 2nd Floor	MS4 Cell Counter	2	Uni-directional
27	IRCH 2nd Floor	MS9 Cell Counter	2	Uni-directional
28	Lab Medicine Room No-2	Combine	2	Uni-directional
29	Lab Medicine Room No-2	Caretium	2	Uni-directional
30	CNC R.No. 53 GF	Hitachi Modular	1	Bi-directional
31	CCF Ground Floor	Beckman Coulter Access 2	1	Bi-directional
32	Lab Medicine R.No. 20	Hitachi Modular	2	Bi-directional
33	Endocrinology-01	Cobas Integra	1	Bi-directional

S. No.	Laboratory	Equipment	Number	Machine Type
34	CNC	Sta Compact	2	Bi-directional
35	RPC 6th Floor	Beckman Coulter AU680	1	Bi-directional
36	RPC 6th Floor	Access 2	1	Bi-directional
37	New Private Ward 2nd Floor	Sta Compact	1	Bi-directional
38	Reproductive Biology	Architect 1000	1	Bi-directional
39	Reproductive Biology	Architect 4000	1	Bi-directional
40	Reproductive Biology	Architect 2000	1	Bi-directional (IoT based Interfacing)
41	Endo-02	Cobase E411	4	Biderctional
42	Endo-02	Liasion	2	Biderctional
43	Endo-02	Cobase E411	1	Bi-directional (IoT based Interfacing)
44	Endo-02	LiasionXL	1	Biderctional
45	CNC	Advia	1	Biderctional
46	CNC	AdviaCentura XP	1	Bi-directional
47	CNC	Beckman Coulter Act5	1	Bi-directional
48	Biochemistry	Vitros Analyzer	1	Bi-directional
49	Endo-01	Thosh G8	1	Unidirectional
50	Lab medicine Room no-2	EliteAcl	1	Bi-directional (IoT based Interfacing)
		Uni-directional	27	
		Bi-directional	33	
		Total	60	

Laboratory	Samples Reported Online
Fluid chemistry CNC	349
Bacteriology CSF PCR, Microbiology Department	1,401
Haematology PT (OPD), Laboratory Medicine	24,306
Clinical Microbiology (Stool), Laboratory Medicine	15,197
Central Paediatrics 3rd Floor, Paediatrics	1,112
RPC Ocular	3,220
RPC Pathology (Urine/Stool)	1,675
Hormones, CNC	34,054
TB Lab, Microbiology	15,224
Drugs Tests, CNC	1,884
Reproductive Biology	2,33,069
Clinical Microbiology (Urine AFB), Laboratory Medicine	621
Anaerobic Lab, Microbiology	2,381
Sputum Culture, Microbiology	40,678
Mycology Lab, Microbiology	35,650
Clinical Microbiology (HIV AND VIRAL Marker), Laboratory Medicine	1,07,930



<b>Laboratory</b>	<b>Samples Reported Online</b>
SRB, Lab	29,737
Blood Bank	3,928
Parasitological, Microbiology	22,756
Tumour Marker, Lab Oncology, IRCH	244
Haemogram, Lab Oncology, IRCH	1,77,429
STD Lab, Microbiology	1,856
Flow Cytometry, Microbiology	13
Haematology/Coagulation/Haemolytic Microbiology Anaemia,	43
Clinical Microbiology (Semen), Laboratory Medicine	3,466
Pathology/Haematology, RPC	90,406
Clinical Pathology and Molecular Immunology, Lab Medicine	305
Biochemistry, NDDTC, Ghaziabad	16,461
Clinical Biochemistry, Biochemistry	2,711
Haematology (Aphaeresis), IRCH	58,851
Clinical Microbiology (PCR), Laboratory Medicine	3,068
Endocrinology and Metabolism	51859
Fluid Chemistry, Laboratory Medicine	10,929
Clinical Microbiology (Urine Routine OPD), Laboratory Medicine	25,159
Fluid Chemistry (Urine 24 hr/Spot), Laboratory Medicine	32,847
Urine Culture (Microbiology Room No. 2071), Laboratory Medicine	58,417
Clinical Chemistry, CNC	7,12,909
Clinical Immunology, Rheumatology	34,203
Haematology, CNC	4,58,101
Clinical Microbiology, Laboratory Medicine	2,064
Emergency Biochemistry, Laboratory Medicine	10,34,863
Haematology (OPD), Laboratory Medicine	25,66,507
Clinical Chemistry, Laboratory Medicine	37,46,792
Clinical Microbiology (Urine C/S), Laboratory Medicine	16,699
Allergy Testing Laboratory	5,012
Haematology (Ward), Laboratory Medicine	15,56,734
Stool Culture, Microbiology	3,223
Emergency Haematology, Laboratory Medicine	4,28,912
Clinical Microbiology (Sputum AFB and Culture), Lab Medicine	1,768
Haematology Ground Floor R. No. 11, Laboratory Medicine	103
Special Tests, CNC	10,386
CSF Culture, Microbiology	20,454
Lipids and Enzymes, CNC	2,08,952
Medical Oncology, IRCH	4,812
Haematology PT, CNC	1,01,152
Bile Lab	843
Special Investigation, Lab Medicine	36
Ocular Biochemistry, RPC	1,77,664
Lab Oncology, IRCH	25,702

Laboratory	Samples Reported Online
PT (CCF 27), Laboratory Medicine	29,275
Haematology, NDDTC, Ghaziabad	13,936
Clinical Microbiology, TORCH Profile, Laboratory Medicine	6,279
Lab Medicine PSY, Laboratory Medicine	19
Ocular Microbiology, RPC	11,027
Urine Clinical Chemistry, CNC	1,568
Urine Routine, Laboratory Medicine	25,200
Blood Culture Microbiology	47,402
SRB, Lab Medicine	433
Haematology (Fluid Test), Laboratory Medicine	32,340
Pus Culture, Microbiology	39,311
Endo Collection, Endocrinology	57,446
Emergency Haematology PT, Laboratory Medicine	2,44,826
Clinical Microbiology, Laboratory Medicine	2,064
HNU	275
Serology Lab, Department of Microbiology	11,126
Haematology Molecular, Department of Haematology	22

**EHS (Employees Health Scheme) Pharmacy software:** The software is used for recording and maintaining Employees Health Prescriptions and records. Software also maintains the Local Purchase records of medicines procured from the vendor and issued to the employees and its dependents.

1. EHS Pharmacy total registrations: **2,33,897**
2. EHS Pharmacy total online prescriptions: **2,01,665**

#### Management of existing in-house modules

1. **PDS:** Summary of total cases registered 92,804 from Emergency, New Emergency and Paediatrics Emergency.
2. **Use of SNOMED CT:** The integration of SNOMED CT in this module in fields like Diagnosis, Symptoms, and Systems etc. Total number of transactions recorded is 55,336.
3. **Quality Assurance Module (QAM):** 1051 entries have been recorded for scheduling conferences, lectures, faculty meetings and also for doctor's grading purpose.
4. **QAM/HA:** 3 entries have been made for grading purpose by HA.
5. **RPC PDS:** 7,905 patients' details registered for RPC.
6. **OT Scheduling:** 70,050 OT scheduled for different departments.
7. **Equipment Checklist RPC:** 2,269 checklists created for equipments in RPC.
8. **E Birth Certificate:** 2,483 birth certificates generated through this module.
9. **E blood request:** 98,549 blood requests have been made for arranging blood for patients.
10. **E Cath list:** 4,578 scheduling has been done for Cath Laboratory.
11. **E MLC:** 13,194 medical records maintained for MLC cases. It is an online module for Doctors to prepare eMLC. SNOMED CT was integrated in this module in fields like Alleged H/O, Diagnosis. Total number of transactions recorded was 11,405.
12. **E MLC RPC:** 98 medical records maintained for MLC cases at RPC.
13. **Penicillin Register:** 2,258 registrations done for scheduling and alerting regarding penicillin intakes.
14. **Gamma Knife Register:** 105 registrations done for Gamma Knife procedure.
15. **Online admission slip:** A total of 21,955 admission slips comprising patients of both OPD and Emergency have been provided in a real platform based upon the availability of beds under different department heads. SNOMED CT was integrated in this module in fields like Diagnosis etc. and the total number of transactions recorded is 3,052.
16. **QR code in medical and fitness certificate:** 10,822 certificates generated for AIIMS and other centres employees.
17. **E-grievance module:** 41 complaints have been made through this.

18. **E-Death Note:** 5,937 death certificates have been generated through this application. SNOMED CT is integrated in this module in fields like Immediate cause, Antecedent cause, Diagnosis etc. Total number of SNOMED CT transactions recorded was 2,891.
19. **ECG Lab:** Census of ECG Lab and 4,863 entries have been registered.
20. **Integration of SNOMED CT with eHospital (NIC):** SNOMED CT was integrated through Web API of eHospital. It was integrated with two modules i.e. Admission and Discharge. Total number of transactions at the time of admission in eHospital is 1,909 and discharge in eHospital is 34,203.

#### ***List of Modules In-house maintained and developed applications***

1. **Anticoagulant Register:** It is an online register to enter Lab values of patients like PT/INR for the use of teleconsultations. Authenticated patients can enter their Lab values themselves in this application by OTP authentication and fresh prescription will be provided by the doctors.
2. **Bone Bank:** It is an application for entering patients' bone details which will be preserved for later use. It is developed for Neuro and Ortho Departments.
3. **Gynaecology e MLC:** It is used for registering female MLC cases. In this module all the forms are printed out electronically.
4. **Heart Transplant:** It is used for registering patient details for heart transplantation for matching of heart for transplant.
5. **Breast Cancer:** It is used for registering Breast Cancer details. It is used in Surgery Department.
6. **Medicine module:** Medicine module is for capturing the admission note, consultant note, progress note, discharge summary of the summary. We have integrated SNOMED CT in this module in fields like Diagnosis, Investigations, Vitals, operative notes etc.
7. **Student wellness:** It is used for capturing students' mental health details.

#### **RIS, PACS and HIS at AIIMS**

AIIMS currently is running the eHospital HIS wherein appointments for various radiological investigations are provided to patients. The radiological investigations available include:

Plain X-ray

CT Scan

MRI Scans

Ultrasonography

PET Scans

Ophthalmic Radiology

Mammography

Angiography

Dental X-rays

Non-dicom Images (PDF, JPG, JPEG)

Other imaging modalities are also available. These investigations are offered across multiple locations in campuses of AIIMS. The individual departments, which offer these services, have their own Standalone PACS and RIS systems. A few departments do not have any PACS. In addition, AIIMS has also implemented a common centralized PACS Server with web-based visualizer—Oviyam. This system integrates with the standalone departmental PACS (Siemens/GE Centricity/Philips/Sonosite) and modalities. Few systems are not integrated at present.

#### **Current OPEN PACS Implementation**

- **dcm4chee2.18.1:** *dcm4chee PACS (OPEN PACS) version has been upgraded from version 2.17.2 to 2.18.1 due to some bug fixes and performance improvement.*
- **HL7 ADT Module** has been configured to receive Patient Demographics from e-Hospital.
- **Oviyam viewer:** Module added to get studies from GE-PACS directly using DICOM C-Get/C-Move.
- **HL7 ADT A40** module configured to receive UHID from Vista/e-Hospital and replace it against the existing TC Number.
- **Auto forwarding of studies** from JPNATC PACS to AIIMS PACS configured. For this, an additional AE Title Dec 2017—iOviyam2—Mobile viewer—Software update done.
- *Oviyam (viewer) software update due to Chrome Update 70 (Some Browser features are removed in update 70 and an alternative workaround is done).*
- **PDF2DICOM application** installed to upload Spirometry reports which convert Pdf, JPG, JPEG images to Dicom images and push into PACS server.

**PACS integration with HIS e-Hospital:** This helps to send the requisition for radiological investigations such as X-ray, CT, MRI etc. via online to RIS systems. PACS integration had been done with different modalities during April 2019-March 2020.

***Different Studies have been stored/archived in Open PACS during 2019-2020:***

Modality	No. of Images	Location of the Modality
CR	58,193	Main AIIMS and IRCH
CR	61,182	IPACS, JPNATC
CT	14,180	Main AIIMS and IRCH
CT	12,761	IPACS, JPNATC
DG	1	Main AIIMS and IRCH
DX	42,510	Main AIIMS and IRCH
KO/MR	5	Main AIIMS and IRCH
MG	1,749	Main AIIMS and IRCH
MR	5,392	Main AIIMS and IRCH
MR	875	IPACS, JPNATC
OT	8,905	Main AIIMS and IRCH
PR	7	Main AIIMS and IRCH
PR/MR	45	IPACS, JPNATC
PX	28	IPACS, JPNATC
PX	2	Main AIIMS and IRCH
REG/CR	3	Main AIIMS and IRCH
REG/CR	3,788	IPACS, JPNATC
RF	29	IPACS, JPNATC
RF	73	Main AIIMS and IRCH
PT/RWV/CT	29	Main AIIMS and IRCH
SC	4,829	Main AIIMS and IRCH
SEG/CT/PR/DOC/SR	38	Main AIIMS and IRCH
SEG/CT/SR	1	
	IPACS, JPNATC	
US	14,286	Main AIIMS and IRCH
US/PR	35	Main AIIMS
XA	6	Main AIIMS and IRCH
XA	138	IPACS, JPNATC



- 2019.
- i. High speed internet connection provided for Live Webinar, Department of Obstetrics and Gynaecology Seminar Room, 31 August 2019.
  - j. High speed internet connection provided for Live Webinar on Menopause Hormonal Therapy (MHT), Department of Obstetrics and Gynaecology Seminar Room, 17 August 2019.
  - k. Wi-Fi facility provided for two tablets for ORBO, 64th Institute Day, 24-27 September 2019.
  - l. Wi-Fi facility provided for National Conference of Indian Association of Surgical Gastroenterology, Dept. of GI Surgery, Auditorium, Conference Hall and Board room, 9-13 October 2019.
  - m. High speed internet connection provided for Workshop “Live data collection from Italian Synchrotron source”, 11-12 November 2019, Ramalingaswami Board room and SET facility, Convergence Block.
  - n. High speed internet connection provided for Workshop on “Priorities for Advancing Research on Health Effects of Air Pollution in India”, Ramalingaswami Board Room, SET Facility Studio 1&3 and Nursing LT, Old OT Block, 2-4 December 2019.
  - o. Wi-Fi facility provided for the conference, “AIIMS Rheuma Summit”, 21–22 March 2020, Jawaharlal Auditorium, AIIMS.
  - p. Firewall rules created for SSH access to APAR and Payroll server.
3. Continued maintenance of aims.edu website.
  4. The total number of pages updated, created and uploaded on AIIMS website was approx. 6500.
  5. The total number of visitors to AIIMS website was approx. 75 lakhs.
  6. Continued management of Unified Threat Management (UTM) firewall done for security of computer networks and application for management at gateway level Anti-Virus, Anti-Spam, IPS/IDS, load balancing and content filtering.
  7. Continued management of the wireless networking zones at around 18 hostel locations, creating Wi-Fi zones for internet, information and online journals access to students and resident doctors. So far, approx. 9000 students have availed this facility. Currently 1300 users were registered for this facility.
  8. Continued BBDL OPAC Services and enhancement of library online resources subscribed through BB Dixit library through AIIMS website.
  9. Continued management of Wi-Fi zone at B.B. Dixit Library for internet and online journal access for students.
  10. High-speed internet facility through NKN lease line for faculty and students is being maintained on 24/7 basis on the AIIMS network at around 8500 nodes.
  11. Maintenance of Web server, Proxy server and Mail Server 24x7x365 days.
  12. Facility management and call maintenance for internet and network user’s complaints and resolution 24x7x365 days through help desk of Computer Facility.
  13. VPN based access mechanism for e-Hospital Module, CPRS access from outside AIIMS continued management for Ballabgarh, AIIMS centres.
  14. Continued management of IPSec tunnel for connecting NDDTC, JPNATC, and Centre for excellence in Epilepsy and Brain Research Center, Gurgaon.
  15. MAC ID based authentication provided to AIIMS faculty, scientists, Assistant and Deputy Nursing Superintendents for Wi-Fi based access to e-hospital software’s and internet at wards, OPD, ICU and OTs etc.
  16. Created approx. 120 IDs for VPN access.
  17. Created approx. 290 new email ids on aims.edu and aims.ac.in domain for faculty members, scientists and officers of AIIMS.
  18. Regular e-mails sent to all faculty regarding various conference, seminars, etc.
  19. Tender specification for the CAMC of Networking, PC, Peripherals and RC of spares was prepared and was vetted by the technical specification committee for tendering.
  20. Conducted meeting regarding technical strategy for the new upcoming blocks at Masjid Moth and NCI, Jhajjar.
  21. Activated and configured IP for internet connections.
  22. Provision of external IP address for the GE Centricity RIS-PACS for Neurosciences Centre.
  23. Firewall rules created for allowing YouTube and Facebook for LAN and Wi-Fi users.
  24. Firewall rules created for LAN to WAN and WAN to LAN.

25. Cyberoam licenses renewed for two years.
26. Established Covid 19 National Consultancy Centre (CoNTec) at AIIMS.
27. Deployed State of Art 3 Tier Networking Architecture (Core Switch to Core Switch-100G, Core to Distribution-40G and Distribution to Access Switch-10G) at New OPD Block, NCI Jhajjar, New Burn and Plastic Surgery Block and it is being provided for MCH, New Surgical Block and VVIP Block at AIIMS.
28. In the process of implementing NAC, NMS, WLAN Controller, Firewall for the management of Wireless devices, switches and packet filtering.

## PUBLICATIONS

**Journals: 2**

## AWARDS, HONOURS AND SIGNIFICANT EVENTS

**SN Ragu Kumar** was member of various Technical Specification Committee for development of IT Infrastructure for AIIMS and all its Centres and Upcoming Centres; monitoring of the services and all service providers/vendors pertaining to IT Implementation at AIIMS; Management/Administration of Computer Facility, NIC staff posted at Computer Facility and Contractual Staff working in Computer Facility; Conducted Orientation program for newly selected MBBS students, AIIMS, New Delhi; Attended Elastic search security workshop, JW Marriott Hotel, Aerocity, New Delhi on 31 July 2019; Attended seminar regarding utilization of e-Resources in Scholarly Communication at BB Dikshit Library, AIIMS on 9 August 2019; Attended Digital Governance Summit at Hotel Taj Place, New Delhi on 27 August 2019; Attended 12th India Security Summit ASSOCHAM Corporate Office, Chanakyapuri, New Delhi on 28 August 2019; Attended National Conference on Access & Availability of Medical Literature in Electronic Environment, AIIMS, New Delhi, 2-3 September 2019.

**Satish Prasad** was Nodal Officer for eOffice Project (NIC) and coordinated and trained personnel for the use of eOffice; Course coordinator and took classes of MSc, BSc and Post Certificate students for IT classes of College of Nursing, BSc Dental Operating Room Assistant course, BSc Dental Hygiene course, BSc OT Technology; designated as Central Assistant Public Information Officer (CAPIO) for computer facility; was involved with monitoring and maintaining of the finance server (Novell) for in-house developed financial applications; team leader for the development of eAPAR module and Payroll module based on open source platform.

**Sushil Kumar Meher** has taken a major role in implementing HIS (eHospital) and OPD clinical screening and other specialty module in newly established centre of NCI, Jhajjar; supervising the core module, LIS module, Blood Bank, RIS, PACS and different clinical module developed in-house and eHospital; played a major role for integration of robotic lab and Open PACS of NCI, Jhajjar. Setting up a Data centre and Design, Deployment and implementation of computer networking and Wi-Fi for NCI, Jhajjar (Haryana) and establishing connectivity from NCI, Jhajjar to AIIMS, New Delhi; Involved in teaching activities of undergraduate and postgraduate students; **Member**, Condemnation Committee for CNC; Technical committee for purchasing computer related items; Technical committee for purchase of IT equipments in ICMR, New Delhi; Attended Annual Convention of Computer Society of India, Theme: Digital Democracy - IT for Change, Bhubaneswar, Orissa, 16-18 January 2020, Keynote speaker: "Transforming Healthcare through AI and Robotic: Now no longer a Sci-Fi"; Attended MEDRECON 2020 20th Annual National Health Information Management Conference organized by Health Records Association of India (HERAI), Kochi, Kerala, Keynote speaker: "A pragmatic approach for prepping healthcare systems towards eHealth/EMR – Indian Scenario", Chaired session on "Healthcare Data Standards"; presented a paper "Role of Nursing Informatics in Implementation of SNOMED-CT in India" and Chaired a session T2-11 (Telehealth 2) in Medinfo 2019 (17th World Congress of Medical and Health Informatics), Lyon, France, 25-30 August 2019; Attended and participated in the roundtable discussion in India Mobile Congress, Department of Telecommunications and Cellular Operator Association of India (COAI), 14-16 October 2019, Aerocity, New Delhi; "Development of Anti-Coagulation Application and its Implementation in AIIMS, New Delhi, India; presented in Editorial Board Member of BMJ Health & Care Informatics editorial board 2020-2023, Board member of International Society for Gerontechnology 2019-2020; Continuing as the Nodal Officer for SNOMED CT project at AIIMS, Ministry of Health and Family Welfare; Organized SNOMED CT introductory training program to clinicians of different clinical departments; Nodal person for providing the availability of Ventilators and ICU beds of AIIMS for emergency cases to Central Govt. Hospitals; Carried out study/survey in the inpatient department to observe the modalities of patients care services in the Wards/Labs of clinical departments of all centres and main hospital; Study of Open PACS process after implementation of new IT infrastructure in main server room by Hitachi.

**Sanjay Gupta** has established COVID 19 National Tele Consultancy Centre ( CoNTeC ) at AIIMS; Installed IT infrastructure in New OPD Block for starting OPD there; Started State-of-the-art networking at NCI, Jhajjar, New OPD and New Burn and Plastic Surgery Block and it is being provided for MCH, New Surgical, NAC and VVIP Blocks at AIIMS; Online Grievance portal for employees implemented at AIIMS; Online Elections of SYS, Officers' Association, FAIMS

and RDA conducted using Information Kiosks at AIIMS; attended International conference “MEDINFO-2019: 17th World Congress Medical and Health Informatics”, 25-30 August 2019 at Lyon, France.

**Vinay Pande** is Nodal Officer for the Digital Payments Infrastructure at AIIMS; looking after the Billing module of e-Hospital software; Team member for the development of APAR module, Payroll module and the software development/implementation; for the AIIMS students of MSc (Nursing), BSc (Nursing), took Inf. Technology, HIS, Nursing and Medical Informatics, Bio-Medical Information retrieval classes.

**Hari Shankar** conducted Orientation program for MBBS students, AIIMS; took classes for MSc and BSc Nursing students; presented a paper titled “Development of Anti-Coagulation Application and its Implementation in AIIMS, New Delhi, India” in Health Informatics New Zealand (HinZ) Conference 2019 held on 20-22 November 2019, Hamilton, New Zealand.

**Shyamal Barua** coordinated the implementation of Appointment System, OPD Module, Casualty Registration Module, Radiology Information System Scheduling module, etc. of eHospital Project; Implementation of In-house Software for radiotherapy appointment module, IRCH Day Care, RPC Histopathology indexing module, Patient diagnosis module for NCI Jhajjar etc.; Configuration and implementation of OPD Module in NEW RAK OPD. Coordinated as nodal officer for implementation of GeM portal and e-procurement. Involved in technical guidance for CCTV procurement and monitoring system.

**Tripta Sharma** is maintaining and configuring e-Hospital application modules such as Appointment Module, Admission Discharge and Transfer Module, Inventory Module, EHS (Employees Health Services) Module in AIIMS and various Centres; involved in teaching activities of undergraduate and postgraduate students.





## 11.6. Electron Microscope Facility

### Professor

TC Nag

### Associate Professor

Subhash C Yadav (on leave from 1 September 2019 to 28 February 2020)

### Senior Technical Officer

Sandeep Arya

### Technical Officer

Chanda Panwar

### EDUCATION

1. Thirteen M. Biotech students of the Department of Biotechnology, AIIMS, received two weeks training from 13 August 2019 to 27 August 2019 (as part of their 1st Semester Cell Biology Practical).
2. EM classes (theory as well as practical, Fridays only) for Anatomy postgraduates were conducted from 3 January 2020 to 13 March 2020.

### CME/Workshops/symposium/National and International Conferences

1. The summer training course in Electron Microscopy for technical personnel was held from 15 May 2019 to 14 June 2019. Thirteen candidates were trained in sample processing, ultramicrotomy, CPD, sputter coating, TEM and SEM viewing and routine maintenance of microscopes.
2. The 35th National Training Program in Electron Microscopy for Scientific Investigators was held from 26 November 2019 to 7 December 2019. Twenty candidates from different parts of the country participated in this training program.
3. Six teachers (Dr Mohini Sewal, Dr Kavita Verma, Rashmi Singh, Geetika Taneja and Tripti Mehta) from Sanskriti School, New Delhi, visited EM facility on 4 May 2019 to explore the facilities available in SAIF, EM Facility, AIIMS for possible future research plan with EM.
4. One hundred and six students along with six teachers from Indian School, New Delhi, visited EM facility on 17 and 20 May 2019 and were instructed on principles of EM and processing of biological samples for EM observation.
5. One hundred and twenty-five students along with four teachers from Delhi Public School, RK Puram, New Delhi, visited EM facility on 18 October 2019 and were instructed on principles of EM and processing of biological samples for EM observation.

### Lectures delivered

TC Nag: 3

Subhash Chandra Yadav: 2

### RESEARCH

#### Funded projects

#### Ongoing

1. Mitochondrial dynamics and status of autophagy in retinal photoreceptor cells after experimental iron overload in rats, TC Nag, ICMR, 3 years, 2019-22, Rs 30 lakhs
2. Designing of rapid and cost-effective Nano-LAMP based detections of BK virus from serum of post-renal transplant patients, Subhash Chandra Yadav, ICMR, 3 years, 2019-2022, Rs 35.84 lakhs
3. Magnetic nanoparticles and quantum dots coupled visual confirmation of cervical cancer cells from cytology sample: A cost effective, quick and suitable test for rural Indian setup, Subhash C Yadav, SERB, 3 years, 2018-2021, Rs 38.68 lakhs
4. External delivery of cisplatin using human papilloma virus (HPV 16) based nanocarriers for treatment of cervical cancer, Subhash C Yadav, AIIMS-IITD, 2 years, 2019-2021, Rs 10 Lakhs
5. Development of quick and specific detection system of EWS-FLI-1 fusion protein, Subhash C Yadav, DBT, 3 years, 2019-2022, Rs 80 lakhs

### **Completed**

1. Simple, quick and onsite early diagnostic kit for pathogen detection in asymptomatic stage, Subhash C Yadav, DBT, 3 years, 2016-19, Rs 50.21 lakhs

### **Departmental projects**

#### **Ongoing**

1. Study of microglia in the retina of rats exposed to bright light after selective Müller cell damage
2. Light-induced oxidative stress and endogenous neuroprotective mechanisms in post-hatch chick retina
3. Remodeling in horizontal cells following light-induced retinal damage in rat
4. A novel Immuno Nano Fluorescence Assay (INFA) system for noninvasive detection of prostate cancer using urine-based protein biomarkers, PSA and MSMB
5. Visual, rapid, non-invasive and cost-effective BK virus detection system for renal transplanted patients using Gold nanoparticle coupled loop mediated isothermal amplification (Nano-LAMP)

#### **Completed**

1. Epigenetic regulation of brain-derived neurotrophic factor in the central auditory pathway and hippocampus of neonatal chicks exposed to prenatal sound stimulation

### **Collaborative projects**

#### **Ongoing**

1. Decipher mechanistic basis of the intracellular trafficking of the optically active Nanoparticles using super resolution microscopy, School of Biotechnology, JNU, New Delhi

### **PUBLICATIONS**

**Journals: 11**

**Chapters in Books: 1**

### **PATIENT CARE**

#### **Special laboratory facilities**

S. No.	Facility	User number		Specimens analyzed	
		<u>Internal</u>	<u>External</u>	<u>Internal</u>	<u>External</u>
1.	Transmission Electron Microscope	331	419	1415	2342
2.	Scanning electron microscope	94	150	427	467

### **AWARDS, HONOURS AND SIGNIFICANT EVENTS**

**Professor TC Nag** was conferred fellowship of the Electron Microscopy Society of India, nominated for a plenary lecture (under medical sciences) and acted as a national advisory committee member in the 12th Asia-Pacific Microscopy Conference held in Hyderabad (February 2020); Executive committee member, 37th Annual Meeting of Indian Academy of Neurosciences (IAN), AIIMS, New Delhi (November 2019) and conceived, organised and chaired a session on special symposium (plasticity in developing neuronal circuits); Chaired two sessions in International Conference on Electron Microscopy & Allied Analytical Techniques (EMAAT), Himachal Pradesh University, Shimla, 7-9 June 2019. He reviewed manuscripts for Aging and Disease (1), Anatomical Record (1), Archives for Physiology and Biochemistry (1), Biofactor (1), Experimental Eye Research (1), Journal of Microscopy and Ultrastructure (2), Biomedicine and Pharmacotherapy (3), Journal of Neuroscience Research (1), Microscopy Research and Technique (1), Pharmaceutical Biology (1) and Redox Biology (1). He also examined two PhD thesis during this period.

**Subhash C Yadav** availed Long-Term International Research Fellowship from Department of Health Research, Government of India for six months (1 September 2019 to 28 February 2020) to work on Cryo-Electron Tomography at Stanford University California, USA.

## 11.7. Hostel Section

### Superintendent of Hostels

Dr Sandeep Agarwala

### Deputy Superintendent of Hostels

Dr S Datta Gupta  
Dr Raj Kumar Yadav  
Dr Vijay Kumar  
Dr Kapil Yadav

Dr SK Maulik  
Dr Rakesh Kumar  
Dr Tanuj Dada  
Dr Kamlesh Kumari Sharma

Dr Neerja Bhatla  
Dr KH Reeta  
Dr Partha Haldar  
Mrs Bhupinder Kaur

### Senior Store Officer (Hostels)

Shri Rakesh Kumar Sharma

### Administrative Officer (Hostels)

Shri BK Singh

### Account Officer (Hostels)

Mrs Rakesh Kumari Sharma

### Senior Warden

Shri Shashi Prakash Pandey

### Warden

Mr Mohan Sharma

Mrs Seema Pruthi

### Deputy Warden

Mr Satprakash Kalia

Mrs Suchita Kumari

Mr Sukhpal Mallick

### Assistant Warden

Mrs Tripta Sharma

Ms Rani Varghese

### Junior Warden

Mr Babu Lal Meena  
Mr Rajesh Rawat

Mr Dinesh Desai

Mrs Nirmala  
Mrs Sunil Devi

### Ministerial and Contractual Staff

There are five ministerial and eleven contractual staff in the hostel section.

### Subordinate Staff

Twelve male and 26 female office attendants are posted in different hostels. AIIMS has several halls of residence with a capacity of over 1990 (approximate) single/double rooms, 287 married accommodations, 418 accommodations for nursing students/staff nurses and 24 guest rooms. These are spread over different hostels and residences in the AIIMS Main Campus, Masjid Moth, Ayurvigyan Nagar, JPNA Trauma Centre Hostel (Raj Nagar).

### Details of Hostels

S. No.	Name of Hostels	Single Room	Two to Eight Seaters	Total Strength
<i>Gents Hostel</i>				
1	No. 1 (Charak)	62	2x3 = 6 (BSc)	68
2	No. 2 (Jivak)	55	2x2 = 4 (BSc)	59
3	No. 3 (Sushruta)	70	2x6 = 12 (BSc)	82
4	No. 4 (Madhava)	53	2x7 = 14 (BSc)	67
5	No. 5 (Nagarjuna)	53	2x5 = 10 (BSc)	63
6	No. 6 (Vagbhatta)	69	2x6 = 12 (MBBS)	81

S. No.	Name of Hostels	Single Room	Two to Eight Seaters	Total Strength
7	No. 7 (Ashwini)	24 PG	83X2 = 166 (MBBS)	190
8	No. 8 (Bharadwaj)	108	0	108
9	No. 12 (Dhanwantri)	72	0	72
10	No. 14 (Atreya)	144	0	144
11	No. 16 (Agnivesa)	10	0	10
11	No. 18 (Kashyap)	283	2x10 = 20; 3x14 = 42	345
10	JPN Apex Trauma Centre	58	0	58
11				
	<b>Total</b>	<b>1061</b>	<b>286</b>	<b>1347</b>
<i>Ladies Hostel</i>				
12	No. 9 (Parvati)	65	13x2 = 26	91
13	No. 10 (Saraswati)	106	0	106
14	No. 11 (Akshara)	0	2x26 = 52; 3x4 = 12	64
15	No. 13 (Laxmi)	0	2x33 = 66; 4x1 = 4; 6x1 = 6	76
16	No. 19 (Patanjali)	306	0	306
	<b>Total</b>	<b>477</b>	<b>166</b>	<b>643</b>
<i>Nursing Students/Staff Nurses Hostel</i>				
17	No. 15 (Medha) Students	160	90+14+4+0+0 (180+42+16)	398
18	No. 15 (Medha) Staff nurses	20	0	20
	<b>Total</b>	<b>180</b>	<b>238</b>	<b>418</b>
<i>Hostel Accommodation for the Married</i>				
21	No. 14 (Atreya)	42		42
23	No. 16 (Agnivesa)	142	0	142
24	F-type for PhD	18	0	18
25	No. 17 (Ambuja)	54	0	54
	Ayurvgiyan Nagar Type III	25	0	25
25	JPN Apex Trauma Centre	6	0	6
	<b>Total</b>	<b>287</b>		<b>287</b>
	<b>Grand Total</b>	<b>1,347 (Males) 643 (Females)</b> <b>418 (Nursing students and staff) 287 (Married)</b>		<b>24</b> <b>2,695</b>

## FACILITIES

### Male Guest Room

S. No.	Location (Hostel)	Washroom	Air Conditioner
1.	Hostel No. 2 (Jivak)	Common	Provided
2.	Hostel No. 3 (Sushruta)	Common	Provided
3.	Hostel No. 7 (Ashwini)	Common	Provided
4.	Hostel No. 8 (Bharadwaj)	Common	Provided

S. No.	Location (Hostel)	Washroom	Air Conditioner
5.	Hostel No. 12 (Dhanwantri)	Common	Provided
6.	Hostel No. 301/JPNATC	Attached	Provided
7.	Room No. 315/ JPNATC	Attached	Provided
8.	Room No. 203 Hostel No. 17 (Ambuja)	Attached	Provided
9.	Room No. 303 Hostel No. 17 (Ambuja)	Attached	Provided
10.	Room No. 403 Hostel No. 17 (Ambuja)	Attached	Provided
11.	Room No. 503 Hostel No. 17 (Ambuja)	Attached	Provided
12.	Room No. 603 Hostel No. 17 (Ambuja)	Attached	Provided

#### Female Guest Room

S.No.	Location (Hostel)	Washroom	Air Conditioner
1.	Hostel No.9 (Parvati)	Common	Provided
2.	Hostel No. 10 (Saraswati)	Common	Provided
3.	Hostel No. 13 (Luxmi)	Common	Provided
4.	Guest Room No. III, Hostel No. 15 (Medha)	Attached	Provided

#### Guest Rooms reserved for Academic Section for visiting observers/exchange students

S. No.	Location (Hostel)	Washroom	Air Conditioner
1.	15-A Hostel No. 14 (Atreya)	Attached	Provided
2.	15-B/ Hostel No. 14 (Atreya)	Attached	Provided
3.	16-A/ Hostel No. 14 (Atreya)	Attached	Provided
4.	16-B/Hostel No. 14 (Atreya)	Attached	Provided
5.	17-A/ Hostel No. 14 (Atreya)	Attached	Provided
6.	17-B/ Hostel No. 14 (Atreya)	Attached	Provided
7.	Guest Room No. I, Hostel No. 15 (Medha)	Attached	Provided
8.	Guest Room No. II, Hostel No. 15 (Medha)	Attached	Provided

#### Shops and Establishments

Various Mess/Cafes and Shops like Juice shop, Barber shop, General store, Tailor shop, Dhobi shop, Computer typing shop, Book/stationary shop, Photostat shop, STD/ISD/PCO Booth, Coffee shops are provided in Hostels located at Ansari Nagar, Trauma Centre and Masjid Moth Campus.

#### Students' Wellness Centre

##### (i) Main Campus

- Students' Wellness Centre services are available at room no. 11 (Opposite Hostel No. 7/Ashwini Hostel), Gents Hostel, AIIMS.
- Hostel no. 10 Saraswati Hostel.

##### (ii) Masjid Moth Campus

Common Room (2/II), Second Floor, Hostel No. 19 (Patanjali Hostel), Masjid Moth.

## **SIGNIFICANT EVENTS**

### **1. Civil Works**

#### **Renovation**

2. Hostel No. 8 First floor, South Indian Mess has been renovated with modular kitchen and furnished with new dining tables and chairs.
3. Hostel No. 9 (Parvati Hostel), 17 rooms' windows replaced and main gate wall renovation work has been done.
4. Hostel No. 10 (Saraswati Hostel), 5 common lavatories no. 2, 4, 6, 13 and 14 have been renovated.
5. Hostel No. 10 (Saraswati Hostel), 2 rooms and Hostel No. 9 (Parvati Hostel), 3 corner rooms were renovated.
6. Hostel No. 14 (Atreya Hostel), 1st floor to 7th floor (144) single rooms and 11 common lavatories got renovated. Ground floor to 6th floor (office side) and other side 4th floor to 7th floor water cooler platform and sinks are made. All the single rooms, corridor lights and 25 geysers in common lavatories have been changed.
7. Hostel No. 14 (Atreya Hostel) Warden Office got renovated. Water coolers have been converted into a centralized system on one side from the ground floor to the 7th floor in front of the hostel office.
8. Hostel No. 15 (Medha Hostel)–Room No. N-307 got renovated. The entire shaft flooring work and all the switch room doors replaced and south side corridors lights have been changed. Main gate also got replaced.
9. Hostel No. 19 – Kadi lock work done.
10. Old Hostel Office in Hostel No. 7 converted into Hostel Store and renovated.
11. JPNATC Hostel – Corridor and room windows and balcony doors have been repaired.

#### **Under Renovation**

1. Hostel No. 3 (Sushruta Hostel) lavatories No. 7, 8 and 9, Hostel No. V (Nagarjuna Hostel) lavatories No. 1, 3 & 5 and Hostel No. 7 (Ashwini Hostel) lavatories No. 4, 8 and 12 under renovation.

### **2. Electrical Works**

1. Electrical panel has been changed in Hostel No. I, II, III, IV, V and VI.
2. Hostel No. 10 (Saraswati Hostel), 5 rooms and Hostel No. 13 (Laxmi Hostel), 5 rooms electrical work have been done. Electrical panel has been changed in Hostel No. 10.
1. Hostel No. 9, 10 and 13 approximately 97 fans have been changed.
2. Hostel No.14 and 15 – the entire solar geyser has been removed.
3. Hostel No. 17 outside staircases covered with grills, LED lights provided in all the rooms.
4. Hostel no. 19 calling bell work done.
5. JPNATC Hostel – LED lights have been replaced.

### **3. Air Conditioning**

1. Hostel No. 14 (Atreya Hostel), Hostel No. 18 (Kashyap Hostel) and Hostel No. 19 (Patanjali Hostel) A/C provided in Warden Office.
2. Three A/C provided in the guest rooms in Hostel No. 17.

### **4. CCTV Cameras**

1. In front of the Hostel No. 16 (Agnivesa Hostel) and Hostel No. 17 (Ambuja Hostel), CCTV cameras have been installed.

### **5. Miscellaneous**

1. Hostel No. 7 (Ashwini Hostel) – 19 rooms have been converted into double seater and allotted to MBBS students. Presently 55 rooms are under renovation and to be converted into double seater.
2. Hostel No. 11 (Akshara Hostel) has been converted into UG Hostel with double seater.
3. Hostel No. 13 (Laxmi Hostel), 20 single rooms have been converted into double seater and allotted to BSc Paramedical students.
4. Hostel No. 15 (Medha Hostel): North side 14 single rooms converted into double seater rooms and allotted to MSc Nursing and BSc (PB) Nursing Students.
5. Hostel No. 19
  - I. 2/I Common room converted into Reading room.
  - II. 2/II Common room converted into Student Wellness Center.

III. Room No. 6 converted into Visitor's room

1. Hostel No. 7 Room No. 32 added as extension of Hostel Section Reception, Cashier Room and Guest Room booking counter.
2. Permission for Guests to visit in Hostel No. 19 granted.
3. Hostel 15 Reading rooms 1, 2, 3, 6 and 7 well furnished.
4. Modified hostel accommodation rules implemented.
5. Tender work for allotment of fresh tenders for all the Messes/Café in the hostel has reached final stage.

**Future plans**

1. Provision of CCTV Cameras in various locations.
2. Hostel No. 2 Store to be renovated.
3. Hostel No. 1 lavatories no. 7 and 9, Hostel No. 7 lavatories no. 14, 16 and 18 and Hostel No. 8 lavatories no. 3, 5, 7, 14, 15, 16, 17 and 18 to be renovated.
4. Hostel No. 12 (Dhanwantri Hostel), 15 common lavatories need to be renovated. Electrical rewiring is required in all the rooms.
5. Hostel No. 14 – 38 married rooms, 6 guest rooms, ground floor recreation room, common lavatories and all the shafts need to be renovated. Corridor windows and balcony doors to be replaced. Water roofing work is also to be done.
6. Hostel No. 14 and Hostel No. 15 – Chimney to be installed in the mess kitchen, mess desert coolers to be replaced, mess rewiring work to be done and the staircase used in emergency is to be repaired.
7. Hostel No. 15 – both sick room and three guest rooms need to be renovated.
8. Hostel No. 17 – Exhaust fans and almirah to be installed in the kitchen and geyser to be installed in the guest rooms. Water stagnation in the underground parking repairing work to be done.
9. Hostel No. 19 – Ground floor to tenth floor staircase to be covered with grill. 2/I Reading room and 2/II Student Wellness Center A/C to be installed in these rooms. Emergency light also to be provided in all rooms. CCTV cameras to be installed.
10. Provision of Wifi in Hostel No. 7 and 8.
11. Cultural activity groups to be formed with help of the wellness clinic and provided for with appropriate location.
12. Replacement of furniture of Hostel No. 1-6 (UG).
13. Renovation work of café 5 and Hostel No. 9 messes to be done.





## 11.8. Ethics Committee

The total number of project proposals and thesis protocol submitted and discussed in the ethics committee for above mentioned academic year are mentioned below:

### *Meetings*

#### **The number of meetings were:**

- Institute Ethics Committee: **11**
- Institute Ethics Committee for postgraduate Research for Basic and Clinical Science: **11**

#### **The number of projects reviewed were:**

- New project proposals: **975**
- Review projects: **600**
- Old projects: **275**

#### **The number of projects reviewed for postgraduate research in basic and clinical sciences were:**

- New thesis: **684**
- Review thesis: **300**
- Old thesis: **150**

In addition, the Institute Ethics Committee continues to receive notifications of serious adverse reactions, serious adverse events, annual progress reports, completion reports, etc.

The Institute Ethics Committee's Standard Operating Procedures (SOPs) were modified and are available on the AIIMS website.

### **SIGNIFICANT EVENTS**

The Institute Ethics Committee and Institute Ethics Committee for Post Graduate Research for Basic and Clinical Sciences are registered with the Drug Controller General of India, Department of Health Research and Federal Wide Assurance of the USA.



## 11.9. KL Wig Centre for Medical Education, Technology and Innovation

### Chief

Professor OP Kharbanda (till February 2020)

### Professors-in-Charge

#### Faculty Development of Basic Sciences

Professor KK Deepak

#### Faculty Development of Clinical Faculty of Medicine and Allied discipline

Professor Rita Sood

#### Faculty Development of Surgical disciplines

Professor Anurag Srivastava

### Faculty Members for

#### Fellowship in Clinical Research Methodology and Evidence Based Medicine

1. Dr Kameshwer Prasad (Chief Coordinator)
2. Dr Anurag Srivastava
3. Dr SN Dwivedi
4. Dr Shashi Kant
5. Dr Govind Makaria
6. Dr V Sreenivas
7. Dr Deepti Vibha
8. Dr Nalin Mehta
9. Dr Tulika Seth
10. Dr Rajeev Kumar
11. Dr Rakesh Lodha
12. Dr Neerja Bhatla
13. Dr Navneet Wig
14. Dr Manju Vatsa
15. Dr Peush Sahni

### Education Media Generalist

Shri Yogesh Kumar

### Administrative officer

Shri Pallav Kumar Chittej (till December 2019)

Shri Kushal Kumar (from February 2020)

### HIGHLIGHTS

The full potential of CMET has been used for the benefit of the AIIMS faculty, Residents, Research Scholars, Nurses and all categories of staff by providing training programmes and media support. Six-monthly CMET Training calendars: (i) June to December 2019 and (ii) January to June 2020, were distributed well in advance to the faculty, residents and staff of AIIMS which resulted in a better turnout of the participants.

1. **A total of 53 In-house Training programmes** were conducted during this financial year which includes:
  - 1.1. Five Induction programme of three half days was organised for Nursing (4) and Administrative staff (1)
  - 1.2. Nine Workshops for Faculty, Residents and MSc nursing students were held on different topics with particular emphasis on issues like Information Retrieval, Bibliography management, Tools for Scientific Writing in MS Word, Designing Effective Presentation, Animation in PowerPoint, Excel, and Creativity
  - 1.3. One Workshop on Writing a Research Paper in collaboration with NMJI
  - 1.4. Fourteen training programmes in collaboration with ORBO
  - 1.5. Eight workshops for Non Medico Staff entitled "First Aid in Emergency Care" FACE
  - 1.6. Six workshops for Administrative staff on administrative and financial topics
2. **64th Institute Day Exhibition:** CMET played a crucial role in organising the Institute Exhibition from 24 to 27 September 2019. The theme of the Exhibition was "**Universal Healthcare**".
  - In-house creations of innovative and reusable and portable penal were designed for the exhibition.
  - A total number of 104 posters of 36x56 inch were prepared, and six video stations were placed on display.

3. **Mini Health Exhibitions**
  1. **Autism Awareness:** Together we can, 11 April 2019, CMETi designed and printed 40 posters.
  2. **AIIMS Geriatric Programmes:** 3 December 2019, for visit of Her Majesty Queen Silvia of Sweden.
  3. **Childhood Cancer Exhibition:** 27 February 2020, CMETi designed and printed 16 posters.
  4. **RPC Day Exhibition,** 10 March 2020, CMETi designed and printed 40 posters.
4. **Logistic support to Department of Surgery and Psychiatry:** After the fire incident in the AIIMS Teaching block in August 2019, staff of Surgery and Psychiatry department was shifted to CMETi along with HODs and store office. All the logistic supports, like space, furniture, computers, printers, internet facility etc. were extended to both the departments to run the department smoothly.
5. **CMETi Hall Utilisation:** CMETi extended logistic support, including audio-visual to various departments of AIIMS to organize workshops/CME apart from its own programmes (184 days). During the year, three CMET halls Technology Hall, Education Hall, and Innovation Hall were used for 177, 57 and 58 days, respectively.

- **Media-related activities**

Particulars	Total
Designing/printing of large format Academic Posters (including 80 e-posters)	1471
Video recording and editing, No. of requisitions	437
Clinical/Event Photography and Scan, X-ray/CT/MRI/Slide, No. of requisitions	393
Number of on-screen presentations	66
Colour printing (A3 Size)	1446
Colour printing (A4 Size)	1206
Certificates Prints A4 Size (CMET workshops + Other Department)	539

## EDUCATION

### 53 Workshops/training Programme

S. No.	Title	Target group	Date
1-4	Induction programme-2019, Batches 12 to 15	Nursing Officers	1-13 April 2019
5-6	Introduction to Organ Retrieval	Senior Residents and nursing officers	12 and 15 April 2019
7	Noting Drafting	Administrative Staff	16 April 2019
8	First Aid in Common Emergency	All Staff of AIIMS	23 April 2019
9	Writing a Research paper (in collaboration with NMJI)	Residents	25-26 April 2019
10	Safe Blood Transfusion Practice	Nursing Officers	26 April 2019
11-12	Introduction to Organ Retrieval	Senior Residents and nursing officers	3 and 10 May 2019
13	Safe Blood Transfusion Practice	Residents	3 May 2019
14	Right of Information Act (RTI)	Administrative Staff	16 May 2019
15	First Aid in Common Emergency	All Staff of AIIMS	20 May 2019
16	Introduction to Organ Retrieval	Nursing Officers	21 May 2019
17	First Aid in Common Emergency	All Staff of AIIMS	14 June 2019
18	How to Handle Court Cases	Administrative Staff	20 June 2019

<b>S. No.</b>	<b>Title</b>	<b>Target group</b>	<b>Date</b>
19	Procurement and General Rules	Administrative Staff	25-26 July 2019
20	Induction Programme	Administrative Staff	5-7 August 2019
21	Tools for Scientific Writing in MS word	MSc Nursing Students	8 August 2019
22	Introduction to Organ Retrieval	Senior Residents	8 August 2019
23	Information Retrieval and Bibliography Management	MSc Nursing Students	10 August 2019
24	Media in Education	MSc Nursing Students	17 August 2019
25	Orientation Programme	Retiring Staff	19-20 August 2019
26	First Aid in Common Emergency	Administrative Staff	21 August 2019
27	Designing Posters & Pamphlets	MSc Nursing Students	22 August 2019
28	Epilepsy: Primary Care	Residents & Nursing Officers	27 August 2019
29	Animation in PowerPoint	MSc Nursing Students	29 August 2019
30	Creativity	MSc Nursing Students	31 August 2019
31-32	Introduction to Organ Retrieval	Senior Residents and nursing officers	12 and 17 September 2019
33	Procurement and General Rules	Administrative Staff	18-Sep-19
34-35	Introduction to Organ Retrieval	Senior Residents and Nursing Officers	4 and 14 October 2019
36	Safe Blood Transfusion	Nursing Officers	16 October 2019
37-38	Microteaching Workshop	Faculty	18 and 23 October 2019
39	First Aid in Common Emergency	Security Guards	24 October 2019
40	Grant Writing Workshop	Faculty & Residents	25 October 2019
41	Immunological Investigation in Rheumatic Disease	Residents & Students	22 November 2019
42	First Aid in Common Emergency	Security Guards	4 December 2019
43	Information Retrieval and Bibliography Management	Residents & Students	14 January 2020
44	Introduction to Organ Retrieval	Nursing Officers	20 January 2020
45	Wound Management	Nursing Officers	21 January 2020
46	First Aid in Common Emergency	All Staff of AIIMS	22 January 2020
47	Introduction to Organ Retrieval	Senior Residents	24 January 2020
48	Tools for Scientific Writing in MS Word	Residents & Students	28 January 2020
49-50	Introduction to Organ Retrieval	Senior Residents	14 and 24 February 2020
51	Designing Effective Presentation	Residents & Students	18 February 2020

S. No.	Title	Target group	Date
52	Wound Management	Nursing Officers	3 March 2020
53	First Aid in Common Emergency	Administrative Staff	4 March 2020

**Lecture series under Fellowship in Clinical Research Methodology and Evidence Based Medicine** (13 sessions of 90+ minutes were organized in this year)

S.No	Date	Topics	Name of Faculty
1	4 April 2019	Clinical Perspective on Cox Proportional Hazards Regression	Dr Kameshwar Prasad
2	12 April 2019	Case-Control Study Session - 1	Dr Partha Halder
3	26 April 2019	Case-Control Study Session - 2	Dr Partha Halder
4	3 May 2019	Case-Control Study Session - 3	Dr Partha Halder
5	4 December 2019	Randomized Control trials	Dr Tulika Seth
6	11 December 2019	Randomized Control trials	Dr Tulika Seth
7	1 January 2020	Randomized Control trials	Dr SN Dwivedi
8	8 January 2020	Different Design in RCT	Dr SN Dwivedi
9	22 January 2020	Randomized Control trials	Dr SN Dwivedi
10	29 January 2020	Randomization in RCT, Random permuted block design	Dr SN Dwivedi
11	5 February 2020	Sample size calculation	Dr SN Dwivedi
12	26 February 2020	Sampling Methodology	Dr SN Dwivedi
13	4 March 2020	Data safety Monitoring Board	Dr SN Dwivedi

**Lectures delivered**  
**Yogesh Kumar**

S.No	Topic	Date
1-4	Conducted Sessions on Team building and Conflict Management during the four induction programmes held in 2019-20	1-13 April 2019
5-7	Conducted three Sessions on Pride of AIIMS, Communication Skills and Team building during the Induction Programme for Administrative Staff	5-7 August 2019
8	Tools for Scientific Writing in MS word (MSc Nursing)	8 August 2019
9	Information retrieval and bibliography management (MSc Nursing)	10 August 2019
10	Media in Education (MSc Nursing)	17 August 2019
11	Conducted a session on "Preparation for Retirement" during Orientation Programme for Retiring Staff of AIIMS	19 and 20 August 2019

<b>S.No</b>	<b>Topic</b>	<b>Date</b>
12	Designing posters and pamphlets (MSc Nursing)	22 August 2019
13	Animation in PowerPoint (MSc Nursing)	29 August 2019
14	Creativity (MSc Nursing)	31 August 2019
15	TOT Workshop for Nurses: Management of Substance Use Disorder, Use of Media	5 October 2019
16	Microteaching Workshop for Faculty	18 October 19
17	Microteaching Workshop for Faculty	23 October 19
18	TOT Workshop for Nurses: Management of Substance Use Disorder, Use of Media	5 December 2019
19	Information retrieval and bibliography management (Faculty/Residents)	14 January 2020
20	Tools for Scientific Writing in MS word (Faculty/Residents)	28 January 2020
21	Medical Photography for the faculty and residents of Department of Emergency Medicine	29 January 2020
22	Designing Effective Presentation (Faculty/Residents)	18 February 2020





## 11.10. Media and Protocol Division

### Chairperson

Dr Aarti Vij

### Additional Spokesperson

Dr Karan Madan

### Staff

Bishwanath Acharya

Sandeep Saxena

NP Singh

### AIIMS in the News: Print and electronic media

S. No.	Date	Title	Newspaper
1.	1 April 2019	Israel's ocular discovery partners with all India Institute of Medical Sciences, New Delhi	EurekAlert!
2.	1 April 2019	आयुष्मान भारत से मुफ्त में हुई हृदय की सर्जरी	दैनिक जागरण
3.	2 April 2019	Catching them young: AIIMS docs develop app to help in timely diagnosis of Autism	The Times of India
4.	2 April 2019	एम्स में मरीज़ व तीमारदार को सस्ती दर पर मिलेगा भोजन	दैनिक जागरण
5.	2 April 2019	एम्स में किफायती दाम पर भोजन मिलेगा	हिंदुस्तान
6.	2 April 2019	AIIMS app to help doctors diagnose neuro disorders	Hindustan Times
7.	3 April 2019	37 सवालो से बच्चो के मनोरोगी होने का पता लगा सकेंगे डॉक्टर	अमर उजाला
8.	3 April 2019	3000 बेड, 6000 नर्स और 600 फैकल्टी से बदलेगा एम्स	नवभारत टाइम्स
9.	3 April 2019	बच्चो की बीमारी का एंप से पता चलेगा	हिंदुस्तान
10.	9 April 2019	मेडिकल में एम्स, कॉलेज में मिरांडा तो फार्मसी में जामिआ हमदर्द टॉप	दैनिक भास्कर
11.	9 April 2019	एम्स है देश का सबसे अच्छा मेडिकल कॉलेज	दैनिक जागरण
12.	10 April 2019	बरियट्रिक सर्जरी करा चुके मरीजो के लिए हुआ सेमिनार	दैनिक जागरण
13.	10 April 2019	AIIMS holds bariatric op awareness	The Pioneer
14.	11 April 2019	AIIMS to start registry of ortho implant surgeries	Hindustan Times
15.	13 April 2019	The Delhi Prison Administration had started the intensive counselling services on April 16 last year in collaboration with NGO Mental Health Foundation and mentored by AIIMS.	The Indian Express
16.	14 April 2019	Delhi consumes five lakh litres of alcohol worth Rs 6 crore every month, a new survey by the All India Institute of Medical Sciences (AIIMS) done in collaboration with the Indian Statistical Institute (ISI)	India Today
17.	14 April 2019	एम्स घुटने के प्रत्यारोपण के लिए पंजीकरण करेगा	हिंदुस्तान
18.	15 April 2019	AIIMS to carry out oral health survey for national policy	Hindustan Times
19.	16 April 2019	New guidelines to tackle mental health of inmates	India Today
20.	19 April 2019	हाइपरटेंशन की पुष्टि को तीन बार जांच जरूरी	दैनिक जागरण
21.	21 April 2019	New courses to develop the startup ecosystem	The Times of India
22.	24 April 2019	बुजुर्गो को संतुलन बनाकर चलने का तरीका सिखाएगा एम्स	हिंदुस्तान
23.	26 April	New bike service for emergency medical care	The Times of

	2019		India
24.	26 April 2019	ICMR project to help rescue 'heart patients' near AIIMS	The Hindu
25.	26 April 2019	Bike-borne paramedics to help heart patients	The Asian Age
26.	26 April 2019	Biker squad to give patients 'heart'	The Pioneer
27.	26 April 2019	दिल के मरीजों के लिए बाइक एम्बुलेंस	हिंदुस्तान
28.	26 April 2019	आई सी एम् आर ने शुरु की दिल के दौरे के मरीजों को मदद पहुंचने की योजना	जनसत्ता
29.	26 April 2019	हार्ट अटैक आने पर एक फ़ोन में घर पहुंचेगा एम्स कर्मी	दैनिक जागरण
30.	26 April 2019	छाती में दर्द की सूचना पर तुरंत पहुंचेगी बाइक एम्बुलेंस	अमर उजाला
31.	26 April 2019	हार्ट के मरीजों की जिंदगी बचाने के लिए आई बाइक एम्बुलेंस	नवभारत टाइम्स
32.	26 April 2019	Bike ambulances roll out to reduce heart attack deaths	Hindustan Times
33.	26 April 2019	Mission Delhi—A pilot project for heart patient launched	The Statesman
34.	27 April 2019	Doctors finds key to eye care in the womb	The Times of India
35.	28 April 2019	एम्स में 658 की सर्जरी हुई	हिंदुस्तान
36.	28 April 2019	AIIMS to give Modicare in non-PMJAY states	The Pioneer
37.	5 May 2019	1200 treated at AIIMS, RML; ophthalmology cardio most sought after	The Indian Express
38.	7 May 2019	सफलता : बिना सर्जरी अस्थमा के मरीज को ठीक किया	हिंदुस्तान
39.	12 May 2019	एम्स में दांतों की दवा कम दामों पर मिलेगी	हिंदुस्तान
40.	14 May 2019	AIIMS hospital can now issue disability certificates	Hindustan Times
41.	16 May 2019	एम्स में 500 ने किया रक्तदान	हिंदुस्तान
42.	16 May 2019	सुविधा: एम्स में मरीजों के लिए डेंगू कार्नर शुरू	हिंदुस्तान
43.	17 May 2019	Study to identify dengue hotspots across country	The Indian Express
44.	17 May 2019	अस्पतालों में शुरू होगा डेंगू कार्नर	दैनिक जागरण
45.	17 May 2019	Set up dedicated dengue corner: Min to hospitals	The Pioneer
46.	18 May 2019	Aiming High: The focus on innovation and unmatched footfall of patients offering exposure to students has made AIIMS a topper for 23 years.	India Today Magazine
47.	19 May 2019	Against drugs, setting the wheels in motion	The Indian Express
48.	23 May 2019	New AIIMS to tie up with top health institute abroad	The Indian Express
49.	23 May 2019	एम्स ने बनाया 'आईएमडब्लू टूलकिट' ऐप , मरीज की जानकारीया फीड करने पर पता चल सकेगा ऑपरेशन के लिए फिट है या नहीं	दैनिक भास्कर
50.	23 May 2019	सर्जरी को मरीज फिट या नहीं ऐप बताएगा	हिंदुस्तान
51.	23 May 2019	अब एम्स के डॉक्टर पहले एप से करेंगे जांच, पिछले वर्ष 1.94 लाख ऑपरेशन कर दुनिया में रचा था इतिहास	अमर उजाला
52.	27 May 2019	AIIMS facility to prevent risky falls in senior patients	Hindustan Times
53.	30 May 2019	एमएस मरीजों के लिए एम्स में विशेष क्लिनिक होगा शुरू	अमर उजाला
54.	30 May 2019	एम्स में स्क्लेरोसिस के लिए क्लिनिक	हिंदुस्तान
55.	31 May 2019	Multiple sclerosis clinic at AIIMS from next month	The Indian Express
56.	31 May 2019	E-Cigarettes not safer alternative	The Indian Express
57.	31 May 2019	ईसिगरेट पर प्रतिबंध लगना ही जनता के हिट में : एम्स	अमर उजाला

58.	2 June 2019	एम्स में दूर होगी डॉक्टरों की कमी	दैनिक जागरण
59.	4 June 2019	Leap in breast cancer therapy	The Indian Express
60.	6 June 2019	NEET टॉपर्स की पहली पसंद एम्स	नवभारत टाइम्स
61.	6 June 2019	एम्स के डॉक्टरों ने की यमुना की सफाई	नवभारत टाइम्स
62.	14 June 2019	रक्तदान कर मरीजों को देते हैं जीवनदान एम्स के डॉक्टर	दैनिकजागरण
63.	14 June 2019	Transform Indian Healthcare	The Times of India
64.	17 June 2019	एम्स में योग पर कार्यशाला	दैनिक जागरण
65.	20 June 2019	एम्स ने 12 सप्ताह तक 160 मरीजों पे किया रिसर्च, दवाखाने के साथ योग करने से भी जेनेटिक कारणों से हुए डिप्रेसन में मरीज का होता है लाभ	दैनिक भास्कर
66.	20 June 2019	As death toll rises, AIIMS to begin study on causes of AES	Hindustan Times
67.	21 June 2019	शोध : योग से दोबारा दिल के डोरे का खतरा आधा	हिंदुस्तान
68.	21 June 2019	गर्भपात- काला मोतिया से बचाता है योग	हिंदुस्तान
69.	21 June 2019	बौद्धपन के खिलाफ हथियार बना योग, पुरुषों की क्षमता बढ़ी और महिलाओं में गर्भपात रुका	दैनिक भास्कर
70.	22 June 2019	AIIMS to come up with guidelines on yoga 'asanas'	The Indian Express
71.	23 June 2019	एम्स में जल्द शुरू होगा सर्जिकल ब्लॉक	दैनिक जागरण
72.	23 June 2019	एम्स के डॉक्टर ने पेश की इन्सानियत की मिसाल	अमर उजाला
73.	23 June 2019	डॉक्टर ने खून देकर जान बचाई	हिंदुस्तान
74.	23 June 2019	'AIIMS trauma centre processes are very similar to those in Israel'.	Hindustan Times
75.	23 June 2019	AIIMS to find out cause of encephalitis currently listed under unknown category.	ANI
76.	25 June 2019	AIIMS resident docs pitch in for rare blood group donations	The Times of India
77.	25 June 2019	'नशा रोग का इलाज' पर लोक वयाख्यान एवं पैनल वार्ता	दैनिक जागरण
78.	25 June 2019	Public Lecture and Panel Discussion on Dealing with Addiction	The Times of India
79.	25 June 2019	'नशा रोग का इलाज' पर लोक वयाख्यान एवं पैनल वार्ता	पंजाब केसरी
80.	25 June 2019	Public Lecture and Panel Discussion on Dealing with Addiction	Hindustan Times
81.	25 June 2019	डॉक्टर ने ब्लड देकर बचाई बच्ची की जान	नवभारत टाइम्स
82.	26 June 2019	समय पर इलाज हो तो छूट सकता है नशा	हिंदुस्तान
83.	27 June 2019	Top Indian hospitals understaffed, overworked	Hindustan Times
84.	30 June 2019	एम्स के ट्रामा सेन्टर में शुरू हुए ऑपरेशन थियेटर	अमर उजाला
85.	1 July 2019	5० कोलोनियों में घर बैठे मिलेगी कैंसर की जांच	अमर उजाला
86.	1 July 2019	The All India Institute of Medical Sciences continues to be the benchmark for medical education and research in the country	India Today Magazine
87.	1 July 2019	Treat drug users as patients, not criminals: AIIMS expert	The Statesman
88.	1 July 2019	सुविधा : एम्स में स्टेम सेल रजिस्ट्री बनेगी	हिंदुस्तान
89.	6 July 2019	एम्स के बजट में 600 करोड़ का इजाफा	अमर उजाला
90.	7 July 2019	AIIMS may conduct first lung transplant by August	The Times of India
91.	7 July 2019	License in hand, AIIMS ready for lung transplants	The Indian Express
92.	7 July 2019	एम्स के डॉक्टर की पहल पर देश भर में बनेगा दो भाषाओं में बी पी एल कार्ड	दैनिक जागरण
93.	7 July 2019	एम्स में फेफड़ों का प्रत्यारोपण भी होगा	हिंदुस्तान
94.	7 July 2019	बेटे का अंगदान कर चार को बचाया	हिंदुस्तान
95.	8 July 2019	AIIMS celebrates silver jubilee of Transplantation of Human Organs Act	The Pioneer
96.	8 July 2019	AIIMS to take up largest oral health survey	The Asian Age
97.	8 July 2019	Promoting Organ Donation	Millennium Post
98.	8 July 2019	Delhi AIIMS to start lung transplant & Skin bank	Lokmat Times
99.	8 July 2019	AIIMS-Delhi to soon start transplant	Drug Today

100.	8 July 2019	परिवार को अंगदान के लिए राजी करना आसान काम नहीं: प्रो गुलेरिया	नवोदय टाइम्स
101.	10 July 2019	एम्स में बदलेगा स्वरूप बनेगा मास्ट प्लान	दैनिक जागरण
102.	12 July 2019	ब्लड स्टेम सेल डोनर रजिस्ट्री को एम्स आरडीए ने शुरू की मुहिम	दैनिक जागरण
103.	13 July 2019	AIIMS to take up largest oral health survey	The Asian Age
104.	14 July 2019	एम्स के सहयोग से आयुर्वेद पर शोध	नवभारत टाइम्स
105.	15 July 2019	दांत के रोगों से लड़ने के लिए देश व्यापी सर्वेक्षण करेगा एम्स	हिंदुस्तान
106.	15 July 2019	एम्स करेगा दांतों का नेशनल सर्वे	नवभारत टाइम्स
107.	15 July 2019	सर्वे से पता चलेगी दाँत की बीमारियाँ	दैनिक जागरण
108.	16 July 2019	एम्स में बनेगा त्वचा बैंक	अमर उजाला
109.	16 July 2019	AIIMS facilities to treat patients with burn injuries by year end	The Times of India
110.	16 July 2019	एम्स में बर्न एवं प्लास्टिक सर्जरी सेंटर होगा हाथ का प्रत्यारोपण	दैनिक जागरण
111.	16 July 2019	Burn unit at AIIMS soon	The Indian Express
112.	16 July 2019	AIIMS says herbal drug used by tribals effective in treatment superficial wounds	The Indian Express
113.	16 July 2019	Centre set to roll out rotavirus vaccination drive in all states by September this year	The Indian Express
114.	16 July 2019	एम्स में बन रहा है एशिया का सबसे बड़ा बर्न सेंटर	नवभारत टाइम्स
115.	16 July 2019	हर्बल दवाई भी कारगर: एम्स	हिंदुस्तान
116.	16 July 2019	एम्स में अब साधारण प्लास्टिक सर्जरी ही नहीं चेहरा और हाथ भी बदले जा सकेंगे तयार हो रही अर्टिफिकल स्किन	दैनिक भास्कर
117.	16 July 2019	एम्स – आई आई टी मिलकर बना रहे कृतिम त्वचा	हिंदुस्तान
118.	17 July 2019	With no side-effects, herbal drug used by tribals passes AIIMS Delhi trials for treating superficial wounds	Swarajya
119.	17 July 2019	देश के सभी अस्पतालों में अब एक जैसी होगी कटे होठ का इलाज	दैनिक जागरण
120.	17 July 2019	कटे होठ के इलाज के लिए बनेगी गाइडलाइस	नवभारत टाइम्स
121.	18 July 2019	Forensic experts call for one-stop sexual assault test centers	The Pioneer
122.	18 July 2019	Call for one-stop sexual assault test centres with DNA facilities	The Times of India
123.	18 July 2019	रेप पीड़िता को एक ही छत के नीचे पूरी मदद	हिंदुस्तान
124.	19 July 2020	Mission Delhi is the ICMR-AIIMS pilot initiative to provide care to STEMI Heart Attack patients.	Medical Dialogues
125.	19 July 2019	हरदयाघात होने पर 10 मिनट में घर पहुंच बचा रहे जान	दैनिक जागरण
126.	20 July 2019	एम्स ट्रामा सेंटर में शुरू हुए दो ओ टी मरीजों को राहत	दैनिक जागरण
127.	22 July 2019	एडवांस स्टेज के प्रोस्टेट कैंसर के इलाज में हो रहा नुक्लेअर मेडिसिन का प्रयोग	दैनिक जागरण
128.	22 July 2019	एम्स में मनाया ओ टी टेक्निशियन डे	नवभारत टाइम्स
129.	24 July 2019	ट्रेनों में अब दवा और ऑक्सीजन सिलेंडर भी मिलेगा	अमर उजाला
130.	26 July 2019	आयुष्मान भारत से एम्स में अब तक 1578 मरीजों की फ्री सर्जरी	नवभारत टाइम्स
131.	28 July 2019	खुद फैसले ले सकेंगे देशभर के एम्स के अध्यक्ष	अमर उजाला
132.	29 July 2019	AIIMS comes up with fluorescence imaging to identify cancer-affected breast tissues	The Pioneer
133.	29 July 2019	Sunday OPD care a breeze for the elderly	The Times of India
134.	29 July 2019	AIIMS inducts 'game-changer' tech in breast cancer surgery	The Asian Age
135.	29 July 2019	कैंसर प्रभावी ऊतकों की पहचान आसान	अमर उजाला
136.	29 July 2019	स्तन कैंसर ऊतकों की पहचान के लिए एम्स ने शुरू की नई तकनीक	जनसत्ता
137.	29 July 2019	New imaging tech in AIIMS to identify breast cancer tissues	The Statesman
138.	29 July 2019	सारकोमा से पीड़ित 70 फीसदी मरीज इलाज के बाद हो जाते हैं स्वस्थ	दैनिक जागरण
139.	29 July 2019	Public Lecture and Panel Discussion on Hepatitis in India	Hindustan Times
140.	29 July 2019	Public Lecture and Panel Discussion on Hepatitis in India	The Indian Express
141.	29 July 2019	भारत में हेपेटाइटिस पर लोक वयाख्यान एवं पैनल वार्ता	पंजाब केसरी
142.	29 July 2019	भारत में हेपेटाइटिस पर लोक वयाख्यान एवं पैनल वार्ता	दैनिक जागरण

143.	29 July 2019	नई तकनीक से एम्स में जांच	हिंदुस्तान
144.	30 July 2019	AIIMS working on to engage scientists: Director	The Pioneer
145.	30 July 2019	आर्टिफिसियल इंटेलिजेंस से इलाज की नई तकनीक विकसित हो सकती है	दैनिक जागरण
146.	30 July 2019	AIIMS Collaborates with National, International Institutions to Find Affordable Medical options for the Poor	The New Indian Express
147.	30 July 2019	एम्स में दिल व फेफड़ों के एक साथ प्रत्यारोपण की तैयारी	दैनिक जागरण
148.	30 July 2019	1,578 people treated in AIIMS under Ayushman Bharat	The Pioneer
149.	31 July 2019	3-year-old donates bone marrow, save sister's life	The Asian Age
150.	5 August 2019	Next month, AIIMS to shift its OPD to Masjid Moth facility	The Indian Express
151.	4 August 2019	एम्स में दिल व फेफड़ों के एक साथ प्रत्यारोपण की तैयारी	दैनिक जागरण
152.	6 August 2019	शुरुआत में फेफड़ों का प्रत्यारोपण मुफ्त करेगा एम्स	अमर उजाला
153.	6 August 2019	मधुमेह और ब्लड प्रेशर का इलाज करेगा सॉफ्टवेयर	हिंदुस्तान
154.	9 August 2019	Just 37% of patients at AIIMS are women	The Times of India
155.	9 August 2019	अब डॉक्टर बनना होगा सस्ता दाखिला में भी होगी आसनी	अमर उजाला
156.	10 August 2019	AIIMS centre to study diseases caused by ecological toxins	The Indian Express
157.	10 August 2019	First ecotoxicology diagnostic centre at AIIMS	The Hindu
158.	10 August 2019	AIIMS centre to study diseases caused by ecological toxins	The Indian Express
159.	10 August 2019	एम्स में शरीर में प्रदूषण की जांच करने वाली लेब खुली, 40 मरीजों के सेम्पल की जांच	दैनिक भास्कर
160.	10 August 2019	मरीज के शरीर में प्रदूषण के दुस्प्रभाव की जांच करेगा एम्स	अमर उजाला
161.	10 August 2019	प्रदूषण से पीड़ितों के लिए एम्स में विशेष क्लिनिक	हिंदुस्तान
162.	12 August 2019	एम्स में अब इम्यूनोथेरेपी से भी हो रहा कैंसर का इलाज	दैनिक जागरण
163.	12 August 2019	इराक की दो बच्चियों को ईदी में मिला नया जीवन	नवभारत टाइम्स
164.	13 August 2019	17 साल के लड़के के दिल ने बचाई एक सक्श की जान	नवभारत टाइम्स
165.	13 August 2019	एम्स में इमरजेंसी का होगा विस्तार, दोगुने होंगे बिस्तर, मरीजों को मिलेगी राहत	अमर उजाला
166.	22 August 2019	वीडियो कॉल से मरीज देख रहे डॉक्टर	अमर उजाला
167.	22 August 2019	AB-PMJAY saved Rs. 12,000 crore for beneficiaries since launch: Health Minister	The Indian Express
168.	22 August 2019	डॉक्टर वीडियो कॉल से कर रहे इलाज	हिंदुस्तान
169.	24 August 2019	एम्स : लेजर से दूर होगा बुजुर्गों की न्यूरोपैथी का दर्द	नवभारत टाइम्स
170.	24 August 2019	मधुमेह पीड़ितों को लेजर तकनीक से अधिक लाभ	नवभारत टाइम्स
171.	24 August 2019	मधुमेह ग्रस्त बुजुर्गों की पीडा लेजर से दूर करेगा एम्स	अमर उजाला
172.	24 August 2019	Laser therapy for diabetic nerve	The Times of India
173.	25 August 2019	From team of AIIMS, IIT-Delhi, Special stethoscope to help students and teachers	The Indian Express

174.	25 August 2019	Some hygiene products will be available for free at health centres	The Times of India
175.	25 August 2019	एम्स के अटेंडेंट ने बहादुरी दिखा बदमाशों को दबोचा	दैनिक जागरण
176.	26 August 2019	AIIMS workshop trains over 100 orthodontists	The Pioneer
177.	26 August 2019	बाल चेहरों की विकृति दूर करने में जुटे डॉक्टर	अमर उजाला
178.	27 August 2019	एम्स के कैंसर सर्जन बिहार के गांव में लगाते है फ्री मेडिकल कैंप	नवभारत टाइम्स
179.	27 August 2019	15 डॉक्टर एक साथ सुन सकेंगे दिल की धरकने	हिंदुस्तान
180.	30 August 2019	45% of disease burden can be prevented with physical activity, say Harsh Vardhan	Hindustan Times
181.	1 September 2019	AIIMS conducting clinical trials on repurposed drugs	The Times of India
182.	1 September 2019	एम्स के अनुसार इंटरनेशनल स्टडी में खुलासा, सेफ नहीं कोई भी हेयर कलर या मेहँदी	नवभारत टाइम्स
183.	1 September 2019	एम्स ने 21 डेली केयर प्रोडक्ट्स को लेकर किया सर्वे, हेयर डार्ड, मेहँदी, शैम्पू से हो रही है त्वचा की समस्याए	दैनिक भास्कर
184.	1 September 2019	Leprosy drug to treat cancer? Docs hunt for new uses of cold meds	The Times of India
185.	1 September 2019	Conjoined twins separated in 16-hours-long surgery at AIIMS ready to return to Odisha	Hindustan Times
186.	1 September 2019	एम्स में अंगदान पर कार्यशाला	हिंदुस्तान
187.	1 September 2019	2 साल बाद जग्गा ओर बलिया को एम्स से मिलेगी छुट्टी	नवभारत टाइम्स
188.	4 September 2019	Being considered: Drones to transport cornea to eye banks	The Indian Express
189.	4 September 2019	चिंताजनक : 760 ऑय बैंक में से सिर्फ दो फीसदी ही सक्रिय	हिंदुस्तान
190.	4 September 2019	जब ड्रोन से पहुंचेगा कॉर्निया, मैनपावर ओर खर्च होगा कम	नवभारत टाइम्स
191.	4 September 2019	AIIMS eyes use of drones to transport corneal tissue	The Times of India
192.	4 September 2019	At 2,234, collection of donor corneas at AIIMS eye bank hits record high	The New Indian Express
193.	4 September 2019	एम्स में एक साल में 1426 नेत्र प्रत्यारोपण	दैनिक जागरण
194.	4 September 2019	दिल्ली – एन सी आर के सरकारी अस्पतालों से जुड़ेगा एम्स	अमर उजाला
195.	5 September 2019	AIIMS exploring use of drones for eye transplant	Hindustan Times
196.	6 September 2019	Conjoined twins return home today after 2 years	Hindustan Times
197.	6 September 2019	एम्स में भर्ती जग्गा - बलिया की आज होगी छुट्टी	दैनिक जागरण
198.	7 September 2019	जुड़वा बच्चों के सिर अलग करने में सफल रहा एम्स	जनसत्ता
199.	7 September 2019	जग्गा – बलिया की पहचान एम्स में होगी : हर्षवर्धन	हिंदुस्तान
200.	7 September 2019	Conjoined twins discharged from AIIMS after 2 yrs post rare surgery	The Statesman
201.	7 September 2019	Separated 2 yrs ago, Odisha's conjoined twins on way home	The Indian Express
202.	7 September 2019	Craniopagus twins head home	The Hindu
203.	7 September 2019	Conjoined twins get independent lives after surgery at AIIMS	The Pioneer

204.	7 September 2019	Two years on, conjoined twins leave for Odisha	The Times of India
205.	7 September 2019	जग्गा – बलिया : आधा – अधूरा कपाल 5 साल बाद होगा पूरा	अमर उजाला
206.	10 September 2019	76.3% of households consume adequate iodized salt: Survey	The Asian Age
207.	11 September 2019	Docs remove 2 Inch needle from minor's back	The Asian Age
208.	11 September 2019	एम्स में बच्ची की पीठ से दो इंच लंबी सुई निकाली	हिंदुस्तान
209.	11 September 2019	बच्ची की पीठ में घुसी २ इंच लम्बी सुई, एम्स ने निकाली	अमर उजाला
210.	11 September 2019	AIIMS docs remove sewing needle from minor's back	The Statesman
211.	13 September 2019	AIIMS has created benchmark in the field of healthcare not only at the national level but Internationally also	The Outlook
212.	15 September 2019	Shah kick off "seva saptah" at AIIMS	The Times of India
213.	15 September 2019	'Week of Service' Ahead of PM's Birthday	The Indian Express
214.	15 September 2019	शाह ने श्रमदान कर सेवा सप्ताह की शुरुआत की	दैनिक जागरण
215.	15 September 2019	भाजपा ने की 'सेवा सप्ताह' की शुरुआत , शाह व नड्डा ने एम्स में बच्चों को बाटे फल, सफाई भी की	दैनिक भास्कर
216.	15 September 2019	शाह व नड्डा ने किया एम्स से 'सेवा सप्ताह' का सुभारम्भ	जनसत्ता
217.	15 September 2019	Shah, Nadda mop floors at AIIMS	The Hindu
218.	15 September 2019	शाह ने एम्स में सफाई की, मरीजों को फल बाटे	हिंदुस्तान
219.	15 September 2019	अमित शाह ने एम्स से किया सेवा सप्ताह का शुभारंभ	अमर उजाला
220.	16 September 2019	AIIMS Prof facelifts AP hospital	The Asian Age
221.	17 September 2019	एम्स में ३२ मरीजों के शरीर में खतरनाक रसायन	अमर उजाला
222.	18 September 2019	AIIMS – Delhi donates 93.89 lakh to Odisha	The Outlook
223.	18 September 2019	AIIMS finds high toxin levels in 16% of patients	The Times of India
224.	18 September 2019	रेफरल मरीजों के शरीर में टोक्सिन का पता लगाएगा एम्स	अमर उजाला
225.	19 September	फणि पीड़ितों के लिए एम्स ने दिए 94 लाख	दैनिक जागरण



	2019		
226.	20 September 2019	एम्स में कैंसर की स्क्रीनिंग करेगी आँखों की डॉक्टर	दैनिक जागरण
227.	21 September 2019	एम्स : पहली बार हुई रोबोट से रीढ़ की सर्जरी	दैनिक जागरण
228.	21 September 2019	360 डिग्री पर फोटो लेकर रोबोट से की गयी एम्स में पहली बार रीढ़ की हड्डी की सर्जरी	नवभारत टाइम्स
229.	21 September 2019	रोबोट से एम्स ने पहली बार क्रिया स्पाइन का ऑपरेशन	अमर उजाला
230.	21 September 2019	एम्स में पहली बार रोबोट से रीढ़ की सर्जरी	हिंदुस्तान
231.	22 September 2019	45 yrs old woman from West Bengal first patient to benefit at AIIMS	The Times of India
232.	22 September 2019	Patients with serious illnesses falling through gap between two schemes: AIIMS	The Indian Express
233.	25 September 2019	AIIMS to ensure dignified death for non-cancer patient too	The Times of India
234.	25 September 2019	एम्स का 64 वा स्थापना दिवस	नवभारत टाइम्स
235.	25 September 2019	ल्यूपस पर एम्स समेत देश के 9 संस्थानों में अनुसंधान शुरू	अमर उजाला
236.	26 September 2019	KV teachers to get trained by AIIMS on sensitizing students about Oral Health	PTI
237.	26 September 2019	एमबीबीएस के विद्यार्थियों के लिए इ - लर्निंग ऐप लांच	अमर उजाला
238.	26 September 2019	एम्स का डायरेक्टरी ऐप लांच	नवभारत टाइम्स
239.	26 September 2019	एम्स के पांच हजार कर्मी ऐप से जुड़ेंगे	हिंदुस्तान
240.	26 September 2019	एम्स ने शुरू किया टेलीफोन डायरेक्टरी एप एव एडवांस रिसोर्स लर्निंग प्लेटफार्म	दैनिक जागरण
241.	26 September 2019	ऑपरेशन से पहले डॉक्टरों की प्रैक्टिस के लिए एम्स ने बनाई मशीन	अमर उजाला
242.	26 September 2019	AIIMS to train KV teachers for sensitising students on oral health	The New Indian Express
243.	27 September 2019	Panel to assess facilities at AIIMS, Safdarjung	The Indian Express
244.	27 September 2019	सिर्फ 20 रुपए में अनुवांशिक बीमारी का पता लगा लेता है एम्स	अमर उजाला
245.	28 September 2019	डॉक्टरों ने निकाली जलवायु न्याय यात्रा	अमर उजाला
246.	28	बेरियाट्रिक सर्जरी की बारी कियाने के लिए देशभर के सर्जन एम्स में जुटे	दैनिक भास्कर

	September 2019		
247.	29 September 2019	24*7 helpline for sarcoma patients	The Pioneer
248.	30 September 2019	एक दिन में 100 से ज्यादा पड़ते थे दोरे एम्स ने दी संजीविनी	अमर उजाला
249.	1 October 2019	10 सेकंड में जोड़ो के दर्द का पता लगाएगा डॉक्टर : एम्स	अमर उजाला
250.	2 October 2019	एम्स में डॉ हर्षवर्धनने किया रक्तदान	दैनिक जागरण
251.	3 October 2019	AIIMS to recycle, reuse plastic waste; Jamia goes plastic-free	The Asian Age
252.	4 October 2019	ल्यूपस रोग पर शोध कर रहा एम्स	हिंदुस्तान
253.	4 October 2019	गंभीर बीमारी पर एम्स करेगा स्टडी	नवभारत टाइम्स
254.	7 October 2019	AIIMS, Health Ministry launch 'eDantSeva'	Hindustan Times
255.	8 October 2019	दांत की बीमारी में एप से परामर्श	हिंदुस्तान
256.	9 October 2019	एम्स में दिसंबर में शुरू होगा बर्न सेंटर	दैनिक जागरण
257.	11 October 2019	AIIMS Delhi wins top cleanliness award, bags Rs 3 Crore	The Outlook
258.	11 October 2019	Blindness in India drops by 47%: Report	The Pioneer
259.	12 October 2019	AIIMS Delhi wins top cleanliness award, bags Rs 3 Crore	Millennium Post
260.	12 October 2019	एम्स को तीसरे वर्ष कायाकल्प अवार्ड	हिंदुस्तान
261.	12 October 2019	एम्स की हैट्रिक, लगातार तीसरी बार जीता कायाकल्प अवार्ड	अमर उजाला
262.	12 October 2019	At AIIMS Trauma Centre, a 3-year-old spells hope	The Hindu
263.	12 October 2019	स्वच्छता के मामले में दिल्ली का एम्स अब्वल	दैनिक जागरण
264.	13 October 2019	एम्स मोबाइल वैन नशा पीड़ितों तक पहुंचेगी	हिंदुस्तान
265.	13 October 2019	मोबाइल वैन सेवा का विस्तार कर नशे की लत छुड़ाएगा एम्स	दैनिक जागरण
266.	13 October 2019	नशा पीड़ितों के लिए एम्स ने गोकलपुरी में लगाई मोबाइल वैन	अमर उजाला
267.	13 October 2019	Public Lecture and Panel Discussion on STROKE	The Indian Express
268.	13 October 2019	Public Lecture and Panel Discussion on STROKE	Hindustan Times
269.	13 October 2019	पक्षाघात पर लोक वयाख्यान एवं पैनल वार्ता	पंजाब केसरी
270.	13 October 2019	पक्षाघात पर लोक वयाख्यान एवं पैनल वार्ता	दैनिक जागरण
271.	14 October 2019	Prevention and Treatment of Blinding Eye Diseases	Hindustan Times
272.	14 October 2019	नेत्र अंधता रोगों की रोकथाम एवं उपचार पर लोक वयाख्यान एवं पैनल वार्ता	पंजाब केसरी
273.	14 October 2019	नेत्र अंधता रोगों की रोकथाम एवं उपचार पर लोक वयाख्यान एवं पैनल वार्ता	दैनिक जागरण
274.	15 October 2019	AIIMS, IIT Delhi develop low-cost tech to help paralytics	The New Indian Express

275.	15 October 2019	जिम में संभलकर करे व्यायाम, लापरवाही से हो सकता है लकवा	दैनिक जागरण
276.	15 October 2019	तकनीक से लकवा पीड़ितों को मिलेगा आराम	दैनिक जागरण
277.	15 October 2019	मोटापे पर लोक वयाख्यान एवं पैनल वार्ता	दैनिक जागरण
278.	15 October 2019	मोटापे पर लोक वयाख्यान एवं पैनल वार्ता	पंजाब केसरी
279.	15 October 2019	Public Lecture on Obesity	The Indian Express
280.	15 October 2019	Public Lecture on Obesity	Hindustan Times
281.	15 October 2019	लकवाग्रस्त मरीजों के लिए एम्स और आईआईटी ने बनाई डीवाईस, खतम हो जाएगी फैजियोथेरेपिस्ट की जरूरत	दैनिक जागरण
282.	16 October 2019	बुलंदशहर की बच्ची को एम्स ट्रामा सेंटर ने दी नयी जिंदगी	दैनिक जागरण
283.	16 October 2019	देश भर में तैयार होगा स्ट्रोक मैप, तुरंत मिलेगा उपचार	अमर उजाला
284.	16 October 2019	बुलंदशहर की बच्ची को एम्स ट्रामा सेंटर ने दी नई जिंदगी	दैनिक जागरण
285.	16 October 2019	Rescued three-year-old discharged from AIIMS	The Hindu
286.	17 October 2019	टेबलेट और इंजेक्शन से 10 kg तक वजन हो सकता है कम: एम्स	नवभारत टाइम्स
287.	17 October 2019	Miracle baby's rises from pit to new life	The Times of India
288.	17 October 2019	अब दवाइयों से भी हो रहा मोटापे का इलाज	दैनिक जागरण
289.	17 October 2019	एम्स में मोटापे की सर्जरी का आकड़ा हजार के पार	अमर उजाला
290.	17 October 2019	IIT-Kgp alumnus develops device to trap vehicular pollutant	The Pioneer
291.	17 October 2019	सरकारी स्कूलों के बच्चे प्राइवेट स्कूलों के बच्चों से ज्यादा फिट वजह: फ्रास्ट फूड, इससे 46 प्रतिशत में डायबिटीज का खतरा	दैनिक भास्कर
292.	19 October 2019	मानसिक स्वास्थ्य के प्रति करेंगे जागरूक	दैनिक जागरण
293.	19 October 2019	At AIIMS, doctors remove tumour weighing 18 kg from woman's stomach	The Indian Express
294.	19 October 2019	Separating Jagga and Balia	The Hindu
295.	19 October 2019	बच्चों को तनाव से उबरने में मदद करेगा एम्स	अमर उजाला
296.	20 October 2019	45 के बाद हड्डियों की जांच कराये महिलालये	दैनिक जागरण
297.	21 October 2019	Ayurvedic antibiotic to fight fever, cold: AIIMS research	The Asian Age
298.	21 October 2019	एम्स छात्रों के मानसिक स्वास्थ्य पर काम करेगा	हिंदुस्तान
299.	21 October 2019	बैक्टीरिया से निपटने में आयुर्वेदिक एंटीबायोटिक कारगर	दैनिक जागरण
300.	21 October 2019	एम्स ने खोजी आयुर्वेदिक एंटीबायोटिक 'मृत्युंजय'	अमर उजाला
301.	24 October 2019	Centre to set up peritoneal dialysis services under PMNDP	The Hindu
302.	29 October 2019	मेडिकल विश्विद्यालय बनेगा दिल्ली एम्स, तैयारियां शुरू	अमर उजाला
303.	28 October 2019	दिवाली: अस्पताल अलर्ट, सीनियर डॉक्टर भी मुस्तैद	नवभारत टाइम्स
304.	30 October	AIIMS initiates survey to access infrastructure needs to become world	The Statesman

	2019	class medical university	
305.	31 October 2019	'Masks, air purifiers offer more reassurance than real protection against air pollution, not real solution': Dr. Randeep Guleria	Hindustan Times
306.	2 November 2019	Air pollution crisis: Docs ask people to take precautions	The Statesman
307.	4 November 2019	Find sustainable solution to Delhi pollution: AIIMS Director Randeep Guleria	The New Indian Express
308.	7 November 2019	आई आई टी के साथ मिलकर एम्स ने बनाए विशेष जूते और छड़ी	अमर उजाला
309.	7 November 2019	अमेरिकी यूनिवर्सिटी जेनेटिक्स के क्षेत्र में AIIMS, कस्तूरबा मेडिकल कॉलेज के साथ करेगी काम	NDTV इंडिया
310.	8 November 2019	जेनेटिक्स पर परिक्षण करेगा एम्स, कस्तूरबा मेडिकल कॉलेज	अमर उजाला
311.	11 November 2019	AIIMS OPD Shift to bigger campus	Hindustan Times
312.	11 November 2019	AIIMS to help poor students overcome language barrier	The Times of India
313.	11 November 2019	प्रदूषण में कमी के साथ ही मरीज की संख्या घटी	अमर उजाला
314.	11 November 2019	By year-end, new facilities for OPD services at AIIMS	The Indian Express
315.	13 November 2019	एम्स में मादक पदार्थों के बढ़ते इस्तेमाल पर शोध	दैनिक जागरण
316.	13 November 2019	पहनने योग्य किडनी से डायलिसिस होगी आसान	दैनिक जागरण
317.	13 November 2019	अब एम्स में एक ही छत के नीचे इलाज और जांच	अमर उजाला
318.	13 November 2019	एम्स में इलाज और जांच की सुविधा जल्द	हिंदुस्तान
319.	13 November 2019	नशे के आदी लोगों पर एम्स कर रहा अध्ययन	हिंदुस्तान
320.	13 November 2019	2.5 करोड़ की किट से एम्स कर रहा ड्रग की पहचान	नवभारत टाइम्स
321.	14 November 2019	Dead, but still 'alive' through a sacred act	The Times of India
322.	14 November 2019	AIIMS felicitates organ donors, families	DRUG Today
323.	14 November 2019	Huge gap between demand and availability of organs: AIIMS	The New Indian Express
324.	14 November 2019	FOR THE BRAVEHEARTS AT AIIMS	The Indian Express
325.	14 November 2019	Health Minister felicitates family organ donors	The Hindu
326.	14 November 2019	जाते- जाते आठ लोगों को जिंदगी दे गई सुरभि	अमर उजाला
327.	14 November 2019	अंगदान मुहीम को बड़े स्तर पर शुरू करने की जरूरत: रिजिजू	नवोदय टाइम्स
328.	14 November 2019	अंगदान कर जिंदगी देने वालों को याद कर भर आई आंखें	दैनिक भास्कर
329.	14 November 2019	अंगदान करना एक कठिन लेकिन सहस्रपूर्ण निर्णय	जनसत्ता
330.	14 November 2019	दोबारा जिंदगी मिलने पर किसी ने दिल तो किसी ने किडनी के लिए जताया आभार	लोकमत समाचार
331.	14 November 2019	मधुमेह पीड़ितों की जिंदगी आसान बनने में जुटा एम्स	हिंदुस्तान
332.	14 November 2019	ORBO felicitated family members of 38 multiple organ donors	Hindustan Times
333.	14 November 2019	किसी और का दिल मुझमें धड़क रहा है इसलिए जिन्दा हूँ	नवभारत टाइम्स

334.	14 November 2019	आठ लोगों को जिंदगी दे गई सुरभि	हिंदुस्तान
335.	14 November 2019	Union health minister Harsh Vardhan urges people to donate organs	The Statesman
336.	14 November 2019	अंगदान के लिए आंदोलन खड़ा करने की जरूरत : डॉ हर्षवर्धन	आउटलुक
337.	14 November 2019	एम्स ने अंगदाताओं को किया सम्मानित	पंजाब केसरी
338.	14 November 2019	अंगदान भगवन का काम करने जैसा: हर्षवर्धन	दैनिक जागरण
339.	14 November 2019	अंगदान करना ईश्वरीय है	UNI
340.	14 November 2019	एम्स में बनेगा ट्रांसप्लांट सेंटर	DD News
341.	15 November 2019	Pollution an additional stress for heart patients	Hindustan Times
342.	15 November 2019	एम्स में मिलेगी दांतों की सस्ती दवा एव इम्प्लांट	दैनिक जागरण
343.	15 November 2019	एम्स के डेंटल स्टोर पर ६०% तक सस्ती दवाएं	नवभारत टाइम्स
344.	15 November 2019	एम्स में दंत प्रत्यारोपण और दवाएं सस्ती दरों पर	हिंदुस्तान
345.	15 November 2019	एम्स में दन्त रोगियों के लिए अलग से शुरू हुई फार्मैसी	अमरउजाला
346.	16 November 2019	At AIIMS, Scan QR code to pledge your organs	The Indian Express
347.	16 November 2019	कैंसर संस्थान में 800 बेड की धर्मशाला	हिंदुस्तान
348.	20 November 2019	AIIMS trauma centre to get rooftop helipad after decade-long wait	Hindustan Times
349.	20 November 2019	बच्चों को विज्ञान की ओर लेजा रहा दिल्ली एम्स	अमरउजाला
350.	21 November 2019	एम्स हेलिपैडवाला पहला सरकारी हॉस्पिटल होगा	हिंदुस्तान
351.	21 November 2019	एम्स ट्रामा सेंटर की छत पर उतरेंगे हेलीकॉप्टर	नवभारत टाइम्स
352.	21 November 2019	कहें नमस्ते, तभी इलाज होंगे सस्ते	नवभारत टाइम्स
353.	23 November 2019	एम्स में मेडिकल शिक्षा व इलाज की शुल्क की हो रही समीक्षा	दैनिक जागरण
354.	26 November 2019	#DNA Fight Rape अपराध से लड़ेगा AIIMS ओर पुलिस का कैपेन	नवभारत टाइम्स
355.	25 November 2019	Focus on exercise crucial to manage heart disease: Study	Hindustan Times
356.	27 November 2019	AIIMS docs train to handle chopper emergencies	Hindustan Times
357.	27 November 2019	UCL and AIIMS strengthen clinical and healthcare engineering links	UCL Global
358.	28 November 2019	Control room to track availability of ICU beds in all central govt. hospitals	The Times of India
359.	29 November 2019	Help on 2 wheels in places where ambulance can't go	The Times of India
360.	30 November 2019	AIIMS–New Delhi, IISC Bangalore and others Bag India Research Excellence Awards announced by Clarivate Analytics	Indian Web2
361.	30 November 2019	देश में डॉक्टरों की कमी नहीं: हर्षवर्धन	दैनिकजागरण
362.	4 December 2019	Swedish queen stops by at dementia centre at AIIMS	The Times of India
363.	4 December 2019	Swedish Queen interacts with dementia patients at AIIMS	The Statesman
364.	4 December 2019	स्वीडन की रानी एम्स में डिमेंसिया से मिली	हिंदुस्तान

365.	4 December 2019	एम्स ने स्वीडन से किया करार	अमर उजाला
366.	4 December 2019	स्वीडन के साथ मिलकर सस्ते उपकरण तैयार करेगा एम्स	दैनिक जागरण
367.	4 December 2019	AIIMS, ICMR working on virtual autopsy technique: Govt. in Rajya Sabha	The Indian Express
368.	5 December 2019	एम्स में महिलाओं में बढ़ रही हृदय की बीमारी पर होगी चर्चा	दैनिक जागरण
369.	5 December 2019	हृदयरोगो पर सम्मेलन आज एम्स में	हिंदुस्तान
370.	5 December 2019	हृदयरोगो की नई तकनीक सिखने को जुटेंगे डॉक्टर	दैनिक भास्कर
371.	5 December 2019	एम्स में बाटी ट्राइसाइकिल	नवभारत टाइम्स
372.	6 December 2019	शरीर के कई अंगों को खराब कर सकती है कबूतर की बीट	अमर उजाला
373.	6 December 2019	बच्ची की मौत, पिता ने की बेटी की आँखों दान	जनसत्ता
374.	8 December 2019	Keep kids away from mosquito repellents	The Times of India
375.	11 December 2019	कहानी अंगदान से नई जिंदगी पाने वालों की	जनसत्ता
376.	12 December 2019	MOU Signing Ceremony between AIIMS and National Cheng Kung University (Taiwan)	Taiwan Republic of India
377.	13 December 2019	बायोप्सी में लगनेवाला वक्त और दर्द दोनों की होगी छुट्टी, ब्लड टेस्ट से हो जाएगी जाँच	नवभारत टाइम्स
378.	15 December 2019	रक्त परीक्षण बायोप्सी से मुक्ति दिलाएगा : एम्स	हिंदुस्तान
379.	22 December 2019	सेवा का सर्वश्रेष्ठ माध्यम है चिकित्सा: ओम बिरला	दैनिक जागरण
380.	23 December 2019	एम्स में राष्ट्रीय स्तर का आधुनिक वन स्टाप सेंटर बनेगा	हिंदुस्तान
381.	26 December 2019	एम्स में 570 कमरों वाला नया ओपीडी ब्लॉक अगले महीने से, बढ़ेंगे 725 बेड	नवभारत टाइम्स
382.	24 December 2019	One in every seven people suffers from mental disorder, finds study	The Times of India
383.	27 December 2019	कैंसर पीड़िता का इलाज करे एम्स	हिंदुस्तान
384.	27 December 2019	एम्स में अगले माह तैयार हो जायेगा सर्जिकल ब्लॉक	दैनिक जागरण
385.	27 December 2019	Breakthrough by AIIMS docs on Celiac Diseases	The Indian Express
386.	31 December 2019	AIIMS mobile service for those living within 5 km	The Indian Express
387.	31 December 2019	Docs report hike in lung, heart ailments	Hindustan Times
388.	31 December 2019	अब पांच किमी के दायरे में मिलेगी मोबाइल इमरजेंसी केयर की सुविधा	दैनिक जागरण
389.	31 December 2019	मरीजों के लिए अब 2 किमी ज्यादा दौड़ेगी बाइक एम्बुलेंस, ओर 25 लाख लाख लोगों को मिलेगा फायदा	नवभारत टाइम्स
390.	31 December 2019	हार्ट अटैक से बचाने के लिए बाइक एम्बुलेंस का बड़ा दायरे	अमर उजाला
391.	1 January 2020	एम्स के नाम दर्ज होगा सिर से जुड़े बच्चों को अलग करने का रिकॉर्ड	दैनिक जागरण
392.	1 January 2020	Going separate ways, happily	The Times of India

393.	1 January 2020	AIIMS के सर्जन को डी-लिट की उपाधि	नवभारत टाइम्स
394.	3 January 2020	Govt. appoints AIIMS Professor Suresh Chandra as NMC Chief	The Hindu
395.	3 January 2020	Govt appoints AIIMS Professor Suresh Chandra as NMC Chief	The Pioneer
396.	3 January 2020	AIIMS Prof. appointed chairman of NMC	Indian Express
397.	3 January 2020	डॉ शर्मा ने एम्स में कई सुविधाएं शुरू करने में अहम भूमिका निभाई	दैनिक जागरण
398.	3 January 2020	प्रो सुरेश चंद्र शर्मा राष्ट्रिय चिकित्सा आयोग के पहले अध्यक्ष नियुक्त	हिंदुस्तान
399.3	3 January 2020	एम्स के सुरेश चंद्र शर्मा एनएमसी के पहले अध्यक्ष बने	जनसत्ता
400.	5 January 2020	एम्स में ओपीडी के लिए कतार में नहीं लगाना पड़ेगा	हिंदुस्तान
401.	5 January 2020	एम्स लाइब्रेरी बनेगी दिव्यांग अनुकूल	दैनिक जागरण
402.	11 January 2020	3 डी तकनीक से प्रैक्टिस के बाद निकला तीर	अमर उजाला
403.	17 January 2020	मुँह की सफाई में लापरवाही बन सकती है दिल की बीमारी का कारन	हिंदुस्तान
404.	18 January 2020	इलाज के लिए आयुर्वेद का सहारा लेगा एम्स , कचनार का शरीर पर असर जानने को हो रही है स्टडी, असर दिखा तो होगा इलाज	दैनिक भास्कर
405.	24 January 2020	Ready to deal with Chinese virus: Hospitals	The Times of India
406.	24 January 2020	AIIMS launches 'I-trec' in Punjab	The Asian Age
407.	25 January 2020	Corona virus: Isolation wards	The Times of India
408.	25 January 2020	AIIMS to increase isolation ward's capacity if required for coronavirus: Director	ANI
409.	25 January 2020	AIIMS sets up isolation ward for treating nCoV cases	The Statesman
410.	25 January 2020	AIIMS authorities ready to use isolation wards for suspected cases for coronavirus	HT
411.	26 January 2020	कोरोना वायरस को लेकर एम्स ने कासी कमर	जनसत्ता
412.	26 January 2020	AIIMS library gets lift for disabled students after three decades	The Times of India
413.	27 January 2020	AIIMS offers city's 1st Lung transplant	The Times of India
414.	27 January 2020	AIIMS to initiate study to evaluate ill effect of biomass fuels on tribal's health in Jharkhand	The Pioneer
415.	31 January 2020	अर्थराइटिस के खिलाफ जागरूकता को एम्स की डॉ उमा कुमार को राष्ट्रीय सम्मान	दैनिक भास्कर
416.	2 February 2020	Coronavirus prevention: Dr. Randeep Guleria	DD News
417.	3 February 2020	Coronavirus a Mild Illness: AIIMS Director Dr. Randeep Guleria	NDTV
418.	4 February 2020	कैंसर से निबटने में सक्षम बन रहा , 'आयुष्मान' भारत	दैनिक जागरण
419.	4 February 2020	AIIMS plans to set up six drug de-addiction centres in Andhra Pradesh	The New Indian Express
420.	8 February 2020	कोरोना वायरस की जांच एम्स और NCDC में भी	नवभारत टाइम्स
421.	10 February	More facilities, less wait at new AIIMS OPD Block	The Times of

	2020		India
422.	10 February 2020	Eight-floor OPD block at AIIMS for six specialities, more depts to follow soon	The Indian Express
423.	10 February 2020	17.9 kg tumour removed from woman's uterus	Hindustan Times
424.	10 February 2020	मरीज़ो को राहत : एम्स की नया ओ पी डी ब्लॉक आज से शुरू	हिंदुस्तान
425.	10 February 2020	एम्स में आज शुरू होगा नया ओ पी डी ब्लॉक	दैनिक जागरण
426.	11 February 2020	एम्स की नई ओपीडी में मिलेगा सुविधाजनक इलाज	दैनिक जागरण
427.	11 February 2020	एम्स में शुरू हुई 6 विभागों की नई ओपीडी, 8 मंज़िल बिल्डिंग में 570 कमरे हैं, हर मंज़िल पर 500 लोगो के बैठने की व्यवस्था	दैनिक भास्कर
428.	11 February 2020	महिलाओ और दिव्यांगों के लिए अलग काउंटर	नवभारत टाइम्स
429.	11 February 2020	To unclog AIIMS, 6 dept shifted to new OPD block	Hindustan Times
430.	11 February 2020	New OPD set up at AIIMS	The Indian Express
431.	11 February 2020	एम्स ट्रामा सेंटर में बड़ी सुविधाएं	दैनिक जागरण
432.	13 February 2020	AIIMS help at doorstep saves heart-attack patient	The Times of India
433.	13 February 2020	देश में पहली बार मरीज़ को घर पर मिली क्लॉट बस्टर दवा	दैनिक जागरण
434.	13 February 2020	Heart attack patient gets help at home, courtesy AIIMS bike ambulance	Hindustan Times
435.	16 February 2020	एम्स ने किया शोध : सीलिएक से पीड़ित महिलाओ को बांझ बना रहा ग्लूटेन युक्त आटा, तलाक की भी नौबत	दैनिक भास्कर
436.	16 February 2020	Celiac diseases more common in North	The New Indian Express
437.	16 February 2020	एम्स में घटेगी सर्जरी के वेटिंग, मई में शुरू किया जायेगा सर्जिकल ब्लॉक	दैनिक जागरण
438.	16 February 2020	Celiac disease needs widespread awareness: AIIMS	Millennium Post
439.	16 February 2020	असामान्य था, अब सामान्य हो चला है सीलियक	नवोदय टाइम्स
440.	16 February 2020	सीलियक बीमारी को छिपाना महिलाओ को पढ़ रहा भारी	दैनिक जागरण
441.	16 February 2020	सीलियक: पेट की बीमारी से परेशां देश में 80 लाख लोग	पंजाब केसरी
442.	16 February 2020	AIIMS to sensitise people on incurable celiac	TSG Sunday Guardian Live
443.	18 February 2020	AIIMS introduces 3D printing technology for jaw joint replacements	The Statesman
444.	18 February 2020	AIIMS में 60 मरीज़ो को लगाया आर्टिफिसियल जबड़ा	नवोदय टाइम्स
445.	18 February 2020	कैंसर से लड़ने वाले बच्चो ने रंगारंग प्रोग्राम से मनमोहा	हिंदुस्तान
446.	19 February 2020	At AIIMS, organs of two brain dead save 7 lives in 48 hours	Hindustan Times
447.	19 February 2020	In a first, AIIMS offers short cancer treatment	The New Indian Express
448.	19 February 2020	Hearts of gold of two families save 7 lives	The Times of India
449.	19 February 2020	7 people get second life at AIIMS after organ donation	The Indian Express



450.	19 February 2020	दो लोगो के अंगदान से साथ लोगो को मिला नया जीवन	दैनिक जागरण
451.	19 February 2020	48 घंटो में साथ लोगो को मिला नया जीवन	अमर उजाला
452.	19 February 2020	Families donate organs of 2 brain dead patients	The Asian Age
453.	20 February 2020	एम्स: नई ओ पी डी से राहत, वेटिंग 20 % कम	अमर उजाला
454.	20 February 2020	... इधर, नई ओ पी डी से प्रतीक्षा समय कम हुआ	हिंदुस्तान
455.	21 February 2020	एम्स दुर्लभ बीमारी गोचर से पीड़ित आरजू का इलाज करेगा	हिंदुस्तान
456.	21 February 2020	रक्तदान के लिए अभियान चलाया	हिंदुस्तान
457.	21 February 2020	एम्स की मुख्य ओपीडी में कम हुए मरीज़	दैनिक जागरण
458.	21 February 2020	रक्त के लिए डॉक्टर हुए एक जुट, सोशल मीडिया पर अपील	अमर उजाला
459.	22 February 2020	AIIMS docs develop womb-removal method that lowers complications	Hindustan Times
460.	22 February 2020	एम्स में इमरजेंसी सुविधाओं का किया जायेगा विस्तार	दैनिक जागरण
461.	22 February 2020	एम्स के पुराने ओपीडी ब्लॉक में भी होगी इमरजेंसी सेवाएं	नवभारत टाइम्स
462.	22 February 2020	एम्स: ओपीडी में घट गए 5 लाख मरीज़, पहली बार 2 लाख सर्जरी	नवभारत टाइम्स
463.	22 February 2020	एम्स में चार साल में होगी पांच हज़ार बेड	दैनिक जागरण
464.	23 February 2020	एम्स में बिश्तरों की संख्या दो गुनी होगी	हिंदुस्तान
465.	24 February 2020	एम्स में 27 को रक्तदान शिविर, लोगो से बड़ी संख्या में शामिल होने की अपील	दैनिक भास्कर
466.	26 February 2020	एम्स में बर्न एव प्लास्टिक सर्जरी सेंटर जुलाई से शुरू	दैनिक जागरण
467.	27 February 2020	एम्स का डॉक्टर सीख रहा प्राकृतिक चिकित्सा	हिंदुस्तान
468.	28 February 2020	एम्स ने जुटाया तीन हज़ार यूनिट रक्त	दैनिक जागरण
469.	28 February 2020	CAPF's personnel donate blood at AIIMS camp, GTB Hospital	The Statesman
470.	28 February 2020	एम्स ने एक दिन में एकत्रित किया 3000 यूनिट रक्त	अमर उजाला
471.	29 February 2020	एम्स में ग्रीन पब्लिक स्वास्थ्य सम्मेलन आज से	दैनिक जागरण
472.	29 February 2020	25000 sapling to boost green cover in south Delhi	The Times of India
473.	29 February 2020	आम आदमी की सेहत के लिए पहला ' ग्रीन पब्लिक हेल्थ कांफ्रेंस '	UNI
474.	29 February 2020	AIIMS discovery: Pregnant women to be anaemia-free	Lokmat Times
475.	29 February 2020	कोरोना वायरस के संदिग्धों को लोगो के संपर्क में न आने की सलाह: एम्स	UNI
476.	29 February 2020	AIIMS में शुरू हुई इंडियन पब्लिक हेल्थ एसोसिएशन की 64 वी वार्षिक कांफ्रेंस	Zee News
477.	29 February 2020	AIIMS docs recommend FCM for upping haemoglobin in anaemic women	Drug Today
478.	29 February 2020	पब्लिक हेल्थ को मज़बूत करने के लिए एम्स में जुटेंगे 1500 विशेषज्ञे	पंजाब केसरी

479.	1 March 2020	दान में मिले दिल से AIIMS ने अब तक 1,000 मरीजों को दी नई जिंदगी	NDTV इंडिया
480.	1 March 2020	डॉक्टरों के सम्मेलन में पर्यावरण सुधर की पहल	जनसत्ता
481.	2 March 2020	डॉ उमा कुमार को राष्ट्रीय विज्ञान संचार पुरस्कार	हिंदुस्तान
482.	4 March 2020	CRPF personnel donate blood at AIIMS, New Delhi	Hindustan Times
483.	4 March 2020	AIIMS डायरेक्टर से जानिए कोरोना वायरस की ABC	CNBC Awaaz
484.	4 March 2020	“Don’t Panic, But stay Careful” by Dr. Randeep Guleria	Mail Today
485.	4 March 2020	एम्स में बढ़ रहा है बहरापन, 40 फीसद बुजुर्ग पीड़ित	दैनिक जागरण
486.	4 March 2020	Corona virus कितना है खतरनाक जानिए डॉ रणदीप गुलरिया	News Station
487.	4 March 2020	कोरोना पर AIIMS डायरेक्टर के सुझाव	TV9 Bharatvarsh
488.	4 March 2020	Coronavirus पर बोले AIIMS के डायरेक्टर- डरने की जरूरत नहीं, 97% लोग ठीक हो जाते हैं	Quint Hindi
489.	4 March 2020	AIIMS के डायरेक्टर से जानिए Coronavirus से कैसे बचें?	News 24
490.	5 March 2020	सच्चाई : 10 % संक्रमित ही होते है गंभीर बीमार: डॉ कारन मदन	हिंदुस्तान
491.	5 March 2020	Smartphones may make your headaches worse: AIIMS	The Outlook
492.	5 March 2020	Coronavirus पर AIIMS के Director की कुछ Tips	Zee News
493.	5 March 2020	Exclusive conversation with the AIIMS Director on the Deadly Coronavirus	Oneindia News
494.	5 March 2020	भारत Coronavirus की Vaccine बनाने में सक्षम: AIIMS निदेशक	NDTV India
495.	5 March 2020	Exclusive conversation with the AIIMS Director on the Deadly Coronavirus	Boldsky
496.	6 March 2020	IIHMR University at AIIMS Delhi IPHACON 2020	Careers 360
497.	6 March 2020	कोरोना से जंग को एम्स भी हुआ तैयार	दैनिक जागरण
498.	6 March 2020	Coronavirus क्या है और कैसे इससे बचे, जानिए AIIMS director Randeep Guleria के साथ तैयार	Hindustan News Daily
499.	6 March 2020	देशभर के उच्च शिक्षण संस्थानों में युवा ड्रग्स को कहेंगे बाय	दैनिक जागरण
500.	7 March 2020	AIIMS के डायरेक्टर Dr Randeep Guleria ने दिया Coronavirus से जुड़े हर सवाल का जवाब	ABP News
501.	7 March 2020	Coronavirus - Covid-19 II Myths & Facts by Dr. Randeep Guleria (Director, AIIMS, Delhi)	Kaiwaa Production
502.	7 March 2020	कोरोना के 83 % मरीजों में होता है खासी - बुखार: AIIMS	नवभारत टाइम्स
503.	7 March 2020	Coronavirus से जुड़े सवालों के जवाब	India Today Social
504.	7 March 2020	2 मीटर से ज्यादा दूर नहीं जाता कोरोना वायरस: डॉ गुलेरिया	अमर उजाला
505.	7 March 2020	AIIMS Director Randeep Guleria ... Corona Virus	TV10 India
506.	8 March 2020	52 labs for testing suspected cases made functional	Hindustan Times

507.	9 March 2020	AIIMS to be nodal centre for COVID-19 treatment in India	The Times of India
508.	9 March 2020	प्रतिरोधक क्षमता से ख़तम होता है कोरोना : डॉ रणदीप गुलेरिया	हिंदुस्तान
509.	9 March 2020	नई इमरजेंसी में बनेगा आइसोलेशन वार्ड	नवभारतटाइम्स
510.	9 March 2020	Govt tells AIIMS to set up more isolation beds	Mail Today
511.	9 March 2020	एम्स को भी आइसोलेशन वार्ड सुरु करने का निर्देश	दैनिक जागरण
512.	9 March 2020	एम्स निर्देशक डॉ गुलेरिया ने कहा, रोग प्रतिरोधक क्षमता ही विषाणु को खत्म कर देती है	जनसत्ता
513.	9 March 2020	घबराये नहीं , कोरोना वायरस के 80 फीसद मरीज़ नहीं होते गंभीर	दैनिक जागरण
514.	10 March 2020	Humidity in air generally helps virus to grow, says AIIMS chief	The Asian Age
515.	10 March 2020	कोरोना की दवाओं और वैक्सिन पर शोध करेगा एम्स के डॉक्टर	अमर उजाला
516.	10 March 2020	हुडदंग में घायलों के इलाज के लिए AIIMS ट्रामा सेंटर तैयार	नवभारत टाइम्स
517.	12 March 2020	Dr. Randeep Guleria Director AIIMS busts some Corona Virus related myths	Sleep for all
518.	13 March 2020	सुविधा: एम्स में ही हो जाएगी कोरोना की पुष्टि	हिंदुस्तान
519.	13 March 2020	Dr. Randeep Guleria (AIIMS) demonstrates how we should wash hands to keep coronavirus at bay	DD News
520.	14 March 2020	AIIMS Director Dr Randeep Guleria Speaks to Republic TV, Answers FAQs on Coronavirus	Republic TV
521.	14 March 2020	Corona के संक्रमण के खतरे और बचाव पर AIIMS के डायरेक्टर Dr. Randeep Guleria का 'मंत्र'!	Republic Bharat
522.	14 March 2020	Coronavirus AIIMS के Director Randeep Guleria ने कहा - बदलते मौसम में सर्दी, जुकाम आम बात  COVID 19	Dainik Jagran
523.	14 March 2020	Coronavirus से बचने के लिए AIIMS के डायरेक्टर Dr Randeep Guleria की Hindi में सलाह	Lokmat News
524.	14 March 2020	Coronavirus can't spread through dead bodies: AIIMS Director Randeep Guleria, शव से नहीं फैलता कोरोना	In Khabar
525.	14 March 2020	AIIMS Director Says No Proof of Any COVID-19 Preventive So Far	Go News India
526.	14 March 2020	एम्स की ओर से एन सी आई में 100 बेड का आइसोलेशन वार्ड ओर 25 बेड का आई सी यू किया गया तैयार	दैनिक जागरण
527.	15 March 2020	No Medicine for Coronavirus   Delhi AIIMS Director Randeep Guleria	ETV (Andhra Pradesh)
528.	15 March 2020	Should focus on self-quarantine, avoid crowded places: AIIMS Chief	The Indian Express
529.	15 March 2020	AIIMS Director Randeep Guleria Speaks on Coronavirus Outbreak	Kanak News Digital
530.	15 March 2020	डेड बॉडी से नहीं फैलता है कोरोना वायरस: AIIMS	नवभारत टाइम्स
531.	15 March 2020	AIIMS has 120-150 beds for coronavirus patients: Director	Hindustan Times
532.	15 March 2020	Social distancing best way to tackle COVID-19	The Statesman
533.	16 March 2020	7 depts to shift to new OPD block at AIIMS	The Indian Express

534.	16 March 2020	एम्स के नए ओ पी डीमें होगी अत्याधुनिक लैब	दैनिकजागरण
535.	16 March 2020	कोरोना के लिए एम्स ने जारी की 24 घंटे चलने वाली हेल्पलाइन	जनसत्ता
536.	16 March 2020	नए ब्लॉक में आठ ओर विभागों की ओपीडी शुरू	हिंदुस्तान
537.	16 March 2020	एम्स में रोजाना होगी 2 लाख सैंपल की जांच	अमर उजाला
538.	16 March 2020	Corona Virus: AIIMS के डॉक्टरों की नई मुहिम, वृद्धाश्रम में बुर्जुगों को दे रहें Corona की जानकारी	TV9 Bharatvarsh
539.	17 March 2020	क्या है coronavirus की Stage-3? AIIMS के director Randeep Guleria से जानें रोकथाम के उपाय	AajTak HD
540.	17 March 2020	AIIMS Director busts biggest coronavirus myths about non-veg food, hot weather	CVR News Telugu
541.	17 March 2020	AIIMS के डायरेक्टर बोले- खतरनाक स्टेज में न पहुंचे कोरोना, इसलिए वर्चुअल लॉकडाउन की जरूरत	Offbeat
542.	17 March 2020	AIIMS Director busts biggest coronavirus myths about non-veg food, hot weather	The Economic Times
543.	18 March 2020	Setting the stage for Panic	Mail Today
544.	19 March 2020	एम्स के निदेशक रणदीप गुलेरिया से जानिए क्या है #COVID 19	PIB India
545.	19 March 2020	मोदी ने की एम्स के डॉक्टर की प्रशंशा	हिंदुस्तान
546.	19 March 2020	पीएम ने रीट्वीट की एम्स के डॉक्टर की फोटो	दैनिक जागरण
547.	20 March 2020	COVID-19 concerns? AIIMS Director answers top 10 crucial questions	Hindustan Times
548.	20 March 2020	Dr Randeep Guleria Director AIIMS NEW DELHI, Speech on COVID-19 CORONA	Student's AIIMS New Delhi
549.	20 March 2020	Partners' Briefing on COVID-19 - WHO-SEARO	WHO
550.	20 March 2020	AIIMS Chief debunks nine Corona myths	Mail Today
551.	20 March 2020	AIIMS doctors make sanitizers to beat shortfall	The Times of India
552.	20 March 2020	एम्स में बनाया सेंटीज़र और फेसिअल शील्ड	नवभारत टाइम्स
553.	20 March 2020	Hospitals may pool resources for ICU needs	The Times of India
554.	20 March 2020	एम्स की अपील, रोज़ ओपीडी में न आए लोग	जनसत्ता
555.	21 March 2020	దేశంలో కరోనా వ్యాప్తిలో రెండో దశలోనో ఉందో- AIIMS Director Dr. Randeep Guleria Face to Face	NTV Telugu
556.	21 March 2020	Coronavirus testing protocol to go hand in hand with our healthcare capacity: AIIMS' Guleria	The Economic Times
557.	21 March 2020	Avoid Non-Essential Travel till Picture Becomes Clearer: AIIMS Director on Coronavirus	NDTV
558.	21 March 2020	AIIMS Director on Need for India To Go into Lockdown Mode to Tackle COVID-19 Outbreak	CNN-News 18
559.	21 March 2020	Call Centre at AIIMS for COVID-19	The Hindu
560.	21 March 2020	Corona Case: AIIMS launches comprehensive booklet	Bhaskar Live
561.	21 March	IIT, AIIMS invent sterilisation device to battle coronavirus outbreak	IANS

	2020		
562.	21 March 2020	Containment priority to tackle virus	The Statesman
563.	22 March 2020	Randeep Guleria Speaks to Arnab Goswami, says 'Preparing Ourselves in Case of a Large Outbreak'	Republic World
564.	23 March 2020	COVID facility in hospital run by AIIMS at Jhajjar	The Times of India
565.	23 March 2020	ICMR allots 800 Bedded AIIMS Jhajjar Exclusively for COVID-19 Patients	Medical Dialogues
566.	24 March 2020	AIIMS appeal to people of India to stay home and practice social distancing	The Economic Times
567.	25 March 2020	Exclusive: AIIMS Director Randeep Guleria Tells Ways to Fight Corona	News Nation
568.	26 March 2020	AIIMS plans to use prototype of ventilators for COVID-19 patients due to shortage	The Print
569.	26 March 2020	Coronavirus: AIIMS sets up task force to develop management protocol for COVID-19	NDTV
570.	27 March 2020	Coronavirus: IIT-Delhi develops infection-proof Fabric, partners with AIIMS	NDTV
571.	28 March 2020	AIIMS Delhi to provide tele-consultancy to registered patient from April	The Economic Times
572.	28 March 2020	AIIMS taps robots and telemedicine to cut contact risk	The Economic Times
573.	30 March 2020	AIIMS to convert Trauma Centre into COVID-19 hospital	The Economic Times
574.	30 March 2020	Coronavirus Outbreak: AIIMS Dr Prasun Chatterjee on elder care, best hygiene practices and boosting immune system	First Post
575.	30 March 2020	Dr. Harsh Vardhan launches National Teleconsultation Centre (CoNTeC) at AIIMS	Medical Dialogues
576.	30 March 2020	Indian doctors being evicted from homes over corona virus fears	The Guardian
577.	31 March 2020	AIIMS, Jhajjar to function as dedicated COVID-19 hospital	The Outlook

#### Press Releases

S.No.	Date	Topics	Department
1.	8 April 2019	NIRF under Ministry of Human Resources Development, GoI has ranked AIIMS, New Delhi as No-1 in survey on Indian Ranking 2019.	Health Bulletin
2.	9 April 2019	Media coverage on Bariatric Surgery Patient Support Group	Surgical Disciplines
3.	16 May 2019	Dengue	Medicine
4.	22 May 2019	Surgical Nutrition Updates - IAPEN Symposium Series	Physiology
5.	30 May 2019	World MS-Day	Neurology
6.	12 June 2019	Result of AIIMS –MBBS -2019 Entrance Exam	Health Bulletin
7.	12 July 2019	National Plastic Surgery Day	Plastic Surgery
8.	29 July 2019	DBT-AIIMS Leadership Dialogue	Health Bulletin
9.	29 July 2019	World Hepatitis Day	Gastroenterology & Human Nutrition
10.	6 August 2019	Unnao was shifted to AIIMS Trauma Centre from KGMC	Health Bulletin
11.	6 August 2019	Mr. Mahendra Singh was shifted to AIIMS Trauma Centre from KGMC	Health Bulletin
12.	7 August 2019	Unnao continue to be on advanced life system and continues to be critical condition	Health Bulletin
13.	9 August 2019	Clinical Ecotoxicology Facilities started at AIIMS, New Delhi	Anatomy
14.	14 August 2019	The Making of Close Doors Open Windows	Neurosurgery

15.	30 August 2019	First AIIMS Cadaveric Multiorgan & Tissue Retrieval Workshop	ORBO
16.	31 August 2019	CODFICON-2019	Dermatology & Venerology
17.	4 September 2019	34th Eye Donation Fortnight Celebration by National Eye Bank	Dr. R.P. Centre
18.	6 September 2019	Successful separation of Craniopagus twins at AIIMS	Health Bulletin
19.	6 September 2019	Strong Bones – Health & Safe Aging	Orthopaedics
20.	18 September 2019	Voluntary Contribution in CM Relief Fund	Health Bulletin
21.	1 October 2019	National Voluntary Blood Donation Day	Health Bulletin
22.	11 October 2019	World Arthritis Day	Rheumatology
23.	19 October 2019	7th Annual Neuroanaesthesia	Neuro-Anaesthesiology & Critical Care
24.	13 November 2019	Donor Felicitation Ceremony	ORBO
25.	14 November 2019	Brief regarding visit of Hon'ble HFW to Jhajjar Campus of AIIMS, New Delhi	Health Bulletin
26.	30 November 2019	Rheumatoid Arthritis	Transplant Immunology and Immunogenetics
27.	3 December 2019	Visit by Her Majesty Queen Silvia of Sweden	Health Bulletin
28.	22 January 2020	AIIMS New Delhi has Launched Quality improvement Project with Department of Health and Family Welfare Punjab	Health Bulletin
29.	1 February 2020	Small fire in a Lab. on the Ground Floor of C.N. Centre, AIIMS	Health Bulletin
30.	15 February 2020	Celiac Diseases	Gastroenterology & Human Nutrition
31.	17 February 2020	3D Technologies enabled patient specific Jaw-Joint replacement	CDER
32.	21 February 2020	National Conference of safe and sustainable Hospital 'SASH 2020' at AIIMS, New Delhi	Health Bulletin
33.	28 February 2020	IPHACON-2020, Centre for Community Medicine	Centre for Community Medicine
34.	3 March 2020	Hearing of Life	ENT
35.	15 March 2020	Second Phase of New OPD Block	Health Bulletin
36.	28 March 2020	COVID-19 National Teleconsultation Centre (CoNTeC)	Health Bulletin

#### Press Conference:

S.No.	Date	Topics	Department
1.	9 April 2019	Importance of physical activity after Bariatric Surgery	Surgery
2.	25 April 2019	Mission Delhi (Delhi Emergency Life Heart-Attack Initiative)	ICMR
3.	16 May 2019	Dengue	Medicine
4.	16 May 2019	Clinical Nutrition update Series: Surgical Nutrition	Physiology
5.	31 May 2019	Tobacco	Health Bulletin
6.	31 May 2019	Multiple Sclerosis: Invisible MS (Neglected Symptoms)	Neurology
7.	19 June 2019	International Yoga Day	Health Bulletin
8.	21 June 2019	5th International Yoga	Health Bulletin
9.	15 July 2019	National Plastic Surgery	Plastic Surgery
10.	29 July 2019	DBT-AIIMS Leadership Dialogue	Health Bulletin
11.	30 July 2019	Hepatitis in India	Gastroenterology & Human Nutrition
12.	14 August 2019	Book Release by Hon'ble Dr. Harsh Vardhan (MoH&FW) to the Making of Closed Doors Open Windows	Neurosurgery
13.	17 August 2019	Delhi Fire Services and AIIMS Fire Division, the fire at Teaching Block, no loss or damage to life.	Health Bulletin
14.	30 August 2019	First AIIMS Cadaveric Multi organ & Tissue Retrieval workshop	ORBO
15.	31 August 2019	CODFICON-2019	Dermatology & Venerology

16.	4 September 2019	34th Eye Donation Fortnight	Dr. R.P. Centre
17.	6 September 2019	Craniopagus twins from Odisha	Health Bulletin
18.	6 September 2019	Strong Bones–Healthy and Safe Ageing	Orthopaedics
19.	16 September 2019	Ecotoxicology Lab	Anatomy
20.	18 September 2019	Voluntary contribution in CM Relief Fund	Health Bulletin
21.	25 September 2019	Institute Day Celebration	Health Bulletin
22.	12 October 2019	National Voluntary Blood Donation Day	Health Bulletin
23.	11 October 2019	Arthritis	Rheumatology
24.	14 October 2019	Stroke	Neurology
25.	15 October 2019	Prevention & Treatment of Blindness of Eye Diseases	Dr. R.P. Centre
26.	16 October 2019	Obesity: Causes, Prevention and Management	Medicine
27.	19 October 2019	AIIMS Neuro-Anaesthesia Update	Neuro-Anaesthesia
28.	1 November 2019	Air Pollution	Health Bulletin
29.	2 November 2019	Air Pollution	Health Bulletin
30.	11 November 2019	International Society of Addiction Medicine (ISAM-2019)	Psychiatry & NDDTC
31.	13 November 2019	Donor Felicitation Ceremony	ORBO
32.	14 November 2019	NCI Jhajjar	Health Bulletin
33.	15 February 2020	Celiac Disease	Gastroenterology & Human Nutrition
34.	17 February 2020	CADAVER Course	CDER
35.	28 February 2020	IPHACON -2020	Centre for Community Medicine
36.	2 March 2020	Safe and Sustainable Hospital (SASH) 2020	Hospital Administration
37.	3 March 2020	Hearing for Life	ENT
38.	7 March 2020	Corona Virus	Pulmonary Medicine
39.	12 March 2020	Corona Virus	Pulmonary Medicine

#### Media Interactions:

S.No.	Date	Topic's / Story	Print/Electronic Media
1.	25 April 2019	India Today Best College issue–AIIMS	India Today Magazine
2.	29 April 2019	New research on Breast Cancer	Outlook Hindi
3.	30 April 2019	Best College	India Today Magazine
4.	3 May 2019	Mission Delhi	Outlook
5.	13 May 2019	The Best College in the Country	India Today
6.	21 May 2019	Your lifestyle and kidney diseases	News X
7.	13 June 2019	Vector Borne Diseases	All India Radio
8.	13 June 2019	Science Monitor/Science this week	RSTV / DD Science
9.	20 June 2019	National Doctor's Day	Employment News
10.	13 July 2019	Using latest equipments for high end operations as well as the robotic surgery	ANI
11.	13 August 2019	MBBS students from AIIMS in collaboration with IIT and TISS have developed an interesting broadcasting stethoscope	The Indian Express
12.	27 August 2019	Initial findings of Toxicology department's work on patient samples	Zee News
13.	29 August 2019	Mental health and Fitness	All India Radio
14.	11 September 2019	Lab of Ecotoxicology	NDTV India
15.	17 September 2019	Report o mental health series	BBC Hindi
16.	25 September 2019	Scrub typhus infections	Hindustan Times
17.	26 September 2019	Food allergies and trying to look at the challenges that people with different food allergies are facing in the current scenario	Financial Express
18.	27 September 2019	AIIMS research on Lupus	ETV Bharat
19.	27 September 2019	Jaw re-construction and transplant	ETV Bharat

20.	07 October 2019	Toxicology	Zee News
21.	27 November 2019	Contraceptive Pill	BBC
22.	9 December 2019	TB	The Print
23.	17 January 2020	Prostate Cancer	DD News
24.	18 January 2020	Kachnar plant's use in depression and diabetes cure	RSTV
25.	21 January 2020	Cancer Day	BBC
26.	3 February 2020	Coronavirus	RSTV / DD National
27.	3 February 2020	Various innovative measures taken by AIIMS and the road map you are looking out for the upcoming year.	The Economic Times
28.	5 February 2020	Coronavirus COVID-19	RSTV/ DD National
29.	6 February 2020	Novel Coronavirus	NDTV
30.	30 March 2020	AIIMS Coronavirus Screening Point	French TV
31.	31 March 2020	Coronavirus Outbreak	The Assam Tribune
32.	31 March 2020	COVID-19	The Indian Express

**Public Lectures:**

S.No.	Topic	Date	Department
1.	Dengue Fever	16 May 2019	Medicine
2.	Multiple Sclerosis: Invisible MS (Neglected Symptoms)	30 May 2019	Neurology
3.	Dealing with Addiction	26 June 2019	Psychiatry
4.	Hepatitis in India	30 July 2019	Gastroenterology & Human Nutrition
5.	STROKE	14 October 2019	Neurology
6.	Prevention and Treatment of Blinding Eye Diseases	15 October 2019	Dr. Rajendra Prasad Centre
7.	Obesity: Causes, Prevention and Management	16 October 2019	Medicine
8.	Celiac Disease	15 February 2020	Gastroenterology & Human Nutrition
9.	Hearing for Life	3 March 2020	ENT





## 12. Publications

### Journal Articles

1. Abbey P, Kandasamy D, Naranje P. Neonatal Jaundice. *Indian J Pediatr.* 2019; 86:830-41.
2. Abhyankar YS, Dev S, Sarun OS, Saxena A, Joshi R, Darbari H, Rath GK, et al. Buchsbaum J. Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. *Phys Med.* 2019;64:166-73.
3. Abhyankar YS, Harsh R, Badwe R, Rath GK, Laskar S, Faddegon B, et al. Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. *Physica Medica.*2019; 64:166-73.
4. Abraham RA, Agrawal PK, Ramakrishnan L. Effect of temperature and time delay in centrifugation on stability of select biomarkers of nutrition and non communicable diseases in blood samples. *Biochem Med.* 2019; 29:020708.
5. Acharya S, Mishra A, Paul D, Ansari AH, Azhar M, Kumar M, et al. Francisella novicida Cas9 interrogates genomic DNA with very high specificity and can be used for mammalian genome editing. *Proc Natl Acad Sci U S A.* 2019; 116:20959-68.
6. Agarwal A, Garg D, Goyal V, Pandit AK, Srivastava AK, Srivastava MP. Optic neuritis following anti-rabies vaccine. *Trop Doct.*2020;50:85-6.
7. Agarwal A, Jindal D, Ajay VS, Kondal D, Mandal S, Ghosh S,...Tondon N, et al. Association between socioeconomic position and cardiovascular disease risk factors in rural north India: The Solan Surveillance Study. *PLoS One.* 2019; 14:e0217834.
8. Agarwal D, Kumar A, Sundar D. Commentary: Medico legal aspects in ophthalmology in India. *Indian J Ophthalmol.* 2019; 67:1526-7.
9. Agarwal H, Gupta A, Choudhary N, Kumar S, Sagar S, Mishra B. Evaluation of Risk Factors for Enteric Fistula and Intra-abdominal Sepsis in Patients with Open Abdomen in Trauma—a Level 1 Trauma Centre Study. *Indian J Surg.* 2019; 24:1-5.
10. Agarwal H, Kumar A, Gupta A, Kumar S, Sagar S, Mishra B. Complex Liver Injury—a Quagmire to a Trauma Surgeon. *Indian J Surg.* 2019;81:599-601.
11. Agarwal M, Garg SK, Asokan K, Kumar P. Properties optimization of temperature dependence of nanophosphor KCl:Sm<sup>3+</sup> for radiation dosimetry. *J Alloys Compound.* 2020; 823:153740.
12. Agarwal N, Chandrappa H, Varshney G, Borkar SA. TO THE EDITOR. Comment on Functional Outcome of Elderly Patients Treated for Odontoid Fracture: A Multicenter Study. *Spine (Phila Pa 1976).*2019;44:951-8.
13. Agarwal N, Raheja A. Bobblehead-Doll Syndrome. *N Engl J Med.* 2019; 380:e5.
14. Agarwal R, Bhardwaj M, Chetan C, Sharma N. Optic shrinkage and retraction in opacified hydrophilic acrylic intraocular lens: an anterior segment optical CT-based observation. *BMJ Case Rep.* 2019; 12:e231545.
15. Agarwal R, Dhooria S, Sehgal IS, Aggarwal AN, Madan K, Mohan A. Transbronchial Lung Cryobiopsy in Diffuse Interstitial Lung Diseases...Bent but Not Broken. *AmJ RespirCrit Care Med.* 2019;200:940-1.
16. Agarwal R, Gagrani M, Mahajan A, Sharma N. Fulminant Sphingomonas paucimobilis keratitis: case study and review of literature. *BMJ Case Rep.* 2019; 12:e231642.
17. Agarwal R, Nongrem G, Maharana PK, Sharma N. Unilateral acute hydrops in a child with bilateral microcornea and iridofundal coloboma. *Indian J Ophthalmol.* 2019; 67:1351-3.
18. Agarwal R, Tripathi M, Patil A, Sharma N. Rare atypical presentation of phacolytic glaucoma as non-resolving microbial keratitis with endophthalmitis. *BMJ Case Rep.* 2019; 12:e231616.
19. Agarwal S, Hoda W, Mittal S, Madan K, Hadda V, Mohan A, et al. Anesthesia and anesthesiologist concerns for bronchial thermoplasty. *Saudi J Anaesth.* 2019;13:78-80.
20. Agarwal S, Kakkar A, Damle NA, Kumar C, Sarangi J, Subudhi K, et al. SMARCB1 (INI1)-deficient thyroid carcinoma: A novel entity expanding the spectrum of tumors with INI1 loss. *Pathol Res Pract.* 2020; 216:1528
21. Agarwal S, Kakkar A, Damle NA, Kumar C, Sarangi J, Subudhi K, Jain D, Sharma MC. SMARCB1 (INI1)-deficient thyroid carcinoma: A novel entity expanding the spectrum of tumors with INI1 loss. *Pathol Res Pract.* 2020 Apr;216(4):152830.
22. Agarwal S, Thakar A. Paediatric Audiology: Jane R. Madell, Carol Flexer, Jace Wolfe, Erin C. Schafer (eds). *Indian J Paediatr.* 2019; 86:869-70.

23. Agarwal SK. From editor's desk. *Semin Dial.* 2020;33:3.
24. Agarwal SK. Healthcare in India and violence against doctors: The missing links. *Indian J Nephrol.* 2019;29:221-31.
25. Agarwal, H., Gupta, A., Choudhary, N\*. et al. Evaluation of Risk Factors for Enteric Fistula and Intra-abdominal Sepsis in Patients with Open Abdomen in Trauma—a Level 1 Trauma Centre Study. *Indian J Surg.* (2019). <https://doi.org/10.1007/s12262-019-01934-z>
26. Aggarwal A, Goyal A, Kandasamy D. Lipoblastoma – A Rare Benign Immature Adipocytic Neoplasm. *Indian J Musculoskelet Radiol.* 2019; 1:124-6.
27. Aggarwal A, Praneeth K, Kumar A, Jindal N, Malhotra P, et al. Acute Myelopathy as the first manifestation in a hitherto undiagnosed case of Chronic Myeloid Leukemia. *Indian J Hematol Blood Transfus.* 2019;35:373.
28. Aggarwal H, Kumar A, Gupta A, Kumar S, Sagar S, Mishra B. Complex Liver Injury- a Quagmire to a trauma surgeon. *Indian J Surg.* 2019; 81:599-601.
29. Aggarwal H, Kumar A. Acceleration and Deceleration injury. *Indian J Surg.* 2020; 82:108-9.
30. Aggarwal K, Kumar, Bhardwaj N, Jat B, Kumar R. Isolated Laryngeal Leishmaniasis: A Diagnostic Dilemma. *Indian J Otolaryngol Head Neck Surg.* 2019; 71(Suppl 1):872-5.
31. Aggarwal R, Banerjee A, Soni KD, Kumar A, Trikha A. Clinical characteristics and management of patients with fat embolism syndrome in level I Apex Trauma Centre. *Chin J Traumatol.* 2019; 22:172-6.
32. Aggarwal R, Goyal V, Pandey RM, Kumar N, Singh S, Shukla G. Development and Validation of Quality of Life in Parkinson's Disease Instrument. *Ann Indian Acad Neurol.* 2020; 23:59-71.
33. Aggarwal R, Soni KD, Goyal K, Singh GP, Sokhal N, Trikha A. Does Real Time Ultrasonography Confer Any Benefit During Bronchoscopy Guided Percutaneous Tracheostomy: A Preliminary, Randomized Controlled Trial. *Indian J Crit Care Med.* 2019; 23:236-8.
34. Aggarwal S, Vanathi M, Gupta V, Tandon R. Our experience with rose k2 contact lens for visual rehabilitation in keratoconic corneas following collagen crosslinking. *Contact Lens and Anterior Eye.* 2019; 42(Suppl 1):E25.
35. Agnihotri V, Gupta A, Kumar L, Dey S. Serum sHLA-G: Significant diagnostic biomarker with respect to therapy and immunosuppressive mediators in Head and Neck Squamous Cell Carcinoma. *Sci Rep.* 2020; 10:3806.
36. Agrawal A, Mahey R, Kachhawa G, Khadgawat R, Vanamail P, Kriplani A. Comparison of metformin plus myoinositol vs metformin alone in PCOS women undergoing ovulation induction cycles: randomized controlled trial. *Gynecol Endocrinol.* 2019; 35:511-4.
37. Agrawal D, Garg K. Microscissor DREZotomy - A New Way for 'Atraumatic Lesioning' of DREZ. *Neurol India.* 2019;67:1320-1322.
38. Agrawal D. Cerebrospinal fluid studies in Chiari I malformation: Do we go with the flow? *Neurol India.* 2019;67:664.
39. Agrawal D. Indian Journal of Neurotrauma-A New Inning. *Indian J Neurotrauma.* 2019; 16:01.
40. Agrawal D. Pen Is Mightier than the Sword: Columbia Shows the Way in Formulating Neurotrauma Guidelines. *J Neurosci Rural Pract.* 2020;11:1.
41. Agrawal D. Trauma Systems and Services in India. *Indian J Neurotrauma.* 2019; 16:075.
42. Agrawal K, Garg R, Bhatnagar S. Knowledge and Awareness of End-of-life Care among Doctors Working in Intensive Care Units at a Tertiary Care Center: A Questionnaire-based Study. *Indian J Crit Care Med.* 2019;23:568-73.
43. Agrawal M, Borkar SA, Kale SS. Phenytoin Toxicity Manifesting as Acute Psychosis: An Uncommon Side Effect of a Common Drug. *Asian J Neurosurg.* 2019;14:532-4.
44. Agrawal M, Borkar SA, Mahapatra AK. Somsak's procedure: A review. *J Peripher Nerv Surg.* 2020;01:1-5.
45. Agrawal M, Borkar SA. Multiple Bilateral Spinal Neurofibromas in an Adult with Nonfamilial NF1. *Neurol India.* 2020;68:236-7.
46. Agrawal M, Dharanipathy S, Nakra T, Garg K, Gurjar H, Mishra S et al. Supratentorial Neurenteric Cyst: A Rare Differential for a Frontal Cyst. *World Neurosurg.* 2019;129:140-142.
47. Agrawal M, Phalak M, Panda S, Kale SS. Spontaneous resolution of brain abscess by rupture into middle ear. *Asian J Neurosurgery.* 2019;14:1011.
48. Agrawal M, Singh PK. In Reply to Letter to the Editor Regarding "Proposal of a New Safety Margin for Placement of C2 Pedicle Screws on Computed Tomography Angiography". *World Neurosurg.* 2020 Mar; 135:410.
49. Agrawal S, Gautam H, Choudhary AH, Das BK, Kumar L, Kapil A. Central Line-Associated Blood stream Infections in Cancer Patients: An experience from a tertiary care cancer centre. *Ind J Med Microbiol.* 2019; 37:376-80.
50. Agrawal S, Goyal A, Agarwal S, Khadgawat R. Hypercalcemia, adrenal insufficiency and bilateral adrenal histoplasmosis in a middle-aged male: a diagnostic dilemma. *BMJ Case Rep.* 2019; 12: e231142.

51. Agrawal S, Jena S, Panda S, Sharma S, Dhawan B, Nath G, et al. Antibiotic Susceptibility, Virulence, Pattern, and Typing of Staphylococcus aureus Strains Isolated from Variety of Infections in India. *Front Microbiol.* 2019; 10:2763.
52. Agrawal SK, Das P, Shalimar, Swatantra G, Chaudhry R. Multifocal hepatic abscesses in immunocompetent patient due to Bartonella henselae: Case report with review of literature. *Indian J Med Microbiol.* 2019; 37:292-5.
53. Agrawal SK, Gautam H, Choudhary AH, Das BK, Kumar L, Kapil A. Central Line-Associated Bloodstream Infections in Cancer Patients: An experience from a tertiary care cancer centre. *Ind J Med Microbiol.* 2019; 37:376-80.
54. Agrawal SK, Rawre J, Khanna N, Dhawan B. Increase in Chlamydia trachomatis Genital and ExtraGenital Infections in Indian Males. *Indian J Med Microbiol.* 2019; 37:285-6.
55. Ahlawat R, Garg N, Singh S, Lathwal A. The economically viable salary for fresher medical graduate in the public sector of contemporary India. *Glob J Med Res.* 2019; 19:65-9.
56. Ahmad J, Khubaib M, Kumar S, Srinivasan A, Hasnain SE, Ehtesham NZ, et al. Disorder-to-Order Transition in PE-PPE Proteins of Mycobacterium tuberculosis augments the pro-Pathogen Immune Response. *FEBS Open Bio.* 2020; 10:70-85.
57. Ahmed AS, Arava S, Ramakrishnan S. Mass protruding out from pulmonary vein to left atrium. *Postgrad Med J.* 2020; 96:300.
58. Ahmed AS, Ghatai N, Sharma G, Malhi AS. Supreme dominance of right coronary artery in a patient with typical angina. *BMJ Case Rep.* 2019; 12:e230278
59. Ahmed NH, Satpathy G. Role of Molecular Methods in Diagnosing Ocular Microbial Infections. *RPC Newsletter.* 2019; 1:12-4.
60. Ahuja D, Bharati SJ, Gupta N, Kumar V, Bhatnagar S. Scrambler therapy: A ray of hope for refractory chemotherapy-induced peripheral neuropathy. *Indian J Cancer.* 2020;57:93-7.
61. Ahuja D, Jain K, Vig S, Bharati SJ. Unusual Complication After TTE: a Simple Management. *Indian J Surg Oncol.* 2019; 10:437-8.
62. Aifah A, Iwelunmor J, Akwanalo C, Allison J, Amberbir A, Asante KP, ...Sharma H, et al. The Kathmandu Declaration on Global CVD/Hypertension Research and Implementation Science: A Framework to Advance Implementation Research for Cardiovascular and Other Noncommunicable Diseases in Low- and Middle-Income Countries. *Glob Heart.* 2019; 14:103-7.
63. Akhtar N, Mallick HN. Recommendations for a national sleep policy in India. *Natl Med J India.* 2019; 32:59-60.
64. Albert V, Subramanian A, Pati HP, Agrawal D, Bhoi SK. Efficacy of Thromboelastography (TEG) in Predicting Acute Trauma-Induced Coagulopathy (ATIC) in Isolated Severe Traumatic Brain Injury (iSTBI). *Indian J Hematol Blood Transfus.* 2019;35:325-31.
65. Alka Y, Balbir K, Rajesh M, Naveen Y. Comparison of two video laryngoscopes: guide channel and optical laryngoscopes in patients undergoing tracheal intubation with cervical spine pathology prospective, randomized, comparative study. *J Clin Res Pain Anaesthesia.*2019; 1:180014.
66. Alladi S, Arshad F. Towards Improving Prediction of Progression to Dementia: Emerging Evidence for Role F-18 FDG PET in Developing Countries. *Neurol India.* 2019; 1318-9.
67. Amar, Bhayana A, Kumawat D, Kumar V, Chandra M, Chandra P, et al. Interocular asymmetry in choroidal thickness in healthy Indian population using swept-source optical coherence tomography. *Indian J Ophthalmol.* 2019; 67:1252-3.
68. Ambekar A, Mishra AK, Parmar A, Kumar R, Kumar M, Rao R, et al. Are non-injecting opioid users at risk of transition to injecting drug use? A multi-site study from India. *Asian J Psychiatr.* 2019; 42:79-84.
69. Ambekar A, Rao V, Pai SA, Bindhu MR, Midha D, Kaushal S, et al. Grossing and reporting of testicular tumor specimens: An evidence-based approach. *Indian J Cancer.* 2020; 57:7-12.
70. Ambereen A, Lal B, Agarwal B, Yadav R, Roychoudhury A. Sandwich technique for the surgical management of oral submucous fibrosis. *Brit J Oral Maxillofac Surg.* 2019; 57:944-5.
71. Amitkumar M, Singh PK, Singh KJ, Khumukcham T, Sawarkar DP, Chandra SP, et al. Surgical Outcome in Spinal Operation in Patients Aged 70 Years and Above. *Neurol India.* 2020;68:45-51.
72. Anand RK, Maitra S, Ray BR, Baidya DK, Khanna P, Roy Chowdhury S, et al. Comparison of ultrasound guided vs conventional palpatory method of dorsalis pedis artery cannulation: A randomized controlled trial. *Saudi J Anaesth.* 2019; 13:295-8.
73. Anand S, Jain V, Agarwala S, Priyadarshi M, Sankar MJ. Skim Milk Preparation for the Management of Chylothorax Developing after Congenital Diaphragmatic Hernia Repair. *J Indian Assoc Pediatr Surg.* 2019; 24:153-4.
74. Anand S, Jain V, Agarwala S, Sachdeva S, Kothari SS. Thoracoscopic Left Cardiac Sympathetic Denervation in a Child with Refractory Long QT Syndrome. *J Indian Assoc Pediatr Surg.* 2019; 24:297-9.

75. Anand S, Jain V, Kandasamy D, Agarwala S. Traumatic perforation of a juxtapancreatic enteric duplication cyst: a paediatric emergency. *BMJ Case Rep.* 2019; 12:e227984.
76. Anand S, Shivashankar R, Kondal D, Garg V, Khandelwal S, Gupta R, et al. Potassium intake in India: Opportunity for mitigating risks of high-sodium diets. *Am J Prev Med.* 2020; 58:302-12.
77. Anand V, Chakrabarty B. Fosphenytoin in status epilepticus: The ice needs to be broken. *Indian Pediatr.* 2020; 57:209-10.
78. Anand V, Jauhari P. Autism, Epilepsy and Intellectual Disability: A Clinical Conundrum. *Indian J Pediatr.* 2019; 86:877-8.
79. Anand V, Khandelwal M, Appunni S, Gupta N, Seth A, Singh P, et al. CD44 splice variant (CD44v3) promotes progression of urothelial carcinoma of bladder through Akt/ERK/STAT3 pathways: novel therapeutic approach. *J Cancer Res Clin Oncol.* 2019; 145:2649-61.
80. Anderson AJ, Chaurasia AK, Sharma A, Gupta A, Gupta S, Khanna A, et al. Comparison of Rates of Fast and Catastrophic Visual Field Loss in Three Glaucoma Subtypes. *Invest Ophthalmol Vis Sci.* 2019; 60:161-7.
81. Andrabi M, Andrabi MM, Kunjunni R, Sriwastva MK, Bose S, Sagar R, et al. Lithium acts to modulate abnormalities at behavioral, cellular and molecular levels in sleep deprivation, induced mania, like behavior. *Bipolar Disord.* 2019; 00:1–15.
82. Angmo D, Shakarwal J, Gupta B, Sihota R, Dada T. Comparative Evaluation of Phacoemulsification Alone versus Phacoemulsification with Goniosynechialysis in Primary Angle-Closure Glaucoma. *Ophthalmol Glaucoma.* 2019; 2:346-56.
83. Angmo D, Singh R, Chaurasia S, Yadav S, Dada T. Evaluation of anterior segment parameters with two anterior segment optical coherence tomography systems: Visante and, in primary angle closure disease. *Indian J Ophthalmol.* 2019; 67:500-4.
84. Anjali VR, Pandey R, Srivastava A, Rajeshwari M, Pandey D, Sharma MC. Sequential EGFR mutation and ALK rearrangement in adenocarcinoma lung, with rare metastasis to bilateral breast, ovary and endometrium. *Respir Med Case Rep.* 2019; 28:100954.
85. Anjali VR, Srivastava A, Kakkar A, Mallick S. Extremely Aggressive Behavior of a Completely Resected Case of Gallbladder Undifferentiated Carcinoma, Giant Cell Type: A Rare Case with Breast, Neck Nodes, and Subcutaneous Scalp Nodules Metastasis. *J Gastrointest Cancer.* 2020; 51:325-8.
86. Anjum S, Temkar S, Chawla R, Garg G. Occurrence of Hemi-Central Retinal Artery Occlusion Following Embolization in a Case of Recurrent Juvenile Nasopharyngeal Angiofibroma. *Ophthalmic Surg Lasers Imaging Retina.* 2019; 50:385-7.
87. Ansari MA, Badrealam KF, Alam A, Tufail S, Khalique G, Equbal MJ, et al. Recent nano-based therapeutic intervention of bioactive sesquiterpenes: Prospects in cancer therapeutics. *CurrPharmaceut Design.* 2020; 26:1138-44.
88. Ansari S, Kumari S. Competency Based Medical Education and its Application in Biochemistry. *Int J Healthc Educ Med Inform.* 2019; 6:7-9.
89. Anthwal D, Lavania S, Gupta RK, Verma A, Myneedu VP, Sharma PP, et al. Development and evaluation of novel bio-safe filter paper-based kits for sputum microscopy and transport to directly detect Mycobacterium tuberculosis and associated drug resistance. *PLoS One.* 14:e0220967.
90. Anupa G, Sharma JB, Roy KK, Sengupta J, Ghosh D. An assessment of the multifactorial profile of steroid-metabolizing enzymes and steroid receptors in the eutopic endometrium during moderate to severe ovarian endometriosis. *ReprodBiol Endocrinol.* 2019;17:111.
91. Anuragi RP, Lakshmy R, Bhardwaj DN, Bharti DR, Sikary AK, Behera C. Association of lipid profile with completed suicides: A hospital-based case-control study. *Asian J Psychiatr.* 2019; 46:19-20.
92. Appunni S, Anand V, Khandelwal M, Gupta N, Rubens M, Sharma A. Small Leucine Rich Proteoglycans (decorin, biglycan and lumican) in cancer. *Clin Chim Acta.* 2019; 491:1-7.
93. Arava S, Nath D, Palleti R, Ray R. Cellular cardiac myxoma: New histopathological subtype? *Indian J Pathol Microbiol.* 2020; 63:144-5.
94. Arava S, Nath D, Palleti R, Ray R. Cellular cardiac myxoma: New histopathological subtype?. *Indian J Pathol Microbiol.* 2020; 63:144-5.
95. Arif N, Khullar S, Kumar R, Choudhary SK, Kapil A, Dhawan B. Pleural effusion due to Chryseobacterium indologenes: Case report and review of literature. *J Lab Physicians.* 2019; 11:284-6.
96. Arora A, Khadtale D, Agarwal B, Yadav R, Bhutia O, Roychoudhury A. Radiographical and histological evaluation of bioactive synthetic bone graft putty in sinus floor augmentation: A pre- and post-intervention study. *Natl J Maxillofac Surg.* 2019; 10:13-9.
97. Arora C, Malhotra A, Ranjan P, Vikram NK, Shalimar, Singh N, et al. Lifestyle Intervention Framework for Obese

- Patients with Non-alcoholic Fatty Liver Disease - a Tool for Health Professionals in Resource Constraint Settings. *Cureus*. 2019; 11:e5999.
98. Arora P, Sangwan SK, Gupta R, Mochan S, Gupta SK, Saxena S, et al. Association of Vascular Endothelial Growth Factor and Soluble fms-Like Tyrosine Kinase1 Polymorphisms with Their Circulating Protein Levels in Preeclampsia. *J Anat Soc India*. 2019; 68:215-20.
  99. Arora S, Damle NA, Meel R, Lata K, Tandon N, Sharma S et al. Graves' Ophthalmopathy on 68Ga-DOTANOC Positron Emission Tomography/Computed Tomography. *Indian J Nucl Med*. 2019; 34:338-40.
  100. Arora S, Damle NA, Meel R, Sharma S, Sen S, Bal C, et al. Orbital IgG4 Disease: Imaging Findings on 68Ga-DOTANOC PET/CT. *Nucl Med Mol Imaging*. 2019; 53:432-5.
  101. Arora S, Damle NA, Passah A, Ray A, Soneja M, Banerjee S, et al. Scar arcoidosis on (18)F-FDG PET/CT. *Asia Ocean J Nucl Med Biol*. 2019; 7:185-7.
  102. Arora S, Damle NA, Passah A, Sharma R, Goyal H, Arunraj ST, et al. Tracer Accumulation in Relation to Venous Thrombus on 18F-DOPA PET/CT in a Case of Persistent Hyperinsulinemic Hypoglycemia of Infancy. *Nucl Med Mol Imaging*. 2019; 53:148-51.
  103. Arora S, Gupta S. Monitoring Tobacco Use and Prevention Policies: Perspective of WHO Report on the Global Tobacco Epidemic, 2017. *J Nurs Sci Pract*. 2019; 9:39-45.
  104. Arora S, Kumar R, Passah A, Tripathi M, Agarwala S, Khadgawat R, et al. Prospective evaluation of 68Ga-DOTANOC positron emission tomography/computed tomography and 131I-meta-iodobenzylguanidine single-photon emission computed tomography/computed tomography in extra-adrenal paragangliomas, including uncommon primary sites and to define their diagnostic roles in current scenario. *Nucl Med Commun*. 2019; 40:1230-42.
  105. Arora S, Madan K, Mohan A, Kalaivani M, Guleria R. Serum inflammatory markers and nutritional status in patients with stable chronic obstructive pulmonary disease. *Lung India*. 2019; 36:393-8.
  106. Arora S, Padma MV, Singh MB, Goyal V, Häberle J, Gupta N, et al. Adult onset type II citrullinemia--a great masquerader. *QJM*. 2020;113:49-51.
  107. Arora S, Passah A, Nalli H, Goyal H, Tripathi M, Shamim SA, et al. Posterior Reversible Encephalopathy Syndrome: Pattern on 18F-Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography Correlated with Magnetic Resonance Imaging in Pediatric Hypertensive Encephalopathy. *Indian J Nucl Med*. 2020; 35:72-3.
  108. Arvind B, Medigeshi GR, Kapil A, Xess I, Singh U, Lodha R, et al. Aetiological agents for pulmonary exacerbations in children with cystic fibrosis: An observational study from a tertiary care centre in northern India. *Indian J Med Res*. 2020; 151:65-70.
  109. Arya DS, Chowdhury S, Chawla R, Das AK, Ganie MA, Kumar KMP, et al. Clinical Benefits of Fixed Dose Combinations Translated to Improved Patient Compliance. *J Assoc Physicians India* 2019; 67:58-64.
  110. Arya K, Kumar RR. District Rehabilitation Centres in the state of Punjab: Efficacy and Neglected Concerns of Female Drug Users. *Mahila Pratistha*. 2019;4:217-34.
  111. Arya S, Nanda S, Duggal R, Bhatia R. Orthodontic pain induced sensitization of trigeminonociceptive system. *Biosci Biotechnol Res Commun*. 2019; 12:992-8.
  112. Ashwath KG, Aggarwal A, Praneeth K, Singla N, Gupta K. Neutrophil-to-Lymphocyte Ratio: Can It Be Used as an Adjunct Tool to Predict Histopathological Grade of Brain Tumor? *J Neurosci Rural Pract*. 2019; 10:648-52.
  113. Asif MI, Nayak S, Pujari A, Sharma N, Agarwal T. Double arcus cornealis. *Indian J Ophthalmol*. 2019; 67:1723.
  114. Association of Child Neurology (AOCN)-Indian Epilepsy Society (IES) SOLACE Expert Group. Association of Child Neurology-Indian Epilepsy Society Consensus Document on Parental Counseling of Children with Epilepsy. *Indian J Pediatr*. 2019;86:608-16.
  115. Asthana S, Bhatia S, Dhoundiyal R, Labani SP, Garg R, Bhatnagar S. Quality of life and needs of the Indian advanced cancer patients receiving palliative care. *Cancer Res Stat Treat*. 2019;2:138-44.
  116. Avinash T, Harish N, Arunav K, Raj A, Tripathi M, Bal C. Oral administration of F-18 FDG as a possible and acceptable alternative route in patients with difficult intravenous access. *Indian J Nucl Med*. 2019; 34:176-7.
  117. Ayub A, Talawar P, Gupta S, Kumar R, Alam A. Erector spinae plane block: A safe, simple and effective alternative for knee surgery. *Anaesth Intensive Care*. 2019; 47:469-71.
  118. Ayyalusamy A, Vellaiyan S, Subramanian S, Ilamurugu A, Satpathy S, Naumanet M, et al. Auto-segmentation of head and neck organs at risk in radiotherapy and its dependence on anatomic similarity. *Radiat Oncol J*. 2019; 37:134-42.
  119. Azam Z, Pandey V, Gupta N, Sapra L, Dar HY, Shokeen N, et al. Phytoconstituents as novel osteo-protective agents: Implications in bone health. *Front Biosci (Landmark Ed)*. 2020; 25:1259-96.
  120. Baa AK, Naik RD, Vanidassane I, Arora S, Shamim SA, Mallick S, et al. Unusual Gastric Metastasis in Triple-Negative (Estrogen Receptor/Progesterone Receptor /HER2neu Negative) GATA-Binding Protein 3-Positive Breast Cancer. *Indian J Nucl Med*. 2020; 35:82-3.

121. Babu B, John K, Manickam P, Kishore J, Singh R, Mangal D, et al. Development and implementation of integrated road traffic injuries surveillance – India (IRIS-India): A protocol. *Adv J Emerg Med.*2020; 4:e35.
122. Babu BV, Sharma Y, Kusuma YS, Muthusami S, Lal D, Marimuthu P, et al. Patient experiences and health system responsiveness among internal migrants: a nationwide study in 13 Indian cities. *J Healthc Qual Res.* 2019; 34:167-75.
123. Babu BV, Viswanathan K, Ramesh A, Gupta A, Tiwari S, Palatty B, et al. An Interventional Study on Comprehensive Emergency Care and Trauma Registry for Road Traffic Injuries in India: A Protocol. *Adv J Emerg Med.* 2019;3:e50.
124. Babu G, Prabhaskar K, Chaturvedi P, Kuriakose M, Birur P, Anand AK, ...Rath GK, et al. Indian clinical practice consensus guidelines for the management of hypopharyngeal cancer. *Indian J Cancer.* 2020; 57(Suppl):S16-8.
125. Baby A, Kesav P, Kumar P, Madhusudhan KS. Computed tomography guided percutaneous nephrostomy in an obstructed pelvic pancake kidney: A report of a novel transiliopsoas approach. *BMJ Case Rep CP.* 2019; 12:e232665.
126. Baby B, Singh R, Singh R, Suri A, Arora C, Kumar S, et al. A Review of Physical Simulators for Neuroendoscopy Skills Training. *World Neurosurg.* 2020;137:398-407.
127. Bagaria D, Agarwal H, Ghoshal S. Patchy Necrosis of Small Bowel. *Indian J Surg.* 2019; 5:1-2.
128. Bagaria D, Banerjee N, Kumar V, Agarwal H. Effective use of Bedsheet as Pelvic binder in Resource Constraint Situations. *Int J Sci Res.* 2019;8:44-5.
129. Bagchi S, Behera V, Agarwal SK. ACTH (corticotrophin) therapy in resistant primary membranous nephropathy. *Kidney Int.* 2019;96:250-1.
130. Bagga A, Khandelwal P, Mishra K, Thergaonkar R, Vasudevan A, Sharma J, et al; Indian Society of Pediatric Nephrology. Hemolytic uremic syndrome in a developing country: Consensus guidelines. *Pediatr Nephrol.* 2019; 34:1465-82.
131. Bagga B, Das CJ. Multiple splenic artery aneurysms in non-cirrhotic hepatic fibrosis. *BMJ Case Rep.* 2019; 12:e228705.
132. Bagga B, Kumar A, Chahal A, Gamanagatti S, Kumar S. Traumatic Airway Injuries: Role of Imaging. *Curr Probl Diagn Radiol.* 2020; 49:48-53.
133. Baghel V, Tripathi M, Parida G, Gupta R, Yadav S, Kumar P, et al. In Vivo Assessment of Tau Deposition in Alzheimer Disease and Assessing Its Relationship to Regional Brain Glucose Metabolism and Cognition. *Clin Nucl Med.* 44:e597-601.
134. Bagri N, Jana M, Sundaram DD. Pseudorheumatoid Arthropathy of Childhood: A Mimicker of Juvenile Idiopathic Arthritis. *Indian J Pediatr.* 2019; 86:1158-9.
135. Bagri NK, Saurabh VK, Basu S, Kumar A. Isotonic versus Hypotonic Intravenous Maintenance Fluids in Children: A Randomized Controlled Trial. *Indian J Pediatr.* 2019; 86:1011-6.
136. Bagri NK, Singh A, Seth R, Ramnan AV. Multifocal Osteitis Camouflaging Underlying Malignancy. *J Clin Rheumatol.* 2020; 26:11-4.
137. Bagri NK. Cyclosporine for Systemic Onset Juvenile Idiopathic Arthritis: Current Stand and Future Directions. *Indian J Pediatr.* 2019; 86:576-7.
138. Bahadur T, Chaudhry R, Bamola VD, Agrawal SK, Malhotra P, Chutani AM, et al. Toll like receptors (TLRs) in response to human gut microbiota of Indian obese and lean individuals. *J Family Med Prim Care.* 2019; 8:1567-70.
139. Baidya A, Kodan P, Fazal F, Jorwal P. *Stenotrophomonas maltophilia*: More than Just a Colonizer! *Indian J Crit Care Med.* 2019; 23:434-6.
140. Baidya A, Nischal N, Chandrasekar PH. Pre-exposure Prophylaxis in HIV: Is it Time to Act Now? *J Assoc Physicians India.* 2020; 68:89.
141. Baitha BK, Yadav SC, Chauhan S. Comparison of neurological outcome after ascending and aortic arch surgery using two techniques of cerebral perfusion antegrade selective cerebral perfusion and retrograde cerebral perfusion. *Indian J Extra Corporeal Tech.* 2020; 29:46-66.
142. Baitha U, Deb KS, Ranjan P, Mukherjee A, Baudh NK, Kaloiya GS, et al. Estimated prevalence of medically unexplained physical symptoms in the medicine outpatient department of a tertiary care hospital in India. *Gen Hosp Psychiatry.* 2019; 61:47-5.
143. Baitha U, Ranjan P, Sarkar S, Arora C, Kumari A, Dwivedi SN, et al. Development of a self-assessment tool for resident doctors' communication skills in India. *J Educ Eval Health Prof.* 2019; 16:17.
144. Bajaj J, Chandra SP, Ramanujam B, Girishan S, Doddamani R, Tripathi M. Need of Immediate Drug Reduction after Epilepsy Surgery - A Prospective Observational Study. *Neurol India.* 2019;67:1050-3.
145. Bajaj J, Chaudhary K, Chandra PS, Ramanujam B, Girishan S, Doddamani R, et al. Left Temporal Lobectomy Using Functional MRI in a Math Genius: A Case Report. *Neurol India.* 2020; 68:170-2.
146. Bajpai M, Goel P, Gupta A, Varshney A. Sharp foreign bodies of the aerodigestive tract: Endoscopic Removal by

- the Kangaroo Technique. *Indian J Otolaryngol Head. Neck Surg.* 2019; 71:933-8.
147. Bajpai S, Upadhyay A, Sati H, Pandey RM, Chatterjee P, Dey AB. Hindi Version of Addenbrooke's Cognitive Examination III: Distinguishing Cognitive Impairment Among Older Indians at the Lower Cut-Offs. *Clin Interv Aging.* 2020; 15:329-39.
  148. Bajpai V, Govindaswamy A, Sagar S, Kumar S, Garg P, Xess I, et al. Multidrug-Resistant *Candida auris* Fungemia in Critical Care Units: Experience from a Tertiary Care Hospital in India. *Microb Drug Resist.* 2020; 26:145-9.
  149. Bajpai V, Gupta E, Mitra LG, Kumar H, Maiwall R, Soni KD, et al. Spectrum of respiratory viral infections in liver disease patients with cirrhosis admitted in critical care unit. *J Lab Physicians.* 2019; 11:356.
  150. Bala R, Chaturvedi A, Pandia MP, Bithal PK. Intraoperative Dexmedetomidine Maintains Hemodynamic Stability and Hastens Postoperative Recovery in Patients Undergoing Transsphenoidal Pituitary Surgery. *J Neurosci Rural Pract.* 2019;10:599-605.
  151. Balachandran R, Kharbanda OP, Sennimalai K, Neelapu BC. Orientation of Cone-Beam Computed Tomography Image: Pursuit of Perfect Orientation Plane in Three Dimensions—A Retrospective Cross-Sectional Study. *Ann Natl Acad Med Sci (India).* 2019; 55:202-9.
  152. Balaji A, Medigeshi GR, Kapil R, Xess I, Singh U, Lodha R, et al. Aetiological agents for pulmonary exacerbations in children with cystic fibrosis: An observational study from a tertiary care centre in northern India. *Indian J Med Res.* 2020; 151:65-70.
  153. Balan S, Gupta K, Balasundaram P, Jadon R. Reversible hypoxic brain injury: the penumbra conundrum of Grinker. *BMJ Case Rep.* 2019; 12:e228670.
  154. Balasubramanyam U, Kapoor PM. Anesthetic Challenges in Minimally Invasive Cardiac Surgery. *J Card Crit Care.* 2019; 03:28-35.
  155. Balhara YP, Singh S, Bhargava R. The pattern of problematic internet use and mental health-related internet use among psychiatric outpatients at a tertiary care center. *Tzu Chi Med J.* 2020;32:198-204.
  156. Balhara YPS, Anwar N. BehavioR: a digital platform for prevention and management of behavioural addictions. *WHO South East Asia J Public Health.* 2019; 8:101-3.
  157. Balhara YPS, Singh S, Sarkar S. Are the Patients Ready for the Change?: An Empirical Study to Evaluate the Impact of Change in Formulation of Buprenorphine-Naloxone on Prescription Pattern, Treatment Adherence, and Patient Satisfaction. *Subst Use Misuse.* 2019;54:307-14.
  158. Balkrishnan P, Panda PK, Pandey RM, Biswas A, Aggarwal P, Vikram NK et al. Compliance of WHO Guideline on Dengue Management among Indian Patients: An Interventional Quality Improvement Study. *J Assoc Physicians India.* 2019; 67:30-4.
  159. Ballal S, Yadav MP, Bal C, Sahoo RK, Tripathi M. Broadening horizons with <sup>225</sup>Ac-DOTATATE targeted alpha therapy for gastroenteropancreatic neuroendocrine tumour patients stable or refractory to <sup>177</sup>Lu-DOTATATE PRRT: first clinical experience on the efficacy and safety. *Eur J Nucl Med Mol Imaging.* 2020; 47:934-46.
  160. Balyan AP, Kumar V, Pandya P, Raina A. Ideal specimen for Identification in Forensic cases after Hematopoietic stem cell Transplantation (HSCT): A review. *Anil Aggrawal's Internet J Forensic Med Toxicol.* 2020; 21:14.
  161. Bandesh K, Prasad G, Giri AK, Kauser Y, Upadhyay M, Basu A, ...Tandon N, et al. Genome-wide association study of blood lipids in Indians confirms universality of established variants. *J Hum Genet.* 2019; 64:573-87.
  162. Banerjee A, Aggarwal R, Soni KD, Trikha A. Prone positioning in a patient with fat embolism syndrome presenting as diffuse alveolar haemorrhage: new perspective. *BMJ Case Reports.* 2020;13:e233452.
  163. Banerjee A, Bala R, Aggarwal R. Atypical presentation of thyroid storm: a diagnostic dilemma. *BMJ Case Reports.* 2019;12:e231090
  164. Banerjee N, Rattan A, Priyadarshini P, Kumar S. Post-traumatic bronchobiliary fistula. *BMJ Case Rep.* 2019;12:e228294.
  165. Banik S, Lamsal R, Rath GP, Sinha S, Bithal PK. Intracranial pressure monitoring in children with severe traumatic brain injury: a retrospective study. *J Pediatr Neurosci.* 2019;14:7-15.
  166. Bansal D, Kumar R. Percutaneous ablation for renal masses. *Ann Transl Med.* 2019; 7(Suppl 6):S174.
  167. Bansal D, Kumar S, Jain S. 'Poles apart presentation': diagnosis and management of iatrogenic posterior urethral false tract in cases of pelvic fracture urethral injury. *BMJ Case Rep.* 2019; 12:e231166.
  168. Bansal K, Kharbanda OP, Sharma JB, Sood M, Priya H, Kriplani A. Effectiveness of an integrated perinatal oral health assessment and promotion program on the knowledge in Indian pregnant women. *J Indian Soc Pedod Prev Dent.* 2019; 37:383-91.
  169. Bansal R, Mahajan A, Rathi C, Mehta A, Lokhandwala Y. What is the mechanism of paroxysmal atrioventricular block in a patient with recurrent syncope? *J Arrhythm.* 2019; 35:870-2.



170. Bansal R, Parakh N, Gupta A, Juneja R, Naik N, Bahl VK. Incidence and predictors of pacemaker-induced cardiomyopathy with comparison between apical and non-apical right ventricular pacing sites. *J Interv Card Electrophysiol.* 2019; 56:63-70.
171. Bansal R, Ramakrishnan S, Verma SK. Pulmonary artery from the left main coronary artery. *Ann Pediatr Cardiol.* 2019; 12:176-7.
172. Bansal R, Singhal S, Dewangan G, Kumar P, Satpathy S, Kumar N, et al. Diabetic complications and poor mental health in the aging population. *J Geriatr Ment Health.* 2019; 6:78-83.
173. Bansal, VK, Misra M, Agarwal AK,..., Kumar S et al. SELSI Consensus Statement for Safe Cholecystectomy — Prevention and Management of Bile Duct Injury- Part A. *Indian J Surg* (2019). <https://doi.org/10.1007/s12262-019-01993-2>.
174. Bansal, VK, Misra M, Agarwal AK,..., Kumar S et al. SELSI Consensus Statement for Safe Cholecystectomy — Prevention and Management of Bile Duct Injury- Part B. *Indian J Surg* (2019).<https://doi.org/10.1007/s12262-019-01994-1>.
175. Barwad A, Phulware RH, Narwal A, Gupta V, Ramteke P. Not All the Spindle Cell Tumors in Oral Cavity Are Sarcomatoid Squamous Cell Carcinoma. *Indian J Surg Oncol.* 2020; 11:127-30.
176. Barwal I, Kumar R, Dada T, Yadav SC. Effect of Ultra-Small Chitosan Nanoparticles Doped with Brimonidine on the Ultra-Structure of the Trabecular Meshwork of Glaucoma Patients. *Microsc Microanal.* 2019; 25:1352-66.
177. Basing J, Bindra A, Kumar N. Letter to the Editor: Anesthetic Management of a Neonate with Subdural Hematoma. *J Neuroanesth Critical Care.* 2019; Jun:1-2.
178. Basu A, Chadda RK, Sood M, Kaur H, Kukreti R. A preliminary association study between serotonin transporter (5-HTTLPR), receptor polymorphisms (5-HTR1A, 5-HTR2A) and depression symptom-clusters in a north Indian population suffering from Major Depressive Disorder (MDD). *Asian J Psychiatr.* 2019; 43:184-8.
179. Basu K, Maurya N, Kaur J, Saxena R, Gupta V, Sihota R, et al. Possible role of differentially expressing novel protein markers (ligatin and fibulin-7) in human aqueous humor and trabecular meshwork tissue in glaucoma progression. *Cell Biol Int.* 2019; 43:820-34.
180. Basu P, Muwonge R, Bhatla N, Nene BM, Joshi S, Esmey PO, et al. Two-dose recommendation for Human Papillomavirus vaccine can be extended up to 18 years – updated evidence from Indian follow up cohort study. *Papillomavirus Res.* 2019;7:75-81.
181. Batra A, Patel A, Gupta VG, Mehta P, Tvsyvk T, Biswas B, et al. Oncotype DX: Where Does It Stand in India? *J Glob Oncol.* 2019;5:1-2.
182. Batra P, Abrol AK, Gupta S, Pushpan P, Kumar R. Susceptibility pattern of oral antimicrobials in uncomplicated UTI: Does fosfomycin still stand effective? *J Family Med Prim Care.* 2020; 9:850-3.
183. Batra P, Batra M, Singh S. Epidemiology of TORCH Infections and Understanding the Serology in Their Diagnosis. *J Fetal Med.* 2020; 7:25-9.
184. Batra P, Khurana S, Govindaswamy A, Aravinda A, Bajpai V, Ayyanar M, et al. Antibiotic resistance profile, ESBL and AmpC production in *Acinetobacter* spp in a level 1 trauma centre from India. *J Lab Physicians.* 2019; 11:128-32.
185. Batra P, Mathur P, Paul R, Gupta P, Malhotra R. Clinical profile of patients with heteroresistant vancomycin-intermediate *Staphylococcus aureus* bacteraemia compared to those with methicillin-resistant *Staphylococcus aureus* bacteraemia at a level-1 trauma centre of India. *J Patient Saf Infect Contr.* 2019;7:16-9.
186. Bavoria S, Nongkynrih B, Krishnan A. Health workforce availability and competency to manage noncommunicable diseases at secondary care level hospitals of Delhi. *Int J Non-Commun Dis.* 2019; 4:38-42.
187. Behera C, Rautji R, Anuragi RP, Yadav RN. Suicide note written on the forearm using a sharp pointed object. *Med Leg J.* 2019; 87:92-4.
188. Behera C, Sikary AK, Gupta SK. Homicide patterns for the last 20 years in South and South East Delhi, India. *Med Sci Law.* 2019; 59:83-94.
189. Behera C, Sikary AK, Mridha AR, Pandey RM, Satapathy S, Lalwani S et al. Association of menstruation cycle with completed suicide: a hospital-based case-control study. *Arch Womens Ment Health.* 2019; 22:771-7.
190. Behera C, Sikary AK, Rautji R, Gupta SK. Electrocution deaths reported in South Delhi, India: A retrospective analysis of 16 years of data from 2002 to 2017. *Med Sci Law.* 2019; 59:240-6.
191. Benjafield AV, Ayas NT, Eastwood PR, Heinzer R, Ip MSM, Morrell MJ...Sinha S, et al. Estimation of the Global Prevalence and Burden of Obstructive Sleep Apnoea: A Literature-Based Analysis. *Lancet Respir Med.* 2019; 7:687-98.
192. Benson R, Pathy S, Kumar L, Mathur S, Dadhwal V, Mohanti BK. Locally advanced cervical cancer - neoadjuvant chemotherapy followed by concurrent chemoradiation and targeted therapy as maintenance: A phase II study. *J Cancer Res Ther.* 2019; 15:1359-64.

193. Berta M, Arava S, Madan K, Singh A, Jain D, Guleria R. Endobronchial metastasis from extra thoracic malignancies: A clinicopathological study of 11 cases. *Lung India*. 2019; 36:212-5.
194. Bhagat H, Singhal V, Dash HH, Mahajan S, Mishra N, Pandia MP. Comparative evaluation of intraoperative use of normal saline, Ringer's lactate, and combination of normal saline and Ringer's lactate in neurosurgical patients - A preliminary randomized clinical trial. *Neurol India*. 2019;67:452-8.
195. Bhakuni T, Singhal R, Annarapu GK, Sharma A, Mahapatra M, Saxena R, et al. Unique case of autoantibody mediated inactivation of ADAMTS13 in an Indian TTP patient. *Blood Cells Mol Dis*. 2019; 77:29-33.
196. Bhalla AS, Das A, Naranje P, Irodi A, Raj V, Goyal A. Imaging protocols for CT chest: A recommendation. *Indian J Radiol Imaging*. 2019; 29:236-46.
197. Bhandari A, Bansal A, Singh A, Gupta RK, Sinha N. Comparison of transport of chemotherapeutic drugs in voxelized heterogeneous model of human brain tumor. *Microvasc Res*. 2019; 124:76-90.
198. Bhando T, Bhattacharyya T, Gaurav A, Akhter J, Saini M, Gupta VK...Biswas D, et al. Antibacterial properties and in vivo efficacy of a novel nitrofurantoin, IITR06144, against MDR pathogens. *J Antimicrob Chemother*. 2020; 75:418-28.
199. Bharadwaj D, Kapoor I, Mahajan C, Prabhakar H. Cerebral hyperperfusion syndrome after external carotid artery - middle cerebral artery bypass for carotid artery giant aneurysm. *J ClinAnesth*. 2019;54:41-2.
200. Bharadwaj D, Mahajan C, Aggarwal R, Prabhakar H, Chaturvedi A. Comparison of Bispectral Index-Guided Administration of Desflurane and Propofol for Endoscopic Transnasal Transsphenoidal Resection of Pituitary Tumors. *J Neuroanaesthesiol Crit Care*. 2020; 7:19-26.
201. Bharate V, Kumar Y, Koli D, Pruthi G, Jain V. Effect of different abutment materials (zirconia or titanium) on the crestal bone height in 1 year. *J Oral Biolnd Craniofac Res*. 2020; 10:372-4.
202. Bharath G, Kumar P, Makkar N, Singla P, Soneja M, Biswas A, et al. Mortality in systemic lupus erythematosus at a teaching hospital in India: A 5-year retrospective study. *J Family Med Prim Care*. 2019; 8:2511-5.
203. Bharath G, Mishra PR, Aggarwal P. Tranexamic acid: Emerging therapies in hemoptysis. *Chest*. 2019; 155:1303-4.
204. Bharath G, Vedula K, Aggarwal P. Young female with palpitations. *Ann Emerg Med*. 2019; 74:303-4.
205. Bharati J, Bhatia D, Khandelwal P, Gupta N, Sinha A, Khadgawat R, et al. C-Terminal Fibroblast Growth Factor-23 Levels in Non-Nutritional Hypophosphatemic Rickets. *Indian J Pediatr*. 2019; 86:555-7.
206. Bharati SJ, Ahuja D, Hadda V, Yadav HP. Short endotracheal tube: An approach to shorten procedure time in bronchial thermoplasty. *Saudi J Anaesth*. 2019;13:271-2.
207. Bharati SJ, Ahuja D, Hadda V, Yadav HP. Short endotracheal tube: An approach to shorten procedure time in bronchial thermoplasty. *Saudi J Anaesth*. 2019;13:271-2.
208. Bharati SJ, Bhatnagar S. Scope for Integration of Palliative Care in Neurological and Neurosurgical Patients. *J Neuroanaesthesiol Crit Care*. 2019; 06:003-4.
209. Bhardwaj N, Yadav R, Kumar VS, Khan S. Melanotic Neuroectodermal Tumour of Infancy Presenting as a Lytic Lesion in Femur: A Rare Tumour at a Rare Site with an Unusual Behaviour. *BMJ Case Rep*. 2019; 12:e231959.
210. Bhardwaj V, Kapoor PM, Karanjkar AA, Chowdhury UK, Hote MP, Rajashekhar P. Congenital Cyanotic Cardiac Surgery in Children: Is Algorithm-Based Point-of-Care Testing Essential to Prevent Bleeding? *J Card Crit Care*. 2019; 02:084-90.
211. Bhargava P, Verma VK, Malik S, Khan SI, Bhatia J, Arya DS. Hesperidin regresses cardiac hypertrophy by virtue of PPAR- $\gamma$  agonistic, anti-inflammatory, antiapoptotic, and antioxidant properties. *J Biochem Mol Toxicol*. 2019; 33:e22283.
212. Bhari N, Bharti P. Dystrophic calcinosis cutis in autosomal recessive dystrophic epidermolysis bullosa. *BMJ Case Rep*. 2019; 12:e231287.
213. Bhari N, Sharma VK, Singh S, Parihar A, Arava S. Effect of Q-switched Nd-YAG laser on the clinical, pigmentary, and immunological markers in patients with lichen planus pigmentosus: A pilot study. *Dermatol Ther*. 2020; 33:e13208.
214. Bhasin A, Padma MV, Vivekanandhan S, Moganty R, Talwar T, Sharma S, et al. Vascular Endothelial Growth Factor as Predictive Biomarker for Stroke Severity and Outcome; An Evaluation of a New Clinical Module in Acute Ischemic Stroke. *Neurol India*. 2019; 67:1280-5.
215. Bhasin A, Srivastava MVP, Vivekanandhan S, Moganty R, Talwar T, Sharma S, et al. Vascular Endothelial Growth Factor as Predictive Biomarker for Stroke Severity and Outcome; An Evaluation of a New Clinical Module in Acute Ischemic
216. Bhasin D, Roy A. Complete Heart Block. *Circulation*. 2019; 140:516-9.
217. Bhaskaran K, Shashni AK, Sharma P, Saxena R, Phuljhele S. Combined resection-recession in true divergence

- excess sensory exotropia. *J AAPOS*. 2019; 23:258.e1-4.
218. Bhasym A, Annarapu GK, Saha S, Shrimali N, Gupta S, Seth T, et al. Neutrophils develop rapid proinflammatory response after engulfing Hb-activated platelets under intravascular hemolysis. *Clin Exp Immunol*. 2019; 197:131-40.
  219. Bhasym A, Gurjar BS, Prabhu S, Puraswani M, Khandelwal P, Saini H, et al. Altered peripheral blood leucocyte phenotype and responses in healthy individuals with homozygous deletion of FHR1 and FHR3 genes. *J Clin Immunol*. 2019; 39:336-45.
  220. Bhat AA, Younes SM, Raza SS, Zarif L, Nisar S, Ahmed I, ...Kumar S, et al. Role of non-coding RNA networks in leukemia progression, metastasis and drug resistance. *Mol Cancer*. 2020; 19:57.
  221. Bhatia R, Parambath N, Yadav S, Mridha AR. Rapidly growing targetoid necrotic plaques in an immunocompetent man. *Postgrad Med J*. 2019; 95:284.
  222. Bhatia R, Pedapati R, Chopra S. Plasmapheresis for NMOSD: Not a Rescue Therapy Anymore!? *Ann Indian Acad Neurol*. 2019; 22:371-2.
  223. Bhatia R, Sharma G, Patel C, Garg A, Roy A, Bali P, et al. Coronary Artery Disease in Patients with Ischemic Stroke and TIA. *J Stroke Cerebrovasc Dis*. 2019; 28:104400.
  224. Bhatia R, Sharma G, Patel C, Garg A, Roy A, Bali P, et al. Coronary Artery Disease in Patients with Ischemic Stroke and TIA. *J Stroke CerebrovascDis*. 2019;28:104400.
  225. Bhatia R, Singh N. Can We Treat Secondary Progressive Multiple Sclerosis Now? *Ann Indian Acad Neurol*. 2019; 22:131-6.
  226. Bhatia R, Sreenivas V, Singh N, Joseph R, Dash D, Singh RK, et al. Validation of ICH and ICH-GS Scores in an Indian Cohort: Impact of Medical and Surgical Management. *J Stroke Cerebrovasc Dis*. 2019;28:2213-20.
  227. Bhatia SJ, Makharia GK, Abraham P, Bhat N, Kumar A, Reddy DN, et al. Indian consensus on gastroesophageal reflux disease in adults: A position statement of the Indian Society of Gastroenterology. *Indian J Gastroenterol*. 2019; 38:411-40.
  228. Bhatla N, Denny L. The revised FIGO staging of cervical cancer (2018) – Implications for the LMICs. *South Afr J Gynaecol Oncol*. 2019;11:3-4.
  229. Bhatla N, Rajaram S, Maheshwari A. The Revised FIGO Staging of Cervical Cancer (2018): Implications for India and the LMICs. *Indian J Gynecol Oncol*. 2019;17:92.
  230. Bhatla N, Singhal S, Saraiya U, Srivastava S, Bhalariao S, Shamsunder S, et al. Screening and management of preinvasive lesions of the cervix: Good clinical practice recommendations from the Federation of Obstetrics and Gynaecologic Societies of India (FOGSI). *J ObstetGynaecol Res*. 2020;46:201-14.
  231. Bhatnagar T, Murhekar MV, Soneja M, Gupta N, Giri S, Wig N, et al. Lopinavir/ritonavir combination therapy amongst symptomatic coronavirus disease 2019 patients in India: Protocol for restricted public health emergency use. *Indian J Med Res*. 2020; 151:184-9.
  232. Bhatnagar V, Sharma N, Dhua A, Jana M. Surgical correction of pectus excavatum using a rib graft strut following excision of costal cartilages. *J Indian Assoc Pediatr Surg*. 2019; 24:252-6.
  233. Bhatt R, Goswami D, Roychoudhury A. Comparison of the efficacy of dexmedetomidine and clonidine infusions to produce hypotensive anaesthesia in patients undergoing orthognathic surgery: A randomised controlled trial. *Anaesthesia*. 2019; 74:92.
  234. Bhatt SP, Misra A, Pandey RM, Upadhyay AD, Gulati S, Singh N. Vitamin D Supplementation in Overweight/obese Asian Indian Women with Prediabetes Reduces Glycemic Measures and Truncal Subcutaneous Fat: A 78 Weeks Randomized Placebo-Controlled Trial (PREVENT-WIN Trial). *Sci Rep*. 2020; 10:220.
  235. Bhattacharjee S, Maitra S, Baidya DK. Comparison of long, short and oblique axis approach for ultrasound guided internal jugular vein cannulation: A network meta-analysis. *J Vasc Access*. 2020; 21:204-9.
  236. Bhattacharya T, Jayaraj P, Arora J, Sen S. Role of Cyclooxygenase-2 – Proliferator-Activated Receptor Gamma Pathway in the Pathogenesis of Sebaceous Gland Carcinoma. *Clin Oncol*. 2019; 2:1014.
  237. Bhatwalkar SB, Gound SS, Mondal R, Srivastava RK, Anupam R. Anti-biofilm and Antibacterial Activity of *Allium sativum* Against Drug Resistant Shiga-Toxin Producing *Escherichia coli* (STEC) Isolates from Patient Samples and Food Sources. *Indian J Microbiol*. 2019; 59:171-9.
  238. Bhatwalkar SB, Shukla P, rivastava R, Mondal R, Anupam R. Validation of Environmental Disinfection Efficiency of Traditional Ayurvedic Fumigation Practices. *J Ayurveda Integr Med*. 2019; 10:203-6.
  239. Bhawal U K, Yoshida K, Kurita T, Suzuki M, Okada Y, Tewari N, et al. Effects of low-power laser irradiation on body weight gain and inflammatory cytokines in various experimental models of diabetic rats. *Laser Ther*. 2019; 28:257-65.
  240. Bhawani S, Kumar S, Mathur S, Singhal S, Meena J, Sharma DN et al. Evaluation of prevalence and prognostic significance of human epidermal growth factor receptor 2/neu expression in carcinoma endometrium. *Int J Mol*

- Immuno Oncol. 2020; 5:8-13.
241. Bhayana AA, Kumar V. Valsalva retinopathy following transesophageal echocardiography Indian J Ophthalmol. 2019; 67:553-4.
  242. Bhayana AA, Kumawat D, Kumar V, Chandra M, Chandra P, Sihota R, et al. Interocular asymmetry in choroidal thickness in healthy Indian population using swept-source optical coherence tomography. Indian J Ophthalmol. 2019; 67:1252.
  243. Bhayana AA, Prasad P, Azad SV. Refractive errors and the red reflex- Bruckner test revisited. Indian J Ophthalmol. 2019; 67:1381-2.
  244. Bhayana AA, Singh P, Sen S, Bajaj MS. Isolated conjunctival involvement in a case of cutaneous leishmaniasis. Trop Doct. 2019; 49:149-51.
  245. Bhethanabhotla S, Tiwari A, Sharma MC, Vishnubhatla S, Bakhshi S. Prognostic Significance of IL-6 in Hodgkin Lymphoma. Indian J Pediatr. 2019; 86:551-4.
  246. Bhowmik DM. Chronic Kidney Disease of Unknown Cause in Agricultural Communities. N Engl J Med. 2019;381:687-8.
  247. Bhushan S, Bazaz R, Naalla R, Singhal M. Think before throwing away the amputated part! BMJ Case Rep. 2019;12:e230271.
  248. Bhushan S, Naalla R, Singhal M. Salvage of a Finger Near Total Avulsion Amputation: A Simpler Alternative Technique. Indian J Plast Surg. 2020;53:162-3.
  249. Bindal S, Singla N, Singh P, Modi M, Praneeth K, Mohanty M, et al. Effect of Extent of Hippocampal and Amygdala Resection on Seizure Outcome in Patients with Refractory Epilepsy Secondary to Medial Temporal Sclerosis. J Postgrad Med Edu Res. 2019;53:11-16.
  250. Bindra A, Kaushal A, Yadav CP. Commentary on Neuroprotective Role of Dexmedetomidine in Epilepsy Surgery. Neurol India. 2019;67:1364.
  251. Bindra A, Pathak S, Sikka K. Split Larynx. Anesthesiology. 2019; 131:1152.
  252. Bindu B, Bindra A, Kumar S, Kulkarni S, Rath G, Prabhakar H. Survey of work practices among anesthesiologists in India. Indian Anaesthetists' Forum. 2019; 20:1-8.
  253. Bindu B, Rath GP. Palliative care for neurologically-injured patients: why and how? JNeuroanaesthesiolCritl Care. 2019; 6:5-12.
  254. Bindu B, Singh GP, Jain V, Chaturvedi A. A Persistently High End-Tidal Carbon Dioxide Value: Can This Be Spurious? J NeuroanaesthesiolCrit Care. 2020; 07:104-6.
  255. Bisht R, Natanasabapathi, G, Kale S. Estimation of technical treatment accuracy in fractionated stereotactic radiosurgery. JRadiotherapPract. 2020; 19:30-7.
  256. Bisht S, Chawla B, Tolahunase M, Mishra R, Dada R. Impact of yoga based lifestyle intervention on psychological stress and quality of life in the parents of children with retinoblastoma. Ann Neurosci. 2019; 26:66-74.
  257. Bisht S, Dada R. Yoga: Impact on sperm genome and epigenome-clinical consequences. Ann Neurosci. 2019; 26:49-51.
  258. Biswas A, Adhikari N, Bakhshi S, Gopinathan VR, Sharma MC. A Rare Case of Primary Central Nervous System Lymphoma in an Adolescent Female Treated with High-Dose Methotrexate and Rituximab-Based Chemoimmunotherapy and Consolidation Whole Brain Radiotherapy. Pediatr Neurosurg. 2019; 54:57-65.
  259. Biswas A, Devnani B, Agarwal S, Sharma MC, Sharma A. Combined Modality Management of Sinonasal Anaplastic Lymphoma Kinase-Positive Anaplastic Large Cell Lymphoma in a Young Adult-Report of a Rare Case. J Adolesc Young Adult Oncol. 2019; 8:469-76.
  260. Biswas A, Raza A, Das S, Kapoor M, Jayarajan R, Verma A, et al. Loss of function mutation in the P2X7, a ligand-gated ion channel gene associated with hypertrophic cardiomyopathy. Purinergic Signal. 2019; 15:205-10.
  261. Biswas R, Gupta S, Haresh KP, Mathur S, Halder A, Rath GK. Triple horror: A rare case of triple metachronous malignancy. Lung India. 2019; 36:463-4.
  262. Biswas R, Krishnan B, Phulware RH, Roy SG, Kumar R, Barwad A, et al. Ewing's Sarcoma of Scapula: a Rare Case Report. Indian J Surg Oncol. 2019;10:232-5.
  263. Biswas R, Kumari K, Haresh KP, Gupta S, Halder A, Rath GK. Papillary tumor of the pineal region in an adolescent. Indian J Med Paediatr Oncol. 2019;40(Suppl):199-201.
  264. Biswas S, Frosch K, Sharma NK, Malhotra R, Sharma S, Sarkar A, et al. Synovial fluid phosphoproteome profile of Indian-German Osteoarthritis: Serum Albumin a potential marker. Trends Carbohydr Res. 2019; 11:35-46.
  265. Biswas S, Kumar P, Tansir G, Biswas A. Cardiac Tamponade in Dengue Hemorrhagic Fever: An Unusual Manifestation of a Common Disease. Am J Trop Med Hyg. 2019; 101:448-50.

266. Biswas S, Ray A. Dextrocardia with pulmonary hypoplasia: an unusual cause of unilateral lung white-out. *BMJ Case Reports CP*. 2019; 12:e229413.
267. Biswas S, Soneja M, Wig N. N-Terminal pro-BNP is an independent predictor of mortality in patients with sepsis. *J Assoc Physicians India*. 2020; 68:87.
268. Bittner R, Bains K, Bansal VK, Berrovetto F, Casey JB, Chen D, et al. Update of Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS))—Part A. *Surg Endosc*. 2019; 33:3069-39.
269. Bittner R, Bains K, Bansal VK, Berrovetto F, Casey JB, Chen Det al. Update of Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS)) Part B. *Surg Endosc*. 2019; 33:3511-49.
270. Bodwal J, Chauhan M, Behera C, Jitendra K. Fatal monocrotophos poisoning by cutaneous absorption while sleeping: A remarkable case study. *Med Leg J*. 2019; 87:144-50.
271. Bodwal J, Sikary AK, Chauhan M, Behera C. Request for euthanasia in the suicide note of a planned suicide. *Med Leg J*. 2019; 87:97-9.
272. Bora S, Kumar A, Mishra S, Satyarthee GD, Singh PK, Sawarkar D et al. Intracranial aspergillosis amongst immunocompetent patients: An experience with combined surgical and medical management of 18 patients. *ClinNeurol Neurosurg*. 2019;186:105511.
273. Bora SK, Suri A, Khadgawat R, Tandon N, Suri V, Chand Sharma M, et al. Management of Cushing's Disease: Changing Trend from Microscopic to Endoscopic Surgery. *World Neurosurg*. 2020; 134:e46-54.
274. Bora SK, Suri A, Khadgawat R, Tandon N, Suri V, Sharma MC, et al. Management of Cushing's disease: Changing trend from microscopic to endoscopic surgery. *World Neurosurg*.2019; 8750:32321-6.
275. Bora SK, Tirpude AP, Gaikwad M, Sahu RN, Chinzah L, Kujur B, et al. Cavum Septum Pellucidum: Significance and Management. *Natl J Clin Anat*. 2019; 8:126-9.
276. Borges FK, Bhandari M, Guerra-Farfan E, Patel A, Sigamani A, UmerM,...Mathur P, et al. Accelerated surgery versus standard care in hip fracture (HIP ATTACK): An international, randomised, controlled trial. *Lancet*. 2020; 395:698-708.
277. Borkar SA, Sharma R, Mansoori N, Sinha S, Kale SS. Spinopelvic parameters in patients with lumbar degenerative disc disease, spondylolisthesis, and failed back syndrome: Comparison vis-à-vis normal asymptomatic population and treatment implications. *J Craniovertebr Junction Spine*. 2019;10:167-71.
278. Borkar SA, Sreenivasan R, Sharma R, Sinha S, Joseph SL, Garg A, et al. Cervical rotation before and after hinge-door cervical laminoplasty for cervical spondylotic myelopathy. *J CraniovertebrJunctSpine*. 2019;10:114-8.
279. Borle A, Goswami D, Meshram T, Rajpal MK, Akshat S. Undiagnosed peripartum cardiomyopathy: Anesthesiologist's nightmare! *J Anaesthesiol Clin Pharmacol*. 2019; 35:566-8.
280. Boro H, Goyal A, Khadgawat R. Isolated growth hormone deficiency presenting with recurrent hypoglycaemia in a toddler. *BMJ Case Rep*. 2019; 12:e231056.
281. Boro H, Goyal A, Tandon N. Spontaneous Conception, Pericardial Effusion, and Pseudohypertrophic Myopathy Mimicking Muscular Dystrophy in Delayed Presentation of Sheehan Syndrome. *Neurol India*. 2020; 68:179-81.
282. Bradshaw C, Kondal D, Montez-Rath ME, Han J, Zheng Y, Shivashankar R,...Tondon N, et al. Early detection of chronic kidney disease in low-income and middle-income countries: development and validation of a point-of-care screening strategy for India. *BMJ Glob Health*. 2019; 4:e001644.
283. Brat DJ, Aldape K, Colman H, Figarella-Branger D, Fuller GN, Giannini C..., Sarkar C, et al. cIMPACT-NOW update 5: recommended grading criteria and terminologies for IDH-mutant astrocytomas. *Acta Neuropathol*. 2020; 139:603-8.
284. Brijwal M, Rawre J, Dhawan B, Khanna N, Choudhary A, Dar L. Herpes Simplex Virus Type 1 Genital Ulcer Disease at a Tertiary Care Hospital in North India. *Clin Infect Dis*. 2019; 68:1783-4.
285. Budhiraja S, Sagar P, Kumar R, Sharma SC. Mycotic Pseudoaneurysm of Internal Carotid Artery Induced by Skull Base Osteomyelitis. *Otol Neurotol*. 2019; 40:e816-9.
286. Bumer T, Kashyap L, Arora MK, Batra RK, Prasad G, Mohan VK, et al. Comparison between caudal epidural block and popliteal nerve block for postoperative analgesia in children undergoing foot surgery: a randomized controlled trial. *Int J Res Med Sci*. 2020; 8:560-5.
287. Burman S, Kumar N, Goyal K, Bindra A. Rupture along with fibrin clot occluding the middle port of the triple lumen catheter: an uncommon complication of central venous catheterization. *BMJ Case Rep*. 2019; 12:12:e231290
288. CENTER-TBI investigators and participants for the ICU stratum. Quality indicators for patients with traumatic brain injury in European intensive care units: a CENTER-TBI study. *Crit Care*. 2020;24:78.
289. CENTER-TBI Participants and Investigators. Case-mix, care pathways, and outcomes in patients with traumatic brain

- injury in CENTER-TBI: a European prospective, multicentre, longitudinal, cohort study. *Lancet Neurol.* 2019;18:923-34.
290. Cerci JJ, Etchebehere EC, Nadel H, Brink A, Bal CS, Rangarajan V, et al. Is True Whole-Body 18F-FDG PET/CT Required in Pediatric Lymphoma? An IAEA Multicenter Prospective Study. *J Nucl Med.* 2019; 60:1087-93.
  291. Chadda RK, Deb KS, Mahapatra A, Gupta R. Referral patterns in a consultation liaison psychiatry service in India: A comparison with the Western world. *Gen Hosp Psychiatry.* 2019; 59:76-7.
  292. Chadda RK, Gupta A. Looking into biological markers of suicidal behaviours. *Indian J Med Res.* 2019; 150:328-31.
  293. Chadda RK. Influence of the new mental health legislation in India. *BJPsych Int.* 2020; 17:20-2.
  294. Chadda RK. Substance use disorders: Need for public health initiatives. *Indian J Soc Psychiatry.* 2019; 35:13-8.
  295. Chahal A, Malla S, Dash C, Gupta D, Gamanagatti S. Pull-Type Radiologically Inserted Gastrostomy: An Improvised Technique Using a Frugal Innovation. *J Clin Interv Radiol ISVIR.* 2019; 3:007-11.
  296. Chahal A, Malla S, Gamanagatti S. Endovascular Management of a Rare Cause of Bleeding Per Vaginam: A Hole in the Mole. *J Clin Interv Radiol ISVIR.* 2019; 3:122-5.
  297. Chakladar A, Singh J, Tak NK, Patra BN, Sagar R. Fluvoxamine-Associated Galactorrhea: A Case Report. *J Clin Psychopharmacol.* 2020; 40:101-2.
  298. Chakraborty A, Arvind A, Srivastav S, Bade G, Kaur S, Jain S. Demonstration of nerve muscle preparation in rats: for nerve-muscle physiology teaching. *Indian J Physiol Pharmacol.* 2019; 63:66-72.
  299. Chakraborty S, Dakle P, Sinha A, Vishweswaraiah S, Nagori A, Kabra SK, et al. Genetic variations in olfactory receptor gene OR2AG2 in a large multigenerational family with asthma. *Sci Rep.* 2019; 9:19029.
  300. Chakraborty S, Prasad G, Marwaha RK, Basu A, Tandon N, Bharadwaj D. Comparison of plasma adipocytokines & C-reactive protein levels in healthy school going adolescents from private & government-funded schools of Delhi, India. *Indian J Med Res.* 2020; 151:47-58.
  301. Chakraborty S, Vellarikkal SK, Sivasubbu S, Roy SS, Tandon N, Bharadwaj D. Role of Tmem163 in zinc-regulated insulin storage of MIN6 cells: Functional exploration of an Indian type 2 diabetes GWAS associated gene. *Biochem Biophys Res Commun.* 2020; 522:1022-9.
  302. Chan EY, Webb H, Yu E, Ghiggeri GM, Kemper MJ, Ma AL, et al. Both the rituximab dose and maintenance immunosuppression in steroid-dependent/frequently-relapsing nephrotic syndrome have important effects on outcomes. *Kidney Int.* 2020; 97:393-401.
  303. Chandra A, Nongkynrih B, Gupta SK. Role of smartphone technology in medical education in India. *Indian J Community Fam Med.* 2019; 5:103-7.
  304. Chandra A, Nongkynrih B. Facilitators and barriers of physical activity in prevention and control of NCD-A qualitative study in north India. *J Trop Med Health.* 2019; 3:144.
  305. Chandra D, Singh J, Deka R, Ahuja A, Sharma R, Mishra P, et al. T Regulatory cells in Donor Grafts may predict the severity of Acute graft versus host disease after matched sibling donor allogeneic peripheral blood stem cell transplantation. *Indian J Hematol Blood Transfus.* 2019; 35:233-9.
  306. Chandra P, Kumawat D, Agarwal D, Chawla R. Combined Vitrectomy and Anti-VEGF Treatment for Stage 4 Retinopathy of Prematurity With Extensive Neovascular Proliferation. *J Pediatr Ophthalmol Strabismus.* 2020; 57:61-6.
  307. Chandra P, Kumawat D, Tewari R, Azimeera S. Post-Ranibizumab injection endophthalmitis in aggressive posterior retinopathy of prematurity. *Indian J Ophthalmol.* 2019; 67:967-9.
  308. Chandra P, Kumawat D, Tewari R, Sinha R. Surgical outcomes of immediate sequential bilateral vitreoretinal surgery for advancing Retinopathy of Prematurity. *Indian J Ophthalmol.* 2019; 67:903-7.
  309. Chandra P, Kumawat D, Tewari R. Hybrid clear corneal micro-incision surgical technique for stage 5 retinopathy of prematurity. *Indian J Ophthalmol.* 2019; 67:936-8.
  310. Chandra P, Salunkhe N, Kumar V, Kumawat D, Tewari R. Retinopathy of prematurity in oculocutaneous albinism. *Indian J Ophthalmol.* 2019; 67:960-2.
  311. Chandra P, Tewari R, Salunkhe N, Kumawat D, Chaurasia AK, Gupta V. Short-term incidence and management of glaucoma after successful surgery for stage 4 retinopathy of prematurity. *Indian J Ophthalmol.* 2019; 67:917-21.
  312. Chandra P. Retinopathy of prematurity: Challenges of a growing epidemic in India. *Curr Med Res Pract.* 2019; 9:211-2.
  313. Chandra PS, Bajaj J, Singh PK, Garg K, Agarwal D. Basilar Invagination and Atlantoaxial Dislocation: Reduction, Deformity Correction and Realignment Using the DCER (Distraction, Compression, Extension, and Reduction) Technique With Customized Instrumentation and Implants. *Neurospine.* 2019;16:231-50.
  314. Chandra PS. Plasma Technologies for Health Applications. *Neurol India.* 2020; 68:3-4.

315. Chandran A, Sakthivel P, Chirom AS. Quincke's disease. *BMJ Case Rep.* 2019; 12:e231967.
316. Chandran A, Sakthivel P, Singh CA. A Swollen Nose - Nasal Septal Hematoma. *Indian J Pediatr.* 2020; 87:88.
317. Chandran N, Mahapatra A, Tak NK, Patra BN, Sagar R. Anticholinergic induced mania-A case report. *Asian J Psychiatr.* 2019; 43:53-4.
318. Chandrasekaran AM, Kinra S, Ajay VS, Chattopadhyay K, Singh K, Singh K,...Praveen PA, et al. Effectiveness and cost-effectiveness of a Yoga-based Cardiac Rehabilitation (Yoga-CaRe) program following acute myocardial infarction: Study rationale and design of a multi-center randomized controlled trial. *Int J Cardiol.* 2019; 280:14-8.
319. Chatterjee P, Srivastava AK, Kumar DA, Chakrawarty A, Khan MA, Ambashtha AK, et al. Effect of deep tissue laser therapy treatment on peripheral neuropathic pain in older adults with type 2 diabetes: a pilot randomized clinical trial. *BMC Geriatr.* 2019; 19:218.
320. Chattopadhyay A, Gupta S, Dayal P, Mandal P, Agrawal A, Ambekar A. Butorphanol dependence in a health-care professional: A case report with narrative review. *J Subst Use.* 2019; 24:463-4.
321. Chattopadhyay A, Gupta S, Sankar J, Kabra SK, Lodha R. Outcomes of Severe PARDS on High-Frequency Oscillatory Ventilation - A Single Centre Experience. *Indian J Pediatr.* 2020; 87:185-91.
322. Chattopadhyay K, Chandrasekaran AM, Praveen PA, Manchanda SC, Madan K, Ajay VS, et al. Development of a Yoga-Based Cardiac Rehabilitation (Yoga-CaRe) Programme for Secondary Prevention of Myocardial Infarction. *Evid Based Complement Alternat Med.* 2019; 2019:7470184.
323. Chattopadhyay S, Sabharwal PK, Jain S, Kaur A, Singh H. Functionalized polymeric magnetic nanoparticle assisted SERS immunosensor for the sensitive detection of *S. typhimurium*. *Anal Chim Acta.* 2019; 1067:98-106.
324. Chaturvedi P, Prabhash K, Babu G, Kuriakose M, Birur P, Anand AK,...Rath GK, et al. Indian clinical practice consensus guidelines for the management of oral cavity cancer. *Indian J Cancer.* 2020; 57(Suppl):S6-8.
325. Chaturvedi S, Suri V. Pineal tumors: Rare but challenging entity. *Neurol India.* 2019; 67:503-4.
326. Chaubey R, Sazawal S, Mahapatra M, Chikkara S, Saxena R. Effect of the Epigenetic Regulators (JAK2 and IDH-2) on the Methylation Status of Tumor Suppressor Genes (p15, FHIT, Calcitonin and SOCS-1) and Prognosis of MDS Patients: A Study from India. *Indian J Genet Mol Res.* 2019; 8:9-14.
327. Chaudhari VA, Pradeep R, Ramesh H, Bhandare MS, Dhar P, Pal S, et al. Surgery for cystic tumors of pancreas: Report of high-volume, multicenter Indian experience over a decade. *Surgery.* 2019;166:1011-1016.
328. Chaudhary S, Kumaran SS, Kaloija GS, Goyal V, Sagar R, Kalaivani M, et al. Domain specific cognitive impairment in Parkinson's patients with mild cognitive impairment. *J Clin Neurosci.* 2020; 75:99-105.
329. Chaudhry R, Thakur CK, Gupta N, Sagar T, Bahadur T, Wig N, et al. Mortality due to scrub typhus - report of five cases. *Indian J Med Res.* 2019; 149:790-4.
330. Chauhan M, Behera C, Singh M. Incisioning by Faith Healer Complicating Fatal Septicemia in Human Cobra Bite: Medical Science Typically Deviated by Irrational Belief. *Int J Med Toxicol Leg Med.* 2019; 22:60-3.
331. Chauhan M, Naagar S, Behera C, Sreenivas M. Electrocuting Fatalities in the National Capital Region of India. *Int J Med Toxicol Leg Med.* 2019; 22:42-6.
332. Chauhan P, Koul V, Bhatnagar N. Effect of Acid Etching Temperature on Surface Physicochemical Properties and Biocompatibility of Ti6Al4V ELI Alloy. *Mater Res Express.* 2019; 6:10541.
333. Chauhan S, Sen S, Singh N, Sharma A, Kashyap S, Pushker N, et al. Human Papillomavirus in Ocular Malignant Tumors- A Study from Tertiary Eye Care Centre in North India. *Can J Ophthalmol.* 2019; 54:688-93.
334. Chauhan V, Galwankar S, Deepak KK, Mohan A, Guleria R, Bhoi S, et al. The 2019 WACEM and Academic College of Emergency Experts India Position Paper on Developing the Academic Department of Space Medicine in India - The Time Has Come! *J Emerg Trauma Shock.* 2019; 12:229-31.
335. Chauhan V, Singh S, Galwankar S, Aggarwal P, Bhoi S, Di Somma S, et al. Establishing national centre for point-of-care technology for 'Swasth Bharat, Samridh Bharat'. *J Lab Physicians.* 2019; 11:177-9.
336. Chavali S, Rath GP. Reflex Bradycardia Due to Traction on Filum Terminale During Detethering of Spinal Cord. *Neurology India.* 2019; 67:889-90.
337. Chavali S, Sidiqqi OA, Rath GP. Organization of a Neurointensive Care Unit. *J Neuroanaesthesiol Crit Care.* 2019; 6:182-6.
338. Chavali S, Singh GP, Prabhakar H, Chaturvedi A. Recurrent transient episodes of left bundle branch block immediately following surgery - A rare phenomenon. *Indian J Anaesth.* 2019;63:153-5.
339. Chavali S, Tripathi M, Rajagopalan V. Fever in the Neurointensive Care Unit. *Review Article J Neuroanaesthesiol Crit Care.* 2019;6:275-83.
340. Chawla D, Deorari A. Retinopathy of prematurity prevention, screening and treatment programmes: Progress in India. *Semin Perinatol.* 2019; 43:344-7.

341. Chawla D, Kaur T, Joshi A, Singh N. 3D bioprinted alginate-gelatin based scaffolds for soft tissue engineering. *Int J Biol Macromol.* 2019; 144:560-7.
342. Chawla N, Deep R, Khandelwal SK, Garg A. Beliefs about voices and their relation to severity of psychosis in chronic schizophrenia patients. *Indian J Psychiatry.* 2019; 61:465-71.
343. Chawla N, Deep R, Khandelwal SK, Garg A. Reduced integrity of superior longitudinal fasciculus and arcuate fasciculus as a marker for auditory hallucinations in schizophrenia: A DTI tractography study. *Asian J Psychiatr.* 2019; 44:179-86.
344. Chawla R, Banerjee M. Bilateral giant macular schisis in a case of Goldmann-Favre syndrome. *BMJ Case Rep.* 2019; 12:e230351.
345. Chawla R, Kumar A, Mandal S. Three-Dimensional Reconstruction Imaging of Peripapillary Intrachoroidal Cavitation in a Myopic Patient. *Ophthalmol Retina.* 2019; 3:928.
346. Chawla R, Sundar MD, Sharma A, Hasan N. Managing a recurrence of choroidal tuberculoma two years following primary therapy. *Indian J Ophthalmol.* 2019; 67:1713-4.
347. Chawla R. Advanced Optical Coherence Tomography Angiography Analysis of Age-related Macular Degeneration Complicated by Onset of Unilateral Choroidal Neovascularization. *Am J Ophthalmol.* 2019; 199:260.
348. Chopra S, Sharma KA, Ranjan P, Malhotra A, Vikram NK, Kumari A. Weight management module for menopause women: A practical guide for gynaecologists. *J Mid-Life Health.* 2019; 10:165-72.
349. Choudhary AH, Palaskar MK, Kausar M, Mahesh R, Sharma DK. Resource optimization through process re-engineering of Inhalational Therapy Unit at a tertiary care public hospital. *Int J Res Med Sci.* 2019; 7:4469-74.
350. Choudhary M. Comparison of perception of newly admitted and outgoing B.sc (Nursing) students towards nursing profession: A cross sectional survey. *TNNMC J Nurs Educ Admin.* 2019; 7:31-4.
351. Choudhary P, Verma KL, Sharma M, Kumar A. Fatal suicidal poisoning by chloroquine in presence of alcohol-an interesting case report. *Egypt J Forensic Sci Appl Toxicol.* 2019; 19:1-10.
352. Choudhary SK, Bansal N, Kumar I, Rajashekar P, Hote M, Lalwani S. Audit of homograft valve bank. *Indian J Thorac Cardiovasc Surg.* 2019; 36:14-20.
353. Choudhary SK, Mathew AB, Parhar A, Hote MP, Talwar S, Rajashekar P. Genetic polymorphisms and dosing of Vitamin K antagonist in Indian patients after heart valve surgery. *Indian J Thorac Cardiovasc Surg.* 2019; 35:539-47.
354. Choudhary V, Satapathy S, Sagar R. Qualitative Study on the Impact of Child Sexual Abuse: Perspectives of Children, Caregivers, and Professionals in Indian Context. *J Child Sex Abus.* 2019; 28:489-510.
355. Choudhury A, Magoon R, Sahoo S, Sehgal L. Opioid free cardiac surgery: opportunities and obstacles. *J Cardiothorac Vasc Anesth.* 2020; 34:567-8.
356. Choudhury A, Magoon R. Airway assessment by ultrasonography: Is it the final answer. *Airway.* 2019; 2:55-6.
357. Choudhury A. Aortic conterpulsation for myocardial support: towards a new paradigm. *Ann Card Anaesth.* 2019; 22:283-4.
358. Choudhury AR, Gupta S, Chaturvedi PK, Kumar N, Pandey D. Mechanobiology of Cancer Stem Cells and Their Niche. *Cancer Microenviron.* 2019;12:17-27.
359. Choudhury AR, Kumar N, Sandeep K, Pandey D. Stem cell repertoire in the prostate epithelium. *J Stem Cell Res Ther.* 2019; 5:44-6.
360. Choudhury M, Kapoor PM. Anaphylaxis-Induced Atrial Fibrillation and Anesthesia: Are We Missing Something? *J Card Crit Care.* 2019; 03:51-2.
361. Choudhury M, Kapoor PM. Are We Clinicians Away from Ethics? *J Card Crit Care.* 2019; 02:066-70.
362. Choudhury M. ALCAPA and tetralogy of Fallot's: A rare Echocardiographic ombination. *J Periop Echocardiography.* 2019; 6:36-9.
363. Chouhan D, Shankar V, Ansari MT. Bilateral Kienböck's disease concomitant with gouty arthritis. *BMJ Case Rep.* 2020; 13:e233725.
364. Chouhan RS, Kumar M, Saran A, Mohammed S, Gupta S, Chopra K. An unexpected cause of endotracheal tube obstruction after routine tracheal suctioning. *J Anaesthesiol Clin Pharmacol.*2019; 35:564-6.
365. Chourasia BK, Deshmukh A, Kaur I, Paul G, Panda A, Rathore S, et al. Plasmodium falciparum Clag9-Associated PfRhopH Complex Is Involved in Merozoite Binding to Human Erythrocytes. *Infect Immun.* 2020; 88:e00504-19.
366. Chowdhury AR, Punj J, Pandey R, Darlong V, Sinha R, Bhoi D. Ultrasound is a reliable and faster tool for confirmation of endotracheal intubation compared to chest auscultation and capnography when performed by novice anaesthesia residents - A prospective controlled clinical trial. *Saudi J Anaesth.* 2020; 14:15-21.
367. Chowdhury PM, George N, Kapoor PM, Singh S, Kumari L. Redo Mitral Valve Replacement using a St. Jude Medical Mechanical Prosthesis in a Patient with Thrombosed Mitral Prosthesis: A Video Presentation. *J Card Crit*



- Care. 2019; 3:097-8.
368. Chowdhury UK, George N, Sankhyan LK, Hasija S, Mishra AK, Kalaivani M. Intermittent Antegrade and Continuous Retrograde Coronary Sinus Cold Blood Cardioplegia to Prevent and Reverse Ischemic and Reperfusion Damage in Patients Undergoing Bentall's Procedure: A Clinical Report on 130 Patients. *Int J Clin Case Stud Rep.* 2019; 1:23-32.
  369. Chowdhury UK, George N, Singh S, Kapoor PM, Sankhyan LK, Chauhan A, et al. Dacron Patch Closure of Ventricular Septal Defect with Concomitant Aortic Valve Replacement using a Mechanical Prosthesis: A Video Presentation. *J Card Crit Care.* 2019; 3:099-100.
  370. Chowdhury UK, Jha A, Ray R, Kalaivani M, Hasija S, Kumari L, et al. Histopathology of the right ventricular outflow tract and the relation to hemodynamics in patients with repaired tetralogy of Fallot. *J Thorac Cardiovasc Surg.* 2019; 58:1173-83.
  371. Chowdhury UK, Sankhyan LK, Kumar A, Seth S, Jagia P. Post-Operative Assessment of Univentricular Repair by Multi-Slice Computed Tomographic Angiography. *J Cardiol Diagn Res.* 2019; 2:84-93.
  372. Chowdhury UK, Singh S, George N, Sankhyan LK, Kapoor PM. Transpulmonary Closure of Giant Persistent Ductus Arteriosus under Cardiopulmonary Bypass and Normothermic Cardioplegia. *J Card Crit Care.* 2019; 03:36-8.
  373. Christa E, Srivastava P, Chandran DS, Jaryal AK, Yadav RK, Roy A, et al. Effect of yoga-based cardiac rehabilitation on heart rate variability: Randomized controlled trial in patients post-MI. *Int J Yoga Therap.* 2019; 29:43-50.
  374. Clark D, Joannides A, Abdallah OI, Adeleye AO, Bajamal AH, Bashford T,...Gupta DK. Global Neurotrauma Outcomes Study (GNOS) collaborative. Management and outcomes following emergency surgery for traumatic brain injury - A multi-centre, international, prospective cohort study (the Global Neurotrauma Outcomes Study). *Int J Surg Protoc.* 2020;20:1-7.
  375. Claudino AM, Pike KM, Hay P, Keeley JW, Evans SC,...Sharan P, et al. The classification of feeding and eating disorders in the ICD-11: results of a field study comparing proposed ICD-11 guidelines with existing ICD-10 guidelines. *BMC Med.* 2019; 17:93.
  376. Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury (CENTER-TBI) Investigators and Participants. Central versus Local Radiological Reading of Acute Computed Tomography Characteristics in Multi-Center Traumatic Brain Injury Research. *J Neurotrauma.* 2019;36:1080-92.
  377. Correa ARE, Gupta N, Bagri N, Vignesh P, Alam S, Yamaguchi S. Mevalonate Kinase Deficiency as Cause of Periodic Fever in Two Siblings. *Indian Pediatr.* 2020; 57:180-1.
  378. Daba S, Joshi P, Agarwal R, Yadav RK, Kachhawa G. Impact of audio assisted relaxation technique on stress, anxiety and milk output among postpartum mothers of hospitalized neonates: A randomized controlled trial. *J Neonatal Nurs.* 2019; 25:200-4.
  379. Dabas A, Vats P, Sharma R, Singh P, Seth A, Jain V et al. Management of Infants with Congenital Adrenal Hyperplasia. *Indian Pediatr.* 2020; 57:159-64.
  380. Dabas S. Effect of teaching partograph on knowledge related to intra-partum monitoring among nursing personnel. *Nurs J India.* 2020; 111:29-31.
  381. Dada T, Gagrani M. Mindfulness Meditation Can Benefit Glaucoma Patients. *J Curr Glaucoma Pract.* 2019; 13:1-2.
  382. Dada T, Ramesh P, Shakrawal J. Meditation: A Polypill for Comprehensive Management of Glaucoma Patients. *J Glaucoma.* 2020; 29:133-40.
  383. Dadhich H, Sharma R, Borkar SA, Dash A, Mahajan S, Sharma MC. Solitary Extra-axial Intracranial Primary Meningeal Pleomorphic Xanthoastrocytoma: An Extremely Rare Case. *World Neurosurg.* 2019; 130:386-90.
  384. Dadhwal R, Jain S, Seth A, Bal CS. Neuroendocrine tumour of urinary bladder: a rare case of aggressively behaving primary well-differentiated neuroendocrine tumour with review of literature. *BMJ Case Rep.* 2019; 12:e231061.
  385. Dadhwal V, Bhatt RK. Intrauterine Fetal Infection: Do-able approaches. *JFetal Med.* 2020; 7:5-8.
  386. Dadhwal V, Garimella S, Khoiwal K, Sharma KA, Perumal V, Deka D. Mifepristone Followed by Misoprostol or Ethacridine Lactate and Oxytocin for Second Trimester Abortion: A Randomized Trial. *Eurasian J Med.* 2019;51:262-6.
  387. Dadhwal V, Sharma AK, Deka D, Chawla L, Agarwal N. Selective fetal reduction in monochorionic twins: Preliminary experience. *J Turk Ger Gynecol Assoc.* 2019;20:79-83.
  388. Daga D, Kumar V, Azad SV. Concentric retinal pigment epithelium tear in central serous chorioretinopathy. *Indian J Ophthalmol.* 2019; 67:1329-30.
  389. Daggumilli S, Vanathi M, Ganger A, Goyal V, Tandon R. Corneal Evaluation in Patients with Parkinsonism on Long-Term Amantadine Therapy. *Cornea.* 2019; 38:1131-6.
  390. Dahiya B, Khan A, Mor P, Kamra E, Singh N, Gupta KB, et al. Detection of Mycobacterium tuberculosis lipoarabinomannan and CFP-10 (Rv3874) from urinary extracellular vesicles of tuberculosis patients by immuno-PCR. *Pathog Dis.* 2019; 77:ftz049.

391. Dahiya S, Malik N, Pandey K, Gupta R, Perumal V, Singh V. Impact of different grades of anaemia severity during pregnancy on maternal and neonatal outcomes: a prospective study. *Int J Reprod Contracept Obstet Gynecol.* 2019;8:2215-20.
392. Dahiya S, Malik R, Sharma P, Sashi A, Lodha R, Kabra SK, et al. Current antibiotic use in the treatment of enteric fever in children. *Indian J Med Res.* 2019; 149:263-9.
393. Dahiya U, Srivastava A. Prevention and Early detection of Breast and Cervical Cancer in Women. *Int J Biotech Biomed Sci.* 2019; 5:114-7.
394. Damodaran S, Bajaj MS, Sharma P, Kumar A, Chawla R, Pujari A, et al. Swept-source optical coherence tomography features of regressed macular retinoblastoma. *Indian J Ophthalmol.* 2019; 67:2013-8.
395. Danier J, Rivera L, Claeys C, Dbaibo G, Jain VK, Kosalaraksa P... Kant S, et al. Clinical presentation of influenza in children 6 to 35 months of age: Findings from a randomized clinical trial of inactivated quadrivalent Influenza Vaccine. *Pediatr Infect Dis J.* 2019; 38:866-72.
396. Darbari S, Meena RK, Sawarkar D, Doddamani RS, Singh M, Chandra PS Intraventricular Meningioma Presenting as Lateral Posterior Choroidal Artery Stroke. *World Neurosurg.* 2019;125:364-7.
397. Darbari S, Meena RK, Sawarkar D, Doddamani RS. Optic Nerve Hemangioblastoma: Review. *World Neurosurg.* 2019;128:211-5.
398. Darlong V, Som A, Baidya DK, Pandey R, Punj J, Pande A. Effect of varying time intervals between fentanyl and propofol administration on propofol requirement for induction of anesthesia: Randomized Controlled Trial. *Ind J Anaesth.* 2019; 63:827-33.
399. Das A, Chakraborty A, Srivastava S, Kaur S, Jain S, Bade G. Study of neuromuscular transmission under (i) phenomenon of fatigue, (ii) site of fatigue, (iii) neuromuscular blocking in an in-situ rat nerve muscle preparation: a novel approach to nerve muscle physiology experiment teaching. *Indian J Physiol Pharmacol.* 2019; 63:79-85.
400. Das A, Yadav CS, Gamanagatti S, Pandey RM, Mittal R. Arthroscopic and 3D CT Scan Evaluation of Femoral Footprint of the Anterior Cruciate Ligament in Chronic ACL Deficient Knees. *J Knee Surg.* 2019; 32:584-8.
401. Das CJ, Razik A, Sharma S, Verma S. Prostate biopsy: when and how to perform. *Clin Radiol.* 2019; 74:853-64.
402. Das D, Kuberappa RG, Kumari MS, Meel R. Globe luxation following cow horn injury. *BMJ Case Rep.* 2019; 12:229994.
403. Das D, Sehgal L, karanjkar A, Sharan S, Kapoor PM. Is TEE a Game Changer in Aortic Prosthetic Paravalvular Leak? *J Card Crit Care.* 2019; 03:42-4.
404. Das D, Sharma KA, Dadhwal V, Deka D, Vanamail P. Assessment of the customized birth weight formula in a low risk Indian population. *Int J Reprod Contracept Obstet Gynecol.* 2019;8:3722-5.
405. Das N, Thakral D, Singh G, Malhotra A, Phulware RH, Gogia A, et al. FLI1 and MIC2 expression in precursor B-lymphoblastic leukemia with Burkitt-like morphology and extensive extramedullary involvement: A diagnostic challenge in pediatric small round cell tumor. *Indian J Pathol Microbiol.* 2019; 62:614-7.
406. Das P, Baloda V. Use of smooth muscle markers is better than the endothelial cell markers for identification of tumor venous invasion and extramural tumor deposits in gastrointestinal tract tumors. *Indian J Pathol Microbiol.* 2020; 63:3-4.
407. Das P, Gahlot GP, Singh A, Baloda V, Rawat R, Verma AK, et al. Quantitative histology-based classification system for assessment of the intestinal mucosal histological changes in patients with celiac disease. *Intest Res.* 2019; 17:387-97.
408. Das P, Makharia GK. Just do not stop at colonoscopy, Do biopsies (Editorial). *J Dig Endosc.* 2019; 10:03-5.
409. Das R, Singh N. Exploring electrochemistry of carbon nanodots and its application in noninvasive bacterial growth monitoring. *Biosens. Bioelectron.* 2019; 144:111640.
410. Das RR, Sankar J, Kabra SK. Role of Breathing Exercises And Yoga/Pranayam In Childhood Asthma: A Systematic Review. *Curr Pediatr Rev.* 2019; 15:175-83.
411. Dass J, Dhingra G, Gupta N, Kotwal J. Myelomatous ascites: Flow cytometric diagnosis and evolution of phenotype. *Indian J Pathol Microbiol.* 2020; 63:154-6.
412. Dass J, Mittal S, Gupta N, Kotwal J. Myeloma co-existing with prostatic carcinoma: Clues from a "non-coagulable" prothrombin time. *Indian J Pathol Microbiol.* 2020; 63:151-3.
413. Datta SK, Pavani C. Active communication between laboratory physicians and clinicians: Need of the hour to improve patient outcomes. *J Lab Physicians.* 2019; 11:174-5.
414. Dave A, Saha S, Naalla R, Singhal M. Hemi-Intravascular Stenting Technique for Super Microsurgical Anastomosis in Pediatric Thumb Replantation. *Int Microsurg J.* 2019;3:3.
415. Dawani A, Gupta AK, Jana M. Imaging in Pediatric extra-pulmonary tuberculosis. *Indian J Pediatr.* 2019; 86:459-467.

416. Dawman L, Mukherjee A, Sethi T, Agrawal A, Kabra SK, Lodha R. Role of Impulse Oscillometry in Assessing Asthma Control in Children. *Indian Pediatr.* 2020; 57:11-23.
417. De M, Dawar R, Singhal M, Bichpuriya A, Nalla R. Non healing ulcer due to bone wax in alveolar bone graft donor site-A case report. *Selcuk Med J.* 2019; 35:192-4.
418. De M, Dawar R, Singhal M, Dash S, Bichpuriya A. To Be, Notch to Be. *Indian J Plast Surg.* 2020; 53:154-6.
419. De M, Mohan VK, Bhoi D, Talawar P, Kumar A, Garg B, et al. Transforaminal Epidural Injection of Local Anesthetic and Dorsal Root Ganglion Pulsed Radiofrequency Treatment in Lumbar Radicular Pain: A Randomized, Triple-Blind, Active-Control Trial. *Pain Pract.* 2020; 20:154-67.
420. De M, Mohan VK, Bhoi D, Talawar P. Utility of real-time ultrasound-guided infraorbital nerve block in trigeminal neuralgia. *Indian J Pain.* 2019; 33:45-7.
421. Deb KS, Singh S. Where There is No Psychiatrist (Second Edition). *Nat Med J India.* 2019; 32:54-5.
422. Deb KS. Healing the healer – A 10-Year journey of supporting a medical student with bipolar disorder. *Indian J Soc Psychiatry.* 2020; 36:5-10.
423. DebBarma A, Dey A, Yadav A, Prasad K, Gupta SK. Sudden death during liposuction surgery: a rare occurrence. *Int J Health Res Medico Leg Prae.* 2019; 5:80-2.
424. Deepak KK. Newer physiology is growing. *Indian J Physiol Pharmacol.* 2019; 64:1.
425. Deepak KK. Space Physiology: A promising field of research for physiologists. *Indian J Physiol Pharmacol.* 2019; 63:189-91.
426. Deo S, Singh V, Mokkalapati PR, Shukla NK, Dwivedi SN, Sharma A, et al. Clinical Spectrum, Pattern, and Level-Wise Nodal Involvement Among Oral Squamous Cell Carcinoma Patients–Audit of 945 Oral Cancer Patient Data. *Indian J Surg Oncol.* 2019; 11:86-91.
427. Deo SVS, Mishra A, Shukla NK, Sandeep B. Thoraco-Abdominal flap: A simple flap cover for large post mastectomy soft tissue defects in LABC. *Indian J Surg Oncol.* 2019;10:494-8.
428. Deo SVS, Singh V, Mokkalapati PR, Shukla NK, Dwivedi SN, Sharma A, et al. Clinical Spectrum, Pattern, and Level-Wise Nodal Involvement Among Oral Squamous Cell Carcinoma Patients - Audit of 945 Oral Cancer Patient Data. *Indian J Surg Oncol.* 2020; 11:86-91.
429. Deora H, Garg K, Tripathi M, Mishra S, Chaurasia B. Residency perception survey among neurosurgery residents in lower-middle-income countries: grassroots evaluation of neurosurgery education. *Neurosurg Focus.* 2020;48:E11
430. Deorari A, Chandra P. Quality improvement: A new paradigm in health care. *Apollo Med.* 2019; 16:128-3.
431. Deorari A, Koganti RA. Closing the practice-to-outcome gap: lessons from the Better Birth study. *Lancet Glob Health.* 2019; 7:e992-3.
432. Dev S, Sarun OS, Saxena A, Abhyankar YS, Joshi R, Darbari H..Sharma A, et al. Monte Carlo Processing on a Chip (MCoaC)-preliminary experiments toward the realization of optimal-hardware for TOPAS/Geant4 to drive discovery. *Phys Med.* 2019; 64:166-73.
433. Dey A, Sharma N, Yadav A, Prasad K, Debbarma A, Gupta SK. Digital Virtual Autopsy: Need of the Hour in India. *RFP Indian J Hosp Adm.* 2019; 3:21-4.
434. Dey D, Jingar P, Agrawal S, Shrivastava V, Bhattacharya A, Manhas J, et al. *Symphytum officinale* augments osteogenesis in human bone marrow-derived mesenchymal stem cells in vitro as they differentiate into osteoblasts. *J Ethnopharmacol.* 2020; 248:112329.
435. Dhagudu N, Gupta S, Bhad R, Rao R. Community-based Management of Opioid Use Disorder: Role of Nursing Professionals and Paramedical Workers. *Indian J Psychiatr Nurs.* 2019; 16:43-8.
436. Dhagudu NK, Erravalli A, Sarkar S, Chadda RK. Tramadol-Related Adverse Drug Reactions at an Addiction Psychiatry Setting: A Cross-Sectional Analysis. *Indian J Psychol Med.* 2019; 41:593-5.
437. Dhamija E, Deshmukh A, Meena P, Kumar M, Bhatnagar S, Thulkar S. Complementary Role of Intervention Radiology in Palliative Care in Oncology Setting. *Indian J Palliat Care.* 2019;25:462-7.
438. Dhamija E, Meena P, Ramalingam V, Sahoo R, Rastogi S, Thulkar S. Chemotherapy induced pulmonary complications in cancer: Significance of clinicoradiological correlation. *Indian J Radiol Imaging.* 2020;30:20-6.
439. Dhamija E, Paul SN, Kedia S. Non- alcoholic fatty liver disease associated with Hepatocellular carcinoma: An Increasing concern. *Indian J Med Res.* 2019; 149:9-17.
440. Dhanda A, Dube SK, Agarwal S, Satyarthee GD. Reply to Comment on Simple Maneuver to Tide over the Crisis due to Intraoperative Malfunctioning of a Pilot Balloon. *J Neuroanaesthesiol Crit Care.* 2019; 6 (01):52.
441. Dhandapani M, Gopichandran L. Nursing Image and Empowerment: Beyond Professional Conduct. *J Nurs Sci Pract.* 2019; 9:13-7.
442. Dhar M, Agrawal S, Singh U, Agarwal R. The “critical” link in the transport of critically ill patients; role of the

- anesthesiologist and challenges in the Indian setup. *J Anaesthesiol Clin Pharmacol*. 2019; 35:401-2.
443. Dhar R, Mukherjee I, Singh S, Goswami S, Karmakar S. Role of Carbon Monoxide signaling in trophoblast invasion. *Open Access J Reprod Syst Sex Disord*. 2019; 2:186-92.
  444. Dhar R, Seethy A, Pethusamy K, Singh S, Rohil V, Purkayastha K, et al. De novo genome assembly of the Indian Blue Peacock (*Pavo cristatus*), from Oxford Nanopore and Illumina sequencing. *GIGA Sci*. 2019; 8:giz038.
  445. Dhar R, Singh S, Pethusamy K, Seethy A, Mukherjee I, Srivastava T, et al. De novo genome assembly of Ompok bimaculatus (Pabda Fish). *BMC Res Notes*. 2019; 12:ArtNo.825.
  446. Dharmshaktu P, Saha S, Kar P, Sreenivas V, Ramakrishnan L, Goswami R. Absence of vitamin D deficiency among common outdoor workers in Delhi. *Clin Endocrinol (Oxf)*. 2019; 91:356-62.
  447. Dhawan A, Agarwal A, Mulder CJ, Makharia GK. Celiac disease in the East and the West: Bridging the gaps between the guidelines and their implementation in daily practice is mandatory. *Indian J Gastroenterol*. 2019; 38:185-9.
  448. Dhawan A, Mishra AK, Ambekar A, Chatterjee B, Agrawal A, Bhargava R. Estimating the size of substance using street children in Delhi using Respondent-Driven Sampling (RDS). *Asian J Psychiatr*. 2020:101890.
  449. Dhawan B, Rawre J, Dhawan N, Bhatia R, Gupta V, Khanna N. High prevalence of *Mycoplasma genitalium* in men who have sex with men: A cross-sectional study. *Indian J Dermatol Venereol Leprol*. 2020; 86:195-6.
  450. Dhiman A, Kumar C, Mishra SK, Sikri, Datta I, Sharma P, et al. Theranostic Application of a Novel G-Quadruplex-Forming DNA Aptamer Targeting Malate Synthase of *Mycobacterium tuberculosis*. *Mol Ther Nucleic Acids*. 2019;18:661-72.
  451. Dhiman R, Padhy SK, Varshney T, Vikas SJ, Kumar P, Kumar A. Optic disc pit maculopathy and its spectrum of management. *Indian J Ophthalmol*. 2019; 67:1336-7.
  452. Dhiman Y, Patidar GK, Hazarika A. Consecutive reactive results in screening of transfusion transmitted infections: Family history of blood donors is also important. *Transfus Apher Sci*. 2019; 58:464-7.
  453. Dhinesh KT, Roy TS, Jacob TG, Kaur C, Dinesh KV. Analyzing the age-related changes in the human cochlear nerve: a quantitative morphological study. *Int J Anat Res*. 2019; 7:6456-61.
  454. Dhingra A, Ganie MA, Dharmshaktu P, Chakraborty S, Jyotsna VP, Gupta N. Pattern of Lipid Abnormalities Among South Asian Indians with Cushing's Syndrome and the Short Term Impact of Surgical Correction of Hypercortisolism. *HorMetab Res*. 2019; 51:309-14.
  455. Dhochak N, Jat KR, Lodha R, Kabra SK. Lentil aspiration leading to likely hypersensitivity pneumonitis. *Pediatr Pulmonol*. 2019; 54:1781-6.
  456. Dhochak N, Jat KR, Sankar J, Lodha R, Kabra SK. Predictors of Malnutrition in Children with Cystic Fibrosis. *Indian Pediatr*. 2019; 56:825-30.
  457. Diksha D, Gupta P, Malik PS, Mohan A. A pilot study to assess oxidative and inflammatory markers as early indicator for response to chemotherapy in non-small cell lung cancer. *J Clin Pharm Ther*. 2020; 45:179-84.
  458. Dindi K, Bachani D, Singhal M, Singh AR. Road traffic injuries: Epidemiology, challenges and initiatives in India. *Natl Med J India*. 2019; 32:113-7.
  459. Doddamani RS, Chandra PS. Aneurysmal SAH "A Riddle Wrapped Up in Enigma". *Neurol India*. 2019; 67:1290-1.
  460. Doddamani RS, Sawarkar D, Meena RK, Gurjar H, Singh PK, Singh M et al. Remote Cerebellar Hemorrhage Following Surgery for Supratentorial Lesions. *World Neurosurg*. 2019;126:e351-9.
  461. Doddamani RS, Tripathi M, Samala R, Agarwal M, Ramanujan B, Chandra SP. Posterior quadrant disconnection for sub-hemispheric drug refractory epilepsy. *Neurol India*. 2020;68:270-3.
  462. Dube SK. Report on 47th SNACC Annual Meeting. *Journal of Neuroanaesthesiology and Critical Care* 2019; 6 (03):305-6.
  463. Dubey D, Azad SV. X-linked retinoschisis. *Indian J Ophthalmol*. 2020; 68:215.
  464. Dubey M, Nongkynrih B, Gupta SK, Kalaivani M, Goswami AK, Salve HR. Sleep Quality Assessment of Adolescents Residing in an Urban Resettlement Colony, New Delhi, India. *Indian J Community Med*. 2019; 44:271-6.
  465. Dubey S, Rastogi S, Sampath V, Khan SA, Kumar A. Role of intravenous zoledronic acid in management of giant cell tumor of bone-A prospective, randomized, clinical, radiological and electron microscopic analysis. *J Clin Orthop Trauma*. 2019;10:1021-6.
  466. Dubey S, Trikha V, Kumar A, Mittal S. Comments on Cementless distal fixation modular stem without reconstruction of femoral calcar for unstable intertrochanteric fracture in patients aged 75 years or more of Zha GC, Liu J, Wang Y, Feng S, Chen XY, Guo KJ, Sun JY. Published in *OrthopTraumatolSurg Res*. 2019;105(1):35-39. *OrthopTraumatolSurg Res*. 2019; 105:795.
  467. Dwarakanathan V, Kumar A, Nongkynrih B, Kant S, Gupta SK. Challenges in the conduct of community-based

- research. *Natl Med J India*. 2019; 31:366-9.
468. Elavarasi A, George J, Sharma MC, Kumari K, Garg A, Pandit AK, et al. Multiple Neurologic Deficits and Cognitive Decline in a Young Woman. *Ann Indian Acad Neurol*. 2019; 22:506-12.
  469. Elavarasi A, Goyal V, Samal P. Dancing Scapula: The Missed Movement. *Ann Indian Acad Neurol*. 2019; 22:218-9.
  470. Elavarasi A, Goyal V, Singh MB, Padma Srivastava MV. Is Triamcinolone an Easy and Efficient Way to Treat Meralgia Paresthetica? A Cohort Study. *Ann Indian Acad Neurol*. 2019;22:308-10.
  471. Elavarasi A, Goyal V. Jumping stump: look before you label. *BMJ Case Rep*. 2019;12:e228249.
  472. Elavarasi A, Goyal V. Reversible uraemic encephalopathy. *BMJ Case Rep*. 2019;12:e228261.
  473. Elavarasi A, Haq TM, Thahira T, Bineesh C, Kancharla LB. Acute Ischemic Stroke Due to Multiple Bee Stings\_A Delayed Complication. *Ann Indian Acad Neurol*. 2020;23:135-6.
  474. Elavarasi A, Haq TM, Thahira T, Bineesh C, Kancharla LB. Mobile Phone-Induced Vertebral Artery Dissection. *Ann Indian Acad Neurol*. 2019; 22:349-50.
  475. Elavarasi A, Kasturi N, Mani B. Macular Star and Choroidal Tubercles: A Rare Cause of Opticospinal Syndrome. *Can J Neurol Sci*. 2019;46:625-7.
  476. Elavarasi A, Mani B. Vertical Diplopia: Skew Deviation and Medullary Lesion. *Ann Indian Acad Neurol*. 2019;22:490.
  477. Elavarasi A, Singh MB, Srivastava P, Goyal V. Neuropsychiatric Lupus: The Devil is in the Detail. *Ann Indian Acad Neurol*. 2019;22:253-5.
  478. Elhence A, Shalimar. Treatment of non-alcoholic fatty liver disease - Current perspectives. *Indian J Gastroenterol*. 2020; 39:22-31.
  479. Ellipse Trial Investigators. Liraglutide in Children and Adolescents with Type 2 Diabetes. *N Engl J Med*. 2019; 381:637-646.
  480. Elwadhwi D, Khandelwal SK, Kumar L, Sharma A. Short-term impact of hematopoietic stem cell transplantation on psychiatric morbidity and quality of life in hematological malignancies in adults. DeekshaElwadhwi, SK Khandelwal, Lalit Kumar, Atul Sharma. *Indian J Psychol Med*. 2020; 42:61-8.
  481. Enas EA, Varkey B, Dharmarajan TS, Pare G, Bahl VK. Lipoprotein(a): An underrecognized genetic risk factor for malignant coronary artery disease in young Indians. *Indian Heart J*. 2019; 71:184-8.
  482. Faiq MA, Sidhu T, Sofi RA, Singh HN, Qadri R, Dada R, et al. A Novel Mathematical Model of Glaucoma Pathogenesis. *J Curr Glaucoma Pract*. 2019; 13:3-8.
  483. Farmania R, Jauhari P, Chakrabarty B, Gulati S. Chronic meningitis with persistent hypoglycorrhachia: An unusual presentation of Lyme's disease. *Neurol India*. 2019; 67:563-5.
  484. Farooqui FA, Deepti S. Myxomatous Mitral-Valve Prolapse. *N Engl J Med*. 2019; 381:e37.
  485. Farswan A, Gupta A, Gupta R, Kaur G. Imputation of Gene Expression Data in Blood Cancer and Its Significance in Inferring Biological Pathways. *Front Oncol*. 2020;9:1442.
  486. Faruq M, Kumar D, Wadhwa S, Shamim U, Mathur A, Parveen S, Garg A, et al. Intrafamilial variable spastic paraplegia/ataxia/ALS phenotype linked to a novel KIF5A mutation. *Clin Genet*. 2019; 96:271-3.
  487. Faruqui N, Joshi R, Martiniuk A, Lowe J, Arora R, Anis H, et al. A health care labyrinth: perspectives of caregivers on the journey to accessing timely cancer diagnosis and treatment for children in India. *BMC Public Health*. 2019; 19:1-2.
  488. Faruqui N, Joshi R, Martiniuk A, Lowe J, Arora R, Anis H, et al. A health care labyrinth: perspectives of caregivers on the journey to accessing timely cancer diagnosis and treatment for children in India. *BMC Public Health*. 2019; 19:161.
  489. Fatima S, Kamble SS, Kumar S, Ranganathan A, Kaer LV, Mohanty S. Mycobacterium tuberculosis programs mesenchymal stem cells to establish dormancy and persistence. *J Clin Invest*. 2020; 130:655-61.
  490. Fazal F, Gupta N, Ramu SK, Nayan A, Vikram NK, Ray A. Haemophagocytic lymphohistiocytosis in patients with human immunodeficiency virus infection: to treat or not to treat. *Pan Afr Med J*. 2019; 32:105.
  491. Feigin VL, Nichols E, Alam T, Bannick MS, Beghi E, Sagar R, et al. Global, regional, and national burden of neurological disorders, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Neurol*. 2019; 18:459-80.
  492. Ferrone G, Spinazzola G, Hadda V, Esquinas A. Proportional assist ventilation plus (PAVAV+) from weaning to assist control ventilation: insights for caution on issue. *Minerva Anestesiol*. 2019;85:1141-2.
  493. Gahlot GP, Das P, Baloda V, Singh A, Vishnubhatla S, Gupta SD, et al. Duodenal mucosal immune cells in treatment-naive adult patients with celiac disease having different histological grades and controls. *Indian J Pathol Microbiol*. 2019; 62:399-404.

494. Gahlot M, Goyal A, Singh AKC, Jyotsna VP, Gupta N, Khadgawat R. Long-term Response to Recombinant Human Growth Hormone Therapy in Indian Children with Growth Hormone Deficiency. *Indian J Endocrinol Metab.* 2019; 23:446-51.
495. Gairola M, Prabhaskar K, Babu G, Chaturvedi P, Kuriakose M, Birur P, ...Rath GK et al. Indian clinical practice consensus guidelines for the management of nasopharyngeal cancer. *Indian J Cancer.* 2020; 57(Suppl):S9-11.
496. Gamanagatti S. Necessity of Image Guidance for Subclavian Catheterization to Improve Patient Safety. *Indian J Pediatr.* 2019; 86:985-6.
497. Ganapathy A, Kumar V, Prathapamchandra V, Jessy JP, Rani N, Kaler S, et al. Topographic localization of nerve to masseter muscle to determine the primary nerve- muscle relation, an aid to facial sculpting techniques. *Muscles Ligaments Tendons J.* 2019; 10:124-9.
498. Ganie MA, Sahar T, Rashid A, Wani IA, Nisar S, Sathyapalan T, et al. Comparative Evaluation of Biomarkers of Inflammation Among Indian Women With Polycystic Ovary Syndrome (PCOS) Consuming Vegetarian vs. Non-vegetarian Diet. *Front Endocrinol (Lausanne).* 2019; 10:699.
499. Garg A, Kumar P, Rao RN, Kashyap R. Myeloma - associated amyloid arthropathy masquerading as seronegative arthritis. *South Asian J Cancer* 2020; 9:37-55.
500. Garg B, Kumar A, Gaba S, Ranjan P. Broken blade tip in lumbar disc space retrieved via anterior trans-abdominal approach: a rare but potentially devastating complication of lumbar spine surgery. *Int J Sci Res.* 2019; 8:15-6.
501. Garg B, Mehta N, Jaryal A. Larger screw on the concave side of apex pedicle: Friend or foe? Report on a rare cause of neurological deficit in scoliosis surgery. *Indian Spine J.* 2020;3:114-7.
502. Garg B, Mehta N. Minimally invasive transforaminal lumbar interbody fusion (MI-TLIF): A review of indications, technique, results and complications. *J Clin Orthop Trauma.* 2019; 10(Suppl 1):S156-62.
503. Garg B. Legends in Orthopedics: Prof. A K Gupta. *Indian J Orthop.* 2019;53:582.
504. Garg D, Agarwal A, Dash D, Mahajan S, Singh RK, Bhatia R, et al. Rasmussen's encephalitis presenting as progressive parietal dysfunction sans seizures. *Seizure.* 2019;71:219-21.
505. Garg D, Pedapati R, Nakra T, Singh RK, Prabhakar A, Dash D, ...Bhatia R, et al. Langerhans cell histiocytosis presenting as a rapidly evolving frontotemporal syndrome. *Neurol Sci,* 2019;40:1055-8.
506. Garg D, Vibha D, Pandit AK, Srivastava AK. Neurosyphilis presenting as pure cerebellar ataxia: an atypical manifestation. *BMJ Case Rep.* 2019;12:e231058.
507. Garg H, Dass C, Chhabra A. Anesthetic management of Fraser syndrome-Check laryngoscopy can help! *Paediatr Anaesth.* 2020; 30:197-198.
508. Garg H, Kaushal S, Nayak B, Singh P, Ramteke P, Sarangi J. Carcinoid tumor masquerading as testicular tumor. *J Clin Urol.* 2019; 13:150-3.
509. Garg H, Kumar S, Singh Y, Khanna P. Overcoming the airway eclipse in coronavirus disease 2019 epidemic. *Airway.* 2020;3:25-30.
510. Garg H, Tiwari D, Nayak B, Singh P, Yadav S, Kumar R, et al. A comparative analysis of various surgical approaches of nephron-sparing surgery and correlation of histopathological grade with RENAL nephrometry score in renal cell carcinoma. *J Min Access Surg.* 2020; 16:144-51.
511. Garg K, Agrawal D. Role of Minimal Invasive Spine Surgery Techniques in Thoracolumbar Burst Fractures. *Indian J Neurotrauma.* 2019; 16:33-7.
512. Garg K, Deora H, Mishra S, Tripathi M, Sadashiva N, Chandra PS, et al. How is neurosurgical residency in India? Results of an anonymized national survey of residents. *Neurol India.* 2019;67:777-82.
513. Garg K, Sharma R, Dash C, Agrawal D, Sharma BS. Spinal Intradural Extramedullary Ependymoma with Intracranial Metastasis and Leptomeningeal Spread: A Case Report and Comprehensive Review of Literature. *Neurol India.* 2019;67:1352-7.
514. Garg K, Singh PM, Singla R, Aggarwal A, Borle A, Singh M, et al. Role of Decompressive Craniectomy in Traumatic Brain Injury - A Meta-analysis of Randomized Controlled Trials. *Neurol India.* 2019;67:1225-32.
515. Garg M, Garg K, Singh PK, Satyarthee GD, Agarwal D, Mahapatra AK, et al. Neurogenic Fever in Severe Traumatic Brain Injury Treated with Propranolol: A Case Report. *Neurol India.* 2019;67:1097-9.
516. Garg M, Kumar A, Singh PK, Agrawal D, Satyarthee GD, Gupta D, Gurjar HK, Mishra M, Chandra PS, Kale SS. Single-Stage Transpedicular Approach for Circumferential Arthrodesis in Traumatic Lumbar Vertebral Body Burst Fractures. *Indian J Neurotrauma.* 2019; 16:14-20.
517. Garg P, Jaryal AK, Kachhawa G, Kriplani A, Deepak KK. Sequential profile of endothelial functions and arterial stiffness in preeclampsia during the course of pregnancy. *Pregnancy Hypertens.* 2019; 18:88-95.
518. Garg PK, Meena D, Babu D, Padhan RK, Dhingra R, Krishna A, et al. Endoscopic versus laparoscopic drainage of

- pseudocyst and walled-off necrosis following acute pancreatitis: A randomized trial. *Surg Endosc.* 2020; 34:1157-66
519. Garg PK, Meena D, Babu D, Padhan RK, Dhingra R, Krishna A, et al. Endoscopic versus laparoscopic drainage of pseudocyst and walled-off necrosis following acute pancreatitis: a randomized trial. *Surg Endosc.* 2020; 34:1157-66.
  520. Garg PK, Singh VP. Organ Failure due to systemic injury in acute pancreatitis. *Gastroenterology.* 2019; 156:2008-23.
  521. Garg R, Nandi R, Hadda V, Mohan A. Conventional laryngoscopy as a rescue for fiber-optic-assisted tracheal intubation in a patient with perilaryngeal edema after rigid bronchoscopy: A case report. *Lung India.* 2019; 36:253-4.
  522. Garg S, Gupta SK, Bakhshi S, Mallick S, Kumar L. ETP-ALL with aberrant B marker expression: Case series and a brief review of literature. *Int J Lab Hematol.* 2019; 41:e32-7.
  523. Garg S, Malhotra RK, Khan SI, Sarkar S, Susrutha PN, Singh V, et al. Fisetin attenuates isoproterenol-induced cardiac ischemic injury in vivo suppressing RAGE/NF- $\kappa$ B mediated oxidative stress, apoptosis and inflammation. *Phytomedicine.* 2019; 56:147-55.
  524. Garg S, Sain A, Sharma V, Farooque K, Rangaswamy N. Functional Outcome of a Coronal Shear Fracture of the Capitellum Managed by Herbert Screw Fixation Using the Anterolateral Surgical Approach. *Cureus.* 2020; 12:e6578.
  525. Garg S, Sharma V, Farooque K, Rangaswamy N. Functional Outcome of a Coronal Shear Fracture of the Capitellum Managed by Herbert Screw Fixation Using the Anterolateral Surgical Approach. *Cureus.* 2020; 12:e6578.
  526. Garg V, Gogia A, Gupta G. Upfront Lenalidomide in Follicular Lymphoma: Time has Come or Not? *Indian J Hematol Blood Transfus.* 2019; 35:362-3.
  527. Garg VK, Mishra S, Gupta N, Garg R, Bharati S, Kumar V, et al. Microbial and Antibiotic Susceptibility Profile among Isolates of Clinical Samples of Cancer Patients admitted in the Intensive-care Unit at Regional Tertiary Care Cancer Center: A Retrospective Observational Study. *Indian J of Crit Care Med.* 2019; 23:67-72.
  528. Gaur K, Gupta RK, Saran RK, Sharma MC. Composite pleomorphic xanthoastrocytoma-ganglioglioma; assessing and addressing the dilemma of differential expression of neuronal markers: Case report with diagnostic perspective. *Indian J Pathol Microbiol.* 2019; 62:296-9.
  529. Gaur N, Samdani A, Meel R, Bajaj MS. Atypical presentation of IgG(4)-related disease as an isolated inferior orbital mass. *BMJ Case Rep.* 2019; 12:e231609.
  530. Gaur V, Chaudhary S, Tyagi A, Agarwal S, Sharawat SK, Sarkar S, et al. Dysregulation of miRNA expression and their prognostic significance in pediatric cytogenetically normal acute myeloid leukemia. *British J of Hematology* 2020; 188:e90-4.
  531. Gautam D, Pande A, Malhotra R. Fatal Cobalt Cardiomyopathy Following Revision Total Hip Arthroplasty – A Brief Report with Review of Literature. *Arc Bone J Surg.* 2019; 7:379-83.
  532. Gautam H, Basu A, Mohapatra S, Sood S, Kapil A, Das BK. A case of bilateral empyema with pericardial effusion caused by *Streptococcus intermedius* in an immunocompetent patient. *Indian J Case Rep.* 2019; 5:530-2.
  533. Gautam H, Singla M, Jain R, Lodha R, Kabra SK, Singh UB. Point of Care Urine lipoarabinomannan antigen detection for diagnosis of tuberculosis in children. *Int J Tuberc Lung Dis.* 2019; 23:714-9.
  534. Gautam S, Bisht S, Dada R. The Link between Oxidative Stress and Cancer: Prevention through Yoga. *React Oxyg Species.* 2019; 8:258-66.
  535. Gautam S, Gautam S, Kumar U, Kumar M, Kanga U, Dada R. Association of HLA-G 3'UTR Polymorphisms with Soluble HLA-G Levels and Disease Activity in Patients with Rheumatoid Arthritis: A Case-Control Study. *Immunol Invest.* 2020; 49:88-105.
  536. Gautam S, Tolahunase M, Kumar U, Dada R. Impact of yoga based mind-body intervention on systemic inflammatory markers and co-morbid depression in active Rheumatoid arthritis patients: A randomized controlled trial. *Restor Neurol Neurosci.* 2019; 37:41-59.
  537. Gautam US, Mehra S, Kumari P, Alvarez X, Niu T, Tyagi JS, et al. Mycobacterium tuberculosis sensor kinase DosS modulates the autophagosome in a DosR-independent manner. *Commun Biol.* 2019; 2:349.
  538. GBD 2017 Diarrhoeal Disease Collaborators. Quantifying risks and interventions that have affected the burden of diarrhoea among children younger than 5 years: an analysis of the Global Burden of Disease Study 2017. *Lancet Infect Dis.* 2020; 20:37-59.
  539. GBD 2017 HIV collaborators. Global, regional, and national incidence, prevalence, and mortality of HIV, 1980–2017, and forecasts to 2030, for 195 countries and territories: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors Study 2017. *Lancet HIV.* 2019; 6:e831-59.
  540. GBD 2017 Lower Respiratory Infections Collaborators. Quantifying risks and interventions that have affected the burden of lower respiratory infections among children younger than 5 years: an analysis for the Global Burden of Disease Study 2017. *Lancet Infect Dis.* 2020; 20:60-79.
  541. GBD 2017 Pancreatic Cancer Collaborators. The global, regional, and national burden of pancreatic cancer and its attributable risk factors in 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of

- Disease Study 2017. *Lancet Gastroenterol Hepatol.* 2019;4:934-47.
542. Gehlot S, Gupta A, Gupta R. SDCT-AuxNet $\theta$ : DCT augmented stain deconvolutional CNN with auxiliary classifier for cancer diagnosis. *Med Image Anal.*2020;61:101661.
  543. George B, Menon H, Bhurani D, Damodar S, Apte S, Seth T, et al. A Prospective Observational Multi-institutional Study on Invasive Fungal Infections Following Chemotherapy for Acute Myeloid Leukemia (MISFIC Study): A Real World Scenario from India. *Indian J Hematol Blood Transfus.* 2020; 36:97-103.
  544. George N, Sethi P, Nischal N, Kumar A, Siripurapu G, Wig N, et al. A Catastrophic Presentation of Enteric Fever with Secondary Hemophagocytic Lymphohistiocytosis. *J Assoc Physicians India.* 2018; 66:11-2.
  545. Gerdin LW, Khajanchi M, Kumar V Roy, Nobhohit; Saha, Makhan Lal; Soni, Kapil Dev; Mishra, Anurag; Kamble, Jyoti; Borle, Nitin; Verma, Chandrika Prasad. Comparison of emergency department trauma triage performance of clinicians and clinical prediction models: a cohort study in India. *BMJ Open.* 2020; 10:e032900.
  546. Ghoniya R, Raheja A. Imaging in diffuse leptomeningeal glioneuronal tumor. *Neurol India.*2019;67:615-6.
  547. Ghose S, Ghosh S, Tanwar VS, Tolani P, Kutum R, Seth S, et al. Investigating Coronary Artery Disease methylome through targeted bisulfite sequencing. *Gene.* 2019; 721:144107.
  548. Ghosh A, Singh A, Yadav R, Khan SA, Kumar VS, Gamanagatti S. Solid variant ABC of long tubular bones: A diagnostic conundrum for the radiologist. *Indian J Radiol Imaging.* 2019;29:271-6
  549. Ghosh D, Anupa G, Bhat MA, Bharti J, Mridha AR, Sharma JB, et al. How Benign is Endometriosis: Multi-Scale Interrogation of Documented Evidence. *Curr Opin Gynecol Obstet.* 2019; 318-45.
  550. Ghosh S, Jain R, Jhanjee S, Rao R, Mishra AK. Alcohol Biomarkers and their Relevance in Detection of Alcohol Consumption in Clinical Settings. *Int Arch Subst Abuse Rehabil.* 2019; 1:002.
  551. Ghosh-Jerath S, Downs S, Singh A, Paramanik S, Goldberg G, Fanzo J. Innovative matrix for applying a food systems approach for developing interventions to address nutrient deficiencies in indigenous communities in India: a study protocol. *BMC Public Health.* 2019; 19:944.
  552. Giridhar P, Gupta P, Mallick S, Upadhyay AD, Rath GK. Impact of adjuvant therapy on survival in patients with myoepithelial carcinoma: A systematic review and individual patient data analysis of 691 patients. *Radiother Oncol.* 2019;140:125-30.
  553. Giridhar P, Kashyap L, Mallick S, Upadhyay AD, Rath GK. Impact of surgery and adjuvant treatment on the outcome of extraocular sebaceous carcinoma: a systematic review and individual patient's data analysis of 206 cases. *Int J Dermatol.* 2020; 59:494-505.
  554. Girishan S, Tripathi M, Garg A, Doddamani R, Bajaj J, Ramanujam B, et al. Enhancing outcomes of endoscopic vertical approach hemispherotomy: understanding the role of "temporal stem" residual connections causing recurrence of seizures. *J Neurosurg Pediatr.* 2019 8:1-9.
  555. Global Neurotrauma Outcomes Study (GNOS) collaborative. Management and outcomes following emergency surgery for traumatic brain injury - A multi-centre, international, prospective cohort study (the Global Neurotrauma Outcomes Study). *Int J Surg Protoc.* 2020;20:1-7.
  556. Godiyal AK, Singh U, Anand S, Joshi D. Analysis of Force Myography (FMG) based locomotion patterns. *Measurement.* 2019; 140:497-503.
  557. Goel AD, Gosain M, Amarchand R, Sharma H, Rai S, Kapoor SK, et al. Effectiveness of a Quality Improvement Program Using Difference-in-Difference Analysis for Home Based Newborn Care - Results of a Community Intervention Trial. *Indian J Pediatr.* 2019; 86:1028-35.
  558. Goel P, Bajpai M, Damle NA, Naranje P, Tripathi M. Bowel Excretion of Technetium-99mL, L-Ethylene Dicysteine Masquerading as a Dilated Ureter in a Case of Pelvi-Ureteric Junction Obstruction: Case Report and Review. *J Indian Assoc Pediatr Surg.* 2019; 24:222-4.
  559. Goel P, Bajpai M, Sharma K, Naranje P. Previously Undescribed Anomalies of Hepatic Artery and Portal Venous Anatomy in a Case of Extrahepatic Biliary Atresia and its Implications. *J Indian Assoc Pediatr Surg.* 2019; 24:294-6.
  560. Goel P, Jain S, Bajpai M, Khanna P, Jain V, Yadav DK. Does caudal analgesia increase the rates of urethrocutaneous fistula formation after hypospadias repair? Systematic review and meta-analysis. *Indian J Urol.* 2019; 35:222-9.
  561. Goel S, Kumar A, Ravani RD, Chandra P, Chandra M, Kumar V. Comparison of ranibizumab alone versus ranibizumab with targeted retinal laser for branch retinal vein occlusion with macular edema. *Indian J Ophthalmol.* 2019; 67:1105.
  562. Goel S, Sahay P, Singhal D, Maharana PK, Titiyal JS, Sharma N. Intraoperative optical coherence tomography – guided release of lenticulo-corneal adhesion and lens aspiration in anterior dislocation of lens with corneal ectasia. *Indian J Ophthalmol.* 2020; 68:510-2.
  563. Gogia A, Deo SVS, Sharma D, Phulia RK, Thulkar S, et al. Discordance in Biomarker Expression in Breast Cancer After Metastasis: Single Center Experience in India. *J Glob Oncol.* 2019; 5:1-8.



564. Gogia A, Deo SVS, Sharma D, Thulkar S, Kumar R, Malik PS, et al. Clinicopathologic Characteristics and Treatment Outcomes of Patients With Up-Front Metastatic Breast Cancer: Single-Center Experience in India. *J Glob Oncol.* 2019;5:1-9.
565. Gogia A, Gupta R, Kumar L, Sharma A, Soni L. Chronic lymphocytic leukemia with deletion 17p: An Indian scenario. *South Asian J Cancer.* 2019; 8:40.
566. Gopalakrishnan V, Agarwal SK, Aggarwal S, Mahajan S, Bhowmik D, Bagchi S. Infection is the chief cause of mortality and non-death censored graft loss in the first year after renal transplantation in a resource limited population: A single centre study. *Nephrology (Carlton).* 2019;24:456-63.
567. Gosal JS, Ruparelia J, Garg M, Praneeth K, Bhaskar S, Jha DK. Giant skull vault defect in a child caused by Langerhans cell histiocytosis: the calvaria-eating disease. *Childs Nerv Syst.*2020; 36:651-4.
568. Goswami AK, Ramadass S, Kalaivani M, Nongkynrih B, Kant S, Gupta SK. Disability and its association with sociodemographic factors among elderly persons residing in an urban resettlement colony, New Delhi, India. *PLoS One.* 2019; 14:e0224494
569. Goswami C, Poonia S, Kumar L, Sengupta D. Staging System to Predict the Risk of Relapse in Multiple Myeloma Patients Undergoing Autologous Stem Cell Transplantation. *Front Oncol.* 2019;9:633.
570. Goswami D, Sardar A, Baidya DK, Yadav R, Bhutia O, Roychoudhury A. Comparative evaluation of two doses of Etoricoxib (90mg and 120mg) as preemptive analgesic for postoperative pain relief in mandibular fracture surgery under general anesthesia: A prospective, randomized, double blinded, placebo controlled trial. *Turk J Anaesthesiol Reanim.* 2020; 48:24-30.
571. Goswami K. IAPSM Declaration 2018: A promising Beginning *Healthline J;* 2019;10:3-6.
572. Goswami R, Nair A. Diabetes mellitus, vitamin D & osteoporosis: Insights. *Indian J Med Res.* 2019; 150:425-8.
573. Goud V, Alagirusamy R, Das A, Kalyanasundaram D. Box-Behnken technique based multi-parametric optimization of electrostatic spray coating in the manufacturing of thermoplastic composites. *Mater Manuf Process.* 2019; 34:1638-45.
574. Goud V, Singh D, Alagirusamy R, Das A, Kalyanasundaram D. Investigation of the mechanical performance of carbon/polypropylene 2D and 3D woven composites manufactured through multi-step impregnation processes. *Compos Part A Appl Sci Manuf.* 2020; 130:105733.
575. Govindaswamy A, Bajpai V, Khurana S, Aravinda A, Batra P, Malhotra R, et al. Prevalence and characterization of beta-lactamase-producing *Escherichia coli* isolates from a tertiary care hospital in India. *J Lab Physicians.* 2019; 11:123-7.
576. Govindaswamy A, Bajpai V, Khurana S, Batra P, Mathur P, Malhotra R. Prevalence and characterization of carbapenemase producing *Escherichia coli* from a tertiary care hospital in India. *J Glob Infect Dis.* 2019; 11:123-4.
577. Govindaswamy A, Bajpai V, Singh P, Lohiya A, Ayyanar M, Gupta DK et al. Prevalence and Antibiotic Resistance Profile of Cerebrospinal Fluid Pathogens from Neurosurgical Patients from Level 1 Trauma Center in India. *Asian J Neurosurg.* 2019;14:834-8.
578. Govindaswamy A, Khurana S, Bajpai V, Batra P, Malhotra R, Mathur P. Prevalence and characterization of beta-lactamase producing *Escherichia coli* isolates from a tertiary care hospital in India. *J Lab Physicians.* 2019; 11:123-7.
579. Govindaswamy A, Tripathi V, Gupta A, Mathur P, Mittal S. An unusual case of post-trauma polymicrobial cutaneous diphtheria. *Infection.* 2019;47:1055-7.
580. Gowda NR, Wankar A, Arya SK. Feedback System in Healthcare: The Why, What and How. *Int J Marketing Studies.* 2020; 12:52-61.
581. Goyal A, Boro H, Khadgawat R. Male Gender Identity and Reversible Hypokalemic Hypertension in a 46,XX Child with 11-Beta-Hydroxylase Deficiency Congenital Adrenal Hyperplasia. *Cureus.* 2019; 11:e5248.
582. Goyal A, Grover A, Gauba K, Gupta A, Mehta N, Dutta S, et al. A community-based pragmatic, controlled trial for preventing and reducing oral diseases among 1-6-year-old children visiting Anganwadi centers, under the Integrated Child Development Scheme, India. *BMC Public Health.* 2019; 19:1626.
583. Goyal A, Gupta Y, Kalaivani M, Sankar MJ, Kachhawa G, Bhatla N, et al. Concordance of glycaemic and cardiometabolic traits between Indian women with history of gestational diabetes mellitus and their spouses: an opportunity to target the household. *Diabetologia.* 2019; 62:1357-65.
584. Goyal A, Khadgawat R. An egg in the neck: A rare case of massively calcified thyroid nodule. *Indian J Med Res.* 2019; 150:419..
585. Goyal A, Khadgawat R. Monitoring Bone Health in Children with Hemophilic Arthropathy: Where Do We Stand? *Indian J Pediatr.* 2019; 86:487-8.
586. Goyal A, Kubihal S, Gupta Y, Jyotsna VP, Khadgawat R. Dynamic Testing for Evaluation of Adrenal and Gonadal

- Function in Pediatric and Adult Endocrinology: An Overview. *Indian J Endocrinol Metab.* 2019; 23:593-601.
587. Goyal A, Malhotra R, Kulshrestha V, Kachhawa G. Severe hyperandrogenism due to ovarian hyperthecosis in a young woman. *BMJ Case Rep.* 2019; 12:e232783.
  588. Goyal A, Razik A, Kandasamy D, Seth A, Das P, Ganeshan B, et al. Role of MR texture analysis in histological subtyping and grading of renal cell carcinoma: a preliminary study. *AbdomRadiol (NY).* 2019; 44:3336-49.
  589. Goyal A, Tirumalasetty S, Hossain G, Challoo R, Arya M, Agrawal R, et al. Development of a Stand-Alone Independent Graphical User Interface for Neurological Disease Prediction with Automated Extraction and Segmentation of Gray and White Matter in Brain MRI Images. *J Healthc Eng.* 2019;2019:9610212.
  590. Goyal S, Biswas A, Mohanti BK, Bakhshi S. Non-metastatic Ewing's sarcoma family of tumors arising from head and neck: a single institution experience. *TherRadiol Oncol.* 2019;3:22.
  591. Gribble MO, Head JR, Prabhakaran D, Kapoor D, Garg V, Mohan D, et al. Potentially Heterogeneous Cross-Sectional Associations of Seafood Consumption with Diabetes and Glycemia in Urban South Asia. *Int J Environ Res Public Health.* 2020; 17:459.
  592. GUARDIAN Consortium, Sivasubbu S, Scaria V. Genomics of rare genetic diseases-experiences from India. *Hum Genomics* 2019; 14:52.
  593. Gujral UP, Prabhakaran D, Pradeepa R, Kandula NR, Kondal D, Deepa M,...Tondon N, et al. Isolated HbA1c identifies a different subgroup of individuals with type 2 diabetes compared to fasting or post-challenge glucose in Asian Indians: The CARRS and MASALA studies. *Diabetes Res Clin Pract.* 2019; 153:93-102.
  594. Gulati K, Madhukar V, Verma V, Singh AR, Gupta SK, Sarkar C. Medical leadership competencies: A comparative study of physicians in public and private sector hospitals in India. *Int J Health Plann Manage.* 2019; 34:e947-63.
  595. Gulati K, Singh AR, Kumar S, Verma V, Gupta SK, Sarkar C. Impact of a leadership development programme for physicians in India. *Leadersh Health Serv.* 2019; 33:43-55.
  596. Gulati S, Saini L, Kaushik JS, Chakrabarty B, Arora NK, Pandey RM et al. The Development and Validation of DSM 5-Based AIIMS-Modified INDT ADHD Tool for Diagnosis of ADHD: A Diagnostic Test Evaluation Study. *Neurol India.* 2020; 68:352-7.
  597. Guleria P, Agarwal S, Iyer VK, Jain D, Mathur SR, Yadav D. Subcategorisation of AUS/FLUS thyroid lesions as per the 2017 Bethesda System for Reporting Thyroid Cytopathology: a retrospective study from a tertiary care centre analysing risk of malignancy (ROM) of the different subcategories. *J Clin Pathol.* 2019; 72:771-7.
  598. Guleria P, Jain D. Thymic lesions of the paediatric age group: a comprehensive review of non-neoplastic and neoplastic etiologies. *Mediastinum.* 2019; 3:24.
  599. Guleria P, Kumar L, Kumar S, Bhatla N, Ray R, Singhal S, et al. A clinicopathological study of granulosa cell tumors of the ovary: Can morphology predict prognosis? *Indian J Pathol Microbiol.* 2020;63:53-9.
  600. Guleria P, Madan K, Kumar S, Saikia J, Jain D. Pulmonary epithelial myoepithelial carcinoma with papillary architecture: an uncommon morphology of a rare tumour. *Pathology.* 2019; 51:443-5.
  601. Guleria P, Mallick SR, Ramteke P, Jain D. Cytomorphological clues for a correct diagnosis of anaplastic lymphoma kinase-positive large B-cell lymphoma. *Cytopathology.* 2019; 30:432-5.
  602. Guleria P, Parshad R, Malik PS, Ray R, Pandey RM, Jain D. Histotyping of Indian thymomas: A clinicopathologic study from north India. *Indian J Med Res.* 2019; 150:153-60.
  603. Gulla KM, Balaji A, Mukherjee A, Jat KR, Sankar J, Lodha R, et al. Course of Illness after Viral Infection in Indian Children with Cystic Fibrosis. *J Trop Pediatr.* 2019; 65:176-82.
  604. Gulla KM, Gunathilaka G, Jat KR, Sankar J, Karan M, Lodha R, et al. Utility and safety of endobronchial ultrasound-guided transbronchial needle aspiration and endoscopic ultrasound with an echobronchoscope-guided fine needle aspiration in children with mediastinal pathology. *Pediatr Pulmonol.* 2019; 54:881-5. .
  605. Gulla KM, Jat KR, Lodha R, Kabra SK. Clinical profile and course of children with postinfectious bronchiolitis obliterans from a tertiary care hospital. *Lung India.* 2020; 37:8-12.
  606. Gunathilaka PKG, Jat KR, Sankar J, Lodha R, Kabra SK. Propofol versus Fentanyl for Sedation in Pediatric Bronchoscopy: A Randomized Controlled Trial. *Indian Pediatr.* 2019; 56:1011-6.
  607. Gunisetty S, Nayak K, Rai RC, Chawla Y, Reddy ES, Aggarwal C, et al. Analysis of dengue specific memory B cells, neutralizing antibodies and binding antibodies in healthy adults from India. *Int J Infect Dis.* 2019; 84(Suppl):S57-63.
  608. Gupta A, Bagri NK, Tripathy SK, Barwad A, Phulware RH, Hari P. Successful use of tocilizumab in amyloidosis secondary to systemic juvenile idiopathic arthritis. *Rheumatol int.* 2020; 40:153-9.
  609. Gupta A, Bhatnagar V, Dhua AK, Jana M, Singh A, Malik R. Correlation of Hepatic Artery Resistive Index with Portal Pressure and Serum Nitric Oxide Levels in Patients with Extrahepatic Portal Vein Obstruction. *J Indian Assoc Pediatr Surg.* 2020; 25:38-42.

610. Gupta A, Girdhar KK. Bypassing trachea-oesophageal fistula during endotracheal intubation for surgical correction: Time to rethink!. *Indian J Anaesth.* 2019; 63:950-1.
611. Gupta A, Gupta N. Failed videolaryngoscopy in an infant with giant vallecular cyst managed successfully with a 'three-person technique' of fibre-optic intubation. *BMJ Case Rep.* 2019; 12: e231035.
612. Gupta A, Kaushik G, Sharma A, Kumar S, Sagar S. Improving Quality of Emergency Care in India by Implementing Trauma Registries. *Indian J Neurotrauma.* 2019;16:124-9.
613. Gupta A, Patel C, Gupta SK, Ramakrishnan S, Saxena A, Kothari SS. Myocardial perfusion abnormalities in Eisenmenger syndrome. *Nucl Med Commun.* 2020; 41:206-11.
614. Gupta A, Patel C, Gupta SK, Ramakrishnan S, Saxena A, Kothari SS. Myocardial perfusion abnormalities in Eisenmenger syndrome. *Nucl Med Commun.* 2020; 41:206-11.
615. Gupta A, Raheja S, Gupta A. Indigenous technique for continuous perineural catheter insertion and our regime for continuous adductor canal blocks. *Saudi J Anaesth.* 2020; 14:131-2.
616. Gupta A, Ramakrishnan L, Pandey RM, Sati HC, Khandelwal R, Khenduja P, et al. Risk factors of anemia amongst elderly population living at high-altitude region of India. *J Family Med Prim Care.* 2020; 9:673-82.
617. Gupta A, Sharma S, Mathur S, Yadav DK, Gupta DK. Cervical congenital infantile fibrosarcoma: a case report. *J Med Case Rep.* 2019; 13:41.
618. Gupta A, Singh PK, Iqbal N, Sharma P, Baraigya HR, Kaur P, et al. Structural and binding studies of phosphopantetheine adenylyl transferase from *Acinetobacter baumannii*. *Biochim Biophys Acta Proteins Proteom.* 2019; 1867:537-47.
619. Gupta A, Singh PK, Sharma P, Kaur P, Sharma S, Singh TP. Structural and biochemical studies of phosphopantetheine adenylyltransferase from *Acinetobacter baumannii* with dephospho-coenzyme A and coenzyme A. *Int J Biol Macromol.* 2020; 142:181-90.
620. Gupta A, Tripathy SK, Phulware R, Arava S, Bagri BK. Cryopyrin-associated periodic fever syndrome in children: A case-based review. *Int J Rheum Dis.* 2020; 23:262-70.
621. Gupta AK, Jana M, Kumar A. Imaging in short stature and bone age estimation. *Indian J Pediatr.* 2019; 86:939-51.
622. Gupta AK, Kumar GK, Rani K, Pokhriyal R, Khan MI, Kumar DR, et al. 2D-DIGE as a strategy to identify serum protein biomarkers to monitor pharmacological efficacy in dopamine dictated states of Parkinson's disease and schizophrenia. *Neuropsychiatr Dis Treat.* 2019; 15:1031-44.
623. Gupta AK, Meena JP. Neutropenia in Pediatric Infections. *Indian J Pediatr.* 2019; 86:983-4.
624. Gupta AK, Pokhriyal R, Das U, Khan MI, Kumar DR, Gupta R, et al. Evaluation of  $\alpha$ -synuclein and apolipoprotein E as potential biomarkers in cerebrospinal fluid to monitor pharmacotherapeutic efficacy in dopamine dictated disease states of Parkinson's disease and schizophrenia. *Neuropsychiatr Dis Treat.* 2019; 15:2073-85.
625. Gupta AK, Pokhriyal R, Khan MI, Kumar DR, Gupta R, Chadda RK, et al. Cerebrospinal fluid proteomics for identification of  $\alpha$ 2-macroglobulin as a potential biomarker to monitor pharmacological therapeutic efficacy in dopamine dictated disease states of Parkinson's disease and schizophrenia. *Neuropsychiatr Dis Treat.* 2019; 15:2853-67.
626. Gupta AK, Shroff M. Pediatric Radiology: Why the pediatricians need it? *Indian J Pediatr.* 2019; 86:803-4.
627. Gupta D, Thakral D, Bakhshi S, Kabra SK, Mitra DK. Hematopoietic stem cell transplantation in children with Griscelli Syndrome type 2: Experience and outcomes. *Indian J Pathol Microbiol.* 2019; 62:279-82.
628. Gupta D, Thakral D, Kumar P, Kabra SK, Lodha R, Kumari R, et al. Primary Immunodeficiency Disorders Among North Indian Children. *Indian J Pediatr.* 2019; 86:885-91.
629. Gupta DK, Mahapatra AK, AIIMS Team Craniopagus. Addressing the Shared Circumferential Sinus in Craniopagus Conjoined Twins: Is Venous Bypass an Option? *World Neurosurg.* 2020;133:421-422.
630. Gupta DK, Mahapatra AK. AIIMS Team Craniopagus. Addressing the Shared Circumferential Sinus in Craniopagus Conjoined Twins: Is Venous Bypass an Option? *World Neurosurg.* 2020;133:421-2.
631. Gupta DS, Kapoor I, Mahajan C, Prabhakar H. Baclofen for neurogenic fever in a patient with cerebral contusion. *J Clin Anesth.* 2019; 55:134-5.
632. Gupta J, Jauhari P. How important it is to Differentiate AMAN from AIDP in Childhood GBS? A Clinician's Perspective. *Indian J Pediatr.* 2019; 86:321-2.
633. Gupta J, Kaul S, Srivastava A, Kaushik N, Ghosh S, Sharma C, et al. Expression, purification and characterization of the Hepatitis E virus like-particles expressed in the *Pichia pastoris*. *Front Microbiol.* 2020; 11:141.
634. Gupta J, Sinha R, Jauhari P, Malik R, Chakrabarty B, Gulati S. Acute Severe Pancreatitis: A Dreadful Complication of Sodium Valproate. *Indian J Pediatr.* 2019; 86:655.
635. Gupta M, Mahapatra M, Saxena R. Cytogenetics impact on the prognosis of acute myeloid leukemia. *J Lab*

- Physicians. 2019; 11:133-7.
636. Gupta M, Yadav A, Kumar RL, Kumar S. Sudden death during flight due to strangulated hernia – A rare case report. *J Indian Acad Forensic Med.* 2019; 41:82-3.
  637. Gupta M, Yadav R, Mahey R, Agrawal A, Upadhyay A, Malhotra N, et al. Correlation of body mass index (BMI), anti-mullerian hormone (AMH), and insulin resistance among different polycystic ovary syndrome (PCOS) phenotypes - a cross-sectional study. *Gynecol Endocrinol.* 2019;35:970-3.
  638. Gupta MD, Girish MP, Yadav R. The saturated fat Controversy: Finding calmness in chaos. *Indian Heart J.* 2019; 71:181-3.
  639. Gupta N, Bharati SJ, Kumar V, Garg R, Mishra S, Bhatnagar S. Comparative evaluation of forced air warming and infusion of amino acid enriched solution on intraoperative hypothermia in patients undergoing head and neck surgeries: a prospective randomized study. *Saudi J Anaesth.* 2019;13:318-24.
  640. Gupta N, Chaudhry R, Soneja M, Valappil VE, Malla S, Razik A, et al. Infectious versus non-infectious causes of oligoarticular inflammatory arthritis: A prospective study from a tertiary care hospital in north India. *Drug Discov Ther.* 2019; 13:96-100.
  641. Gupta N, Chaudhry R, Valappil VE, Soneja M, Ray A, Kumar U, et al. Lyme arthritis: A prospective study from India. *J Family Med Prim Care.* 2019; 8:4046-7.
  642. Gupta N, Correa ARE, Jana M, Kabra M. Report of a Novel Homozygous Nonsense DDR2 Mutation in an Indian Adult Male with Spondylo-meta-epiphyseal Dysplasia, Short Limb-Abnormal Calcification Type. *J Pediatr Genet.* 2019; 8:153-6.
  643. Gupta N, Dattatri R, Gupta A. Continuous erector spinae block as an anesthetic technique in breast surgery: What is the current evidence? *J Anaesthesiol Clin Pharmacol.* 2019;35:422-3.
  644. Gupta N, Dutta K, Garg R, Bharati SJ. Ketamine and propofol infusion for therapeutic rigid bronchoscopy in a patient with central airway obstruction. *J Anaesthesiol Clin Pharmacol.* 2019; 35:410-2.
  645. Gupta N, Gupta A. Commentary: Venous air embolism during hysteroscopy: A stitch in time saves nine! *J Anaesthesiol Clin Pharmacol.* 2019;35:417-20.
  646. Gupta N, Gupta A. Complications during hysteroscopy for gynecological procedures: prevention is better than cure! *Korean J Anesthesiol.* 2020;73:79-80.
  647. Gupta N, Gupta A. Misplaced nasogastric tube: A simple test to rule out its intratracheal placement. *J Anaesthesiol Clin Pharmacol.* 2019;35:267-8.
  648. Gupta N, Kazi ZB, Nampoothiri S, Jagdeesh S, Kabra M, Puri RD, et al. Clinical and Molecular Disease Spectrum and Outcomes in Patients with Infantile-Onset Pompe Disease. *J Pediatr.* 2020; 216:44-50.
  649. Gupta N, Kumar R, Seth T, Garg B, Sati H, Sharma A. Clinical significance of circulatory microRNA-203 in serum as novel potential diagnostic marker for multiple myeloma. *J Cancer Rese Clin Oncol.* 2019; 145:1601-11.
  650. Gupta N, Kumar R, Seth T, Garg B, Sharma A. Targeting of stromal versican by miR-144 and miR-199 inhibit multiple myeloma by downregulating FAK/STAT3 signaling. *RNA Biol.* 2020; 17:98-111.
  651. Gupta N, Nischal N. Management of acute febrile diseases in limited resource settings: a case-based approach. *Infez Med.* 2020; 28:11-6.
  652. Gupta N, Niyas VKM, Nischal N, Soneja M, Vinod KS, Ranjan S, et al. Epidemiological trends in patients living with human immunodeficiency virus: a 13-year experience from a tertiary care center in India. *Infez Med.* 2019; 27:308-15.
  653. Gupta N, Potdar V, Praharaj I, Giri S, Sapkal G, Yadav P, ... Dar L, et al. Laboratory preparedness for SARS-CoV-2 testing in India: Harnessing a network of Virus Research & Diagnostic Laboratories (VRDL). *Indian J Med Res.* 2020; 151:216-25.
  654. Gupta N, Vashist P, Ganger A, Tandon R, Gupta SK. Eye donation and eye banking in India. *National Med J India* 2018;31(5): 283-286.
  655. Gupta N, Yadav S, Gurrnkonda VB, Kabra M. First report of THOC6 related intellectual disability (Beaulieu Boycott Innes syndrome) in two siblings from India. *Eur J Med Genet.* 2020; 63:103742.
  656. Gupta P, Kumar S, Singhal S, Meena J, Mathur S, Kumar L. Role of pelvic and para-aortic lymphadenectomy in epithelial ovarian cancers. *Int J Reprod Contracept Obstet Gynecol.* 2020; 9:328-34.
  657. Gupta P, Prieto-Merino D, Ajay VS, Singh K, Roy A, Krishnan A, et al. Cardiovascular risk prediction in India: Comparison of the original and recalibrated Framingham prognostic models in urban populations. *Wellcome Open Res.* 2019; 4:71.
  658. Gupta P, Singh J, Kumar N. Lurasidone-Associated Manic Switch in a Patient With Depression: A Case Report. *J Clin Psychopharmacol.* 2019; 39:687-9.

659. Gupta P, Verma KK, Khandpur S, Bhari N. Weekly Azathioprine Pulse versus Betamethasone Oral Mini-Pulse in the Treatment of Moderate-to-Severe Alopecia Areata. *Indian J Dermatol.* 2019; 64:292-8.
660. Gupta R, Abraham RA, Kondal D, Dhatwalia S, Prabhakaran D, Ramakrishnan L. Association of trans fatty acids with lipids and other cardiovascular risk factors in Indian Industrial population. *BMC Res Notes.* 2019; 12:342.
661. Gupta R, Kumar V, Gupta N, Ratre BK. Perioperative management of a giant solitary fibrous tumor of Pleura. *J Anaesthesiol Clin Pharmacol.* 2020;36:138-40.
662. Gupta R, Narnoli S, Das N, Sarkar S, Balhara YPS. Patterns and predictors of self-harm in patients with substance-use disorder. *Indian J Psychiatry.* 2019; 61:431-8.
663. Gupta S, Azmira K, Gupta V. A Membrane in the Eye. *J Pediatr Ophthalmol Strabismus.* 2019; 56:271.
664. Gupta S, Giridhar P, Sharma DN, Haresh KP, Julka PK, Rath GK. Can Chemotherapy be Integrated with Brachytherapy in Locally Advanced Carcinoma Cervix- A Proof of Principle Study. *Asian Pac J Cancer Prev.* 2019; 20:2653-7.
665. Gupta S, Jagannath S, Jain S, Sethia R, Gunjan D, Mathur P, et al. Su1429–Neutrophil Cd64 Expression is a Novel Biomarker to Distinguish Sterile and Infected Fluid Collections in Patients with Acute Pancreatitis. *Gastroenterology.* 2019;156:S-546.
666. Gupta S, Kabra SK. Indigenous Regression Equations for Forced Oscillation Technique - A Much Needed Affair. *Indian J Pediatr.* 2020; 87:173-4.
667. Gupta S, Kumar R, Kalaivani M, Nongkynrih B, Kant S, Gupta SK. Prevalence, awareness, treatment, and control of diabetes and hypertension among elderly persons in a rural area of Ballabgarh, Haryana. *J Family Med Prim Care.* 2020; 9:777-82.
668. Gupta S, Markan A, Azmira K, Dada T, Gupta V. Supracapsular fixation for repositioning Ahmed glaucoma valve in case with tube-endothelial touch. *Eur J Ophthalmol.* 2020; 30:212-6.
669. Gupta S, Mukherjee A, Lodha R, Kabra M, Deepak KK, Khadgawat R, et al. Effects of Exercise Intervention Program on Bone Mineral Accretion in Children and Adolescents with Cystic Fibrosis: A Randomized Controlled Trial. *Indian J Pediatr.* 2019; 86:987-94.
670. Gupta S, Selvan H, Gupta V. Single-suture single-knot ab interno cycloplexy for extensive posttraumatic cyclodialysis: Modified sewing machine technique. *J Cataract Refract Surg.* 2019; 45:3-7.
671. Gupta S, Selvan H, Khokhar S. Hook and flip technique: for phacoemulsification in non-rotating nuclei and posterior polar cataracts. *Int Ophthalmol.* 2019; 39:1219-23.
672. Gupta S, Selvan H, Shakrawal J, Gupta V. One-step management of post-traumatic triple dialysis using two rings. *Eur J Ophthalmol.* 2019; 29:NP9-13.
673. Gupta S, Warjri G, Gupta V. 'E' sign: a clinical clue to the diagnosis of microspherophakia. *Eye (Lond).* 2020; 34:597-9.
674. Gupta SD, Shamim S, Gamanagatti S, Shalimar, Gupta P, Khan MA, et al. Re188 lipiodol therapy in liver cancer with portal vein thrombosis: a promising alternative. *J Nucl Med.* 2019; 60(Suppl1):431.
675. Gupta SK, Anderson RH. Fifth arch arteries: Why do developmental biologists encounter them so infrequently? *Pediatr Int.* 2020; 62:421.
676. Gupta SK, Anderson RH. Virtual dissection: An alternative to surface-rendered virtual three-dimensional cardiac model. *Ann Pediatr Cardiol.* 2020; 13:102-3.
677. Gupta SK, Bakhshi S, Chopra A, Kamal VK. Molecular genetic profile in BCR-ABL1 negative pediatric B-cell acute lymphoblastic leukemia can further refine outcome prediction in addition to that by end-induction minimal residual disease detection. *Leuk Lymphoma.* 2018; 59:1899-904.
678. Gupta SK, Parakh N. Septal bounce illustrated on coronary angiogram. *BMJ Case Rep.* 2019; 12:e230179.
679. Gupta SK, Ramadass S. Vitamin D in chronic obstructive pulmonary disease and asthma in Indian population. *Lung India* 2019; 36:473-5.
680. Gupta SK, Sharma HP, Das U, Velpandian T, Saklani R. Effect of rutin on retinal VEGF, TNF- $\alpha$ , aldose reductase, and total antioxidant capacity in diabetic rats: molecular mechanism and ocular pharmacokinetics. *Int Ophthalmol.* 2020; 40:159-68.
681. Gupta SV, Aggarwal S, Vyas S. Transplantation of live allograft kidney with double ureter: A case report and review of literature. *Indian J Urol.* 2019; 35:161-3.
682. Gupta U, Gupta Y, Jose D, Mani K, Jyotsna VP, Sharma G, et al. Effectiveness of a Video-Based Lifestyle Education Program Compared to Usual Care in Improving HbA1c and Other Metabolic Parameters in Individuals with Type 2 Diabetes: An Open-Label Parallel Arm Randomized Control Trial (RCT). *Diabetes Ther.* 2020; 11:667-79.
683. Gupta V, Dada T. Should we perform peripheral laser iridotomy in primary angle closure suspects: implications of

- the ZAP trial? *Ann Transl Med.* 2019; 7(Suppl 3):S157.
684. Gupta V, Mehta N, Singh G, Xess I, Khanna N. Mystifying brown pear-shaped multiseptate structures in the potassium hydroxide mounts of patients with suspected dermatophytosis. *Int J Dermatol.* 2020; 59:e68-70.
  685. Gupta V, Mridha AR, Khaitan BK. Unsatisfactory response to sirolimus in Maffucci syndrome-associated spindle cell hemangiomas. *Dermatol Ther.* 2019; 32:e12851.
  686. Gupta V, Saxena R, Vashist P, Bhardwaj A, Pandey RM, Tandon R, et al. Spectacle Coverage among Urban Schoolchildren with Refractive Error Provided Subsidized Spectacles in North India. *Optom Vis Sci.* 2019; 96:301-8.
  687. Gupta V, Saxena R, Walia GK, Agarwal T, Vats H, Dunn W, et al. Gestational route to healthy birth (GaRBH): protocol for an Indian prospective cohort study. *BMJ Open.* 2019; 9:e025395.
  688. Gupta V, Shaikh NF, Gupta S. Remodeling an Avascular Bleb. *J Glaucoma.* 2019; 28:e126-7.
  689. Gupta V, Sharma VK. Skin typing: Fitzpatrick grading and others. *Clin Dermatol.* 2019; 37:430-6.
  690. Gupta V, Sharma VK. Syndromic management of sexually transmitted infections: A critical appraisal and the road ahead. *Natl Med J India.* 2019; 32:147-52.
  691. Gupta V, Singh A, Khadgawat R, Agarwal A, Iqbal A, Mehtab W, et al. The spectrum of clinical and subclinical endocrinopathies in treatment-naïve patients with celiac disease. *Indian J Gastroenterol.* 2019; 38:518-26.
  692. Gupta YK, Meenu M, Peshin SS. Aluminium utensils: Is it a cause of concern. *Natl Med J India.* 2019; 32:38-40.
  693. Gurjar HK, Mishra S, Garg K. Contralateral Ventriculostomy for Intraoperative Brain Relaxation in Supratentorial Brain Tumors. *Neurol India.* 2020;68:159-62.
  694. Gurjar HK, Mishra S, Garg K. Incipient Transcalvarial Cerebral Herniation: Underrecognized Complication of Elective Craniotomy. *World Neurosurg.* 2019;130:240-3.
  695. Gurnani N, Gupta M, Aggarwal S, Nehra A, Vishnubhatla S. Assessment Of Impact Of Bariatric Surgery On The Cognitive Functions Of Morbidly Obese Patients Psychology And Bariatric Surgery-Pre And Post-Op Challenges. *Obesity Surg.*2019; 29:244.
  696. Gyawali S, Patra BN. Autism spectrum disorder: Trends in research exploring etiopathogenesis. *Psychiatry Clin Neurosci.* 2019; 73:466-75.
  697. Hackmann C, Balhara YPS, Clayman K, Nemeč PB, Notley C, Pike K, et al. Perspectives on ICD-11 to understand and improve mental health diagnosis using expertise by experience (INCLUDE Study): an international qualitative study. *Lancet Psychiatry.* 2019; 6:778-85.
  698. Hadda V, Kumar R, Madan K, Khan MA, Mohan A, Khilnani GC, et al. Intraobserver Variability and Reliability of Diaphragm Thickness Measurement on Ultrasonography by Critical Care Physician Among Patients with Sepsis. *J Assoc Chest Physicians.* 2019; 7:18-22.
  699. Hadda V, Tiwari P, Mittal S, Madan K, Mohan A. Ultrasonography of diaphragm in chronic obstructive pulmonary disease: Unanswered questions. *Lung India* 2020;37:83-4.
  700. Hadda V, Madan M, Mittal S, Madan K, Esquinas A. Severe community acquired pneumonia: Prediction of outcome. *J Crit Care.* 2019;54:287.
  701. Hanson CS, Gutman T, Craig JC, Bernays S, Raman G, Zhang Y, et al. Identifying important outcomes for young people with CKD and their caregivers: A nominal group technique study. *Am J Kidney Dis.* 2019; 74:82-94.
  702. Haresh KP., Udhayam, N, Agarwal, S, Gupta S, Giridhar P, Rath GK A large helmet-shaped proliferating trichilemmal tumor of the scalp: Is definitive radiotherapy the treatment? A case report. *J Egypt Natl Canc Inst.* 2019; 31:7.
  703. Harikrishnan S, Bahl A, Roy A, Mishra A, Prajapati J, Nanjappa MC. National Heart Failure Registry, India: Design and methods. *Indian Heart J.* 2019; 71:488-91.
  704. Hasan N, Chawla R, Kumar A. Optic Disc Hemangioblastoma with Papilledema in a Case of Von Hippel – Lindau Disease. *Ophthalmol Retina.* 2019; 3:733.
  705. Hemachandran N, Gamanagatti S. Imaging of Pancreatic Trauma-A Clinical Scenario-Based Approach. *J Gastrointest Abdom Radiol.* 2020; 3:028-34.
  706. Himani, Kumar R, Ansari JA, Mahdi AA, Sharma D, Karunanand B, Datta SK. Blood Lead Levels in Occupationally Exposed Workers Involved in Battery Factories of Delhi-NCR Region: Effect on Vitamin D and Calcium Metabolism. *Ind J Clin Biochem.* 2020; 35:80-7.
  707. Hip Attack Investigators. Accelerated Surgery Versus Standard Care in Hip Fracture (HIP ATTACK): An International, Randomised, Controlled trial. *Lancet.* 2020; 395:698-708.
  708. Hoda W, Ratre BK, Bharti SJ. Use of venturi to prevent desaturation during nebulization. *Lung India.* 2019;36:567-8.
  709. Hooda B, Chouhan RS, Lamsal R, Rath GP. Incidence and predictors of postoperative pulmonary complications in patients undergoing craniotomy and excision of posterior fossa tumor. *J Anaesthesi Clin Pharmacol.* 2019;35:254-60.

710. Howlett JG, Stebbins A, Petrie MC, Jhund PS, Castelvechio S, Roy A, et al. STICH Trial Investigators. CABG Improves Outcomes in Patients With Ischemic Cardiomyopathy: 10-Year Follow-Up of the STICH Trial. *JACC Heart Fail.* 2019; 7:878-87.
711. Hussain M, Siddharth V, Arya SK. ABC, VED and lead time analysis in the surgical store of a public sector tertiary care hospital in Delhi. *Indian J Public Health.* 2019; 63:194-8.
712. Hussain S, Singh A, Nazir SU, Tulsyan S, Khan A, Kumar R, et al. Cancer drug resistance: A fleet to conquer. *JCell Biochem.* 2019; 120:14213-25.
713. Ihtisham K, Ramanujam B, Srivastava S, Mehra NK, Kaur G, Khanna N, et al. Association of cutaneous adverse drug reactions due to antiepileptic drugs with HLA alleles in a North Indian population. *Seizure.* 2019;66:99-103.
714. India State-Level Disease Burden Initiative Malnutrition Collaborators. The burden of child and maternal malnutrition and trends in its indicators in the states of India: the Global Burden of Disease Study 1990-2017. *Lancet Child Adolesc Health.* 2019; 3:855-70.
715. India State-Level Disease Burden Initiative Mental Disorders Collaborators. The burden of mental disorders across the states of India: the Global Burden of Disease Study 1990-2017. *Lancet Psychiatr.* 2020; 7:148-61.
716. India State-Level Disease Burden Initiative Mental Disorders Collaborators. The burden of mental disorders across the states of India: the Global Burden of Disease Study 1990-2017. *Lancet Psychiatr.* 2020; 7:148-61.
717. India State-Level Disease Burden Initiative Road Injury Collaborators. Mortality due to road injuries in the states of India: the Global Burden of Disease Study 1990–2017. *Lancet Public Health.* 2020; 5:e86-98.
718. Irpachi K, Sharan S, Karanjkar A, Kapoor PM. Anesthesia Concerns in Child with Takayasu Arteritis for Catheterization Laboratory Intervention. *J Card Crit Care.* 2019; 03:49-50.
719. Ismail J, Sankar J. Maintenance Intravenous Fluids in Children - The Verdict was Already Out? *Indian J Pediatr.* 2019; 86:981-2.
720. Ismail J, Sankar J. Peripheral Perfusion Index - Magic Wand in Prediction of Shock? *Indian J Pediatr.* 2019; 86:879-80.
721. Iyer GK, Paplikar A, Alladi S, Dutt A, Sharma M, Mekala S, ... Hooda R, et al. ICMR Neurocognitive Tool Box Consortium. Standardising Dementia Diagnosis across Linguistic and Educational Diversity: Study Design of the Indian Council of Medical Research-Neurocognitive Tool Box (ICMR-NCTB). *J Int Neuropsychol Soc.* 2020;26:172-86.
722. Iyer H, Elhence A, Mittal S, Madan K, Garg PK. Pulmonary complications of acute pancreatitis. *Expert Rev Respir Med.* 2020; 14:209-17.
723. Izzuddeen Y, Gupta S, Haresh KP, Sharma D, Giridhar P, Rath GK. Hypofractionated radiotherapy with temozolomide in diffuse intrinsic pontine gliomas: a randomized controlled trial. *J Neurooncol.* 2020;146:91-5.
724. Jaacks LM, Yadav S, Panuwet P, Kumar S, Rajacharya GH, Johnson C, ... Tondon N, et al. Metabolite of the pesticide DDT and incident type 2 diabetes in urban India. *Environ Int.* 2019; 133(Pt A):105089.
725. Jacob OM, Kant S, Haldar P, Kaur R, Dadhwal V, Prakash S. Intravenous iron sucrose and change in hemoglobin, ferritin, and oxidative stress-markers among moderately anaemic pregnant women attending a secondary care level hospital in Northern India. *Indian J Public Health.* 2020; 64:11-6.
726. Jacob OM, Kumar R. Effectiveness of quarter standard-dose combination dose for initial management of hypertension. *Natl Med J India* 2019; 32:26-28.
727. Jacob OM, Malhotra S. Community interventions and participation in women's groups and counselling through home visits and their effect on a child's growth. *Natl Med J India.* 2019 ;32:24-26.
728. Jain A, Gupta AK, Jat K, Kabra SK. Late dumping syndrome in an infant on feeding jejunostomy. *BMJ Case Rep.* 2019; 12:e228471.
729. Jain A, Lodha R. Management of Latent Tuberculosis Infection in Children from Developing Countries. *Indian J Pediatr.* 2019; 86:740-5.
730. Jain A, Mittal S, Tiwari P, Hadda V, Madan K, Mohan A. Improving Lung Function in Severe Heterogenous Emphysema with the Spiration Valve System: Stilla Great Need to "EMPROVE". *Am J Respir Crit Care Med.* 2020;201:391.
731. Jain D, Nambirajan A, Borczuk A, Chen G, Minami Y, Moreira AL, et al. Immunocytochemistry for predictive biomarker testing in lung cancer cytology. *Cancer Cytopathol.* 2019; 127:325-39.
732. Jain D. Lung Molecular Cytopathology: EGFR and Beyond. *J Cytol.* 2019; 36:124-7.
733. Jain D. Pediatric mediastinal tumors: clinicopathologic spectrum. *Mediastinum.* 2020; 4:1.
734. Jain K, Gupta N, Yadav M, Thulkar S, Bhatnagar S. Radiological evaluation of airway - What an anaesthesiologist needs to know! *Indian J Anaesth.* 2019;63:257-64.

735. Jain K, Nangia S, Ballambattu VB, Sundaram V, Sankar MJ, Ramji S, et al. Goat lung surfactant for treatment of respiratory distress syndrome among preterm neonates: a multi-site randomized non-inferiority trial. *J Perinatol.* 2019; 39(Suppl 1):3-12.
736. Jain K, Sankar MJ, Nangia S, Ballambattu VB, Sundaram V, Ramji S, et al. Causes of death in preterm neonates (<33 weeks) born in tertiary care hospitals in India: analysis of three large prospective multicentric cohorts. *J Perinatol.* 2019; 39(Suppl 1):13-9.
737. Jain K, Yadav M, Gupta N, Thulkar S, Bhatnagar S. Ultrasonographic assessment of airway. *J Anaesthesiol Clin Pharmacol.* 2020; 36:5-12.
738. Jain P, Ojha SK, Kumar V, Bakhshi S, Singh S, Yadav S. Differential seminal plasma proteome signatures of acute lymphoblastic leukemia survivors. *Reprod Biol.* 2019; 19:322-8.
739. Jain P, Wadhwa N, Joshi MK, Jain M, Halder A, Mishra K. Cellular mesenchymal epithelial transition (C-MET) gene copy number variation in gastric adenocarcinoma: A pilot search for new marker for targeted therapy in HER-2/neu resistance. *Indian J Pathol Microbiol.* 2020;63:86-9.
740. Jain R, Verma R. Laboratory Profile of Women Substance Users Seeking Treatment at Tertiary Care Centre in North India: A Retrospective Study. *J Addict Res.* 2020; 4:6-8.
741. Jain R. Critical Issues in Alcohol and Drugs of Abuse Testing. *Res. Indian J Med Res.* 2019;150:646-7.
742. Jain S, Garg S, Mittal R, Digge VK, Shukla A, Ganesh V. Arthroscopic Repair of a “U” Shaped Rotator Cuff Tear: Modified Margin Convergence with a Single Triple-loaded Suture Anchor. *Cureus.* 2020;12:e6690.
743. Jain S, Gupta A, Ray A, Vikram NK. A case of chronic lead poisoning with herbal-based medication. *BMJ Case Rep.* 2019; 12:e227954.
744. Jain S, Kumar V, Salunkhe N, Tewari R, Chandra P, Kumar A. Swept-Source OCT Analysis of the Margin of Choroidal Coloboma: New Insights. *Ophthalmol Retina.* 2020; 4:92-9.
745. Jain S, Nag HL, Kantiwal P, Devanand H. Spontaneous distal migration and protrusion of a Kuntscher intramedullary nail from the left femur: a rare complication. *Cureus.* 2020;12:e6576.
746. Jain S, Padhan R, Bopanna S, Jain SK, Dhingra R, Dash NR, et al. Percutaneous Endoscopic Step-Up Therapy Is an Effective Minimally Invasive Approach for Infected Necrotizing Pancreatitis. *Dig Dis Sci.* 2020; 65:615-22.
747. Jain V, Bhalla AS, Manchanda S, Pillai R, Sharma DN, Mathur VP. Effect of intravenous administration of zoledronic acid on jawbone density in cases having skeletal metastasis: A prospective clinical study. *J Indian Prosthodont Soc.* 2019; 19:203-9.
748. Jain V, Kumar A, Ahmad N, Jana M, Kalaivani M, Kumar B, et al. Genetic polymorphisms associated with obesity and non-alcoholic fatty liver disease in Asian Indian adolescents. *J Pediatr Endocrinol Metab.* 2019; 32:749-58.
749. Jain V, Sangdup T, Agarwala S, Bishoi AK, Chauhan S, Dhua A, et al. Abernethy malformation type 2: varied presentation, management and outcome. *J Pediatr Surg.* 2019; 54:760-5.
750. Jain V, Seith A, Manchanda S, Pillai R, Sharma DN, Mathur VP. Effect of intravenous administration of zoledronic acid on jaw bone density in cases having skeletal metastasis: A prospective clinical study. *J Indian Prosthodont Soc.* 2019; 19:203-9.
751. Jaiswal AK, Bhatia D, Rajesh, Gupta M, Millo T. Analytical Aspects and Management of copper poisoning- A review. *Indian J Forensic Community Med.* 2019; 6:110-5.
752. Jaiswal AK, Bist K, Ali Z, Dey A, Sharma DK. Tin Toxicity with Analytical Aspects and its Management. *Int J Forensic Sci.* 2019; 2:78-83.
753. Jaiswal AK, Giri N, Gupta M, Jha A, Ojha R. Analytical Aspects and Management of Antimony poisoning- A review. *J Pharm Adv Res.* 2019; 2:452-7.
754. Jaiswal AK, Krishna S, Chand K, Millo T, Gupta SK. Method Validation and Quantitative Estimation of Ethanol using n-propanol as Internal Standard in whole Blood by Gas Chromatography-Headspace (GC-HS). *J Forensic Chem Toxicol.* 2019; 5:5-9.
755. Jaiswal AK, Kumar R, Thakur A, Puri P, kumar R, Kanojia R. Cobalt Toxicity/poisoning with Analytical Aspects and Management. *Int J Med Lab Res.* 2019; 4:21-8.
756. Jaiswal AK, Shubhangi N, Dey A, Sharma DK, Millo T, Gupta SK. Iron poisoning with analytical aspects and its management. *Int J Med Lab Res.* 2019; 4:33-40.
757. Jaiswal AK, Solanki S, Priya A, Sherawat S, Kumar R. Bismuth poisoning with analytical aspects and its management. *Int J Med Lab Res.* 2019; 4:47-54.
758. Jaiswal AK, Sunil, Navotsana S, Chauhan S, Millo T. Detection and Identification of Organophosphorus in Gastric Lavage. *Int J Forensic Sci.* 2019; 2:25-8.
759. Jamshed N, Aggarwal P, Galwankar S, Bhoi S. The INDUSEM position paper on the emerging electronic waste



- management emergency. *J Emerg Trauma Shock*. 2020; 13:25-9.
760. Jangir H, Nambirajan A, Seth A, Sahoo RK, Dinda AK, Nayak B, et al. Prognostic stratification of muscle invasive urothelial carcinomas using limited immunohistochemical panel of Gata3 and cytokeratins 5/6, 14 and 20. *Ann Diagn Pathol*. 2019; 43:151397.
  761. Jat KR, Kumar P, Mukherjee A, Randev S, Jose B, Kalaivani M, et al. Wheezing in Preschool Children and Total IgE Levels: A Birth Cohort Study. *Indian Pediatr*. 2020; 57:235-8.
  762. Jat KR, Lodha R. Do Inhaled Corticosteroids Alter Nasopharyngeal Flora in Children with Asthma? *Indian Pediatr*. 2019; 56:911-2.
  763. Jauhari P, Kamila G. Treatment Options in Refractory West Syndrome. *Indian J Pediatr*. 2020; 87:1-2.
  764. Jayaraj P, Sen S. Evaluation of PD-L1 and PD-1 expression in aggressive eyelid sebaceous gland carcinoma and its clinical significance. *Indian J Ophthalmol*. 2019; 67:1983-7.
  765. Jayasundar R, Ghatak S, Makhdoomi MA, Luthra K, Singh A, Velpandian T. Challenges in integrating component level technology and system level information from Ayurveda: Insights from NMR phytometabolomics and anti-HIV potential of select Ayurvedic medicinal plants. *J Ayurveda Integr Med*. 2019; 10:94-101.
  766. Jena BR, Khandelwal A, Pandia MP, Singh GP. Anesthetic Management of a Patient with Gilbert's Syndrome for Spine Surgery: A Case Report. *J Neuroanaesthesiol Crit Care*. 2020; 07:107-9.
  767. Jena BR, Kumar SP, Bindra A, Kumar N. Letter to the Editor: Electrocardiogram Changes in Intracranial Space Occupying Lesion. *J Neuroanesth Critical Care* 2019; Oct:1-2.
  768. Jha J, Singh MK, Singh L, Pushker N, Bajaj MS, Sen S, et al. Expression of BAP1 and ATM proteins: Association with AJCC tumor category in uveal melanoma. *Ann Diagn Pathol*. 2019; 44:151432.
  769. Jha J, Singh MK, Singh L, Pushker N, Bajaj MS, Sen S, et al. Prognostic relevance of ATM protein in uveal melanoma and its association with clinicopathological factors. *Int J Clin Oncol*. 2019; 24:1526-35.
  770. Jha P, Manjunath N, Singh J, Kalaivani M, Garg A, Raheja A, et al. Analysis of PD-L1 expression and T cell infiltration in different molecular subgroups of diffuse midline gliomas. *Neuropathology*. 2019; 39:413-24.
  771. Jindal D, Roy A, Ajay VS, Yadav SK, Prabhakaran D, Tandon N. Strategies for Stakeholder Engagement and Uptake of New Intervention: Experience From State-Wide Implementation of mHealth Technology for NCD Care in Tripura, India. *Glob Heart*. 2019; 14:165-172.
  772. Jobin SP, Maitra S, Baidya DK, Subramaniam R, Prasad G, Seenu V. Role of serial lactate measurement to predict 28day mortality in patients undergoing emergency laparotomy for perforation peritonitis: prospective observational study. *J Intensive Care*. 2019; 7:58.
  773. John O, Gummidi B, Tiwari A, Ramakrishnan L, Jha V. Study to test and operationalize preventive approaches for CKD of undetermined etiology in Andhra Pradesh, India. *Kidney Int Rep*. 2019; 4:1412-9.
  774. Johnson LCM, Chwastiak L, Poongothai S, Tandon N, Anjana RM, Aravind S, et al. Adaptations and patient responses to behavioral intervention components in a depression-focused chronic disease care model implemented in India. *Transl Behav Med*. 2020; 10:35-45.
  775. Jose A, Nagori SA, Arya S, Roychoudhury. A Hyoid bone syndrome masquerading as temporomandibular joint dysfunction. *Br J Oral Maxillofac Surg*. 2019; 57:477-8.
  776. Jose AP, Awasthi A, Kondal D, Kapoor M, Roy A, Prabhakaran D. Impact of repeated blood pressure measurement on blood pressure categorization in a population-based study from India. *J Hum Hypertens*. 2019; 33:594-601.
  777. Joseph J, Chandran DS, Kiran RV, Abhived VV, Sivaprakasam M. Image-free technique for flow mediated dilation using ARTSENS® Pen. *Conf Proc IEEE Eng Med Biol Soc*. 2019; 2019:5051-4.
  778. Joseph J, Gopichandran L, Seth S, Tirwa M. Effectiveness of a structured heart failure clinical pathway on nurses' knowledge and patient care outcomes. *J Pract Cardiovasc Sci*. 2020; 6:53.
  779. Joshi P, Joshi M, Seth N, Deorari A, Anand P. Enhancing the quality of Discharge Counseling and reducing the unnecessary neonatal followup visits: A quality improvement initiative. *Nursing J India*. 2019; 110:252-6.
  780. Joshi R, Tripathi M, Gupta P, Goyal A, Gupta YK. Depression in patients receiving pharmacotherapy for epilepsy: An audit in a tertiary care centre. *Pharmacol Rep*. 2019; 71:848-54.
  781. Joshi S, Choudhury A, Magoon R, Sehgal L, Malik V, Hote MP. Transesophageal echocardiographic estimation of coronary sinus blood flow for predicting favourable postoperative transit time coronary artery graft flow measurements: A pilot study. *J Card Vasc Anaesth*. 2020; 34:58-64.
  782. Jyani G, Prinja S, Ambekar A, Bahuguna P, Kumar R. Health impact and economic burden of alcohol consumption in India. *Int J Drug Policy*. 2019; 69:34-42.
  783. Kadyan J S, Srivastava RN, Pandey J, Dayal P. A Cross Sectional Study on Professional Stress, Depression, Alcohol Use & Quality of Life Among IT/ITES Professionals in Selected Companies in NCR- National Capital Region.

Think India J.2019; 22:5353-67.

784. Kakkar A, Bhardwaj N, Sakthivel P, Singh CA, Jain D, Mathur SR, et al. Fine needle aspiration cytology of cribriform adenocarcinoma of minor salivary gland, a recently defined entity. *Cytopathology*. 2019; 30:662-6.
785. Kakkar A, Bhardwaj N, Sakthivel P, Singh CA, Jain D, Mathur SR, et al. Fine Needle Aspiration Cytology of Cribriform Adenocarcinoma of Minor Salivary Gland, a Recently Defined Entity. *Cytopathology*. 2019; 30:662-6.
786. Kakkar A, Jangra K, Kumar N, Sharma MC, Mathur SR, Deo SS. Epithelial-myoepithelial carcinoma of the breast: A rare type of malignant adenomyoepithelioma. *Breast J*. 2019-; 25:1273-5.
787. Kakkar A, Kaur K, Verma A. Pediatric mediastinal germ cell tumors. *Mediastinum*. 2019; 3:30.
788. Kakkar A, Nandy SB, Gupta S, Bharagava B, Airan B, Mohanty S. Adipose tissue derived mesenchymal stem cells are better respondents to TGFβ1 for in vitro generation of cardiomyocyte-like cells. *Mol Cell Biochem*. 2019; 460:53-66.
789. Kakkar A, Purkait S, Agarwal S, Mallick S, Gogia A, Karak AK, et al. Primary thyroid lymphoma: A series from a tertiary care center in Northern India. *J Cancer Res Ther*. 2019; 15:669-75.
790. Kakkar A, Sakthivel P, Mahajan S, Thakar A. Nasopharyngeal Papillary Adenocarcinoma as a Second Head and Neck Malignancy. *Head Neck Pathol*. 2019; 13:699-704.
791. Kakkar A, Sharma B, Das P, Jain S, Dattagupta S, Sood R. ALK-negative anaplastic large-cell lymphoma diagnosed on liver biopsy in a child presenting with non-resolving pyrexia. *Indian J Med Paediatr Oncol*. 2019; 40:S169-72.
792. Kakkar AK, Padhy BM, Sarangi SC, Gupta YK. Methodological Characteristics of Clinical Trials: Impact of Mandatory Trial Registration. *J Pharm Pharm Sci*. 2019; 22:131-41.
793. Kale SS, Borkar SA. APCSS-CVJ Special Topic Series. *Neurospine*. 2019;16:184-5.
794. Kalsi AK, Halder A, Jain M, Srivastava A. Association of cadmium, chromium manganese and lead with hyperprolactinemia: A pilot study. *J Clin Diagn Res*. 2020; 14:QC04-7.
795. Kalum SJD, Ray A, Bhari N, Vikram NK. Cutaneous microembolism: a close mimic of Janeway's lesion. *BMJ Case Rep*. 2019; 12:e232129.
796. Kamal G, Shah SB, Gupta A. Anesthesia Challenges in the Management of Freeman-Sheldon Syndrome: Report of Two Cases and Literature Review. *AANA J*. 2020; 88:35-8.
797. Kandasamy D, Sharma R, Gupta AK. Bowel Imaging in Children Part 1. *Indian J Pediatr*. 2019; 86:805-16.
798. Kankarwal M, Devi YS, Deb KS, Anand RK, Singh KJK. A Study to Assess the Knowledge among Staff Nurses Working in Various ICUs Regarding Identification and Management of ICU Delirium with a View to Develop a Protocol. *EC Nurs Healthcare*. 2019; 1.1:31-9.
799. Kannan S, Dongare PA, Garg R, Harsoor SS. Describing and Displaying Numerical and Categorical Data. *Airway* 2019;2:64-70.
800. Kanodia A, Sakthivel P, Singh CA, Rajeshwari M. Strawberry nose and rhinosporidiosis. *QJM*. 2020; 113:64-5.
801. Kanodia P, Kaur G, Coshic P, Chatterjee K, Neeman T, George A, et al. Characterization of biological variation of peripheral blood immune cytochrome in an Indian cohort. *Sci Rep*. 2019; 9:14735.
802. Kant K, Tomar AK, Sharma P, Kundu B, Singh S, Yadav S. Human epididymis protein 4 quantification and interaction network analysis in seminal plasma. *Protein Pept Lett*. 2019; 26:458-65.
803. Kant S, Halder P, Gupta A, Lohiya A. Serum calcium level among pregnant women and its association with pre-eclampsia and delivery outcomes: A cross-sectional study from North India. *Nepal J Epidemiol*. 2019; 9:795-803.
804. Kant S, Kumar R, Malhotra S, Kaur R, Halder P. Prevalence and determinants of anemia among adult males in a rural area of Haryana, India. *J Epidemiol Glob Health*. 2019; 9:128-34.
805. Kant S, Malhotra S, Halder P, Kaur R, Kumar R. Anemia among pregnant women attending antenatal clinic at a secondary healthcare facility in district Faridabad, Haryana. *Indian J Community Fam Med*. 2019; 5:51-5.
806. Kanwat H, Banjara R, Kumar VS, Majeed A. Conjoined twins presenting with foot deformities: insights to management and challenges. *BMJ Case Reports*. 2019; 12:e231247.
807. Kanwat H, Mittal S, Trikha V, Malhotra R. Unusual Bilateral Neck of Femur Stress Fracture in a Healthy, Non-athletic Individual – A Case Report and Literature Review. *J Orthop Case Rep*. 2019; 9:90-3.
808. Kapoor D, Gupta Y, Desai A, Praveen D, Joshi R, Rozati R, et al. Lifestyle intervention programme for Indian women with history of gestational diabetes mellitus. *Glob Health Epidemiol Genom*. 2019;4:e1.
809. Kapoor I, Prabhakar H, Mahajan C. Postoperative Cognitive Dysfunction. *Indian J Crit Care Med*. 2019;23(Suppl 2):S162-4.
810. Kapoor I, Prabhakar H, Mahajan C. Pressure inside endoscope: An important intraoperative surrogate ! *J Pediatr Neurosci*. 2019;14:238.

811. Kapoor M, Agrawal D, Ravi S, Roy A, Subramanian SV, Guleria R. Missing female patients: an observational analysis of sex ratio among outpatients in a referral tertiary care public hospital in India. *BMJ Open*. 2019; 9:e026850.
812. Kapoor P, Monga N, Kharbanda OP, Kapila S, Miglani R, Moganty R. Effect of orthodontic forces on levels of enzymes in gingival crevicular fluid (GCF): A systematic review. *Dental Press J Orthod*. 2019; 24:40.e1-22.
813. Kapoor PM. Algorithm-Based Platelet Function Tests: A Need or a Greed? *J Card Crit Care*. 2019; 03:05-7.
814. Kapoor PM. Do New Technologies in Cardiac Critical Care Add to Social and Economic Challenges in India? A Reality Check. *J Card Crit Care*. 2019; 02:051-3.
815. Kapoor PM. Simulation on Extracorporeal Membrane Oxygenation. *J Card Crit Care*. 2019; 3:055-8.
816. Kapur S, Bhalla AS, Jana M. Pediatric Chest MRI: A Review. *Indian J Pediatr*. 2019; 86:842-53.
817. Kapur S, Das CJ, Sharma S. Multiparametric Magnetic Resonance Imaging of the Prostate: An Update. *Ann Nat Acad Med Sci (India)*. 2019; 55:74-83.
818. Kapur S, Goyal A. Clubbing masquerading as a vascular malformation! *Postgrad Med J*. 2019; 95:514.
819. Kar M, Nisheetha A, Kumar A, Jagtap S, Shinde J, Singla M, et al. Isolation and molecular characterization of dengue virus clinical isolates from pediatric patients in New Delhi. *Int J Infect Dis*. 2019; 84:S25-33.
820. Karanjkar A, Kapoor PM, Sharan S, Bhardwaj V, Malik V, Hasija S, et al. A Prospective Randomized Clinical Trial of Efficacy of Algorithm-Based Point of Care Guided Hemostatic Therapy in Cyanotic Congenital Heart Disease Surgical Patients. *J Card Crit Care*. 2019; 03:08-16.
821. Karimkhan A, Patidar GK, Hazarika A. Donor Notification: Improve Response Rate by New Method of Registration. *IOSR JDent Med Sci*. 2019;18:42-6.
822. Karthikeyan G. Functional capacity and preoperative risk evaluation. *Lancet*. 2019; 393:1592.
823. Karthikeyan G. Tracking the impact of interventions against COVID-19 in absence of extensive testing. *Indian J Med Res*. 2020; 151:114-5.
824. Kashyap A, Chopra S, Ranjan P, Sarkar S, Poorna A, Baitha U. Yoga Therapy For Medically Unexplained Physical Symptoms. *Adv Mind Body Med*. 2020; 34:17-21.
825. Kashyap N, Singhal M, Tiwari R, Chauhan S, Manas R. Scalp Avulsion Injuries and Replantation. Is Deep Temporal Artery an Alternate Option? *Ann Plast Surg*. 2020;84:178-82.
826. Kashyap R, Kumar P, Lal H, Rao RN. Primary diffuse large B-cell lymphoma of the breast. Treatment and long term outcome of two cases. *Indian J Med Paediatr Oncol*. 2020; 41:78-81.
827. Kashyap SP, Sachdeva S, Dolma Y, Sarin A, Gupta SK. Knowledge, Practice and Attitude of Hepatitis B Infection and its Prevention among Nurses in a Tertiary Eye Care Center of Delhi. *Int J Res Found Hosp Healthc Adm*. 2019; 7:20-3.
828. Kashyap SR, Sachdeva S, Dolma Y, Sarin A, Gupta SK. Knowledge, Practice and Attitude of Hepatitis B Infection and its Prevention among Nurses in a Tertiary Eye Care Center of Delhi. *Int J Res Foundation of Hosp Healthcare Admin*. 2019; 7:19-23.
829. Kataria K, Dhar A, Ranjan P, Kumar A, Islam S, Srivastava A. Radical Mastectomy SANS Axillary Lymph Node Dissection for Large Phyllodes Tumor: A Guarantee Against Recurrence. *Indian J Surg*. 2019; 81:520-4.
830. Kataria N, Gupta S, Srivastava MV, Jhanjee S. Contributing factors which led to relapse of tobacco-seeking behaviour among stroke survivors, in a selected tertiary care hospital, New Delhi. *Indian J PsychiatrNurs*. 2019;16:84-91.
831. Kathiresan P, Ambekar A, Sarkar S. Opioid Substitution Treatment Using Buprenorphine for Management of Dependence on Natural Opioids: Case Series. *Indian J Psychol Med*. 2019;41:586-8.
832. Kathiresan P, Pakhre A, Kattula D, Sarkar S. Tapentadol Dependence: A Case Series. *Prim Care Companion CNS Disord*. 2019; 21:19102444.
833. Kathpalia P, Nag TC, Chattopadhyay P, Sharma A, Bhat MA, Roy TS, et al. In ovo Sound Stimulation Mediated Regulation of BDNF in the Auditory Cortex and Hippocampus of Neonatal Chicks. *Neuroscience*. 2019; 408:293-307.
834. Katiyar AK, Aggarwal H, Priyadarshi P, Kumar A, Kumar S, Gupta A, et al. Primary vs delayed primary closure in patients undergoing lower limb amputation following trauma: A randomised control study. *Int Wound J*. 2020; 17:419-28.
835. Katyal J, Arora E, Gupta YK. Impact of increased focus on pharmaco vigilance on knowledge and attitude towards adverse drug reaction reporting among medical students in India. *Int J Risk Saf Med*. 2020; 31:15-24.
836. Kaundal A, Sehgal R, Kachhawa G, Kumar S, Kriplani A, Vanamail P. Current practices in family planning: a population-based study. *Int J of Reprod ContraceptObstet Gynecol*. 2019;8:2372-7.
837. Kaur A, Chattopadhyay S, Jain S, Singh H. Development of antimicrobial polyacrylonitrile microspheres for water

- disinfection. *J Appl Polymer Sci.* 2019; 136:47968.
838. Kaur A, Midha S, Giri S, Mohanty S. Functional Skin Grafts: Where Biomaterials meet Stem Cells. *J Stem Cell Int.* 2019; Art ID 1286054.
  839. Kaur A, Ruhela A, Sharma P, Khariwal H, Seth S, Kumar A, et al. Simultaneous and high sensitive detection of *Salmonella typhi* and *Salmonella paratyphi a* in human clinical blood samples using an affordable and portable device: *Biomed Microdevices.* 2019; 21:95.
  840. Kaur A, Sharma P, Ruhela A, Khariwal H, Seth S, Kumar A, et al. Simultaneous and high sensitive detection of *Salmonella typhi* and *Salmonella paratyphi A* in human clinical blood samples using an affordable and portable device. *Biomed Microdevices.* 2019; 21:95.
  841. Kaur A. Sprouts. A live nutrition powerhouse. *Ann Ayurvedic Med* 2019; 8: Issue 3-4
  842. Kaur C, Pramanik A, Kumari K, Mandage R, Dinda AK, Sankar J, et al. Renal detection of *Plasmodium falciparum*, *Plasmodium vivax* and *Plasmodium knowlesi* in malaria associated acute kidney injury: a retrospective case-control study. *BMC Res Notes.* 2020;13:37.
  843. Kaur C, Pramanik A, Kumari K, Mandage R, Dinda AK, Sankar J, et al. Renal detection of *Plasmodium falciparum*, *Plasmodium vivax* and *Plasmodium knowlesi* in malaria associated acute kidney injury: a retrospective case-control study. *BMC Res Notes.* 2020; 13:37.
  844. Kaur C, Saini S, Pal I, Kumar P, Sati HC, Jacob TG, et al. Age-related changes in the number of cresyl-violet-stained, parvalbumin and NMDAR 2B expressing neurons in the human spiral ganglion. *Hear Res.* 2020; 388:107883.
  845. Kaur G, Gupta R, Mathur N, Rani L, Kumar L, Sharma A, et al. Clinical impact of chromothriptic complex chromosomal rearrangements in newly diagnosed multiple myeloma. *Leuk Res.* 2019; 76:58-64.
  846. Kaur G, Ruhela V, Rani L, Gupta A, Sriram K, Gogia A, et al. RNA-Seq profiling of deregulated miRs in CLL and their impact on clinical outcome. *Blood Cancer J.* 2020; 10:6.
  847. Kaur H, Kumaran S, Bhatia R, Chopra S, Nehra A. Effectiveness of homebased comprehensive neuropsychological rehabilitation for post stroke aphasia in limited resource settings: An fMRI based randomized controlled trial. *J Neurological Sci.* 2019; 405:48.
  848. Kaur K, Jha P, Pathak P, Suri V, Sharma MC, Garg A, et al. Approach to molecular subgrouping of medulloblastomas: Comparison of NanoStringCounter assay versus combination of immunohistochemistry and fluorescence in-situ hybridization in resource constrained centres. *J Neurooncol.* 2019; 143:393-403.
  849. Kaur K, Kakkar A, Bhardwaj N, Sakthivel P, Singh CA, Jain D, et al. Spectrum of cytomorphological features of extranodal NK/T-cell lymphoma, nasal type. *Cytopathology.* 2019; 30:393-401.
  850. Kaur K, Kakkar A, Rastogi S, Sharma MC. Sino nasal amelanotic melanoma with neuroendocrine differentiation: a diagnostic conundrum. *Ultrastruct Pathol.* 2020; 44:249-54.
  851. Kaur K, Rajeshwari M, Gurung N, Kumar H, Sharma MC, Yadav R, et al. Uterine tumor resembling ovarian sex cord tumor: A series of six cases displaying varied histopathological patterns and clinical profiles. *Indian J Pathol Microbiol.* 2020; 63(Suppl):S81-6.
  852. Kaur M, Hussain SY. Anaesthetic management of an infant with tracheomalacia scheduled for computed tomography angiography: A challenge. *Indian J Anaesth.* 2019; 63:312-5.
  853. Kaur M, Ramakumar N, Yadav S, Subramaniam R. Recurrent syncope in a child and video assisted thoracoscopic surgery - The long and short of it. *Indian J Anaesth.* 2019; 63:847-50.
  854. Kaur M, Sahoo AK, Gupta S. Unusual presentation of erythema elevatum diutinum in an HIV-positive man with dramatic response to dapsone. *Int J STD AIDS.* 2019; 30:1337-9.
  855. Kaur M, Titiyal JS, Gagrani M, Shaikh F, Agarwal T, Sinha R, et al. Repeat keratoplasty in failed Descemet stripping automated endothelial keratoplasty. *Indian J Ophthalmol.* 2019; 67:1586-92.
  856. Kaur M, Titiyal JS. Commentary: Pediatric infectious keratitis. *Indian J Ophthalmol.* 2020; 68:440-1.
  857. Kaur P, Chakrabarty B. Vitamin D and Neurological Disorders: The Conundrum continues. *Indian J Pediatr.* 2019; 86:771-2.
  858. Kaur P, Pandey V. Anthropometric and nutritional profile of hospitalized diabetic eye disease patients. *J Nutr Metab Health Sci* 2020;2(2):43-50
  859. Kaur P. Role of diet and antioxidants supplementation on progression and management of Parkinson's disease. *J Nutr Metab Health Sci* 2020;2(2):30-42
  860. Kaur R, Gupta N. Hemolytic Anemia and Neurological Manifestations – An Uncommon Combination. *Indian J Pediatr.* 2019; 86:673-4.
  861. Kaur R, Kant S, Mathur VP, Lohiya A. Feasibility of opportunistic screening for oral cancers in a dental outpatient department of a secondary care hospital in Northern India. *J Family Med Prim Care.* 2020; 9:909-14.

862. Kaur R, Kumar A, Hadda V, Kalaivani M, Nongkynrih B, Kant S, et al. Quality of spirometry testing in a community setting: A study among elderly persons in a rural area of Haryana. *J Family Med Prim Care*. 2019; 8:3718-25.
863. Kaur R, Mishra P, Kumar S, Sankar MJ, Kabra M, Gupta N. Apert syndrome with congenital diaphragmatic hernia: another case report and review of the literature. *Clin Dysmorphol*. 2019; 28:78-80.
864. Kaur T, Krishan K, Kaur P, Sharma SK, Kumar A. Application of tpsDig2 Software in Nasal Angle Measurements. *J Craniofac Surg*. 2020; 31:319-25.
865. Kaushal A, Bindra A, Kumar A, Goyal K, Kumar N, Rath GP, et al. Long Term Outcome in Survivors of Decompressive Craniectomy following Severe Traumatic Brain Injury. *Asian J Neurosurg*. 2019;14:52-7.
866. Kaushal R, Das CJ, Singh P, Dogra PN, Kumar R. Multiparametric magnetic resonance imaging-transrectal ultrasound fusion biopsies increase the rate of cancer detection in populations with a low incidence of prostate cancer. *Investig Clin Urol*. 2019; 60:156-61.
867. Kaushal R, Das CJ, Singh P, Dogra PN, Kumar R. Multiparametric magnetic resonance imaging transrectal ultrasound fusion biopsies increase the rate of cancer detection in populations with a low incidence of prostate cancer. *Investig Clin Urol*. 2019; 60:156-61.
868. Kaushik K, Palanichamy JK. Potential of tiny RNAs as a hope to detect Parkinson's disease. *Ann Indian Acad Neurol*. 2020; 23:5.
869. Kaushik S, Shyam H, Agarwal S, Sharma R, Nag TC, Dwivedi AK, et al. Genistein potentiates Centchroman induced anti-neoplasticity in breast cancer via PI3K/Akt deactivation and ROS dependent induction of apoptosis. *Life Sci*. 2019; 239:117073.
870. Kaushik S, Tomar A, Puthanmadhom NS, Nag TC, Arya DS, Bhatia J. Pitavastatin attenuates cisplatin-induced renal injury by targeting MAPK and apoptotic pathways. *J Pharm Pharmacol*. 2019; 71:1072-81.
871. Kawasra R, Singh S, Sharma D, Sharma SK, Sharma N, Khanna K. Pomegranate supplementation attenuates inflammation, joint dysfunction via inhibition of NF- $\kappa$ B signaling pathway in experimental models of rheumatoid arthritis. *J Food Biochem*. 2019; 43:e12959.
872. Kayal EB, Kandasamy D, Khare K, Bakhshi S, Sharma R, Mehndiratta A. Intravoxel incoherent motion (IVIM) for response assessment in patients with osteosarcoma undergoing neoadjuvant chemotherapy. *Eur J Radiol*. 2019; 119:108635.
873. Kayal EB, Kandasamy D, Sharma R, Bakhshi S, Mehndiratta A. Segmentation of osteosarcoma tumor using diffusion weighted MRI: a comparative study using nine segmentation algorithms. *Signal Image Video Process*. 2020; 14:727-35.
874. Kedia S, Das P, Madhusudhan KS, Dattagupta S, Sharma R, Sahni P, et al. Differentiating Crohn's disease from intestinal tuberculosis. *World J Gastroenterol*. 2019;25:418-432.
875. Kedia S, Mouli VP, Kamat N, Sankar J, Ananthkrishnan A, Makharia G, et al. Risk of Tuberculosis in Patients With Inflammatory Bowel Disease on Infliximab or Adalimumab Is Dependent on the Local Disease Burden of Tuberculosis: A Systematic Review and Meta-Analysis. *Am J Gastroenterol*. 2020; 115:340-9.
876. Kedia S, Sharma R, Makharia G, Ahuja V, Desai D, Kandasamy D, et al. Indian guidelines on imaging of the small intestine in Crohn's disease: A joint Indian Society of Gastroenterology and Indian Radiology and Imaging Association consensus statement. *Indian J Radiol Imaging*. 2019; 29:111-32.
877. Keppen C, Savino Z, Kapfo W, Khamo V, Kanga U. HLA-C\*04:01:01:78, a novel variant of HLA-C\*04, detected in a Sumi individual from Nagaland, North-East India. *HLA*. 2020;95:58-9.
878. Keppen C, Sharma A, Abid M, Khamo V, Kanga U. A silent mutation in codon 228 results in a novel allele HLA-C\*04:06:03 in an Ao-Naga individual from North-East India. *HLA*. 2020;95:60-1.
879. Keppen C, Sharma A, Abid M, Khamo V, Kanga U. Characterization of the novel allele HLA-DPA1\*02:01:01:12 from an Ao tribal individual from Nagaland, North-East India. *HLA*. 2020;95:86-7.
880. Keppen C, Sharma A, Abid M, Khamo V, Kanga U. Discovery of the novel allele, HLA-C\*03:04:01:38 in two individuals from the Ao tribe of Nagaland, North-East India. *HLA*. 2020;95:53-4.
881. Keppen C, Sharma A, Abid M, Khamo V, Kanga U. The novel HLA-C\*04:400 allele, identified in a Konyak-Naga tribal individual from North-East India. *HLA*. 2020;95:62-3.
882. Keppen C, Sharma A, Gautam SK, Khamo V, Kanga U. A novel allele HLA-B\*38:02:01:02, identified in an Angami individual from Nagaland, North-East India. *HLA*. 2020;95:51-2.
883. Keppen C, Sharma A, Gautam SK, Khamo V, Kanga U. HLA-C\*07:06:01:06 - A new HLA-C allele identified in an Ao tribal individual from Nagaland, North-East India. *HLA*. 2020;95:65-6.
884. Keppen C, Sharma A, Gautam SK, Khamo V, Kanga U. Recognition of the novel HLA-A\*11:01:01:25 allele in the tribal population of Nagaland, North-East India. *HLA*. 2019;94:515-7.
885. Keppen C, Sharma A, Gautam SK, Khamo V, Kanga U. The HLA-B\*13:01:01:03 allele characterized in four

- individuals from the tribal population of Nagaland, North-East India. *HLA*.2019;94:526-8.
886. Keppen C, Sharma A, Medhi S, Khamo V, Kanga U. A novel allele HLA-B\*15:02:01:04, recognized in an individual from the Angami tribe, Nagaland, North-East India. *HLA*.2020;95:49-50.
  887. Keppen C, Sharma A, Medhi S, Khamo V, Kanga U. Detection of the novel HLA-DQB1\*03:404 allele in an Ao individual from Nagaland, North-East India. *HLA*.2020;95:78-9.
  888. Keppen C, Sharma A, Medhi S, Khamo V, Kanga U. HLA-DPA1\*02:01:01:13, a novel HLA-DPA1 allele, detected in an Ao tribal individual from Nagaland, North-East India. *HLA*.2020;95:88-90.
  889. Keppen C, Therie D, Keppen J, Khamo V, Kanga U. Description of the novel null allele, HLA-DPA1\*01:29N in a Lotha individual from Nagaland, North-East India. *HLA*. 2020;95:82-3.
  890. Keri VC, Jorwal P, Kodan P, Biswas A. Tuberculosis masquerading as metastasis in liver: a rare and an unusual presentation. *BMJ Case Rep*. 2020; 13:e233303.
  891. Keri VC, Sethi P, Swain S, Nischal N, Kumar A, Wig N. B Cell ALL with Pyrexia of Unknown Origin, Masquerading as Inflammatory Arthritis. *J Assoc Physicians India*. 2019; 67:76-8.
  892. Kethawath SM, Jain R, Dhawan A, Sarkar S. A review of peripheral brain-derived neurotrophic factor levels in alcohol-dependent patients: Current understanding. *Indian J Psychiatry*. 2020; 62:15-20.
  893. Kethawath SM, Jain R, Dhawan A, Sarkar S. Trajectory of liver function tests during the initial alcohol detoxification period: A preliminary analysis. *Indian J Psychiatry*. 2020;62:225-6.
  894. Khajanchi MU, Kumar V, Gerdin LW, Soni KD, Saha ML, Roy N, et al. Martin Gerdin Wörnberg. Prevalence of a definitive airway in patients with severe traumatic brain injury received at four urban public university hospitals in India: a cohort study. *Inj Prev*. 2019; 25:428-32.
  895. Khan NH, Kohli M, Gupta K, Das BK, Pandey RM, Sinha S. HIV Drug Resistance Mutations in Patients with HIV and HIV-TB Coinfection After Failure of First-Line Therapy: A Prevalence Study in a Resource-Limited Setting. *J Int Assoc Provid AIDS Care*. 2019; 18:1-7.
  896. Khan WF, Rathor YS, Pol MM, Singh G. Inguinal hernia with ovary as content- laparoscopic repair in a Mayer-Rokitansky-Küster-Hauser syndrome patient: case report. *Int Surg J*. 2019; 6:1421-3.
  897. Khan WF, Rathore YS, Aduri RS, Mridha AR. Lipoleiomyosarcoma of spermatic cord: an unusual presentation. *BMJ Case Rep*. 2019; 12:e228952.
  898. Khanal S, Sreenivas V, Acharya SK. Comparison of Cox Proportional Hazards Model and Lognormal Accelerated Failure Time Model: Application in Time to Event Analysis of Acute Liver Failure Patients in India. *Nepalese J Stat*. 3:21-40.
  899. Khandelwal A, Bithal PK, Rath GP. Anesthetic Considerations for Extracranial Injuries in Patients with Associated Brain Trauma. *J Anaesthesiol Clin Pharmacol*. 2019;35:302-11.
  900. Khandelwal A, Kapoor I, Mahajan C, Sharma HB, Prabhakar H. Perioperative anesthetic management and factors affecting outcome in robotized stereotactic assisted (ROSA) intracranial procedures: A retrospective study. *J Clin Anesth*. 2020;62:109717.
  901. Khandelwal A, Mishra RK, Singh S, Singh S, Rath GP. Dilated pupil as a diagnostic component of brain death- does it really matter? *J Neurosurg Anesthesiol*. 2019; 31:356-6.
  902. Khandelwal A, Singh GP, Chaturvedi A. Why chest compressions should start when systolic arterial blood pressure is below 50 mm Hg in the anaesthetized patient. *Br J Anaesth*. 2020; 124:234-8.
  903. Khandelwal M, Anand V, Appunni S, Seth A, Singh P, Mathur S, et al. RASSF1A-Hippo pathway link in patients with urothelial carcinoma of bladder: plausible therapeutic target. *Mol Cell Biochem*. 2020; 464:51-63.
  904. Khandelwal P, Thomas CC, Rathi BS, Hari P, Tiwari AN, Sinha A, et al. Membrane-filtration based plasma exchanges for atypical hemolytic uremic syndrome: Audit of efficacy and safety. *J Clin Apher*. 2019; 34:555-62.
  905. Khandpur S. Clinical dermatology through case studies. *Indian J Dermatol Venereol Leprol*. 2020; 86:104.
  906. Khangembam BC, Singhal A, Kumar R, Bal C. Tc-99m Glucoheptonate Single Photon Emission Computed Tomography-Computed Tomography for Detection of Recurrent Glioma: A Prospective Comparison with N-13 Ammonia Positron Emission Tomography-Computed Tomography. *Indian J Nucl Med*. 2019; 34:107-17.
  907. Khanna K, Agarwala S, Bakhshi S, Srinivas M, Jana M, Devasenathipathy K, et al. Need for urodynamic examination as a follow-up regular tool in the assessment of long term urological outcomes in patients with sacro-coccygeal teratoma. *J Pediatr Surg*. 2019; 54:2107-11.
  908. Khanna K, Sharma S, Gupta DK. A clinical approach to diagnosis of ambiguous genitalia. *J Indian Assoc Pediatr Surg*. 2019; 24:162-9.
  909. Khanna U, Khandpur S. What Is New in Narrow-Band Ultraviolet-B Therapy for Vitiligo? *Indian Dermatol Online J*. 2019; 10:234-43.

910. Kharbanda OP, Ivaturi A, Priya H, Dorji G, Gupta S. Digital possibilities in the prevention and early detection of oral cancer in the WHO South-East Asia Region. *WHO South East Asia J Public Health*. 2019; 8:95-100.
911. Kharbanda OP, Priya H, Balachandran, R, Khurana C. Current Scenario of Teledentistry in Public Healthcare in India. *J Int Soc Telemed EHealth*. 2019; 7:e10(1-8).
912. Kharbanda OP, Qureshi T, Kandasamy D. Prevalence of cervical vertebrae anomalies in patients with cleft lip and palate. *Australasian Orthod J*. 2019; 35:46-52.
913. Khetan K, Baloda V, Sahoo RK, Vishnubhathla S, Yadav R, Saraya A et al. SPARC expression in desmoplastic and non desmoplastic pancreatic carcinoma and cholangiocarcinoma. *Pathol Res Pract*. 2019; 215:152685.
914. Khilnani GC, Dubey D, Hadda V, Sahu SR, Sood S, Madan K et al. Predictors and microbiology of ventilator-associated pneumonia among patients with exacerbation of chronic obstructive pulmonary disease. *Lung India*. 2019; 36:506-11.
915. Khokhar S, Dhull C, Mahalingam K, Agarwal P. Reply: Posterior lenticonus with persistent fetal vasculature. *Indian J Ophthalmol*. 2019; 67:1782.
916. Khokhar S, Dhull C, Verma S, Gupta Y. Phacoemulsification tip fracture. *Indian J Ophthalmol*. 2020; 68:187-8.
917. Khokhar S, Dhull C. Commentary: Understanding angiogenic factors in pathogenesis of persistent fetal vasculature. *Indian J Ophthalmol*. 2019; 67:1622-3.
918. Khokhar S, Sen S, Dhull C. Active-fluidics-based torsional phacoemulsification in diabetic eyes: A prospective interventional study. *Indian J Ophthalmol*. 2019; 67:619-24.
919. Khokhar S, Yadav D, Gupta S, Sihota R, Chaurasia AK, Gupta A, et al. Refractive outcomes of cataract surgery in primary congenital glaucoma. *Eye (Lond)*. 2019; 33:542-8
920. Khokhar SK, Tomar A, Pillay G, Agarwal E. Biometric changes in Indian pediatric cataract and postoperative refractive status. *Indian J Ophthalmol*. 2019; 67:1068-72.
921. Khosla D, Kapoor R, Kumar R. In Regard to Boulle et al. *Int JRadiat Oncol Biol Phys*. 2019; 105:1160.
922. Khunger JM, Pati HP, Mahapatra M, Khunger A. Utilization of flow-cytometry in diagnosis of Auto Immune Haemolytic Anemia. *Indian J Hematol Blood Transfus*. 2019; 35:297-303.
923. Khurana S, Mathur P, Malhotra R. Staphylococcus aureus at an Indian tertiary hospital: Antimicrobial susceptibility and minimum inhibitory concentration (MIC) creep of antimicrobial agents. *J Glob Antimicrob Resist*. 2019;17:98-102.
924. Kim R, Kumar A, Raman R, Narayan R, Nagpal M, Ruamviboonsuk P, et al. Expert Corner - Diabetic Retinopathy. *J Ophthalmic Sci Res*. 2019; 57:146-51.
925. Kishore A, Sreelatha AAK, Sturm M, von-Zweyendorf F, Pihlstrøm L, Raimondi F,...Rajan R, et al. International Parkinson's Disease Genomics Consortium (IPDGC). Understanding the role of genetic variability in LRRK2 in Indian population. *Mov Disord*. 2019;34:496-505.
926. Kishore R, Gupta A, Gupta AK, Kabra SK. Novel mutation in the CD27 gene in a patient presenting with hypogammaglobulinemia, bronchiectasis and EBV-driven lymphoproliferative disease. *BMJ Case Rep*. 2020; 13:e23348.
927. Kishore S, Gupta SK, Arava S, Mridha AR, Jaiswal AK, Sikary AK, et al. Biochemical findings in sudden unexpected death in epilepsy: Hospital based case-control study. *J Forensic Leg Med*. 2020; 69:101884.
928. Kohli M, Sharma SK, Upadhyay V, Varshney S, Sengupta S, Basak T, et al. Urinary EPCR and dermcidin as potential novel biomarkers for severe adult OSA patients. *Sleep Med*. 2019; 64:92-100.
929. Komal K, Chaudhary S, Yadav P, Pramanik R, Singh M. The Therapeutic and Preventive Efficacy of Curcumin and Its Derivatives in Esophageal Cancer. *Asian Pac J Cancer Prev*. 2019; 20:1329-37.
930. Kothari SS, Relan J, Devagourou V. Operable ventricular septal defect despite severe pulmonary hypertension and cyanosis! *Cardiol Young*. 2019; 29:986-8.
931. Kotikalapudi R, Patel RK, Inampudi KK, Reddy KK, Erugula SR, Rao KM. GATA2 Haploinsufficiency Caused by G492A Mutation Associated with Familial AML. *Acta Sci Cancer Biol*. 2019; 3:22-25.
932. Kotwal A, Seth T, Thakur R, Rath GK, Sharma DN, Nagpal J. Outcome of community based planned intervention targeting perceptions, attitudes and health seeking behaviour regarding cancers in New Delhi, India. *Int J Community Med Public Health*. 2020; 7:711-6.
933. Koyalmantham V, Kale SS, Devarajan LJ, Phalak M, Chandra PS, Suri A et al. Patient Outcomes Following Obliteration of Spinal Dural Arteriovenous Fistula and the Role of Indocyanine Green Angiography Videoangiography (ICG-VA) During Surgery. *Neurol India*. 2020;68:118-23.
934. Kriplani A, Dalal V, Kachhawa G, Mahey R, Yadav V, Kriplani I. Minimally Invasive Endoscopic Approach for Management of OHVIRA Syndrome. *J ObstetGynaecol India*. 2019; 69:350-5.

935. Krishan S, Dhiman RK, Kalra N, Sharma R, Bajjal SS, Arora A, et al. Joint Consensus Statement of the Indian National Association for Study of the Liver and Indian Radiological and Imaging Association for the Diagnosis and Imaging of Hepatocellular Carcinoma Incorporating Liver Imaging Reporting and Data System. *J Clin Exp Hepatol.* 2019; 9:625-51.
936. Krishna A, Bansal VK, Misra MC, Prajapati O, Kumar S. Totally Extraperitoneal Repair in Inguinal Hernia: More Than a Decade's Experience at a Tertiary Care Hospital. *Surg Laparosc Endosc Percutan Tech.*2019; 29:247-51.
937. Krishna SN, Hasija S, Chauhan S, Kaushal B, Chowdhury UK, Bisoi AK. Can echocardiographic right ventricular function parameters predict vasoactive support requirement after tetralogy of Fallot repair? *J Cardiothorac Vasc Anesth.* 2019; 33:2404-13.
938. Krishnamurthy P, Sharma G, Gulati G, Siddharthan D. A curious case of impossible coronary sinus cannulation. *Indian Pacing Electrophysiol J.* 2019; 19:202-4.
939. Krishnan A, Das DK. Mortality surveillance in India: Past, present, and future. *Indian J Public Health.* 2019; 63:163-4.
940. Krishnan A, Kumar R, Broor S, Gopal G, Saha S, Amarchand R, et al. Epidemiology of viral acute lower respiratory infections in a community-based cohort of rural north Indian children. *J Glob Health.* 2019; 9:010433.
941. Krishnan A, Kumar R, Broor S, Gopal G, Saha S, Amarchand R, et al. Epidemiology of viral acute lower respiratory infections in a community-based cohort of rural north Indian children. *J Glob Health.* 2019; 9:010433.
942. Krishnan S, Pisharady KK, Rajan R, Sarma SG, Sarma PS, Kishore A. Predictors of dementia-free survival after bilateral subthalamic deep brain stimulation for Parkinson's disease. *Neurol India.* 2019;67:459-66.
943. Kruszka P, Addissie YA, Tekendo-Ngongang C, Jones KL, Savage SK, Gupta N, et al. Turner syndrome in diverse populations. *Am J Med Genet A.* 2020; 182:303-13.
944. Kubihal S, Goyal A, Gupta Y, Jyotsna VP, Khadgawat R. Dynamic testing for evaluation of adrenal and gonadal function in pediatric and adult endocrinology: An overview. *Indian J Endocrinol Metab.* 2019; 23:593-601.
945. Kumar A, Acharya SK, Singh SP, Arora A, Dhiman RK, Aggarwal R, et al. 2019 Update of Indian National Association for Study of the Liver (INASL) Consensus on Prevention, Diagnosis and Management of Hepatocellular Carcinoma in India: The Puri II Recommendations *J Clin Exp Hepatol.* 2020; 10:43-80.
946. Kumar A, Agarwal D, Balaji A. Commentary: A Cluster of central retinal artery occlusion cataract surgery. *Indian J Ophthalmol.* 2019; 67:635.
947. Kumar A, Agarwal D, Chawla R. Coats disease: Our experience in India. *Indian J Ophthalmol.* 2019; 67:783-4.
948. Kumar A, Agarwal D, Chawla R. Commentary: Coats disease: Our experience in India. *Indian J Ophthalmol.* 2019; 67:783-4.
949. Kumar A, Agarwal D, Nayak S. Commentary: Improving training in retina in Indian residency programmes *Indian J Ophthalmol.* 2019; 67:1819-20.
950. Kumar A, Agarwal D. Commentary: Considerations regarding area of internal limiting membrane peeling during macular hole surgery. *Indian J Ophthalmol.* 2020; 68:162.
951. Kumar A, Agarwal D. Commentary: Learning curve of a trained vitreo-retinal injections in a rat model: Implications for future clinical trials. *Indian J Ophthalmol.* 2019; 67:1459.
952. Kumar A, Agarwal D. Digitally Assisted Vitreoretinal Surgery – An Emerging Technology. *DOS Times.* 2019;256-8.
953. Kumar A, Agarwal D. Pachychoroid Spectrum - An Emerging Clinical Entity. *Delhi J Ophthalmol.* 2019; 30:5-6.
954. Kumar A, Agarwal D. Resident - to - resident bedside teaching: An innovative concept. *Indian J Ophthalmol.* 2019; 67:1901-2.
955. Kumar A, Aggarwal R, Bhoi S, Sharma AK. Small Bursts of Frequent Communications – an Effective Communication Method in a Busy Emergency Department. *Indian J Surg.* 2019; 81:513-5.
956. Kumar A, Chandra P, Kale S. Parietal transventricular approach for medial temporal glioma: A technical report. *Surg Neurol Int.* 2020;11:22.
957. Kumar A, Faiq MA, Krishna H, Raj GV, Kishan V, Coffey JC, et al. Development of a Novel Technique to Dissect the Mesentery that Preserves Mesenteric Continuity and Enables Characterization of the Ex Vivo Mesentery. *Front. Surg.* 2020; 6:80.
958. Kumar A, Gupta N, Gupta A. Urapidil in the Preoperative treatment of pheochromocytoma: How safe is it? *J Anaesthesiol Clin Pharmacol.* 2020;36:55-6.
959. Kumar A, Hasan N, Agarwal S, Sunder D. Role of microscope-integrated optical coherence tomography in detecting myopic choroidal neovascularization intraoperatively in a case of myopic rhegmatogenous retinal detachment. *Indian J Ophthalmol.* 2020; 68:193-4.
960. Kumar A, Jain A, Saurabh S, Trikha V, Mittal S. Technical tip for removal of broken cephalomedullary reamer



- tip in cases of proximal femoral nailing. *J Clin Orthop Trauma*. 2019; 10:969-71.
961. Kumar A, Jain V, Chowdhury MR, Kumar M, Kaur P, Kabra M. Pathogenic/likely pathogenic variants in the SHOX, GHR and IGFALS genes among Indian children with idiopathic short stature. *J Pediatr Endocrinol Metab*. 2020;33:79-88
  962. Kumar A, Kumawat D, Sundar MD, Gagrani M, Gupta B, Roop P, et al. Polypoidal choroidal vasculopathy: a comprehensive clinical update. *Ther Adv Ophthalmol*. 2019; 11:2515841419831152.
  963. Kumar A, Lakshminarayanan D, Joshi N, Vaid S, Bhoi S, Deorari AK. Triageing the Triage– reducing waiting time to triage in the Emergency Department at a tertiary care hospital in New Delhi, India. *Emerg Med J*. 2019; 36:558-63.
  964. Kumar A, Manchanda S, Panda PK, Jain M, Kumar V, Biswas. Dengue Co-Infection Microfilaria Presenting with Intestinal Obstruction: A Case Report. *J Bangladesh Coll Phys Surg*. 2019; 37:35-8.
  965. Kumar A, Misra S, Yadav AK, Sagar R, Verma B, Grover A, ...Prasad K, et al. Role of glial fibrillary acidic protein as a biomarker in differentiating intracerebral haemorrhage from ischaemic stroke and stroke mimics: a meta-analysis. *Biomarkers*. 2020; 25:1-8.
  966. Kumar A, Mistry T, Gupta N, Kumar V, Bhatnagar S. Lumbar Erector Spine Plane Block for pain management in postherpetic neuralgia in a patient with chronic lymphocytic leukemia. *Indian J Palliat Care*. 2020;26:134-6.
  967. Kumar A, Mittal S, Jain A, Trikha V. Avoiding malalignment in proximal femur fractures treated with newer generation cephalomedullary nails: Some technical tips. *J Clin Orthop Trauma*. 2019;10(Suppl 1):S242-6.
  968. Kumar A, Padhy SK, Dhiman R, Kumar P, Parekh T, Varshney T. Macular hole following phakic intraocular lens implantation and its management. *Indian J Ophthalmol*. 2019; 67:1758-60.
  969. Kumar A, Padhy SK, Dhiman R, Kumar P, Varsnay T. Multimodal imaging in a patient of Kranenburg syndrome. *Indian J Ophthalmol*. 2019; 67:946.
  970. Kumar A, Pujari A, Chawla R, Markan A, Shah P, Kumar S, et al. Age-related changes in macular vessels and their perfusion densities on optical coherence tomography, *Indian J Ophthalmol*. 2020; 68:494-9.
  971. Kumar A, Shete V, Singh M, Satyarthee GD, Agrawal D, Singh PK, et al. Intracranial Meningeal Hemangiopericytomas: An Analysis of Factors Affecting Outcome in 39 Cases Managed with Multimodality Treatment. *Neurol India*. 2019; 67:1266-73.
  972. Kumar A, Sundar D, Agarwal D. Commentary: Electronic medical record system – should complement but not replace traditional health care. *Indian J Ophthalmol*. 2020; 68:432-3.
  973. Kumar A, Vashist P. Indian community eye care in 2020: Achievements and challenges. *Indian J Ophthalmol*. 2020; 68:291-3.
  974. Kumar B, Yadav A, Ratre BK. Resistant hypertension and rare variant of primary aldosteronism: an incidental finding in pediatric patient undergoing ophthalmic procedure. *J Med Clin stud*. 2019; 2:122.
  975. Kumar BK, Lodha R. Can Vitamin D Supplementation Reduce Risk of Recurrence of Pneumonia in Under-Five Children? *Indian J Pediatr*. 2019; 86:1083-4.
  976. Kumar C, Jha CK, Bichoo RA, Yadav SK. Wide angled ‘V’ is the perfect disposition of a TIVAD catheter when right internal jugular vein is cannulated to gain central access. *Gastroenterol Rep*. 2019;7:374-5.
  977. Kumar D, Narang R, Sreenivas V, Rastogi V, Bhatia J, Saluja D, et al. Circulatory miR-133b and miR-21 as Novel Biomarkers in Early Prediction and Diagnosis of Coronary Artery Disease. *Genes (Basel)*. 2020; 11:164.
  978. Kumar G, Ekka M, Jamshed N, Aggarwal P. Congenital Absence of Uvula: A Rare Case Report. *Ann Clin Case Stud*. 2019; 1:1008.
  979. Kumar G, Saleem N, Kumar S, Maulik SK, Ahmad S, Sharma M, et al. Transcriptomic validation of the protective effects of aqueous bark extract of Terminalia arjuna (Roxb) on isoproterenol-induced cardiac hypertrophy in rats. *Front Pharmacol*. 2019; 10:1443.
  980. Kumar G, Sood M, Verma R, Mahapatra A, Chadda RK. Family caregivers’ needs of young patients with first episode psychosis: A qualitative study. *Int J Soc Psychiatry*. 2019; 65:435-42.
  981. Kumar K, Banerjee J, Tripathi M, Chandra PS, Dixit AB. Epigenetic Regulation of mTOR Pathway in Malformations of Cortical Development. *Neurol India*. 2019; 67:1472
  982. Kumar KR, Kashyap L. Assessing functional capacity before major non-cardiac surgery. *Natl Med J India*. 2019; 32:155-6.
  983. Kumar L, Chellapuram KS, Dev R, Varshneya A, Pawar S, Sharma A, et al. Induction Therapy with Novel Agent and Autologous Stem Cell Transplant Overcomes the Adverse Impact of Renal Impairment in Multiple Myeloma. *Clin Hematol Int*. 2019; 4:205-19.
  984. Kumar L, Jain S, Kaushal S, Seth A, Goel R, Kumar M, et al. Case of Type 1 Papillary Renal Cell Cancer with Pelvic Tumor Thrombus Masquerading as Urothelial Cancer with Review of Literature. *J Endourol Case Rep*. 5:157-60.

985. Kumar L, Kumar S, Dogra PN, Kaushal S, Panaiyadiyan S, Jain S, et al. Robotic Excision of Upper Ureteral Fibroepithelial Polyp Presenting as Pelviureteral Junction Obstruction: Surgical Surprise with Review of Literature. *J Endourol Case Rep.* 2019; 6:30-4.
986. Kumar L, Narwal A, Kumar M, Kaushal S. Primary clear-cell urothelial carcinoma of urinary bladder: a not-so-clear entity with review of literature. *BMJ Case Rep.* 2019; 12:e231192.
987. Kumar L, Ramavath D, Kataria B, Tiwari A, Raj A, Chellapuram KS, et al. High-dose chemotherapy followed by autologous stem cell transplant for multiple myeloms: Predictors of long-term outcome. *Indian J Med Res.* 2019; 149:730-9.
988. Kumar M, Garg H, Gupta N, Kaushal S, Sharma A, Kumar R. The unfolded protein response regulator GRP78: a potential biomarker for tumor behaviour in renal cell carcinoma. *Int J Urol.* 2019; 26:29-30.
989. Kumar M, Iyer VK, Mathur S, Barwad A. Granular cell ameloblastoma-diagnosis aspiration cytology. *Diagn Cytopathol.* 2019; 47:1120-2.
990. Kumar M, Kumar R. Evaluation of male factor infertility. *AOGD Bulletin.* 2019; 19:8-11.
991. Kumar M, Singh D, Deepak KK. Identifying heart-brain interactions during internally and externally operative attention using conditional entropy. *Biomed Signal Process Control.* 2020; 57:101826.
992. Kumar M, Vishnu VY. Newer advances in the treatment of Duchenne muscular dystrophy and spinal muscular atrophy. *J Curr Res Sci Med.* 2019;5:78-84.
993. Kumar N, Kaushal S, Kanaklata, Gowda M, Kumar S. Primary tracheal synovial sarcoma: a rare clinical entity with diagnostic challenges. *J Egypt Natl Canc Inst.* 2020; 32:3.
994. Kumar N, Mehra NK, Kanga U, Kaur G, Tandon N, Chuzho N, et al. Diverse human leukocyte antigen association of type 1 diabetes in north India. *J Diabetes.* 2019; 11:719-28.
995. Kumar N, Ranjan P, Panwar P, kataria K. Wandering gallbladder. *Int Surg J.* 2020; 7:1694-7.
996. Kumar N, Ray M, Lata K, Wankhede D, Mathur SR, Shamim SA. *Paraneoplastic Cerebellar Degeneration in Occult Primary Ovarian Cancer: A Case Report and Literature Review.* *J Gynecol Surg.*2020; 36:34-6
997. Kumar N, Ray MD, Sharma DN, Pandey R. Vulvar cancer: surgical management and survival trends in a low resource setting. *J Egypt Natl Canc Inst.* 2020; 32:4.
998. Kumar P, Bal C, Damle NA, Ballal S, Dwivedi SN, Agarwala S. Lesion-Wise Comparison of Pre-Therapy and Post-Therapy Effective Half-Life of Iodine-131 in Pediatric and Young Adult Patients with Differentiated Thyroid Cancer Undergoing Radioiodine Therapy. *Nucl Med Mol Imaging.* 2019; 53:199-207.
999. Kumar P, Bhaskar S. Myeloid differentiation primary response protein 88 (MyD88)-deficient dendritic cells exhibit a skewed cytokine response to BCG. *BMC Research Notes.* 2019; 12:52.
1000. Kumar P, Chandrashekhara SH, Kumar S, Malhi AS. Loeffler's endocarditis with isolated left ventricular involvement on Cardiac MRI. *BMJ Case Rep.* 2019; 12:e227642
1001. Kumar P, Chawla D, Thukral A, Deorari A, Shukla R, Gilbert C. Development of a quality improvement package for reducing sight-threatening retinopathy of prematurity. *Indian J Ophthalmol.* 2020; 68(Suppl 1):S115-20.
1002. Kumar P, Das G, Bhaskar S. Mycobacterium indicus pranii therapy induces tumor regression in MyD88- and TLR2-dependent manner. *BMC Research Notes.* 2019; 12:648.
1003. Kumar P, Malla S, Singh A, Razik A, Madhusudhan KS. Demystifying the mesenteric root lesions. *Abdom Radiol (NY).* 2019; 44:2708-20.
1004. Kumar P, Misra S, Kumar A, Faruq M, Vivekanandhan S, Srivastava AK, et al. The Relationship Between Tumor Necrosis Factor-Alpha (-308G/A, +488G/A, -857C/T, and -1031T/C) Gene Polymorphisms and Risk of Intracerebral Hemorrhage in the North Indian Population: A Hospital-Based Case-Control Study. *Neurol India.* 2020; 68:78-83.
1005. Kumar P, Mukherjee A, Randev S, Jat KR, Lodha R, Kabra SK. Normative Data of Infant Pulmonary Function Testing: A Prospective Birth Cohort Study from India. *Indian Pediatr.* 2020; 57:25-33.
1006. Kumar P, Mukherjee A, Randev S, Medigeshi GR, Jat KR, Kapil A, et al. Effect of acute respiratory infections in infancy on pulmonary function test at 3 years of age: a prospective birth cohort study. *BMJ Open Respir Res.* 2020; 7:e000436.
1007. Kumar P, Sharma YR, Chandra P, Azad R, Meshram GG. Comparison of the Safety and Efficacy of Intravitreal Ranibizumab with or without Laser Photocoagulation Versus Dexamethasone Intravitreal Implant with or without Laser Photocoagulation for Macular Edema Secondary to Branch Retinal Vein Occlusion. *Folia Med (Plovdiv).* 2019; 61:240-8.
1008. Kumar P, Singh A, Chandrashekhara SH. Kommerell's diverticulum: rare cause of unilateral vocal cord palsy. *BMJ Case Rep.* 2019; 12:e227682.
1009. Kumar P, Singh B, Thakur V, Thakur A, Thakur N, Pandey D, et al. Hyper-production of taxol from *Aspergillus*

- fumigatus, an endophytic fungus isolated from *Taxus* sp. of the Northern Himalayan region. *Biotechnol Rep (Amst)*. 2019; 15; 24:e00395.
1010. Kumar R, Gupta N, Malla S, Ranjan S, Nischal N, Wig N. Multi-drug Resistant Tuberculous Osteomyelitis of the First Carpometacarpal Joint Presenting as Unmasking Immune Reconstitution Inflammatory Syndrome. *J Assoc Physicians India*. 2019; 67:85-6.
1011. Kumar R, Gupta S, Gautam M, JhahhariaKaler S, Ray SB. Diverse characters of Brennan's paw incision model regarding certain parameters in the rat. *Korean J Pain*. 2019; 32:168-77.
1012. Kumar R, Kumar M, Bhatia P, Kamal M, Mohammad S, Syal R. Electrocardiographic changes or artifacts? A dilemma. *Indian Anaesth Forum*. 2020; 21:78-80.
1013. Kumar R, Kumar R, Tanwar P, Rath GK, Kumar R, Kumar S, et al. Deciphering the impact of missense mutations on structure and dynamics of SMAD4 protein involved in pathogenesis of gall bladder cancer. *JBiomolStructDyn*. 2020; 17:1.
1014. Kumar R, Kumar S, Gogia A, Kakkar A, Mathur SR. Laryngeal metastases from breast cancer: A rare clinical entity. *CurrProbl Cancer*. 2019;43:130-4.
1015. Kumar R, Parray HA, Shrivastava T, Sinha S, Luthra K. Phage display antibody libraries: A robust approach for generation of recombinant human monoclonal antibodies. *Int J Biol Macromol*. 2019; 135:907-18.
1016. Kumar R, Shah TH, Hadda V, Tiwari P, Mittal S, Madan K, et al. Assessment of quadriceps muscle thickness using bedside ultrasonography by nurses and physicians in the intensive care unit: Intra- and inter-operator agreement. *World J Crit Care Med*. 2019;8:127-34.
1017. Kumar R, Tanwar P, Singh AR, Hussain S, Rath GK. Impact of HPV on the Pathobiology of Cancers. *Gulf J Oncol*. 2019; 1:72-5.
1018. Kumar R. What's inside. *Indian J Urol*. 2019; 35:183-4.
1019. Kumar RR, Balakrishnan A, Suman SK, Dasgupta S, Arava S, et al. Filariasis: a vasculitis mimic. *Rheumatol Adv Pract*. 2019; 3:rkz045.
1020. Kumar RR, Kumar U. Groove sign: Heeding clue to eosinophilic fasciitis. *Eur J Rheumatol*. 2019; 7:52.
1021. Kumar RV, Bhasker S. Obesity in patients with carcinoma cervix increases the risk of adverse events. *Rep Pract Oncol Radiother*. 2020;25:212-6.
1022. Kumar S, Chandra KN, Ayub A. Reversible cerebral vasoconstriction syndrome a rare cause of post-partum headache: an anesthetic overview. *Braz J Anesthesiol*. 2019; 69:311-4.
1023. Kumar S, Dalal V, Sharma JB, Chadda R, Agarwal R, Roy KK. Opioid Dependence in Pregnancy. *J Obstet Gynaecol India*. 2019; 69(Suppl 1):1-3.
1024. Kumar S, Gaur N, Singh N, Kumar D. Imparting increased corrosion passive and bio-active character to Al<sub>2</sub>O<sub>3</sub> based ceramic coating on AZ91 alloy. *Surf Coat Technol*. 2020; 383:125231.
1025. Kumar S, Giridhar P, Verma S, Phulware RH, Malhotra N, Kumar R. Primary Broad Ligament Leiomyosarcoma: a Rare Case Report with Review of Literature. *Indian J Surg Oncol*. 2020; 15:1-6.
1026. Kumar S, Kumar N, Verma R. Safety and efficacy of adjunctive transcranial direct current stimulation in treatment-resistant obsessive-compulsive disorder: An open-label trial. *Indian J Psychiatry*. 2019; 61:327-34.
1027. Kumar S, Kumar R, Gogia A, Arava S, Tripathi M. Esophageal Metastases from Breast Carcinoma: a Rare Delayed Metastases After 15 Years. *J Gastrointest Cancer*. 2019; 50:674-7.
1028. Kumar S, Kumar R, Gogia A, Arava S, Tripathi M. Esophageal Metastases from Breast Carcinoma: a Rare Delayed Metastases After 15 Years. *J Gastrointest Cancer*. 2019;50:674-7.
1029. Kumar S, Mohapatra AN, Sharma HP, Singh UA, Kambi NA, Velpandian T, et al. Altering Opioid Neuromodulation in the Songbird Basal Ganglia Modulates Vocalizations. *Front Neurosci*. 2019; 13:671.
1030. Kumar S, Ray A. Routine Polysomnography before Bariatric Surgery: Is it Necessary or Optional? *Indian J Sleep Med*. 2019; 14:54-9.
1031. Kumar S, Sarangi SC, Tripathi M, Ramanujam B, Gupta YK. Seizure recurrence risk in persons with epilepsy undergoing antiepileptic drug tapering. *Acta Neurol Scand*. 2020; 141:65-76.
1032. Kumar S, Singh S, Singh K, Rajkumar S, Balhara YPS. Prevalence and pattern of problematic internet use among engineering students from different colleges in India. *Indian J Psychiatry*. 2019;61:578-83.
1033. Kumar V, Azad SV, Vohra R, Venkatesh P. Serous macular detachment in nanophthalmos: A manifestation of pachychoroid spectrum. *Am J Ophthalmol Case Rep*. 2019; 15:100522.
1034. Kumar V, Deorari V, Swaroop S, Biswas A. Panophthalmitis in a patient with dengue fever. *BMJ Case Rep*. 2019; 12:e229588.
1035. Kumar V, Jorwal P, Biswas A, Deorari V. Parkes Weber syndrome. *QJM*. 2019; 112:936.

1036. Kumar V, Jorwal P, Soneja M, Sinha S, Nischal N, et al. Evaluation of rapid diagnostic tests and assessment of risk factors in drug-resistant pulmonary tuberculosis. *J Family Med Prim Care*. 2020; 9:1028-34.
1037. Kumar V, Kumawat D, Mahalingam K. Macular Colobomata: Comparison of Clinical and Optical Coherence Tomography Features With Serologic Results. *Am J Ophthalmol*. 2019; 200:47-56.
1038. Kumar V, Nayak M, Panthee R, et al. A Technical Tip to Avert Meniscal Rotation and Dislocation in a Mobile Bearing Unicompartmental Knee Arthroplasty. *Case Rep Orthop Res*. 2020;3:42-8.
1039. Kumar V, Padhy S, Bhai T, Azad S. Bilateral focal choroidal excavation in high myopia. *Indian J Ophthalmol*. 2019; 67:1347-.
1040. Kumar V, Sankar J. Liquid Mosquito Repellents - Keep Them Away from Toddlers. *Indian J Pediatr*. 2020; 87:3.
1041. Kumar V, Sharma P, Bairagya HR, Sharma S, Singh TP, Tiku PK. Inhibition of human 3-hydroxy-3-methylglutaryl CoA reductase by peptides leading to cholesterol homeostasis through SREBP2 pathway in HepG2 cells. *Biochim Biophys Acta Proteins Proteom*. 2019; 1867:604-15.
1042. Kumar V, Surve A, Azad S, Venkatesh P, Bagri N, Prasad P, et al. Juvenile idiopathic arthritis-related uveitis mimicking endophthalmitis. *J AAPOS*. 2019; 23:38-241.
1043. Kumar V, Surve A, Balasubramaniam N, Azad S, Venkatesh P. Retained intraocular copper foreign body presenting as subretinal abscess. *Can J Ophthalmol*. 2019; 54:e254-8.
1044. Kumar V, Tewari R. Giant retinal pigment epithelium rip in a patient with peripheral exudative hemorrhagic chorioretinopathy. *Indian J Ophthalmol*. 2019; 67:1164-5.
1045. Kumar VL, Verma S, Das P. Artesunate suppresses inflammation and oxidative stress in a rat model of colorectal cancer. *Drug Dev Res*. 2019; 80:1089-97.
1046. Kumaran SS, Kumari S, Goyal V, Bose S, Jain S, Dwivedi SN, et al. Metabolomic analysis of serum using proton NMR in 6-OHDA experimental PD model and patients with PD. *Neurochem Int*. 2020; 134:104670.
1047. Kumari A, Diwaker P, Gogoi P, Arora VK, Garg PK, Pandey R. Primary extraneural ependymoma of the broad ligament: A rare entity. *J Cancer Res Ther*. 2019;15:1398-1401.
1048. Kumari K, Longchar M, Gunathilaka G, Narange P, Agarwala S, Arava S. Type I pleuropulmonary blastoma presenting as congenital pulmonary airway malformation: A report of two cases. *Ind J Pathol Microbiol*. 2019; 62:595-8.
1049. Kumari K, Longchar M, Gunathilaka G, Narange P, Aggarwal S, Arava S. Type I pleuropulmonary blastoma presenting as congenital pulmonary airway malformation: A report of two cases. *Indian J Pathol Microbiol*. 2019; 62:595-8.
1050. Kumari K, Naranje P, Nakra T, Kaushal S, Roy D, Davera S, ... Biswas A, et al. Extensive chondroid differentiation in a Wilms tumor following chemotherapy: Clinical relevance and implications. *Pediatr Urol Case Rep*. 2020; 7:1-6.
1051. Kumari K, Naranje P, Nakra T, Kaushal S, Roy D, Davera S, et al. Extensive chondroid differentiation in a Wilms tumor (kidney) following chemotherapy: Clinical relevance and implications. *Pediatr Urol Case Rep*. 2020; 7:1-7.
1052. Kumari K, Pradeep I, Kakkar A, Dinda A, Seth A, Nayak B, et al. BK Polyomavirus and Urothelial Carcinoma: Experience at a Tertiary Care Centre in India with review of literature. *Ann Diagn Pathol*. 2019; 40:77-80.
1053. Kumari K, Thota R, Chaudhary HL, Sharma MC, Thakar A, Singh G. Low-Grade Fibromyxoid Sarcoma of the External Auditory Canal: A Rare Pathology and Unusual Location. *Head and Neck Pathology*. 2020; 14:276-82.
1054. Kumari M, Khurana S, Bhardwaj N, Malhotra R, Mathur P. Pathogen burden & associated antibiogram of *Pseudomonas* spp. in a tertiary care hospital of India. *Indian J Med Res*. 2019; 149:295-8.
1055. Kumari N, Yadav S. Modulation of protein oligomerization: An overview. *Prog Biophys Mol Biol*. 2019; 149:99-113.
1056. Kumari S, Deka D, Dadhwal V, Perumal V. Correlation of fetal blood vessel Doppler measurements with fetal anemia among Rhesus isoimmunized pregnancies after two intrauterine transfusions. *Int J Gynaecol Obstet*. 2019;146:218-22.
1057. Kumari S, Kumaran SS, Goyal V, Bose S, Jain S, Dwivedi SN, et al. Metabolomic analysis of serum using proton NMR in 6-OHDA experimental PD model and patients with PD. *Neurochem Int*. 2020; 134:104670.
1058. Kumari S, Kumaran SS, Goyal V, Bose S, Jain S, Dwivedi SN, Srivastava AK, Jagannathan NR. Metabolomic analysis of serum using proton NMR in 6-OHDA experimental PD model and patients with PD. *Neurochem Int*. 2020 Mar;134:104670.
1059. Kumari S, Rawre J, Trikha A, Sreenivas V, Sood S, Kapil A, et al. Linezolid-resistant *Staphylococcus haemolyticus*: Emergence of G2447U & C2534U mutations at the domain V of 23S ribosomal RNA gene in a tertiary care hospital in India. *Indian J Med Res*. 2019;149:795-8.
1060. Kumari S, Rawre J, Trikha A, Sreenivas V, Sood S, Kapil A, et al. Linezolid-resistant *Staphylococcus haemolyticus*:

- Emergence of G2447U & C2534U mutations at the domain V of 23S ribosomal RNA gene in a tertiary care hospital in India. *Indian J Med Res.* 2019; 149:795-8.
1061. Kumari V, Joshi P, Dhua AK, Sapra S, Srinivas M, Agarwala S, et al. Developmental status of children operated for esophageal atresia with or without trachea-esophageal fistula along with maternal stress, their quality of life and coping abilities at AIIMS, New Delhi. *Eur J Pediatr Surg.* 2019; 29:125-31.
1062. Kumawat D, Alam T, Sahay P, Chawla R. Ocular abnormalities and complications in anterior megalophthalmos: a case series. *Eye (Lond).* 2019; 33:826-32.
1063. Kumawat D, Chawla R. Correspondence. *Retina.* 2019; 39:e26-7.
1064. Kumawat D, Jayaraman N, Sahay P, Chandra P. Multicoloured lenticular opacities in a case of cerulean cataract. *BMJ Case Rep.* 2019; 12:e230167.
1065. Kumawat D, Kumar V, Sahay P, Nongrem G, Chandra P. Bilateral asymmetrical partial heterochromia of iris and fundus in Waardenburg syndrome type 2A with a novel MITF gene mutation. *Indian J Ophthalmol.* 2019; 67:1481.
1066. Kumawat D, Sahay P, Alam T, Bhari A, Chandra P. Ocular auto-stimulation and its morbidity in stage 5 retinopathy of prematurity. *Indian J Ophthalmol.* 2019; 67:912-6.
1067. Kumawat D, Saluja G, Chawla R, Rathod S, Sahay P. Multimodal imaging-guided management of a nonangiomatic proliferation at the optic disc in a case of Von Hippel-Lindau disease. *Can J Ophthalmol.* 2020; 55:e22-6.
1068. Kumawat D, Venkatesh P, Brar AS, Sahay P, Kumar V, Chandra P, Chawla R. Atypical Macular Holes. *Retina.* 2019; 39:1236-64.
1069. Kundu S. Insights into the mechanism(s) of digestion of crystalline cellulose by plant class C GH9 endoglucanases. *J Mol Model.* 2019 25:240.
1070. Kundu S. Mathematical model of a short translatable G-quadruplex and an assessment of its relevance to misfolding-induced proteostasis. *Math Biosci Eng.* 2020; 17:2470-93.
1071. Kuriakose J, Redecke V, Guy C, Zhou J, Wu R, Ippagunta SK, et al. Patrolling monocytes promote the pathogenesis of early lupus-like glomerulonephritis. *J Clin Invest.* 2019; 130:2251-65.
1072. Kushwah S, Yadav M, Hari P, Meena J, Sinha A, Bagga A. Incidence and determinants of acute kidney injury in patients with nephrotic syndrome. *Asian J Pediatr Nephrol.* 2019; 2:75-81.
1073. Kusuma YS, Babu BV. The costs of seeking healthcare: illness, treatment seeking and costs of care by the urban poor in Delhi, India. *Health Soc Care Community.* 2019; 27:1401-20.
1074. Kuthiala N, Kumaran S, Bhatia R. Vascular Endothelial Growth Factor as Predictive Biomarker for Stroke Severity and Outcome; An Evaluation of a New Clinical Module in Acute Ischemic Stroke. *Neurol India.* 2019; 67:1280-5.
1075. Kuthirummal N, Vanathi M, Mukhija R, Gupta N, Meel R, Saxena R, et al. Evaluation of Barrett universal II formula for intraocular lens power calculation in Asian Indian population. *Indian J Ophthalmol.* 2020; 68:59-64.
1076. Lal B, Ghosh M, Agarwal B, Gupta D, Roychoudhury A. A novel economically viable solution for 3D printing-assisted cranioplast fabrication. *Br J Neurosurg.* 2020 Feb 19:1-4.
1077. Lall M, Singh S, Dar L, Venkatesh P. Declining cytomegalovirus retinitis in ART- experienced women from North India. *Med J Armed Forces India.* 2019; 75:355-6.
1078. Lamsal R, Mahajan C, Chauhan V, Gupta N, Mishra N, Rath GP. Effect of pregabalin on post-craniotomy pain in patients undergoing supratentorial tumour surgery: randomised double-blind, placebo-controlled trial. *J Neurosci Rural Pract.* 2019; 10:641-5.
1079. Landge K, Ojha V, Ganga KP, Kaushik P, Sharma P, Jagia P. Endomyocardial fibrosis regression. *J Pract Cardiovasc Sci.* 2019; 5:102-4.
1080. Langfitt JT, Quigg M, Yan G, Yu W, Ward MM, Barbaro NM, ... Tripathi M, et al. Direct and indirect costs associated with stereotactic radiosurgery or open surgery for medial temporal lobe epilepsy: Results from the ROSE trial. *Epilepsia.* 2019; 60:1453-61.
1081. Lata S, Venkatesh P, Temkar S, Selvan H, Gupta V, Dada T, et al. Comparative Evaluation Of Anterior Segment Optical Coherence Tomography, Ultrasound Biomicroscopy, and Intraocular Pressure Changes After Panretinal Photocoagulation By Pascal and Conventional Laser. *Retina.* 2020; 40:537-45.
1082. Law T, Lipnick M, Joshi M, Rath GP, Gelb AW. The path to safe and accessible anaesthesia care. *Indian J Anaesth.* 2019; 63:965-71.
1083. Lee J, Banerjee J, Khobragade PY, Angrisani M, Dey AB. LASI-DAD study: a protocol for a prospective cohort study of late-life cognition and dementia in India. *BMJ Open.* 2019; 9:e030300.
1084. Lejding T, Engfeldt M, Bruze M, Isaksson M, Svedman C, Zimerson E, et al. Skin application of glutathione and iron sulfate can inhibit elicitation of allergic contact dermatitis from hexavalent chromium. *Contact Dermatitis.* 2020; 82:45-53.

1085. Lele A, Kannan N, Vavilala MS, Sharma D, Mossa-Basha M, Agyem K, et al. Patients Who Benefit from Intracranial Pressure Monitoring without Cerebrospinal Fluid Drainage After Severe Traumatic Brain Injury. *Neurosurgery*. 2019; 85:231-9.
1086. Lele AV, Vavilala MS, Gupta D, CHIRAG (Collaborative Head Injury and Guidelines) Study. In Reply: Patients Who Benefit From Intracranial Pressure Monitoring Without Cerebrospinal Fluid Drainage After Severe Traumatic Brain Injury. *Neurosurgery*. 2019; 84:E261.
1087. Lewis A, Raheja A, McCutcheon I. Introduction: Primary and secondary infections of the brain. *Neurosurg Focus*. 2019; 47:E1.
1088. Li G, Bielicki J, Ahmed ASMNU, Islam S, Berezin EN, Gallaci C...Chaurasia S, et al. Towards understanding global patterns of antimicrobial use and resistance in neonatal sepsis: insights from the NeoAMR network. *Arch Dis Child* 2019; 105:26-31.
1089. Linda P, Gupta S, Jhanjee S, Mathur VP. Comparison of attitude of smokeless tobacco users taking dental treatment versus not seeking dental treatment toward cessation of smokeless tobacco use. *Indian J Psychiatr Nurs*. 2019;16:31-4.
1090. Local Burden of Disease Child Growth Failure Collaborators. Mapping child growth failure across low- and middle-income countries. *Nature*. 2020; 577:231-4.
1091. Local Burden of Disease Educational Attainment Collaborators. Mapping disparities in education across low- and middle-income countries. *Nature*. 2020; 577:235-8.
1092. Loeb M, Dokainish H, Dans A, Palileo-Villanueva LM, Roy A, Karaye K, et al. Corrigendum to “Randomized controlled trial of influenza vaccine in patients with heart failure to reduce adverse vascular events (IVVE): Rationale and design” [212 (2019) 36-44]. *Am Heart J*. 2020; 221:180.
1093. Lohani KR, Kataria K, Ranjan P, Khadka S, Jayaram J. Thyroid gossypiboma: a rare diagnosis with common presentation. *Int Surg J*. 2019; 6:3409-11.
1094. Lohiya A, Daniel RA, Kar SS, Sahu SK, Nongkynrih B, Varghese C. Measuring outcomes of hypertension treatment in primary care in resource-limited settings. *WHO South East Asia J Public Health*. 2019; 8:112-4.
1095. Lun R, Yogendrakumar V, Demchuk AM, Aviv RI, Rodriguez-Luna D, Molina CA,...Padma MV, et al. Calculation of Prognostic Scores Using Delayed Imaging Outperforms Baseline Assessments in Acute Intracerebral Hemorrhage. *Stroke*. 2020; 51:1107-10.
1096. Lung T, Jan S, de Silva HA, Guggilla R, Maulik PK, Naik N, et al. Fixed-combination, low-dose, triple-pill antihypertensive medication versus usual care in patients with mild-to-moderate hypertension in Sri Lanka: a within-trial and modelled economic evaluation of the TRIUMPH trial. *Lancet Glob Health*. 2019; 7:e1359-66.
1097. M K MA, Kumaresan A, Yadav S, Mohanty TK, Datta TK. Comparative proteomic analysis of high- and low-fertile buffalo bull spermatozoa for identification of fertility associated proteins. *Reprod Domest Anim*. 2019; 54:786-94.
1098. MA Ganie, Sahar T, Rashid A, Wani IA, Nisar S, Lakshmy R. Comparative evaluation of biomarkers of inflammation among Indian women with polycystic ovary syndrome (PCOS) consuming vegetarian vs. non-vegetarian diet. *Front Endocrinol*. 2019; 10:699.
1099. Madaan P, Gupta D, Agrawal D, Kumar A, Jauhari P, Chakrabarty B, et al. Neurocognitive outcomes and their Diffusion Tensor Imaging (DTI) correlates in children with Mild Traumatic Brain Injury (mTBI). *Neurology*. 2019;92(15 Suppl):P5.6-059.
1100. Madaan P, Jauhari P, Chakrabarty B, Gulati S. Jeavons syndrome in a family with GLUT1-deficiency syndrome. *Seizure*. 2019; 71:158-60.
1101. Madaan P, Jauhari P, Chakrabarty B, Gulati S. Jeavons Syndrome: An Overlooked Epilepsy Syndrome. *Pediatr Neurol*. 2019; 93:63.
1102. Madaan P, Jauhari P, Chakrabarty B, Gulati S. Ketogenic Diet in Epilepsy of Infancy With Migrating Focal Seizures. *Pediatr Neurol*. 2019; 95:92.
1103. Madaan P, Jauhari P, Chakrabarty B, Kumar A, Gulati S. Saposin B-Deficient Metachromatic Leukodystrophy Mimicking Acute Flaccid Paralysis. *Neuropediatrics*. 2019; 50:318-21.
1104. Madaan P, Jauhari P, Michael SN, Sinha A, Chakrabarty B, Gulati S. Stroke as an initial manifestation of thiamine-responsive megaloblastic anemia. *Ann Indian Acad Neurol*. 2020; 23:136-8.
1105. Madan K, Mittal S, Gupta N, Biswal SK, Tiwari P, Hadda V, et al. The Cricothyroid versus Spray-As-You-Go Method for Topical Anesthesia during Flexible Bronchoscopy: The CRISP Randomized Clinical Trial. *Respiration*. 2019; 98:440-6.
1106. Madan K, Mittal S, Hadda V, Mohan A, Khilnani GC, Guleria R, et al. Nebulized lignocaine for topical anaesthesia in no-sedation bronchoscopy (NEBULA): A randomized, double blind, placebo-controlled trial. *Lung India*. 2019;36:288-94.
1107. Madan K, Mittal S, Hadda V, Mohan A. Cryoprobe transbronchial lung biopsy with flexible bronchoscope using

- Arndt endobronchial blocker. *Lung India*. 2019;36:241-243.
- 1108.Madan K, Mittal S, Suri TM, Jain A, Mohan A, Hadda V, et al. Bronchial thermoplasty for severe asthma: A position statement of the Indian chest society. *Lung India*. 2020;37:86-96
- 1109.Madan K, Mittal S, Tiwari P, Hadda V, Mohan A, Guleria R, et al. The Cricothyroid versus Spray-As-You-Go Method for Topical Anesthesia during Flexible Bronchoscopy: The CRISP Randomized Clinical Trial. *Respiration*. 2019;98:440-6.
- 1110.Madasu S, Malhotra S, Kant S, Sagar R, Mishra AK, Misra P, et al. Anxiety disorders among adolescents in a rural area of northern India using Screen for Child Anxiety-Related Emotional Disorders Tool: A Community-based Study. *Indian J Community Med*. 2019; 44:317-21.
- 1111.Madasu S, Malhotra S, Kant S, Sagar R, Mishra AK, Misra P, et al. Prevalence and determinants of anxiety disorders among adolescents in a rural community from northern India. *Asian J Psychiatr*. 2019; 43:137-42.
- 1112.Madasu S, Malhotra S, Kant S, Sagar R, Mishra AK, Misra P, et al. Anxiety disorders among adolescents in a rural area of northern India using screen for child anxiety-related emotional disorders tool: A community-based study. *Indian J Community Med*. 2019; 44:317-21.
- 1113.Madathil S, Anand P, Deorari AK, Agarwal R, Thukral A, Sankar MJ, et al. Non-immune Hydrops in Neonates: A Tertiary Care Center Experience. *Indian Pediatr*. 2020; 57:321-3.
- 1114.Madhubala A, Tewari N, Mathur VP, Bansal K. Comparative evaluation of fracture resistance using two rehydration protocols for fragment reattachment in uncomplicated crown fractures: in vitro study using bovine teeth. *Dent Traumatol*. 2019; 35:199-203.
- 1115.Madhusudhan KS, Das P, Gunjan D, Srivastava DN, Garg PK. IgG4-Related Sclerosing Cholangitis: A Clinical and Imaging Review. *AJR Am J Roentgenol*. 2019; 213:1221-31.
- 1116.Madhusudhan KS, Srivastava DN. Letter to the editor. (Common pitfalls when using the Liver Imaging Reporting and Data System (LI-RADS): lessons learned from a multi-year experience). *Abdom Radiol (NY)*. 2019; 44:3207-8.
- 1117.Magan D, Yadav RK, Bal CS, Mathur R, Pandey RM. Brain Plasticity and Neurophysiological Correlates of Meditation in Long-Term Meditators: A (18) Fluorodeoxyglucose Positron Emission Tomography Study Based on an Innovative Methodology. *J Altern Complement Med*. 2019; 25:1172-82.
- 1118.Magoon R, Choudhury A. Opioid free anesthesia: is it too early to bid adieu. *Can J Anaesth*. 2019; 66:1268-9.
- 1119.Magoon R, Kumar AK, Malik V, Makhija N. Dexmedetomidine and postoperative delirium: Decoding the evidence! *J Anaesthesiol Clin Pharmacol*. 2020;36:140-1.
- 1120.Magoon R, Makhija N, Das D. Perioperative myocardial injury and infarction following non-cardiac surgery: A review of the eclipsed epidemic. *Saudi J Anesth*. 2020; 14:91-9.
- 1121.Magoon R, Makhija N, Das D. Vasoplegic syndrome after cardiac surgery: Better the devil you know! *J Card Surg*. 2019; 34:1679-80.
- 1122.Magoon R, Makhija N, Jangid SK. Balancing a single-ventricle circulation: 'physiology to therapy'. *Indian J Thorac Cardiovasc Surg*. 2020; 36:159-62.
- 1123.Magoon R, Makhija N, Jangid SK. Calcium Administration on separation from Cardiopulmonary bypass: Looking beyond a Facilitated Weaning! *J Card Crit Care TSS*. 2019; 3:53-4.
- 1124.Magoon R, Makhija N, Sahoo S, Das D. Platypnea-Orthodeoxia Syndrome: Revisiting the Enigmatical Hypoxemia! *J Pract Cardiovasc Sci*. 2019; 5:225-6.
- 1125.Magoon R, Makhija N, Sarkar S. Erector spinae plane block and cardiac surgery: 'A closer look'. *J Clin Anesth*. 2020; 60:8
- 1126.Magoon R, Makhija N. Endothelial glycocalyx and cardiac surgery: Newer insights. *J Cardiothorac Vas Anesth*. 2020; 34:310-11.
- 1127.Magoon R, Malik V, Makhija N. Micro RNAs in cardiac surgery: Novel molecular Signatures! *J Cardiothorac Vas Anesth*. 2020; 34:570.
- 1128.Mahajan C, Mishra RK, Jena BR, Kapoor I, Prabhakar H, Rath GP, et al. Effect of magnesium and lignocaine on post-craniotomy pain: A comparative, randomized, double blind, placebo-controlled study. *Saudi J Anaesth*. 2019;13:299-305.
- 1129.Mahajan P, Visclosky T, Bhoi S, Galwankar S, Kuppermann N, Neumar R. The importance of developing global emergency medicine research network. *Am J Emerg Med*. 2019; 37:744-5.
- 1130.Mahajan S, Suri V, Sharma MC, Kedia S, Sardana H, Nakra T. Primary intracranial malignant ectomesenchymoma in an adult: Report of a rare case and review of the literature. *Neuropathology*. 2019; 39:200-6.
- 1131.Mahantshetty U, Gudi S, Singh R, Sasidharan A, Sastri SC, Gurram L, et al. Indian Brachytherapy Society Guidelines for radiotherapeutic management of cervical cancer with special emphasis on high-dose-rate brachytherapy. *J*

Contemp Brachytherapy. 2019;11:293-306.

1132. Mahapatra A, Choudhary V, Sagar R. Assessment of caregiver needs in parents of children suffering from neurodevelopmental disorders in an Indian population. *Asian J Psychiatr.* 2020; 49:101807.
1133. Mahapatra A, Kuppili PP, Gupta R, Deep R, Khandelwal SK. Prevalence and predictors of family accommodation in obsessive-compulsive disorder in an Indian setting. *Indian J Psychiatry.* 2020; 62:43-50.
1134. Mahapatra SJ, Jain S, Bopanna S, Gupta S, Singh P, Trikha A, et al. Pentazocine, a Kappa-Opioid Agonist, Is Better Than Diclofenac for Analgesia in Acute Pancreatitis: A Randomized Controlled Trial. *Am J Gastroenterol.* 2019; 114:813-21.
1135. Maharana PK, Nawaz S, Singhal D, Jhanji V, Agarwal T, Sharma N, et al. Causes and Management Outcomes of Acquired Corneal Opacity in a Preschool Age (0-5 Years) Group: A Hospital-Based Study. *Cornea.* 2019; 38:868-72.
1136. Maharana PK, Singhal D, Sahay P, Sharma N. Comment on Descemetorhexis Without Endothelial Keratoplasty Versus DMEK for Treatment of Fuchs Endothelial Corneal Dystrophy. *Cornea.* 2019; 38:e14.
1137. Maharishi V, Gupta P, Kumar VL, Upadhyay AD, Das P, Yadav R, et al. Effect of H. pylori eradication therapy on hepatic steatosis in patients with non-alcoholic fatty liver disease: a randomized controlled pilot study. *Gastroenterol Rep (Oxf).* 2019; 8:104-10.
1138. Mahendran M, Agarwal S, Ray A, Vikram NK. Binge alcohol consumption leading to hypokalemic rhabdomyolysis. *BMJ Case Rep.* 2019; 12:e229307.
1139. Mahendran M, Gupta K, Kumar A, Bhatt M, Khan MA, Vyas S, et al. Bedside sonography by medicine residents in critically ill patients: A retrospective study from a teaching hospital in India. *J Family Med Prim Care.* 2019; 8:2517-21.
1140. Mahesh R, Kaur P, Gahlot M. Usefulness of periodic food safety training among hospital food handlers. *Int J Curr Adv Res* 2020;9:20910–13.
1141. Maheshwari K, Chaturvedi R, Gupta S. Impact of Family Environment on Mental Well Being of Adolescent Girls: A Cross Sectional Survey. *Indian J Psychiatr Nurs.* 2020; 17:24-8.
1142. Mahmood A, Vijayakumar V, Ansari MT. Giant cell tumour of the scaphoid: a case report. *J Hand Surg Eur Vol.* 2019; 44:747-8.
1143. Mahtab S, Kar P, Saha S, Sreenivas V, Sottini A, Imberti L, et al. Central Immune Tolerance of T and B Cells in Patients With Idiopathic Hypoparathyroidism T1D and Autoimmune Thyroiditis. *J Endocr Soc.* 2019; 3:1175-84.
1144. Mahto RK, Rana SS, Kharbanda OP. Accidental Swallowing of a Molar Band. *Turk J Orthod.* 2019; 32:115-8.
1145. Maitra S, Bhattacharjee S, Som A. Noninvasive Ventilation and Oxygen Therapy after Extubation in Patients with Acute Respiratory Failure: A Meta-analysis of Randomized Controlled Trials. *Indian J Crit Care Med.* 2019; 23:414-22.
1146. Maitra S, Bhattacharjee S. Adherence to the Prevailing Sepsis Definition Is Quintessential to Subphenotype Identification. *Am J Respir Crit Care Med.* 2020; 201:258.
1147. Maji P, Malik R, Lodha R, Bagga A. Sick Cell Intrahepatic Cholestasis with Acute Liver Failure and Acute Kidney Injury: Favourable Outcome with Exchange Transfusion. *Indian J Pediatr.* 2020; 87:83.
1148. Mak JWY, Tang W, Yip TCF, Ran ZH, Wei SC, Ahuja V, et al. Stopping anti-tumour necrosis factor therapy in patients with perianal Crohn's disease. *Aliment Pharmacol Ther.* 2019; 50:1195-203.
1149. Makhija N, Magoon R, Goyal A. In reply: Additional insights regarding aortic intramural hematoma. *Can J Anesth.* 2020; 67:384
1150. Makhija N, Magoon R, Karanjkar A. Baffle leak after Senning Procedure: Role of Transesophageal Echocardiographic Imaging. *J of Cardiovasc Med Surg.* 2019; 5:187-8.
1151. Makhija N, Magoon R, Sarkar S. Transesophageal echocardiographic imaging of an aortic intramural hematoma: characterizing the crescent. *Can J Anesth.* 2019;66:1415-6.
1152. Makhija N, Vikram NK, Kaur G, Sharma R, Srivastava DN, Madhusudhan KS. Role of magnetic resonance imaging in the monitoring of patients with non-alcoholic fatty liver disease: Comparison with ultrasonography, lipid profile, and body mass index. *J Clin Exp Hepatol.* 2020; 10:139-49.
1153. Makwana T, Gupta N, Vashist P. Ocular emergencies in the South Asia region. *Community Eye Health.* 2019; 31:S1-4.
1154. Malagi AV, Das CJ, Khare K, Calamante F, Mehndiratta A. Effect of combination and number of b values in IVIM analysis with post-processing methodology: simulation and clinical study. *MAGMA.* 2019; 32:519-27.
1155. Malapure SS, Mukherjee A, Bal C. Radioiodine Therapy of Graves' Disease and the Uptake Paradox. *Indian J Nucl Med.* 2020; 35:17-20.
1156. Malgulwar PB, Kakkar A, Sharma MC, Ghosh R, Pathak P, Sarkar C, et al. Loss of SMARCB1/INI1



- Immunoexpression in Chordoid Meningiomas. *Neurol India*. 2019; 67:1492-7.
1157. Malhotra P, Goel H, Mishra AK. Inflammatory lymphadenopathy in renal cell carcinoma: prognostic tool? *Ann Transl Med* 2019; 7:189.
1158. Malhotra R, Bala K, Gautam D, Bhattacharya A, Bhusan AX, Pandey P, et al. Mycobacterium abscessus Periprosthetic joint infection following bilateral Total Knee arthroplasty. *IDCases*. 2019; 17:e00542.
1159. Malhotra R, Gautam D. Cup-Cage Construct using Porous Cup with Burch-Schneider Cage in the management of complex acetabular fractures. *Hip Pelvis*. 2019;31:87-94.
1160. Malhotra R, Khurana A, Shekhar S, Gautam D. Proximal femoral fracture in ankylosed hip treated with primary total hip arthroplasty: Technical tips with report of two cases. *J Clin Orthop Trauma*. 2020; 11:99-104.
1161. Malhotra R, Vaishya R. Revision Arthroplasty in 2020. *J Clin OrthopTrauma*. 2020; 11:1.
1162. Malhotra R, Bala K, Gautama D, Bhattacharya A, Bhusan AX, Pandey P, et al. Mycobacterium abscessus Periprosthetic joint infection following bilateral Total Knee arthroplasty. *ID Cases*. 2019;17:e00542.
1163. Malhotra R, Khurana A, Shekhar S, Gautam D. Proximal femoral fracture in ankylosed hip treated with primary total hip arthroplasty: Technical tips with report of two cases. *J Clin OrthopTrauma*. 2020; 11:99-104.
1164. Malhotra R. Orthopedic Care a-CROSS Community. *Indian JOrthop*. 2019; 53:583-5.
1165. Malhotra S, Dumoga S, Sirohi P, Singh N. Red Blood Cells-Derived Vesicles for Delivery of Lipophilic Drug Camptothecin. *ACS Appl Mater Interfaces*. 2019; 11:22141-51.
1166. Malhotra S, Kalaivani M, Rath R, Prasad M, Vashist P, Gupta N, et al. Use of spectacles for distance vision: coverage, unmet needs and barriers in a rural area of North India. *BMC Ophthalmol*. 2019; 19:252.
1167. Malhotra S, Kant S, Ahamed F, Rath R, Kalaivani M, Gupta SK, et al. Health behaviors, outcomes and their relationships among young men aged 18-24 years in a rural area of north India: A cross-sectional study. *PLoS One*. 2019; 14:e0220285.
1168. Malik R. The Significant Psychological Burden of a Celiac Family: Overlooked and Untreated. *Indian J Pediatr*. 2019; 86:406-7.
1169. Malla S, Razik A, Das CJ. Macrodystrophia lipomatosa of the foot. *BMJ Case Rep*. 2019; 12:e229464.
1170. Malla S, Razik A, Vyas S. Cutaneous metastasis in adenocarcinoma rectum. *BMJ Case Rep*. 2019; 12:e229652.
1171. Mallick S, Benson R, Giridhar P, Singh RA, Rath GK. Demography, patterns of care and survival outcomes in patients with malignant tumors of trachea: A systematic review and individual patient data analysis of 733 patients. *Lung Cancer*. 2019;132:87-93.
1172. Mallick S, Giridhar P, Benson R, Melgandi W, Rath GK. Demography, Pattern of Care, and Survival in Patients with Xanthoastrocytoma: A Systematic Review and Individual Patient Data Analysis of 325 Cases. *J Neurosci Rural Pract*. 2019;10:430-7.
1173. Manchanda S, Bhalla AS, Kumar R, Kairo AK. Duplication Anomalies of the Internal Auditory Canal: Varied Spectrum. *Indian J Otolaryngol Head Neck Surg*. 2019; 71:294-8.
1174. Manchanda S, Vora Z, Sharma R, Hari S, Das CJ, Kumar S et al. Quantitative Sonoelastographic Assessment of the Normal Uterus Using Shear Wave Elastography: An Initial Experience. *J Ultrasound Med*. 2019;38:3183-9.
1175. Mandal PK, Shukla D, Tripathi M, Erslund L. Cognitive Improvement with Glutathione Supplement in Alzheimer's Disease: A Way Forward. *J Alzheimers Dis*. 2019; 68:531-5.
1176. Mandal T, Meena S, Singh R, Azad CS. Microfilaria in achylous haematuria: can it imitate urolithiasis? *Trop Parasitol* 2020; 10:44-6
1177. Mangal J, Monga R, Mathur SR, Dinda AK, Joseph J, Ahlawat S, et al. Unsupervised organization of cervical cells using bright-field and single-shot digital holographic microscopy. *J Biophotonics*. 2019; 12:e201800409.
1178. Manish De, Mohan VK, Bhoi D, Talwar P, Kumar A, Garg B, et al. Transforaminal Epidural Injection of Local Anaesthetic and Dorsal Root ganglion Pulsed Radiofrequency Treatment in Lumbosacral Radicular Pain: A Randomised, Triple Blind, Active control Trial. *Pain Pract*. 2020;20:154-67.
1179. Mann M, Kumar S, Chauhan SS, Bhatla N, Kumar S, Bakhshi S, et al. PARP-1 inhibitor modulate  $\beta$ -catenin signaling to enhance cisplatin sensitivity in cancer cervix. *Oncotarget*. 2019; 10:4262-75.
1180. Manoharan D, Bharati SJ, Yadav MK. A novel technique of ultrasound-guided glossopharyngeal nerve block to relieve cancer pain. *Saudi J Anaesth*. 2019;13:279-80.
1181. Manoharan D, Kumar A, Krishna A, Bansal VK. Unusual pseudocyst in a wandering spleen. *BMJ Case Rep*. 2019; 12:e229948.
1182. Manoharan D, Srivastava DN, Gupta AK, Madhusudhan KS. Complications of endoscopic retrograde cholangiopancreatography – an imaging review. *Abdom Radiol (NY)*. 2019; 44:2205-16.
1183. Manoharan D, Srivastava DN, Madhusudhan KS. Spontaneous rupture of an esophageal mucocele into the airway:

- a case report. *ACG Case Rep J* 2019; 6:e00285.
1184. Manoharan KS, Bora S, Suri A. In Response to “Facial Nerve Schwannomas Mimicking as Vestibular Schwannomas” by Beth N. McNulty et al. *J Neurol Surg B Skull Base*. 2019;80:327-8.
  1185. Mantoo M, Priyadarshi M, Verma Ankit, Thukral A. Osteomyelitis in limb amputated by amniotic band sequence. *BMJ Case Rep*. 2019; 12:e228588.
  1186. Marais S, Toorn RV, Chow FC, Manesh A, Siddiqi OK, Figaji A, ... Prasad K, et al. Tuberculous Meningitis International Research Consortium. Management of intracranial tuberculous mass lesions: how long should we treat for? *Wellcome Open Res*. 2019;4:158.
  1187. Marathe S, Talwar. The science and art of aortic and/or pulmonary root translocation. *Ann Pediatr Cardiol*. 2020; 13:56-66.
  1188. Mariz FC, Bender N, Anantharaman D, Basu P, Bhatla N, Pillai MR, et al. Peak neutralizing and cross-neutralizing antibody levels to human papillomavirus types 6/16/18/31/33/45/52/58 induced by bivalent and quadrivalent HPV vaccines. *NPJ Vaccines*. 2020; Art no.14:1-14.
  1189. Markan A, Chawla R, Gupta V, Tripathi M, Sharma A, Kumar A. Photoreceptor evaluation after successful macular hole closure: an adaptive optics study. *Ther Adv Ophthalmol*. 2019; 11:1-7.
  1190. Marwaha RK, Dev T, Mittal A, Mani K, Narang A, Arora P, et al. A randomised controlled trial comparing the efficacy of micellised and fat-soluble vitamin D3 supplementation in healthy adults. *Br J Nutr*. 2019; 121:859-65.
  1191. Mary MCH, Singh D, Deepak KK. Assessment of interaction between cardio-respiratory signals using directed coherence on healthy subjects during postural change. *IRBM* 2019; 40:167-73.
  1192. Mary, MCH, Singh D, Deepak KK. Detecting changes in cardiovascular interaction during postural stress using directed coherence. *SIViP*. 2019; 13:1521-8.
  1193. Mathe P, Kale S, Batra A, Aggarwal S, Nagarajappa A. Intravenous oxytocin bolus and infusion versus infusion alone on the blood loss during caesarean section. *Int J Reprod Contracept Obstet Gynecol*. 8:4824-8.
  1194. Mathew R, Agrawal N, Aggarwal P, Jamshed N. Atrial Myxoma Presenting as Acute Bilateral Limb Ischemia. *J Emerg Med*. 2019; 57:710-2.
  1195. Mathew R, Jamshed N, Aggarwal P, Patel S, Pandey RM. Profile of acute poisoning cases and their outcome in a teaching hospital of north India. *J Family Med Prim Care*. 2019; 8:3935-9.
  1196. Mathew U, Mittal A, Vyas S, Ray A. Interstitial pneumonia with autoimmune features and platypnea-orthopnea syndrome. *BMJ Case Rep*. 2019; 12:e230948.
  1197. Mathur P, Khurana S, De Man T, Rastogi N, Katoch O, Veeraraghavan B, et al. Multiple importations and transmission of colistin-resistant *Klebsiella pneumoniae* in a hospital in northern India. *Infect Control Hosp Epidemiol*. 2019; 40:1387-93.
  1198. Mathur P, Mittal S, Trikha V, Lohiya A, Khurana S, Sagar S, et al. Protocol for developing a surveillance system for surgical site infections. *Indian J Med Microbiol*. 2019;37:318-25.
  1199. Mathur P, Sharma R, Kandasamy D, Kedia S, Gamanagatti S, Ahuja V. Can ADC be used as a surrogate marker of response to therapy in intestinal tuberculosis? *Abdom Radiol (NY)*. 2019; 44:3006-18.
  1200. Mattoo B, Tanwar S, Bhatia R, Tripathi M, Bhatia R. Repetitive transcranial magnetic stimulation in chronic tension type headache: A pilot study. *Indian J Med Res*. 2019; 150:73-80.
  1201. Maurya A, Baitha BK, Kumar A, Yadav SC, Chauhan S. Typical temperature rebound post operation in elective cardiac surgeries. *Ind J Extra Corporeal Tech*. 2020; 29:72-8.
  1202. Maurya RK, Kumar P, Sharma M, Nehra K, Singh H, Chaudhari PK. Cephalometric appraisal of the effects of orthodontic treatment on total airway dimensions in adolescents. *J of Oral Biol Craniofac Res*. 2019; 9:51-6.
  1203. Maurya SP, Das BK, Singh R, Tyagi S. Effect of *Withania somnifera* on CD38 expression on CD8+ T lymphocytes among patients of HIV infection. *Clin Immunol*. 2019; 203:122-4.
  1204. Meel R, Surve A, Bakhshi S, Kashyap S, Gupta B, Sharma S. A Rare Case of Pediatric Lacrimal Sac: Squamous Cell Carcinoma. *J Pediatr Ophthalmol Strabismus*. 2019; 56:e8-11.
  1205. Meena H, Jana M, Singh V, Kabra M, Jain V. Growth Pattern and Clinical Profile of Indian Children with Classical 21-Hydroxylase Deficiency Congenital Adrenal Hyperplasia on Treatment. *Indian J Pediatr*. 2019; 86:496-502.
  1206. Meena J, Bharti J, Roy KK, Kumar S, Singhal S, Shekhar B. Bicornuate Uterus with Complete Cervico-Vaginal Agenesis and Skeletal Deformity: A Case Report. *J Obstet Gynecol India*. 2019; 69(Suppl 1):67-70.
  1207. Meena J, Mathew G, Hari P, Sinha A, Bagga A. Prevalence of bladder and bowel dysfunction in toilet-trained children with urinary tract infection and/or primary vesicoureteral reflux: A systematic review and meta-analysis. *Front Pediatr*. 2020; 8:84.
  1208. Meena J, Shekhar B, Singhal S, Kumar S, Roy KK, Singh N. Pilonic: A Rare Presentation of Ovarian Dermoid. *J*

ObstetGynaecol India. 2019;69:377-9.

- 1209.Meena J, Sinha A, Hari P, Bagga A. Therapy with the combination of tolvaptan and furosemide for refractory edema in nephrotic syndrome. *Indian J Nephrol.* 2020; 30:53-5.
- 1210.Meena J, Sinha A. Evaluation for vesicoureteric reflux following febrile urinary tract infections. *Indian J Pediatr.* 2019; 86:773-4.
- 1211.Meena JP, Brijwal M, Seth R, Gupta AK, Jethani J, Kapil A, et al.Prevalence and clinical outcome of respiratory viral infections among children with cancer and febrile neutropenia.*Pediatr Hematol Oncol.* 2019; 36:330-43.
- 1212.Meena JP, Brijwal M, Seth R, Gupta AK, Jethani J, Kapil A, et al. Prevalence and clinical outcome of respiratory viral infections among children with cancer and febrile neutropenia.*Pediatr Hematol Oncol.* 2019; 12:1-14.
- 1213.Meena JP, Gupta AK, Jana M, Seth R. Combination Antifungals as an Effective Means of Salvage in PaediatricLeukaemia Patients with Invasive Fungal Infections. *Indian J Med Microbiol.* 2019; 37:109-12.
- 1214.Meena JP, Gupta AK, Parihar M, Seth R. Clinical profile and outcomes of non-Hodgkin's lymphoma in children: A report from a tertiary care hospital from India. *Indian J Med Paediatr Oncol.* 2019; 40:41-7.
- 1215.Meena JP, Gupta AK. Neuroblastoma in a developing country: Miles to go. *Indian J Pediatr.* 2019; 86:403-8.
- 1216.Meena JP, Phillips RS, Kinsey S. Brincidofovir as a Salvage Therapy in Controlling Adenoviremia in Pediatric Recipients of Hematopoietic Stem Cell Transplant.*J PediatrHematol Oncol.* 2019; 41:e467-72.
- 1217.Meena JP, Sharma A, Gupta AK, Singh A, Maharana PK, Phulware RH, et al. Conjunctival mass as the initial presentation of acute lymphoblastic leukemia in a child. *Indian J Med Paediatr Oncol.* 2019; 40:142-4.
- 1218.Meena RK, Doddamani RS, Chipde H, Mahajan S, Chandra SP, Sawarkar DP. Primary spinal atypical teratoid/rhabdoid tumour presenting with hematomyelia and subarachnoid haemorrhage-a case report. *Childs Nerv Syst.* 2020;36:655-9.
- 1219.Meena RK, Doddamani RS, Gurjar HK, Kumar A, Chandra PS. Type 1.5 Split Cord Malformations: An Uncommon Entity. *World Neurosurg.* 2020;133:142-9.
- 1220.Meena S, Bir R, Sood S, Das BK, Kapil A. Emergence of *Burkholderia cepacia* in ICU Setting. *Ind J Crit Care Med.* 2019; 23:423-6.
- 1221.Meena S, Rohilla R, Kaistha N, Singh A, Gupta P. *Candida auris* emergence in the Himalayan foothills: First case report from Uttarakhand, India. *Curr Med Mycol.* 2020; 6:47-50.
- 1222.Meenu M, Reeta KH, Dinda AK, Kottarath SK, Gupta YK. Evaluation of sodium valproate loaded nanoparticles in acute and chronic pentylenetetrazole induced seizure models. *Epilepsy Res.* 2019; 158:106219.
- 1223.Mehani B, Narta K, Paul D, Raj A, Kumar D, Sharma A, et al. Fusion transcripts in normal human cortex increase with age and show distinct genomic features for single cells and tissues. *Sci Rep.* 2020; 10:1368.
- 1224.Mehmi N, Kumar R, Sagar P, Singh CA, Kumar R, Thakar A, et al. Importance and Impact of Appropriate Radiology in the Management of Branchial Cleft Anomalies. *Indian J Otolaryngol Head Neck Surg.* 71:953-9.
- 1225.Mehndiratta A, Nayak A, Arya M, Kayal EB, Culli J, Krishan S, et al. Computer aided diagnosis of cirrhosis and hepatocellular carcinoma using multi-phase abdomen CT. *Int J CARS.* 2019; 14:1341-52.
- 1226.Mehra S, Panwar R, Thakur B, Yadav R, Kumar M, Singh R, et al. Expression and Clinical Implications of Cysteine Cathepsins in Gallbladder Carcinoma. *Front. Oncol.* 2019; 9:1239.
- 1227.Mehrotra R, Nethan ST, Ravi P, Grover S, Sharma S, Rath GK, et al. A revisit at 16 years for individuals from peri-urban New Delhi for tobacco use and associated oral lesions. *Transl Res Oral Oncol.* 2019; 4:1-9.
- 1228.Mehrotra.R, Nethan ST, Ravi P, Grover S, Sharma S, Rath GK, et al. A revisit at 16 years for individuals from peri-urban New Delhi for tobacco use and associated oral lesions. *Translat Res Oral Oncol.* 2019; 4:1-9.
- 1229.Mehta A, Bajaj MS, Pushker N, Chawla B, Pujari A, Grewal SS, et al. To compare intralesional and oral propranolol for treating periorbital and eyelid capillary hemangiomas. *Indian J Ophthalmol.* 2019; 67:1974-80.
- 1230.Mehta N, Garg B, Malhotra R. Management of fragility fractures in India. *Best Pract Res Clin Rheumatol.* 2019; 33:301-9.
- 1231.Mehta NH, Garg B, Ansari T, Srivastava DN, Kotwal PP. Comparison of Magnetic Resonance Arthrography and wrist arthroscopy in the evaluation of chronic wrist pain in Indian population. *Indian J Orthop.* 2019; 53:769-75.
- 1232.Mehtab W, Agarwal A, Singh N, Malhotra A, Makharia GK. All that a physician should know about FODMAPs. *Indian J Gastroenterol.* 2019; 38:378-90.
- 1233.Menon V, Pillai AG, Satheesh S, Kaliamoorthy C, Sarkar S. Factor structure and validity of Type D personality scale among Indian (Tamil-speaking) patients with acute myocardial infarction. *Indian J Psychiatry.* 2019;61:572-7.
- 1234.Mian A, Kumari K, Kaushal S, Fazal F, Kodan P, Batra A, et al. Fatal familial hemophagocytic lymphohistiocytosis with perforin gene (PRF1) mutation and EBV-associated T-cell lymphoproliferative disorder of the thyroid. *Autops Case Rep.* 2019; 9:e2019101.

1235. Mian A, Singal AK, Bakhshi S, Sood R, Vikram NK, Ray A. Treatment of Pulmonary Embolism with Chemotherapy in a Case of Newly Diagnosed Osteosarcoma. *J Assoc Physicians India*. 2019; 67:76-8.
1236. Mian A, Singal AK, Bakhshi S, Sood R, Vikram NK, Ray A. Treatment of Pulmonary Embolism with Chemotherapy in a Case of Newly Diagnosed Osteosarcoma. *J Assoc Physicians India*. 2019; 67:76-8.
1237. Michael SN, Madaan P, Jauhari P, Chakrabarty B, Kumar A, Gulati S. Selective Pyramidal Tract involvement in Late-Onset Krabbe Disease. *Indian J Pediatr*. 2019; 86:970-1.
1238. Midha S, Dalela M, Sybil D, Patra P, Mohanty S. Advances in three-dimensional bioprinting of bone: Progress and challenges. *J Tissue Eng Regen Med*. 2019; 13:925-45.
1239. Minu M, Reeta KH, Dinda AK, Sarat KK, Gupta YK. Evaluation of sodium valproate loaded nanoparticles in acute and chronic pentylenetetrazole induced seizure models. *Epilepsy Res*. 2019; 158:106219.
1240. Mishra A, Sharma D, Mishra P. Effect Of Barium Sulphate And Gastrografin Dye On Wound Healing. In *The Gastrointestinal Tract Of Albino Rat – An Experimental Study*. *Int JSci Res*. 2019; 8:67-9.
1241. Mishra B, Joshi MK, Tiwari R, Uniyal M. A complex chest wall wound managed by a novel technique of thoracoplasty. *BMJ Case Rep*. 2019; 12:e230782.
1242. Mishra D, Kharbanda OP, Srivastava A, Qaiser D, Yadav R, Bhatt K, et al. Use of fluorescein dye in detection of oral dysplasia and oral cancer. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2019; 128:e37.
1243. Mishra D, Satpathy G, Chawla R, Venkatesh P, Ahmed N, Panda S. Utility of broad-range 16S rRNA PCR assay vs. Conventional methods for laboratory diagnosis of bacterial endophthalmitis in a tertiary care hospital. *Br J Ophthalmol*. 2019; 103:152-6.
1244. Mishra J, Talwar S, Kaur L, Chandiok K, Yadav S, Ramakrishnan L. Differential global and MTHFR gene specific methylation patterns in preeclampsia and recurrent miscarriages: A case control study from North India. *Gene*. 2019; 704:68-73.
1245. Mishra N, Makhdoomi MA, Sharma S, Kumar S, Dobhal A, Kabra SK, et al. Viral characteristics associated with maintenance of elite neutralizing activity in chronically HIV-1 clade C infected monozygotic pediatric twins. *J Virol*. 2019; 93:e00654-19.
1246. Mishra N, Mohata M, Narang R, Lakshmy R, Hazarika A, Pandey RM, et al. Altered Expression of Complement Regulatory Proteins CD35, CD46, CD55, and CD59 on Leukocyte Subsets in Individuals Suffering From Coronary Artery Disease. *Front Immunol*. 2019; 10:2072.
1247. Mishra P, Kabra M, Gupta N. Epigenetic Abnormalities of 11p15.5 Region in Beckwith-Wiedemann Syndrome - A Report of Eight Indian Cases. *Indian J Pediatr*. 2020; 87:175-8.
1248. Mishra RK, Mahajan C, Kapoor I, Prabhakar H, Bithal P. Comparison of Full Outline of UnResponsiveness (FOUR) score and the conventional scores in predicting outcome in aneurysmal subarachnoid haemorrhage patients. *Indian J Anaesth*. 2019; 63:295-9.
1249. Mishra S, Rastogi YP, Jabin S, Kaur P, Amir M, Khatoun S. A bacterial phyla dataset for protein function prediction. *Data Brief*. 2019; 28:105002.
1250. Mishra S, Rastogi YP, Jabin S, Kaur P, Amir M, Khatun S. A deep learning ensemble for function prediction of hypothetical proteins from pathogenic bacterial species. *Comput Biol Chem*. 2019; 83:107147.
1251. Mishra S, Sinha R, Ray BR, Pandey RK, Darlong V, Punj J. Effect of entropy-guided low-flow desflurane anaesthesia on laryngeal mask airway removal time in children undergoing elective ophthalmic surgery - A prospective, randomised, comparative study. *Indian J Anaesth*. 2019; 63:485-90.
1252. Mishra SK, Shankar U, Jain N, Sikri K, Tyagi JS, Sharma TK, et al. Characterization of G-quadruplex motifs in espB, espK and cyp15 genes of *Mycobacterium tuberculosis* as a potential drug targets. *Mol Ther Nucleic Acids*. 2019; 16:698-706.
1253. Misra A, Patel M, Agarwal P, Lodha S, Tandon N, Magdum M, et al. Effectiveness and Safety of Physician-Led Versus Patient-Led Titration of Insulin Glargine in Indian Patients with Type 2 Diabetes Mellitus: A Subanalysis of the Asian Treat to Target Lantus Study (ATLAS). *Diabetes Technol Ther*. 2019; 21:656-64.
1254. Misra MC, Krishna A, Baksi A, Bansal VK. Teaching and learning of laparoendoscopic hernia surgery in India: A challenge—problems and solutions. *Int J Abdom Wall Hernia Surg*. 2019; 2:63-9.
1255. Misra P, Singh AK, Archana S, Lohiya A, Kant S. Relationship between body mass index and percentage of body fat, estimated by bio-electrical impedance among adult females in a rural community of North India: A cross-sectional study. *J Postgrad Med*. 2019; 65:134-40.
1256. Misra P, Singh AK, Kant S, Srivastava R, Palepu S, Kardam P, et al. Glycaemic control among adults with self-reported diabetes in health and demographic surveillance site (HDSS) of rural North India. *Int J Diabetes Dev Ctries*. 2019; 39:707-14.
1257. Misra S, Vaishya R, Trikhya V, Maheshwari J. Practice guidelines for proximal humeral fractures. *J Clin Orthop*

- Trauma. 2019;10:631-3.
- 1258.Mistri M, Mehta S, Solanki D, Kamate M, Gupta N, Kabra M, et al. Identification of novel variants in a large cohort of children with Tay-Sachs disease: An initiative of a multicentric task force on lysosomal storage disorders by Government of India. *J Hum Genet.* 2019; 64:985-94.
- 1259.Mitra R, Dube SK, Jain V. Isolated diastolic hypotension: A unique complication of intra-arterial nimodipine infusion!! *J ClinAnesth.* 2019; 59:1.
- 1260.Mittal A, Gogia A, Mallick S, Gupta R. Leukemia Cutis: A Rare Initial Presentation of Chronic Lymphocytic Leukemia. *Indian J Hematol Blood Transfus.* 2019; 35:367-8.
- 1261.Mittal A, Gupta N, Soneja M. Touraine-Solente-Gole syndrome. *BMJ Case Rep.* 2019; 12:e232238.
- 1262.Mittal A, Ray A, Biswas S, Das C. Size matters: an unusual case report. *Egypt J Bronchology.* 2019; 13:286-8.
- 1263.Mittal K, Ningombam A, Chawla R, Shaikh N, Datta SK. Refractile Particles in the Anterior Chamber of an Eye: A Rare Case. *J Appl Lab Med.* 2019; 04:464-7.
- 1264.Mittal P, Agarwal SK, Singh G, Bhowmik D, Mahajan S, Dinda A, et al. Spectrum of biopsy-proven renal disease in northern India: A single-centre study. *Nephrology (Carlton).* 2020;25:55-62.
- 1265.Mittal P, Verma H, Monga R, Garg A, Thakar A. Anterior clinoid mucocele and mono-ocular vision loss – Rare case with diagnostic dilemma. *Interdiscip Neurosurg.* 2019; 19:1000568.
- 1266.Mittal S, Hadda V, Mohan A, Madan K. Rupture of occlusion balloon during transbronchial lung cryobiopsy. *Lung India.* 2019;36:263-65.
- 1267.Mittal S, Madan K, Aggarwal N, Dhar A. Tuberculosis and Short Bowel: A Therapeutic Challenge. *Indian J Crit Care Med.* 2019; 23):199.
- 1268.Mittal S, Madan K, Mohan A, et al. Hemoptysis due to endobronchial telangiectasias. *BMJ Case Rep.* 2019;12:e231377.
- 1269.Mittal S, Madan K, Mohan A, Hadda V. A young male with hemoptysis. *LungIndia.*2019;36:558-9.
- 1270.Mittal S, Mohan A, Hadda V, Madan K. Endobronchial ultrasound elastography in mediastinal lymphadenopathy: Report of two cases and systematic review of literature. *Lung India.* 2019;36:149-53.
- 1271.Mittal SK, Agarwal SK, Singh G, Bhowmik D, Mahajan S, Dinda AK, Bagchi S. Spectrum of biopsy-proven renal disease in northern India: A single-centrestudy. *Nephrology (Carlton)* 2020; 25:55-62.
- 1272.Mochan S, Dhingra MK, Gupta SK, Saxena S, Arora P, Rani N, et al. Vascular Endothelial Growth Factor Alleviates Endoplasmic Reticulum Stress via PERK, IRE1, and ATF6 Pathways in Trophoblast Cells. *J Anat Soc India.* 2019; 68:187-95.
- 1273.Mochan S, Dhingra MK, Gupta SK, Saxena S, Arora P, Yadav V, et al. Status of VEGF in preeclampsia and its effect on endoplasmic reticulum stress in placental trophoblast cells. *Eur J Obstet Gynecol Reprod Biol X.* 2019; 4:100070.
- 1274.Modak T, Singh S, Kumar S, Deep R. Substance Use Related Emergencies in a Tertiary Care General Hospital Setting: Observations and Discussion. *Indian J Psychol Med.* 2019; 41:595-7.
- 1275.Modi D, Dholakia N, Gopalan R, Venkatraman S, Dave K, Shah S, et al. mHealth intervention “ImTeCHO” to improve delivery of maternal, neonatal, and child care services-A cluster-randomized trial in tribal areas of Gujarat, India. *PLoS Med.* 2019; 16:e1002939.
- 1276.Modi P, Bhoi S, Aggarwal P, Murmu LR, Sinha TP, Ekka M, et al. The changing paradigm from subjectivity to objectivity in pupillary assessment during neurological examination. *Am J Emerg Med.*2019; 37:1594-5.
- 1277.Mohan A, Ansari A, Madan K, Hadda V, Khilnani GC, Guleria R, et al. Alterations in body composition in Indian patients with non-small cell lung cancer. *Lung India.* 2019;36:295-8.
- 1278.Mohan A, Madan K, Hadda V, Tiwari P, Mittal S, Guleria R, et al. Guidelines for diagnostic flexible bronchoscopy in adults: Joint Indian Chest Society/National College of chest physicians (I)/Indian association for bronchology recommendations. *Lung India.*2019;36:37-89.
- 1279.Mohan A, Mittal S. Liquid biopsy for T790M mutation detection: A ray of hope? *Lung India.* 2020;37:1-2.
- 1280.Mohan A, Sachdeva KS, Vajpayee M, Das BK, Guleria R, Singh UB, et al. Insights in tuberculosis immunology: Role of NKT and T regulatory cells. *Int J Mycobacteriol.* 2019;8:333-40
- 1281.Mohan B, Verma A, Singh K, Singh K, Sharma S, Roy A, et al. Prevalence of sustained hypertension and obesity among urban and rural adolescents: a school-based, cross-sectional study in North India. *BMJ Open.* 2019; 9:e027134.
- 1282.Mohan V, Kumar M S, Kumar CPG, Yuvaraj J, Krishnan A, Amarchand R, et al. Using global positioning system technology and Google My Maps in follow-up studies-An experience from influenza surveillance study, Chennai, India. *Spat Spatiotemporal Epidemiol.* 2020; 32:100321.
- 1283.Mohapatra BK, Thakur US, Chauhan K, Sharma A, Kaushik A, Behera C, et al. Recovery of High Molecular

- Weight DNA from Old viscera Samples via Two Established Methods for Human Identification: A Comparative Study. *Indian Internet J Forensic Med Toxicol.* 2019; 17:31-5.
1284. Mohapatra S, Sahoo B, Bhatia S, Sood S, Das BK, Kapil A. Fosphomycin: a ray of hope against multidrug resistant uropathogens. *Malaysian J Microbiol.* 2019; 15:1-4.
1285. Mohta M, Dubey M, Malhotra RK, Tyagi A. Comparison of the potency of phenylephrine and norepinephrine bolus does used to treat post-spinal hypotension during elective caesarean section. *Int J ObsetAnesth.* 2019; 38:25-31.
1286. Mokkapati PR, Gowda M, Deo S, Dhamija E, Thulkar S. Breast Anthropometry-Results of a Prospective Study Among Indian Breast Cancer Patients. *Indian J Surgoncol.* 2020; 11:28-34.
1287. Mondal D, Julka PK, Sharma DN, Laviraj MA, Jana M, Kamal VK, et al. Dual partial arc volumetric-modulated arc therapy: The game changer for accelerated hypofractionated whole-breast radiotherapy with simultaneous integrated tumor cavity boost in early breast cancer - A comparative dosimetric study with single partial arc volumetric-modulated arc therapy. *J Cancer Res Ther.* 2019; 15:1005-10.
1288. Mondal D, Julka PK, Sharma DN, Laviraj MA, Jana M, Kamal VK, et al. Dual partial arc volumetric-modulated arc therapy: The game changer for accelerated hypofractionated whole-breast radiotherapy with simultaneous integrated tumor cavity boost in early breast cancer - A comparative dosimetric study with single partial arc volumetric-modulated arc therapy. *J Cancer Res Ther.* 2019; 15:1005-10.
1289. Monga N, Kharbanda OP. A Pristine Approach for the Prominent Premaxilla in Bilateral Cleft Lip and Palate (BCLP) Cases. *Cleft Palate Craniofac J.* 2019; 56:1115-9.
1290. Moorthy S, Sagar S, Trikha V, Sagar R, Sawhne C, Kalaivani K, et al. Study protocol to report the effectiveness of virtual reality therapy in combination with physical therapy protocol for improving balance in traumatic lower limb amputees: A parallel, open-label randomized controlled trial. *Rev Pesqui Fisioter.* 2019; 524-31.
1291. Morankar R, Goyal A, Gauba K, Singla V. Analysis of bone mineral density and content in children with Molar incisor hypomineralization using dual-energy X-ray absorptiometry scan: A pilot study. *J Indian Soc Pedod Prev Dent.* 2019; 37:282-5.
1292. More S, Mishra S, Garg VK, Chandrashekhara SH, Bharti SJ. A Case Report of Surgical Entrapment and Catheter Embolization: A Rare Complication of Peripherally Inserted Central Catheters. *A Pract.* 2019; 13:310-2.
1293. Moresky RT, Razzak J, Reynolds T, Wallis LA, Wachira BW, Nyirenda M, ... Bhoi S, et al. National Institute of Health Fogarty International Center convened the Collaborative on Enhancing Emergency Care Research in LMICs (CLEER). *BMJ Glob Health.* 2019; 4(Suppl 6):e001265.
1294. Mridha AR, Barwal I, Gupta A, Majeed A, Barwad AW, Kumar VS, et al. Processing Techniques for Scanning Electron Microscopy Imaging of Giant Cells from Giant Cell Tumors of Bone. *Microsc Microanal.* 2019; 25:1376-82.
1295. Mukherjee A, Lodha R, Kabra SK. Pharmacokinetics of First-Line Anti-Tubercular Drugs. *Indian J Pediatr.* 2019; 86:468-78.
1296. Mukhija R, Gupta N. Advances in anterior segment examination. *Community Eye Health.* 2019; 32:S5-6.
1297. Mukhija R, Lomi N, Kumar S, Sen S. Retinoblastoma in an adult: a diagnostic dilemma. *BMJ Case Rep.* 2019; 12:e230537.
1298. Mukhija R, Pujari A, Singh R, Nayak S, Singh V, Tandon R. Role of ultrasonography in childhood eye diseases in a tertiary care setting: indications and scope. *Trop Doct.* 2020; 50:3-8.
1299. Mukhopadhyay T, Shekhar S, Datta SK. Interpretation of Total Serum Amylase in Renal Dysfunction: A Diagnostic Challenge. *IOSR J Dent Med Sci.* 2019; 18:51-4.
1300. Mulchandani R, Chandrasekaran AM, Shivashankar R, Kondal D, Agrawal A, Panniyammakal J, ... Tandon N, et al. Effect of workplace physical activity interventions on the cardio-metabolic health of working adults: systematic review and meta-analysis. *Int J Behav Nutr Phys Act.* 2019; 16:134.
1301. Muralidharan S, Ranjani H, Mohan Anjana R, Jena S, Tandon N, et al. Engagement and Weight Loss: Results from the Mobile Health and Diabetes Trial. *Diabetes Technol Ther.* 2019; 21:507-13.
1302. Mustari AP, Dev T, Ramam M, Bhari N. Erythematous indurated plaques in a newborn. *Pediatr Dermatol.* 2020; 37:e12-4.
1303. Muthukrishnan SP, Chandran DS, Afreen N, Bir M, Dastidar SG, Jayappa H, et al. Planning, implementation, and evaluation of multicomponent, case-based learning for first-year Indian medical undergraduates. *Adv Physiol Educ.* 2019; 43:504-11.
1304. Muthukrishnan SP, Patel SK, Dubey M, Patil A, Deepak KK. An innovative method to demonstrate nerve – muscle physiology experiments using finger muscle twitch recording in a human subject. *Indian J Physiol Pharmacol.* 2019; 63:86-93.
1305. Muthukrishnan SP, Soni S, Sharma R. Brain networks communicate through theta oscillations to encode high load in a visuospatial working memory task: An EEG connectivity study. *Brain Topogr.* 2020; 33:75-85.

1306. Muvalia G, Jamshed N, Sinha TP, Bhoi S. Kite-string injuries: A case series. *Int J Crit Illn Inj Sci.* 2019; 9:147-50.
1307. Myllemngap B, Swain S, Vyas S, Kumar P. Myxedema Coma, Pancytopenia, and Hypocoagulopathy: A Rare Presentation of Sheehan's Syndrome. *Indian J Endocrinol Metab.* 2019; 23:268-9.
1308. Naalla R, Murthy V, Chauhan S, Chinta K, Singhal M. Revisiting the Trapezius Flap as a Reconstructive Option for Cervico-Occipital and Thoracic Spine Regions. *Indian J Plast Surg.* 2019; 52:322-3.
1309. Nabi S, Bhat GA, Iqbal B, Lone MM, Lone GN, Khan MA, et al. Association of Activity Altering Genotypes-Tyr113His and His139Arg in Microsomal Epoxide Hydrolase Enzyme with Esophageal Squamous Cell Carcinoma. *Nutr Cancer.* 2019; 71:806-17.
1310. Nag TC, Kathpalia P, Gorla S, Wadhwa S. Localization of nitro-tyrosine immunoreactivity in human retina. *Ann Anat.* 2019; 223:8-18.
1311. Nag TC, Maurya M, Roy TS. Age-related changes of the human retinal vessels: possible involvement of lipid peroxidation. *Ann Anat.* 2019; 226:35-47.
1312. Nag TC. Accessory structures that originate from photoreceptor bundles in the retina of the teleost *Notopterus notopterus* (Pallas). *Tissue Cell.* 2019; 58:8-11.
1313. Nagarajappa A, Kaur M, Samanta A, Tyagi A. Endotracheal tube fixation: Still a dilemma. *J Anaesthesiol Clin Pharmacol.* 2019; 35:400-1.
1314. Nagarathna R, Kaur N, Anand A, Sharma K, Dada R, Sridhar P, et al. Distribution of glycated haemoglobin and its determinants in Indian young adults. *Diabetes Res Clin Pract.* 2020; 159:107982.
1315. Nagpal R, Maharana PK, Roop P, Murthy S, Rapuano CJ, Titiyal JS, et al. Phototherapeutic Keratectomy. *Surv Ophthalmol.* 2020; 65:79-108.
1316. Nagpal R, Sahay P, Maharana PK, Sharma N. Management of Descemet Membrane's Folds After Deep Anterior Lamellar Keratoplasty: Descemet Membrane-Tucking Technique. *Cornea.* 2019; 38:772-4.
1317. Nagpal R, Singhal D, Maharana PK, Sharma N. Reduction of Acanthamoeba Cyst Density Associated With Treatment Detected by In Vivo Confocal Microscopy in Acanthamoeba Keratitis. *Cornea.* 2019; 38:463-8.
1318. Naik N, Narula J. Heart failure in low-income and middle-income countries: failing REPORT card grades. *Lancet Glob Health.* 2020; 8:e318.
1319. Nair RR, Chauhan R, Harankhedkar S, Mahapatra M, Saxena R. Imatinib induced platelet dysfunction and hypofibrinogenemia in chronic myeloid leukemia. *Blood Coagul Fibrinolysis.* 2019; 30:246-8.
1320. Nakra T, Mehta A, Bal A, Nambirajan A, Mishra D, Midha D, et al. Epidermal growth factor receptor mutation status in pulmonary adenocarcinoma: Multi-institutional data discussion at national conference of "Lung Cancer Management in Indian context. *Curr Probl Cancer.* 2020; 44:100561.
1321. Nakra T, Roy M, Yadav R, Agarwala S, Jassim M, Khanna G, et al. Cytomorphology of hepatoblastoma with histological correlation and role of SALL4 immunocytochemistry in its diagnosis, subtyping, and prognostication. *Cancer Cytopathol.* 2020; 128:190-200.
1322. Nakra T, Nambirajan A, Guleria P, Phulwara RH, Jain D. Insulinoma-associated protein 1 is a robust nuclear immunostain for the diagnosis of small cell lung carcinoma in cytology smears. *Cancer Cytopathol.* 2019; 127:539-48.
1323. Nambirajan A, Malgulwar PB, Sharma A, Boorgula MT, Doddamani R, Singh M et al. Clinicopathological evaluation of PD-L1 expression and cytotoxic T-lymphocyte infiltrates across intracranial molecular subgroups of ependymomas: are these tumors potential candidates for immune check-point blockade? *Brain Tumor Pathol.* 2019; 36:152-61.
1324. Nambirajan A, Parshad R, Goyal A, K MN, Jain D. Innocuous clinical presentation of a SMARCA4-deficient thoracic sarcoma arising in a patient with chronic empyema thoracis. *Pathology.* 2019; 51:657-9.
1325. Nambirajan A, Sharma MC, Garg K, Sriram S, Boorgula MT, Suri V. Large dural-based mass with bony hyperostosis in a 16-year-old male: IgG4-related disease mimicking lymphoplasmacyte-rich meningioma. *Childs Nerv Syst.* 2019; 35:1423-7.
1326. Nambirajan A, Singh V, Irugu DVK, Agarwal S, Jain D. Spindle epithelial tumour with thymus-like elements presenting with lymph node metastasis: An illustrative case report with review of literature. *Cytopathology.* 2019; 30:657-61.
1327. Nambirajan A, Husain N, Shukla S, Kumar S, Jain D. Comparison of laboratory-developed test & validated assay of programmed death ligand-1 immunohistochemistry in non-small-cell lung carcinoma. *Indian J Med Res.* 2019; 150:376-84.
1328. Namdev P, Dar HY, Srivastava RK, Mondal R, Anupam R. Induction of T7 Promoter at Higher Temperatures May Be Counterproductive. *Ind J Clin Biochem.* 2019; 34:357-60.
1329. Namdev P, Lyngdoh DL, Dar HY, Chaurasiya SK, Srivastava R, Tripathi T, et al. Intrinsically Disordered Human T

- Lymphotropic Virus Type 1 p30 Protein: Experimental and Computational Evidence. *AIDS Res Hum Retroviruses*. 2019; 35:477-87.
1330. Nandi M, Sikri K, Chaudhary N, Mande SC, Sharma RD, Tyagi JS. Multiple transcription factors co-regulate the Mycobacterium tuberculosis adaptation response to Vitamin C. *BMC Genomics*. 2019; 20:887.
1331. Nanditha S, Malik V, Hasija S, Malhotra P, Sreenivas V, Chauhan S. Comparison of grading of aortic stenosis between transthoracic and transesophageal echocardiography in adult patients undergoing elective aortic valve replacement surgeries: A prospective observational study. *Ann Card Anaesth*. 2019; 22:194-8.
1332. Narain P, Padhi AK, Dave U, Mishra D, Bhatia R, Vivekanandan P, et al. Identification and characterization of novel and rare susceptible variants in Indian amyotrophic lateral sclerosis patients. *Neurogenetics*. 2019; 20:197-208.
1333. Narang H, Ray A, Vyas S, Tripathi M, Damle N, Jadon RS, et al. Undiagnosed Fever in a TB Contact Patient: An Unusual Cause. *Undiagnosed Fever in a TB Contact Patient: An Unusual Cause*. *J Assoc Physicians India*. 2019; 67:74-6.
1334. Naranje P, Bhalla AS, Sherwani P. Chest Tuberculosis in Children. *Indian J Pediatr*. 2019; 86:448-58.
1335. Narayan K, Lin MY, Chennakesvan SK, Bernshaw D, Maheshwari A, Bhatla N. Redistribution of Cervix Cancer Patients from FIGO 2009 to FIGO 2018 Staging Following Incorporation of Medical Imaging. *Indian J Gynecol Oncol*. 2019; 17:93.
1336. Narayanan A, Ramam M, Bhari N. Erythematous scaly facial plaques with overlying hair loss. *Indian J Dermatol Venereol Leprol*. 2019; 85:347.
1337. Narayanan DL, Matta D, Gupta N, Kabra M, Ranganath P, Aggarwal S, et al. Spectrum of ARSA variations in Asian Indian patients with Arylsulfatase A deficient metachromatic leukodystrophy. *J Hum Genet*. 2019; 64:323-31.
1338. Narayanan M, Phillips S, Venkataraju A, Bhoi S, Roy TS. Parasacral ischial plane (PIP) block: Cadaveric validation. *J Clin Anesth*. 2020; 60:68-9.
1339. Narendra PL, Hegde HV, Chandrashekarappa K, Tore VV, Endigeri P, Boodadi M... Khan MA, et al. Survey of surgeons attitude to local anesthetics for postoperative pain relief. *Anesth Essays Res*. 2019; 13:452-64.
1340. Narula H, Meena S, Jha S, Kaistha N, Pathania M, Gupta P. *Curvularia lunata* causing orbital cellulitis in a diabetic patient: An old fungus in a new territory. *Curr Med Mycol*. 2020; 6:51-4.
1341. Natarajan CK, Jeeva Sankar M, Agarwal R, Deorari A, Paul V. Performance on Paladai Feeding of Preterm Infants with Bronchopulmonary Dysplasia. *Indian J Pediatr*. 2019; 86:323-8.
1342. Nayak A, Kayal EB, Arya M, Culli J, Krishan S, Agarwal S, et al. Computer-aided diagnosis of cirrhosis and hepatocellular carcinoma using multi-phase abdomen CT. *Int J Comput Assist Radiol Surg*. 2019; 14:1341-52.
1343. Nayak M, Kumar V, Kanojiya G, Mellon S, Srivastava DN, Pandit H, et al. A radiographic analysis of alignment in 966 lower extremities with knee pain and its association with osteoarthritis in Indian population. *J Orthop*. 2019; 20: 207-12.
1344. Nayak M, Kumar V, Kanojiya G, Mellon S, Srivastava DN, Pandit H, et al. A radiographic analysis of alignment in 966 lower extremities with knee pain and its association with osteoarthritis in Indian population. *J Orthop*. 2019; 20:207-12.
1345. Nayak M, Kumar V, Yadav R, Maredupaka S, Srivastava DN, Malhotra R, et al. Coronal Alignment of the Lower Extremity: A Gender Based Radio Graphic Analysis in Indian Patients. *Indian J Orthop*. 2020; 54:504-12.
1346. Nayak M, Yadav R, Sahu BK, Kumar V, Sharma V. An Unusual Presentation of Pubic-type Anterior Hip Dislocation with Concomitant Anterior and Posterior Acetabular Wall Fracture. *Cureus*. 2019; 11:e4390.
1347. Nayak M, Yadav R, Sahu BK, Kumar VS, Sharma V. An unusual presentation of pubic-type anterior hip dislocation with concomitant anterior and posterior acetabular wall fracture. *Cureus*. 2019; 11:e4390.
1348. Nayak S, Coshic P, Pandey RM, Chatterjee K. Frequent plateletpheresis donations & its effect on haematological parameters: An observational study. *Indian J Med Res*. 2019; 150:468-76.
1349. Nayyar BU, Nayyar R. Judicious use and interpretation of Urodynamics. *AOGD Bulletin*. 2019; 19:31-3.
1350. Nayyar BU, Nayyar R. Urinary tract infections in pregnancy. *AOGD Bulletin*. 2019; 19:34-3.
1351. Nayyar R, Dadhwal R, Kapil A, Pandey RM, Dogra P. Urethral Instillation of Povidone-Iodine Reduces Post-Cystoscopy Urinary Tract Infection in Males: A Randomized Controlled Trial. *Sci Rep*. 2020; 10:3585.
1352. Nayyar R, Kumar P, Barwad AW, Saini S. Curious case of myxoid adipocytic tumour with ureteropelvic junction obstruction in horseshoe kidney: dilemma in management. *BMJ Case Rep*. 2020; 13:e231803.
1353. Nayyar R. Operative atlas of laparoscopic and robotic reconstructive urology (Book review). *Indian J Urol*. 2019; 35:309.
1354. Naz F, Dinda AK, Saxena R, Koul V. Biosafety of unmodified ultrafine gold particles (AuPs) upon interacting with human blood components before systemic use. *Regul Toxicol Pharmacol*. 2019; 107:104405.



1355. Naza F, Dindaa AK, Kumarb A, Koul V. Investigation of ultrafine gold nanoparticles (AuNPs) based nanoformulation as single conjugates target delivery for improved methotrexate chemotherapy in breast cancer. *Int J Pharm.* 2019; 569:118561.
1356. Nazir SU, Kumar R, Dil-Afroz, Rasool I, Bandhopadhyay B, Singh A, et al. Differential expression of Ets-1 in breast cancer among North Indian population. *J Cell Biochem.* 2019;120:14552-61.
1357. Nazir SU, Kumar R, Singh A, Khan A, Tanwar P, Tripathi R, et al. Breast cancer invasion and progression by MMP-9 through Ets-1 transcription factor. *Gene.* 2019;711:143952.
1358. NCD Risk Factor Collaboration-NCD-RisC. Rising rural body-mass index is the main driver of the global obesity epidemic. *Nature.* 2019; 569:260-4.
1359. Negi N, Das BK. Decoding intrathecal immunoglobulins and B cells in the CNS: their synthesis, function, and regulation. *Int Rev Immunol.* 2020; 39:67-79.
1360. Negi N, Roy KK, Kumar S, Nair VG, Vanamail P. Clinical Outcome Analysis and Correlation of Reproductive Outcome with Endometriosis Fertility Index in Laparoscopically Managed Endometriosis Patients: A Retrospective Cohort Study. *J Hum Reprod Sci.* 2019;12:98-103.
1361. Nehra A, Tripathi M, Padma MV. Neuropsychological Disability: A Hidden Epidemic of Neurological Conditions. *Neurol India.* 2020;68:154-8.
1362. Nehra A. Role of Neuropsychology in Continuum of Health Care In Neurological Conditions. *Neurol India.* 2019; 67.
1363. Netaji A, Jain V, Gupta AK, Kumar U, Jana M. Utility of MR proton density fat fraction and its correlation with ultrasonography and biochemical markers in nonalcoholic fatty liver disease in overweight adolescents. *J Pediatr Endocrinol Metab.* 2020; 33:473-9.
1364. Neyaz O, Lukram S, Nanda S, Wadhwa S. Effectiveness of Hath Yoga Versus Conventional Therapeutic Exercises for Chronic Nonspecific Low-Back Pain. *J Altern Complement Med.* 2019;25:938-45.
1365. Niceta M, Barbuti D, Gupta N, Ruggiero C, Tizzano EF, Graul-Neumann L, et al. Skeletal abnormalities are common features in Aymé-Gripp syndrome. *Clin Genet.* 2020; 97:362-9.
1366. Nigam A, Varun N, Sharma S, Munjal YP, Prakash A. Glycaemic Profile in the Second and Third Trimesters of Normal Pregnancy Compared to Non-Pregnant Adult Females. *Obstet Med.* 2020;13:30-6.
1367. Nilima, Puranik A, Shreenidhi SM, Rai SN. Spatial evaluation of prevalence, pattern and predictors of cervical cancer screening in India. *Public Health.* 2020; 178:124-36.
1368. Nisa N, Hussain I, Punj J, Parthiban M, Narasimhan P. Dilemmas in a parturient with intracranial meningioma with raised intracranial pressure and difficult airway for cesarean section. *J Anaesthesiol Clin Pharmacol.* 2020; 36:133-5.
1369. Nishanth KN, Chadda RK, Sood M, Biswas A, Lakshmy R. Metabolic syndrome and its impact on functioning in participants with schizophrenia: A hospital-based cross-sectional study. *Indian J Soc Psychiatry.* 2019; 35:179-82.
1370. Niyas VKM, Keri VC, Ahuja J, Anand A, Nischal N, Wig N. Severe Immune Thrombocytopenia in a Patient with HIV-HCV Co-infection: Challenges in Management. *J Assoc Physicians India.* 2020; 68:77-9.
1371. Nizami HL, Katare P, Prabhakar P, Kumar Y, Arava S, Chakraborty P, et al. Vitamin D Deficiency in Rats Causes Cardiac Dysfunction by Inducing Myocardial Insulin Resistance. *Mol Nutr Food Res.* 2019; 63:e1900109.
1372. O'Reilly GM, Mathew J, Roy N, Gupta A, Joshipura M, Sharma N, et al. A checklist for trauma quality improvement meetings: A process improvement study. *Injury.* 2019; 50:1599-604.
1373. Oberoi A, Kataria K, Prakash O, Yadav R, Goyal A. Management of giant adrenal schwannoma. *Int Surg J.* 2019; 6:2605-8.
1374. Ojha V, Chandrashekhara SH, Ganga KP, Saxena A, Gulati G. Congenital Left Ventricular Diverticulum in Pentalogy of Cantrell: Puzzle Solved With Dual-Source CT. *Ann Thorac Surg.* 2019; 108:e205.
1375. Ojha V, Ganga K, Sinha M, Sharma A. Right coronary artery pseudoaneurysm after drug eluting stent: Dilemma solved on dual source CT. *Ann Thorac Surg.* 2020; 109:e155.
1376. Ojha V, Pandey NN, Ganga KP, Kumar S. Origin of bilateral subclavian arteries from the site of coarctation: A hitherto undescribed configuration. *Ann Thorac Surg.* 2020; 109:e81.
1377. Ojha V, Pandey NN, Jagia P. Hemiazygos continuation of isolated left-sided inferior vena cava into persistent left superior vena cava: rare association of left isomerism. *BMJ Case Rep.* 2019; 12:e230350.
1378. Ojha V, Raju SN, Ganga KP, Sharma A. Unusual late presentation of coarctation of aorta with right subclavian artery aneurysm. *BMJ Case Rep.* 2020; 13:e233349
1379. Ojha V, Sharma A, Gulati G, Ramakrishnan S. True Right Ventricular Diverticulum in Tetralogy of Fallot: A Rare Association. *Ann Thorac Surg.* 2019; 108:e345.
1380. Ojha V, Sharma A, Gulati G, Ramakrishnan S. True Right Ventricular Diverticulum in Tetralogy of Fallot: A Rare Association. *Ann Thorac Surg.* 2019; 108:e345.

- 1381.Ojha V, Vadher A, Chandrashekhara SH, Kumar S. Constrictive pericarditis with a right ventricular apical outpouching masquerading a diverticulum. *Ann Thorac Surg.* 2019; 108:e203.
- 1382.Ooi CJ, Hilmi I, Banerjee R, Chuah SW, Ng SC, Wei SC,...Makharia GK, etal. Best practices on immunomodulators and biologic agents for ulcerative colitis and Crohn's disease in Asia.*Intest Res.* 2019; 17:285-310.
- 1383.Osoegawa K, Vayntrub TA, Wenda S, De Santis D, Barsakis K, Ivanova M,...Kanga U. Quality control project of NGS HLA genotyping for the 17th International HLA and Immunogenetics Workshop. *Hum Immunol.*2019;80:228-36. *Otol Neurotol.* 2019; 40:754-60.
- 1384.Padhy SK, Chawla R. Novel ultrawide field fundus fluorescein angiographic findings in a patient of Takayasu arteritis on immunosuppression. *Indian J Ophthalmol.* 2020; 68:238-0.
- 1385.Padhy SK, Dhiman R, Kumar P, Varshney T, Kumar A. Multimodal imaging in a patient of Kranenburg syndrome. *Indian J Ophthalmol.* 2019; 67:946-7.
- 1386.Padhy SK, Kumar V. Systemic sarcoidosis presenting as optic nerve head granuloma. *Indian J Ophthalmol.* 2019; 67:1714.
- 1387.Padhy SK, Takkar B, Chawla R, Kumar A. Artificial intelligence retinopathy: A natural step to the future. *Indian J Ophthalmol.* 2019; 67:1004-9.
- 1388.Padma MV, Kuthiala N. Restorative Therapies after Stroke: Drugs, Devices, and Robotics. *Ann NatlAcad Med Sci(India).* 2019; 55:124-31.
- 1389.Pal A, Pegwal N, Bihari M, Sharma R. Is dementia in Parkinson' disease related to chronic stress, anxiety and depression? *Ann Indian Acad Neurol.* 2019; 22:409-13.
- 1390.Pal I, Paltati CRB, Kaur C, Saini S, Kumar P, Jacob TG, et al. Morphological and neurochemical changes in GABAergic neurons of the aging human inferior colliculus. *Hear Res.* 2019; 377:318-29.
- 1391.Pal S, Medatwal N, Kumar S, Kar A, Komalla V, Yavvari PS, et al. A Localized Chimeric Hydrogel Therapy Combats Tumor Progression through Alteration of Sphingolipid Metabolism. *ACS Cent Sci.* 2019; 5:1648-62.
- 1392.Paliwal VK, Das A, Anand S, Mishra P. Intravenous Steroid Days and Predictors of Early Oral Steroid Administration in Tuberculous Meningitis: A Retrospective Study. *Am J Trop Med Hyg.* 2019;101:1083-6.
- 1393.Panaiyadiyan S, Singh P, Nayak B. In Pursuit of the Broken Prong-Instrument Malfunction during Percutaneous Nephrolithotomy. *J Clin Diagn Res.* 2019; 13:PD04-5.
- 1394.Panda PS, Dube SK, Jain V. Head Injury Exacerbates Tinea Corporis!! *J NeuroanaesthesiolCrit Care* 2020;7:46-7.
- 1395.Panda S, Kumar R, Konkimalla A, Thakar A, Singh CA, Sikka K, et al. Rationale behind thyroidectomy in total laryngectomy: analysis of endocrine insufficiency and oncological outcomes. *Indian J Surg Oncol.* 2019; 10:608-13.
- 1396.Panda S, Sikka K, Singh V, Agarwal S, Kumar R, Thakar A, et al. Comprehensive Analysis of Factors Leading to Poor Performance in Prelingual Cochlear Implant Recipients.
- 1397.Panda S, Sikka K, Thakar A, Sharma SC, Krsihnamurthy P. Transoral robotic surgery for the parapharyngeal space: expanding the transoral corridor. *J Robot Surg.* 2019; 14:61-7.
- 1398.Panda S, Tiwari A, Luthra K, Sharma SK, Singh A. Association of Fok1 VDR polymorphism with Vitamin D and its associated molecules in pulmonary tuberculosis patients and their household contacts. *Sci Rep.* 2019; 9:15251.
- 1399.Panda S, Tiwari A, Luthra K, Sharma SK, Singh A. Status of vitamin D and the associated host factors in pulmonary tuberculosis patients and their household contacts: A cross sectional study. *J Steroid Biochem Mol Biol.* 2019; 193:105419.
- 1400.Pande A, Soni KD. Management of Pediatric Trauma. *J Pediatr Crit Care.* 2019; 6:31-9.
- 1401.Pandey AK, Sharma A, Sharma PD, Saroha K, Parida GK, Bal CS, et al. Denoising of iodine-131 images using a median filter. *Nucl Med Commun.* 2019; 40:308-16.
- 1402.Pandey D, Patel SKS, Singh R, Kumar P, Thakur V, Chand D. Solvent-tolerant acyltransferase from *Bacillus* sp. APB-6: Purification and Characterization. *Indian J Microbiol.* 2019;59:500-7.
- 1403.Pandey G, Bakhshi S, Kumar M, Thakur B, Jain P, Kaur P, et al. Prognostic and therapeutic relevance of cathepsin B in pediatric acute myeloid leukemia. *Am J Cancer Res.* 2019; 9:2634-49.
- 1404.Pandey H, Singh K, Ranjan R, Pandey SK, Sharma A, Kishor K, et al. Clinical variability and molecular characterization of Hbs/G $\gamma$  (A $\gamma$  $\delta$  $\beta$ ) 0-thal and Hbs/HBFH in Indian sickle cell disease patients: AIIMS experience. *Hematology.* 2019; 24:349-52.
- 1405.Pandey NN, Sharma A, Sinha M. Isolated infundibuloarterial inversion with crisscross pulmonary arteries. *Asian Cardiovasc Thorac Ann.* 2020; 28:129-30.
- 1406.Pandey NN, Shaw M, Sachdeva S, Gulati GS, Kothari SS. Circumflex retroesophageal left aortic arch with right ductus arteriosus: A rare complete vascular ring diagnosed on computed tomography angiography. *Ann Pediatr Cardiol.* 2020; 13:98-9.

1407. Pandey NN, Sinha M, Kumar S. Levoatriocardinal vein in association with tetralogy of Fallot: a rare pulmonary to systemic connection. *BMJ Case Rep.* 2019; 12:e230648.
1408. Pandey NN, Sinha M, Rajagopal R, Raju SN, Sharma A, Kumar S. Unique association of Hemitruncus with Proximal Interruption of the Anomalous Pulmonary Artery. *Ann Thorac Surg.* 2020; 109:e79.
1409. Pandey NN, Sinha M, Rajagopal R, Sharma A, Kumar S. Deciphering normal and anomalous viscerocardiac situs on multidetector CT angiography. *Br J Radiol.* 2019; 92:20190231.
1410. Pandey NN, Sinha M, Sharma A, Bhambri K, Kumar S. Aberrant Origin of Left Vertebral Artery From Left Common Carotid Artery in Association With Tetralogy of Fallot and Anomalous Aortic Origin of Left Pulmonary Artery. *Heart Lung Circ.* 2020; 29:e22-4.
1411. Pandey NN, Sinha M, Sharma A, Kumar S. Empty left atrioventricular groove: congenital atresia of left circumflex artery. *Acta Cardiol.* 2019; 74:549-50.
1412. Pandey NN, Sinha M, Sharma A, Rajagopal R, Bhambri K, Kumar S. Anomalies of coronary artery origin: Evaluation on multidetector CT angiography. *Clin Imaging.* 2019; 57:87-98.
1413. Pandey P, Bhatnagar AK, Mohan A, Sachdeva KS, Vajpayee M, Das BK, et al. Insights in Tuberculosis Immunology: Role of Natural-Killer T cells and T regulatory cells in Tuberculosis. *Int J Mycobacteriol.* 2019; 8:333-40.
1414. Pandit A, Gupta N, Kumar V, Bharati SJ, Garg R, Madan K, et al. Effect of palliative bronchoscopic interventions on symptom burden in patients with central airway narrowing: A retrospective review. *Indian Palliat Care.* 2019; 25:250-3.
1415. Pandit A, Gupta N, Madan K, Bharti SJ, Kumar V. Anaesthetic considerations for whole lung lavage for pulmonary alveolar proteinosis. *Ghana Med J.* 2019; 53:248-51.
1416. Pangasa N, Prasad G, Singh G, Nair PR. Anaesthetic management of a child with pulmonary agenesis for laparoscopic inguinal hernia repair. *Indian J Anaesth.* 2019; 63:604-5.
1417. Pannu CD, Farooque K, Sharma V, Singal D. Minimally invasive spine surgeries for treatment of thoracolumbar fractures of spine: A systematic review. *J Clin Orthop Trauma.* 2019; 10(Suppl1):S147-55.
1418. Pant K, Mishra AK, Pradhan SM, Nayak B, Das P, Shalimar D, et al. Butyrate inhibits HBV replication and HBV-induced hepatoma cell proliferation via modulating SIRT-1/Ac-p53 regulatory axis. *Mol Carcinog.* 2019; 58:524-32.
1419. Parambath N, Sharma VK, Parihar AS, Sahni K, Gupta S. Use of platelet-rich plasma to suspend noncultured epidermal cell suspension improves repigmentation after autologous transplantation in stable vitiligo: a double-blind randomized controlled trial. *Int J Dermatol.* 2019; 58:472-6.
1420. Parashar NK, Deepti S, Yadav R, Sinha M, Ramakumar V. An unexpected complication of intracardiac device implantation: Contralateral pneumothorax and pneumopericardium. *Indian Pacing Electrophysiol J.* 2019; 19:167-70.
1421. Parmar A, Dubey DK, Balhara YPS, Mishra AK. Do Addiction Science Journals Endorse Unbiased Reporting of Research? A Systematic Evaluation of Instructions for Authors. *Subst Use Misuse.* 2019; 54:1734-42.
1422. Parmar A, Ganesh R, Mishra AK. The top 100 cited article on Obsessive Compulsive Disorder (OCD): A Citation Analysis. *Asian J Psychiatr.* 2019; 42:34-41.
1423. Parmar A, Sharan P, Khandelwal SK, Agarwal K, Sharma U, Jagannathan NR. Brain neurochemistry in unmedicated obsessive-compulsive disorder patients and effects of 12-week escitalopram treatment: (1) H-magnetic resonance spectroscopy study. *Psychiatry Clin Neurosci.* 2019; 73:386-93.
1424. Parmar V, Kumar A, Prakash GV, Datta S, Kalyanasundaram D. Investigation, modelling and validation of material separation mechanism during fiber laser machining of medical grade titanium alloy Ti6Al4V and stainless steel SS316L. *Mech Mater.* 2019; 137:103125.
1425. Parveen R, Kumar N, Sinha AP, Garg R, Deo SVS, Kumar S. Fatigue and Functional Ability in Patients Undergoing Upfront Surgical Treatment for Solid Malignancies. *Indian J Surg Oncol.* 2019; 10:441-5.
1426. Parveez MQ, Ponappan K, Tandon M, Sharma A, Jain P, Singh AK, et al. Preoperative glycated haemoglobin level and postoperative morbidity and mortality in patients scheduled for liver transplant. *Indian J Endocrinol Metab.* 2019; 23:570-4.
1427. Pasquali P, Sonthalia S, Moreno-Ramirez D, Agrawal M, Gupta S, Kumar D, et al. Tele dermatology and its Current Perspective. *Indian Dermatol Online J.* 2020; 11:12-20.
1428. Passah A, Damle NA, Arora S, Kumar R, Sharma CK, Ramteke P, et al. Follicular variant of papillary carcinoma thyroid occurring in struma ovarii. *Thyroid Res Pract.* 2019; 16:48-5.
1429. Patekar M, Adhikari N, Biswas A, Raina V, Kumar L, Mohanti BK, et al. Primary CNS Lymphoma in India: A 17-Year Experience from the All India Institute of Medical Sciences. *J Glob Oncol.* 2019; 5:1-9.
1430. Patel A, Deo SVS, Bhatnagar S. A survey of medical professionals in an apex tertiary care hospital to assess awareness, interest, practices, and knowledge in palliative care: A descriptive cross-sectional study. 2019; 25:172-80.

1431. Patel A, Tannock IF, Srivastava P, Biswas B, Gupta VG, Batra A, et al. Low-Dose Abiraterone in Metastatic Prostate Cancer: Is It Practice Changing? Facts and Facets. *JCO Glob Oncol.* 2020; 6:382-6.
1432. Patel A, Tiwari A, Biswas B, Sharma MC, Vishnubhatla S, Bakhshi S. Clinical Predictors and Prognostic Model for Pediatric Lymphoblastic Lymphoma Treated With Uniform BFM90 Protocol: A Single-Center Experience of 65 Patients From Asia. *Clin Lymphoma Myeloma Leuk.* 2019; 19:e291-e8.
1433. Patel S, Mathew R, Bhoi S. Caution in diagnosing angioedema as anaphylaxis. *BMJ Case Rep.* 2019; 12:e230329.
1434. Patel SA, Cunningham SA, Tandon N, Narayan KMV. Chronic Diseases in India-Ubiquitous Across the Socioeconomic Spectrum. *JAMA Netw Open.* 2019; 2:e190404.
1435. Pathak D, Srivastava AK, Gulati S, Rajeswari MR. Assessment of cell-free levels of iron and copper in patients with Friedreich's ataxia. *Biometals.* 2019; 32:307-15.
1436. Pathak D, Srivastava AK, Padma MV, Gulati S, Rajeswari MR. Quantitative proteomic and network analysis of differentially expressed proteins in PBMC of Friedreich's ataxia (FRDA) patients. *Front Neurosci.* 2019; 13:1054.
1437. Pathak M, Deo SV, Dwivedi SN, Sreenivas V, Thakur B, Julka PK, et al. Role of neoadjuvant chemotherapy in breast cancer patients: Systematic review and meta-analysis. *Indian J Med Paediatr Oncol.* 2019; 40:48-62.
1438. Pathak M, Dwivedi SN, Deo SVS, Thakur B, Sreenivas V, Rath GK. Effectiveness of added targeted therapies to neoadjuvant Chemotherapy for breast cancer: A systematic review and Meta-analysis. *Clin Breast Cancer.* 2019; 19:e690-700.
1439. Pathak M, Dwivedi SN, Deo SVS, Thakur B, Sreenivas V, Rath GK. Effectiveness of Taxanes over Anthracyclines in Neoadjuvant Setting: Systematic Review and Meta-analysis. *World J Meta-Anal.* 2019; 7:170-83.
1440. Pathak M, Dwivedi SN, Deo SVS, Thakur B, Sreenivas V, Rath GK. Effectiveness of Added Targeted Therapies to Neoadjuvant Chemotherapy for Breast Cancer: A Systematic Review and Meta-analysis. *Clin Breast Cancer.* 2019; 19:e690-700.
1441. Pathak M, Dwivedi SN, Deo SVS, Thakur B, Sreenivas V, Rath GK. Effectiveness of taxanes over anthracyclines in neoadjuvant setting: A systematic-review and meta-analysis. *World J Meta Anal.* 2019; 7:170-83.
1442. Pathak M, Dwivedi SN, Thakur B, Sreenivas V. Comparative role of various methods of estimating between study variance for meta-analysis using random effect method. *Clin Epidemiol Glob Health.* 2020; 8:185-9.
1443. Pathak M, Dwivedi SN, Thakur B, Sreenivas V. Methods of Estimating the Pooled Effect Size under Meta-analysis: A Comparative Appraisal. *Clin Epidemiol Glob Health.* 2020; 8:105-12.
1444. Pathania A, Haldar P, Kant S, Gupta SK, Pandav CS, Bachani D. Prevalence of anemia among elderly persons residing in old age homes in National Capital Territory, Delhi, India. *Indian J Public Health.* 2019; 63:288-92.
1445. Patidar GK, Karimkhan A, Hazarika A. Management of Blood Products for Heart Transplant Recipients in a Tertiary Care Hospital. *IOSR J Dent Med Sci.* 2019; 18:82-4.
1446. Patil S, Relan J, Hote M, Kothari SS. Severe thrombocytopenia in tetralogy of Fallot patients: A contraindication for corrective surgery? *Ann Pediatr Cardiol.* 2019; 12:305-7.
1447. Patil S, Singh N. Silk Fibroin-Alginate Based Beads for Human Mesenchymal Stem Cell Differentiation in 3D. *Biomater Sci.* 2019; 7:4687-97.
1448. Patil V, Gupta R, Singh S, Goyal A, Deb KS. Central pontine/extrapontine myelinolysis presenting with manic and catatonic symptoms. *Indian J Psychol Med.* 2019; 41:491-3
1449. Patnaik SK, Halder N, Chawla B, Maithani D, Thavaraj V, Biswas NR, et al. Comparison of ocular pharmacokinetics of etoposide and its nanoemulsion after subtenon administration in rabbits. *J Basic Clin Physiol Pharmacol.* 2019; 30:20180108
1450. Patnaik U, Panda S, Thakar A. Audit of Complications in an Otolaryngology led Skull Base Surgical practice. *J Neurol Surg B Skull Base.* 2019; 80:586-92.
1451. Patra S, Bhari N, Mohta P, Singh S, Ramam M, Agarwal S. Adult-onset Still's disease presenting as blotchy and flagellate pigmentation. *Indian J Dermatol Venereol Leprol.* 2019; 85:626-8.
1452. Patra S, Bhatia S, Khaitan BK, Bhari N. Xanthoma disseminatum with neurological involvement and optic atrophy: improvement with cladribine. *BMJ Case Rep.* 2019; 12:e228464.
1453. Patra S, Senthilnathan G, Bhari N. Acrodermatitis enteropathica-like skin eruption with neonatal seizures in a child with biotinidase deficiency. *Clin Exp Dermatol.* 2020; 45:266-7.
1454. Paul M, Meena S, Gupta P, Jha S, Rekha US, Kumar VP. Clinico-epidemiological spectrum of strongyloidiasis in India: Review of 166 cases. *J Family Med Prim Care.* 2020; 9:485-91.
1455. Paul SB, Acharya SK, Gamanagatti SR, Sreenivas V, Shalimar S, Gulati MS. Acetic acid versus radiofrequency ablation for the treatment of hepatocellular carcinoma: A randomized controlled trial. *Diagn Interv Imaging.* 2020; 101:101-10.

1456. Paul SB, Sahu P, Sreenivas V, Nadda N, Gamanagatti SR, Nayak B, et al. Prognostic role of serial alpha-fetoprotein levels in hepatocellular carcinoma treated with locoregional therapy. *Scand J Gastroenterol.* 2019; 54:1132-7.
1457. Pauranik A, George A, Sahu A, Nehra A, Paplikar A, Bhat C, ... Kaur H, et al. Expert group meeting on aphasia: A report. *Ann Indian Acad Neurol.* 2019;22:137-46.
1458. Pawar SJ, Rastogi S, Dhamija E, Barwad A, Kumar V, Pandey R, et al. Lessons learnt from treatment of foot sarcomas: Analysis from dedicated sarcoma clinic in North India. *Ann Oncol.* 2019;30(Suppl 9):ix135-9.
1459. Pedapati R, Bhatia R, Singh N, Bali P, Gupta P, Saxena R, et al. Anti-myelin oligodendrocyte glycoprotein antibody associated disease spectrum - A north Indian tertiary care centre experience and review of literature. *J Neuroimmunol.* 2020; 340:577143.
1460. Pegwal N, Pal A, Sharma R. Deactivation of default-mode network and early suppression of decision making areas during retrieval period by high arousing emotions improves performance in verbal working memory task. *Cogn Affect Behav Neurosci.* 2019; 19:231-8.
1461. Perveen S, Gupta N, Kumar M, Kaur P, Chowdhury MR, Kabra M. Spectrum of amyloglucosidase mutations in Asian Indian patients with Glycogen storage disease type III. *Am J Med Genet A.* 2020; 182:1190-200.
1462. Philip NM, Naranje P, Bagchi S, Das CJ, Agarwal SK. Multiple abscesses in a renal transplant recipient. *Kidney Int.* 2019;96:526.
1463. Phuljhele Aalok S, Saluja G, Sharma P, Saxena R, Shameer A, et al. Effectiveness of Various Surgical Procedures for Correction of Monocular Elevation Deficit. *J Clin Exp Ophthalmol* 10: 790.
1464. Phuljhele S, Dhiman R, Kusiya S, Sharma M, Saxena R, Mahalingam K, Sharma P. Acquired Ocular Motor Palsy: Current Demographic and Etiological Profile. *Asia Pac J Ophthalmol (Phila).* 2020; 9:25-8.
1465. Phuljhele S, Dhiman R, Sharma M, Kusiya SK, Saxena R, Mahalingam K, et al. Acquired Ocular Motor Palsy: Current Demographic and Etiological Profile. *Asia Pac J Ophthalmol (Phila).* 2020; 9:25-8.
1466. Phulware H, Gularia P, Iyer VK, Bakhshi S, Seth R, Arava S, et al. Cytological diagnosis of Langerhans Cell histiocytosis: a series of 47 cases. *Cytopathology.* 2019; 30:413-8.
1467. Phulware RH, Gahlot GPS, Malik R, Gupta SD, Das P. Microvillous Inclusion Disease as a Cause of Protracted Diarrhea. *Indian J Pediatr.* 2019; 86:854-6.
1468. Phulware RH, Guleria P, Iyer VK, Bakhshi S, Seth R, Mridha AR, et al. Cytological diagnosis of Langerhans cell histiocytosis: A series of 47 cases. *Cytopathology.* 2019; 30:413-8.
1469. Phulware RH, Gupta B, Sahoo B, Agarwal S, Mathur S. Aspergillus thyroiditis: In an immunocompromised young adult. *Diagn Cytopathol.* 2019; 47:362-4.
1470. Picetti E, Rossi S, Abu-Zidan FM, Ansaloni L, Armonda R, Baiocchi GL, ... Gupta D, et al. WSES consensus conference guidelines: monitoring and management of severe adult traumatic brain injury patients with polytrauma in the first 24 hours. *World J Emerg Surg.* 2019;14:53.
1471. Pillutla SVP, Kaur C, Roy TS, Jacob TG. Estimation of Volume of Stria Vascularis and the Length of Its Capillaries in the Human Cochlea. *J Microsc Ultrastruct.* 2019; 7:117-23.
1472. PIONEER 6 Investigators. Oral Semaglutide and Cardiovascular Outcomes in Patients with Type 2 Diabetes. *N Engl J Med.* 2019; 381:841-51.
1473. Pokhriyal R, Hariprasad R, Kumar L, Hariprasad G. Chemotherapy Resistance in Advanced Ovarian Cancer Patients. *Biomark Cancer.* 2019;11:1179299X19860815.
1474. Pol MM. The effect of various surgical techniques in difficult cholecystectomy: A retrospective cohort study. *Ann Colorectal Res.* 2020; 8:23-8.
1475. Porubsky S, Rudolph B, Rückert JC, Küffer S, Ströbel P, Roden AC, ... Jain D, et al. EWSR1-translocation in primary hyalinising clear cell carcinoma of the thymus. *Histopathology.* 2019; 75:431-6.
1476. Porwal K, Pal S, Tewari D, China SP, Singh P, Tewari M, et al. Increased bone marrow-specific adipogenesis by clofazimine causes impaired fracture healing, osteopenia and osteonecrosis without extra-skeletal effects in rats. *Toxicol Sci.* 2019; 172:167-80.
1477. Poudel RR, Kumar VS, Tiwari V, Subramani S, Khan SA. Factors affecting compliance to hospital visit among clubfoot patients: A cross-sectional study from a tertiary referral clubfoot clinic in the developing country. *J Orthop Surg.* 2019; 27:1-4.
1478. Prabhakaran D, Jha D, Ajay VS, Roy A, Perel P. Response by Prabhakaran et al to Letter Regarding Article, "Effectiveness of an mHealth-Based Electronic Decision Support System for Integrated Management of Chronic Conditions in Primary Care: The mWellcare Cluster-Randomized Controlled Trial". *Circulation.* 2019; 139:e1039.
1479. Prabhaskar K, Babu G, Chaturvedi P, Kuriakose M, Birur P, Anand AK, ... Rath GK, et al. Indian clinical practice consensus guidelines for the management of oropharyngeal cancer. *Indian J Cancer.* 2020;57(Suppl):S12-5.

1480. Prabhash K, Babu G, Chaturvedi P, Kuriakose M, Birur P, Anand AK, ... Rath GK, et al. Indian clinical practice consensus guidelines for the management of squamous cell carcinoma of head and neck. *Indian J Cancer*. 2020; 57(Suppl):S1-S5.
1481. Prabhu M, Damle NA, Ray A, Kandasamy D. 18F-FDG PET/CT in cyst infection in autosomal dominant polycystic kidney disease. *Indian J Radiol Imaging*. 2020; 30:102-4.
1482. Prabhu M, Raju S, Chakraborty D, Arora S, Kumar R. Spectrum of 18F-FDG Uptake in Bilateral Lung Parenchymal Diseases on PET/CT. *Clin Nucl Med*. 2020; 45:e15-19.
1483. Prabhu M, Shakya S, Ballal S, Shamim SA, Bal C. Long-term Clinicopathological Features of a Family with Multiple Endocrine Neoplasia Type 2A Caused by C634R RET Gene Mutation. *Indian J Nucl Med*. 2020; 35:48-53.
1484. Pradhan S, Das A, Bansal R. Cluster Headache in a Case of Ophthalmic Cysticercosis. *Neurol India*. 2019; 67:1365-6.
1485. Pradhan S, Das A, Das A, Mulmuley M. Antibody Negative Autoimmune Encephalitis- Does it Differ from Definite One? *Ann Indian Acad Neurol*. 2019; 22:401-8.
1486. Pradhan S, Das A, Ghosh J. Step-Headache: A Distinct Symptom of Migraine. *J Neurosci Rural Pract*. 2020; 11:89-94.
1487. Pradhan S, Das A, Mulmuley M, Das A. Neurocysticercosis or tuberculoma – Which one has more epileptic potential? *Seizure*; 78:91-5.
1488. Pradhananga S, Regmi K, Razzaq R, Etefaghian A, Dey AB, Hewson D. Ethnic differences in the prevalence of frailty in the United Kingdom assessed using the electronic Frailty Index. *Aging Med (Milton)*. 2019; 2:168-73.
1489. Prajapati B, Fatma M, Fatima M, Khan MT, Sinha S, Seth PK. Identification of lncRNAs Associated With Neuroblastoma in Cross-Sectional Databases: Potential Biomarkers. *Front Mol Neurosci*. 2019; 12:293.
1490. Prajapati C, Singh MB, Srivastava MVP, Sreenivas V, Bhatia R, Goyal V, et al. Comparing long-term outcomes of epilepsy patients from a single-visit outreach clinic with a conventional epilepsy clinic: A cross-sectional observational study from India. *Seizure*. 2019; 67:5-10.
1491. Prakash P, Ramachandran R, Tandon N, Kumar R. Open surgery for pheochromocytoma: Current indications and outcomes from a retrospective cohort. *Indian J Urol*. 2020; 36:21-5.
1492. Prakash S, Singh N, Priyatma, Kommaraju VS, Singh C. Assessment of mustard oil components against free radicals and oxidized LDL cholesterol. *Int J Chem Stud*. 2019; 7:423-8.
1493. Pramanik R, Bakhshi S. Metronomic therapy in pediatric oncology: A snapshot. *Pediatr Blood Cancer*. 2019; 66:e27811.
1494. Pramanik R, Kancharla H, Bakhshi S, Sharma A, Gogia A, Malik P, et al. Engraftment Syndrome: A Retrospective Analysis of the Experience at a Tertiary Care Institute. *Clin Hematol Int*. 2019; 12:114-9.
1495. Pramanik R, Sharma A, Sharma A et L. POEMS Syndrome: Indian Experience From a Tertiary-Care Institute. *Clin Lymphoma Myeloma Leuk*. 2019; 19:e536-44.
1496. Praneeth K, Aggarwal A, Gupta SK, Singla N. Necessity is the mother of invention: Technical note on the use of self-designed low-cost continuous sump suction for use in microvascular anastomosis. *SurgNeurol Int*. 2019; 10:216.
1497. Praneeth K, Salunke P, Karthigeyan M, Malik P. Short Segment C1 - C2 Fusion in a Case of Congenital C2 Spondylolysis Associated with Chiari Malformation. *Neurol India*. 2019; 67:1553-5.
1498. Prasad A, Kharbanda OP. Interdisciplinary Management of an Adult Bilateral Cleft Lip and Palate Patient with Excessive Incisor Display - A Case Report. *Turk J Orthod*. 2019; 32:176-181.
1499. Prasad C, Khandelwal A, Kumar S, Chaturvedi A, Kumar N. Abdominal Cerebrospinal Fluid Pseudocyst Due to Ventriculoperitoneal Shunt Mimicking Unilateral Pleural Effusion: A Rare Finding. *J NeurosurgAnesthesiol*. 2019 Jul 10
1500. Prasad C, Kumar S, Mahajan C. Subclavian artery stenosis: A reason for possible medication error. *Saudi J Anaesth*. 2020; 14:132-4.
1501. Prasad G, Bandesh K, Giri AK, Kauser Y, Chanda P, Parekatt V, ... Vankatesh P, et al. Genome-Wide Association Study of Metabolic Syndrome Reveals Primary Genetic Variants at CETP Locus in Indians. *Biomolecules*. 2019; 9:321.
1502. Prasad K. Editorial Commentary on the National Exit Examination. *Ann Indian Acad Neurol*. 2020; 23:150.
1503. Prasad K. Some more Measures of Effect Size. *Neurol India*. 2020; 68:163-4.
1504. Prasad M, Malhotra S, Kalaivani M, Vashist P, Gupta SK. Gender differences in blindness, cataract blindness and cataract surgical coverage in India: a systematic review and meta-analysis. *Br J Ophthalmol*. 2020; 104:220-4.
1505. Prasad S, Sagar R, Kumaran SS, Mehta M. Study of Functional Magnetic Resonance Imaging (fMRI) in Children and Adolescents with Specific Learning Disorder (dyslexia). *Asian J Psychiatr*. 2020; 50:101945.
1506. Prasad K. Know Some Vital Statistics: What is P Value? *Neurol India*. 2019; 67:1086.

- 1507.Prasad K. Statistical Significance versus Clinical Importance. *Neurol India*. 2019;67:1513-4.
- 1508.Prashant S, Saurabh V, Abhity G, Brajesh R, Bharti S, Kumar S. Peri-Operative Anesthetic Management for Low Lying Tracheal Tumor; It is all About Sharing the Surgical Field between Anesthesia and Surgical Teams: A Case Report. *J Anesth Clin Res*. 2019; 10:899.
- 1509.Praveen PA, Venkatesh P, Tandon N. Screening model for diabetic retinopathy among patients with type 1 diabetes attending a tertiary care setting in India. *Indian J Ophthalmol*. 2020; 68(Suppl 1):S96-9.
- 1510.PRINCE Study Investigators. Global Survey of Outcomes of Neurocritical Care Patients: Analysis of the PRINCE Study Part 2.*Neurocrit Care*. 2020; 32:88-103.
- 1511.PRINCE Study Investigators. Worldwide Organization of Neurocritical Care: Results from the PRINCE Study Part 1.*Neurocrit Care*. 2020; 32:172-9.
- 1512.Priya S, Nagpal P, Sharma A, Pandey NN, Jagia P. Imaging Spectrum of Double-Outlet Right Ventricle on Multislice Computed Tomography.*J Thorac Imaging*. 2019; 34:W89-99.
- 1513.Pujari A, Basheer S, Rakheja V, Gagrani M, Saxena R, Phuljhele S, et al. Extraocular muscle surgery on goats' eye: An inexpensive technique to enhance residents' surgical skills.*Indian J Ophthalmol*. 2019; 67:1688-9.
- 1514.Pujari A, Chawla R, Markan A, Shah P, Kumar S, Hasan N, et al.Age-related changes in macular vessels and their perfusion densities on optical coherence tomography angiography.*Indian J Ophthalmol*. 2020; 68:494-9.
- 1515.Pujari A, Chawla R, Mukhija R, Obedulla H, Phuljhele S, Saxena R, et al. Assessment of Macualr vascular plexus density using optical coherence tomography Angiography in cases of strabismic amblyopia. *Indian J Ophthalmol*. 2019; 67:520-1.
- 1516.Pujari A, Chawla R, Selvan H, Mukhija R, Kumar A. Post traumatic retinal injuries: Does the ocular protective reflex play a crucial role? *Med Hypotheses*. 2019; 131:109286.
- 1517.Pujari A, Kishore A, Makwana T, Sharma N. A simple tool to assess an implantable collamer lens vault. *J Cataract Refract Surg*. 2019; 45:883-4.
- 1518.Pujari A, Kumar S, Markan A, Chawla R, Damodaran S, Kumar A. Buckling surgery on a goat's eye: A simple technique to enhance residents' surgical skill. *Indian J Ophthalmol*. 2019; 67:1327-8.
- 1519.Pujari A, Lakra S, Makwana T, Sharma N. Assessment of optic edge and the posterior capsule junction on optical coherence tomography.*J Cataract Refract Surg*. 2019; 45:1200-1.
- 1520.Pujari A, Lomi N, Goel S, Yadav S, Mukhija R, Kumar P, et al. Unmodified iPhone XS Max for fundus montage imaging in cases of retinoblastoma. *Indian J Ophthalmol*. 2019; 67:948-9.
- 1521.Pujari A, Markan A, Chawla R, Gagrani M. The additional role of unmodified iPhone X as a direct ophthalmoscope. *Indian J Ophthalmol*. 2019; 67:1253-4.
- 1522.Pujari A, Mukhija R, Azimeera S, Sharma N. Intralenticular changes on optical coherence tomography in eyes with mature brown cataract. *J Cataract Refract Surg*. 2019; 45:694-5.
- 1523.Pujari A, Mukhija R, Shashni A, Bajaj MS, Sen S. Orbital metastasis from a primary salivary duct carcinoma: importance of long-term follow-up. *Can J Ophthalmol*. 2019; 54:e21-4.
- 1524.Pujari A, Phuljhele S, Sharma P. Quantification of Retinal Torsion in Strabismus Using a Smartphone.*Ophthalmol Retina*. 2019; 3:379.
- 1525.Pujari A, Rakheja V, Bajaj MS, Sen S, Yadav B. Isolated conjunctival histoplasmosis in an elderly patient: a rare but important scenario. *Can J Ophthalmol*. 2019; 54:e15-6.
- 1526.Pujari A, Saxena R, Phuljhele S, Bhaskaran K, Basheer S, Sharma P. Pathomechanism of optic nerve avulsion. *Med Hypotheses*. 2019; 125:28-30.
- 1527.Pujari A, Selvan H, Asif MI, Gupta B, Dada T. Smartphone-aided Quantification of Iridocorneal Angle. *J Glaucoma*. 2019; 28:e153-5.
- 1528.Pujari A, Selvan H, Behera AK, Gagrani M, Kapoor S, Dada T. The Probable Mechanism of Traumatic Angle Recession and Cyclodialysis. *J Glaucoma*. 2020; 29:67-70.
- 1529.Pujari A, Selvan H, Goel S, Ayyadurai N, Dada T. Smartphone Disc Photography Versus Standard Stereoscopic Disc Photography as a Teaching Tool. *J Glaucoma*. 2019; 28:e109-11.
- 1530.Pujari A, Selvan H, Goel S, Dada T. Direct Smartphone Disc Video Documentation for Pediatric Glaucomas During Evaluation Under Anesthesia. *J Glaucoma*. 2019; 28:e143-4.
- 1531.Pujari A, Sharma N, Chaniyara MH, Urkude J, Singh R, Yadav S, et al. Optimal refinement of residents' surgical skills by training on induced goat's eye corneoscleral perforation. *Indian J Ophthalmol*. 2019; 67:547-8.
- 1532.Pujari A, Sharma N. Posttraumatic posterior capsular defect: Assessment of 3 cases. *J Cataract Refract Surg*. 2019; 45:1349-50
- 1533.Pujari A, Sharma P, Basheer S, Obedulla H, Bhaskaran K, Phuljhele S. Pulled into two syndrome (PITS) in a case

- of congenital fibrosis of the extraocular muscle. *Indian J Ophthalmol.* 2019; 67:1229-30.
1534. Pujari A, Singh P, Sinha A, Nayak S, Bajaj MS. Continuous B scan ultrasound guided post-traumatic sub-periosteal orbital hematoma drainage: An advantage over routine needle drainage procedure. *World J Emerg Med.* 2019; 10:248-50.
1535. Pujari A, Swamy DR, Selvan H, Agarwal D, Sihota R, Gupta S, et al. Clinical, ultrasonographic and optical coherence tomography correlation of optic nerve head cupping in glaucoma patients. *Indian J Ophthalmol.* 2019; 67:1663-6.
1536. Pujari A, Urkude J, Singh R, Mukhija R, Asif MI, Sharma N. Operative microscope slit beam to ascertain the alignment of toric intraocular lens intraoperatively. *J Cataract Refract Surg.* 2019; 45:1045-6.
1537. Pujari A, Urkude J, Singh R, Yadav S, Mukhija R, Sharma N. Slitlamp protractor: Refinement of existing slitlamp toric scale. *J Cataract Refract Surg.* 2019; 45:1515.
1538. Pujari A, Yadav S, Mukhija R, Urkude J, Sharma N. Smartphone-aided technique to quantify toric intraocular lens alignment. *J Cataract Refract Surg.* 2019; 45:1833-4.
1539. Puneet UM, Bhatia R, Sreenivas V, Singh N, Joseph R, Dash D, et al. Validation of ICH and ICH-GS Scores in an Indian Cohort: Impact of Medical and Surgical Management. *J Stroke Cerebrovasc Dis.* 2019;28:2213-20.
1540. Punj J, Kaler P, Ankalagi B, Prasad A, Sinha R, Sagar P. Successful anaesthesia management of a child with hunter syndrome for adenotonsillectomy. *Intractable Rare Dis Res.* 2019; 8:286-8.
1541. Punj J, Marada S. Ultrasound lumbar sympathetic block: Out of plane approach with insulated stimulation needle - Case series of three patients. *Indian J Anaesth.* 2020; 64:148-50.
1542. Punj J, Pandey R, Darlong V. Most Hemodynamically Stable Method for Change From High to Low Anesthesia Flow: A Randomized Controlled Trial Comparing State Entropy, High Fresh Gas Flow for 10 Minutes, and 0.8 Ratio of End-Expired Agent Concentration to Inspired Agent Concentration. *AANA J.* 2019; 87:390-4.
1543. Punj J. Multiple bilateral ultrasound-guided stellate ganglion blocks to treat acute vasculitis in a recently diagnosed patient of systemic lupus erythematosus. *Indian J Anaesth.* 2019; 63:851-5.
1544. Punjadath S, Madan K, Mohan A, Mittal S. A young man with chronic cough: big is not always beautiful. *Thorax.* 2019;74:1006-7.
1545. Punnose J, Malhotra RK, Sukhija K, Mathew A, Chopra A, Sharma A, et al. Bimodal distribution of fasting, one and two hour post load plasma glucose in Asian Indian pregnant women without pre-gestational diabetes: Gestational age related changes. *J Clin Transl Endocrinol.* 2019;16:100195.
1546. Punnose J, Malhotra RK, Sukhija K, Mathew A, Chopra A, Sharma A, et al. Glycated haemoglobin in the first trimester: A predictor of gestational diabetes mellitus in pregnant Asian Indian women. *Diabetes Res Clin Res.* 2020;159:107953.
1547. Puraswani M, Khandelwal P, Saini H, Saini S, Gurjar BS, Sinha A, et al. Clinical and Immunological Profile of Anti-factor H Antibody Associated Atypical Hemolytic Uremic Syndrome: A Nationwide Database. *Front Immunol.* 2019;10:1282.
1548. Puraswani M, Khandelwal P, Saini H, Saini S, Gurjar BS, Sinha A, et al. Clinical and immunological profile of anti-factor H antibody associated atypical hemolytic uremic syndrome: A nationwide database. *Front Immunol.* 2019;10: 1282
1549. Puri G, Ranjan P, Kumar S, Garg G. Pneumoperitoneum induced bradycardia: evaluation of its causes, management, prophylaxis and its implications. *Int J Sci Res.* 2019; 8:63-5.
1550. Puri G, Ranjan P, Kumar S, Garg R. Pneumoperitonium Induced Bradycardia- Evaluation of its Causes, Management, Prophylaxis and its Implications. *Int J Sci Res.* 2019; 8:1-3.
1551. Puri I, Bhatia R, Vibha D, Singh MB, Padma MV, Aggarwal P, et al. Stroke-related education to emergency department staff: An acute stroke care quality improvement initiative. *Neurol India.* 2019;67:129-33.
1552. Puri I, Garg D, Srivastava AK, Singh L, Shukla G, Goyal V. Langerhans Cell Histiocytosis Presenting With Late-Onset Sporadic Ataxia. *Mov Disord Clin Pract.* 2019; 6:716-8.
1553. Puri R, Mehta V, Duell PB, Nair D, Mohan JC, Mishra S, et al. Proposed low-density lipoprotein cholesterol goals for secondary prevention and familial hypercholesterolemia in India with focus on PCSK9 inhibitor monoclonal antibodies: Expert consensus statement from Lipid Association of India. *J Clin Lipidol.* 2020; 14:e1-e13.
1554. Purva M, Randeep G, Rajesh M, Mahesh CM, Sunil G, Kumar S, et al. Assessment of core capacities for antimicrobial stewardship practices in Indian hospitals: Report from a multicentric initiative of global health security agenda. *Indian J Med Microbiol.* 2019;37:309-17.
1555. Pushker N, Meel R, Bajaj MS. Levator-Muller's recession using labial mucosa as a spacer in severe eyelid retraction. *Can J Ophthalmol.* 2019; 54:678-81.
1556. Pushker N, Meel R, Kumar A, Kashyap S, Sen S, Bajaj MS. Orbital and periorbital dermoid/epidermoid cyst: a



- series of 280 cases and a brief review. *Can J Ophthalmol.* 2020; 55:167-71.
1557. Pushpam D, Bakhshi S. Paediatric chronic myeloid leukaemia: Is it really a different disease? *Indian J Med Res.* 2019; 149:600-9.
1558. Pushpam D, Chopra A, Sreenivas V, Kumar R, Bakhshi S. Absolute Lymphocyte Count at the End of Induction as a Surrogate Marker for Minimal Residual Disease in T-cell Acute Lymphoblastic Leukemia. *Indian Pediatr.* 2019; 56:381-3.
1559. Pushpam D, Chopra A, Vishnubatra S, Bakhshi S. Association of absolute lymphocyte count and peripheral blood lymphocyte subsets percentage with minimal residual disease at the end of induction in pediatric B cell acute lymphoblastic leukemia. *Pediatric Blood Cancer.* 2019; 36:138-50.
1560. Pushpam D, Chopra A, Vishnubatra S, Kumar R, Bakhshi S. Absolute lymphocyte count at end of induction as a surrogate marker for minimal residual disease in T acute lymphoblastic leukemia: A pilot study. *Indian Pediatrics.* 56:381-3.
1561. Pushpam D, Rajput N, Chopra A, Sreenivas V, Kumari M, Kumar R, et al. Association of absolute lymphocyte count and peripheral blood lymphocyte subsets percentage with minimal residual disease at the end of induction in pediatric B cell acute lymphoblastic leukemia. *Pediatr Hematol Oncol.* 2019; 3:1-13.
1562. Qaiser D, Ranjan P, Kataria K, Dhar A, Srivastava A. Physics for Surgeons - Part 4: Energy Devices in Surgery. *Int. Ann. Sci.* 2020; 9:122-31.
1563. Quraishi R, Varshney M, Singh A, Singh D, Kumar M, Rao A, et al. Use of filter paper to measure alcohol biomarkers among opioid dependent patients on agonist maintenance treatment: A community based study. *Indian J Psychol Med.* 2019; 41:529-34.
1564. Qureshi SS, Gupta JK, Goyal A, Yadav HN. A novel approach in the management of hyperhomocysteinemia. *Med Hypotheses.* 2019; 129:109245.
1565. Radhakrishnan DM, Goyal V, Shukla G, Singh MB, Ramam M. Hemi Masticatory Spasm: Series of 7 Cases and Review of Literature. *Mov Disord Clin Pract.* 2019; 6:316-9.
1566. Rafiq R, Sharma R, Borkar SA. Giant Sporadic Unilateral Vestibular Schwannoma in Child: Can It Get Bigger Than This? *World Neurosurg.* 2019;130:378-9.
1567. Raheja A, Suri A, Sreenivasan SA, Singla R. Insurance and flow alteration STA-MCA bypass in management of complex anterior circulation aneurysms in postendovascular era. *World Neurosurg.* 2019; 126:e1387-98.
1568. Raheja A. Editorial: Endoscopic sinus surgery in sinusitis induced intracranial abscess: concepts and controversies. *Neurosurg Focus.* 2019; 47:E13.
1569. Rai N, Upadhyay AD, Goyal V, Dwivedi S, Dey AB, Dey S. Sestrin2 as Serum Protein Marker and Potential Therapeutic Target for Parkinson's Disease. *J Gerontol A Biol Sci Med Sci.* 2020; 75:690-5.
1570. Raina R, Lam S, Raheja H, Krishnappa V, Hothi D, Bagga A, et al. Pediatric intradialytic hypotension: recommendations from the Pediatric Continuous Renal Replacement Therapy (PCRRT) Workgroup. *Pediatr Nephrol.* 2019; 34:925-41.
1571. Raina SK, Galwankar S, Dhariwal AC, Bhatt R, Kumar R, Gilada I...Aggarwal P, et al. Fighting antimicrobial resistance: Status paper with action points by Organized Medicine Academic Guild. *J Glob Infect Dis.* 2019; 11:54-8.
1572. Raina SK, Kumar R, Galwankar S, Gilada I, Aggarwal P, et al. A health care delivery model focusing on development of a cadre of primary care physicians- Recommendations of Organized Medicine Academic Guild. *J Fam Med Prim Care.* 2019; 8:330-5.
1573. Raj N, Padhy SK, Kumar V. Choroidal metastasis as the presenting feature of metastatic lung carcinoma. *Clin Exp Optom.* 2020; 103:244-5.
1574. Raja P, Bakhshi H, Sharma S, Gogia A, Malik A, Kumar P, et al. Engraftment Syndrome: A Retrospective Analysis of the Experience at a Tertiary Care Institute. *Clin Hematol Int.* 2019; 1:114-9.
1575. Rajagopal R, Garg PK, Khera PS, Sharma S. "Double-lumen" aortic arch with "double-lumen" brachiocephalic artery. *Ann Pediatr Cardiol.* 2019; 12:141-3.
1576. Rajagopalan V, Chouhan RS, Pandia MP, Lamsal R, Rath GP. Effect of intraoperative blood loss on perioperative complications and neurological outcome in adult patients undergoing elective brain tumour surgery. *J Neurosci Rural Pract.* 2019; 10:631-40.
1577. Rajan S, Theard MA, Easdown J, Goyal K, Pasternak JJ. Perceived Benefits and Barriers to a Career in Neuroanesthesiology: A Pilot Survey of Anesthesiology Clinicians. *J Neurosurg Anesthesiol.* 2019
1578. Rajan, Ancil V; Soni, Kapil Dev; Roja, VR; Kamath, Rajesh. Association between Work Motivation and Job Satisfaction among Nurses in the Clinical Settings in India. *Indian J Pub Health Res Dev.* 2019; 10(12): 1940-1943.
1579. Rajbhandari H, Joshi S, Malakar S, Paudel P, Jain P, Uppadaya K, ...Singh MB, et al. Epilepsy field workers, a smartphone application and telephone telemedicine: safe and effective epilepsy care in rural Nepal. *Seizure.* 2019;

1580. Rajeev N, Mathew G, Sinha A, Hari P, Bagga A. Atypical hemolytic uremic syndrome with critical illness neuropathy. *Asian J Pediatr Nephrol.* 2019; 2:48-9.
1581. Rajesh Y, Biswas A, Banik P, Pal I, Das S, Borkar SA, et al. Transcriptional regulation of HSPB1 by Friend leukemia integration-1 factor modulates radiation and temozolomide resistance in glioblastoma. *Oncotarget.* 2020;11:1097-108.
1582. Rajeshwari M, Sakthivel P, Sikka K, Jain D. Carcinoma encuirasse in Neck: extremely unusual initial presentation of gastric cancer. *BMJ Case Rep.* 2019; 12:e228418.
1583. Rajeshwari M, Sakthivel P, Yogal R, Panda S, Singh CA, Jain D. Composite tumor of the Anand S, Dhua AK. Penile Tourniquet Syndrome in a Child with Nocturnal Enuresis. *J Indian Assoc Pediatr Surg.* 2019; 24:231-2.
1584. Rajhans P, Hans G, Kumar V, Chadda RK. Interpersonal Psychotherapy for Patients with Mental Disorders. *Indian J Psychiatry*2020; 62(Suppl 2):201-12.
1585. Rajora MAK, Goyal H, Khakha DC. Nature-Based Sounds Role in Physiological Stress Responses in Patients under Mechanical Ventilation Support. *Int J Health Sci Res.* 2019; 9326-32.
1586. Rakesh Garg, SM Ahmed, M Athar. Framework for universal cardiopulmonary resuscitation (CPR) guidelines: Need of the hour. *Central J ISA* 2018; 2:35-6.
1587. Ramadass S, Gupta SK. Need-based approach for cost-effective tuberculosis control in India. *National Med J India* 2018; 31; 290-292.
1588. Ramadass S, Rai SK, Gupta SK, Kant S, Wadhwa S, Sood M, et al. Prevalence of disability and its association with sociodemographic factors and quality of life in a rural adult population of northern India. *Natl Med J India* 2018; 31: 268-273.
1589. Ramakrishnan S, Zachariah G, Gupta K, Rao JS, Mohanan PP, Venugopal K, et al. Prevalence of hypertension among Indian adults: Results from the great India blood pressure survey. *Indian Heart J.* 2019; 71:309-313.
1590. Ramaswamy VV, Nangia S, Thukral A, Singh V. Rare neonatal interstitial lung disease masquerading as pulmonary hemosiderosis. *BMJ Case Rep.* 2019; 12:e228398.
1591. Ramot R, Kachhawa G, Kulshreshtha V, Varshney S, Sankar MJ, Devasenathipathy K, et al. Bone Mass in Newborns Assessed by DXA – A Systematic Review and Meta-analysis. *Indian J Endocrinol Metab.* 2019; 23:198-205.
1592. Ramteke P, Phulware RH, Shende T, Sahoo B, Barwad A. Hydatid cyst of femur, radiologically mimicking a sarcoma. *Diagn Cytopathol.* 2019; 47:1045-8.
1593. Ramteke P, Phulware RH, Shende T, Sahoo B, Barwad A. Not All the Spindle Cell Tumors in Oral Cavity Are Sarcomatoid Squamous Cell Carcinoma. *Indian J Surg Oncol.*2020; 11:127-30.
1594. Rani K, Mukherjee R, Nikolajeff F, Dinda AK, Goyal V, Kumar S, et al. Neuronal Exosomes in Saliva of Parkinson's Disease Patients: A Pilot Study. *Parkinsonism Relat Disord.* 2019; 67:21-3.
1595. Rani K, Tyagi M, Mazumder M, Singh A, Shanmugam A, Dalal K, et al. Accelerated identification of serine racemase inhibitor from *Centella asiatica*. *Sci Rep.* 2020; 10:4640.
1596. Rani L, Gogia A, Singh V, Kumar L, Sharma A, Kaur G, Gupta R. Comparative assessment of prognostic models in Chronic Lymphocytic Leukemia: Evaluation in Indian Cohort. *Ann Hematol.* 2019; 98:437-43.
1597. Ranjan A, Jamshed N, Aggarwal P, Upadhyay V. Fasciculating toxicity. *Am J Emerg Med.* 2019; 37:798.e1-2.
1598. Ranjan P, Ranjan R, Kumar M. National exit test: How will one size fit all? *Ann Indian Acad Neurol.* 2020; 23:145-9.
1599. Rao AR, Kumar P, Gunasekaran V, Dey AB. Reversible chorea secondary to uremia in an older adult. *Aging Med (Milton).* 2019; 2:118-20.
1600. Rao GR, Ranjan P, Chadda RK, Kaloija GS, Dwivedi SN, Baitha U, et al. A descriptive study of disability in patients presenting with medically unexplained physical symptoms in a medical OPD setting. *J Family Med Prim Care.* 2019; 8:1755-9.
1601. Rao R, Kedia S, Ambekar A, Gupta V, Jain A. Predictors of long-term retention on Opioid Agonist Treatment: a six-year, community-based retrospective cohort study in India. *J Subs Use.* 2020; 25:489-94.
1602. Rao R, Varshney M, Singh S, Agrawal A, Ambekar A. Mental Healthcare Act, 2017, and addiction treatment: Potential pitfalls and trepidations. *Indian J Psychiatry.* 2019;61:208-12.
1603. Rashid H, Kataly J, Tripathi M, Sood M, Gupta YK. Validation of the Indian version of Neurological Disorders Depression Inventory for Epilepsy (NDDI-E). *Epilepsy Behav.* 2019; 95:75-8.
1604. Rastogi L, Dass J, Arya V, Kotwal J. Evaluation of high-fluorescence body fluid (HF-BF) parameter as a screening tool of malignancy in body fluids. *Indian J Pathol Microbiol.* 2019; 62:572-7.
1605. Rastogi N, Khurana S, Veeraraghavan B, Yesurajan Inbanathan F, Rajamani Sekar SK, Gupta D, et al. Epidemiological investigation and successful management of a Burkholderiacepacia outbreak in a neurotrauma intensive care unit. *Int J Infect Dis.* 2019; 79:4-11.

- 1606.Rastogi N, Nayan A, Sethi P, Nischal N, Brijwal M, Kumar A, et al. Dengue Fever with Acute Disseminated Encephalomyelitis: Sensorium Imbroglio. *J Assoc Physicians India*. 2019; 67:80-2.
- 1607.Rastogi S, Aggarwal A, Dhamija E, Barwad A, Panday R, Khan SA, et al. Desmoid tumor (DT) management in dedicated sarcoma medical oncology clinic in a developing country: Lessons learnt.*J Clin Oncol*.2019; 37(Suppl 15):e22541
- 1608.Rastogi S, Aggarwal A, Shishak S, Barwad A, Dhamija E, Pandey R, et al. Discordance of Histo-pathological Diagnosis of Patients with Soft Tissue Sarcoma Referred to Tertiary Care Center. *Asian Pac J Cancer Care*.2019; 4:119-23.
- 1609.Rath GP, Singh GP. Operating Room to Intensive Care Unit Handoffs: Time to Recognize an Underrated Predictor of Patient Outcome. *JNeuroanaesthesiolCritl Care*.2019; 6:179-81.
- 1610.Rattan A, Aggarwal H, Kumar A. Traumatic Lung Hernia-A rare entity. *Indian J Surg*. 2019; 81:599-601.
- 1611.Rattan A, Kumar S, Gupta A, Mishra B, Sagar S. Management of Patients with Neurotrauma by Trauma Surgeons: Need of the Hour. *Indian J Neurotrauma*. 2019;16:082-5.
- 1612.Ravindran RD, Sundaresan P, Krishnan T, Vashist P, Maraini G. Genetic variants in a sodium-dependent vitamin C transporter gene and age-related cataract. *Br J Ophthalmol*. 2019; 103:1223-7.
- 1613.Rawal I, Ghosh S, Hameed SS, Shivashankar R, Ajay VS, Patel SA,...Tandon N, et al. Association between poor oral health and diabetes among Indian adult population: potential for integration with NCDs. *BMC Oral Health*. 2019; 19:191.
- 1614.Rawat C, Kukal S, Kushwaha S, Agarwal R, Sharma S, Srivastava AK,et al. Elevated serum alkaline phosphatase in epilepsy: effect of age and treatment. *Br J Biomed Sci*. 2020; 77:44-7.
- 1615.Rawat C, Kushwaha S, Srivastava AK, Kukreti R. Peripheral blood gene expression signatures associated with epilepsy and its etiologic classification. *Genomics*. 2020;112:218-24.
- 1616.Rawat S, Gupta S, Bhat M, Dinda AK, Mohanty S. Efficient Labeling of Human Mesenchymal Stem Cells Using Iron Oxide Nanoparticles. *Methods Mol Biol*.2020;2150:113-20.
- 1617.Rawat S, Roy KK, Kumar S, Sharma JB, Singh N, Chodsol K. A randomised comparative study of ovarian reserve following two different techniques of laparoscopic cystectomy in ovarian endometrioma. *Int J Clin Obstet Gynecol*. 2019; 3:230-7.
- 1618.Rawre J, Dhawan B, Khanna N, Sreenivas V, Broor S, Chaudhary R. Distribution of Chlamydia trachomatis ompA genotypes in patients attending an STD outpatient clinic in New Delhi, India. *Indian J Med Res*. 2019; 149:662-70.
- 1619.Ray A, A Mittal, S Vyas. CT Halo Sign: A Systematic Review. *Eur J Radiol*. 2020; 124:108843.
- 1620.Ray A, Agarwal S, Biswas S, Sinha S. A study on factors determining dose of topical lignocaine during broncho-alveolar lavage by spray-as-you-go technique: A single centre observational study. *Drug Discov Ther*. 2019; 3:89-95.
- 1621.Ray A, Biswas S. Vocal cord disorders: uncommon causes of dyspnea. *Egypt J Bronchology*. 2019; 13:435.
- 1622.Ray A, Jain S, Narwal A, Sinha S. Endoscopic ultrasound fine-needle aspiration with an echobronchoscope (EUS-B-FNA) from a difficult-to-access paraspinal lesion. *Lung India*. 2019; 36:457-8.
- 1623.Ray A, Mittal A, Vyas S. CT Halo sign-A systematic review and meta-analysis. *Eur Resp J*. 2019; 54(Suppl 63):PA4819.
- 1624.Ray A, Mohta S, Soneja M, Jadon R, Wig N, Sood R. Clinical spectrum and outcome of critically ill hospitalized patients with acute febrile illness and new-onset organ dysfunction presenting during monsoon season. *Drug Discov Ther*. 2019; 13:101-7.
- 1625.Ray A. Being Mindful of the Context. *J Emerg Med*. 2019;57:577.
- 1626.Ray R, Dabas A, Shah D, Malhotra RK, Madhu Sv, Gupta P. Seasonal Variation in Serum 25-hydroxy Vitamin D and its Association with Clinical Morbidity in Healthy Infants from Northern India. *Indian Peditric*. 2019;56:1020-4.
- 1627.Raza MS, Das BK, Goyal V, Lodha R, Chaudhry R, Sood S, et al. Emerging multidrug resistance isolates of hospital-acquired bacterial meningitis in a tertiary care centre in North India. *J Med Microbiol*. 2019; 68:1585-90.
- 1628.Razik A, Das CJ, Gupta A, Wanamacher D, Verma S. Urinary diversions: a primer of the surgical techniques and imaging findings. *Abdom Radiol (NY)*. 2019; 44:3906-18.
- 1629.Razik A, Das CJ, Sharma S. Angiomyolipoma of the Kidneys: Current Perspectives and Challenges in Diagnostic Imaging and Image-Guided Therapy.*Curr Probl Diagn Radiol*. 2019; 48:251-61.
- 1630.Razik A, Singh AN, Roy SG, Madhusudhan KS. Mesenteric Tuberculosis Masquerading as Carcinoid Tumor on Conventional Imaging and DOTANOC Positron Emission Tomography/Computed Tomography: Uncommon Presentation of a Common Disease. *Indian J Nucl Med*. 2019;34:216-219.
- 1631.Real SAS, Parveen F, Rehman AU, Shaik R, Deo SVS, Husain SA. Mutation, methylation and expression analysis of LIFR gene in Indian breast cancer patients.*Mutat Res*. 2019; 816-8:111677.

- 1632.Rebello TJ, Keeley JW, Kogan CS, Sharan P, Matsumoto C, Kuligyna M, et al. Anxiety and Fear-Related Disorders in the ICD-11: Results from a Global Case-controlled Field Study. *Arch Med Res.* 2019; 50:490-501.
- 1633.Reddy SPK, Vishnu VY, Goyal V, Singh MB, Arora S, Garg A, et al. CADASIL syndrome and stroke in young people. *QJM.* 2020;113:118-9.
- 1634.Remenyi B, Carapetis J, Stirling JW, Ferreira B, Kumar K, Lawrenson J. Inter-rater and intra-rater reliability and agreement of echocardiographic diagnosis of rheumatic heart disease using the World Heart Federation evidence-based criteria. *Heart Asia.* 2019; 11:e011233.
- 1635.Renne B, Radic J, Agrawal D, et al. Cerebellar mutism after posterior fossa tumor resection in children: a multicenter international retrospective study to determine possible modifiable factors. *Childs Nerv Syst.* 2020;36:1159-69.
- 1636.Rewari V, Ramachandran R, Singh CA. Awake nasal fibre optic intubation -a simple manoeuvre for easy navigation of the fiberscope through the nasopharynx. *Rev Bras Anesthesiol.* 2019; 69:641
- 1637.Rewari V, Ramachandran R. Continuous wound infiltration of local anaesthetics for acute postoperative pain – A revisit. *Indian J Anaesth.* 2019; 63:425-7.
- 1638.RezaeeZ,Kaura S, Solanki D, Dash A, Padma MV, Lahiri U, et al. Deep Cerebellar Transcranial Direct Current Stimulation of the Dentate Nucleus to Facilitate Standing Balance in Chronic Stroke Survivors-A Pilot Study. *Brain Sci.* 2020; 10:94
- 1639.Rishi I, Halder A, Sharma JB, Jain M, Sharma M. Single Strand Conformation Polymorphism and Sequencing of HS6ST2 Gene in Patients of Idiopathic Premature Ovarian Failure. *J Clin Diagn Res.* 2020; 14:GC01-8.
- 1640.Robba C, Galimberti S, Graziano F, Wieggers EJA, Lingsma HF, Gupta D, et al. CENTER-TBI ICU Participants and Investigators. Tracheostomy practice and timing in traumatic brain-injured patients: a CENTER-TBI study. *Intensive Care Med.* 2020;46:983-94.
- 1641.Rohilla R, Meena S, Kaistha N, Krishna Raj A, Gupta P. Disseminated cryptococcosis and hepatitis C virus infection: A fatal co-infection. *Curr Med Mycol.* 2019; 5:50-3.
- 1642.Rout G, Sharma S, Gunjan D, Kedia S, Nayak B, Shalimar. Comparison of various prognostic scores in variceal and non-variceal upper gastrointestinal bleeding: A prospective cohort study. *Indian J Gastroenterol.* 2019; 38:158-66.
- 1643.Rout G, Sharma S, Gunjan D, Kedia S, Saraya A, Nayak B, et al. Development and Validation of a Novel Model for Outcomes in Patients with Cirrhosis and Acute Variceal Bleeding. *Dig Dis Sci.* 2019; 64:2327-37.
- 1644.Rout S, Dhar P. Sodium arsenite exposure during early postnatal period induces morphological and biochemical changes in rat kidney. *J Anat Soc India.* 2019; 68:62-7.
- 1645.Roy K, Satapathy AK, Houhton JAL, Flanagan SE, Radha V, Mohan V, et al. Congenital HyperinsulinemicHypoglycemia and Hyperammonemia due to Pathogenic Variants in *GLUD1*.*Indian J Pediatr.* 2019; 86:1051-3.
- 1646.Roy K, Sharma R, Jana M, Jain V. Life-threatening Hypercalcemia as the First Manifestation of Acute Lymphoblastic Leukemia. *Indian Pediatr.* 2019; 56:972-4.
- 1647.Roy N, Prasad C, Kumar A, Mondol K, Jain K, Yadav R, et al. Protective IFNL4 haplotype, linkage disequilibrium and their influence on virological response to Hepatitis C virus infection in Indian population. *Virusdisease.*2019; 30:344-53.
- 1648.Roy S, Das P, Das S, Roy S, Pal S, Joy VM,...Mathur P, et al. Detection of the emergence of mcr-1–mediated colistin-resistant *Escherichia coli* and *Klebsiella pneumoniae* through a hospital-based surveillance in an oncology center in eastern India. *Infect ControlHospEpidemiol.* 2020; 41:378-80.
- 1649.Roychoudhury A, Bhutia O, Yadav R, Goswami D, Bhatt K, Agarwal B, et al. Surgical outcomes and challenges in stock alloplastic totaljoint replacement (TJR) in adult temperomandibular jointankylosis (TMJA). *Int J Oral Maxillofac Surg.* 2019; 48(Suppl 1):177.
- 1650.Roychoudhury A, Bhutia O, Yadav R, Goswami D, Bhatt K, Agarwal B, et al. Surgical outcomes and challenges in stock alloplastic totaljoint replacement (TJR) in adult temperomandibularjointankylosis (TMJA). *Int J of Oral Maxillofac Surg.* 2019; 48:177.
- 1651.Runda N, Ganger A, Gupta N, Singh A, Vashist P, Tandon R. Knowledge and attitude towards eye donation among health professionals of northern India. *Natl Med J India.* 2019; 32:9-12.
- 1652.Sachdeva S, Jamshed N, Aggarwal P, Kashyap SR. Perception of workplace violence in emergency department. *J Emerg Trauma Shock.* 2019; 12:179-84.
- 1653.Sachdeva S. Knowledge and practice of Basic Life Support among Nurses Working in Tertiary Care Hospital, New Delhi. *J Emerg Trauma Nurs.* 2020; 1:65-70.
- 1654.Sadana D, Gupta RK, Jain S, Kumaran SS, G S R, Thennarasu K, Rajeswaran J. Neurocognitive profile of patients with Bipolar Affective Disorder in the euthymic phase. *Asian J Psychiatr.* 2019; 44:121-6.
- 1655.Saha S, Goswami R. Auditing the Efficacy and Safety of Alfacalcidol and Calcium Therapy in Idiopathic Hypoparathyroidism. *J Clin Endocrinol Metab.* 2019; 104:1325-35.

- 1656.Saha S, Kumar A, Saurabh K, Shankar SH, Kashyap A, Nischal N, et al. Current status of treatment of latent tuberculosis infection in India. *Indian J Med Sci.* 2019; 71:54-9.
- 1657.Saha S, Madan K, Jain D, Goswami R. Pulmonary alveolar proteinosis (PAP) in idiopathic hypoparathyroidism. *BMJ Case Rep.* 2019; 12:e231053..
- 1658.Sahay P, Bari A, Maharana PK, Titiyal JS. Missed caterpillar cilia in the eye: cause for ongoing ocular inflammation. *BMJ Case Rep.* 2019; 12:e230275.
- 1659.Sahay P, Dhanda S, Maharana PK, Titiyal JS. Intercalary staphyloma in Marfan Syndrome: A dreaded complication of scleral incision. *Indian J Ophthalmol.* 2019; 67:1161-2.
- 1660.Sahay P, Goel S, Maharana PK, Sharma N, Titiyal JS. Sequelae of neglected hypermature senile cataract. *Indian J Ophthalmol.* 2019; 67:1707-8.
- 1661.Sahay P, Goel S, Maharana PK, Sharma N. Amniotic Membrane Transplantation in Acute Severe Ocular Chemical Injury: A Randomized Clinical Trial. *Am J Ophthalmol.* 2019; 205:202-3.
- 1662.Sahay P, Goel S, Nagpal R, Maharana PK, Sinha R, Agarwal T, Sharma N, Titiyal JS. "Infectious Keratitis Caused by Rare and Emerging Micro-Organisms" *Curr Eye Res.* 2020 jul
- 1663.Sahay P, Kumawat D, Gupta S, Tripathy K, Vohra R, Chandra M, et al. Detection and monitoring of subclinical ocular siderosis using multifocal electroretinogram. *Eye (Lond).* 2019; 33:1547-55.
- 1664.Sahay P, Maharana PK, Mandal S, Sinha R, Agarwal T, Sharma N, et al. Cataract surgery outcomes in eyes with chorioretinal coloboma. *J Cataract Refract Surg.* 2019; 45:630-8.
- 1665.Sahay P, Maharana PK, Shaikh N, Goel S, Sinha R, Agarwal T, et al. Intra-lenticular lens aspiration in paediatric cases with anterior dislocation of lens. *Eye (Lond).* 2019; 33:1411-7.
- 1666.Sahay P, Maharana PK. Effect of Keratoconus Severity on Clinical Outcome After Deep Anterior Lamellar Keratoplasty. *Am J Ophthalmol.* 2019; 207:430-1.
- 1667.Sahay P, Maharana PK. Increasing Povidone-Iodine Exposure in Endothelial Keratoplasty Tissue Processing and Fungal Infection Impact. *Cornea.* 2019; 38:e50.
- 1668.Sahay P, Singhal D, Nagpal R, Maharana PK, Farid M, Gelman R, et al. Pharmacologic therapy of mycotic keratitis. *Surv Ophthalmol.* 2019; 64:380-400.
- 1669.Sahoo S, Magoon R, Choudhury A. The man behind modern cardiac catheterization. *J Pract Cardiovasc Sci.* 2019; 5:118.
- 1670.Sahoo T, Anand P, Verma A, Saksena M, Sankar MJ, Thukral A, et al. Outcome of extremely low birth weight (ELBW) infants from a birth cohort (2013-2018) in a tertiary care unit in North India. *J Perinatol.* 2020; 40:743-9.
- 1671.Sahoo T, Joshi M, Madathil S, Verma A, Sankar MJ, Thukral A. Quality improvement initiative for reduction of false alarms from multiparameter monitors in neonatal intensive care unit. *J Educ Health Promot.* 2019; 8:203.
- 1672.Sahoo T, Sivanandan S, Thomas D, Verma A, Thukral A, Sankar MJ, et al. Predictors of Mortality among Neonates with Congenital Diaphragmatic Hernia: Experience from an Inborn Unselected Cohort in India. *Indian Pediatr.* 2019; 56:1037-40.
- 1673.Sahu A, Patil V, Sagar R, Bhargava R. Psychiatric comorbidities in children with specific learning disorder-mixed type: A cross-sectional study. *J Neurosci Rural Pract.* 2019;10:617-22.
- 1674.Sahu MK, Bipin C, Arora Y, Singh SP, Devagouru V, Rajshekar P, et al. Peritoneal Dialysis in Pediatric Postoperative Cardiac Surgical Patients. *Indian J Crit Care Med.* 2019; 23:371-5.
- 1675.Sahu MK, Bipin C, Karanjkar A, Singh SP, Rajashekar P, Choudhary SK. Vitamin D Deficiency and Its Response to Supplementation as "Stoss Therapy" in Children with Cyanotic Congenital Heart Disease Undergoing Open Heart Surgery. *J Card Crit Care.* 2019; 03:17-23.
- 1676.Sahu MK, Bipin C, Niraghatam HV, Karanjkar A, Singh SP, Rajashekar P. Severe Subglottic Tracheal Stenosis Dictates Intercontinental Transfer of a 2-Year-Old Child with Tracheostomy Tube In Situ. *J Card Crit Care TSS.* 2020; 3:45-8.
- 1677.Sahu MK, Niraghatam HV, Bansal N, Singh SP, Choudhary SK. Ivabradine-The Final Crusader for Postoperative Junctional Ectopic Tachycardia, a Case Report with Literature Review. *World J Cardiovasc Surg.* 2019; 9:73-82.
- 1678.Sahu V, Mohan A, Dey S. p38 MAP kinases: plausible diagnostic and prognostic serum protein marker of non small cell lung cancer. *Exp Mol Pathol.* 2019; 107:118-23.
- 1679.Saikia J, Deo SV, Bhorival S, Bharati SJ, Kumar S. Video assisted thoracoscopic surgery in paediatric mediastinal tumors. *Mediastinum.* 2020;4:2.
- 1680.Sain A, Garg S, Sharma V, Meena UK, Bansal H. Osteoporotic Distal Fibula Fractures in the Elderly: How To Fix Them. *Cureus.* 12:e6552.
- 1681.Sain A, Sharma V, Farooque K, Muthukumaran V, Pattabiraman K. Dual Plating of the Distal Femur: Indications

- and Surgical Techniques. *Cureus*. 2019; 11:e6483.
- 1682.Saini C, Srivastava RK, Kumar P, Ramesh V, Sharma A. A distinct double positive IL-17A+/F+ T helper 17 cells induced inflammation leads to IL17 producing neutrophils in Type 1 reaction of leprosy patients. *Cytokine*. 2020; 126:15487.
- 1683.Saini J, Gupta RK, Kumar M, Singh A, Saha I, Santosh V, et al. Comparative evaluation of cerebral gliomas using rCBV measurements during sequential acquisition of T1-perfusion and T2\*-perfusion MRI. *PLoS One*. 2019; 14:e0215400.
- 1684.Saini R, Rao R, Parmar A, Mishra AK, Ambekar A, Agrawal A, et al.Rates, knowledge and risk factors of non-fatal opioid overdose among people who inject drugs in India: A community-based study.*Drug Alcohol Rev*. 2020;39:93-7.
- 1685.Saini S, Kaur C, Pal I, Kumar P, Jacob TG, Thakar A, et al. Morphological development of the human cochlear nucleus. *Hear Res*. 2019; 382:107784.
- 1686.Saini V, Chinta K, Reddy VP, Stein A, Lamprecht DA, Glasgow JN, et al. Hydrogen sulfide stimulates Mycobacterium tuberculosis respiration and growth to exacerbate tuberculosis. *Nat Comm*. 2020;Art No.557:1-17.
- 1687.Sakthivel P, Irugu DVK, Kakkar A, Kaur K, Jain S, Pramanik R, et al.Squamous cell carcinoma as a somatic-type malignancy in an extragonadal immature teratoma of the sinonasal region. *Int J Pediatr Otorhinolaryngol*.2019; 126:109639.
- 1688.Sakthivel P, Singh CA, Thakar A, Thirumeni G, Raveendran S, Sharma SC. Masseteric-Facial Nerve Anastomosis: Surgical Techniques and Outcomes—A Pilot Indian study. *Indian J Otolaryngol Head Neck Surg*. 2020; 72:92-7.
- 1689.Sakthivel P, Thakar A, Prasanth A, Bhalla AS, Kakkar A, Sikka K, et al. Prostate-Specific Membrane Antigen Expression in Primary Juvenile Nasal Angiofibroma-A Pilot Study. *Clin Nucl Med*. 2020; 45:195-9.
- 1690.Sakthivel P, Thakar A, Prashanth A, Angamuthu M, Sharma SC, Kumar R. Clinical Applications of 68Ga-PSMA PET/CT on Residual Disease Assessment of Juvenile Nasopharyngeal Angiofibroma (JNA). *Nucl Med Mol Imaging*. 2020; 54:63-4.
- 1691.Salpietro V, Dixon CL, Guo H, Bello OD, Vandrovцова J, Efthymiou S, et al. AMPA receptor GluA2 subunit defects are a cause of neurodevelopmental disorders. *Nat Commun*. 2019; 10:3094.
- 1692.Samala R, Borkar SA, Sharma R, Garg A, Suri A, Gupta D et al. Effectiveness of preoperative facial nerve diffusion tensor imaging tractography for preservation of facial nerve function in surgery for large vestibular schwannomas: Results of a prospective randomized study. *Neurol India*. 2019;67:149-54.
- 1693.Samuel SS. How do hypoxic mechanisms play role in the carbon monoxide induced injury to the human body? *Int J Curr Res Med Sci*. 2020; 6:9-12.
- 1694.Sandeep Aggarwal, Amit Bhambri, Vitish Singla, Nihar Ranjan Dash, Atul Sharma. Adenocarcinoma of oesophagus involving gastro-oesophageal junction following mini-gastric bypass/one anastomosis gastric bypass. *J Minim Access Surg*. 2020; 16:2; 175-8.
- 1695.Sandhu HS, Devagourou V, Gopichandran L. Implementation of intercostal drainage care protocol for post-operative cardiac patients in post-operative cardiothoracic ICU. *Baba Farid Uni Nurs J*. 2020; 16:20-6.
- 1696.Sankar J, Das RR, Mahapatro S, Sankar MJ. Effect of a Training Strategy in Improving Medication Fallacies during Pediatric Cardiopulmonary Resuscitation: A Before-and-After Study from a Developing Country. *Pediatr Emerg Care*. 2019; 35:278-82.
- 1697.Sankar J, Das RR, Singh A. Effect of Prehospital Transport Factors on Shock Index, Serum Lactate, and Mortality in Children with Septic Shock: A Prospective Observational Study. *J Emerg Trauma Shock*. 2019; 12:274-9.
- 1698.Sankar J, Gupta S, Lingaiah R. StrongyloidesstercoralisHyperinfection and Intractable Pulmonary Hemorrhage. *J Pediatr*. 2020; 218:258.
- 1699.Sankar J, Ismail J, Das R, Dev N, Chitkara A, Sankar MJ. Effect of Severe Vitamin D Deficiency at Admission on Shock Reversal in Children with Septic Shock: A Prospective Observational Study. *J Intensive Care Med*. 2019; 34:397-403.
- 1700.Sankar J, Singh M, Kumar K, Sankar MJ, Kabra SK, Lodha R. ‘Intermittent’ versus ‘continuous’ ScvO2 monitoring in children with septic shock: a randomised, non-inferiority trial. *Intensive Care Med*. 2020;46:82-92
- 1701.Sankaranarayanan R, Basu P, Kaur P, Bhaskar R, Singh B, Singh GB, ..., Bhatla N, et al.Current status of human papillomavirus vaccination in India’s cervical cancer prevention efforts.*Lancet Oncol*. 2019;20:e637-44.
- 1702.Sankhyan LK, Chowdhury UK, George N, Chauhan A, Kapoor PM. Intracardiac Repair of the Tetralogy of Fallot Using Trans-right Atrial and Transpulmonary Approach: A Video Presentation. *J Card Crit Care*. 2019; 02:091-2.
- 1703.Sarangi J, Kakkar A, Roy D, Thakur R, Singh CA, Sharma MC. Ocular non-teratoidmedulloepithelioma with teratoid metastases in ipsilateral intraparotid lymphnodes. *Eur J Ophthalmol*. 2019 Aug 14 .
- 1704.Sarangi SC, Kaur N, Tripathi M. Assessment of psychiatric and behavioral adverse effects of antiepileptic drugs

- monotherapy: Could they have a neuroendocrine correlation in persons with epilepsy? *Epilepsy Behav.* 2019; 100:106439.
- 1705.Sarangi SC, Pattnaik SS, Katyal J, Kaleekal T, Dinda AK. An interaction study of *Ocimum sanctum* L. and levetiracetam in pentylenetetrazole kindling model of epilepsy. *J Ethnopharmacol.* 2020; 249:112389.
- 1706.Sarangthem V, Seo BY, Aena Yi, Lee YJ, Cheon SH, Kim SK,...Singh TD, et al. Effects of molecular weight and structural conformation of multivalent-based elastin-like polypeptides on tumor accumulation and tissue biodistribution. *Nanotheranostics* 2020; 4:57-70.
- 1707.Sardana H, Ghoniya R, Kedia S. Letter to the Editor. Is analysis of the preoperative neurological status of a patient necessary to derive conclusions? *J Neurosurg Spine.* 2019;31:772-3.
- 1708.Sardana H, Kaura M, Kedia S. Letter to the Editor. Preoperative DVT screening in neurooncology: is it cost-effective to perform duplex sonography in all patients? *J Neurosurg.* 2019;131:984-5.
- 1709.Sardana H, Kedia S. Letter to the Editor. Infantile hydrocephalus treated by choroid plexus coagulation. *J NeurosurgPediater.* 2019;24:477-8.
- 1710.Sardana H, Sahu R, Kedia S. Letter to the Editor. PEEK interbody device and pseudarthrosis. *J Neurosurg Spine.* 2019;31:617-8.
- 1711.Sarin SK, Choudhury A, Sharma MK, Maiwall R, Mahtab MA, Rahman S,...Saraya A, et al. APASL ACLF Research Consortium (AARC) for APASL ACLF working Partysz. Acute-on-chronic liver failure: consensus recommendations of the Asian Pacific association for the study of the liver (APASL): an update. *Hepato Int.* 2019; 13:353-90.
- 1712.Sarkar L, Biswas S, Ray A, Sinha S. Hydropneumothorax following diagnostic bronchoalveolar lavage: A rarest of rare complication. *Lung India.* 2019; 36:270-1
- 1713.Sarkar S, Balhara YPS, Kumar S, Saini V, Kamran A, Patil V, et al. Internalized stigma among patients with substance use disorders at a tertiary care center in India. *J EthnSubst Abuse.* 2019; 18:345-58.
- 1714.Sarkar S, Kochhar KP, Khan NA. Fat Addiction: Psychological and Physiological Trajectory. *Nutrients.* 2019;11:2785.
- 1715.Sarkar S, Pakhre A, Murthy P, Bhuyan D. Brief Interventions for Substance Use Disorders. *Indian J Psychiatry.* 2020;62(Suppl 2):S290-8.
- 1716.Sarma R, Gupta N, Gupta A. To sniff or not to sniff: The eternal debate.*J Anaesthesiol Clin Pharmacol.* 2020;36:100-1.
- 1717.Sasi A, Ray A, Bhalla AS, Arava S, Agarwal S, Jadon RS, et al. Chylothorax in a case of accelerated silicosis with pulmonary silicoproteinosis: A unique association. *Indian J Occup Environ Med.* 2020; 24:39-41.
- 1718.Satapathy AK, Pandey S, Chaudhary MR, Bagga A, Kabra M, Uwe K, et al. Report of Another Mutation Proven Case of Carbonic Anhydrase II Deficiency. *J Pediatr Genet.* 2019; 8:91-4.
- 1719.Sathiyamoorthy R, Kalaivani M, Aggarwal P, Gupta SK. Prevalence of pulmonary tuberculosis in India: A systematic review and meta-analysis. *Lung India.* 2020; 37:45-52.
- 1720.Satpathy G, Ahmed NH, Nayak N, Tandon R, Sharma N, Agarwal S, et al. Spectrum of mycotic keratitis in north India: Sixteen years study from a tertiary care ophthalmic centre. *J Infection Public Health.* 2019; 12:367-71
- 1721.Satyarthee GD, Grag K. Adult Achondroplasia Patient With Extensive Long Segment Severe C1 to C6 Segment Spinal Canal Stenosis: Unique Presentation. *Asian J Neurosurg.* 2019;14:883-5.
- 1722.Satyarthee GD, Jagdevan A. T.S. Kanaka: First Asian Woman Neurosurgeon, Who Pioneered Stereotactic, Functional and Cerebral Electrode Implant Surgery and Developed Separate Neurosurgical Speciality in India Early 1970. *Asian J Neurosurg.* 2019;14:1050.
- 1723.Satyarthee GD, Moscote-Salazar LR, Agrawal A. Persistent Enlarged Occipital Sinus With Absent Unilateral Transverse Sinus. *J Neurosci Rural Pract.* 2019;10:519-21.
- 1724.Satyarthee GD, Moscote-Salazar LR. Letter to the Editor. Risk of New Seizure Occurrence Following Cranioplasty Procedures. *J Neurosurg.* 2019;132:678-9.
- 1725.Satyarthee GD. External Occipital Protuberance Projecting as Downward Curved Horn Presenting With Intractable Occipital Pain: Report of a First Case. *J PediatrNeurosci.* 2019;14:173-4.
- 1726.Satyarthee GD. Hyperbaric Oxygen Therapy in Ischemic Stroke Management: Standardized Consensus-Based Therapeutic Protocol.*Neurol India.* 2019;67:653-4.
- 1727.Satyarthee GD. Reader Response: Concussion Biomarkers Assessed in Collegiate Student-Athletes (BASICS) I: Normative Study. *Neurology.* 2019;93:564-5.
- 1728.Saxena A, Narang R. Reply to letter 'Prevalence and determinants of hypertension in apparently healthy schoolchildren in India: A multi-center study'. *Eur J Prev Cardiol.* 2019; 26:1345-6.
- 1729.Saxena A, Relan J, Agarwal R, Awasthy N, Azad S, Chakrabarty M, et al. Guidelines for the management of common congenital heart diseases in India: A consensus statement on indications and timing of intervention. *Indian*

- Heart J. 2019; 71:207-23.
- 1730.Saxena A, Relan J, Agarwal R, Awasthy N, Azad S, Choudhary SK. Indian Guidelines for Indications and Timing of Intervention for Common Congenital Heart Diseases: Revised and Updated Consensus Statement of the Working Group on Management of Congenital Heart Diseases. Abridged Secondary Publication. Indian Pediatr. 2020; 57:143-57.
- 1731.Saxena R, Dhiman R. Commentary: Abnormal pupillary light reflexes - A sign of diabetic autonomic neuropathy. Indian J Ophthalmol. 2019; 67:1319.
- 1732.Saxena R, Sharma P. Pediatric Ophthalmology Expert Group. National consensus statement regarding pediatric eye examination, refraction, and amblyopia management.Indian J Ophthalmol. 2020; 68:325-32.
- 1733.Saxena R, Singh D. Reply.Ophthalmology. 2019; 126:e47.
- 1734.Saxena S, Chakraborty A, Kaushal M, Mohil RS, Mishra AK, Singh LC, et al. Breast Cancer in Indian Women: Genetic Risk Factors and Predictive Biomarkers. Ann Natl Acad Med Sci (India). 2019; 55:034-47.
- 1735.Sazawal S, Chhikara S, Singh K, Chaubey R, Mahapatra M, Seth T, et al. Distribution of common BCR-ABL fusion transcripts and their impact on treatment response in Imatinib treated CML patients: A study from India. Indian J Pathol Microbiol. 2019; 62:256-60.
- 1736.Sazawal S, Chhikara S, Singh K, Chaubey R, Mahapatra M, Seth T, et al. Chronic myeloid leukemia with a rare fusion transcript, b2a3 (e13a3) BCR-ABL1: A report of four cases from India. South Asian J Cancer. 2019; 8:107.
- 1737.Sazawal S, Singh K, Chhikara S, Chaubey R, Mahapatra M, Saxena R. Influence of JAK2V617F allele burden on clinical phenotype of polycythemia vera patients: A study from India. South Asian J Cancer. 2019; 8:127-9.
- 1738.Sebastian S, Malhotra R, Sreenivas V, Kapil A, Chaudhry R, Dhawan B. A Clinico-Microbiological Study of Prosthetic Joint Infections in an Indian Tertiary Care Hospital: Role of Universal 16S rRNA Gene Polymerase Chain Reaction and Sequencing in Diagnosis. Indian J Orthop. 2019; 53:646-54.
- 1739.Seddon JA, Tugume L, Solomons R, Prasad K, Bahr NC. The current global situation for tuberculous meningitis: epidemiology, diagnostics, treatment and outcomes. Wellcome Open Res. 2019;4:167.
- 1740.Seenu V, Suhani S, Srivastava A, Parshad R, Mathur S, Kumar R. Optimization of sentinel lymph node identification techniques in the Indian setting: A randomized clinical trial. Indian J Cancer. 2019; 56:114-8.
- 1741.Sehgal VN, Malhotra R. Pharmacology and Therapeutics of Corticosteroids Sparing Maintenance Immunosuppressive/ Adjunct Therapy Drugs. Skinmed. 2019;17:172-9.
- 1742.Selvan H, Angmo D, Sharma A. The Missing Mesenchyme Captured-Axenfeld-Rieger Anomaly. JAMA Ophthalmol. 2019; 137:e184507.
- 1743.Selvan H, Azad SV, Ramesh P, Bhakthaganesh K. Retinopathy in severe aplastic anaemia.BMJ Case Rep. 2019; 12:e232426.
- 1744.Selvan H, Brar AS, Angmo D. Cogan-Reese syndrome with Iris cyst: A novel presentation. Cont Lens Anterior Eye. 2019; 42:467-9.
- 1745.Selvan H, Gupta S, Gupta V. Retained Intraocular Surgical Needle. Ophthalmology. 2019; 126:1083.
- 1746.Selvan H, Gupta S, Puri P, Sen S, Gupta V. The immortal Ologen: persisting 10 years after trabeculectomy. Can J Ophthalmol. 2019; 54:e305-8.
- 1747.Selvan H, Gupta V, Gupta S. Cyclodialysis: an updated approach to surgical strategies. Acta Ophthalmol. 2019; 97:744-51.
- 1748.Selvan H, Gupta V, Gupta S. Cyclodialysis: an updated approach to surgical strategies. Acta Ophthalmol. 2019; 97:744-51.
- 1749.Selvan H, Pujari A. In Reply: Smartphone Disc Photography Versus Standard Stereoscopic Disc Photography as a Teaching Tool.J Glaucoma. 2019; 28:e174-5.
- 1750.Selvan H, Sharma A, Birla S, et al. Molecular characterization of a rare phenotype of X-linked retinoschisis with angle-closure glaucoma. Indian J Ophthalmol. 2019; 67:1226-9.
- 1751.Selvan H, Sharma A, Birla S, Gupta S, Somarajan BI, Gupta V. Molecular characterization of a rare phenotype of X-linked retinoschisis with angle-closure glaucoma. Indian J Ophthalmol. 2019; 67:1226-9.
- 1752.Selvan H, Sharma A, Dada T. Inferior Bitot's spot in a case of Crouzon syndrome: The environmental theory reaffirmed. BMJ Case Rep. 2019; 12:e229853.
- 1753.Selvan H, Shiny H, Gupta S. T-Cell Acute Lymphoblastic Leukemia with Massive Vitreo-Retinal Infiltration and Neovascular Glaucoma.Indian J Hematol Blood Transfus. 2019; 35:605-6.
- 1754.Selvanayagam R, Kumar V, Malhotra R, Srivastava DN, Digge VK. A Prospective Randomised Study Comparing Navigation Versus Conventional Total Knee Arthroplasty. JOrthop Surg. 2019; 27:1-6.
- 1755.Sen S, Dey D, Jingar P, Agrawal S, Shrivastava V, Bhattacharya A, et al. Symphytum officinale augments



- osteogenesis in human bone marrow-derived mesenchymal stem cells in vitro as they differentiate into osteoblasts. *J Ethnopharmacol.* 2020;248:112329.
- 1756.Sen S, Dhiman R, Saxena R, Phuljhele S, Sharma P. Vertical rectus transposition procedures for lateral rectus palsy: A systematic review.*Indian J Ophthalmol.* 2019; 67:1793-9.
- 1757.Sen S, Dhiman R, Saxena R, Phuljhele S, Sharma P. Vertical rectus transposition procedures for lateral rectus palsy: A systematic review.*Indian J Ophthalmol.* 2019; 67:1793-9.
- 1758.Sen S, Saxena R, Vibha D, Tripathi M, Sharma P, Phuljhele S, et al. Detection of structural and electrical disturbances in macula and optic nerve in Alzheimer's patients and their correlation with disease severity.*Semin Ophthalmol.* 2020; 35:116-25.
- 1759.Sen S, Singh P, Bajaj MS, Gaur N. Management of a case of orbital lymphangioma presenting in adulthood with negative-pressure aspiration and bleomycin injection. *BMJ Case Rep.* 2019; 12:e227697.
- 1760.Sengupta D, Kapoor I, Mahajan C, Prabhakar H. Erroneous high entropy values in a patient undergoing brachial plexus repair. *J ClinAnesth.* 2019;58:29-30.
- 1761.Senjam SS, Foster A, Bascaran C, Vashist P, Gupta V. Assistive technology for students with visual disability in schools for the blind in Delhi. *Disabil Rehabil Assist Technol.* 2019; 15:1-7.
- 1762.Senjam SS, Foster A, Bascaran C, Vashist P. Awareness, utilization and barriers in accessing assistive technology among the young patients attending in low vision rehabilitation clinic of a tertiary eye care centre in Delhi. *Indian J Ophthalmol.* 2019; 67:1548-54.
- 1763.Senjam SS, Foster A, Bascaran C. Barriers to using assistive technology among students with visual disability in schools for the blind in Delhi, India. *Disabil Rehabil Assist Technol.* 2020; 25:1-7.
- 1764.Senjam SS, Singh A. Addressing the Health needs of people with disabilities in India. *Indian J Public Health.* 2020; 64:79-82.
- 1765.Senjam SS. Assistive technology for people with visual loss. *Delhi J Ophthalmol.* 2019; 30:7-12.
- 1766.Senjam SS. Assistive technology for students with visual disability: Classification matters. *Kerala J Ophthalmol* 2019; 31:86-91.
- 1767.Seth A, Onuma Y, Chandra P, Bahl VK, Manjunath CN, Mahajan AU. Three-year clinical and two-year multimodality imaging outcomes of a thin-strut sirolimus-eluting bioresorbable vascular scaffold: MeRes-1 trial. *EuroIntervention.* 2019; 15:607-14.
- 1768.Sethi A, Sankar MJ, Kulkarni S, Thukral A, Chandra P, Agarwal R. Low dose fentanyl infusion versus 24% oral sucrose for pain management during laser treatment for retinopathy of prematurity-an open label randomized clinical trial. *Eur J Pediatr.* 2020; 179:285-92.
- 1769.Sethi A, Sankar MJ, Thukral A, Saxena R, Chaurasia S, Agarwal R. Prophylactic Vitamin K Administration in Neonates on Prolonged Antibiotic Therapy: A Randomized Controlled Trial. *Indian Pediatr.* 2019; 56:463-7.
- 1770.Sethi S, Ramalingam V, Yadav M, Thulkar S. Nodal metastasis of cervix carcinoma- As a probable cause of bone erosion. *J Cancer Res Ther.* 2019;15:1260-4.
- 1771.Sethi SK, Mittal A, Nair N, Bagga A, Iyenger A, Ali U, et al.Pediatric Continuous Renal Replacement Therapy (PCRRT) expert committee recommendation on prescribing prolonged intermittent renal replacement therapy(PIRRT) in critically ill children. *Hemodial Int.* 2020; 24:237-51.
- 1772.Shaikh N, Kumar V, Beniwal A. Cataract with posterior capsule rupture following intravitreal injection. *Indian J Ophthalmol.* 2019; 67:1729.
- 1773.Shaikh N, Kumar V, Venkatesh P. Iris nodules in Fuchs heterochromic iridocyclitis. *Indian J Ophthalmol.* 2019; 67:1339.
- 1774.Shakeel A, Bhattacharya R, Jeevanandham S, Kochhar D, Singh A, Mehra L, et al. Graphene Quantum Dots in the Game of Directing Polymer Self-assembly to Exotic Kagomé Lattice and Janus Nanostructures. *ACS Nano.* 2019; 13:9397-407.
- 1775.Shakrawal J, Temkar S, Sihota R, Venkatesh P. Suprachoroidal hemorrhage after removal of releasable suture with globe massage post-trabeculectomy. *Indian J Ophthalmol.* 2019; 67:287-9.
- 1776.Shakya S, Kumari R, Suroliya V, Tyagi N, Joshi A, Garg A, et al. Whole exome and targeted gene sequencing to detect pathogenic recessive variants in early onset cerebellar ataxia. *Clin Genet.* 2019;96:566-74.
- 1777.Shalimar, Kumar R, Rout G, Kumar R, Yadav R, Das P, et al. Body mass index-based controlled attenuation parameter cut-offs for assessment of hepatic steatosis in non-alcoholic fatty liver disease. *Indian J Gastroenterol.* 2020; 39:32-41.
- 1778.Shalimar, Kumar R, Rout G, Kumar R, Yadav R, Das P, et al. Body mass index-based controlled attenuation parameter cut-offs for assessment of hepatic steatosis in non-alcoholic fatty liver disease. *Indian J Gastroenterol.*2020; 39:32-41.

1779. Shalimar, Sharma R, Das P. Hepatic angiosarcoma- insidious onset of an aggressive liver tumour. *Trop Gastroenterol* .2019; 37:301-2.
1780. Shalimar, Sheikh MF, Mookerjee RP, Agarwal B, Acharya SK, Jalan R. Prognostic Role of Ammonia in Patients With Cirrhosis. *Hepatology*. 2019; 70:982-94.
1781. Shankar A, Dubey A, Saini D, Singh M, Prasad CP, Roy S, et al. Environmental and occupational determinants of lung cancer. *Transl Lung Cancer Res*. 2019;8(Suppl1):S31-49.
1782. Shankar A, Saini D, Dubey A, Roy S, Bharati SJ, Singh N, ...Rath GK, et al. Feasibility of lung cancer screening in developing countries: challenges, opportunities and way forward. *Transl Lung Cancer Res*. 2019;8(Suppl1):S106-21.
1783. Shankar C, Mathur P, Venkatesan M, Pragasam AK, Anandan S, Khurana S, et al. Rapidly disseminating blaOXA-232 carrying *Klebsiella pneumoniae* belonging to ST231 in India: multiple and varied mobile genetic elements. *BMC Microbiol*. 2019; 19:137.
1784. Shankar H, Kumar N, Sandhir R, Singh MP, Mittal S, Adhikari T, et al. Association of dietary intake below recommendations and micronutrient deficiencies during pregnancy and low birth weight. *J Perinat Med* 2019;47:724-31. doi: 10.1515/jpm-2019-0053.
1785. Shankar SH, Kumar P, Madhusudhan KS. Arterial and venous thrombosis with right ventricular thrombus in Crohn's disease. *Turk J Gastroenterol*. 2019; 30:1070-1.
1786. Sharan P, Purnima S, Rao R, Kedia S, Khoury B, Reed GM. Field Testing of ICD-11 Proposals for Female Sexual Dysfunctions in India: Cognitive Interviews with Patients. *Arch Med Res*. 2019; 50: 567-76.
1787. Sharan S, Gandhi A, Kapoor PM. Utility of Platelet Function Tests: A Recent Review Round Up. *J Card Crit Care*. 2019; 03:24-7.
1788. Sharma A, Choudhury V, Chauhan S, Hote MP, Ramakrishnan P. Transthoracic echocardiography: A surrogate tool for predicting pulmonary hypertension. *Egypt J cardiothoracic Anaesth*. 2019; 13:30-4.
1789. Sharma A, George B, Subhash C, Bhurani D, Choudhary D, Easow J, et al. Summary of the Highlights of 2019 ASTCT Meeting by iNDUS BMT Group at Chennai, India. *Indian J Hematol Blood Transfus*. 2019; 35:409-15.
1790. Sharma A, Jose AP, Pandey N, Vats S, Bagre V, Kumar H, et al. A collaborative model for capacity building of primary care physicians in the management of Hypertension in India. *J Hum Hypertens*. 2019; 33:562-5.
1791. Sharma A, Kalyan Mohanti B, Pal Chaudhary S, Sreenivas V, ....., Pal S, et al. Modified gemcitabine and oxaliplatin or gemcitabine + cisplatin in unresectable gallbladder cancer: Results of a phase III randomised controlled trial. *Eur J Cancer*. 2019;123:162-170.
1792. Sharma A, Khandelwal P, Yadav M, Sethi S, Hari P, Sinha A, et al. Atypical hemolytic uremic syndrome with diacylglycerol kinase epsilon (DGKE) gene mutation. *Asian J Pediatr Nephrol*. 2019; 2:101-3.
1793. Sharma A, Kumar R. Metabolic biopsy: concepts and considerations. *Nucl Med Commun*. 2019; 40:775-7.
1794. Sharma A, Malik PS, Khurana S, Kumar S, Bhatla N, Ray MD, et al. Oral metronomic chemotherapy for recurrent & refractory epithelial ovarian cancer: A retrospective analysis. *Indian J Med Res*. 2019; 150:575-83.
1795. Sharma A, Malik PS, Khurana S, Kumar S, Bhatla N, Ray MD, et al. Oral metronomic chemotherapy for recurrent and refractory epithelial ovarian cancer: A retrospective analysis. *Indian J Med Res*. 2019; 150:575-83.
1796. Sharma A, Mohanti BK, Chaudhary SP, Sreenivas V, Sahoo RK, Shukla NK, et al. Modified gemcitabine and oxaliplatin or gemcitabine + cisplatin in unresectable gallbladder cancer: Results of a phase III randomised controlled trial. *Eur J Cancer*. 2019; 123:162-70.
1797. Sharma A, Ojha V, Raju SN. Anomalous vertebral artery origin from common carotid artery. *Asian Cardiovasc Thorac Ann*. 2020; 28:185-6.
1798. Sharma A, Pandey AK, Khichi D, Kumar R. Methylene Diphosphonate Bone Scan Scintigraphic Image Enhancement using Gamma Correction and Optimizing the Value of Gamma. *Indian J Nucl Med*. 2020; 35:21-7.
1799. Sharma A, Rajan R, Modi M, Pinto B, Dhoria A, Rathi M, et al. Neurological Manifestations Do not Affect Cumulative Survival in Indian Patients with Antineutrophil Cytoplasmic Antibody Associated Vasculitis. *Neurol India*. 2019; 67:1043-7.
1800. Sharma A, Sharma U, Jagannathan NR, Ray R, Rajeswari MR. Effect of Doxorubicin on Squamous Cell Carcinoma of Skin: Assessment by MRI Relaxometry at 4.7T. *Cancer Invest*. 2019; 37:339-54.
1801. Sharma A, Sinha M, Pandey NN, Chandrashekhara SH. Stem cell therapy in critical limb ischemia: Current scenario and future trends. *Indian J Radiol Imaging*. 2019;29:397-403.
1802. Sharma A, Tyagi S, Gautam SK, Abid M, Kanga U. HLA-A\*33:03:01:06 allele identified in an individual from the Kashmiri Brahmin population of North India. *HLA*. 2019;94:524-6.
1803. Sharma A, Vanidassane I, Aggarwal A, Mridha AR, Pandey R, Dhamija E, et al. Pazopanib efficacy and toxicity in a metastatic sarcoma cohort: Are Indian patients different? *Indian J Cancer*. 2019; 56:207-10.

1804. Sharma H, Padma MV, Rajeswari MR. Efficacy of low frequency repetitive transcranial magnetic stimulation (rTMS) in Ischemic stroke - A double blind randomised controlled Trial. *Arch Rehabil Res Clin Transl.* 2020; 2:100039.
1805. Sharma H, Vishnu VY, Kumar N, Sreenivas V, Rajeswari MR, Bhatia R, ... Padma MV, et al. Efficacy of Low-Frequency Repetitive Transcranial Magnetic Stimulation in Ischemic Stroke: A Double-Blind Randomized Controlled Trial. *Arch Rehabil Res Clin Transl.* 2020;2:100039.
1806. Sharma JB, Kakkad V, Kumar S, Roy KK. Cross-sectional Study on Vitamin D Levels in Stress Urinary Incontinence in Women in a Tertiary Referral Center in India. *Indian J Endocrinol Metab.* 2019;23:623-7.
1807. Sharma K, Dhua A, Thomas D, Sankar MJ. Congenital sigmoid mesocolic defect as a cause of neonatal intestinal obstruction. *BMJ Case Rep.* 2019; 12:e230253.
1808. Sharma KA, Das D, Dadhwal V, Deka D, Singhal S, Vanamail P. Two-dimensional fetal biometry versus three-dimensional fractional thigh volume for ultrasonographic prediction of birthweight. *Int J Gynaecol Obstet.* 2019;145:47-53.
1809. Sharma KK, Vatsa M, Kalaivani M, Bhardwaj D. Mental health effects of domestic violence against women in Delhi: A community-based study. *J Family Med Prim Care.* 2019; 8:2522-7.
1810. Sharma KK, Vatsa M, Kalaivani M, Bhardwaj DN. Prevalence pattern & prediction of domestic violence against women in Delhi: A community-based study. *Int J Commun Med Public Health.* 2019; 6:3391-406.
1811. Sharma M, Gogia A, Deo SSV, Mathur S. Role of rebiopsy in metastatic breast cancer at progression. *Curr Probl Cancer.* 2019; 43:438-42.
1812. Sharma N, Arora T, Singhal D, Maharana PK, Garg P, Nagpal R, et al. Procurement, storage and utilization trends of eye banks in India. *Indian J Ophthalmol.* 2019; 67:1056-9.
1813. Sharma N, Dey A, Prasad K, Yadav A, Tyagi S. Regulation of Surrogacy in India: Need of the Hour. *RFP Indian J Hosp Adm.* 2019; 3:33-6.
1814. Sharma N, Hussain AY, Nagpal R, Rathi A, Maharana PK, Sinha R, al. Microkeratome-assisted ultrathin Descemet's stripping automated endothelial keratoplasty: A randomized trial comparing single-pass versus double-pass technique. *Indian J Ophthalmol.* 2019; 67:1289-94.
1815. Sharma N, Hussain AY, Nagpal R, Rathi A, Maharana PK, Sinha R, et al. Microkeratome-assisted ultrathin Descemet's stripping automated endothelial keratoplasty: A randomized trial comparing single-pass versus double-pass technique. *Indian J Ophthalmol.* 2019; 67:1289-94.
1816. Sharma N, Millo T. Mitochondrial DNA Typing for Forensic Identification. *J Forensic Chem Toxicol.* 2019; 5:55-65.
1817. Sharma N, Sahay P, Maharana PK, Kumar P, Ahsan S, Titiyal JS. Microscopic Integrated Intraoperative Optical Coherence Tomography -Guided DMEK in Corneas with poor visualization. *Clin Ophthalmol.* 2020; 14:643-51.
1818. Sharma N, Singhal D, Maharana PK, Vajpayee RB. Tuck-In Tenon Patch Graft in Corneal Perforation. *Cornea.* 2019; 38:951-4.
1819. Sharma N, Venugopal R, Maharana PK, Chaniyara M, Agarwal T, Pushker N, et al. Multistep Grading System for Evaluation of Chronic Ocular Sequelae in Patients with Stevens-Johnson Syndrome. *Am J Ophthalmol.* 2019; 203:69-77.
1820. Sharma N, Venugopal R, Singhal D, Maharana PK, Sangwan S, Satpathy G. Microbial Keratitis in Stevens-Johnson Syndrome: A Prospective Study. *Cornea.* 2019;38:938-42.
1821. Sharma P, Jain KG, Pandey PM, Mohanty S. In vitro degradation behaviour, cytocompatibility and hemocompatibility of topologically ordered porous iron scaffold prepared using 3D printing and pressureless microwave sintering. *Mater Sci Eng C Mater Biol Appl.* 2020; 106:110247.
1822. Sharma P, Sagar R, Deep R, Mehta M, Subbiah V. Assessment for familial pattern and association of polymorphisms in KIAA0319 gene with specific reading disorder in children from North India visiting a tertiary care centre: A case-control study. *Dyslexia.* 2020; 26:104-14.
1823. Sharma P, Satapathy A, Ray MD, Ramteke P. Xanthogranulomatous Orchitis Presenting as a Scrotal Mass in an Elderly Male: Malignancy or Mimicker? *Clin Med Insights Case Rep.* 2019; 12:1-4.
1824. Sharma P, Saxena R, Bhaskaran K, Dhiman R, Sethi A, Obedulla H. Augmented medial transposition of split lateral rectus in the management of synergistic divergence. *J AAPOS.* 2020; 24:37-40.
1825. Sharma P, Zaheer S, Goyal S, Ahluwalia C, Goyal A, Bhuyan G, et al. Clinicopathological analysis of extracranial head and neck schwannoma: A case series. *J Cancer Res Ther.* 2019; 15:659-64.
1826. Sharma R, Bhasin S, Gaur P, Joshi D. A switching - based collaborative fractional order fuzzy logic controllers for robotic manipulators. *Appl Math Model.* 2019; 73:228-46.
1827. Sharma R, Borkar SA, Goda R, Kale SS. Which factors predict the loss of cervical lordosis following cervical laminoplasty? A review of various indices and their clinical implications. *Surg Neurol Int.* 2019;10:147.

- 1828.Sharma R, Borkar SA, Phalak M, Joseph SL, Kale SS. Cervical alignment following laminoplasty for cervical spondylotic myelopathy. *Surg Neurol Int.* 2019;10:156.
- 1829.Sharma R, Das P, Kairo A,Kale SS. Phenytoin-induced gingival overgrowth with predominant involvement of hard palate and floor of oral cavity- a case report and review of literature. *J Neurosci Rural Pract.* 2020; 11:349-52.
- 1830.Sharma R, Deepak KK, Gaur P, Joshi D. An optimal interval type-2 fuzzy logic control based closed-loop drug administration to regulate mean arterial blood pressure. *Comput Methods Program Biomed.* 2019; 18:105167.
- 1831.Sharma R, Garg K, Katiyar V, Tandon V, Agarwal D, Singh M, et al. The role of mifepristone in the management of meningiomas: A systematic review of literature. *Neurol India.* 2019;67:698-705.
- 1832.Sharma R, Garg K, Phalak M, Tandon V, Kumari K, Suri V, et al. Aspergilloma Masquerading as Meningioma: An Experience of Two Cases and Review of Literature. *Neurol India.* 2019; 67:1133-6.
- 1833.Sharma R, Goda R, Borkar SA, Katiyar V, Agarwal S, Kumar A, et al. Outcome following post-neurosurgical Acinetobacter meningitis: An Institutional Experience of 72 cases. *Neurosurg Focus.* 2019; 47:E8.
- 1834.Sharma R, Kumar A, Borkar SA. Mature Teratoma of Petrous Temporal Bone in an Infant: A Rare Clinical Entity. *World Neurosurg.* 2019;128:209-10.
- 1835.Sharma R. Continuous Metabolic Syndrome Score in Children: How Useful is it? *Indian J Pediatr.* 2019; 86:881-2.
- 1836.Sharma R. Use of Smartphone Applications in Children with Type 1 Diabetes Mellitus. *Indian J Pediatr.* 2019; 86:1087-8.
- 1837.Sharma R. Vital Need for Sex Education in Indian Youth and Adolescents. *Indian J Pediatr.* 2020; 87:255.
- 1838.Sharma S, Anwar MF, DindaA, Singhal M, Malik A. In Vitro and in Vivo Studies of pH-Sensitive GHK-Cu-Incorporated Polyaspartic and Polyacrylic Acid Superabsorbent Polymer. *ACS Omega.* 2019; 4:20118-28.
- 1839.Sharma S, Ganga K. Reply to: “Re: Establishing IR in Emerging Countries—A Skill Development Initiative”. *Journal of Vascular and Interventional Radiology.* 2019 Aug 1;30(8):1314
- 1840.Sharma S, Gupta DK. Tissue Engineering and Stem cell therapy in Pediatric Urology. *J Indian Assoc Pediatr Surg.* 2019; 24:237-46.
- 1841.Sharma S, Kumar P, Jain V, Logani A. Multiple idiopathic cervical root resorption: Diagnosis, clinical/radiographical/histological presentation, and rehabilitation - A 7-year follow-up case report. *J Conserv Dent.* 2019; 22:313-7.
- 1842.Sharma S, Sheoran A, Gupta KB, Yadav A, Varma-Basil M, Sreenivas V, et al. Quantitative detection of a cocktail of mycobacterial MPT64 and PstS1 in tuberculosis patients by real-time immuno-PCR. *Future Microbiol.* 2019; 14:223-33.
- 1843.Sharma SC, Panda S, Thakar A, Devaraja K. Petrous Bone Cholesteatoma: Radical Excision With An Endeavour For Hearing Preservation. *Indian J Otolaryngol Head Neck Surg.* 2019; 71:1572-9.
- 1844.Sharma SC, Sakthivel P, Singh S, Kumar D. Boyce’s sign in a large Zenker’s diverticulum. *Lancet Gastroenterol Hepatol.* 2019; 4:742.
- 1845.Sharma SK, Sharma R, Singh BK, Upadhyay V, Mani I, Tripathi M, et al. A prospective study of non-tuberculous mycobacterial disease among tuberculosis suspects at a tertiary care centre in north India. *Indian J Med Res.* 2019; 150:458-67.
- 1846.Sharma U, Agarwal K, Hari S, Mathur SR, Seenu V, Parshad R, et al. Role of diffusion weighted imaging and magnetic resonance spectroscopy in breast cancer patients with indeterminate dynamic contrast enhanced magnetic resonance imaging findings. *Magn Reson Imaging.* 2019; 61:66-72.
- 1847.Sharma U, Jagannathan NR. Breast Cancer Metabolomics Using NMR. *Methods Mol Biol.* 2019; 2037:195-213.
- 1848.Sharma U, Jagannathan NR. In vivo MR spectroscopy for breast cancer diagnosis. *BJR Open.* 2019; 1:20180040.
- 1849.Sharma US, Yadav HN, Khare VM, Singh S, Gupta YK, Tiwari AK. Combination of Tribulus terrestris, Boerhaavia diffusa and Terminalia chebula reverses cisplatin-induced nephrotoxicity in wistar rats. *Pharmacologia.* 2019; 10:1-11.
- 1850.Sharma V, Bhardwaj N, Khurana S, Aggarwal R, Sharma N, MathurP. Impact of monocytic cytokines in polytrauma patients with orthopedics injures. *J Clin Orthopaed Trauma.* 2019;10:750-4.
- 1851.Sharma V, Rani K, Roychoudhury A, Chawla A, Nikolajeff F, Kumar S. Novel Insights into Regulation of Human Teeth Biomineralization: Deciphering the Role of Post-Translational Modifications in a Tooth Protein Extract. *Int. J Mol Sci.* 2019; 20:4035.
- 1852.Sharma V, Srinivasan A, Roychoudhury A, Rani K, Nikolajeff F, Kumar S, et al. Characterization of Protein Extracts from Different Types of Human Teeth and Insight in Biomineralization. *Sci Rep.* 2019; 9:9314.
- 1853.Sharma V,Bhardwaj N,Khurana S, Aggarwal R, Sharma N, Mathur P, et al. Impact of monocytic cytokines in polytrauma patients with orthopedic injuries. *J Clin Orthop Trauma.* 2019; 10:750-4.
- 1854.Sharma VK, Bhari N, Patra S, Parihar AS. Platelet-Rich Plasma Therapy for Androgenetic Alopecia. *Indian J*

- Dermatol. 2019; 64:417-9.
1855. Shashni AK, Sen S, Meel R, Sharma MC, Nag TC. Primary apocrine adenocarcinoma of caruncle in an elderly male. *Can J Ophthalmol.* 2019; 54:e123-5.
1856. Shashni AK, Sen S, Meel R, Sharma MC, Nag TC. Primary apocrine adenocarcinoma of caruncle in an elderly male. *Can J Ophthalmol.* 2019; 54:e123-5.
1857. Shaw M, Chandrashekhara SH, Sharma A, Kumar S. Inadvertent arterial placement of central venous catheter: Salvage using endovascular treatment. *BMJ Case Rep.* 2019;12:e231751.
1858. Shaw M, Khurana R, Kumar S, Ojha V. Imaging Depiction of Large Pericardial Metastasis From Osteosarcoma of Tibia. *Ann Thorac Surg.* 2019; 107:e355.
1859. Shaw M, Pandey NN, Sinha M, Kumar S. 'Auto-collateral' from the second diagonal branch to the left anterior descending artery. *BMJ Case Rep.* 2019; 12:e229586.
1860. Shaw M, Sharma A, Kumar S. Sinus of Valsalva Aneurysms: Basic Concepts and Imaging Evaluation Using Multidetector Computed Tomography. *J Thorac Imaging.* 2020; 35:W30-8.
1861. Sheemar A, Temkar S, Takkar B, Sood R, Sinha S, Chawla R, et al. Ultra-Wide Field Imaging Characteristics of Primary Retinal Vasculitis: Risk Factors for Retinal Neovascularization. *Ocul Immunol Inflamm.* 2019; 27:383-8.
1862. Shekhar S, Dey S. Induction of p73,  $\Delta 133p53$ ,  $\Delta 160p53$ , pAKT lead to neuroprotection via DNA repair by 5-LOX inhibition. *Mol Biol Rep.* 2019; 47:269-74.
1863. Shewade HD, Gupta V, Ghule VH, Nayak S, Satyanarayana S, Dayal R, et al. Impact of Advocacy, Communication, Social Mobilization and Active Case Finding on TB Notification in Jharkhand, India. *J Epidemiol Glob Health.* 2019; 9:233-42.
1864. Shewade HD, Gupta V, Satyanarayana S, Kumar S, Pandey P, Bajpai UN, et al. Active versus passive case finding for tuberculosis in marginalised and vulnerable populations in India: comparison of treatment outcomes. *Glob Health Action.* 2019; 12:1656451
1865. Shewade HD, Gupta V, Satyanarayana S, Pandey P, Bajpai UN, Tripathy JP, et al. Patient characteristics, health seeking and delays among new sputum smear positive TB patients identified through active case finding when compared to passive case finding in India. *PLoS One* 2019; 14:e0213345.
1866. Shivasabesan G, O'Reilly GM, Mathew J, Fitzgerald MC, Gupta A, Roy N, et al. Gruen, Biswadev Mitra on behalf of the Australia-India Trauma Systems Collaboration(AITSC). Establishing a Multicenter Trauma Registry in India: An Evaluation of Data Completeness. *World J Surg.* 2019; 43:2426-37.
1867. Shree R, Madhaw G, Manchanda R, Radhakrishnan DM, Kumar N. Steroid responsive catatonia: A case of Hashimoto's encephalopathy. *Ann Mov Disord.*2020;3:51-5.
1868. Shrikhande SV, Barreto SG, Sirohi B, Bal M, Shrimali RK, Chacko RT...Rath GK, et al. Indian Council of Medical Research consensus document for the management of pancreatic cancer. *Indian J Med Paediatr Oncol.* 2019;40:9-14.
1869. Shrivastava N, Singh P, Nayak B, Garg B. The Spectrum of Clinical and Urodynamic Findings in Patients with Spinal Tuberculosis Exhibiting Lower Urinary Tract Symptoms, before and after Spinal Surgical Intervention with Antitubercular Treatment: A Prospective Study. *Asian Spine J.* 2019; 13:615-20.
1870. Shrivastava P, Garg H, Bhat M, Dinda A, Kumar R. Urinary prostate-specific antigen and microseminoprotein-beta levels in men with and without prostate cancer: A prospective cohort study. *Indian J Urol.* 2020; 36:50-5.
1871. Shrivastava P, Gupta DK. Emergence of Research Data Literacy with Special Reference to India. *SRELS J Inf Manage.* 2019; 56:112-8.
1872. Shroff M, Gupta AK. Enhancing treatment and care of children using Pediatric Radiology. *Indian J Pediatr.* 2019; 86:921-2.
1873. Shubham S, Dhochak N, Singh A, Patel SK, Chakrabarty B, Sankar J, et al. Polyneuropathy in Critically Ill Mechanically Ventilated Children: Experience From a Tertiary Care Hospital in North India. *Pediatr Crit Care Med.* 2019; 20:826-31
1874. Shukla D, Mandal PK, Tripathi M, Vishwakarma G, Mishra R, Sandal K. Quantitation of in vivo brain glutathione conformers in cingulate cortex among age-matched control, MCI, and AD patients using MEGA-PRESS. *Hum Brain Mapp.* 2020;41:194-217.
1875. Shukla G, Gupta A, Chakravarty K, Joseph A, Ravindranath A, Mehta M, et al. Rapid Eye Movement (REM) Sleep Behaviour Disorder and REM Sleep without Atonia in the Young. *Can J Neurol Sci.* 2019; 47:100-8.
1876. Shukla P, Vashist P, Senjam SS, Gupta V. Evaluation of a training program on primary eye care for an Accredited Social Health Activist (ASHA) in an urban district. *Indian J Ophthalmol.* 2020; 68:356.
1877. Shukla RK, Kapoor I, Mahajan C, Prabhakar H. Colistin for Treatment of Multidrug Resistant Central Nervous System Infection: A Triple Route Therapy! *Indian J Crit Care Med.* 2019;23:287.

1878. Shukla RK, Vattipalli S, Chaturvedi A, Indu K. Videolaryngoscopy: A Discrete Approach to Awake Intubation! *J Neuroanesthesiol Crit Care*. 2019; 06:48.
1879. Siddharth V, Gupta SK, Agarwala S, Satpathy S, Goel P. Outcome of Care Provided in Neonatal Surgery Intensive Care Unit of a Public Sector Tertiary Care Teaching Hospital of India. *J Indian Assoc Pediatr Surg*. 2019; 24:257-63.
1880. Siddharth V, Gupta SK, Satpathy S, Agarwala S, Lodha R. Structure and organization of intensive care units in a tertiary care hospital of north India: A comparative study against national and international guidelines. *Saudi Crit Care J*. 2019; 3:109-15.
1881. Sidharth, Sharma S, Jain P, Mathur SB, Malhotra RK, Kumar V. Status Epilepticus in Pediatric patients Severity Score (STEPSS): A clinical score to predict the outcome of status epilepticus in children- a prospective cohort study. *Seizure*. 2019; 71:328-32.
1882. Sihota R, Kamble N, Sharma AK, Bhari A, Gupta A, Midha N, et al. 'Van Herick Plus': a modified grading scheme for the assessment of peripheral anterior chamber depth and angle. *Br J Ophthalmol*. 2019; 103:960-5.
1883. Sihota R, Selvan H, Sharma A, Gupta A, Gupta V, Dada T, et al. Long-term evaluation of ocular hypertension with primary angle closure and primary open angles. *Int Ophthalmol*. 2019; 39:803-12.
1884. Sihota R, Selvan H, Sidhu T, Kamble N, Angmo D, Yadav S, et al. Clinical and ASOCT evaluations of 'bleb-sparing epithelial exchange' in paediatric and adult dysfunctional blebs over 5 years. *Graefes Arch Clin Exp Ophthalmol*. 2020; 258:367-77.
1885. Sihota R, Sen S, Mohanty S, Ahmad M, Ravi A Gupta V, et al. Effect of intracameral human cord blood-derived stem cells on lasered rabbit trabecular meshwork. *Int Ophthalmol*. 2019; 39:2757-66.
1886. Sihota R, Sen S, Mohanty S, Ahmad M, Ravi A, Gupta V, et al. Effect of intracameral human cord blood-derived stem cells on lasered rabbit trabecular meshwork. *Int Ophthalmol*. 2019; 39:2757-66.
1887. Sikidar A, Kalyanasundaram D. An open-source plugin for OpenSim® to model the non-linear behaviour of dense connective tissues of the human knee at variable strain rates. *Comput Biol Med*. 2019; 110:186-95.
1888. Sikka K, Singh CA, Agrawal R, Kumar R, Thakar A, Sharma SC, et al. Acquired non-malignant cervical trachea-esophageal fistula: a case series. *Indian J Otolaryngol Head Neck Surg*. 71:286-90.
1889. Sindhu D, Jorwal P, Gupta N, Xess I, Singh G, Soneja M, et al. Clinical spectrum and outcome of hospitalized patients with invasive fungal infections: a prospective study from a medical ward/intensive care unit of a teaching hospital in North India. *Infez Med*. 2019; 27:398-402.
1890. Sindhu D, Ray A, Kumar R, Kaur K, Sharma MC, Sinha S, et al. An Unusual Case Report and Systematic Review of Literature. *Indian J Occup Environ Med*. 2019; 23:141-5.
1891. Singal AK, Karthikeyan G. Aspirin for primary prevention: Is this the end of the road? *Indian Heart J*. 2019; 71:113-7.
1892. Singal AK, Ramakrishnan S, Bhargava B. An Historic ECG From the Past. *Circulation*. 2019; 140:1437-40.
1893. Singh A, Debnath A, Cai K, Bagga P, Haris M, Hariharan H, et al. Evaluating the feasibility of creatine-weighted CEST MRI in human brain at 7 T using a Z-spectral fitting approach. *NMR Biomed*. 2019; 32:e4176.
1894. Singh A, Gupta N, Ganger A, Singh D, Kashyap S, Tandon R. Sutureless Customized Lamellar Corneal Transplant in a Patient with Gelatinous Drop-Like Corneal Dystrophy. *Exp Clin Transplant*. 2019; 17:844-8.
1895. Singh A, Irugu DVK, Sikka K, Verma H, Thakar A. Study of Sigmoid Sinus Variations in the Temporal Bone by Micro Dissection and its Classification—A Cadaveric Study. *Int Arch Otorhinolaryngol*. 2019; 23:e311-6.
1896. Singh A, Kumar R, Bhalla AS, Goyal A, Sagar P. Transverse Cervical Artery Pseudoaneurysm: An Unusual Delayed Complication of Radical Neck Dissection. *Indian J Otolaryngol Head Neck Surg*. 2019; 71(Suppl 1):348-51.
1897. Singh A, Kumar R, Sagar P. Herald Cell: The Gateway to Posterior Tympanotomy - A Cadaveric Study. *Indian J Otolaryngol Head Neck Surg*. 2019; 71:517-9.
1898. Singh A, Pramanik A, Acharya P, Makharia GK. Non-Invasive Biomarkers for Celiac Disease. *J Clin Med*. 2019; 8:885.
1899. Singh A, Singh PK, de Groot T, Kumar A, Mathur P, Tarai B, et al. Emergence of clonal fluconazole-resistant *Candida parapsilosis* clinical isolates in a multicentre laboratory-based surveillance study in India. *J Antimicrob Chemother*. 2019; 74:1260-8.
1900. Singh A, Sinha R, Aravindan A, Kumar KR, Datta PK. Comparison of low-fresh gas flow technique to standard technique of sevoflurane induction in children-A randomized controlled trial. *Paediatr Anaesth*. 2019; 29:304-9.
1901. Singh A, Vanathi M, Kishore A, Gupta N, Tandon R. Evaluation of strip meniscometry, tear meniscus height and depth in the diagnosis of dry eye disease in asian Indian eyes. *Ocul Surf*. 2019; 17:747-52.
1902. Singh A, Verma AK, Das P, Prakash S, Pramanik R, Nayak B, et al. Non-immunological biomarkers for assessment of villous abnormalities in patients with celiac disease. *J Gastroenterol Hepatol*. 2020; 35:438-45.

1903. Singh AD, Maitra S, Singh N, Tyagi P, Ashraf A, Kumar R, et al. Systematic review with meta-analysis: impact of baseline resistance-associated substitutions on the efficacy of glecaprevir/pibrentasvir among chronic hepatitis C patients. *Aliment Pharmacol Ther.* 2020; 51:490-504.
1904. Singh AP, Ramana G, Bajaj T, Singh V, Dwivedi S, Behari M, et al. Elevated Serum SIRT 2 May Differentiate Parkinson's Disease From Atypical Parkinsonian Syndromes. *Front Mol Neurosci.* 2019; 12:129.
1905. Singh CA, Sakthivel P. Rhinosporidiosis. *N Engl J Med.* 2019; 380:1359.
1906. Singh D, Aggarwal S, Vyas S. Laparoscopic repair of recurrent traumatic diaphragmatic hernia. *J Minim Access Surg.* 2019; 16:166-8.
1907. Singh D, Ganger A, Gupta N, Vanathi M, Khadgawat R, Tandon R. Primary Bullous Keratopathy in a Patient With Werner Syndrome Treated With Corneal Transplant. *Exp Clin Transplant.* 2019; 17:699-701.
1908. Singh D, Kumar V, Das CJ, Singh A, Mehndiratta A. Segmentation of prostate zones using probabilistic atlas-based method with diffusion-weighted MR images. *Comput Methods Program Biomed.* 2020; 196:105572.
1909. Singh D, Pol MM, Joshi G, Sumandatta AR, Singh BP, Niharika. Laparoscopic cholecystectomy in Situs Inversus Totalis (SIT): Case Series. *Int J Sci Res.* 2019; 8:26-7.
1910. Singh D, Reeta KH, Sharma U, Jagannathan NR, Dinda AK, Gupta YK. Neuro-protective effect of monomethyl fumarate on ischemia reperfusion injury in rats: Role of Nrf2/HO1 pathway in peri-infarct region. *Neurochem Int.* 2019; 126:96-108.
1911. Singh G, Pradeep I, Agarwal S, Barwad A, Dinda A. Paraffin Immunofluorescence: A Role Beyond Kidney Biopsies. *Appl Immunohistochem Mol Morphol.* 2019; 27:773-5.
1912. Singh G, Sharma M, Krishnan A, Dua T, d'Aniello F, Manzoni S, et al. Models of community-based primary care for epilepsy in low- and middle-income countries. *Neurology.* 2020; 94:165-75.
1913. Singh G, Singh SK, Nalwa A, Singh L, Pradeep I, Barwad A, et al. Glomerular C4d Staining Does Not Exclude a C3 Glomerulopathy. *Kidney Int Rep.* 2019; 4:698-709.
1914. Singh G, Swamy A, Kumari K, Brijwal M, Damle NA, Das CJ, et al. The Case Mass in nonfunctioning first renal allograft in a recipient of 2 transplant kidneys. *Kidney Int.* 2019; 95:1001.
1915. Singh J, Verma R, Kumar V, Kaur R. Very-late onset mania episode: case report and review of cases over 75 years of age. *Int J Contemp Med Res.* 2019; 6:1120-2.
1916. Singh K, Khattar M, Kumar C. Disagreement: Should the duration of primary hyperparathyroidism impact guidelines for evaluation and treatment? *Surgery.* 2019; 166:949-50.
1917. Singh L, Saini N, Pushker N, Bakhshi S, Sen S, Nag TC, et al. Mutational Analysis of the Mitochondrial DNA Displacement-Loop Region in Human Retinoblastoma with Patient Outcome. *Pathol Oncol Res.* 2019; 25:503-12.
1918. Singh L, Subbiah AK, Singh G, Bagchi S, Dinda AK, Agarwal SK. Monoclonal Gammopathy of renal significance with heavy chain deposition disease in renal allograft: challenges in the diagnosis and management. *Transpl Int.* 2019; 32:769-70.
1919. Singh M, Garg K. Musician's Dystonia - What a Neurosurgeon Can Offer! *Neurol India.* 2020; 68:152-3.
1920. Singh M, Garg K. Osteoporosis in Parkinson's disease - Need of screening in early stages. *Neurol India.* 2020; 68:401-2.
1921. Singh M, Sankar J, Kumar A, Kumar UV, Lodha R, Kabra SK. Predictors of Mortality in Children Admitted to the Pediatric Intensive Care Unit with Acute Gastroenteritis with Severe Dehydration. *Indian J Pediatr.* 2019; 86:1142-5.
1922. Singh M. Surgery for Vestibular Schwannoma following Stereotactic Radiosurgery. *Neurol India.* 2019; 67:1279.
1923. Singh MB, Patterson V. Let the best not be the enemy of the good! *Epileptic Disord.* 2020; 22:125-6.
1924. Singh MK, Singh L, Chosdol K, Pushker N, Meel R, Bakhshi S, et al. Clinicopathological relevance of NFκB1/p50 nuclear immunoreactivity and its relationship with the inflammatory environment of uveal melanoma. *Exp Mol Pathol.* 2019; 111:104313.
1925. Singh MK, Singh L, Chosdol K, Pushker N, Saini N, Meel R, et al. Differential expression of p52 and RelB proteins in the metastatic and non-metastatic groups of uveal melanoma with patient outcome. *J Cancer Res Clin Oncol.* 2019; 145:2969-82.
1926. Singh MK, Singh L, Pushker N, Meel R, Chosdol K, Sen S, et al. Does increased activation of NFκB1/p50 associated with the inflammatory environment of uveal melanoma? *Exp Mol Pathol.* 2019; 111:104313.
1927. Singh MK, Singh L, Pushker N, Saini N, Meel R, Chosdol K, et al. Identification of canonical NFκB (C-NFκB) pathway in uveal melanoma and their relation with patient outcome. *Clin Exp Metastasis.* 2019; 36:271-90.
1928. Singh N, Ahuja V, Sachdev V, Upadhyay AD, Goswami R, Ramakrishnan L, et al. Antioxidants for Pancreatic Functions in Chronic Pancreatitis: A Double-blind Randomized Placebo-controlled Pilot Study. *J Clin Gastroenterol.* 2020; 54:284-93.

1929. Singh N, Cheluvvaraju R, Kumar S.A Prospective Randomized Controlled Trial Showing Efficacy of Luteal Phase Low Molecular Weight Heparin in Fresh Non-donor IF/ICSI Cycles in Women with Previous Implantation Failures. *Int J Reprod Contracept Obstet Gynecol.* 2019; 8:4163-8.
1930. Singh N, Davis A, Kumar S, Kriplani A. Effect of intravenous intralipid on implantation rate in women with previous implantation failure after IVF/ICSI: a randomised controlled trial. *Eur J Obstet Gynecol Reprod Biol.* 2019; 240:45-51.
1931. Singh N, Dogra Y, Saini M, Govindarajan M. Severe early-onset ovarian hyperstimulation syndrome with liver dysfunction in an IVF segmentation cycle. *BMJ Case Rep.* 2020;13:e233379.
1932. Singh N, Girish B, Malhotra N, Mahey R, Perumal V. Does double dose of recombinant human chorionic gonadotropin for final follicular maturation in in vitro fertilization cycles improve oocyte quality: A prospective randomized study. *J Hum Reprod Sci.* 2019; 12:310-5.
1933. Singh N, Ray S, Srivastava AK. Clinical mimickers of amyotrophic lateral sclerosis-conditions we cannot afford to miss. *Ann Indian Acad Neurol.* 2019; 22:351.
1934. Singh N, Saini M, Anand S, Kumar N, Srivastava MVP, Mehndiratta A. Robotic Exoskeleton for Wrist and Fingers Joint in Post-Stroke Neuro-Rehabilitation for Low- Resource Settings. *IEEE Trans Neural Syst Rehabil Eng.* 2019; 27:2369-77.
1935. Singh N, Saini M, Kumar N, Deepak KK, Anand S, Srivastava MV, et al. Time-frequency analysis of motor-evoked potential in patients with stroke vs healthy subjects: a transcranial magnetic stimulation study. *SN Compr Clin Med.* 2019; 1:764-80.
1936. Singh N, Saini M, Kumar N, Deepak KK, Anand S, Srivastava MVP, et al. Time-Frequency Analysis of Motor-Evoked Potential in Patients with Stroke vs Healthy Subjects: a Transcranial Magnetic Stimulation Study. *SN Compreh Clin Med.* 2019; 10:764-80.
1937. Singh N, Shekhar B, Mohanty S, Kumar S, Seth T, Girish B. Autologous bone marrow-derived stem cell therapy for Asherman's syndrome and endometrial atrophy: A 5-year follow-up study. *J Human Reprod Sci.* 2020; 13:31-7.
1938. Singh N, Sonika U, Moka P, Sharma B, Sachdev V, Mishra SK, et al. Association of endotoxaemia & gut permeability with complications of acute pancreatitis: Secondary analysis of data. *Indian J Med Res.* 2019; 149:763-70.
1939. Singh NK, Sharma V, Trikha V, Gamanagatti S, Roy A, Balawat AS, et al. Is PFNA-II a better implant for stable intertrochanteric fractures in elderly population? A prospective randomized study. *J Clin Orthop Trauma.* 2019; 10(Suppl 1):S71-6.
1940. Singh P, Arora A, Strand TA, Leffler DA, Mäki M, Kelly CP, et al. Diagnostic Accuracy of Point of Care Tests for Diagnosing Celiac Disease: A Systematic Review and Meta-Analysis. *J Clin Gastroenterol.* 2019; 53:535-42.
1941. Singh P, Gandhi S, Malhotra RK, Seth A. Impact of Using Different Growth References on Interpretation of Anthropometric Parameters of Children Aged 8-15 Years. *Indian Pediatr.* 2020;57:124-8.
1942. Singh PK, Agrawal M, Sawarkar D, Kumar A, Verma S, Doddamani R, et al. Management of neglected complex hangman's fracture by reforming the C2 pedicle: new innovative technique of motion preservation at the C1-2 joint in 2 cases. *J Neurosurg Spine.* 2020 Feb 7:1-8.
1943. Singh PK, Yadav VK, Kalia M, Sharma D, Pandey D, Agarwal V. Pseudomonas aeruginosa quorum-sensing molecule N-(3-oxo-dodecanoyl)-L-homoserine lactone triggers mitochondrial dysfunction and apoptosis in neutrophils through calcium signaling. *Med Microbiol Immunol.* 2019; 208:855-68.
1944. Singh R, Chouhan R, Pandia MP, Lamsal R, Rath GP, Rajagopalan V, et al. Artificial Intelligence in Neuroanaesthesiology and Neurocritical Care Review Article. *J Neuroanaesthesiol Crit Care.* 2020;7:11-8.
1945. Singh R, Gupta N, Vanathi M, Tandon R. Corneal transplantation in the modern era. *Indian J Med Res.* 2019; 150:7-22.
1946. Singh RP, Pandey PM, Mridha AR, Joshi T. Experimental investigations and statistical modeling of cutting force and torque in rotary ultrasonic bone drilling of human cadaver bone. *Proc Inst Mech Eng H.* 2020; 234:148-62.
1947. Singh S, Balhara YPS, Gupta P, Christodoulou NG. Primary and secondary prevention strategies against illicit drug use among adults aged 18-25: a narrative review. *Australas Psychiatry.* 2020;28:84-90.
1948. Singh S, Bhari N, Agrawal S, Verma KK. Rapid response of Kasabach-Meritt phenomenon to a combination of oral prednisolone and sirolimus. *Indian J Dermatol Venereol Leprol.* 2019; 85:348.
1949. Singh S, Bhari N, Jassi R. Kasabach-Merritt phenomenon. *Indian J Paediatr Dermatol.* 2019; 20:295-301.
1950. Singh S, Dahiya N, Singh AB, Kumar R, Balhara YPS. Gaming disorder among medical college students from India: Exploring the pattern and correlates. *Ind Psychiatry J.* 2019;28:107-14.
1951. Singh S, Karwasra R, Kalra P, Nayak D, Khurana A, Manchanda RK. Attenuation of complete Freund's adjuvant-induced arthritis by different dilutions of Eupatorium perfoliatum and Crotalus horridus and their safety evaluation. *Indian J Res Homeopathy.* 2019; 13:107-17.
1952. Singh S, Kedia S, Singh RH, Varshney G. Letter to the Editor Regarding "One and Done: Multimodal Treatment



- of Pediatric Cerebral Arteriovenous Malformations in a Single Anesthesia Event". *World Neurosurg.* 2020;133:440.
1953. Singh S, Kumar N, Verma R, Nehra A. The safety and efficacy of adjunctive 20-Hz repetitive transcranial magnetic stimulation for treatment of negative symptoms in patients with schizophrenia: A double-blinded, randomized, sham-controlled study. *Indian J Psychiatry.* 2020; 62:21-9.
1954. Singh S, Kumar S, Deep R. Patients with deliberate self-harm attended in emergency setting at a tertiary care hospital: A 13-month analysis of clinical-psychiatric profile. *Int J Psychiatry Med.* 2019; 54:363-76.
1955. Singh S, Kumar S, Mahal P, Vishwakarma A, Deep R. Self-reported medication adherence and its correlates in a lithium-maintained cohort with bipolar disorder at a tertiary care centre in India. *Asian J Psychiatr.* 2019; 46:34-40.
1956. Singh S, Madan R, Singh MK, Thakar A, Sharma SC. Head-and-neck paragangliomas: An overview of 54 cases operated at a tertiary care center. *South Asian J Cancer.* 2019; 8:237.
1957. Singh S, Naveed S, Mehta N, Arava S, Bhari N. Firm asymptomatic nodule on the epigastrium in an adult male. *Indian J Dermatol Venereol Leprol.* 2019; 85:439.
1958. Singh S, Singh A, Mallick S, Arava S, Ramam M. Lichenoid pseudovesicular papular eruption on nose: A papular facial dermatosis probably related to actinic lichen nitidus or micropapular polymorphous light eruption. *Indian J Dermatol Venereol Leprol.* 2019; 85:597-604.
1959. Singh S, Singh L, Ranjan R, Singh MK, Thakar A, Sharma SC. Correlating the treatment outcome with tumor staging, grading, and various treatment modalities in patients with esthesioneuroblastoma. *South Asian J Cancer.* 2019; 8:124.
1960. Singh S, Singh V, Goel P, Maitra S, Rawat JD. Randomised Controlled Trial to Compare the Efficacy of Epidural Analgesia versus Intravenous Analgesia during Thoracotomy for Repair of Oesophageal Atresia. *J Clin Diagnos Res.* 2019; 13:UC01-5.
1961. Singh S, Taneja N, Kaul S, Arava S, Bhari N. Aleukemic leukemia cutis mimicking urticaria pigmentosa in a patient of T-cell acute lymphoblastic leukemia. *Indian J Dermatol Venereol Leprol.* 2020; 86:105.
1962. Singh S, Verma Y, Pandey P, Singh UB. Granulomatous hepatitis by *Nocardia* species: An unusual case. *Int J Infect Dis.* 2019; 81:97-9.
1963. Singh SP, Sahu MK, Seth S, Hote MP. The satisfaction levels of heart transplant recipients seeking post transplant medical care at a tertiary care government hospital: A questionnaire-based study. *J Pract Cardiovasc Sci.* 2019; 5:178-85.
1964. Singh TD, Song J, Kim J, Chin J, Ji HD, Lee JE, et al. A novel orally active inverse agonist of estrogen-related receptor gamma (ERR $\gamma$ ), DN200434, enhances sodium iodide symporter function in anaplastic thyroid cancer model. *Clin Cancer Res.* 2019; 25:5069-81.
1965. Singh U, Agarwal R, Dhar M, Biswas S. Emergency surgery for a ruptured ovarian cyst in an anticoagulated patient with artificial mitral valve and massive haemorrhage: Maintaining a delicate balance. *Indian J Anaesth.* 2019; 63:499-501.
1966. Singh V, Guleria P, Malik PS, Mohan A, Arava S, Ray R. Epidermal growth factor receptor (EGFR), KRAS and BRAF mutations in lung adenocarcinomas: A study from India. *Curr Prob Cancer.* 2019; 43:391-401.
1967. Singh V, Guleria P, Malik PS, Mohan A, Thulkar S, Pandey RM, et al. Epidermal growth factor receptor (EGFR), KRAS, and BRAF mutations in lung adenocarcinomas: A study from India. *Curr Probl Cancer.* 2019; 43:391-401
1968. Singh V, Kabra SK. Advances in Tuberculosis: Diagnostics. *Indian J Pediatr.* 2019; 86:439-40.
1969. Singh VK, Yadav D, Garg PK. Diagnosis and management of chronic pancreatitis: A Review. *JAMA.* 2019; 322:2422-34.
1970. Singh VV, Gupta S, Sarkar S, Chatterjee B. Problematic dicyclomine use: A case report and narrative review. *Asian J Psychiatr.* 2020;48:101891.
1971. Singh Y, Anand RK, Gupta S, Chowdhury SR, Maitra S, Baidya DK, et al. Role of IVC collapsibility index to predict post spinal anaesthesia hypotension in pregnant women undergoing LSCS: A prospective observational study. *Saudi J Anaesth.* 2019; 13:312-7.
1972. Singh Y, Anand RK, Gupta S, Chowdhury SR, Maitra S, Baidya DK, et al. Role of IVC collapsibility index to predict post spinal anaesthesia hypotension in pregnant women undergoing LSCS: A prospective observational study. *Saudi J Anaesth.* 2019; 13:312-7.
1973. Singh Y, Mirdha BR, Guleria R, Kabra SK, Mohan A, Chaudhry R, et al. Novel dihydropteroate synthase gene mutation in *Pneumocystis jirovecii* among HIV-infected patients in India: Putative association with drug resistance and mortality. *J Glob Antimicrob Resist.* 2019; 17:236-9.
1974. Singh Y, Anand RK, Gupta S, Chowdhury SR, Maitra S, BaidyaDK, et al. Role of IVC collapsibility index to predict post spinal hypotension in pregnant women undergoing caesarean section. An observational trial. *Saudi J Anaesth.* 2019; 13:312-7.

1975. Singh, N, Saini M, Anand S, Kumar N, Srivastava MVP, Mehndiratta A. Robotic Exoskeleton for Wrist and Fingers Joint in Post-Stroke Neuro-Rehabilitation for Low-Resource Settings. *IEEE Trans Neural Sys Rehabil Eng.* 2019; 27:2369-77.
1976. Singhal A, Khangembam BC, Seth S, Patel C. Equilibrium Radionuclide Angiography in Evaluation of Left Ventricular Mechanical Dyssynchrony in Patients with Dilated Cardiomyopathy: Comparison with Electrocardiographic Parameters and Speckle-Tracking Echocardiography. *Indian J Nucl Med.* 2019; 34:88-95
1977. Singhal D, Maharana PK, Sharma N. Comment on: "Effect of Riboflavin Solution With Hydroxypropyl Methylcellulose and Eyelid Speculum on Pachymetry Changes During Accelerated Collagen Crosslinking". *Cornea.* 2019; 38:e57-8.
1978. Singhal D, Roop P, Maharana PK. Intrastromal cyst in Terrien's marginal degeneration. *Indian J Ophthalmol.* 2019; 67:1475.
1979. Singhal D, Sahay P, Maharana PK, Amar SP, Titiyal JS, Sharma N. Clinical presentation and management of corneal fistula. *Br J Ophthalmol.* 2019; 103:530-3.
1980. Singhal D, Sahay P, Maharana PK, Raj N, Sharma N, Titiyal JS. Vernal Keratoconjunctivitis. *Surv Ophthalmol.* 2019; 64:289-311.
1981. Singhal M, Prabhaskar K, Babu G, Chaturvedi P, Kuriakose M, Birur P, ... Rath GK, et al. Indian clinical practice consensus guidelines for the management of laryngeal cancer. *Indian J Cancer.* 2020;57(Suppl):S19-21.
1982. Singhal R, Rathore D, Bhakuni T, Seth T, Guchhait P. Absence of Nonclassical Monocytes in Hemolytic Patients: Free Hb and NO-Mediated Mechanism. *J Immunol Res.* 2019; 2019:1409383.
1983. Singhal S, Dewangan GC, Bansal R, Upadhyay A, Dwivedi SN, Das CJ, et al. Sarcopenia and its association with geriatric syndromes and quality of life in older Indian outpatients – a cross sectional pilot observational study. *J Indian Acad Geriatr.* 2019; 15:66-74.
1984. Singhal S, Kumar S, Sharma DN, Mathur S. Peritoneal metastasis in Stage IB1 adenocarcinoma cervix: A rare entity. *J Cancer Res Ther.* 2019;15:1415-7.
1985. Singhal S, Singh S, Upadhyay A, Dwivedi S, Das CJ, Mohta S, et al. Serum creatinine and cystatin C-based index can be a screening biomarker for sarcopenia in older population. *Eur Geriatr Med.* 2019; 10:625-30.
1986. Singla N, Aggarwal A, Praneeth K, Ahuja C. Supergiant Cavernous Carotid Aneurysm: Successful Management with Ligation of Internal Carotid Artery and STA-MCA Bypass. *J Neurosci Rural Pract.* 2019;10:697-9.
1987. Singla R, Manjunath N, Sharma R, Mishra S. Neglected Traumatic Atlantoaxial Rotatory Dislocation in Adult: A Case Report. *Int J Spine Surg.* 2020;14:46-52.
1988. Singla R, Singh PK, Khanna G, Suri V, Agarwal D, Chandra PS, et al. An Institutional Review of 10 Cases of Spinal Hemangiopericytoma/Solitary Fibrous Tumor. *Neurol India.* 2020;68:448-53.
1989. Singla V, Aggarwal S, Singh B, Tharun G, Katiyar V, Bhambri A. Outcomes in Super Obese Patients Undergoing One Anastomosis Gastric Bypass or Laparoscopic Sleeve Gastrectomy. *Obes Surg.* 2019; 29:1242-7.
1990. Sinha A, Bhatia R. Physiological basis and mechanism of headache: Mini review. *J Med Sci Clin Res.* 2019; 7:408-13.
1991. Sinha M, Chandrashekhara SH, Sharma A. Aortopulmonary window with unreported interesting pulmonary artery intersection. *Asian Cardiovasc Thorac Ann.* 2020;28:71-2.
1992. Sinha M, Pandey NN, Parashar N, Ojha V, Sharma A. Subaortic diverticula in association with aortic stenosis. *Ann Thorac Surg.* 2020; 109:e151.
1993. Sinha M, Pandey NN, Rajagopal R, Sharma A. A rare configuration of a complete vascular ring with the ductus arteriosus arising from the aberrant subclavian artery. *BMJ Case Rep.* 2019; 12:e232668.
1994. Sinha M, Pandey NN, Sharma A. Anomalies of the Coronary Sinus and Its Tributaries: Evaluation on Multidetector Computed Tomography Angiography. *J Thorac Imaging.* 2020; 35:W60-7.
1995. Sinha M, Pandey NN, Sharma A. Dual coronary compression: An exceedingly rare complication secondary to annulo-aortic ectasia. *Ann Thorac Surg.* 20120; 109:e153.
1996. Sinha M, Pandey NN, Sharma A. Total anomalous pulmonary venous drainage to persistent left superior vena cava: a unique configuration. *BMJ Case Rep.* 2019; 12:e231898.
1997. Sinha M, Pandey NN, Sharma A. Unique subaortic course of anomalous left circumflex artery associated with double chamber right ventricle. *BMJ Case Rep.* 2019;12:e232664.
1998. Sinha R, Kumar KK, Kalaiyaran RK, Khanna P, Ray BR, Pandey RK, et al. Evaluation of performance of C-MAC® video laryngoscope Miller blade size zero for endotracheal intubation in preterm and expreterm infants: A retrospective analysis. *Indian J Anaesth.* 2019; 63:284-8.
1999. Sinha R, Pangasa N, Nethaji R, Maitra S. Successful use of C-MACTM Miller blade in a neonate with Goldenhar

- syndrome and cleft lip with cleft palate: a case report. *Acta Anaesth Belg*, 2019; 7039-41.
2000. Sinha R, Ray BR, Sharma A, Pandey RK, Punj J, Darlong V, et al. Comparison of the C-MAC video laryngoscope size 2 Macintosh blade with size 2 C-MAC D-Blade for laryngoscopy and endotracheal intubation in children with simulated cervical spine injury: A prospective randomized crossover study. *J Anaesthesiol Clin Pharmacol*. 2019; 35:509-14.
  2001. Sinha S, Seth T, Colah R, Bittles A. Haemoglobinopathies in India: estimates of blood requirements and treatment costs for the decade 2017–2026. *J Community Genet*. 2020; 11:39-45.
  2002. Sirohi B, Seth T, Rinki M, Mohan A, Guleria R, Rath GK, et al. Feasibility of lung cancer screening in developing countries: challenges, opportunities and way forward. *Transl Lung Cancer Res*. 2019; 8(Suppl 1):S106-21.
  2003. Sirohiya P, Kumar V, Yadav P, Bharti SJ. Ultrasound-guided glossopharyngeal nerve block at pharyngeal wall level in a patient with carcinoma tongue. *Indian J Palliat Care*. 2020; 26:140-1.
  2004. Sirohiya P, Vig S, Gulia A, Ratre BK, Bharti SJ, Kumar S. Peri-Operative Anesthetic Management for Low Lying Tracheal Tumor; It is all About Sharing the Surgical Field between Anesthesia and Surgical Teams: A Case Report. *J Anesth Clin Res*. 2019; 10:7.
  2005. Siroliya V, Jauhari P. Clinical Concepts in Infantile Onset Epilepsy. *Indian J Pediatr*. 2019; 86:669-70.
  2006. Sivanandan S, Jain K, Bahl M, Sahoo T, Mukherjee S, Gupta YG, et al. Issues, challenges and the way forward in conducting clinical trials among neonates—Investigators’ perspective. *J Perinatol*. 2019; 39(Suppl 1):20-30.
  2007. Sivashankari, Vatsa M, Gupta S, Dwivedi SN. Professionalism in Nursing on Indian Context: The Stakeholders’ View – A Phenomenological Study. *World J Adv Healthcare Res*. 2019; 3:80-85.
  2008. Sivashankari, Vatsa M, Gupta S. Nurse Caring Behaviors: A Survey of Recipients of Health Services’ Expectations. *World J Adv Healthcare Res*. 2019; 3:49-56.
  2009. Sivasubbu S, Scaria V, Khandpur S, et al. Genomics of rare genetic diseases—experiences from India. *Hum Genomics*. 2019; 14:52.
  2010. Smriti P, Thakar A, Sikka K, Sharma SC. Role of Sternomastoid Muscle Interposition In Concomitant Transoral Oncologic Resection and Neck Dissection. *Head Neck*. 2019; 41:2724-31.
  2011. Sneha A, Pawan T, Randeep G, Anant M, Mani K, Hadda V, et al. Acute Phase Proteins as Predictors of Survival in Patients with Acute Exacerbation of Chronic Obstructive Pulmonary Disease Requiring Mechanical Ventilation. *COPD*. 2020; 17:22-28.
  2012. Sokhal N, Khandelwal A, Sokhal S, Chaturvedi A. Ultrasound-guided peripheral artery cannulation: A priority, not an option. *Indian J Anaesth*. 2020;64:167-8.
  2013. Sokhal S, Goyal K, Sokhal N, Kumar N, Kedia S. Iatrogenic Seizures during Intraoperative Transcranial Motor-Evoked Potential Monitoring. *Asian J Neurosurg*. 2019; 14:967-9.
  2014. Sokhal S, Goyal K, Sokhal N, Kumar N, Kedia S. Intraoperative management of a patient for deep brain stimulation with severe dyskinesia and tremors: Ketamine to the rescue! *Asian J Neurosurg*. 2019;14:1275-6.
  2015. Sokhal S, Goyal K, Sokhal N, Kumar N, Kedia S. Iatrogenic Seizures during Intraoperative Transcranial Motor-Evoked Potential Monitoring. *Asian J Neurosurg*. 2019; 14:967-9.
  2016. Solanki SL, Mukherjee S, Agarwal V, Thota RS, Balakrishnan K, Shah SB, ... Garg R, et al. Society of Onco-Anaesthesia and Perioperative Care consensus guidelines for perioperative management of patients for cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (CRS-HIPEC). *Indian J Anaesth*. 2019;63:972-87.
  2017. Somasundaram Sivasankari, Vatsa Manju, Gupta Sandhya, Dwivedi SN. Professionalism in Nursing on Indian Context: The Stakeholders’ View- A Phenomenological Study. *World J Adv Healthc Res*. 2019; 3:80-5.
  2018. Sonai MK, Rastogi S, Madhusudhan KS, Gupta SD, Das P. Clear cell sarcoma like tumor of gastrointestinal tract: Experience of three cases and review of literature. *Indian J Pathol Microbiol*. 2020; 63:90-5.
  2019. Soni KD, Arasu T, Aggarwal R, Darlong V. A unique way of securing the tracheostomy tube in a case of facial and neck burns. *J Anaesthesiol Clin Pharmacol*. 2019;35:412-3.
  2020. Soni KD, Mahindrakar S, Kaushik G, Kumar S, Sagar S, Gupta A. Do the Care Process and Survival Chances Differ in Patients Arriving to a Level 1 Indian Trauma Center, during-Hours and after- Hours? *J Emerg Trauma Shock*. 2019;12:128-34.
  2021. Soni P, Punj J. Regarding the paper published ‘Ultrasound-guided lumbar transforaminal injection through interfacet approach’. *Saudi J Anaesth*. 2019; 13:398-9.
  2022. Soni S, Agarwal A, Singh A, Gupta V, Khadgawat R, Chaturvedi PK, et al. Prevalence of thyroid autoimmunity in first-degree relatives of patients with celiac disease. *Indian J Gastroenterol*. 2019; 38:450-5.
  2023. Soni S, Agarwal A, Singh A, Gupta V, Khadgawat R, Chaturvedi PK, et al. Prevalence of thyroid autoimmunity in first-degree relatives of patients with celiac disease. *Indian J Gastroenterol*. 2019;38:450-5.

2024. Soni S, Muthukrishnan SP, Samanchi R, Sood M, Kaur S, Sharma R. Pre-trial and pre-response EEG microstates in schizophrenia: An endophenotypic marker. *Behav Brain Res.* 2019;371:111964
2025. Sood A, Ahuja V, Kedia S, Midha V, Mahajan R, Mehta V et al. Diet and inflammatory bowel disease: The Asian Working Group guidelines. *Indian J Gastroenterol.* 2019; 38:220-46.
2026. Sood M, Krishnan V, Chadda RK, K K, Kukreti R. Psychopathology of Schizophrenia in South Asia: Has there been a change over the last few decades? *Asian J Psychiatr.* 2019;39:80-3.
2027. Sood M, Mahapatra A, Chadda RK. Use of mobile phones by patients with serious mental illness attending a general hospital psychiatric outpatient service in India. *Asian J Psychiatr.* 2019; 45:61-2.
2028. Sood S, Agarwal SK, Singh R, Gupta S, Sharma VK. In vitro assessment of gentamicin and azithromycin-based combination therapy against *Neisseria gonorrhoeae* isolates in India. *J Med Microbiol.* 2019; 68:555-9.
2029. SPROUT Investigators. Risk Factors for Mortality in Pediatric Postsurgical versus Medical Severe Sepsis. *J Surg Res.* 2019; 242:100-10.
2030. Sreenath K, Chaudhry R, Vinayaraj EV, Thakur B. Antibiotic susceptibility of environmental *Legionella pneumophila* isolated in India. *Future microbiol.* 2019; 14:661-9.
2031. Sreenivasan SA, Garg K, Nambirajan A, Suri V, Singh M, Chandra PS. Rosette-forming glioneuronal tumour of dorsolumbar spinal cord. *Childs Nerv Syst.* 2019;35:1277-9.
2032. Sreenivasan SA, Garg K, Nambirajan A, Suri V, Singh M, Sarat Chandra P. Rosette-forming glioneuronal tumour of dorsolumbar spinal cord. *Childs Nerv Syst.* 2019; 35:1277-9.
2033. Srinivasan R, Rekhi B, Rajwansi A, Pathuthara S, Mathur S, Jain D, et al. Indian Academy of Cytologists Guidelines for Collection, Preparation, Interpretation, and Reporting of Serous Effusion Fluid Samples. *J Cytol.* 2020; 37:1-11.
2034. Srivastava A, Sharma R, Goyal V, Chaudhary S, Sood SK, Kumaran SS. Saccadic Eye Movements in Young-Onset Parkinson's Disease - A BOLD fMRI Study. *Neuroophthalmology.* 2019; 44:89-99.
2035. Srivastava A, Singh P, Gupta H, Kaur H, Kanojia N, Guin D, et al. Systems Approach to Identify Common Genes and Pathways Associated with Response to Selective Serotonin Reuptake Inhibitors and Major Depression Risk. *Int J Mol Sci.* 2019; 20:1993.
2036. Srivastava AK, Garg D. Blink and Don't Miss it: The Role of Blink Reflex in Neurodegenerative Disorders. *Neurol India.* 2020;68:76-7.
2037. Srivastava AK, Reddy Sura PK. Primary angiitis of the central nervous system - An Indian experience. *Neurol India.* 2019; 67:113-4.
2038. Srivastava C, Irshad K, Gupta Y, Sarkar C, Suri A, Chattopadhyay P, et al. NFκB is a critical transcriptional regulator of atypical cadherin FAT1 in glioma. *BMC Cancer.* 2020; 20:62.
2039. Srivastava K, Sehgal R, Konanki R, Jain R, Sharma S, Mittal R, et al. Association of Child Neurology-Indian Epilepsy Society Consensus Document on Parental Counseling of Children with Epilepsy. *Indian J Pediatr* 2019; 86:608-16.
2040. Srivastava M, Punj J. Management of cyclical pelvic pain by multiple ultrasound-guided superior hypogastric plexus blocks in a rare case of Mayer-Rokitansky-Küster-Hauser syndrome - A case series of three blocks in a patient. *Intractable Rare Dis Res.* 2019; 8:271-4.
2041. Srivastava MVP, Vishnu VY. The infamous story of incident stroke and inflamed gall bladder! *Neurol India.* 2019;67:389-90.
2042. Srivastava P, Badhwar S, Chandran DS, Jaryal AK, Jyotsna VP, Deepak KK. Imbalance between Angiotensin II - Angiotensin (1-7) system is associated with vascular endothelial dysfunction and inflammation in type 2 diabetes with newly diagnosed hypertension. *Diabetes Metab Syndr.* 2019; 13:2061-8.
2043. St Louis JD, Tchervenkov CI, Jonas RA, Sandoval N, Zhang H, Jacobs JP...Talwar s, et al. Proceedings From the 3rd Symposium of the World Database for Pediatric and Congenital Heart Surgery. *World J Pediatr Congenit Heart Surg.* 2019; 10:492-8.
2044. Stainikzai HM, Bairwa M, Wasiq AW, Gupta SD, Akabari K. Factors influencing sputum smear conversion among smear positive pulmonary tuberculosis patients in Kandahar city, Afghanistan. *J Clin Diagn Res.* 2019; 13:LC18-21.
2045. Steyerberg EW, Wiegers E, Sewalt C, Buki A, Citerio G, Gupta D, et al. CENTER-TBI Participants and Investigators. Case-mix, care pathways, and outcomes in patients with traumatic brain injury in CENTER-TBI: a European prospective, multicentre, longitudinal, cohort study. *Lancet Neurol.* 2019;18:923-34.
2046. Subbiah A, Bagchi S, Yadav RK, Mahajan S, Bhowmik D, Agarwal SK. Moxifloxacin-associated Neutropenia in a Patient Planned for Renal Transplantation. *Indian J Nephrol.* 2019;29:303-5.
2047. Subhadarshani S, Gupta V, Sarangi J, Agarwal S, Verma KK. Pseudoepitheliomatous, Keratotic and Micaceous Balanitis. *Dermatol Pract Concept.* 2019; 10:e2020012

2048. Subhadarshani S, Kumar T, Arava S, Gupta S. Rosai-Dorfman disease with cutaneous plaques and autoimmune haemolytic anemia. *BMJ Case Rep.* 2019; 12:e231927
2049. Subramaniam R. Anaesthetic concerns in preterm and term neonates. *Indian J Anaesth.* 2019; 63:771-9.
2050. Subramanian MS, Singh V, Chatterjee P, Dwivedi SN, Dey AB. Prevalence and predictors of falls in a health-seeking older population: An outpatient-based study. *Aging Med (Milton).* 2020; 3:25-31.
2051. Sudarshan S, Kumar M, Kaur P, Kumar A, G S, Sapra S, et al. Decoding of novel missense TSC2 gene variants using in-silico methods. *BMC Med Genet.* 2019; 20:164.
2052. Sudhakar DVS, Jaishankar S, Regur P, Kumar U, Singh R, Kabilan U, et al. Novel NR5A1 Pathogenic Variants Cause Phenotypic Heterogeneity in 46,XY Disorders of Sex Development. *Sex Dev.* 2019; 13:178-86.
2053. Sudhan MD, Satyarthee GD, Joseph L, Sharma MC, Kakkar A, Sharma BS. Management and Outcome Analysis of Conus and Filumependymoma: A Tertiary Center Study. *Asian J Neurosurg.* 2019; 14:821-7.
2054. Sugandhi N, Saha M, Bhatnagar V, Dhua AK. Repair of Ruptured Omphalocele Sac in the Neonatal Period and Beyond. *J Indian Assoc Pediatr Surg.* 2020; 25:46-8.
2055. Suhail A, Rizvi ZA, Mujagond P, Ali SA, Gaur P, Singh M, et al. DeSUMOylase SENP7-Mediated Epithelial Signaling Triggers Intestinal Inflammation via Expansion of Gamma-Delta T Cells. *Cell Rep.* 2019 10;29:3522-3538.e7.
2056. Suhani S, Srivastava A, Parshad R, Seenu V, Kataria K, Rathode Y. Complete Estrogen Blockade in Recalcitrant Mastalgia: A Pilot Study. *Indian J Surg.* 2019; 81:417-20.
2057. Suhani, Parshad R, Goyal A, Das P, Sharma R, Makharia GK. Abdominal Pain: The Double Trouble. *ACS Case Rev Surg.* 2019; 2:50-3.
2058. Sullender WM, Fowler KB, Gupta V, Krishna A, Purakayastha DR, Vln RS, et al. Efficacy of inactivated trivalent influenza vaccine in rural India: a 3-year cluster-randomised controlled trial. *Lancet Glob Health.* 2019; 7:e940-50.
2059. Suman B, Singh U, Yadav SL, Handa G. Efficacy of lateral wedging in footwear in medial compartment osteoarthritis knee. *Paripax-Indian J Res.* 2019; 8:7-9.
2060. Sundar D, Sharma A, Chawla R, Hasan N. Coastline like peripheral chorioretinal degeneration as a suspected cause of nasal retinal dialysis. *Indian J Ophthalmol.* 2019; 67:1500-2.
2061. Sundar MD, Ayyadurai N, Chawla R, Hasan N. Ultra-widefield imaging of golden vitreous membranes requiring pars plana vitrectomy in a case of chronic ocular chalcosis. *Indian J Ophthalmol.* 2019; 67:1878-9.
2062. Sundar MD, Puri P, Chawla R, Hasan N. Central retinal vein occlusion and branch retinal vein occlusion in the same eye. *Indian J Ophthalmol.* 2019; 67:1344.
2063. Sundararaju S, Sinha A, Hari P, Lodha R, Bagga A. Renal angina index in the prediction of acute kidney injury in critically ill children. *Asian J Pediatr Nephrol.* 2019; 2:25-30.
2064. Suri M, Kumar S, Jain S, Mathur R. Effect of palatable food ingesta on feeding behavior and blood glucose level in rats. *Acta Biomedica Scintia.* 2020; 7:6-12.
2065. Suri T, Makkar N, Ray A, Sood R. A unique case of hydropneumothorax in allergic bronchopulmonary Aspergillosis. *Med Mycol Case Rep.* 2019; 25:29-31.
2066. Suri T, Tiwari P, Hadda V, Esquinas AM, Mohan A. Preoxygenation before intubation in severe hypoxaemic respiratory failure—a step too far for high-flow nasal cannula? *Lancet Respir Med.* 2019; 7:e17.
2067. Suri TM, Esquinas A, Hadda V, Mohan A. HVNI vs NIPPV in the treatment of acute decompensated heart failure: Is acute stabilization enough? *Am J Emerg Med.* 2019; 37:1588-9.
2068. Surve A, Azad S, Venkatesh P, Kumar V, Chawla R, Gupta V, et al. Choroidal Vascular Pattern in Cases of Sturge-Weber Syndrome. *Ophthalmol Retina.* 2019; 3:1091-7.
2069. Surve A, Azad S, Venkatesh P, Kumar V, Chawla R, Gupta V, et al. Choroidal Vascular Pattern in Cases of Sturge-Weber Syndrome. *Ophthalmol Retina.* 2019; 3:1091-7.
2070. Swami P, Bhatia M, Tripathi M, Chandra PS, Panigrahi BK, Gandhi TK. Selection of optimum frequency bands for detection of epileptiform patterns. *Health Technol Lett.* 2019; 6:126-31.
2071. Swamy A, Sood R, Kapil A, Vikram NK, Ranjan P, Jadon RS, et al. Antibiotic stewardship initiative in a Medicine unit of a tertiary care teaching hospital in India: A pilot study. *Indian J Med Res.* 2019; 150:175-85.
2072. Swarnakar R, Kumar R, Rahman H. Evidence-based structured rehabilitation in a case of Lead (Pb)-induced quadriplegia: A Case Report. *Int J Sci Res.* 2019; 8:22-3.
2073. Swarnakar R, Rahman H. Sensory improvement and reduction of nerve thickening in a leprosy patient treated with ultrasound guided perineural injection of autologous platelet rich plasma: a case report and review of literature. *Int J Adv Res.* 2019; 7:523-5.
2074. Swarnakar R, Rahman H. Platelet-Rich Fibrin Membrane—as a Novel Local Autologous Blood Tissue Graft

- Stimulating Granulation Tissue Growth in Pressure Injury of a Spinal Cord Injury patient: A Case Report. *Int J Sci Res Publ.* 2019;9:36-8.
2075. Sybil D, Jain V, Mohanty S, Husain SA. Oral stem cells in intraoral bone formation. *J Oral Biosci.* 2020; 62:36-43.
2076. Tabish M, Mahendran M, Ray A, Vikram NK. Colistin-induced acquired Bartter-like syndrome: an unusual cause of meltdown. *BMJ Case Rep.* 2020; 13:e232630.
2077. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A, ,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals - A Proposal from the International Committee of Medical Journal Editors. *N Engl J Med.* 2020;382(7):667-668.
2078. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A disclosure form for work submitted to medical journals - a proposal from the International Committee of Medical Journal Editors. *Bull World Health Organ.* 2020;98:153-154.
2079. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals-A Proposal From the International Committee of Medical Journal Editors. *Ethiop J Health Sci.* 2020;30:1-4.
2080. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. En formular til angivelse af interessekonflikter for artikler indsendt til medicinske tidsskrifter – et forslag fra the International Committee of Medical Journal Editors. *Ugeskr Laeger.* 2020;182:V205009. Danish.
2081. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals. *Dtsch Arztebl Int.* 2020;117:61-63.
2082. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals – A Proposal From the International Committee of Medical Journal Editors. *Dan Med J.* 2020;67:A205009. Danish.
2083. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A disclosure form for work submitted to medical journals: a proposal from the International Committee of Medical Journal Editors. *N Z Med J.* 2020;133:6-8. PMID: 32027633.
2084. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals: a Proposal from the International Committee of Medical Journal Editors. *J Korean Med Sci.* 2020;35:e39.
2085. Taichman DB, Backus J, Baethge C, Bauchner H, Flanagan A,....., Sahni P. A Disclosure Form for Work Submitted to Medical Journals: A Proposal From the International Committee of Medical Journal Editors. *Ann Intern Med.* 2020;172:429-430.
2086. Tajamul S, Hadda V, Madan K, Tiwari P, Mittal S, Khan MA, et al. R. Neurally-Adjusted Ventilatory Assist Versus Noninvasive Pressure Support Ventilation in COPD Exacerbation: The NAVA-NICE Trial. *Respir Care.* 2020Jan;65(1):53-61.
2087. Takkar B, Gaur N, Saluja G, Rathi A, Sharma B, Venkatesh V, et al. Evaluation of the Vitreous chamber depth: An assessment of correlation with ocular biometrics ophthalmology in India. *Indian J Ophthalmol.* 2019; 67:1645-9.
2088. Talwar S, Anand A, Siddarth B, Ramakrishnan S, Choudhary SK, Airan B. Early right ventricular function following trans-right atrial versus trans-right atrial, trans-right ventricular repair of Tetralogy of Fallot: Results of a prospective randomized study. *Ann Pediatr Cardiol.* 2019; 12:3-9.
2089. Talwar S, Anderson RH, George N, Gupta SK, Siddharth B, Choudhary SK. Functionally univentricular heart with systemic venous anomalies: surgical palliation and pulmonary arterial reconstruction with a roll of left atrial appendage. *Indian J Thorac Cardiovasc Surg.* 2019; 35:203-7.
2090. Talwar S, George N, Gupta SK, Choudhary SK. Surgical repair for aortopulmonary window with interrupted aortic arch in late childhood. *Cardiol Young.* 2020; 30:298-301.
2091. Talwar S, Gupta A, Choudhary SK. Homograft neopulmonary artery following banding of hemitruncus. *Indian J Thorac Cardiovasc Surg.* 2019; 35:592-3.
2092. Talwar S, Siddarth B, Rajshekar P, Sengupta S, Sharma S, Choudhary SK. An alternative technique for completion of the total cavopulmonary connection. *J Card Surg.* 2019; 34:236-8.
2093. Talwar S, Siddharth B, Gharde P, Choudhary SK. Total Anomalous Pulmonary Venous Connection With an Intact Interatrial Septum. *Ann Thorac Surg.* 2019; 107:e393- 4.
2094. Talwar S, Siddharth B, Gupta SK, Bhoje A, Choudhary SK. Surgical repair for common arterial trunk with pulmonary dominance, hypoplasia of ascending aorta, and interrupted aortic arch. *Ann Pediatr Cardiol.* 2019; 12:287-91.
2095. Talwar S, Siddharth B, Sengupta S, Rajashekar P, Sharma S, Choudhary SK. An alternative technique for intracardiac exposure during transatrial repair of Tetralogy of Fallot. *J Card Surg.* 2019; 34:1347-9.
2096. Tamuli D, Kaur M, Boligarla A, Jaryal AK, Srivastava AK, Deepak KK. Depressed baroreflex sensitivity from

- spontaneous oscillations of heart rate and blood pressure in SCA1 and SCA2. *Acta Neurol Scand.* 2019; 140:350-8.
2097. Tandon V, Chandra PS, Singla R, Bajaj J, Kakkar A, Sharma MC, et al. Drug Refractory Epilepsy - A Series of Lesions with Triple Pathology. *Neurol India.* 2019; 67:1093-6.
2098. Tansir G, Kumar P, Pius A, Sunny SK, Soneja M. Pseudo-pseudo Meigs' syndrome: a rare presentation of systemic lupus erythematosus. *Reumatismo.* 2019; 71:108-12.
2099. Tanwar P, Kumar R, Kumar C, Hussain S. Impact of family medicine practice in combating Violence against Doctors. *Journal of family medicine and primary care.* 2019; 8:2748-9.
2100. Tanwar S, Mattoo B, Kumar U, Bhatia R. Can aberrant spinal nociception be a marker of chronicity of pain in fibromyalgia syndrome? *J Clin Neurosci.* 2019; 65:17-22.
2101. Tarik M, Lakshmy R, Shikha S, Sachdev HPS, Tandon N, Roy A. Association of birth outcomes and postnatal growth with adult leucocyte telomere length: Data from the New Delhi Birth Cohort. *Matern Child Nutr.* 2019; 15:e12857.
2102. Tarik M, Ramakrishnan L, Amarchand R, Salve HR, Mathur P, Joshi P, et al. Feasibility of measuring sodium, potassium and creatinine from urine sample on dried filter paper. *Bioanalysis* 2019; 11:689-701.
2103. Tarik M, Ramakrishnan L, Amarchand R, Salve HR, Mathur P, Joshi P. Feasibility of measuring sodium, potassium and creatinine from urine sample on dried filter paper. *Bioanalysis.* 2019; 11:689-701.
2104. Tarik M, Ramakrishnan L, Sinha S, Sachdev HPS, Tandon N, Roy A, et al. Association of birth outcomes and postnatal growth with adult leukocyte telomere length: Data from New Delhi Birth Cohort. *Matern Child Nutr.* 2019; 15:e12857.
2105. Temiz MZ, Nayak B, Aykan S, Singh P, Colakerol A, Semercioz A, et al. Laparoscopic and robotic transperitoneal repair of retrocaval ureter: A comparison of the surgical outcomes from two centres with a comprehensive literature review. *J Min Access Surg.* 2020; 16:115-20.
2106. Temkar S, Azad SV, Chawla R, Damodaran S, Garg G, Regani H, et al. Ultra-widefield fundus fluorescein angiography in pediatric retinal vascular diseases. *Indian J Ophthalmol.* 2019; 67:788-94.
2107. Tewari N, Bansal K, Mathur VP. Dental Trauma in children: a quick review on management. *Indian J Pediatr.* 2019; 86:1043-7.
2108. Tewari N, Mathur VP. Smart Phones: the new risk factor for traumatic dental and facial injuries in children. *Dent Traumatol.* 2020; 36:76-8.
2109. Tewari R, Chandra P, Agarwal R, Azad R. Posterior laser barrage in advancing retinopathy of prematurity: A prospective randomized study. *Indian J Ophthalmol.* 2019; 67:866-70.
2110. Thaha R, Jogi SP, Rajan S, Mahajan V, Venugopal VK, Mehndiratta A. et al. Modified radial-search algorithm for segmentation of tibiofemoral cartilage in MR images of patients with subchondral lesion. *Int J Comput Assist Radiol Surg.* 2020; 15:403-13.
2111. Thakar A, Aggarwal K. Nasal Endoscopic Trans Sphenoidal Optic Nerve Sheath Fenestration for Intractable Intracranial Hypertension with Papilloedema—Optimism with Caution. *Neurol India.* 2020; 68:1:61.
2112. Thakar A, Sakthivel P, Prashanth A, Kumar R, Sharma SC, Kumar R. Clinical Utility of 68Ga-Prostate-Specific Membrane Antigen PET/CT Scan on Postoperative Assessment of Juvenile Nasal Angiofibroma. *Clin Nucl Med.* 2020; 45:e83-4.
2113. Thakar M, Joshi B, Shrivastava P, Raina A and Lalwani S. An assessment of preserved DNA in decomposed biological materials by using forensic DNA typing. *Egyptian J Forensic Sci.* 2019; 9:1-9.
2114. Thakral D, Kaur G, Gupta R, Benard A, Savola S, Kumar SI, et al. Rapid Identification of Key Copy Number Alterations in B- and T- cell Acute Lymphoblastic leukaemia by Digital Multiplex Ligation- Dependent Probe Amplification. *Front Oncol.* 2019; 9:871.
2115. Thakral D, Kaur G, Gupta R, Benard A, Savola S, Singh IK, et al. Rapid Identification of Key Copy Number Alterations in B- and T-cell Acute Lymphoblastic Leukaemia by Digital Multiplex Ligation-Dependent Probe Amplification. *Front Oncol.* 2019; 9:871.
2116. Thakur R, Irugu DVK, Verma H. Osteoplastic flap approach for posterior table leak: a case report. *J Clin Diagn Res.* 2019; 13:MD01-2.
2117. Thelengana A, Radhakrishnan DM, Prasad M, Kumar A, Prasad K. Thelengana A, et al. Tenecteplase versus alteplase in acute ischemic stroke: systematic review and meta-analysis. *Acta Neurol Belg.* 2019; 119:359-67.
2118. Thelengana A, Shukla G, Srivastava A, Singh MB, Gupta A, Rajan R, et al. Cognitive, behavioural and sleep-related adverse effects on introduction of levetiracetam versus oxcarbazepine for epilepsy. *Epilepsy Res.* 2019; 150:58-65.
2119. Thomas P, Kumari V, Dabas S, Joshi P. Effect of teaching partograph on knowledge related to intra-partum monitoring among nursing personnel. 2020; 61:28-32.

2120. Thota R, Kumar R, Kumar R, Jat B. Navigation-assisted endonasal endoscopic optic nerve decompression in fibrous dysplasia. *BMJ Case Rep.* 2019; 12:e230621.
2121. Thota RS, Garg R, Ramkiran S, Divatia JV. Onco-anaesthesiology as an emerging sub-speciality domain: Need of the hour! *Indian J Anaesth.* 2020;64:69-71.
2122. Thota RS, Ramkiran S, Garg R, Goswami J, Baxi V, Thomas M. Opioid free onco-anesthesia: Is it time to convict opioids? A systematic review of literature. *J Anaesthesiol Clin Pharmacol.* 2019;35:441-52.
2123. Tirpude AP, Gaikwad M, Tirpude PA, Jain M and Bora SK, Retrospective analysis of prevalent anatomy spotter's examination: an educational audit. *Korean J Med Educ.* 2019; 31:115-24.
2124. Titiyal JS, Kaur M, Bharti N, Singhal D, Saxena R, Sharma N. Optimal near and distant stereoacuity after binocular implantation of extended range of vision intraocular lenses. *J Cataract Refract Surg.* 2019; 45:798-802.
2125. Titiyal JS, Kaur M, Falera R, Bhargava A, Sah R, Sen S. Efficacy and safety of Topical Chloroquine in mild and moderate Dry eye Disease. *Curr Eye Res.* 2019; 44:1306-12.
2126. Titiyal JS, Kaur M, Shaikh F, Rawat J. Resurgence of inflammatory giant-cell deposits in modern surface modified intraocular lenses. *J Cataract Refract Surg.* 2020; 46:149-51.
2127. Titiyal JS, Kaur M, Tinwala S, Falera R. Double Bubble Technique for successful reattachment of Total Descemet membrane detachment after deep anterior lamellar keratoplasty. *Nepal J Ophthalmol.* 2019; 10:180-3.
2128. Titiyal JS, Kaur M. Commentry: Femtosecond laser assisted cataract surgery in cataract with phakic intraocular lenses in situ. *Indian J Ophthalmol.* 2019; 67:1746-7.
2129. Titiyal JS, Kaur M. Commentary: Intraocular lens explantation techniques. *Indian J Ophthalmol.* 2019; 67:1325-6.
2130. Titiyal JS, Kaur M. Commentary: Moving towards "mark - less" Toric IOL alignment. *Indian J Ophthalmol.* 2020; 68:458-9.
2131. Tiwari A, Verma NC, Turkkan S, Debnath A, Singh A, Draeger G, et al. Graphitic Carbon Coated Magnetite Nanoparticles for Dual-Mode Imaging and Hyperthermia. *ACS Applied Nano Materials.* 2020; 3:896-904.
2132. Tiwari AK, Goyal A, Semwal BC, Yadav HN. Effect of pravastatin on abrogated cardioprotective effect of late phase of preconditioning in hyperlipidaemic rats. *Lat Am J Pharm.* 2019; 38:1645-53.
2133. Tiwari M, Kumar P, Tejavath KK, Tiwari V. Assessment of Molecular Mechanism of Gallate- Polyvinylpyrrolidone-Capped Hybrid Silver Nanoparticles against Carbapenem-Resistant *Acinetobacter baumannii*. *ACS Omega.* 2020; 5:1206-13.
2134. Tiwari S, Yadav T, Pamnani J, Mathew JM, Elhence P, Praneeth K, et al. Diffuse Leptomeningeal Glioneuronal Tumor: A unique leptomeningeal tumor entity. *World Neurosurg.* 2020;135:297-300.
2135. Tomar A, Kaushik S, Khan SI, Bisht K, Nag TC, Arya DS, et al. The dietary isoflavonedaizzein mitigates oxidative stress, apoptosis, and inflammation in CDDP-induced kidney injury in rats: impact of the MAPK signaling pathway. *J Biochem Mol Toxicol.* 2020; 4:e22431.
2136. Tomar GS, Singh GP, Bithal P, Upadhyay, AD, Chaturvedi A. Comparison of Effects of Manual and Mechanical Airway Clearance Techniques on Intracranial Pressure in Patients With Severe Traumatic Brain Injury on a Ventilator: Randomized, Crossover Trial. *Phys Ther.* 2019; 99:388-95.
2137. Tousifullah M, Gupta AK, Meena JP, Seth R. B cell acute lymphoblastic leukaemia presenting with isolated soft tissue tumours: the non-myeloid sarcoma. *BMJ Case Rep.* 2019; 12:e230982.
2138. Trikha A, Kaur M. Enhanced recovery after surgery in obstetric patients – Are we ready? *J Obstet Anaesth Crit Care.* 2020; 10:1-3.
2139. Trikha V, Gaba S, Kumar A, Mittal S, Kumar A. Safe corridor for iliosacral and trans-sacral screw placement in Indian population: A preliminary CT based anatomical study. *J Clin Orthop Trauma.* 2019; 10:427-31.
2140. Trikha V, Kumar A, Mittal S, Passey J, Gaba S, Khan R, et al. Morphometric Variations of Scaphoid and Safety of Screw Fixation for Its Waist Zone Fractures in Indian Population: A Preliminary Report. *J Hand Surg GlobOnline.* 2019; 1:166-173
2141. Trikha V, Veeresh V, Mittal S, Ganesh V, Bansal H. A new method in sacral fracture fixation. *Injury.* 2020;51:580.
2142. Tripathi A, Kumar M, Kaur P, Kumar B, Sagi SSK. Efficacy of Quercetin as a potent sensitizer of  $\beta_2$  AR in combating the impairment of fluid clearance in lungs of rats under hypoxia. *Respir Physiol Neurobiol.* 2020; 273:103334.
2143. Tripathi M, Garg D. Malformations of cortical development and inverted hippocampal inversion: The questions raised. *Neurol India.* 2019;67:450-1.
2144. Tripathi M, Manjari Tripathi, Girish Kumar Parida, Rajeev Kumar, Sadanand Dwivedi, Ashima Nehra, Chandrasekhar Bal. Biomarker-Based Prediction of Progression to Dementia: F-18 FDG-PET in Amnestic MCI. *Neurol India.* 2019; 67:1310-7.



2145. Tripathi M, Tripathi M, Parida GK, Kumar R, Dwivedi S, Nehra A, et al. Biomarker-Based Prediction of Progression to Dementia: F-18 FDG-PET in Amnesic MCI. *Neurol India*. 2019; 67:1310-7.
2146. Tripathi P, Pati HP, Mahapatra M, Tyagi S, Ahuja A, Saxena R. Utility of Labile Plasma Iron Assay in Thalassemia major Patients. *Indian J Hematol Blood Transfus*. 2019; 35:272-7.
2147. Tripathi R, Dhawan A, Mishra AK, Jain R, Sinha S. Opioids and sleep – a review of literature. *Sleep Med*. 2020; 67:269-75.
2148. Tripathi R, Dhawan A, Rao R, Mishra AK, Jain R, Sinha S. Assessment of Subjective Sleep Problems in Men with Opioid Dependence Maintained on Buprenorphine. *J Addict Med*. 2020; 14:132-8.
2149. Tripathi R, Rao R, Dhawan A, Jain R, Sinha S. Opioids and sleep - a review of literature. *Sleep Med*. 2020; 67:269-75.
2150. Tripathy K, Das A, Chawla R, Temkar S. A young female with subretinal thread-like structures. *Oman J Ophthalmol*. 2019; 12:67.
2151. Tripathy S, Ballal S, Yadav MP, Joshi P, Bal C, Damle NA. Coexistence of Multiple Metastatic Lesions Showing Various Grades of Differentiation in a Single Patient with Neuroendocrine Tumor of Lung as Primary: A Combined Modality Approach of 68Ga-DOTANOC Positron Emission Tomography/Computed Tomography and 18F-Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography Imaging. *Indian J Nucl Med*. 2019; 34:260-2.
2152. Tripathy S, Behera A, Kumar A, Subudhi K, Bal C. Adrenocortical Carcinoma with Inferior Vena Cava Thrombus on 18F-FDG-PET-Computed Tomography. *Indian J Nucl Med*. 2020; 35:87-8.
2153. Tripathy S, Damle NA, Naranje P, Shamim SA, Tripathi M, Bal C. Leptomeningeal Metastasis in Carotid Body Paraganglioma: Findings on 68Ga DOTANOC PET-CT. *Clin Nucl Med*. 2019; 44:e583-5
2154. Tripathy S, Gupta R, Raj STA, Bal C, Shamim SA. Pheochromocytoma: Positive on 131I-MIBG Single-Photon Emission Computed Tomography- Computed Tomography and Negative on 68Ga DOTANOC Positron Emission Tomography-Computed Tomography. *Indian J Nucl Med*. 2019; 34:254-5.
2155. Tripathy S, Kumar R, Kakkar A, Kumar R, Sharma P, Shamim SA. Esthesioneuroblastoma on 68Ga DOTANOC PET/CT. *Clin Nucl Med*. 2019; 44:e486-8. .
2156. Tripathy S, Parida GK, Singhal A, Shamim SA, Kumar R. Thyroid Cartilage Metastases on F-18 Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography: A Tale of Two Cases with a Brief Review of Literature. *Indian J Nucl Med*. 2019; 34:220-2.
2157. Tripathy S, Shamim SA, Behera A, Bal C, Kumar R. Adenoid Cystic Carcinoma of Trachea: Findings on (18)F FDG Positron Emission Tomography-Computed Tomography. *Indian J Nucl Med*. 2019; 34:249-50.
2158. Tripathy S, Shamim SA, Chellapuram S, Barwad A, Rastogi S. Primary Ewing Sarcoma/Primitive Neuroectodermal Tumor of Kidney With Inferior Vena Cava Thrombus: Findings on 18F-FDG PET/CT. *Clin Nucl Med*. 2020; 45:e103-5.
2159. Tripathy S, Tripathi M, Dattagupta S, Parida GK, Shamim SA. In Vivo PSMA Expression in Head and Neck Paragangliomas on 68Ga PSMA 11 PET/CT. *Clin Nucl Med*. 2019; 44:e398-400.
2160. Tripathy S, Tripathi M, Parida GK, Bal C, Shamim SA. Primary Cardiac Angiosarcoma with Extensive Visceral Metastases: Utility of (18)F-Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography in Response Assessment to Sorafenib. *Indian J Nucl Med*. 2019; 34:241-3.
2161. Tripathy S, Tripathi M, Tripathi M, Damle NA, Bal C. (18)F-Fludeoxyglucose Positron-emission Tomography/Computed Tomography in Encephalocraniocutaneous Lipomatosis/Haberland Syndrome. *Indian J Nucl Med*. 2019; 34:160-1.
2162. Tuberculous Meningitis International Research Consortium. Tuberculous meningitis: new tools and new approaches required. *Wellcome Open Res*. 2019;4:181.
2163. Tupalli A, Damle NA, Thankarajan AS, Mangu BS, Kumar A, Khan D, et al. An Unusual Case of Simultaneous Cricoid and Thyroid Cartilage Metastases from Prostatic Adenocarcinoma on 68Ga-PSMA PET/CT. *Nucl Med Mol Imaging*. 2020; 54:61-2.
2164. Turankar RP, Singh V, Gupta H, Pathak VK, Ahuja M, Singh I, et al. Association of non-tuberculous mycobacteria with *Mycobacterium leprae* in environment of leprosy endemic regions in India. *Infect Genet Evol*. 2019; 72:191-8.
2165. Tyagi A, Aggarwal R, Soni KD, Trikha A. Prone Positioning for Management of Fat Embolism Syndrome in a Patient with Spine Fracture; An Unusual Scenario and Review of Literature. *Bull Emerg Trauma*. 2019; 7:192-5.
2166. Tyagi A, Dass C, Rao NT, Soni KD. Emergency anesthetic management of an achondroplastic elderly gravida with polytrauma. *Int J Crit Illn Inj Sci*. 2019; 9:191-3.
2167. Tyagi A, Pramanik R, Bakhshi R, Singh A, Vishnubhatla S, Bakhshi S. Expression of mitochondrial genes predicts survival in pediatric acute myeloid leukemia. *Int J Hematol*. 2019; 110:205-12.

2168. Tyagi A, Pramanik R, Bakhshi R, Vishnubhatla S, Bakhshi S. Genetic Landscape of Mitochondrial Regulatory Region in Pediatric Acute Myeloid Leukemia: Changes from Diagnosis to Relapse. *J Paediatr Genet.* 2019; 8:193-7.
2169. Tyagi A, Aggarwal R, Soni KD, Trikha A. Prone Positioning for Management of Fat Embolism Syndrome in a Patient with Spine Fracture; An Unusual Scenario and Review of Literature. *Bull Emerg Trauma.* 2019; 7:192-5.
2170. Tyagi M, Daga A, Arya SK. Planning & Cost Estimation for Medical Gasses Manifold Services for a 300 Bedded Hospital. *J Acad Hosp Adm.* 2019; 31:48-55
2171. Ung L, Acharya NR, Agarwal T, Alfonso EC, Bagga B, Bispo PJ, et al. Infectious corneal ulceration: a proposal for neglected tropical disease status. *Bull World Health Organ.* 2019; 97:854-6.
2172. Uppal H, Handa G, Singh U, Wadhwa S, Yadav SL. Comparative study of anterior support ankle foot orthosis and posterior ankle foot orthosis in foot drop patients. *Int J Adv Med.* 2019; 6:1924-9.
2173. Vadera HK, Mistry T, Ratre BK. Serratus anterior plane block: Anatomical landmark-guided technique. *Saudi J Anaesth.* 2020;14:134-5.
2174. Vaid A, Patil C, Sanghariyat A, Rane R, Visani A, Banerjee J, et al. Emerging Advanced Technologies Developed by IPR for Bio Medical Applications - A Review. *Neurol India.* 2020; 68:26-34.
2175. Vaithiyam V, Jadon RS, Ray A, Manchanda S, Meena VP, Ranjan P, et al. Metronidazole induced encephalopathy: A rare side effect with a common drug. *Indian J Radiol Imaging.* 2019; 29:431-4.
2176. Valmiki S, Ahuja V, Puri N, Paul J. miR-125b and miR-223 Contribute to Inflammation by Targeting the Key Molecules of NFκB Pathway. *Front Med (Lausanne).* 2020; 6:313.
2177. Vanamail P. Epidemiological profile of female breast cancer in reproductive age-group and its association with maternal characteristics: -A population-based observational study in India. *Oncomedicine.* 2019; 4:27-34.
2178. Vanathi M, Kumawat D, Singh R, Chandra P. Iatrogenic Crystalline Lens Injury in Pediatric Eyes Following Intravitreal Injection for Retinopathy of Prematurity. *J Pediatr Ophthalmol Strabismus.* 2019; 56:162-7.
2179. VandeVyvere T, De La Rosa E, Gupta D, Wilms G, Nieboer D, Tracheostomy practice and timing in traumatic brain-injured patients: a CENTER-TBI study., Steyerberg E, Maas AIR, Verheyden J, van den Hauwe L, Parizel PM; CENTER-TBI Participants and Investigators. Prognostic Validation of the NINDS Common Data Elements for the Radiologic Reporting of Acute Traumatic Brain Injuries: A CENTER-TBI Study. *J Neurotrauma.* 2020 Feb 25. doi: 10.1089/neu.2019.6710.
2180. Vanidassane I, Gogia A, Mallick S. Adult ALK-positive diffuse large B-cell lymphoma: A limited institutional experience. *Indian J Cancer.* 2019; 56:373-4.
2181. Vanidassane I, Gogia A, Raina V, Gupta R. Treatment Related Acute Myeloid Leukemia in Breast Cancer Survivors: A Single Institutional Experience. *Indian J Hematol Blood Transfus.* 2019;35:561-2.
2182. Vanidassane I, Sharma A, Aggarwal A, Gunasekar S, Barwad A, Dhamija E, et al. Multimodality treatment of head and neck soft tissue sarcomas and short- term outcomes: Analysis from sarcoma medical Oncology clinic. *South Asian J Cancer.* 2019; 8:69-71
2183. Vanidassane I, Sharma V, Ramteke P, Yadav MK, Batra A. Primary Yolk Sac Tumor of the Liver in an Adult Man. *ACG Case Rep J.* 2019; 6:e00050.
2184. Varghese N, Joshi P, Cecilia M, Gupta N, Agarwal R, Kabra M, et al. Improving the uptake of newborn screening for endocrinopathies and inborn errors of metabolism: A quality improvement initiative. *J Neonat Nurs.* 2020; 26:59-63.
2185. Varshney S, Khadgawat R, Gahlot M, Khandelwal D, Oberoi AK, Yadav RK, et al. Effect of High-dose Vitamin D Supplementation on Beta Cell Function in Obese Asian-Indian Children and Adolescents: A Randomized, Double Blind, Active Controlled Study. *Indian J Endocrinol Metab.* 2019; 23:545-51.
2186. Vashisht KR, Arava S, Tembhre MK, Parihar A, Sharma VK, Das BK, et al. A randomized pilot study to compare hair follicle cell suspensions prepared using trypsin alone versus trypsin in combination with collagenase type-I for transplantation in vitiligo. *Clin Exp Dermatol.* 2020; 45:172-9.
2187. Vashist P, Tandon R, Murthy GVS, Barua CK, Deka D, Singh S, et al. Association of cataract and sun exposure in geographically diverse populations of India: The CASE study. First Report of the ICMR-EYE SEE Study Group. *PLoS One.* 2020; 15:e0227868.
2188. Vashistha V, Choudhari C, Garg A, Gupta A, Parthasarathi G, Jain D, et al. The time required to diagnose and treat lung cancer in Delhi, India: an updated experience of a public referral center. *Appl Cancer Res* 2019; 39:Art No.11.
2189. Vashistha V, Poulouse R, Choudhari C, Kaur S, Mohan A. Quality of Life among Caregivers of Lower-Income Cancer Patients: A Single-Institutional Experience in India and Comprehensive Literature Review. *Asian Pac J Cancer Care.* 2019; 4:87-93.
2190. Vasudeva A, Sahu S, Neyaz O, Choudhary A, Kumar R, Yadav S L. The efficacy of a structured exercise program versus zoledronic acid in persons with primary osteoporosis: A prospective randomized controlled trial. *Int J Health Sci Res.* 2019;9:1-9.

2191. Vats P, Dabas A, Jain V, Seth A, Yadav S, Kabra M et al. Newborn Screening and Diagnosis of Infants with Congenital Adrenal Hyperplasia. *Indian Pediatr.* 2020; 57:49-55.
2192. Vattipalli S, Shukla RK, Chouhan RS, Kapoor I. An Uncommon Cause of Arterial Waveform Artifact! *J Neuroanesthesiol Crit Care.* 2019; 06:50.
2193. Venkateshmurthy NS, Namara KM, Koorts H, Mohan S, S Ajay V, Jindal D, ... Roy A, et al. Process evaluation protocol for a cluster randomised trial of a complex, nurse-led intervention to improve hypertension management in India. *BMJ Open.* 2019; 9:e027841.
2194. Venkatnarayan K, Khilnani GC, Hadda V, Madan K, Mohan A, Pandey RM. A comparison of three strategies for withdrawal of noninvasive ventilation in chronic obstructive pulmonary disease with acute respiratory failure: Randomized trial. *Lung India.* 2020; 37:3-7.
2195. Venugopalan VY, Bhatia R, Pandian J, Khurana D, Kaul S, Sylaja PN, et al. Regional differences in ischemic stroke in India (north vs. south). *Int J Stroke.* 2019; 14:706-14.
2196. Verma D, Neyaz O, Nanda S, Handa G. Comparison of outcome of ultrasound-guided suprascapular nerve block versus intra-articular steroid injection in adhesive capsulitis of shoulder: A randomized control trial. *Indian J Rheumatol.* 2019; 14:113-8.
2197. Verma DD, Verma R. The effect of personality in relief of post-operative pain by transcutaneous electric nerve stimulation. *Int J Sci Res.* 2019; 8:1-2.
2198. Verma H, Panda S, Sikka K, Irugu DVK, Thakar A. Primary sphenopetro-clival tuberculosis. *Indian J Otolaryngol. Head Neck Surg.* 71:1796-9.
2199. Verma MP, Gupta S. Quality Patient Care by the Tech-Savvy Informatic-Nurses Humanizing Care- A Global Perspective. *Int J Nurs Care.* 2019; 7:1-6.
2200. Verma P, Kapoor S, Kalaivani M, Vats P, Yadav S, Jain V, et al. An Optimal Capillary Screen Cut-off of Thyroid Stimulating Hormone for Diagnosing Congenital Hypothyroidism: Data from a Pilot Newborn Screening Program in Delhi. *Indian Pediatr.* 2019; 56:281-6.
2201. Verma R, Jha A, Singh S. Functional Near-Infrared Spectroscopy to Probe t DCS-Induced Cortical Functioning Changes in Tinnitus. *J Int Adv Otol.* 2019; 15:321-5.
2202. Verma SK, Singh PK, Sawakar DR, Kumar A, Agrawal D, Chandra PS, et al. Motion Preserving Surgery Using O-Arm for Unstable Hangman Fracture. *Indian J Neurotrauma.* 2019; 16:02-9.
2203. Verma SK, Singh PK. Letter to Editor. Giant intracranial aneurysms of the posterior circulation. *J Neurosurg.* 2019 Dec 20:1-2.
2204. Verma V, Mishra AK, Narang R. Application of Bayesian analysis in medical diagnosis. *J Pract Cardiovasc Sci.* 2019; 5:136-41.
2205. Vibha D, Prasad K. Prevailing practices in the treatment of tuberculous meningitis (TBM): a cross-sectional study. *Postgrad Med J.* 2019; 95:348-349.
2206. Vidyasagar, Pol MM, Chumber S, Rathor YS. Role of digital photography in evaluation of gallbladder specimens following laparoscopic cholecystectomy for gallstone disease: a prospective observational study. *Int Surg J.* 2019; 6:1376-9.
2207. Vig S, Bhan S, Ahuja D, Gupta N, Kumar V, Kumar S, et al. Serratus Anterior Plane Block for Post-Thoracotomy Analgesia: a Novel Technique for the Surgeon and Anaesthetist. *Indian J Surg Oncol.* 2019; 10:535-9.
2208. Vig S, Kumar V, Deo S, Bhan S, Mishra S, Bhatnagar S. Effect of perioperative pregabalin on incidence of chronic postmastectomy pain syndrome: A prospective randomized placebo-controlled pilot study. *Indian J Palliat Care.* 25:508.
2209. Vignarajan CP, Malhotra N, Singh N. Ovarian Reserve and Assisted Reproductive Technique Outcomes after Laparoscopic Proximal Tubal Occlusion or Salpingectomy in Women with Hydrosalpinx Undergoing in Vitro Fertilization: A Randomized Controlled Trial. *J Minim Invasive Gynecol.* 2019; 26:1070-5.
2210. Vignesh D, Gupta N, Kalaivani M, Goswami AK, Nongkynrih B, Gupta SK. Prevalence of visual impairment and its association with vision-related quality of life among elderly persons in a resettlement colony of Delhi. *J Family Med Prim Care.* 2019; 8:1432-9.
2211. Vij S, Kumar V, Deo SVS, Bhan S, Mishra S, Bhatnagar S. Effect of Perioperative Pregabalin on Incidence of Chronic Postmastectomy Pain Syndrome: A Prospective Randomized Placebo-Controlled Pilot Study. *Indian J Palliat Care.* 2019; 25:508-13.
2212. Vijapure S, Singh N, Yadav VS, Kumar S, Kiran K. Comparison of stress in peri-implant bone of anterior maxilla on loading of straight and angulated platform switched implant abutments a 3d finite element analysis. *Arch Clin Med Case Rep.* 2020; 4:30-43.
2213. Vijayakumar AR, Nath M, Biswas NR, Saxena R, Halder N, Velpandian T. Effect of NMDA and AMPA/Kainate

- Receptor Antagonists Against Ethambutol Induced Retinal Toxicity Using Optomotor Response (OMR) in Goldfish. *Indian J Physiol Pharmacol.* 2019; 63:294-302.
2214. Vimal AK, Swami P, Anand S, Singh U, Bhasin S, Joshi D. Search algorithm for optimal damping parameters of trans-femoral prosthetic limb. *Appl Math Model.* 2019; 72:356-68.
2215. Vincent V, Thakkar H, Aggarwal S, Mridha AR, Ramakrihnan L, Singh A. ATP-Binding Cassette Transporter A1 (ABCA 1) Expression in Adipose Tissue and Its Modulation with Insulin Resistance in Obesity et al. *Diabetes Metab Syndr Obes.* 2019; 12:275-84.
2216. Vinchure OS, Sharma V, Tabasum S, Ghosh S, Singh RP, Sarkar C, et al. Polycomb complex mediated epigenetic reprogramming alters TGF- $\beta$  signaling via a novel EZH2/miR-490/TGIF2 axis thereby inducing migration and EMT potential in glioblastomas. *Int J Cancer.* 2019; 145:1254-69.
2217. Vinny PW, Gupta A, Modi M, Srivastava MVP, Lal V, Sylaja PN, ...Vishnu VY et al. Headtohead comparison between neurology residents and a mobile medical application for diagnostic accuracy in cognitive neurology. *QJM.* 2019;112:591-8.
2218. Vinny PW, Rajan R, Goyal V, Padma MV, Lal V, Sylaja PN, et al. Deducing differential diagnoses in movement disorders: Neurology residents versus a novel mobile medical application (Neurology Dx). *Ann Mov Disord.* 2019;2:115-25
2219. Vinny PW, Vishnu VY. Tuberculous meningitis: A Narrative Review. *J Curr Res Sci Med.* 2019; 5:13-22.
2220. Vishnu VY, Vinny PW. The neurologist and artificial intelligence: Titans at crossroads. *Ann Indian Acad Neurol.* 2019;22:264-6.
2221. Vora ZA, Kandasamy D, Naranje P, Malik R. Pediatric Chylous Ascites treatment with Combined Ultrasound and Fluoroscopy-Guided Intranodal Lymphangiography. *Indian J Radiol Imaging.* 2019; 29:226-8.
2222. Wadhvani M, Bali S, Bhartiya S, Mahabir M, Upadhaya A, Dada T, et al. Long term effect of panretinal photocoagulation on retinal nerve fiber layer parameters in patients with proliferative diabetic retinopathy. *Oman J Ophthalmol.* 2019; 12:181-5.
2223. Wadhvani M, Phuljhele S, Kumar R, Shameer A. Cervical carcinoma leading to orbital apex syndrome and blindness. *BMJ Case Reports CP.* 2019;12:e226587.
2224. Wadhvani M, Vashist P, Singh SS, Gupta V, Gupta N, Saxena R. Prevalence and causes of childhood blindness in India: A systematic review. *Indian J Ophthalmol.* 2020; 68:311-15.
2225. Walter SD, Macaskill P, Turner R, Guyatt G, Cook R, Prasad K. Comment to the reply letter: Letter to the Editor: Preference option randomized design (PORD) for comparative effectiveness research: Statistical power for testing comparative effect, preference effect, selection effect, intent-to-treat effect, and overall effect. *Stat Methods Med Res.* 2019;28:1603.
2226. Walter SD, Macaskill P, Turner R, Guyatt G, Cook R, Prasad K. Letter to the Editor: Preference option randomized design (PORD) for comparative effectiveness research: Statistical power for testing comparative effect, preference effect, selection effect, intent-to-treat effect, and overall effect. *Stat Methods Med Res.* 2019;28:1597-8.
2227. Weiss SL, Peters MJ, Alhazzani W, Agus MSD, Flori HR... Joshi P. Surviving sepsis campaign international guidelines for the management of septic shock and sepsis associated organ dysfunction in children. *Pediatr Crit Care Med.* 2020; 21:e52-106.
2228. Wolbrink TA, van Schaik SM, Turner DA, Staffa SJ, Keller E, Boyer DL...Lodha R, et al. Online Learning and Residents' Acquisition of Mechanical Ventilation Knowledge: Sequencing Matters. *Crit Care Med.* 2020; 48:e1-8.
2229. Wundavalli L, Agrawal US, Satpathy S, Debnath BR, Agnes TA. How much is adequate staffing for infection control? A deterministic approach through the lens of Workload Indicators of Staffing Need. *Am J Infect Control.* 2020; 48:609-14.
2230. Wundavalli L, Kumar P, Dutta S. Workload indicators of Staffing Need as a tool to determine nurse staffing for a high-volume academic Emergency Department: An observational study. *Int Emerg Nurs.* 2019; 46:100780.
2231. Wundavalli L, S Satpathy, Sharma D K. Barber Johnson technique to assess the efficiency of India's apex tertiary care hospitals: a ten-year trend analysis. *Econ Polit Weekly.* 2019; 54.
2232. Xess I, Malhotra R, Mathur P. Multidrug-Resistant *Candida auris* Fungemia in Critical Care Units: Experience from a Tertiary Care Hospital in India. *Microb Drug Resist.* 2020;26:145-9.
2233. Yadav A, Abilash S, A DebbarmaA, Gupta SK. Establishment of a Postmortem Centre Mortuary - III: Protocols and Guidelines for Dead Body Handling and Preservation. *RFP J Hosp Adm.* 2019; 3:63-6.
2234. Yadav A, Chandran V, Balaji D, Gupta SK. Sudden Cardiac Death in Young Individuals Due to Occlusive Coronary Artery Disease: An Alarming Indicator for Public Health. *RFP Indian J Hosp Adm.* 2019; 3:29-31.
2235. Yadav A, Kumar A, Singh S, Jaiswal AK, Millo T, Gupta SK et al. Estimation of Zinc Levels in Blood, Liver and Stomach Contents using ICP-AES: A Cross Sectional Autopsy Based Study. *J Forensic Chem Toxicol.* 2019;

2236. Yadav CS, Mittal S, Singh S, Gamanagatti S, Anand S, Kumar A. A novel single myocapsular sleeve (SMS) repair technique to reduce dislocation in posterior approach to the hip: A clinico-radiographic study. *J Clin Orthop Trauma*. 2019; 10(Suppl 1):S247-51.
2237. Yadav D, Khandpur S, Subhadarshani S, Sahni K. Congenital symmetrical circumscribed patterned non-scarring alopecia of eyebrows: a variant of congenital triangular alopecia or an anatomical variation? *BMJ Case Rep*. 2019; 12:e227472.
2238. Yadav D, Sharma A, Agarwal S, Gupta V. Hypereosinophilic dermatitis: Generalized lichenification and gyrate erythema as the sole manifestation of idiopathic hypereosinophilic syndrome. *BMJ Case Rep*. 2019; 12:e232142.
2239. Yadav DK, Acharya SK, Bagga D, Jain V, Dhua A, Goel P. Sacrococcygeal teratoma: Clinical characteristics, management, and long-term outcomes in a prospective study from a Tertiary Care Center. *J Indian Assoc Pediatr Surg*. 2020; 25:15-21.
2240. Yadav DK, Jain V, Dinda AK, Agarwala S. Tumor infiltrating lymphocytes in Wilms tumor. *Indian J Med Paediatr Oncol*. 2019; 40:34-8. *larynx: A Case Report*. *JNMA J Nepal Med Assoc*. 2020; 58:52-5.
2241. Yadav HN, Sharma US, Singh S, Gupta YK. Effect of combination of *Tribulusterrestris*, *Boerhaavia diffusa* and *Terminaliachebula* reverses mercuric chloride-induced nephrotoxicity and renal accumulation of mercury in rat. *Oriental Pharm Exp Med*. 2019; 4:497-507.
2242. Yadav HN, Sharma US, Singh S, Gupta YK. Effect of *Tribulus terrestris* in mercuric chloride induced renal accumulation of mercury and nephrotoxicity in rat. *J Adv Pharm Technol Res*. 2019; 10:132-7.
2243. Yadav K, Arjun MC, Jacob OM, Kant S, Ahamed F, Ramaswamy G. Comparison of different doses of daily iron supplementation for anemia prophylaxis in pregnancy: A systematic review. *J Family Med Prim Care*. 2020; 9:1308-16.
2244. Yadav M, Sinha A, Khandelwal P, Hari P, Bagga A. Efficacy of low-dose daily versus alternate-day prednisolone in frequently relapsing nephrotic syndrome: an open-label randomized controlled trial. *Pediatr Nephrol*. 2019; 34:829-35.
2245. Yadav MP, Ballal S, Bal C, Sahoo RK, Damle NA, Tripathi M, et al. Efficacy and Safety of <sup>177</sup>Lu-PSMA-617 Radioligand Therapy in Metastatic Castration-Resistant Prostate Cancer Patients. *Clin Nucl Med*. 2020; 45:19-31.
2246. Yadav MP, Ballal S, Bal C, Sahoo RK, Damle NA, Tripathi M, et al. Efficacy and Safety of <sup>177</sup>Lu-PSMA-617 Radioligand Therapy in Metastatic Castration-Resistant Prostate Cancer Patients. *Clin Nucl Med*. 2020; 45:19-31.
2247. Yadav MP, Ballal S, Sahoo RK, Dwivedi SN, Bal C. Radioligand Therapy With <sup>177</sup>Lu-PSMA for Metastatic Castration-Resistant Prostate Cancer: A Systematic Review and Meta-Analysis. *AJR Am J Roentgenol*. 2019; 213:275-85.
2248. Yadav N, Aggarwal M, Mehta P, Kapoor J, Thekkudan SF, Bhandari P, et al. Primary Plasma Cell Leukemia: A Retrospective Study of a Rare Disease From Tertiary Cancer Centre From India. *Indian J Hematol Blood Transfus*. 2019; 35:649-54.
2249. Yadav N, Banerjee J, Tripathi M, Chandra PS, Dixit AB. Association of Genetic Polymorphisms in Tumor Necrosis Factor-Alpha Gene with the Risk of Intracerebral Hemorrhage in North Indian Population. *Neurol India*. 2020; 68:84-5.
2250. Yadav P, Kumar M, Bansal R, Kaur P, Ethayathulla AS. Structure model of ferrochelatase from *Salmonella Typhi* elucidating metalation mechanism. *Int J Biol Macromol*. 2019; 127:585-93.
2251. Yadav R, Nayak M, Maredupaka S, Sadiq M, Farooque K. Combined Olecranon Osteotomy and the Posterior Minimal Invasive Plate Osteosynthesis Approach for a Concomitant Injury of the Humeral Shaft and a Distal Intraarticular Humerus Fracture. *Cureus*. 2019; 11:e5966.
2252. Yadav R, Yadav RK, Khadgawat R, Pandey RM, Upadhyay AD, Mehta N. Randomized Controlled Trial of A 12-Week Yoga-Based (Including Diet) Lifestyle Vs. Dietary Intervention on Cardio-Metabolic Risk Factors and Continuous Risk Score in Indian Adults with Metabolic Syndrome. *Behav Med*. 2020; 46:9-20.
2253. Yadav R, Yadav RK, Khadgawat R, Pandey RM. Comparative efficacy of a 12 week yoga-based lifestyle intervention and dietary intervention on adipokines, inflammation, and oxidative stress in adults with metabolic syndrome: A randomized controlled trial. *Transl Behav Med*. 2019; 9:594-604.
2254. Yadav RK, Ariga KK, Subbiah A, Bagchi S, Mahajan S, Bhowmik D, et al. Novel Heterozygous Mutations of Congenital Thrombotic Thrombocytopenic Purpura: A Rare Case Report. *Indian J Nephrol*. 2019; 29:295-7.
2255. Yadav RK, Bhowmik D, Subbiah A, Yadav S, Bagchi S, Mahajan S, et al. To study the impact of donor nephrectomy on blood pressure as measured by ambulatory blood pressure monitoring and renal function. *Indian J Nephrol*. 2019; 29:272-7.
2256. Yadav S, Gupta N, Kumari P, Tandon R. Eye trapped an arachnid: Horrific but true! *Indian J Ophthalmol*. 2019;

67:1885.

2257. Yadav S, Tandon R, Singh R, Pujari A. Viscoelastic cannula acting as a wrecker and saviour during cataract surgery. *BMJ Case Rep.* 2019; 12:e231778
2258. Yadav S, Tandon Radhika. Comprehensive eye examination: what does it mean? *Comm Eye Health.* 2019; 32:S1-4.
2259. Yadav S, Thakur S, Kohlhase J, Bhari N, Kabra M, Gupta N. Report of Two Novel Mutations in Indian Patients with Rothmund-Thomson Syndrome. *J Pediatr Genet.* 2019; 8:163-7.
2260. Yadav V, Deka D, Aparna S, Dadhwal V. NT-proBNP: A Useful Biochemical Marker for Prognosis in Rh- Isoimmunized Pregnancies. *J ObstetGynaecol India.* 2019; 69(Suppl 2):128-32.
2261. Yadav V, Malhotra N, Mahey R, Singh N, Kriplani A. Ovarian Sensitivity Index (OSI): Validating the Use of a Marker for Ovarian Responsiveness in IVF. *J ReprodInfertil.* 2019; 20:83-8.
2262. Yan LL, Vedanthan R, Mensah GA, Karmacharya B, Shrestha A, Fitzpatrick A,...Tandon N. Developing the Core Pillars of Training Global Cardiovascular Health Researchers: Companionship, Light, and Fuel. *Glob Heart.* 2019; 14:387-9.
2263. Yogendrakumar V, Ramsay T, Fergusson D, Demchuk AM, Aviv RI, Rodriguez-Luna D,...Bhatia R, et al. the PREDICT/Sunnybrook CTA Study Group. New and expanding ventricular haemorrhage predicts poor outcome in acute intracerebral hemorrhage. *Neurology.* 2019;93:e879-88.
2264. Yogendrakumar V, Ramsay T, Fergusson DA, Demchuk AM, Aviv RI, Rodriguez-Luna D, ...Padma MV, et al. PREDICT/ Sunnybrook CTA StudyGroup1.Redefining Hematoma Expansion With the Inclusion of Intraventricular Hemorrhage Growth. *Stroke.*2020;51:1120-7.
2265. Yogendrakumar V, Ramsay T, Fergusson DA, Demchuk AM, Aviv RI, Rodriguez-Luna D, ...Padma MV, et al. Independent Validation of the Hematoma Expansion Prediction Score: A Non-contrast Score Equivalent in Accuracy to the Spot Sign. *Neurocrit Care.* 2019;31:1-8.
2266. Yoosuf S, Makharia GK. Evolving Therapy for Celiac Disease. *Front Pediatr.* 2019; 7:193.
2267. Zacharia, AA, AhujaN, Kaur S, Mehta N, Sharma R. Does valence influence perceptual bias towards incongruence during binocular rivalry? *Cogn Process.* 2020; 21:239-51.
2268. Zheng D, Xu Y, You S, Hackett ML, Woodman RJ, Li Q,...Tripathi M, et al. Effects of continuous positive airway pressure on depression and anxiety symptoms in patients with obstructive sleep apnoea: results from the sleep apnoea cardiovascular Endpoint randomised trial and meta-analysis. *EClinicalMedicine.* 2019;11:89-96.
2269. Zileli M, Borkar SA, Sinha S, Reinas R, Alves ÓL, Kim SH, et al. Cervical Spondylotic Myelopathy: Natural Course and the Value of Diagnostic Techniques -WFNS Spine Committee Recommendations. *Neurospine.* 2019;16:386-402.
2270. Zileli M, Maheshwari S, Kale SS, Garg K, Menon SK, Parthiban J. Prognosis of CSM: WFNS Spine Committee Recommendations. *Neurospine*2019;16:435-47.
2271. Zuberi M, Mir R, Khan I, Javid J, Guru SA, Bhat M...Sreenivas V, et al. The Promising Signatures of Circulating microRNA-145 in Epithelial Ovarian Cancer Patients. *Microna.* 2020; 9:49-57.

## Abstracts

1. Acharya S, Kumar K, Sarkar A, Ningombam A, Brijwal M, Choudhary A, et al. Dengue and high fluorescence lymphocyte count percentage in blood: A fascinating association. *Indian J Hematol Blood Transfus.* 2019; 35:S89.
2. Afreen N, Chandran D, Jaryal A, Deepak K, Roy S. Graded cuff compression protocol to induce retrograde shear produces proportionate increment in regional arterial compliance in human peripheral artery. *Artery Res.* 2019; 25:S168.
3. Agarwal A, Garg D, Goyal V, Pandit AK, Srivastava AK, Srivastava MVP. Optic neuritis following anti-rabies vaccine. *AnnIndian Acad Neurol.* 2019;22(Suppl 1):S75.
4. Agarwal A, Sharma S, Gunjan D, Singh N, Kaushal K, Poudel S, et al. Natural course of chronic pancreatitis and predictors of its progression: A two-decade experience from a tertiary care centre in India. *J Gastroenterol Hepatol.* 2019; 34(Suppl3):47.
5. Agarwal A, Singh A, Gupta V, Mehtab W, Singh N, Ahuja V, et al. Patients with celiac disease are at high risk of metabolic syndrome and fatty liver. *Turk J Gastroenterol.* 2019; 30:520.
6. Agarwal A, Singh A, Gupta V, Mehtab W, Singh N, Ahuja V, et al. Patients with celiac disease are at high risk of metabolic syndrome and fatty liver. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):72-582.
7. Agarwal A, Sinha A, Parveen A, Hari P, Bagga A. Outcomes of maintenance hemodialysis at a charitable pediatric hemodialysis unit. *Pediatr Nephrol.* 2019; 34:2034.
8. Agarwal L, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Predictors of cervical esophageal anastomotic leak: A retrospective analysis of predictive factors. *Tropical Gastroenterology* 2019; 40(supplement 1): E23-4446 in press.
9. Agarwal S, Sharma S, Gunjan D, Kaushal K, Poudel S, Anand A, et al. Decision curve analysis of non-invasive predictive tools for varices needing treatment in patients with chronic liver disease. *Hepatol Int.* 2020; 14(Suppl 1):S1-422.
10. Aggarwal K, Akhtar N, Mallick HN. High risk of sleep apnea is associated with acute stress in young adults. *Sleep Med.* 2019; 64(Suppl 1):S7.
11. Aggarwal K, Akhtar N, Mallick HN. Social jet lag, screen time, physical activity and sleep quality in Indian young adults. *Sleep Med.* 2019; 64(Suppl 1):S3-4.
12. Aggarwal N, Aggarwala A, Wajid D, Sahoo D, Purkayastha K, Gupta A, et al. Identification of enteral nutrition (EN) related myths amongst parents and a comparison between nutritional status of tube fed versus orally fed pediatric oncology patients. *Pediatr Hematol Oncol.* 2019; 4:S57.
13. Aggarwal R, Goyal V, Srivastava AK, Behari M. Does socio-economic status have impact on quality of life in persons with Parkinson's disease? *Mov Disord.* 2019; 34(Suppl2):243.
14. Aggarwal S, Arumalla K, Singla V, Gani A. Evaluation of Impact of Bariatric Surgery on Clinical, Biochemical and hormonal parameters in Women with Polycystic Ovary Syndrome (PCOS). *Obes Surg.* 2019; 29(Suppl):617.
15. Aggarwal S, Bhambri A, SK. Bariatric Surgery in a Super-Super Obese Patient with Cirrhosis, Grade III Esophageal Varices and Multiple Comorbidities - The Ultimate Challenge. *Obes Surg.* 2019; 29(Suppl):822.
16. Aggarwal S, Bhambri A. "Roux En O" configuration; How to avoid it? *Obes Surg.* 2019; 29(Suppl):1191.
17. Aggarwal S, Bhambri A. Hiatus hernia detection and repair during sleeve gastrectomy - an important risk reduction strategy for denovo gastro-esophageal reflux disease. *Obes Surg.* 2019; 29(Suppl):1204.
18. Agrawal S, Priyam K, Roy TS, Jacob TG. Exocrine Morphology at six and eight weeks in the 4-week L-arginine induced injury murine model of Chronic Pancreatitis. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):298.
19. Ahmed A, Singh A, Anand A, Agarwal A, Chauhan A, Rajput MS, et al. Prevalence of anti-gliadin antibody in patients with irritable bowel syndrome *Turk J Gastroenterol.* 2019; 30:865.
20. Ahmed AS, Naik N, Yadav R, Sharma G, Roy A. Evaluation of ICD therapies in patients receiving ICD for primary and secondary prevention in a tertiary care centre in India. *J Arrhythmia.* 2020; 35(S1):395A. Chatterjee B, Kattula D, Bhatia G, Mishra S. Recovery in Addiction Psychiatry: concept and interventions. *Indian J Psychiatry.* 2020; 62(Suppl 1):S67.
21. Ahuja J, Soneja M, Wig N, Xess I, Biswas A, Singh G, et al. Cryptococcal Antigenemia in Advanced HIV Infection. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S196.
22. Amar R, Pranay T, Rimlee D. Plasmablastic lymphoma and plasmablastic myeloma; is the two an outcome of single disease process. *Blood Res.* 2019; Suppl2.
23. Anand A, Agarwal S, Mohta S, Gunjan D, Kaushal K, Poudel S, et al. Prevalence and prognostic significance of pre-sarcopenia and sarcopenia in cirrhosis. *Hepatol Int.* 2020; 14(Suppl 1):S1-410.
24. Anand A, Gunjan D, Singh N, Madhusudan KS, Kaushal K, Poudel S, et al. Beside methods for the assessment of sarcopenia in patients with cirrhosis of liver. *J Gastroenterol Hepatol.* 2019. 34(Suppl3):519.

25. Anshul Gupta, Sameer Rastogi, Santosh Kumar C et al. Systemic therapy in advanced dermatofibrosarcoma protuberans: Imatinib and beyond. *J Clin Oncol.* 2019; 37:(Suppl15):e22523.
26. Aripirala M, Bansal K, Mathur, V, Tewari, Nitesh. Diode Laser Versus Simvastatin Gel as Pulpotomy Agents in Primary Molars- A Single Blind Randomized Controlled Trial. *J Dent Res.* 2019; 98:Abs No 1520.
27. Arora P, Mochan S, Gupta SK, Saxena S, Rani N, Pallavi SK, et al. Status of MMP9 and TIMP1 in pregnant women with Preeclampsia in Indian population. *FASEB J.* 2019; 33(Suppl 1):774.28.
28. Arya DS, Verma VK, Suchal K, Malik S. Amelioration of Myocardial Injury in Diabetic rats by Kaempferol. *J Hypertens* 2019; 37:e185.
29. Badhwar S, Chandran D, Jaryal A, Narang R, Patel C, Deepak KK. Differential association of central and peripheral arterial compliance with resting and recruitable endothelial function in healthy human subjects. *Artery Res.* 2019; 25:S13-4.
30. Badhwar S, Chandran D, Jaryal A, Narang R, Patel C, Deepak KK. Oscillatory flow patterns in peripheral conduit artery are related to central arterial stiffness in healthy subjects. *Artery Res.* 2019; 25:S52-3.
31. Bagaria D, Banerjee N, Mohiuddin P, Gupta A, Joshi M, Sagar S. Train Related Injuries: Growing Concern in Developing Countries and Five-year Experience at Level-1 Trauma Center in India. *Prehosp Disaster Med.* 2019;34(Suppl 1):S172-3.
32. Baidya Kayal, E.; Kandasamy, D.; Khare, K.; Sharma, R.; Bakhshi, S.; Mehndiratta, A.; IVIM Analysis in Response Evaluation of Osteosarcoma Treated with Neoadjuvant Chemotherapy: Correlation with Histopathological Necrosis, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
33. Bajpai M, Goel P, Anand R. A novel approach to unfavorable anatomy in long gap esophageal atresia: A new dimension to thoracoscopy. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S72.
34. Bajpai M, Goel P, Jana M, Khanna P. Iso-peristaltic gastric tube: Experience from a tertiary care centre and long-term results. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S50.
35. Bajpai M, Goel P, Kandasamy D. An enigmatic route to the contralateral pelvicalyceal system on antegrade pyelogram. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S49.
36. Bajpai M, Goel P, Sharma K, Naranje P. Previously undescribed anomalies of hepatic artery and portal venous anatomy in a case of extra-hepatic biliary atresia and its implications. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S49.
37. Bajpai M, Mitra A, Goel P, Gupta A, Varshney A, Batra RK. Sharp foreign bodies of the aero-digestive tract: Endoscopic removal by the “Kangaroo” technique. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S69.
38. Bajpai M, Nandan R, Goel P. Abdomino-perineal pull-through by the “Hanging Bowel” technique – synthesizing a new paradigm from the past Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S30.
39. Bajpai M, Sharma K, Goel P, Jana M, Baidya D. Single stage trans-vestibular foleys assisted female epispadias repair and bladder neck tightening. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S51.
40. Baksi A, Asuri K, Prakash O, Bansal V. Outcomes of pure polypropylene mesh versus composite mesh in laparoscopic incisional and ventral hernia repair: a cohort study. *Hernia.* 2019; 23:S113-319.
41. Balakrishna S, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Results of Segment 4A sparing Extended Right Hepatectomy in Locally advanced Carcinoma Gall bladder – a case series. *Tropical Gastroenterology* 2019; 40(supplement 1): L29-4285
42. Balakrishna S, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Surgery for Crohn’s Disease: Indications and Outcomes. A 15-year experience at a tertiary care. *Tropical Gastroenterology* 2019; 40(supplement 1): I23-4389
43. Bali P, Bhatia R, Singh N, Srivastava MVP, Sreenivas V. Neuromyelitis Optica Spectrum Disorders- Comparison as per Serostatus and Application of International Consensus Criteria. *Neurology,* 2019; 92(15 Suppl):P1.2-004.
44. Bansal R, Parakh N, Gupta A, Juneja R, Naik N, Yadav R, et al. Incidence and predictors of pacemaker induced left ventricular dysfunction in patients with right ventricular pacing. *J Arrhythmia.* 2020; 35(S1):331A.
45. Bansal S, Mahapatra M, Naranje P, Mahapatra S, Xess I. Abdominal Infections in immunocompromised host: A clinical, radiological and microbiological correlation. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S94.
46. Bansal VK, Krishna A, Prajapati OP. TEP versus TAPP: A prospective comparison more than 1500 cases in a tertiary care hospital. *Hernia.* 2019; 23:S113-319.
47. Bansal VK, Kumar S, Krishna A, Prakash O, Khan WF, Misra MC. An Experience of Over 1500 Cases of Laparoscopic Groin Hernia Surgery at a Tertiary Care Centre. *Surg Endosc.* 2019; 33:130-413.
48. Bhambri A, Aggarwal S. De-novo GERD and weight regain after sleeve gastrectomy due to mechanical causes – (capsule of two interesting cases). *Obes Surg.* 2019; 29(Suppl):1263.



49. Bhatia J, Khan S, Arya DS. Febuxostat attenuates cardiac ischemia reperfusion injury by modulating MAPK/NF- $\kappa$ B/TNF- $\alpha$  pathway. *J Hypertens.* 2019; 37:e117.
50. Bhatia S, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Role of Cysto-pericystectomy and Partial cystectomy/ Deroofing in the management of Hydatid disease of the liver. *Tropical Gastroenterology* 2019; 40(supplement 1): L38-4383
51. Bhattacharjee HK, Mandal P, Bansal V, Sachdeva A, Sood M, Deorari A. Plan-Do-Check-Act (PDCA) Approach to Improve Quality of Care for Surgical Patient: A Randomized Controlled Trial. *Surg Endosc.* 2019; 33:S382.
52. Bhattacharjee R, Neelavalli J, ..., Singh A. Quantitative intra-tumoral-susceptibility-signal (ITSS) vasculature volume (IVV) using QSM vs R2 approach for Glioma Grading. Abstract Nu-399 (Oral and The ISMRM Magna Cum Laude Merit Award). ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
53. Bhoi D, Roy A, Darlong V, Kumar VM, Chhabra A, Prasad G, et al. To Compare The Analgesic Efficacy Of Bilateral Quadratus Lumborum And Transversus Abdominis Plane Block In Patients Undergoing Laparoscopic TAPP Repair Of Inguinal Hernia: An RCT. *Reg Anaesth Pain Med.* 2019; 44(Suppl 1):A94-5.
54. Bhowmick MD, Ariga K, Kochhar KP, Nehra A, Deepak KK, Kaur G, et al. Study of cognitive function in patients with chronic kidney disease and the effect of renal transplantation. *Kidney Int Rep.* 2019; 5(suppl):S341.
55. Bhowmik D, Aslam M, Kaur G. Nutritional status and exercise tolerance of hemodialysis patients in a tertiary care centre in India. *Am J Kidney Dis.* 2019; 73:P657.
56. Bindra A, Mishra R, Khandelwal A, Goyal K, Rath G, Gupta D. To Study the Effect of Cerebral Perfusion Pressure Augmentation on Cerebral Lactate Pyruvate Ratio in Patients with Severe Head Injury: A Cerebral Microdialysis Study. *J NeurosurgAnesthesiol.* 2019; 31:482.
57. Bisht RK, Natanasabapathy G, Subramani V, Singh MJ, Kale SS. Two staged stereotactic radiosurgery to high number of brain metastasis with Gamma knife Perfexion. *Med Phys Int J.* 2019; 7:417.
58. Biswas A, Kashyap L, Roy S, Sahoo R, Pramanik R, Sikka K, et al. Multi-Modality Management of Nasopharyngeal Carcinoma in Paediatric and Adolescent Patients: Experience from a Regional Cancer Centre in North India. *Pediatr Blood Cancer.* 66:S124.
59. Borzych-Duzalka D, Shroff R, Kang HG, Munarriz RL, Bagga A, Krid S, et al. Hemodiafiltration improves biochemical and cardiovascular outcome and growth - data from the International Pediatric Hemodialysis Network. *Pediatr Nephrol.* 2019; 34:2041.
60. Chaithra L, Bansal VK, Krishna A, Prakash O, Bhattacharjee HK, Misra MC. Improving Operative Room Performance in Laparoscopic Surgery of Surgical Residents via Short Term Focused Training - A Quality Improvement Study. *Surg Endosc.* 2019; 33:130-413.
61. Chaman N, Rashid S, Dash NR, Saraya A. Tumor Suppressor Role of Mir-107 and Mir-326 in Periampullary Carcinoma in Association with Metabolic Reprogramming of Cells. *Gastroenterology.* 2019. 156(Suppl 1):S320.
62. Chatterjee B, Mandal P, Rao R, Kattula D. Rehabilitation of special populations in addiction psychiatry. *Indian J Soc Psychiatr.* 2019;35:275
63. Chattopadhyay A, Ganesh R, Sagar R. Paediatric Factitious Bleeding Disorder: A Case Series. *Indian J Psychiatry.* 2020; 62(Suppl 1):S46.
64. Chaturvedi A, Sokhal N, Jena B. Effect of Intravenous Dexmedetomidine On Intraoperative Blood Loss During Intracranial Meningioma Surgery. *J NeurosurgAnesthesiol.*2019; 31:525.
65. Chaturvedi A, Khandelwal A, Goyal K, Sokhal S. Perioperative Anesthetic Management of a Patient With Chin-On-Chest Deformity Presenting for Reconstructive Spine Surgery: A Case Report. *J NeurosurgAnesthesiol.*2019; 31:518.
66. Chaudhari P, Kharbanda OP, Chaudhary R, Pandey RM, Bansal K, Chauhan S. An Investigation Of The Factors Associated With Caries Risk In Children With And Without Cleft Lip And/Or Palate (CL/P). *J Dent Res.* 2019; 98:Abs No 2434.
67. Chaurasia R, Krishna A, Subramanian A, Sinha T. Transfusion practices in severely injured trauma patients in an emergency department: experience at level 1 trauma center in India. *Vox Sang.* 2019; 114(Suppl 1):82.
68. Chawla A, Kumar V, Logani A. Morphological Assessment of Mental Foramen: A CBCT based Retrospective Study. *J Dent Res.* 2019; 98:Abs No242.
69. Chellapuram SK, Kumar L, PramanikR, et al. POEMS SYNDROME: A single centre study of 68 patients and comparison of consolidation Autologous stem cell transplant(ASCT) versus non-ASCT cohorts. *Clin Lymphoma Myeloma Leuk.* 2019;19(Suppl):e307-8.
70. Chhabra A, Balakrishnan A, Kumar A, Talawar P, Subramaniam R, Trikha A, et al. Comparison of ultrasound guided continuous transmuscular quadratus lumborum block with ultrasound guided continuous psoas compartment block for total hip arthroplasty – a randomised controlled trial. *Reg Anaesth Pain Med.* 2019; 44:A135.

71. Chopra A, Singh J, Verma D, Kumar R, Bakhshi S, Kumar J, et al. MEF2C dysregulation is associated with immature T cell immunophenotype, absence of biallelic deletion of TCR-gamma and inferior survival. *Cancer Res.* 2019; 79:5233.
72. Chopra A, Verma D, Kapoor S, Singh J, Kumar J, Palanichamy, et al. Comprehensive Analysis of Immunophenotype and Transcriptome in Indian T-Acute Lymphoblastic Leukemia - a Prospective Study. *Blood.* 2019; 134(Suppl1):1467.
73. Chopra A, Verma D, Kapoor S, Singh J, Palanichamy JK, Pramanik R, et al. Comprehensive Analysis of Immunophenotype and Transcriptome in Indian T-Acute Lymphoblastic Leukemia-a Prospective Study. *Blood.* 2019; 134(Suppl 1):3818.
74. Choudhury A, Joshi S, Magoon R, Hote MP. Coronary sinus blood flow estimated by transesophageal echocardiography correlates well with transit time flowmetry after coronary artery bypass grafting. *J Cardithorac Vasc Anesth.* 2019; 33(S2):85-6.
75. Dadhwal R, Nayyar R, Singh P, Nayak B, Kumar R, Seth A. A Large Contemporary Experience of Renal Tumors in Young Adults and Adolescents: Clinico-Pathological Profile and Long Term Survival Patterns. *World J Urol.* 2019; 37(Suppl 1):S170.
76. Dadhwal V, Deka D, Sharma A, Rana A. Invasive prenatal diagnostic procedures: a single centre experience. *Ultrasound ObstetGynecol.* 2019;54:398.
77. Dadhwal V, Hillman S, Angchuk P, Dolma P, Williams D, Montgomery H. Increased uterine artery diameter protects from altitude associated reduction in fetal growth. *Ultrasound ObstetGynecol.* 2019;54:351.
78. Dadhwal V, Sharma A, Chawla JJ, Rana A. Transplacental and direct fetal therapy for tachyarrhythmias. *Ultrasound Obstet Gynecol.* 2019;54:393.
79. Dadhwal V, Sharma A, Deka D. Pregnancy after conservative management of cesarean scar ectopic: report of two cases. *Ultrasound ObstetGynecol.* 2019;54:415-6.
80. Dadhwal V, Sharma A, Rana A, Chawla J. Prenatal Sonographic diagnosis of meconium Peritonitis and postnatal management: a report of two cases. *Ultrasound Obstet Gynecol.* 2019;54:328-29.
81. Damarla H, Khanna P, Kashyap L, Kashyap S, Maitra S, Verma R. Incidence of postoperative cognitive dysfunction in elderly patients undergoing open abdominal surgery under general anaesthesia using isoflurane or desflurane. *Anaesthesia.* 2020; 75(Suppl 1):78.
82. Dangi S, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Surgical management of hepatolithiasis; A two decade experience at a tertiary care centre. *Tropical Gastroenterology* 2019; 40(supplement 1): L51-4497
83. Dar HY, Srivastava RK. Lactobacillus rhamnosus (LR) enhances Bone Health in Osteoporotic Mice Model (Ovx) By Regulating Treg-Th17 Balance. *Osteoporos Int.* 2019; 30(Suppl 1):P064.
84. Dar L, Choudhary A, Brijwal M, Sahu M, Sachdev J. Dengue outbreaks and predominant circulating virus serotypes and genotypes over more than two decades in a hyper-endemic region. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S657.
85. Das D, Santosh KV, Sharma A, Arava S. Comprehending the phenotypic and functional diversity of  $\gamma\delta$  T cell subtypes in autoimmune skin disease Pemphigus Vulgaris. *J Immunol.* 2019; 202(Suppl 1):115.11.
86. Das N, Gupta R, Malhotra A, Gupta SK, Singh S, Rai S, et al. To explore the utility of diagnostic immunophenotypes for detection of MRD in B-ALL. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl1):S1-151.
87. Das N, Malhotra A, Gupta R, Rai S, Gupta SK, Sahoo RK, et al. CD123 is an Important Predictor of Post Induction Response and Early Treatment Outcome in Acute Lymphoblastic Leukemia. *Clin Lymphoma Myeloma Leuk.* 2019; 19:S197.
88. Das N, Malhotra A, Gupta R, Rai S, Singh S, Sahoo RK, et al. Role of CD123 as Determinant of Minimal Residual Disease in Acute Myeloid Leukemia. *Clin Lymphoma Myeloma Leuk.* 2019;19:S235.
89. Das P, Dutta R, Iqbal A, Gupta SD, Makharia GK. IgA anti-tTG co-localization for identification of Celiac Associated Liver Diseases. *J Gastroenterol Hepatol.* 2019; 2019; 34(Suppl 3):72-582.
90. Das P, Gahlot DG, Singh A, Ahuja V, Sreenivas V, Gupta SD, et al. Quantitative Histology-Based Classification System for Assessment of the Intestinal Mucosal Histological changes in Patients with Celiac Disease. 2019; 34(Suppl 3):72-582.
91. Datta R, Iqbal A, Das P, Singh A, Datta SD, Makharia GK. Celiac Disease Associated Liver Dysfunction: Study of the Histological Features and Co-Localisation Patterns of Iga and Igg Anti-Tissue Transglutaminase Antibody in Liver Biopsies. *Gastroenterology.* 2019; 156(Suppl1):S1233.
92. Datta R, Singh A, Iqbal A, Datta S D, Makharia GK, Das P. Co-Localisation of Iga and Igg Anti-Tissue Transglutaminase 2 Antibodies is a Reliable Method of Diagnosing Extraintestinal Celiac Disease. *Gastroenterology;* 2019. 156(6), s-914 (Mo1991).
93. Datta SK, Jinger P. Ethics in Laboratory Medicine: Indian Scenario. *Ind J Clin Biochem.* 2019; 34(Suppl1):49.

94. Deepak KK. 30 years of autonomic function lab at AIIMS, ND: The paths ahead. *Indian J Physiol Pharmacol.* 2019; 63:24.
95. Deka D, Dadhwal V, Sharma A. Management of Rh iso immunization: the challenge continues. *Ultrasound Obstet Gynecol.* 2019; 54:142.
96. Devnani B, Gupta S, Haresh KP, Biswas A, Pareek V, Batra M,...Rath GK, et al. Impact of Adjuvant Therapy on Survival in Treatment of Central Nervous System Hemangiopericytoma. *Int J Radiat Oncol Biol Phys.* 2019;105(Suppl):E115.
97. Dhar R, Rath GK, Karmakar S. FBXO4 as a novel ubiquitin ligase that targets Cyclin D in the pathogenesis of breast cancer. *J Clin Oncol.* 37:(Suppl 15):e14722.
98. Dhawan V, Kumar M, Chaurasia P, Deka D, Malhotra N, Singh N, et al. Unravelling the sperm transcript signature: on the road to spontaneous and assisted conception. *Andrology.* 2019; 7(Suppl1):78-9.
99. Dhawan V, Kumar M, Singh N, Dadhwal V, Dada R. Paternal contributions in early embryonic gene expression: role in recurrent pregnancy loss. *Fertil Steril.* 2019; 112(Suppl 3):e49-50.
100. Dhillon J, Williamson S, Desai S, Menon S, Shah R, Sirohi D,...Kaushal S, et al. Reporting Trends, Practices, and Resource Utilization in Neuroendocrine Tumors of the Prostate Gland: A Survey of Genitourinary (GU) Pathologists. *Mod Pathol.* 2020; 33(Suppl2):880.
101. Dhiman Y, Patidar GK, Hazarika A. Family history during screening blood donors: Do we really give much importance? *Asian J Transfus Sci.* 2019; 13(Suppl1):32-100.
102. Dhingra K, Grimm W. Osteogenic potential of neural crest-derived stem cells in masticatory mucosa. *J Dent Res:* 98:Abs no 2434.
103. Dube S, Rath G, Bithal P, Prasad K, Roy H, Jena B. Use of Indirect Calorimetry to Assess Outcome in Stroke Patients: A Comparison with Standard Weight-based Formula. *J Neurosurg Anesthesiol.* 2019; 31:513.
104. Dutta T, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Portal vein resection in Whipple's procedure: Experience from a tertiary care centre in India. *Tropical Gastroenterology* 2019; 40(supplement 1): P47-4284
105. Ganguly S, Seth R, Kumar R, Sharma MC, Meena JP, Gupta AK. Characterization of bone marrow involvement in pediatric Hodgkin lymphoma using 18F-FDG-PET/CT and its comparison with blind bone marrow biopsy. *Pediatr Hematol Oncol.* 2019; 4:S30.
106. Ganju N, Agarwal M, Mahapatra M, Dhawan R. Unweaving the tangle of AML in Pregnancy. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S12.
107. Garg B, Singh N, Khan IA, Rashid S, Gunjan D, Gupta S, et al. MiR-30b modulates inflammatory responses by targeting RIP – 140 in pancreatic tumor. *J Gastroenterol Hepatol.* 2019; 34(Suppl3):70.
108. Garg D, Srivastava AK, Jaryal A, Pandey RM, Rajan R, Pandit AK, et al. Differentiation of Autonomic Dysfunction in Multiple System Atrophy Sub types and Idiopathic Parkinson's Disease. *Neurology.* 2019; 92(15 Suppl):P3.6-043.
109. Garg D, Srivastava AK, Jaryal A, Pandey RM, Rajan R, Pandit AK, et al. Autonomic Symptoms Do Not Correlate With Motor Severity In Multiple System Atrophy Subtypes. *J Neurological Sci.* 2019; 405(Suppl):209.
110. Gautam H, Choudhary AH, Agnes A, Singh P, Das BK, Kapil A. Etiology and susceptibility of central line-associated bloodstream infections (CLABSI) in cancer patients: Regular pointwise audit of central line insertion practices (CLIP). *Infect Dis Health.* 2019; 24(Suppl 1):S3.
111. Ghosh S, Jain R, Rao R, Jhanjee S, Mishra AK. Can Ethyl Glucuronide in Hair Be Associated with Alcohol Use in Heavy Drinkers? 2020; *Toxicol Sci.* 174(Suppl 1):60.
112. Goel P, Bajpai M, Anand S, Das P. Systematic review of epidermal inclusion cyst of the penis in children. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S73.
113. Goel P, Bajpai M, Kalaivani M. Pediatric penile anthropometry nomograms from India Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S32.
114. Goel P, Bajpai M, Narsimhan P, Singh TR, Kalaivani M, Khanna P, et al. Prospective study to evaluate the effect of vasodilatory caudal block in pediatric patients. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S72.
115. Gogia A, Gupta R, Sharma A, Kumar L, Raina V, Rani L. Chronic lymphocytic leukemia: An Indian experience. *J Clin Oncol.* 2019; 37(Suppl15):e19007.
116. Goswami S. Preformed natural/non-HLA antibodies are associated with early rejection in kidney transplant. 17th International Congress of Immunology (IUIS 2019). *Eur J Immunol.* 2019; 49(Suppl3):1505-6.
117. Gowda M, Deo S, Dhamija E, Thulkar S, Dwivedi S. TURBO study: Tumor and Breast volumetric by clinical and radiological methods: results of breast volumetry. *Breast.* 2019; Suppl44:S109.
118. Grindstaff E, Pambuccian S, Alshaikh S, Hiroshima K, Hjerpe A, Jain D, et al. Usage of Immunohistochemistry in Body Fluid Cytology: Variation Uncovered by an International Study of over 20,000 Cases from Seven Countries and Four Continents. *Mod Pathol.* 2020; 33(Suppl 2):358.

119. Grover I, Gunjan D, Singh N, Ramakrishnan L, Saraya A. Effect of Calcium and Vitamin D Supplementation on Bone Density in Patients with Cirrhosis- a Double-Blind Randomized Controlled Trial. *Gastroenterology*; 2019; 156(Suppl 1):S481.
120. Grover I, Singh N, Gunjan D, Sati H, Saraya A. Nutritional status, dietary intake and misconceptions of diet in patients with cirrhosis. *Hepatol Int*; 2020; 14(Suppl 1):S1-390.
121. Gruenbaum S, Guay C, Konkayev A, Falegnami A, Qeva E, Prabhakar H, et al. Perioperative Glycemia Management in Patients Undergoing Craniotomy for Brain Tumor Resection: An International Survey of Neuroanesthesiologists' Perceptions and Practices. *J NeurosurgAnesthesiol*.2019; 31:466
122. Gudwani S, Upadhyay P, Sharma K, Kumaran SS, Sagar R, Dhamija R. Non-invasive Assessment of Dysphagia in Degenerative Disorder (Parkinson's Disease).*Neurology*. 2019; 92(15 Suppl):P5.8-045.
123. Gulati S, Panda PK. Evolution of Dietary Therapies in Treatment of Childhood Drug Resistant Epilepsy: an overview of nine studies including six randomized controlled trials accomplished over last twelve years in a tertiary care teaching hospital in North India. *Neurology*. 2019; 92:052.
124. Guleria P, Malik PS, Barwad A, Mathur SR, Iyer VK, Jain D. 'Single Cell Pattern' of Adenocarcinoma Cells in Effusion Cytology: Morphologic Challenges of Lung Cancer. *Acta Cytol*. 2019; 63(suppl 1):1-96.
125. Guleria R, Arora S, Tiwari P, Mohan A, Kalaivani M. Correlation of Oxidative Stress and Antioxidant Enzymes with Mortality in Critically Ill Mechanical Ventilated Patients. *Am J RespirCrit Care Med*. 2019;199:A1587.
126. Guleria R, Madan K, Hadda V, Mohan A, Khilnani GC, Pandey RM, et al. Transdiaphragmatic Pressure Can Be Calculated Using Ultrasound During Magnetic Phrenic Nerve Stimulation in COPD Patients. *Am J RespirCrit Care Med*. 2019;199:A3267.
127. Gundu N, Malik PS, Khurana S, Pathy S, Yadav M, Jain D, Kancharla H. Non-smallcell lung carcinoma (NSCLC) patients with baseline brain imaging: A prospectiveobservational study. *Ann Oncol*. 2019; 30(Suppl2):ii20.
128. Gunjan D, Agarwal A, Mahapatra SJ. Retroversion of the esophagoscope to find bronchoesophageal fistula inside an esophageal diverticulum in a patient with achalasia. *J Gastroenterol Hepatol*. 2019; 34(Suppl 3):577.
129. Gupta A, Chopra A, Meena J, Pandey RM, Singh J, Bakhshi S, Seth R. Effect of Rituximab added to standard chemotherapy therapy on minimal residual disease during induction in CD-20 positive pediatric acute lymphoblastic leukemia (ALL): A randomized Controlled Pilot Trial. *Pediatr Blood Cancer*. 2019; 66:e27989.
130. Gupta A, Meena J, Devarapalli S, Sahoo D, Wajid MA, Tiwary N, et al. Reasons for missed chemotherapy appointments in retinoblastoma patients at a tertiary care centre in India . *Pediatr Blood Cancer*. 2019; 66:e27989.
131. Gupta A, Rastogi S, Kumar CS, Barwad A, Dhamija E, Panday R, et al. Systemic therapy in advanced dermatofibrosarcoma protuberans: Imatinib and beyond. *J Clin Oncol*. 2019; 37(Suppl 15):e22523.
132. Gupta G, Mahapatra M, Seth T, Agarwal M, Dhawan R, Pati HP, et al. Baseline characteristics and therapeutic outcomes of patients with Myeloma. Indian Prospective. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S109.
133. Gupta G, Richa A, Mahapatra M, Seth T, Aggarwal M, Dhawan R, et al. Clinical Profile and Outcomes of Waldenström's Macroglobulinemia From a Tertiary Care Center in India. *Clin Lymphoma Myeloma Leuk*. 2019; 19(Suppl):e316.
134. Gupta G, Richa A, Mahapatra M, Seth T, Dhawan R, Aggarwal M, et al. Baseline Characteristics and Outcomes of Patients with Multiple Myeloma: Indian Perspective. *Clin Lymphoma Myeloma Leuk*. 2019; 19(Suppl):e207.
135. Gupta G, Seth T, Mahapatra M, Datta SK, Saxena R. Efficacy of Low Dose Rasburicase in Management of TLS in Leukaemia and Lymphoma Patients. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S9.
136. Gupta N, Kumar R, Seth T, Garg B, Sharma A. Targeting of versican, a proteoglycan in bone marrow microenvironment by microRNAs inhibit multiple myeloma progression. *Ann Oncol*. 2019; 30(Suppl 6):vi122.
137. Gupta N, Kumar R, Seth T, Garg B, Sharma A. Targeting of versican, a proteoglycan in bone marrow microenvironment by microRNAs inhibit multiple myeloma progression. *Ann Oncol*. 2019; 30(Suppl 6):vi122.
138. Gupta N, Kumar R, Sharma A. Inhibition of miR-144 and miR-199 promote myeloma pathogenesis via upregulation of versican and FAK/STAT3 signaling. *Ann Oncol*. 2019; 30(Suppl 9):ix95.
139. Gupta R, Hazra S, Kaur G, Gupta A, Kaur G, Sharma A, et al. Modified risk stratification (MRS) for Multiple Myeloma-A simplified model using machine learning. *Clin Lymphoma Myeloma Leuk*. 2019; 19:e207-8.
140. Gupta R, Kaur G, Rani L, Khan S, Thakral D, Sharma OD et al. Determination of CNVs by NGS Based Digital MLPA in Multiple Myeloma And Their Effect on Clinical Outcome. *Clin Lymphoma Myeloma Leuk*. 2019;19:e66-7.
141. Gupta R, Mitra DK, Rani S. Urinary MRP8/14, an Endogenous Toll- Like Receptor 4 Ligand, Reflects Renal Disease Activity in Lupus Nephritis: A Cross- Sectional and Longitudinal Assessment. *Arthritis Rheumatol*. 2019; 71(S10):1182-5.

142. Gupta S, Haresh KP, Devanani B. A pilot study to evaluate the feasibility and efficacy of high dose weekly radiotherapy for treating large or fungating inguinal nodes in advanced penile cancers. *Asia Pac J Clin Oncol.* 2019;15(Suppl9):119.
143. Gupta S, Jagannath S, Jain S, Sethia R, Teja V, Elhence A, et al. Neutrophil Cd64 Expression is a Novel Biomarker to Distinguish Sterile and Infected Fluid Collections in Patients with Acute Pancreatitis. *Gastroenterology.* 2019; 156(Suppl 1):S546.
144. Gupta S, Sharma A, Xess I, Singh G, Gupta N, Mani K. Candida infection and clinical response to Fluconazole in Oral leukoplakia. *J Dent Res.* 2019; 98:Abs No 3280.
145. Gupta SK, Bakhshi S, Gupta R, et al. Effect of Concomitant Deletions of CDKN2A/B, PAX5 and Pseudoautosomal Region Genes along with IKZF1 Deletions (IKZF1-Plus) on Outcome in BCR-ABL1 Negative Pediatric B-Cell Acute Lymphoblastic Leukemia. *Clin Lymphoma Myeloma Leuk.* 2019;19:S198-9.
146. Gupta SK, Bakhshi S, Gupta R, Kamal VK, Sahoo RK, Sharma A, et al. Clinical outcome of cases with isolated MLPA finding of amplification of chromosome 21 genes (AMP21-MLPA) is similar to other cases of BCR-ABL1 negative pediatric B-cell acutelymphoblastic leukemia. *Clin Lymphoma Myeloma Leuk.* 2019; 19(Suppl1): S199-200.
147. Gupta SK, Bakhshi S, Gupta R, Kamal VK, Sahoo RK, Sharma A, Kumar L. Effect of concomitant deletions of CDKN2A/B, PAX5 and pseudoautosomal region genes alongwithIKZF1 deletions (IKZF1-plus) on outcome in BCR-ABL1 negative pediatric B-cell acute lymphoblastic leukemia. *Clin Lymphoma Myeloma Leuk.* 2019; 19(Suppl1):S198-9.
148. Gupta SK, Mochan S, Saxena S, Arora P, Rani N, Pallavi SK, et al. H2S Improves the Rate of Migration in Trophoblast Cells. *FASEB J.* 2019; 33(Suppl 1):610.17.
149. Gupta, G, Seth T, Mahapatra, M, Aggarwal M, Dhawan, R. Clinical profile of Posterior reversible encephalopathy syndrome in haematology patients at a tertiary care center. *HemaSphere.* 2019; 3(S1):48.
150. Gurnani N, Gupta M, Aggarwal S, Nehra A, Vishnubhatia S. Assessment of Impact of Bariatric Surgery on the Cognitive functions of Morbidly Obese Patients. *Obes Surg.* 2019; 29(Suppl):244.
151. Gurnani N, Gupta M, Aggarwal S, Nehra A, Vishnubhatla S. Assessment of impact of Bariatric surgery on the cognitive functions of morbidly obese patients Psychology and bariatric surgery-pre and post-op challenges. *Obesity Surgery.* 2019; 29:244.
152. Hadda V, Doddamani S, Madan K, Mittal S, Tiwari P, Mohan A, et al. Efficacy of intrabronchial voriconazole instillation for inoperable pulmonary aspergilloma: a randomized controlled trial. *Respirology.* 2019;24(Suppl 2):4-97.
153. Hadda V, Madan K, Mittal S, Mohan A, Pandey RM, Guleria R, et al. Neurally Adjusted Ventilatory Assist (NAVA) Versus Non-Invasive Pressure Support Ventilation (NIV-PSV) in COPD Exacerbation (NAVA-NICE): A Randomized Trial. *Am J RespirCrit Care Med.* 2019;199:A4250
154. Hadda V, Tiwari P, Mittal S, Mohan A, Khilnani GC, Guleria R, et al. Trends of Change in Diaphragm Thickness on Bedside Ultrasonography Among Critically Ill Patients. *Am J RespirCrit Care Med* 2019;199:A5658.
155. Halder R, Seth T, Mahapatra, M, Chaturvedi, P, Pati, HP, Saxena R. Utility of Inflammatory markers in distinguishing various infective etiologies of fever in febrile neutropenic patients. *HemaSphere.* 2019; 3(S1):921.
156. Hans G, Patil V, Ganesh R. Domestic Violence and mental health in digital age. *Symposia. Indian J Soc Psychiatry.* 2019; 35:368-9.
157. Harankhedkar S, Chauhan R, Mahapatra M, Saxena R. Platelet Aggregation studies in myeloproliferative neoplasms with bleeding diathesis. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S67.
158. Haresh KP, Arun T, Gupta S, Suhani S, Prashad R, Krishnanunni VA, et al. An Institutional Phase I/II Study to Evaluate Safety and Efficacy of High Dose Weekly Hypofractionated Palliative Breast Radiotherapy in Advanced Unresectable or Metastatic Breast Cancer. *Int J Radiat Oncol Biol Phys.* 2019; 105:S195.
159. Harish N, Bakhshi S, Patel C, Sharma A, Gupta RK, Sharma A, et al. Diagnostic usefulness of FDG-PET/CT for detection & extent of Extra medullary disease in pediatric Acute Myeloid Leukemia. *J Nucl Med.* 2019; 60:618.
160. Imbaraj B, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Incidence of Deep Vein Thrombosis (DVT) following major gastrointestinal surgeries from a tertiary hospital in North India: A prospective study. *Tropical Gastroenterology* 2019; 40(supplement 1): M27-4379
161. Iyer H, Mohan A, Madan K, Hadda V, Mittal S, Guleria R, et al. Comparison of Sample Adequacy of Endobronchial Ultrasound Guided Transbronchial Needle Aspiration Using 0 ML, 10 ML and 20 ML Suction Pressures in Malignant and Benign Diseases. *Am J RespirCrit Care Med.* 2019;199:A1392.
162. Jadaun SS, Shalimar S, Seetharama MK, Rout G, Ranjan G, Sharma R, et al. Mo1524—Prevalence of Cerebral Edema and Other Structural Changes of Brain in Acute on Chronic Liver Failure. *Gastroenterology.* 2019; 156(Suppl 1):S1330.

163. Jain A, Dhingra N, Seth T, Mahapatra M. CNS involvement at presentation in AML: A retrospective case series. *HemaSphere*. 2019; 3(S1):810.
164. Jain A, Mahapatra M, Seth T, Irom A, Szawal S. Treatment of CML-CP patients with Nilotinib followed by Imatinib compared to upfront Imatinib. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S79.
165. Jain A, Mittal S, Tiwari P, Hadda V, Madan K, Mohan A. Improving LungFunction in Severe Heterogenous Emphysema with the Spiration Valve System: Stilla Great Need to “EMPROVE”. *Am J RespirCrit Care Med*. 2020;201:391.
166. Jain D, Singh V, Malik P, Mohan A. Epidermal growth factor receptor (EGFR) mutation spectrum in pulmonary adenocarcinomas: Indian experience. *J Thorac Oncol*. 2019; 14(Suppl):P807.
167. Jain R, Ghosh S, Chatterjee B. Critical Issues in Alcohol and Drugs of Abuse Testing in De-addiction Programs. *Indian J Psychiatry*. 2020; 62(Suppl1):S153.
168. Jain S, Mallick S, Ramteke P, Agarwal M, Dhawan R, Saxena R. Nodal Erythroid Sarcoma a diagnostic enigma. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S19.
169. Jain S, Mallick S, Ramteke P, Gogia A, Bakhshi S, Sharma A. Panorama of Lymphoma in India: A tertiary care center review. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S113.
170. Jaswant J, Pakhre A, Deb KS, Chadda RK, Sharma R. Diagnostic and therapeutic challenges in a patient with dissociative aphonia with epilepsy versus psychogenic nonepileptic seizures. *Indian J Soc Psychiatry*. 2019; 35:290.
171. Jat KR, Kumari J, Lodha R, Mukherjee A, Saini S, Kumar A, et al. Cut-off Values of Diagnostic Criteria for Allergic Bronchopulmonary Aspergillosis in Asthmatic Children. *Pediatric Pulmonol*. 2019; 54:S88-9.
172. Jayapal R, Madhusudan KS, Panwar R, Singh AN, Dash NR, Pal S, Sahni Management and outcomes of pseudoaneurysms complicating pancreatic surgery. A tertiary care single centre experience. *Tropical Gastroenterology* 2019; 40(supplement 1): P P60-4396
173. Jayapal R, Sahota GS, Panwar R, Singh AN, Dash NR, Pal S, Sahni Outcomes of patients in duct to mucosa pancreatico-jejunosomy with duct size of 2mm or less following pancreaticoduodenectomy. *Tropical Gastroenterology* 2019; 40(supplement 1): P63-4404
174. Jeyakumar PS S, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Impact of proton pump inhibitor on the development of anastomotic complications after gastric pull up and cervical oesophago-gastric anastomosis: A randomized controlled trial. *Tropical Gastroenterology* 2019; 40(supplement 1): E11-4219 in press.
175. Jhanjee S, Kaloia G, Kattula D. Internet based interventions in tobacco cessation. *Indian J Soc Psychiatry*. 2019; 35:261-2.
176. Jhanjee S, Mandal P, Chatterjee B. Tobacco use in vulnerable populations in India: A review. *Indian J Psychiatry*. 2020; 62(Suppl1):S93.
177. Jingar P, Mohammad T, Deorari AK, Datta SK. Serial nutritional assessment of Breast milk in mothers of very preterm (<32 weeks) Neonates. *Ind J Clin Biochem*. 2019; 34(Suppl1):167.
178. Jogi S, Thaha R, ... , Singh A. An approach to validate MRI Compatible axial Knee joint Loading Device with various standing posture in Standing MRI. Abstract Nu-1431. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
179. Jogi, S.; Rafeek, T.; Rajan, S.; Singh, D.; Mahajan, V.; Venugopal, V.; Mehndiratta, A., Singh, A.; An approach to validate MRI Compatible axial Knee joint Loading Device with various standing posture in Standing MRI, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
180. Joshi A, Sinha A, Sharma A, Shamim U, Sharma P, Zahra S, et al. Genetic basis and phenotype of congenital nephrotic syndrome (ns) using whole exome sequencing. *Pediatr Nephrol*. 2019; 34:2208.
181. Joshi B, Singh D, Wasan H, Sharma U, Jagannathan NR, Dinda AK, et al. Tideglusib exerts neuroprotective effect in brain ischemic reperfusion injury in rats. *Eur Stroke J*. 2019; 4(Suppl):345.
182. Juneja R, Pati HP, Tyagi S, Mahapatra M, Gupta A, Saxena R. Role of IHC on bone marrow biopsies in enhancing diagnosis of suspected case of MDS. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S74.
183. Kairo AK, Quadri JA, Singh A, Sarwar S, Kumar R, Thakar A, et al. Over Expression of Psoriasin in Middle Ear Cholesteatoma Increases Inflammation, Bone Destruction, and Severity of Disease: Ultrastructural and Molecular Findings. *Ann Otolaryngology*. 2(Suppl):A006
184. Kanchana Soman Pillai, Rajan R, Pandit AK, Srivastava AK, Prasad K, Goyal V. Clinical and electrophysiologic characteristics of tremor in tremor dominant Parkinson’s disease patients. *AnnIndian Acad Neurol*. 2019;22(Suppl 1):S8.
185. Kanga U, Keppen C, Sharma A, Kapoor S, Abid M, Medhi S, et al. Genetic Propensity To Nasopharyngeal Carcinoma In Nagas From North East India. *HLA*. 2019; 93:72-3.

186. Kanga U, Sharma G, Sharma A, Alwadh A, Abid M, Gautam SK. Relevance Of HLA-B\*57:01 Screening For Abacavir Hypersensitivity In North Indians. *Human Immunol.*2019; 80(Suppl):106.
187. Kanjilal M, Kumar U, Arya RK, Gupta GK, Agarwal D. Prevalence of musculoskeletal pain and its risk factors among adolescent school children: A Cross-sectional survey. *Indian J Rheumatol.* 2019; 14(Suppl2):S109.
188. Kapil A, Sharma P, Kaur P, Kumar M, Dahiya S, Sood S, et al. Discovery of novel DNA Gyrase inhibitors against Salmonella Typhi using structure-based drug delivery approach. *Biophys J.* 2020; 118:72-3.
189. Kapoor I, Gupta D, Mahajan C, Prabhakar H. Erroneous High Entropy Values in a Patient Undergoing Brachial Plexus Repair *J NeurosurgAnesthesiol.*2019; 31:515.
190. Kapoor I, Mahajan C, Prabhakar H. Effect of Propofol on Brain Volume Assessed by Transcranial Sonography! *J NeurosurgAnesthesiol.*2019; 31:525.
191. Kapoor PM. Perioperative goal directed therapy in CABG. *J Korea Med Sci.* 2019; 1:e19.
192. Kar B, Sengupta A, ..., Singh A. Grading of glioma using a machine learning framework based on optimized features obtained from quantitative DCE-MRI and SWI. Abstract Nu-3071. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
193. Kataria B, Sharma A, Mishra S, Bhatnagar S, Thulkar S, Yadav M, et al. Capecitabine+ best supportive care (BSC) or erlotinib+ BSC has overall survival (OS) benefit over BSC alone in unresectable/metastatic gall bladder cancer (GBC) patients with ECOG PS-III. Results from a phase II randomised controlled trial (RCT). *Ann Oncol.* 2019; 30(Suppl 5):v279.
194. Kaul A, Aggarwal S, Gulati G, Kashyap L. Impact of bariatric surgery on cardiovascular risk reduction in morbidly obese patients using intimal medial thickness as surrogate marker. *Obes Surg.* 2019; 29(Suppl):517.
195. Kaur A, Ganesh R, Sen MS, Patra BN, Sagar R. Demonstration of multiple psychiatric comorbidities in A patient of Neurofibromatosis Type I. *Indian J Psychiatry.* 2020; 62(Suppl 1):S45.
196. Kaur G, Gupta R, Farswan A, Gupta A, Sriram K. Inferring Biological Pathways in Multiple Myeloma after Missing Value Imputation. *Clin Lymphoma Myeloma Leuk.* 2019; 19:e67.
197. Kaushal K, Gunjan D, Goswami P, Das P, Venugopal SK, Sachdev V, et al. Assessment and Comparison of Endotoxemia and Tight Junction Protein Expression in Duodenal Mucosal Biopsy in Non Alcoholic Steatohepatitis and Alcoholic Liver Disease. *Gastroenterology.* 2019; 156(Suppl 1):S1362.
198. Kaushal K, Gupta V, Sharma S, Agarwal S, Poudel S, Gunjan D, et al. Changes in claudin 2 expression mediates increased gut permeability in patients with acute variceal bleed due to alcohol related cirrhosis. *Hepatol Int.* 2020; 14(Suppl 1):S1-456.
199. Kaushal S, Narwal A, Singh G, Seth A. Improved correlation of Urinary cytology specimens by implementation of The Paris System in biopsy proven upper and lower urinary tract urothelial carcinomas. *Acta Cytol.* 2019; 63(suppl):3.
200. Kaushal S, Khandakar H, Jangir H, Mahajan S, Singh G, Sharma MC. Aspiration cytology of Intranodal palisaded myofibroblastoma (intranodal hemorrhagic spindle cell tumor with amianthoid fibers): Report of two cases rarely seen on cytology. *Acta Cytol.* 2019; 63(suppl):3.
201. Kaushik G, Gupta A, Kumar S, Soni KD, Sharma A. A Registry Software for Road Traffic Injury Patients at Apex Trauma Centre in India: An Innovation. *Prehosp Disaster Med.* 2019; 34(Suppl1):S163.
202. Kaushik P, Patel C, Gulati G, Seth S, Parakh N, Kumar R, et al. Comparison of <sup>68</sup>Ga-DOTANOC PET/CT with cardiac MRI for imaging inflammation in cardiac sarcoidosis. *Eur J Nucl Med Mol Imag.* 2019; 46(Suppl 1):1.
203. Kaushik P, Patel C, Kumar R, Gulati GS, Parakh N, Seth S, et al. A comparison of Somatostatin receptor PET/CT and Myocardial perfusion SPECT with cardiac magnetic resonance imaging in cardiac sarcoidosis. *J Nucl Med.* 2019; 60:374.
204. Kavita Y, Akanksha S, Chandran DS, Jaryal AK, Poonam C, Deepak KK. The physiological response to non-hypotensive hypovolemia is initiated by cardiopulmonary receptors and neuro-mechanical decoupling of baroreceptors. *Indian J Physiol Pharmacol.* 2019; 63:83.
205. Kedia S, Das B, Ghosh TS, Jain S, Gupta V, Bopanna S, Makharia GK, Travis SP, Ahuja V. Tu1792–Gut Microbiome Diversity in Acute Severe Colitis is Distinct from Mild to Moderate Ulcerative Colitis. *Gastroenterology.* 2019; 156(Suppl1):S1125.
206. Kedia S, Mouli VP, Kamat N, Sankar J, Makharia G, Ahuja V. Risk of tuberculosis in patients with inflammatory bowel disease on infliximab or adalimumab is dependent on the local disease burden of tuberculosis: a systematic review and meta-analysis. 2019; 34(Suppl 3):72-582.
207. Khan IA, Gupta S, Rashid S, Yadav R, Singh N, Garg B, et al. MicroRNA expression profiles to differentiate pancreatic cancer from normal pancreas and chronic pancreatitis. *J Gastroenterol Hepatol.* 2019. 34(Suppl3):300.
208. Khandelwal P, Faruq M, Puraswani M, Joshi A, Sinha A, Hari P, et al. Coexisting variations in complement genes

- increase relapse risk in anti-factor H associated atypical HUS. *Pediatr Nephrol.* 2019; 34:1952.
209. Khandelwal P, Saini H, Singh G, Saini S, Sinha A, Bagga A, et al. Therapy and outcome of C3 glomerulopathy and immune-complex membranoproliferative glomerulonephritis. *Pediatr Nephrol.* 2019; 34:2105.
  210. Khanna K, Bajpai M, Goel P, Jana M. Choice of therapy in posterior urethral valves: The step ladder management protocol Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S22.
  211. Khanna K, Bajpai M, Goel P, Jana M. Complexities and challenges involved in the management of conjoint twins. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S63.
  212. Khetan K, Baloda V, Sahoo RK, Vishnubhathla S, Yadav R, Saraya A, et al. SPARC expression in desmoplastic and non-desmoplastic pancreatic carcinoma and cholangiocarcinoma. *Pathol Res Pract.* 2019; 215:152685.
  213. Khullar S, Chaudhry R, Agrawal S, Kumar L, Gupta N, Wig N, et al. Trends of Clostridioides difficile-Associated Diarrhea at a Tertiary Care Center in India. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S831.
  214. Kishore K, Sharma A, Ranjan R, Kumar R, Pandey H, Mahapatra M, et al. Influence of TFPI Gene Polymorphisms (33T/C and 536C/T) on DVT in Young Indians. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S142.
  215. Komaraju VS, Gorai B, De Mattos LC, Prakash S. Novel function-spacer-lipid (FSL) trypanosomam Cruzi constructs as sensitive and specific FSL Kodecytes assay. *Indian J Clin Biochem.* 2019; 34:(Suppl 1):151.
  216. Kumar A, Bhattacharjee HK, Bale M, Suhani, Parshad R. Laparoscopic Deroofing of Hydatid Cyst of Liver Using A 150MM, 12MM XCEL® TROCAR. *Surg Endosc.* 2019; 33:S115.
  217. Kumar A, Prasad K, Sagar R, Misra A, Rawar D, Pandit A, et al. Department of Neurology, All India Institute of Medical Sciences, New Delhi, India Transforming growth factor – beta gene polymorphism and risk of ischemic stroke in North Indians: A case control study PP52/259. *Ann India Acad Neurol.* 22(Suppl1):S63.
  218. Kumar CS, Rastogi S, Prajapati R, Barwad A, Aggarwal A, Dhamija E, et al. Efficacy of low dose pazopanib in advanced soft tissue sarcoma (STS): Experience from a dedicated sarcoma medical oncology clinic in India. *J Clin Oncol.* 2019; 37(Suppl 15):e22555.
  219. Kumar K, Ningombam A, Acharya S, Sarkar A, Antony VM, Tiwari R. Peripheral erythrophagocytosis in a case of autoimmune haemolytic anaemia. *Indian J Hematol Blood Transfus.* 2019; 35:S56.
  220. Kumar KR, Kashyap L. Assessing functional capacity before major non-cardiac surgery. *Natl Med J India.* 2019; 32:155-6.
  221. Kumar L, Chellapuram SK, Mookerjee A, Sahoo RK, Malik PS, Gupta R et al. Characteristics and Outcome of Relapsed Myeloma after Single Autologous Stem Cell Transplant: 20-year Experience. *Clin Lymphoma Myeloma Leuk.* 2019; 19:e210-1.
  222. Kumar L, Chellapuram SK, Sahoo RK, Gupta R. VRd versus VCD as induction therapy for newly diagnosed multiple myeloma: A Phase III, randomized study. *Clin Lymphoma Myeloma Leuk.* 2019; 19:e361.
  223. Kumar N, Burman S, Rath G, Bindra A, Chaturvedi A, Goyal K. Cardiovascular Complications After Traumatic Spinal Cord Injury. *J Neurosurg Anesthesiol.* 2019; 31:477.
  224. Kumar P, Panwar R, Singh AN, Dash NR, Pal S, Sahni. PNET: 10 year experience at a tertiary care centre. *Tropical Gastroenterology* 2019; 40(supplement 1): P P50-4342
  225. Kumar R, Harish N, Sharma A, Gupta RK, Sharma A, Bakhshi S, et al. Comparison of FDG PET/CT and CT in response assessment and prognosis of patients with extra medullary disease in acute myeloid leukemia. *J Nucl Med.* 2019; 60:1251.
  226. Kumar R, Ponneth M, Manchanda S, Barwad A, Sagar P, Singh CA, et al. Assessment of depth of invasion in tongue squamous cell carcinoma (T1-T3) by clinical palpation & radiology and their correlation to histopathological depth of invasion. *J Head Neck Physicians Surg.* 2019; 7(Suppl):Abs-087.
  227. Kumar R, Sharma A, Mohan A, Bhalla A, Pandey A, Thulkar S, et al. Role of metabolic tumor volume (MTV) and standardized uptake value (SUV) based parameters derived from whole body (WB) 18F-FDG PET/CT in prediction of overall survival (OS) in NSCLC. *J Nucl Med.* 2019; 60:1337.
  228. Kumar S, Saikia J, Kumar V, Malik PS, Madan K, Jain D, et al. Neoadjuvant chemotherapy followed by surgery in lung cancer: Indian scenario. *Curr Probl Cancer.* 2020; 44:100563.
  229. Kumar SC, Rastogi S, Prajapati R, et al. Efficacy of low dose pazopanib in advanced soft tissue sarcoma (STS): Experience from a dedicated sarcoma medical oncology clinic in India. *J Clin Oncol.* 2019; 37:(Suppl15):e22555.
  230. Lata S, Sazawal S, Ranjan R, Mahapatra M, Tyagi S, Saxena R. Evaluation of JAK2V617F Mutation in Indian Patients with BCR ABL Negative CMPN. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S123.
  231. Lone WG, Bouska A, Herek T, Amador C, Saumyanaraj M, Jia-yu Y, et al. Genome-Wide microRNA Expression Profiling in Molecular Subgroups of Peripheral T-Cell Lymphoma Identified Role of Mir-126 in T-Cell Lymphomagenesis. *Blood.* 2019; 134(Suppl1):2767.



232. Madaan P, Gupta D, Agarwal D, Kumar A, Jauhari P, Chakrabarty B, et al. Neurocognitive outcomes and their Diffusion Tensor Imaging (DTI) correlates in children with Mild Traumatic Brain Injury (mTBI). *Neurology*. 2019; 92:059.
233. Mahajan A, Arora R, Dinand V, Kalra M, Jain S, Bakhshi S, et al. Empirical Anti-tubercular Treatment given to children with Hodgkin Lymphoma: does it impact outcomes? *Pediatr Hematol Oncol*. 2019; 4:S7.
234. Malagi, A.; Das, C.; Khare, K.; Calamante, F.; Mehndiratta, A.; Evaluating effect of Combination and Number of Multiple b-values in IVIM Analysis of Prostate, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
235. Malik R, Maji P, Yadav R, Das P. Autoimmune hepatitis in children: initial experience from an Indian tertiary pediatric centre. *J Pediatr Gastroenterol Nutr*. 2019; 68(suppl):835.
236. Mallick S, Panda A, Lone MR, Goswami A, Ramteke P, Sharma MC, et al. Clinicopathological Profile of Primary Double Expressor Lymphoma. *Clin Lymphoma Myeloma Leuk*. 2019; 19(Suppl):S257.
237. Mallick S, Panda A, LoneMR, GoswamiA, Ramteke P, Sharma MC, et al. Clinicopathological Profile of Primary Double Expressor Lymphoma. *Clin Lymphoma Myeloma Leukaemia*. 2019; 19:S257.
238. Mandal A, Meena J, Khnadelwal P, Sinha A, Hari P, Bagga A. Variations in SCL34A1 predominate on whole exome sequencing in isolated nephrolithiasis. *Pediatr Nephrol*. 2019; 34:2145.
239. Mann M, Kumar S, Sharma A, Chauhan SS, Bhatla N, Gupta R, et al. PARP inhibition enhances cisplatin sensitivity in cervical cancer by modulating b-catenin signaling. *Ann Oncol*. 2019; 30(Suppl5):v19.
240. Marik B, Bagga A, Sinha A, Hari P, Sharma A. Importance of genetic testing in the diagnosis and management of hypophosphatemic rickets. *Biochem Mol Biol J*. 2019; 5:87.
241. Marik B, Bagga A, Sinha A, Khandelwal P, Hari P, Sharma A. Whole Exome Sequencing (WES) in patients with hypophosphatemic rickets. *Pediatr Nephrol*. 2019; 34:1953.
242. Mathew G, Sinha A, Grewal N, Hari P, Bagga A. Sequential rituximab therapy in steroid and/or calcineurin inhibitor dependent nephrotic syndrome. *Pediatr Nephrol*. 2019; 34:2125.
243. Meena J, Mathew G, Hari P, Sinha A, Bagga A. Bladder- bowel dysfunction in children with UTI and/or VUR: Systematic review and meta-analysis. *Pediatr Nephrol*. 2019; 34:1942.
244. Mehndiratta, A.; Kayal, E.; Patil, S.; Bakhshi, S.; Sharma, R.; Kandasamy, D.; SLICs Algorithm for Non-Invasive Response Evaluation in Osteosarcoma with Multiparametric MR Imaging, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
245. Mehtab W, Sachdev V, Singh A, Singh N, Malhotra A, Ahuja V, et al. Estimation of gluten content in unlabeled and labeled gluten-free food products and commonly used food items consumed by celiac disease patients. *Turk J Gastroenterol*. 2019; 30:888.
246. Mehtab W, Sachdev V, Singh N, Singh A, Malhotra A, Ahuja V, et al. Celiac disease adherence test does not detect short term dietary adherence to gluten-free diet. *Turk J Gastroenterol*. 2019; 30:878.
247. Mehtab W, Sachdev V, Singh N, Singh A, Malhotra A, Ahuja V, et al. Celiac disease adherence test does not detect short term dietary adherence to gluten-free diet. *J Gastroenterol Hepatol*. 2019; 34(Suppl 3):72-582.
248. Mino-Kenudson M, Redman M, Hedger J, Daigneault J, Botling J, Brambilla E, Chen G, Chou T, Cooper W, Hirsch FR, Jain Det al. IASLC Global survey for pathologists on PD-L1 testing for non-small cell lung cancer. *J Thorac Oncol*. 2019; 14(Suppl):P815.
249. Mirgh S, Mahapatra M, Seth T, Dhawan R, Aggarwal M, Saxena R, et al. Comparison of Allopurinol and Febuxostat for prevention of Hyperuricemia and tumor lysis syndrome in acute leukemia. *HemaSphere*. 2019; 3(S1):318-9.
250. Mirgh S, Mahapatra M, Seth T, Dhawan R, Aggarwal M, Saxena R, et al. Impact of cytogenetics abnormalities on response in a cohort of Indian Multiple Myeloma patients : Is 13 q deletion the new 17p in disguise? *HemaSphere*. 2019; 3(S1):981.
251. Mishra M, Arora P, Saxena S, Gupta SK, Mochan S, Kasapuram D, et al. Association of MMP 2 gene polymorphisms (- 735C/T and -1306C/T) in Preeclamptic patients in Indian population. *J Mol Genet Med*. 2019; 13:
252. Mishra N, Rath G, Chaturvedi A, Bithal P. Perioperative Management of Pediatric Patients Undergoing Surgery for Intracranial Tumours: A Retrospective Analysis. *J NeurosurgAnesthesiol*. 2019; 31:481.
253. Mishra P, Tyagi S, Pati HP, Mahapatra M. Leukemia stem cells: A novel independent marker of prognostication in acute myeloid leukemia. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S22.
254. Misra S, Talwar P, Kumar A, Kumar P, Rai A, Pandit AK, et al. Seasonal and monthly variation of stroke and its subtypes in the north Indian population. *JNeurological Sci*. 2019; 405(Suppl):130.
255. Misra S, Talwar P, Kumar A, Kumar P, Sagar R, Pandit AK, et al. Comparison of clinical risk factors and lipid profile between ischemic stroke and intracerebral hemorrhage stroke of a tertiary care hospital in north India. *Eur Stroke J*. 2019; 4(Suppl1):343.

256. Misra S, Talwar P, Kumar P, Kumar A, Rai A, Pandit AK, et al. Glial fibrillary acidic protein levels in differentiating ischemic stroke from healthy controls, stroke mimics and intracerebral hemorrhage: A systematic review and meta-analysis. *Ann Indian Acad Neurol.*2019; 22(Suppl1):S51-2.
257. Mittal S, Ganesh R, Singh M, Patra BN, Sagar R. NMS-A Case Report. *Indian J Psychiatry.* 2020; 62(Suppl 1):S45-6.
258. Mochan S, Gupta SK, Saxena S, Arora P, Rani N, Pallavi SK, et al. Status of sFlt-1 in Pregnant Women with Preeclampsia and its Impact on GRP78 in Trophoblast Cells. *FASEB J.* 2019; 33(Suppl 1):774.30.
259. Mohan A, Mittal S, Hadda V, Madan K, Khilnani GC, Guleria R, et al. Survival and Treatment Response of Lung Cancer Patients in India: A Tertiary Care Centre Experience. *Am J RespirCrit Care Med.* 2019;199:A3981
260. Mohan A, Mittal S, Madan K, Khilnani GC, Hadda V, GuleriaR, et al. Delays During Diagnosis and Management of Lung Cancer in India- A Prospective Observational Study. *Am J RespirCrit Care Med.* 2019;199:A3975.
261. Mohta S. Agarwal S, Sharma S, Gunjan D, Gupta V, Kaushal K, et al. Long term outcomes with carvedilol versus propranolol in patients with index variceal bleed: 6-year follow-up of a randomized controlled trial. *Hepatol Int.* 2020; 14(Suppl 1):S1- 383.
262. Mookerjee A, Dahiya M, Gupta R, Kumar R, Sharma A, Luthra K, et al. Post-transplant minimal residual disease assessment in Multiple myeloma. *Clin Lymphoma Myeloma Leuk.*2019; 19:e180.
263. Moond V, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Biliary surgery in portal biliopathy: Short and longterm outcomes. *Tropical Gastroenterology* 2019; 40(supplement 1): B44-4392
264. Moond V, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Intrapancreatic Choledochoplasty as a treatment modality in Chronic Pancreatitis induced distal CBD stricture. *Tropical Gastroenterology* 2019; 40(supplement 1): P73-4498
265. Mukhopadhyay T, Subramanian A, Saxena R. Characterisation of Analytical Errors in Classical Thromboelastography (TEG) Interpretation. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl 1):S65.
266. Mukhopadhyay T, Subramanian A. Quality Improvement Initiative to Improve Critical Value Notification in the Hematology Laboratory. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl 1):S92.
267. Murali D, Agarwala S, Jain V, Dhua A, Bhatnagar V. H type tracheo-esophageal fistula:Technique of identification of fistula and outcomes of surgery. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S62.
268. Murali D, Jain V, Arora S, Passah A, Kalaivani M, Yadav DK, et al. Comparison of the serial diuretic renal scans performed with 99mTc-L,L-EC and 99mTc-MAG3 in children with pelviureteric junction obstruction. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S47.
269. Nagendra MK, Bajpai M, Goel P, Kumar R, Anshul. Hepatic perfusion Index- a novel non radiological method of assessing hepatic blood flow and shunt patency in cases of EHPVO Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S33.
270. Nagendra MK, Bajpai M, Goel P. Beaded foreign body bronchus: A surgical challenge in removal Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S14.
271. Nagendra MK, Sharma S, Singh V, Kakkar A, Bhardwaj B, Yadav DK, et al. Clinicopathological correlation of Rare Adrenal Tumour. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S15.
272. Nagendra MK, Singh VK, Sharma S, Yadav DK, Gupta DK. Congenital Midline Cervical Cleft.(CMCC)- An extremely rare branchial fusion anomaly. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S14.
273. Naik RD, Kumar L, Baa AK, et al. Role of Hypomethylating Agents in the Treatment of AML: Retrospective Study at a Tertiary Care Center. *Clin Lymphoma Myeloma Leuk.* 2019;19:S232-3.
274. Nakra T, Guleria P, Mathur SR, Iyer VK, Jain D. Insulinoma-Associated Protein 1 (INSM1): Immunocytochemistry on Cytology Smears in Small Cell Carcinoma of Lung. *Acta Cytol.* 2019; 63(suppl 1):1-96.
275. Nakra T, Roy M, Yadav R, Agarwala S, Khanna G, Jasim B, et al. Role of SALL4 immunocytochemistry in diagnosis and subtyping of hepatoblastoma on fine needle aspiration cytology. *Acta Cytol.* 2019; 63(suppl1):40.
276. Nambirajan A, Parshad R, Goyal A, Mittal S, Jain D. SMARCA4-deficient thoracic malignancies: a unifying genetic aberration across tumors of divergent differentiation. *J Thorac Oncol.* 2019; 14(Suppl):P1052.
277. NambirajanA, Sharma P, Sharma M, Kumar S, Jain D. Primary endobronchial hyalinising clear cell carcinoma presenting in association with active pulmonary tuberculosis. *J Thorac Oncol.* 2019; 14(Suppl):P1099.
278. Nandan R, Bajpai M, Goel P. Reversal of hypersplenism sans splenectomy in patients of extrahepatic portal vein obstruction Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S25.
279. Nandan R, Sharma S, Yadav DK, Gupta DK. Complicated case of urethral duplication with dilated posterior urethra and renal failure. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S7.
280. Narang M, Srivastava AK, Aggarwal R, Rajan R, Faruq M, Srivastava MVP. Gait in Spinocerebellar Ataxia Type12 (SCA-12). *Mov Disord.* 2019; 34(Suppl 2).
281. Naresh G, Kumar L, Sharma A, Chellapuram S, Malik PS, Sahoo RK,...Biswas A. An Experience of Primary

- Amyloidosis from an Indian Tertiary Cancer Centre: A Retrospective Study. *Clin Lymphoma Myeloma Leuk.* 2019;19(Suppl1):S335.
282. Nayyar R, Dadhwal R, Kapil A, Pandey RM. Intra-Urethral Flora and Post-Cystoscopy Urinary Tract Infection In Males – A Clinical Study. *World J Urol.* 2019; 37(Suppl 1):S15.
  283. Ningombam A, Sarkar A, Acharya S, Antony VM, Tiwari R, Saxena R. Scatterplot patterns of acute myeloid leukemia with cup shaped blast in sysmex XN-series analyser. *Indian J Hematol Blood Transfus.* 2019; 35:S24.
  284. Nityanand S, Gupta A, Yadav S, Kumar P, Garg A, Gupta R, et al. Improved treatment outcome of transplant ineligible multiple Myeloma in the Era of Novel Agents: Experience from Tertiary Care Centre in North India. *Clin Lymphoma Myeloma Leuk.* 2019; 19(Suppl):E234.
  285. Obrei G, Tyagi S, Mahapatra M, Pati HP. Chronic Lymphocytic leukemia and Multiple Myeloma: Two swords in one scabbard. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S121.
  286. Ojha V, Jagia P, Seth S, Ganga KP. Diagnosis of Cardiac Amyloidosis Based on Temporal Sequence of Nulling on Ti Scout: A Poor Man's T1 Map. *J Am Coll Cardiol.* 2020; 75(Suppl 1):1764.
  287. Padmashri P, Singh N, Kumar S, Perumal V. All India Institute of Medical Sciences, New Delhi, India "Role of transdermal testosterone gel pretreatment in poor responders on IVF outcome – a prospective randomised controlled trial with active control. *BJOGIntJObstetGynaecol.*2019(Suppl 2):207.
  288. Palanichamy JK, Sharma G, Nidhi T, Chopra A, Bakhshi S. Role of IGF2BP1 and Target Genes in ETV6-RUNX1 Positive B-Acute Lymphoblastic Leukemia. *Blood.* 2019; 134(Suppl 1):3818.
  289. Panaiyadiyan S, Nayyar R, Seth A, Kumar R, Singh P, Nayak B. Long Term Urinary Continence and Sexual Outcomes Following Successful Vesicovaginal Fistula (VVF) Repair. *World J Urol.* 2019; 37(Suppl 1):S149.
  290. Panda PK, Agarwal A, Jauhari P, Chakrabarty B, Jain V, Pandey RM, et al. Comparison of Efficacy of Daily and Intermittent Low Glycemic Index Therapy Diet among Children with Drug Resistant Epilepsy aged 1-15 years: A Randomized Controlled Non-inferiority Trial. *Epilepsia.* 2019; 60:056.
  291. Panda PK, Badal S, Gulati S. Prevalence and variables associated with occurrence of seizures in pediatric arterial ischemic stroke. *Epilepsia.* 2019; 60:402.
  292. Panda PK, Badal S, Sirolia V, Sharma S, Thupliyal N, Parmar B, et al. Video EEG with Suggestion (VEST) trial-Comparison of efficacy between suggestion methods during Video EEG recording: verbal suggestion in isolation and verbal suggestion along with cotton swab or tuning fork for inducing the paroxysmal event in children aged 5 to 18 years with suspected psychogenic nonepileptic seizures-a randomized controlled non-inferiority trial. *Epilepsia.* 2019; 60:052.
  293. Panda PK, Gulati S. Contribution towards Public Health Awareness Activities and Continuing Medical education for Empowering Health Care Professionals on Childhood Neurodevelopmental Disorders: Experience of a Tertiary Care Teaching Hospital in North India over the last decade-Going E-way. *Neurology.* 2019; 92:070.
  294. Panda PK, Gulati S. Novel Research Initiatives for Early Recognition and Comprehensive Management of Autism Spectrum Disorder to Empower Health Professionals and Health Care Providers: Two Decade Experience from a Tertiary Care Centre in India. *Neurology.* 2019; 92:046.
  295. Panda PK, Sharma S, Madaan P, Badal S, Gulati S. Clinical experience with psychogenic non epileptic seizures in children from a tertiary care center in North India. *Epilepsia.* 2019; 60:392.
  296. Panda PK, Sondhi V, Kanan L, Badal S, Pandey RM, Gulati S. Efficacy of low glycemic index therapy in children with drug resistant epilepsy: a systematic review of existing literature and pooled analysis of the results of these clinical studies. *Epilepsia.* 2019; 60:427.
  297. Pandey A, Kaushik P, Gupta SD, Sharma PD, Patel C, Bal CS, et al. Predicting good count image from low count image using machine learning algorithm. *Indian J Nucl Med.* 2019;34(Suppl):S101.
  298. Pandey A, Sharma A, Vishali, Sharma P, Patel C, Bal C, Kumar R. Prognostic value of locally stationary wavelet field texture analysis using baseline F-18 FDG PET/CT images of Non-Small cell lung cancer (NSCLC) patients. *J Nucl Med.* 2019; 60:1599.
  299. Pandey H, Ranjan R, Singh K, Sharma A, Kishore K, Mahapatra M, et al. Frequency of Alpha gene number and HMOX1 polymorphism in Indian sickle cell disease patients. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S58.
  300. Pandey RM, Madan K, Hadda V, Khilnani GC, Guleria R, Mohan A, et al. Clinico-Pathological Profile of Lung Cancer Patients in India- A Tertiary Care Centre Experience. *Am J RespirCrit Care Med.* 2019;199:A3976.
  301. Pandit AK, Prasad K, Talwar P, Kumar A, Pathak M, Gupta P. The effect of short-term exposure to particulate matter air pollution on mortality and poor prognosis after acute stroke. *Eur Stroke J.* 2019; 4(Suppl1):343.
  302. Parashar N, Naik N. Management of incessant junctional tachycardia ectopic tachycardia presenting as severe left ventricular dysfunction. *J Arrhythmia.* 2020; 35(S1):79A.
  303. Patel GR, Mahapatra M, Pati HP, Seth T, Saxena R. Evaluation of Association Between Hematologic Variables

- and Deep Vein Thrombosis. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S142.
304. Patel GR, Saxena R, Mishra P, Jana M, Mahapatra M. Evaluation of Bone mineral density in Hemophilia patients: A single instate observational study. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S68.
  305. Pathak BK, Dash NR, Pal S, Sahni. Choledochal cysts in adults: Our experience of 15 years at a tertiary care centre, *Tropical Gastroenterology* 2019; 40(supplement 1): B32-4312
  306. Pathak D, Rajeswari MR, Gulati S, Srivastava AK. Effect of GAA expansion on iron copper metabolism and cell free nucleic acids (cfNA) levels in plasma of Friedreich's ataxia (FRDA) patients and its co relation with the FARS. *Eur J Neurol.* 2019; 26:833.
  307. Pathak D, Srivastava AK, Gulati S, Rajeswari MR. Comparative Profiling of Peripheral Blood Mononuclear Cells Proteome in Patients With Friedreich's Ataxia. *Eur J Neurol.* 2019; 26:307.
  308. Pathak M, Goel P, Saxena R. Systematic review of the randomized controlled trials on hypospadias in children for quality assessment based on adherence to the PICOT criteria or CONSORT guidelines Category. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S49.
  309. Patidar GK, Singh K, Karimkhan A, Dhiman Y, Hazarika A. Red cell allo-antibodies in healthy blood donors. *Asian J TransfuS Sci.* 2019; 13(Suppl 1):19-31.
  310. Patil, S.; Baidya Kayal, E.; Bakhshi, S.; Sharma, R.; Kandasamy, D.; Mehndiratta, A.; Machine Learning Techniques for Bone Tumor Segmentation using Diffusion MRI, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
  311. Patnaik SK, KanitkarM, Kumar P, Bamal M, Yadav M, Ramamurthy HR, et al. Cardiovascular outcomes of nephrotic syndrome (CVONS) study: interim analysis. *Pediatr Nephrol.* 2019; 34: 2188.
  312. Pattnaik B, SharmaS, Mittal S, Mohan A, Guleria R, Madan K, et al. Clinical Profile of Cardiac Manifestation of Sarcoidosis. *Lung India.*2019; 36(Suppl 3):S122.
  313. Paul SB, Nadda N, Sreenivas V, Swami SK, Nayak B, Shalimar, et al. Differences between Alpha-fetoprotein secreting and non alpha-fetoprotein secreting hepatocellular carcinoma patients. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):237.
  314. Paul SB, Swami SK, Nadda N, Nayak B, Shalimar, Acharya SK. Clinico-radiological profile of Non alcoholic fatty liver disease related hepatocellular carcinoma: comparison with hepatocellular carcinoma of viral etiology. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):575.
  315. Pawar S, Rastogi S, Dhamija E, et al. Lessons learnt from treatment of foot sarcomas: Analysis from dedicated sarcoma clinic in North India. *Ann Oncol.* 2019; 30(Suppl9):ix135-9.
  316. Poduel S, Goswami P, Kaushal K, Gunjan D, Das P, Yadav R, et al. Agarwal S, Kumar D, Singh N, Saraya A. Early enteral nutrition restores the gut barrier function in patients with acute pancreatitis. *J Gastroenterol Hepatol.* 2019; 34(Suppl3):108.
  317. Prabhakar H, Srinivas S, Dube S. Effect of Dexmedetomidine on Electrocardiography in Patients Undergoing Epilepsy Surgery Under Desflurane Anesthesia. *J NeurosurgAnesthesiol.*2019; 31:497.
  318. Pragna SG, Agarwal M, Sahtya DSK, Mahapatra M, Dhawan R, Seth T. Molecular profile in Denovo/elapsed acute myeloid leukemia using targeted gene sequencing. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S12.
  319. Prajapati C, Singh M, Srivastava MVP, Goyal V, Bhatia R, Shukla G, et al. Long-Term Patient Outcomes From An Epilepsy Outreach Clinic In India. *Neurology.* 2019; 92(Suppl 15):P2.5-032.
  320. Prajapati C, Singh M, Srivastava MVP, Goyal V, Shukla G, Vishnu V, et al. Long-term Follow up of Epilepsy Patients after a Single Neurologist Visit. *Neurology.* 2019; 92(15 Suppl):P2.5-032.
  321. Prakash O, Gupta SV, Bansal VK, Kumar S, Krishna A, Misra MC. Comparison of Pure Polypropylene Mesh vs. Covered Mesh in Laparoscopic Incisional and Ventral Hernia Repair: A Non Randomised Cohort Study. *Surg Endosc.* 2019; 33:130-413.
  322. Prakash S, Kumar K, Saraya A, Shalimar. Role of platelets in patients with Acute on Chronic failure (ACLF): *Indian J Clin Biochem.* 2019; 34(Suppl 1):207.
  323. Prakash S, Priyatma, Shalimar, Selvi SA, Vikram NK. Chemokines in Liver Diseases: New insight in iron trafficking proteins and Prokineticins in metabolic syndrome and non- alcoholic fatty liver disease (NAFLD): *Indian J Clin Biochem.* 2019; 34(Suppl 1):43.
  324. Prakash S, Tiwari U, Priyatma, Ahuja V. Monitoring of thiopurine metabolite levels based on biochemical and haematological indices in inflammatory bowel disease (IBD). *Indian J Clin Biochem.* 2019; 34(Suppl 1):93.
  325. Pramanik R. NOTCH3 expression predicts poor survival in advanced esophageal squamous cell cancers. *Ann Oncol.*2019;30:ix51.
  326. Pranay T, Dimpy G, Amar R, Sameer B. Comparative evaluation of WT1 gene expression at diagnosis and end of induction of acute myeloid leukemiaas a biomarker for therapy response.*Blood Res.* 2019; Suppl2.

327. Priyam K, Sharma MK, Agrawal S, Garg PK, Roy TS, Jacob TG. Activation of Pancreatic Stellate Cells and Progression of Fibrosis in Experimental Models of Early Chronic Pancreatitis. *Pancreas*. 2019; 48(10):1509.
328. Priyam K, Sharma MK, Agrawal S, Garg PK, Roy TS, Jacob TG. Evaluation of Cytokines and Activation of Stellate Cells in a Mouse Model of Experimental Early Chronic Pancreatitis. *J Gastroenterol Hepatol*. 2019; 34:297.
329. Priyatma, Makharia GK, Sahoo RK, Prakash S. Does Chromogranin A an Indicative Biomarker of Gastric Cancer. *Indian J Clinl Biochem*. 2019; 34(Suppl 1):66.
330. Puneeth UM, Bhatia R, Dash D, Tripathi M, Sreenivas V. Validation of ICH and ICH-GS scores in cohort of Indian patients with Intracerebral hemorrhage. *Neurology*. 2019; 92(15 Suppl):P5.3-045.
331. Puraswani M, Khandelwal P, Tomar M, Hari P, Saini S, Sinha A, et al. Functional characterization of antifactory-Hantibodies in atypical hemolytic uremic syndrome. *Pediatr Nephrol*. 2019; 34:2156.
332. Quadri JA, Sarwar S, Shariff M, Shariff A. Alteration in gut endocrine signalling due to chronic fluoride exposure leads to gastrointestinal physio-chemical impairments. *J Gastroenterol Hepatol*. 2019; 34:153.
333. Quraishi R, Jain R, Ambekar A. Use of filter paper in substance abuse treatment setting. *Indian J Clin Biochem*. 2019; 34:200.
334. Rafeek, T.; Jogi, S.; Rajan, S.; Mahajan, V.; Venugopal, V.; Mehndiratta, A.; Singh, A.; Singh, D.; Vats, N.; Automated femoro-tibial cartilage segmentation of OA patients with and without bone abnormality, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada. (Magna cum Laude Merit Award)
335. Raj A, Kumar L, Sharma A, et al. Health related quality of life analysis among testicular germ cell tumor survivors treated in a tertiary cancer hospital in India. *J Clin Oncol*. 2019;37(Suppl15):e16057.
336. Raj A, Kumar L, Sharma A, Pramanik R, Batra A, Seth A, et al. Health related quality of life analysis among testicular germ cell tumor survivors treated in a tertiary cancer hospital in India. *J Clin Oncol*. 2019; 37(Suppl 15):e16057.
337. Rajan R, Reghu A, Saini A, Srivastava AK. Spiral loop width differentiates essential tremor and dystonic tremor. *Mov Disord*. 2019; 34(Suppl 2).
338. Rajkumar S, Sagar R, Deepak KK, Bhargava R, Patra BN. Prefrontal Cortical Activity in Children with ADHD: A Functional Near Infrared Spectroscopy (fNIRS) Study. *Indian J Psychiatry*. 2020; 62(Suppl):S24.
339. Ramakrishna SB, Makharia GK, Ahuja V, Venugopal G, Singh A, Dutta S. HLA DQA1-DQB1 genotypes and haplotype frequencies in patients with celiac disease in India. *J Gastroenterol Hepatol*. 2019; 34(Suppl 3):72-582.
340. Ramot R, Kachhawa G, Kulshrestha V, Jyotsna VP, Aggarwal R, Sreenivas V, et al. A Hospital Based Study of Bone Mass in Asian Indian New Born Subjects. *Osteoporosis Int*. 2019; 30:P061.
341. Ranghare A, Sinha AP, Seth R. Effect of video based education on knowledge of caregivers of children with acute leukemia regarding prevention of infection during chemotherapy. *Pediatr Hematol Oncol*. 2019; 4:S13-4.
342. Ranjan R, Ningombam A, Senapati J, Sarkar A, Singh U, Arulselvi S. A curious case of leukopenia: Not always a disease. *Indian J Hematol Blood Transfus*. 2019; 35:S94.
343. Ranjan R, Pandey H, Sharma A, Lata S, Kishore K, Tyagi S, et al. Evaluation of a rapid and cost effective POCD for screening sickle cell disease in Indian population. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S44.
344. Ranjan R, Sharma A, Kishore K, Bhashan B, Sazawal S, Mahapatra M, et al. Prognostic value of P2X7 1513 (A-C) and BAXG(-248)A gene polymorphisms in CLL patients. *Indian J Hematol Blood Transfus*. 2019; 35(Suppl):S83.
345. Rashid H, Katyal J, Tripathi M, Sood M, Gupta YK. Depression and Suicidal Ideation in Persons with Epilepsy: A Prospective Observational Study. *Epilepsia*. 2019; 60(S2):161.
346. Rashid H, Katyal J, Tripathi M, Sood M, Gupta YK. Validation of the Indian version of Neurological Disorders Depression Inventory for Epilepsy (NDDI-E). *Epilepsia*. 2019; 60(S2):75.
347. Rashid S, Rashid S, Das P, Gupta S, Saraya A. Expression of Notch Receptors and Their Role As Differentiating Markers in Pancreatic Ductal Adenocarcinoma. *Gastroenterology*; 2019. 156(Suppl1):S332.
348. Rashid S, Rashid S, Singh N, Garg B, Khan IA, Sati HC, et al. Role of Notch pathway associated miR-107 in pancreatic ductal adenocarcinoma. *J Gastroenterol Hepatol*. 2019. 34(Suppl3):393.
349. Rastogi S, Aggarwal A, Dhamija E, Barwad A, Panday R, Khan SA, et al. Desmoid tumor (DT) management in dedicated sarcoma medical oncology clinic in a developing country: Lessons learnt. *J Clin Oncol*. 2019; 37(Suppl 15):e22541.
350. Rath G, Lamsal R, Dube S, Roy H, Mishra S. Effect of Dexmedetomidine on Dynamic Cerebral Autoregulation in Patients with Supratentorial Tumors Under Sevoflurane Anesthesia. *J NeurosurgAnesthesiol*.2019; 31:504.
351. Raza MS, Kapil A, Goyal V, Lodha R, Sood S, Gautam H, et al. Impact of the real time PCR in the diagnosis of acute bacterial meningitis in infants in a tertiary health care center in India. *Int J Infect Dis*. 2019; 79(Suppl 1):86.

352. Reeta KH, Singh D, Wasan H. Involvement of apoptosis related proteins in the neuro-protective effect of dihydromyricetin in transient focal ischemia reperfusion injury in rats. *J Neurol Sci.* 2019; 405(Suppl):135.
353. Reghu A, Rajan R, Saini A, Srivastava AK. Automated analysis for quantification of tremor from pen-on-paper Archimedes spirals. *Mov Disord.* 2019; 34(Suppl 2).
354. Rengarajan P, Chandran DS, Prasher B, Jaryal AK, Deepak KK. A study on Sub-Endocardial Viability Ratio (SEVR) in Prakriti classified healthy individuals using applanation tonometer. *Indian J Physiol Pharmacol.* 2019; 63:71.
355. Richa A, Gupta G, Mahapatra M, Pati HP, Tyagi S, Seth T, et al. What do costly tests add to baseline profile? Diagnostic work up of Myeloma in resource constraint setting. *Clin Lymphoma Myeloma Leuk.* 2019; 19(Suppl):e224.
356. Rostami K, Ensari A, Srivastava A, Villanacci V, Marsh M, Carroccio A, et al. Global consensus on definition and histological classification of non-coeliac gluten sensitivity. *Turk J Gastroenterol.* 2019; 30:305.
357. Rout G, Kumar R, Sharma S, Gunjan D, Nayak B, Shalimar. SAT-116-Development and validation of a novel model for outcome in patients with cirrhosis and acute variceal bleeding. *J Hepatol.* 2019; 70(Suppl):e681.
358. Roy S, Biswas A, Binjola A, Kumar R, Tripathi M, Bal C. Dosimetric comparison between 3-dimensional conformal radiotherapy, partial arc volumetric modulated arc therapy and full arc volumetric modulated arc therapy for involved site radiotherapy in early nodal diffuse large B-cell lymphoma. *J Cancer Res Ther.* 2019; 15(Suppl.2):S284-5.
359. Sachan A, Aggarwal S, Singh A, Khan MA, Shukla S, Yadav R. Study of changes in the circulating adipo-cytokines due to bariatric surgery induced weight loss and their association with co-morbidities in Obesity. *Indian J Clin Biochem.* 2019; 34:S120.
360. Sagar R, Chatterjee B, Goyal N, Sahu A. Mental Health Promotion and Prevention in school setting: Are we prepared for tomorrow. *Indian J Psychiatry.* 2020; 62(Suppl 1):S154.
361. Sagar R, Chatterjee B, Goyal N, Sahu A. Mental Health Promotion and Prevention in school setting: Are we prepared for tomorrow. *Indian J Psychiatry.* 2020; 62(Suppl1):S154.
362. Sagar R, Kumar A, Yadav AK, Raj R, Pandit AK, Dash D, et al. Association between matrix metalloproteinases-9 (c1562t) gene polymorphism and risk of intracerebral hemorrhage in north Indian population: a case-control study. *Eur Stroke J.* 2019; 4(Suppl1):343.
363. Sagar R, Salve H, Patra B, Pakhre A. Assessment of Quality and Best Practices under District Mental Health Program. *Indian J Psychiatry* 2020; 62(Suppl 1):S154.
364. Sagar R. Alexithymia and depression-Is there a relationship? *Psychother Psychosoms.* 2019; 88:111.
365. Saha R, Raja D, Acharya P. Assessment of serum markers of kidney injury in predicting outcomes in Acute-on-chronic liver failure. *J Gastroenterol Hepatol.* 2019; 34:492.
366. Sahoo D, Wajid MA, Gupta AK, Meena JP, Seth R. Diverse clinical profile of children with anaplastic large cell lymphoma: a tertiary centre experience. *Pediatr Hematol Oncol.* 2019; 4:S22-3.
367. Sahoo D, Wajid MA, Gupta AK, Meena JP, Seth R. Multicentric Infantile Myofibromatosis: A Case Report and Review of Literature. *Pediatr Hematol Oncol.* 2019; 4:S57.
368. Sahoo D, Wajid MA, Gupta AK, Meena JP, Seth R. Subcutaneous panniculitis like t cell lymphoma (SPTL) presenting as recurrent hemophagocytic lymphocytosis: a case report and review of literature. *Pediatr Hematol Oncol.* 2019; 4:S50-1.
369. Sahoo D, Wajid MA, Meena JP, Gupta AK, Seth R. Chronic granulomatous disease presenting as hemophagocytic lympho histiocytosis: a case report and review of literature. *Pediatr Hematol Oncol.* 2019; 4:S21.
370. Sahota GS, Panwar R, Singh AN, Dash NR, Pal S, Sahni P. Posterior (SMA-first) approach vs. standard pancreatoduodenectomy in patients with periampullary tumours and pancreatic cancer with special focus on circumferential resection margins and long-term survival outcome: A randomized controlled trial. *Tropical Gastroenterology* 2019; 40(supplement 1): P59-4395.
371. Sahu P, Kedia S, Kumar S, Kante B, Makharia GK, Ahuja V. Disease relapse rate following biological exit strategy in patients with IBD: a north indian cohort study. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):72-582,
372. Sahu P, Kumar S, Jain S, Mohil NS, Sahni P, Pal S, et al. Prospective validation of faecal calprotectin as a predictor of steroid failure in patients with acute severe colitis. *J Crohns Colitis.* 2020; 14:S244.
373. Saini S, Nayyar R, Sharma A, Dogra P. Jeopardizing the oncological safety: Trans-urethral resection of bladder tumor may induce measurable hematogenous seeding of cancer cells. *J Natl Compr Canc Netw.* 2019; 17:CLO19-047.
374. Samad SA, Dar L, Kumar L, Brijwal M, Chaudhary A. Incidence of respiratory syncytial virus infection among adults undergoing hematopoietic stem cell transplantation: A prospective study from India. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S651.
375. Sarkar A, Ningombam A, Acharya S. Scatter plots from sysmex XN- series analyser as tool for screening acute promyelocytic leukaemia. *Indian J Hematol Blood Transfus.* 2019; 35:S14.

376. Sarkhel S, Menon V, Deb KS. Smartphone Apps for Mental Health: Overview, challenges and recommendations for the next generation psychiatrist. *Indian J Psychiatry*. 2020; 62:30.
377. Saroj M, Priyatma, Vikram NK, Prakash S. Correlation of the Steady State Biomarker Indices for Glycosylated Haemoglobin, Lipids and Anthropometry in Diabetes and Metabolic Syndrome. *Indian J Clin Biochem*. 2019; 34(Suppl 1):158-9.
378. Sarwar S, Quadri JA, Singh S, Das P, Makharia G, Shariff A. In-utero fluoride exposure induces developmental defects in the gut enteric neurons. *J Gastroenterol Hepatol*. 2019; 34(Suppl 3):248.
379. Sasi D, ..., Singh A. To Evaluate Effect of SENSE and CSENSE on Quantitative T1 and T2 mapping of Human Brain. Abstract Nu-4414. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
380. Sasi D, ..., Singh A. To evaluate the effect of different initial guess selection approaches on quantitative analysis of DCE-MRI data of brain tumor patients. Abstract Nu-5061. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
381. Saxena S, Gupta SK, Arora P, Pallavi SK, Rani N, Sharma A, et al. Role of hydrogen sulphide in regulating invasion in trophoblast cells. *FASEB J*. 2019; 33:789.6.
382. Sengupta A, Agarwal S, ..., Singh A. Grading of glioma using a machine learning framework based on optimized features obtained from T1 perfusion MRI and volumes of tumor components. Abstract Nu-3069. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
383. Sengupta A, Vats N, ..., Singh A. Grading of glioma using a machine learning framework based on optimized features obtained from T1 perfusion MRI and volumes of tumor components. Abstract Nu-3070. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
384. Seth R, Kapoor G, Arora R, Verma N, Kumar A, Mahajan A, et al. The Indian childhood cancer survivorship study (c2s study): after treatment completion registry of childhood cancers: phase-i. An in-pog-le-16-01 study. *Pediatr Hematol Oncol*. 2019; 4:S8-9.
385. Sethia R, Jagannath S, Jain S, Gupta S, Teja V, Elhence A, et al. Does Intracellular Fluid Shift Contribute to Fluid Sequestration and Intravascular Fluid Deficit in Acute Pancreatitis? *Gastroenterology*. 2019; 156(Suppl 1):S545-6.
386. Shakya S, Kumari R, Garg A, Srivastava AK, Faruq M. Need of next generation sequencing technology to deconvolute autosomal recessive cerebellar ataxias in India. *Mov Disord*. 2019; 34(Suppl): S117.
387. Shalimar, Kumar R, Bharath BG, Rout G, Gunjan D, Acharya SK, et al. Cryptogenic or non-A non-E acute liver failure is associated with poor outcome in Indian patients. *J Gastroenterol Hepatol*. 2019; 34(Suppl 3):188.
388. Sharma A, Chaudhary MK, Thakar A, Bhaskar S, Sikka K, Pramanik R, et al. Concurrent chemotherapy and external radiation therapy: An open label non-inferiority phase III randomized controlled trial of weekly versus three weekly cisplatin and radical radiotherapy in locally advanced head and neck squamous cell carcinoma: CONCERT trial. *Ann Oncol*. 2019; 30(Suppl5):v473-4.
389. Sharma A, Mohan A, Bhalla A, Vishnubhatla S, Pandey A, Arora G, et al. Role of metabolic tumor volume (MTV) and standardized uptake value (SUV) based parameters derived from whole body (WB) 18F-FDG PET/CT in interim treatment response assessment of NSCLC. *J Nucl Med*. 2019; 60:1326.
390. Sharma A, Pandey AK, Deepak, Sharma PD, Patel C, Bal C, et al. Classification of good count and low count image using machine learning algorithm. *Indian J Nucl Med*. 2019;34(Suppl):S10
391. Sharma A, Swami S, Dadhwal V, Perumal V. A prospective study of aortic isthmus Doppler Changes in appropriately grown and small for gestational age fetuses and establishing the threshold of aortic isthmus values for prediction of adverse perinatal outcome: a prospective cohort study. *Ultrasound ObstetGynecol*. 2019;54:203-4.
392. Sharma A. Micro RNA in multiple myeloma: From diagnostics to therapeutics. *Indian J Clin Biochem*. 2019; 34 (Suppl 1):S59.
393. Sharma J, Srivastava MVP, Bhatia R, Rajan R, Singh, Goyal V, et al. 'Prehospital' delay in acute stroke reperfusion therapy in Delhi: Time for introspection. *JNeurological Sci*. 405(Suppl):131-32.
394. Sharma MK, Priyam K, Garg PK, Roy TS, Jacob TG. Effect of Chloroquine on the Cerulein-Induced Model of Severe Acute Pancreatitis in Swiss Albino Mice. *Pancreas*. 2019; 48 (10):1520.
395. Sharma MK, Priyam K, Garg PK, Roy TS, Jacob TG. Effect of Rapamycin on Caerulein-Induced Model of Severe Acute Pancreatitis. *J Gastroenterol Hepatol*. 2019; 34:298.
396. Sharma N, Baitha DK, Sartan K, Sen S, Kashyap S, Tandon R, et al. Impression Cytology status in ocular surface squamous neoplasia (OSSN) [HP03]. *J Med Techn Assoc Thailand*. 2019; 47(Suppl1).
397. Sharma N, Madhusudan KS, Jain D, Yadav R, Mathur S, Bansal VK, et al. The role of fine needle aspiration cytology in the evaluation of gallbladder masses, polyps and wall thickening. *Acta Cytol*. 2019; 63(suppl1):40.
398. Sharma P, Yadav RK, Khadgawat R. Yoga based lifestyle intervention modulates cardinal biomarkers of ageing

- like telomerase enzyme and hTERT gene in Indian obese subjects. *Indian J Physiol Pharmacol.* 2019; 63:141.
399. Sharma S, Bhanot R, Yadav DK, Gupta DK. Long term Outcome of Cloacal malformations. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S26.
  400. Sharma S, Gamangatti S, Chauhan A, Vuyyuru S, Teja GV, Saraya A, et al. Acute on chronic liver failure in budd chiari syndrome – profile and predictors of outcome. *J Gastroenterol Hepatol.* 2019. 34(Suppl3):190.
  401. Sharma S, Jyotsna PV, Yadav DK, Srivastava A, Gupta DK. Male Gender Assignment in 46 XX congenital adrenal hyperplasia. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S31.
  402. Sharma S, Sinha M, Kumar S, Gulati GS, Jagia P. Acute outcomes of endovascular treatment of stenosis of the aorta and renal arteries in management of uncontrolled hypertension and left ventricular dysfunction in Takayasu arteritis. *Cardiovasc Intervent Radiol.* 2019; 42(Suppl):S242.
  403. Sharma S, Yadav DK, Gupta DK. Pediatric non-Wilms renal Tumors. *J Indian Assoc Pediatr Surg.* 2019; 24(Suppl1):S69.
  404. Sharma V, Sharma A, Pathy S, et al. Outcomes of metastatic colorectal cancer over fifteen years from an Indian tertiary care center: A retrospective analysis. *J Clin Oncol.* 2019;37(Suppl15):e15050.
  405. Shashikiran NJ, Bhattacharjee HK, Kumar P, Bale M, Oberoi A, Suhani, et al. Laparoscopic Radical Cholecystectomy for Gallbladder Carcinoma. *Surg Endosc.* 2019; 33:S468.
  406. Shishak S, Rastogi S, Panday R, et al. Malignant melanoma: A study of clinical profiles and treatment outcomes in Indian patients. *Ann Oncol.* 2019; 30(Suppl9):ix115-7.
  407. Shishak S, Rastogi S, Panday R, Sharma D, Barwad A, Aggarwal A, et al. Renal Ewing's sarcoma: A single institute experience of seven patients. *J Clin Oncol.* 2019; 37(Suppl15):e22538.
  408. Shishak SA, Rastogi S, Pandey R, Barwad A, Dhamija E, Aggarwal A, et al. Malignant melanoma: A study of clinical profiles and treatment outcomes in Indian patients. *Ann Oncol.* 2019; 30(Suppl 9):ix117.
  409. Shrivastava A, Dash NR, Pal S, Sahni P. Lower gastrointestinal bleeding (LGIB): Our experience of 3 decades. *Tropical Gastroenterology* 2019; 40(supplement 1): I21-4346
  410. Shrivastava A, Dash NR, Pal S, Sahni P. Safety and feasibility of Hyperthermic Intra-Peritoneal Chemotherapy in the management of gastric cancer. *Tropical Gastroenterology* 2019; 40(supplement 1): S15-4224 in press.
  411. Singh A, Verma AK, Das P, Prakash S, Sreenivas V, Kumar L, et al. Non-immunological biomarkers for assessment of villous abnormalities in patients with celiac disease. *Turk J Gastroenterol.* 2019; 30:866.
  412. Singh A, Verma AK, Das P, Prakash S, Sreenivas V, Kumar L, et al. Non-immunological biomarkers for assessment of villous abnormalities in patients with celiac disease. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):43-71.
  413. Singh AP, Dhar A, Srivastava A, Kumar R, Pandey RM. Comparing the efficacy of a combination of artificial lymphatics in the form of silicone tube and compressive therapy versus compressive therapy only in upper limb lymphedema following axillary lymph node dissection in breast cancer patients: A randomized controlled trial. *Indian J Vasc Endovasc Surg.* 2019; 6:283-90.
  414. Singh BN, Panwar R, Singh AN, Dash NR, Pal S, Sahni P Role of intraoperative enteroscopy in management of obscure lower gastrointestinal bleeding (LGIB): 30 year experience at a tertiary care hospital in India. *Tropical Gastroenterology* 2019; 40(supplement 1): I17-4297
  415. Singh BN, Panwar R, Singh AN, Dash NR, Pal S, Sahni P, Pande GK, Chattopadhyay TK, Nundy S. Emergency Proximal Lienorenal Shunt (LRS) for Variceal Bleeding in patients with Extrahepatic Portal Vein Obstruction. A single centre experience over four decades. *Tropical Gastroenterology* 2019; 40(supplement 1): I16-4296
  416. Singh BP, Aggarwal S, Tandon N. One anastomosis Gastric Bypass versus Roux En Y Gastric Bypass for type 2 diabetes mellitus in obese subjects: A Randomised Controlled Trial. *Obes Surg.* 2019; 29(Suppl):98.
  417. Singh D, Bhattacharya S, Das CJ, Kumar V, Singh A, Mehndiratta A. Automated Segmentation of Prostate Gland with Super pixel based and Active Contour based Methodology using Diffusion-Weighted MR Imaging. *Int J CARS.* 2019; 14(Suppl1):S118.
  418. Singh D, Das C, Kumar V, Singh A, Mehndiratta, A. Automated Detection and PIRADS v2 Scoring of Prostate Cancer using Multiparametric MRI. Abstract Nu-1832. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc. Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
  419. Singh D, Das C, Kumar V, Singh A, Mehndiratta, A. Gland and Zonal Segmentation of Prostate using Diffusion-Weighted MR Imaging. Abstract Nu-1831. ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag. Reson.Med. 27(2019)), Date: 11-16 May 2019
  420. Singh D, Verma V, Reeta KH. Sinapic acid mitigates intracerebroventricular streptozotocin induced oxidative stress and neuro-inflammatory changes in rats. *J Neurol Sci.* 2019; 405(Suppl):109.
  421. Singh D, Wasan H, Joshi B, Prakash R, Sharma U, Jagannathan NR, et al. Temporal expression profile of heme



- oxygenase-1 after cerebral ischemia reperfusion injury in rats. *Eur Stroke J.* 2019; 4(Suppl): 351.
422. Singh D, Wasan H, Sharma U, Dinda AK, Reeta KH. Dihydromyricetin exerts neuroprotection in ischemia reperfusion induced neuronal damage by inhibiting apoptosis and astrogliosis. *J Neurochem.* 2019; 150(Suppl1):162-251.
423. Singh HN, Swarup V, Srivastava AK. Genetic markers revealed in dysregulated pathways in ischemic stroke may lead to Parkinson's disease. *Mov Disord.* 2019; 34(Suppl2):S195.
424. Singh I, Swarup V, Shakya S, Goyal V, Srivastava AK. A Robust and Rapid Method of PCR amplification To Confirm Triplet Repeat Disorders: Single-Step Blood Direct PCR. *Mov Disord.* 2019, 34 (Suppl2):S118.
425. Singh K, Karimkhan A, Patidar GK, Hazarika A. Audit of blood requisition and utilization in elective neurosurgical procedures. *Asian J TransfusSci.* 2019; 13(Suppl 1):32-100.
426. Singh M, Batra A, Bakhshi S, Summers M. Validation of Ubiquitin specific peptidases 37 as a prognostic and diagnostic marker in osteosarcoma. *Cancer Res.* 2019;79(13 Suppl):Abs No 1256.
427. Singh N, Anand A, Gunjan D, Saraya A. Inflammatory markers, oxidative stress and anti-oxidant capacity in patients with chronic pancreatitis. *J Gastroenterol Hepatol.* 2019; 334(Suppl3):489.
428. Singh N, Gupta S, Rashid S, Rashid S, Saraya A. Quantitation of Methylation Load of Tumor Suppressor Gene Promoter Methylation in Pancreatic Cancer. *Gastroenterology.* 2019. 156(Suppl1):S1176.
429. Singh N, Roy S, Khan IA, Rashid S, Garg B, Rashid S, et al. Identification of onco-miR(s) in pancreatic cancer through miRNA profiling using Next Generation Sequencing. *J Gastroenterol Hepatol.* 2019; 34(Suppl3):299.
430. Singh P, Singh A, Silvester J, Sachdev V, Chen X, Xu H, et al. Duerksen DR, Kelly C, Makharia GK. Inter-and intra-assay variation in the diagnostic performance of anti-tissue transglutaminase antibody assays in two racially and geographically distinct populations. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):72-582.
431. Singh P, Singh A, Silvester J, Sachdev V, Chen X, Xu H, et al. Inter-and intra-assay variation in the diagnostic performance of anti-tissue transglutaminase antibody assays in two racially and geographically distinct populations. *Turk J Gastroenterol.* 2019; 30:87.
432. Singh R, Dhamija E, Deo SVA, Mathur S, Thulkar S. A prospective study to evaluate the accuracy of axillary staging using ultrasound and USG-guided fine needle aspiration cytology in early breast cancer patients in a high-volume center. *J ClinOncol.*2019; 37(Suppl15):e12060.
433. Singh S, Sarwar S, Quadri JA, Mondal R, Rani N, Nag TC, et al. Development of the Myenteric Plexus at the Ileocaecal Junction in Human Foetuses. *J Gastroenterol Hepatol.* 2019; 34(Supl.3):89.
434. Singh TP, Bakhshi S, Patel C, Pandey AK, Batra A, Dhamija E, et al. Role of 18-FDG positron emission tomography computed tomography in staging and early treatment response evaluation in patients of soft tissue sarcomas. *Indian J Nucl Med.* 2019;34(Suppl):S36.
435. Singh U, Acharya A, Ningombam A, Sarkar A, Ranjan R, Saxena R. Bilirubin crystals in the neutrophils of patient with sepsis. *Indian J Hematol Blood Transfus.* 2019; 35:S95.
436. Singh V, Katiyar A, Malik P, Mohan A, Singh H, Jain D. Whole exome sequencing (WES) in non-small cell lung carcinoma (NSCLC): identification of novel biomarkers. *J Thorac Oncol.* 2019; 14(Suppl):P602.
437. Singh V, Malik P, Tanwar P, Mohan A, Jain D. Liquid biopsy in the detection of EGFR activating and resistance mutations in advanced pulmonary adenocarcinoma. *J Thorac Oncol.* 2019; 14(Suppl):P962.
438. Singh Y, Khanna P. Impact of pre-operative anxiety on propofol induced hypotension in children undergoing elective surgery under general anaesthesia: a prospective observational study. *Anaesthesia.* 2019; 74(Suppl 2):66.
439. Singh, D.; Bhattacharya, S.; Kumar, V.; Das, C.; Singh, A.; Mehndiratta, A.; Optimal b-Value for Superpixel based Automatic Prostate Gland Segmentation using Diffusion-Weighted Imaging, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
440. Singh, D.; Kumar, V.; Das, C.; Singh, A.; Mehndiratta, A.; Automated Detection and PIRADS v2 Scoring of Prostate Cancer using Multiparametric MRI, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
441. Singh, D.; Kumar, V.; Das, C.; Singh, A.; Mehndiratta, A.; Gland and Zonal Segmentation of Prostate using Diffusion-Weighted MR Imaging, 27th Proceeding of International Society for Magnetic Resonance in Medicine (ISMRM), May 2019, Montreal, Canada.
442. Sinha A, Gipson D, Wong C, Massengill S, Ahmad A, Hari P, et al. 6-monthsversus3-monthsprednisolone for initial therapy of steroidsensitive nephrotic syndrome: Openlabel RCT. *Pediatr Nephrol.* 2019; 34:2076.
443. Sinha A, Khandelwal P, Chandan M, Tewari P, George J, Hari P, et al. Whole exome sequencing in steroid and calcineurin inhibitor resistant nephrotic syndrome. *Pediatr Nephrol.* 2019; 34:2210.
444. Sinha A, Raut S, Ghanapriya K, Bhardwaj M, Kalra S, Bagga A. Alternate-day prednisolone made daily during infections versus levamisole for frequently-relapsing nephrotic syndrome. *Pediatr Nephrol.* 2019; 34:2171.

445. Sinha A, Vasudevan A, AmithaNG, Sharma A, Chandan M, Tewari P, et al. Nationwide longitudinal disease cohorts and biorepository for nephrotic syndrome: Preliminary results. *Pediatr Nephrol.* 2019; 34:2206.
446. Sinha R, Kumar KR, Kalaiyaran RK, Khanna P, Ray BR, Pandey RK, et al. Evaluation of performance of C-MAC® video laryngoscope Miller blade size zero for endotracheal intubation in preterm and ex-preterm infants: A retrospective analysis. *Indian J Anaesth.* 2019; 63:284-8.
447. Sisodia P, Bhatia R, Saxena R, Srivastava MVP, Prasad K, Sreenivas V, et al. Aspirin Resistance And Ischemic Stroke: A Prospective Study In Indian Population. *Neurology.* 2019; 92(15 Suppl):P1.3-006.
448. Sisodia P, Bhatia R, Saxena R, Srivastava MVP, Prasad K, Sreenivas V, et al. Biochemical aspirin resistance. Prevalence and clinical outcome in Indian Patients with ischemic stroke. *Europ Stroke J.* 2019;4:578.
449. Sisodia P, Bhatia R, Saxena R, Srivastava MVP, Prasad K, Sreenivas V et al. Aspirin resistance and stroke recurrence. Prospective cohort study. *JNeurological Sci.* 2019; 405(Suppl):67-8.
450. Smith S, McKenney J, Paner G, Al-Ahmadie H, Aron M, Berney D....Kaushal S,et al. Urothelial Dysplasia: Diagnostic Value in Clinical Practice 20 Years since the 1998 WHO/ISUP Consensus. *Mod Pathol.* 2020; 33(Suppl2):977-8.
451. Somani S, Gupta P, Angamuthu M, Baghel V, Reddy KS, Lavanya K, et al. Effect of additional dietary intervention in reducing interfering infra-cardiac activity in patients undergoing Tc99m-MIBI myocardial perfusion SPECT. *Indian J Nucl Med.* 2019;34(Suppl):S47.
452. Soneja M, Bhatt M, Farooqui FA, Vikram NK, Biswas A, Roy A, et al. Myocarditis in Dengue: A Prospective Observational Study. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S928-9.
453. Soni S, Moran R, Vanes LD, Mouchlianitis E, Wigton RL, White TP, et al. Hyperactivation of left medial frontal and cingulate gyrus mediates sound-induced flash illusion in non-affective psychosis. *Schizophr Bull.* 2019; 45(Suppl2):S335.
454. Soni S, Muthukrishnan SP, Sood M, Kaur S, Sharma R. Altered parahippocampal gyrus activation and its connectivity with resting-state network areas in schizophrenia: A QEEG study. *Schizophr Bull.* 2019; 45(Suppl2):S283.
455. Sood A, Srivastav S, Chandran DS, Jaryal AK, Deepak KK. Role of arterial baroreflex in respiratory sinus arrhythmia: a study using oscillatory lower body negative pressure in human subjects. *Clin Auton Res.* 2019; 29:479-546.
456. Soti KR, Kumar L, Saxena R, et al. Characteristics and outcomes of Philadelphia chromosome-negative myeloproliferative neoplasm in a tertiary institute in India: An ambispective study. *J Clin Oncol.* 2019;37(Suppl15):e18553.
457. Sreenath K, Chaudhry R, Vinayaraj EV, Dey AB, Kabra SK, Guleria R. Clinical and Environmental Surveillance of Legionella pneumophila in a Tertiary Healthcare Center in India. *Open Forum Infect Dis.* 2019; 6(Suppl 2):S592.
458. Srivastava AK, Takkar A, Goyal V, Faruq M, Rajan R, Garg A. Clinico-genetic correlation in 102 Spinocerebellar Ataxia Type 12 (SCA 12) patients. *Mov Disord.* 2019; 34(Suppl2):S119.
- 459.
460. Srivastava RK, Dar HY. Sodium Benzoate (Nab) - A Food Additive, inhibits bone loss by upregulating anti-Osteoclastogenic T Cells. *Osteoporos Int.* 2019; 30(Suppl 1):P110.
461. Swarnakar R, Rahman H, Srikumar V. Platelet rich fibrin membrane – as a local autologous blood tissue graft for pressure injury healing in spinalcord injury patients. *Am J Phys Med Rehabil.* 2020; 99(3S):a338.
462. Swarnakar R, Wadhwa S, Srikumar V, Goyal V, Sreenivas V. PARK-EASE Trial: A Randomized Controlled Trial to Study the Efficacy of Exercises in Early-Stage Parkinson’s Disease. *Am J Phys Med Rehabil.* 2020;99(3S):a334. *ke J.* 2019; 4(Suppl):353.
463. Talwar P, Misra S, Rai A, Kumar P, Kumar A, Pandit AK, et al. Matrix metalloproteinase-9 levels for the diagnosis of ischemic stroke: a systematic review and meta-analysis. *Ann Indian AcadNeurol* 2019; 22(Suppl):1-157.
464. Talwar P, Misra S, Rai A, Mishra A, Kumar A, Pandit AK, et al. Relationship between tissue inhibitors of metalloproteinases (TIMPS) gene polymorphisms and risk of spontaneous intracerebral hemorrhage: A systematic review and meta-analysis. *JNeurological Sci.*405(Suppl):135.
465. Talwar P, Sagar R, Misra S, Kumar A, Srivastava A, Pandit AK et al. Association of E-selectin S128R gene polymorphism with the risk of Intracerebral hemorrhage in north Indian population: a case–control study. *Eur Stroke J.* 4(Suppl1):AS33-033.
466. Thaha R, Jogi S, ... , Singh A. Automated femoro-tibial cartilage segmentation of OA patients with and without bone abnormality. Abstract Nu-4719 (The ISMRM Magna Cum Laude Merit Award).ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
467. Thakran S, Chatterjee S, ..., Singh A. Impact of registration on multi-parametric breast MRI data and parameters: Qualitative and Quantitative Assessment. Abstract Nu-4882.ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019

468. Thakran S, Sasi S, ..., Singh A. To evaluate the role of machine learning for characterization of breast lesion using multiparametric MRI. Abstract Nu-4882.ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag. Reson.Med. 27(2019)), Date: 11-16 May 2019
469. Thayumanavan T, Patel C, Bal C, Seth S, Roy A, Pandey AK, et al. To assess the feasibility of fluorine-18 fluoro L-dihydroxyphenylalanine positron emission tomography-computed tomography for evaluation of cardiac sympathetic innervation in heart failure. *Indian J Nucl Med.* 2019;34(Suppl):S45.
470. Thomas SA, Mahapatra M, Jyotsna VP, Lakshmy R. Assessment of Nutritional Status in Patients. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S11.
471. Tikhomirov A, Korolev A, Kumar M, Haque M, Sharma S, Kaur P, et al. Identification of new secretory glycoprotein SPX-40 ligands. *FEBS Open Bio.* 2019; 9:351
472. Tiwari R, Gulati S, Jauhari P, Lodha R, Sankar J, Kumar A, et al. Validation of END-IT Score in children aged 1 month to 14 years with convulsive status epilepticus. *Epilepsia.* 2019; 60:631.
473. Tiwari R, Ningombam A, Antony VM. Utility of haematology analyser in identification of microclots and apoptotic bodies. *Indian J Hematol Blood Transfus.* 2019; 35:S93.
474. Tomar GS, Goyal K, Singh GP, Kedia S, Chaturvedi A. Prognostic Value of Serially Estimated Serum Procalcitonin Levels in Traumatic Brain Injury Patients with or without Extracranial Injury: A Longitudinal Observational Study. *J Neuroanaesthesiol Crit Care.* 2019;06:S18.
475. Totadri S, Mahajan A, Gupta V, Das A, Meena JP, Singh M, et al. Treatment and outcome of chronic myeloid leukemia in children and adolescents: The Indian Pediatric Oncology Group (INPOG) CML-16-01 Multicentric Study. *Pediatr Blood Cancer.* 2019; 66:e27989.
476. Uppal M, Panwar R, Singh AN, Dash NR, Pal S, Sahni. Surgical management of chronic pancreatitis – experience over 34 years from a tertiary care centre in North India. *Tropical Gastroenterology* 2019; 40(supplement 1): P72-4494
477. Vaid T, Agarwal M, Mahapatra M. Oculomotor Palsy: An unusual manifestation of Multiple Myeloma. *Indian J Hematol Blood Transfus.* 2019; 35(Suppl):S109.
478. Vats N, Sengupta A, ..., Singh A. Comparing supervised and unsupervised machine learning frameworks based upon quantitative-MRI features in differentiation between non-enhancing tumor and vasogenic edema of glioma patients and validation using histopathological ground-truth. Abstract Nu-3072.ISMRM 27th Annual Meeting & Exhibition, Canada (Proc.Intl.Soc.Mag.Reson.Med. 27(2019)), Date: 11-16 May 2019
479. Vellaiyan S, Anantharaman A, Subramanian S, Arun G. Feasibility of Deformed MR Images in the Accurate Delineation of Gross Tumor Volume in Liver SBRT. *Med Phys Int J.* 2019;7:230.
480. Vellaiyan S, Sairem MS, Binjola A, Chander S, Rath GK. Evaluation of Indian-made Simulator based cone-beam computed tomography. *Med Phys Int J.* 2019; 7:418.
481. Vellaiyan S, Sharma DN, Sairem MS, Sharma S, Chander S. End-to-end dosimetry audit using anthropomorphic head and neck phantom towards credentialing for clinical trials: A single institution study. *Med Phys Int J.* 2019; 7:416.
482. Vellaiyan S, Sharma DN. Can hybrid inverse planning optimization be better than inverse planning simulated annealing in high-dose-rate intracavitary brachytherapy for cervix cancer? Per ICRU-89 Dosimetric Analysis. *Brachytherapy.* 2019; 18:S110.
483. Vishnu VY, Srivastava MVP, Sharma J, Gupta Y, Singh M, Dwivedi SN, et al. Prophylactic levetiracetam for the prevention of post stroke seizures (PROLEVIS): A randomized, double blind, placebo- controlled trial protocol. *J Neurological Sci.* 2019;405(Suppl):109.
484. Vishnu VY, Vinny P, Rajan R, Goyal V, Srivastava P, Lal V, et al. Neurology residents versus a mobile medical application in deducing differential diagnoses in movement disorders: A multi-center, cross-sectional, observational study. *Mov Disord.* 2019;34(Suppl2).
485. VK, Prakash O, Krishna A, Kumar S, Gupta SV, Baksi A et al. Laparoscopic Cystogastrostomy: Experience of 134 Cases. *Surg Endosc.* 2019; 33:1-77.
486. Vuyyuru SK, Desai D, Sahu P, Kante B, Kedia S, Sharma R, et al. Long term outcomes in patients with non-perianal fistulizing crohn's disease. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):72-582.
487. Wajid A, Sahoo D, Gupta AK, Meena J, Seth R. Clinical outcomes after sequential therapy of juvenile myelomonocytic leukemia with cytarabine and 6- mercaptopurine. *Pediatr Hematol Oncol.* 2019; 4:S33.
488. Wajid MA, Gupta AK, Seth R, Meena JP, Sahoo D. Malignant Melanoma: Adjuvant Therapy with Interferon Alpha 2b and Nivolumab. *Pediatr Hematol Oncol.* 2019; 4:S26.
489. Wajid MA, Seth R, Gupta AK, Meena JP, Sahoo D. Myeloid neoplasms with t (5;12) and ETV6-PDGFRB gene fusion: case report with imatinib therapy and review of the literature. *Pediatr Hematol Oncol.* 2019; 4:S33.
490. Warriar A, Bhatia R, Ajay G, Tripathi M, Prasad K, Sreenivas V. Cerebral Small Vessel Disease Markers and Their Relation to Hematoma Volume Expansion and Functional Outcome. *Neurology.* 2019; 92(15 Suppl):P3.9-006.

491. Wasan H, Singh D, Joshi B, Sharma U, Jagannathan NR, Dinda AK, et al. Evaluation of neuroprotective effects of dihydromyricetin in experimental model of ischemic stroke. Eur Str Swarnakar R, Wadhwa S, Srikumar V, Goyal V, Sreenivas V. Park-Ease Trial: A Randomized Controlled Trial to Study the Efficacy of Exercises in Early-Stage Parkinson's Disease. *Mov Disord.* 2019;34:S900.
492. Wasan H, Singh D, Joshi B, Sharma U, Jagannathan NR, Reeta KH. Evaluation of neuroprotective effects of safinamide in experimental model of ischemic stroke. *J Neurol Sci.* 2019; 405(Suppl):143-4.
493. Yadav R, Aggarwal S, Singh A, Mir R. Effect of surgically induced weight loss on serum adiponectin levels and its association with the gene expression in visceral adipose tissue of morbidly obese. *Clinica Chimica Acta.* 2019; 293(Suppl 1):S306.
494. Yadav R, Yadav RK. Effect of a 12-week yoga-based lifestyle intervention on blood pressure, insulin resistance and inflammatory mediators in pre-diabetic overweight/ obese Indians. *J Hypertens.* 2019; 37(Suppl):e119.
495. Yoosuf S, Singh P, Khaitan A, Strand T, Ahuja V, Leffler D, et al. Celiac disease in patients with cryptogenic liver diseases: A systematic review and meta-analyses. *J Gastroenterol Hepatol.* 2019; 34(Suppl 3):72-582.

## Chapters in Books

1. Adela R, Khadgawat R. Vitamin D and cardiovascular disease: Indian perspective. In: Goswami KC, Yadav R, Naik N, Ramakrishnan S (eds). CSI Cardiology Update 2018. New Delhi: Jaypee Brothers Medical Publishers; 2019:13-6.
2. Aggarwal P, Mohindra R. Muscle wasting. In Richhariya D (ed). Signs and Symptoms in Clinical Practice. New Delhi: Jaypee Brothers Medical Publishers; 2020:501-7.
3. Aggarwal R, Soni KD. Nutrition in the Intensive Care Unit. In: Sehgal R, Trikha A (eds). Yearbook of Anesthesiology -9. New Delhi: Jaypee Brothers & Medical Publishers. 2019:115-32.
4. Aggarwal S, Singla V. Current Status of One Anastomosis Gastric Bypass. In: Khanna S. IAGES Recent Advances in Minimal Access Surger- 2. 2<sup>nd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:166-72.
5. Airan R, Kapoor PM. Extracorporeal Membrane Oxygenation Carbon Dioxide Removal. Rajesh Chandra Mishra. ISCCM Manual of RRT & ECMO in ICU. New Delhi: Jaypee Brothers Medical Publishers; 2020:333-41.
6. Ali S, Samie A, Ali A, Bhat A, Mir T, Prasad BV. Mental Health: A Global Issue Affecting the Pattern of Life in Kashmir. In: Taukeni SG (ed). Biopsychosocial Perspectives and Practices for Addressing Communicable and Non-Communicable Disease. USA: IGI-Global Publication; 2019:18-30.
7. Anand A, Agarwal A, Makharia GK, Non-celiac gluten sensitivity. In: Kumar A (eds). Gastroenterology Annual. 3<sup>rd</sup> ed. New Delhi, 2019.
8. Arunkumar S, Bhowmik D. Banff Classification of Renal Allograft Pathology: Updates and Future Directions. In: Dakshinamoorthy KV, Kumar VS, Ram (eds). Articles Every Nephrologist Should Know. Hyderabad: SVIMS; 2019:717-21.
9. Arunkumar S, Mahajan S. Pregnancy and Lupus Nephritis. In: Khullar D (ed). Lupus Nephritis, Pathogenesis to current management. New Delhi: Vee Enn Prin-O-Pac; 2019:169-79.
10. Arya K. Food insecurity among the Homeless in Delhi: An exploration of Survival Strategies and options. In: Singh CP, Dhingra V (eds.). Social Work Practice: Expanding Scope and Challenges. Jaipur:Rawat Publications; 2019:243-57.
11. Asad M, Muneer A, Kumar P, Thakur V, Rathore S, Malhotra P, et al. Road Towards Development of New Antimalarial: Organelle Associated Metabolic Pathways in Plasmodium as Drug Targets and Discovery of Lead Drug Candidates. In: Hameed S, Fatima Z (eds). Pathogenicity and Drug Resistance of Human Pathogens Mechanisms and Novel Approaches. Singapore: Springer; 2020:181-12.
12. Bagri N, Kumar U. Immunotherapy for Nonspecific Aortoarteritis. In: Goswami KC (ed). Essentials of Postgraduate Cardiology. New Delhi: Evangel Publishing; 2019:581-5.
13. Bagri NK. Emergencies in Pediatric Rheumatology. In: Gupta P, Bagga A, Ramji S, Lodha R (eds). Principles of Pediatric and Neonatal Emergencies. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers. 2020:538-47.
14. Bairwa D, Kumar U. Biosimilars in Rheumatology: Beginning of a new era. In: Pareek KK (ed). Medicine Update 2019. New Delhi: Jaypee Brothers Medical Publishers; 2019:731-6.
15. Bal C, Prabhu M, Chakraborty D, Reddy KS, Arora S. Applications of Radioisotopes in the Diagnosis and Treatment of Thyroid Disorders. In: Kapre ML (ed). Thyroid Surgery: Principles and Practice. Florida: CRC Press; 2020:161-9.
16. Bansal VK. Gall Stone Disease. In: Haribhakti S (ed). Surgical Gastroenterology. 3<sup>rd</sup> ed. Hyderabad: Paras Medical Publishers; 2019.
17. Benson R, Mallick S, Rath GK. Case Carcinoma Breast. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:201-10.
18. Benson R, Mallick S, Rath GK. Lymphoma. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:269-74.
19. Benson R, Mallick S, Rath GK. Carcinoma Cervix. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:195-200.
20. Benson R, Mallick S, Rath GK. Surface Mould Brachytherapy. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:139-44.
21. Benson R, Mallick S. Telecobalt. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:51-4.
22. Benson R, Mallick S. Therapeutic Index and Its Clinical Significance. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:191-4.
23. Bhalla A, Suri V, Jamshed N. Carbon monoxide poisoning. In: Singh O, Juneja D (eds). Principles and Practice of Critical Care Toxicology. New Delhi: Jaypee Brothers Medical Publishers; 2019:162-4.
24. Bhalla AS, Jana M. Approach to mediastinal masses. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:411-27.

25. Bhalla AS, Manchanda S, Jana M. Structured Reporting in Radiology. In AK Gupta, A Garg, MS Sandhu (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:507-14.
26. Bhalla AS, Manchanda S, Naranje P. Computed Tomography Hardware including Dual Energy Computed Tomography: An Update. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:71-99.
27. Bhalla AS, Naranje P, Dawani A. Pediatric Chest Tumors: Imaging. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:289-308.
28. Bhalla AS, Naranje P, Gupta AK. Tubercular infection of the urinary tract. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020: 93-104.
29. Bhalla AS, Shera TA, Jana M. Evaluation of pulmonary nodules. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:94-118.
30. Bhalla AS, Yadav R, Jana M. Imaging of carcinoma lung. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:45-59.
31. Bhatla N, Singhal S. Approach to a Case of Carcinoma Cervix. In: SMala YM, Gupta MM, Rathore AM (eds). Case Discussions in Obstetrics & Gynecology. 2<sup>nd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:497-507.
32. Bindu B, Mahajan C. Anesthesia for infratentorial lesions. In: Prabhakar H, Ali Z (ed). Textbook of Neuroanesthesia and Neurocritical care. Singapore: Springer; 2019:95-114.
33. Bisht S, Chaurasia P, Goswami A, Khan S, Dada R. Epigenetic landscape of infertility. In: Sharma S (ed). Prognostic Epigenetics. New Delhi: Academic Press; 2019:325-49.
34. Borkar S, Sharma R, Kale SS. O-arm and neuronavigation in Minimally Invasive Spine surgery. In: Sardhara J, Behari S (eds). Handbook of Minimally Invasive Spine Surgery. Lucknow: Salubris Medical publishers; 2019:1-10.
35. Borkar SA, Agrawal M, Sinha S. Neurosurgical treatment of Trigeminal Neuralgia. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Heidelberg, Germany: Springer; 2019:161-7.
36. Chadda RK, Rajhans P. Treatment of Depression. In: Sagar R, Sarkar S (eds). Drug Therapy for Psychiatric Disorder. Jaypee Brothers Medical Publishers; 2020:25-42.
37. Chang FB, Molinar D, Deb KS. Tobacco Use and Smoking Cessation. In: Domino FJ (ed). The 5-Minute Clinical Consult. 2020 (South Asian Edition). New Delhi: Wolter Kluwer; 2019:1002-4.
38. Chatterjee P. Geriatric Syndrome. In: Kamath SA (ed). API Text Book of Medicine. 11<sup>th</sup> ed. New Delhi: CBS Publishers & Distributors Pvt. Ltd; 2019:2402-6.
39. Chaudhuri R, Singh M, Mohanty S. Potential of Mesenchymal Stem Cells in Modulating Oxidative Stress in Management of Lung Diseases. Oxidative Stress in Lung Diseases. Singapore: Springer; 2020:59-73.
40. Chavali S, Rath GP. Auriculotemporal and Zygomaticotemporal Nerve Block. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:97-101.
41. Chavali S, Rath GP. Infraorbital Nerve Block In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:91-6.
42. Chavali S, Rath GP. Mental Nerve Block. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:115-9.
43. Chavali S, Rath GP. Supraorbital Nerve block. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:79-84.
44. Chavali S, Rath GP. Supratrochlear Nerve Block. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:85-90.
45. Chidambaram SS. Establishing ETD Digital Library at AIIMS, New Delhi: An occasional paper. In: Chidambaram SS, Babbar P, Pandya MK (eds). AMLEE-2019: National Seminar on Access & Availability of Medical Literature in Electronic Environment. New Delhi: Bookwell; 2019:26-32.
46. Chidambaram SS. Systematic Review to Living Systematic Review: Ought a Medical Librarian to Know. In: Chidambaram SS, Babbar P, Pandya MK (eds). AMLEE-2019: National Seminar on Access & Availability of Medical Literature in Electronic Environment. New Delhi: Bookwell; 2019:106-16.
47. Chitresh KS, Sandeep B. Margin assessment in breast conserving surgeries. In: SVS Deo (ed). Hand Book on Breast Oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:23-5.
48. Choudhary SK, Bhoje A. Cardiac Surgery. In: Prabhakaran D, Reddy KS, Kaul U, Kumar KR (eds). Tandon's Textbook of Cardiology. New Delhi. Wolter Kluwers; 2019:669-727.
49. Choudhuri AH, Kumar M, Ahuja B. Thoracic trauma. In: Jha SK (ed). ISCCM Manual of Trauma Care. New

- Delhi: Jaypee Brothers Medical Publishers; 2020:58-71.
50. Dabas A, Khadgawat R. Lipid disorders in children. In: Khadilkar V, Bajpai A, Prasad HK (eds). IAP Textbook on Pediatric Endocrinology. New Delhi: Jaypee Brothers Medical Publishers; 2019:469-78.
  51. Damodaran S, Baidya DK, Nihalni SK, Kumar A. Algorithms in Intensive Care and Emergency Medicine. In: Kumar A (ed). Manual of Practical Examination in Critical Care and Emergency Medicine. New Delhi: CBS Publishers; 2019: 399-444.
  52. Das A, Naranje P. Structured reporting templates for thoracic tumors. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:443-51.
  53. Das CJ, Goyal A, Singh D. Roentgenographic Manifestations of Pulmonary and Extrapulmonary Tuberculosis. In: Sharma SK (ed). Textbook of Tuberculosis And Nontuberculous Mycobacterial Diseases. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:113-45.
  54. Das CJ, Kandasamy D, Goyal A, Sharma R. Basics of Radiomics, Texture Analysis and Radiogenomics. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances in Imaging Technology. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:490-6.
  55. Das R, Satapathy AK, Kabra SK. Community Acquired Pneumonia. In: Lodha R, Kabra SK (eds). Antibiotics for Common Infections in Children. 2<sup>nd</sup> ed. New Delhi: Indian Journal of Pediatrics. 2019:36.
  56. Das U, Velpandian T. Fluoroquinolones and Other Antibacterials. In: Gupta AK, Vaitheeswaran K (eds). Contemporary Perspectives on Ophthalmology. 10th Ed. New Delhi: Elsevier; 2019:87-115.
  57. Deep R, Bhargava R. Psychiatric emergencies. In: Gupta P (ed). Principles of Pediatric and Neonatal Emergencies. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:553-64.
  58. Denny L, Cubie H, Bhatla N. Expanding prevention of cervical cancer in Low and Middle income countries (LMICs). In: Jenkins D, Bosch X (eds). Human papillomavirus - Proving and Using a Viral Cause for Cancer. London: Elsevier; 2020:379-88.
  59. Deo SVS, Manoj G, Babul B. Planning Incisions for breast surgery. In: SVS Deo(ed). Hand Book on Breast Oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:8-15.
  60. Dey AB, Indani H. Medicine in an Ageing World. In: Kamath SA (ed). API Text Book of Medicine. 11<sup>th</sup> ed. New Delhi: CBS Publishers & Distributors Pvt. Ltd; 2019:2391-5.
  61. Dhawan V, Dada R. Yoga. Meditation and Acupuncture for male reproductive health. In: Parckkattil SJ, Esteyes C, Agarwal A (eds). Male infertility: Contemporary Clinical Approaches, ART and Antioxidants. 2<sup>nd</sup> ed. Switzerland: Springer Nature; 2019:593-602.
  62. Dhiman R, Saxena R. Trachoma. In: Prakash A (ed). Emerging & Re-emerging Infectious Diseases. New Delhi: Evangel; 2019:169-74.
  63. Dhingra R, Lalwani S. Soft embalming. In: Ajmani ML. Embalming Principles and Legal Aspects. 2<sup>nd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:137-40.
  64. Dhingra R, Roy TS. Surgical anatomy of spine. In: Sinha S (ed). Handbook of Neurotrauma. Volume I: Spinal Trauma. Salubris Medical Publishers; 2019:1-18.
  65. Dogra PN, Yadav S, Singh P. Renal, Ureter and Bladder trauma reconstruction. In: Mohan S Gundeti. Surgical techniques in Pediatric and Adolescent Urology. New Delhi: Jaypee Brothers and Medical Publishers; 2020:494-506.
  66. DREZotomy for Brachial plexus neuralgia. Neurosurgery Updates, Vol. I, NSI, Editor: ManasPanigraphy. Publisher: Thieme, 2019.
  67. Elder WG, Sheriff R, Deb KS. Trichotillomania. Domino FJ, Sharma S. The 5-Minute Clinical Consult. 2020 (South Asian Edition). New Delhi: Wolter Kluwer; 2019:1012-4.
  68. Gamanagatti S, Goyal A, Srivastava DN. Vascular Interventions in the genitourinary tract. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:552-70.
  69. Garg B, Manhas V. Multidrug-Resistant Tuberculosis. In: Zaveri G, Mulukutla RD (eds). The ASSI Monographs Spinal Tuberculosis. New Delhi: Thieme; 2019:197-202.
  70. Garg B, Sharan AD. Bone Morphogenetic Proteins and Lumbar fusion. In: Vaccaro AR, Su BW, Chiba K, Dvorak MF, Mayer HM, Rajasekaran S, et al. (eds). The Spine: Medical & Surgical Management. New Delhi: Jaypee Brothers Medical Publishers; 2019:411-20
  71. Garg K, Deora H, Sinha S. Management of Traumatic Atlantoaxial Dislocation. In: Sinha S (ed). Handbook of Neurotrauma. Noida: Salubris; 2019:106-13.
  72. Ghati N, Siddhartha D, Naik N. PVC Cardiomyopathy: How to manage. In: Das MK (ed). CSI Cardiology Update 2019. New Delhi: Evangel; 2019:706-15.

73. Giridhar P, Mallick S, Rath GK. Oral Cavity Carcinoma. In: Mallick S, Rath GK, Benson R (eds). *Practical Radiation Oncology*. New Delhi: Springer; 2019:211-6.
74. Goel S, Ahmed NH, Satpathy G. Ocular Microbiology. In: Maharana PK, Sharma N, Kumar A (eds). *Ophthalmology Clinics-2 for Postgraduates*. New Delhi: Jaypee Brothers Medical Publishers; 2020:306-14.
75. Gopichandran L, Kanniammal C. *Communication and education technology for Bsc (Nursing)*, 2nd edition, CBS Publication, 2019.
76. Gordon DK, Deb KS. Transgender Health. Domino FJ (ed). *The 5-Minute Clinical Consult*. 2020 (South Asian Edition). New Delhi: Wolter Kluwer; 2019:1012-4.
77. Goswami D. Current status of methylene blue in anesthesia & intensive care. In: Sehgal R, Trikha A (eds). *Yearbook of Anesthesiology* 9. New Delhi: Jaypee Brothers Medical Publishers; 2020:373-6.
78. Gowtham L, Velpandian T. Newer Drugs in Glaucoma. In: Gupta AK, Vaitheeswaran K (eds). *Contemporary Perspectives on Ophthalmology*. 10th Ed. New Delhi: Elsevier; 2019:63-73.
79. Goyal A, Bhalla AS. Interventional Radiology in Chest Tumors. In: Bhalla AS, Jana M (eds). *Clinico Radiological Series: Imaging of Chest Tumours*. New Delhi: Jaypee Brothers Medical Publishers; 2020:356-69.
80. Gulati S, Singh LR, Gupte S, Chowdhary BB. Neurology. In: Gupte S (ed). *The Short textbook of Pediatrics*. 13<sup>th</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:573-618.
81. Gulati S. Acute Encephalitis. In: Gupta P, Bagga A, Ramji S (eds). *Principles of Pediatric & Neonatal Emergencies*. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers & Medical Publishers. 2020:335-46.
82. Gulati S. Neurodevelopmental Disorders: The journey thus far. The Dreams and their realization- going e way; empowering professionals and parents. In: Sundaray NK (ed). *Building Legal Capacity for persons with intellectual and developmental disabilities*. New Delhi: National Trust; 2019:68-9.
83. Gupta A, Responsibilities in giving Medicines to Geriatric patient, IGNOU, Manual for caring Elderly, First edition, New Delhi: IGNOU & MOH&FW, 2019. Needs of the Geriatric patient related to Investigations and Medications, IGNOU, Manual for caring Elderly
84. Gupta AK, Kandasamy D. Radiological manifestations of common metabolic disorders. In: Kamath SA (eds). *API Text Book Of Medicine*. 11<sup>th</sup> ed. New Delhi: CBS Publishers & Distributors Pvt. Ltd; 2019:698- 705.
85. Gupta DK, Bora SK. Imaging in Adult Degenerative Scoliosis Neurosurgery Updates. In: Panigrahy M (ed). *Neurosurgery Updates*. Noida: Thieme; 2019:9-28.
86. Gupta DK, Sharma S. Colonic interposition for Esophageal replacement. In: Puri P, Hollwarth ME (eds). *Pediatric Surgery (Springer Surgery Atlas Series)*. 2<sup>nd</sup> ed. Germany: Springer; 2019:59-65.
87. Gupta DK, Sharma S. Hydrometrocolpos. In: Puri P, Hollwarth ME (eds). *Pediatric Surgery (Springer Surgery Atlas Series)*. 2<sup>nd</sup> ed. Germany: Springer; 2019:637-49.
88. Gupta N, Mukhija R, Tandon R. Eyebanking. In: Chaudhari Z, Vanathi M (eds). *Postgraduate Ophthalmology*. 2nd Ed. New Delhi: Jaypee Brothers and medical Publishers; 2020:3.23.
89. Gupta N, Soneja M. Making an antibiotic guideline for a tertiary care hospital. In: Banerjee AK (ed). *Progress in Medicine*. New Delhi: Jaypee Brothers Medical Publishers; 2020:224-32.
90. Gupta N, Verma PK. Venous thromboembolic Disease. In: Verma PK (ed). *Principles and Practice of Critical Care*. 3rd ed. Wolters Kluwer. 2019:320-38.
91. Gupta N, Yadav S, Tandon R. Keratoprosthesis. In: Chaudhari Z, Vanathi M (eds). *Postgraduate Ophthalmology*. 2nd Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:3.22.
92. Gupta R, Kapoor PM. Types of Extracorporeal Membrane Oxygenation: Venoarterial, Venovenous and Hybrid Extracorporeal Membrane Oxygenation. In: Mishra RC (ed). *ISCCM Manual of RRT & ECMO in ICU*. New Delhi: Jaypee Brothers Medical Publishers; 2020:197-211.
93. Gupta R, Sharma A. Substance Dependence: Overview of the Environmental, Genetic, Epigenetic, and Imaging Studies. In: Paul S (ed.) *Application of Biomedical Engineering in Neuroscience*. Singapore: Springer Nature; 2019:101-25.
94. Gupta S, Environmental modifications for Geriatric patient for home setting
95. Gupta S, Handling of samples, drugs and linen, IGNOU, Manual for caring Elderly, First edition, New Delhi: IGNOU & MOH&FW, 2019.
96. Gupta S, Management of Disabilities (Blind, Deaf, Locomotor and dementia), IGNOU, Manual for caring Elderly, First edition, New Delhi: IGNOU & MOH&FW, 2019.
97. Gupta S, Management of positions & pressure points, IGNOU, Manual for caring Elderly, First edition, New Delhi: IGNOU & MOH&FW, 2019.
98. Gupta S, Management of well being of geriatric patient and Mental Health issues, IGNOU, Manual for caring



- Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.\_
99. Gupta S, Needs of the Geriatric patient related to Investigations and Medications, IGNOU, Manual for caring Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.
  100. Gupta S, Patient safety, IGNOU, Manual for caring Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.
  101. Gupta S, Sankar J. Non-Invasive Ventilation in Acutely III Children. In: Dixit S (ed). ISCCM Manual of Non-Invasive Ventilation. New Delhi: Jaypee Brothers and Medical Publishers; 2019:316-27.
  102. Gupta S, Special needs of geriatric patients, IGNOU, Manual for caring Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.
  103. Gupta S, Use of assistive devices, IGNOU, Manual for caring Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.
  104. Gupta S, Wellbeing of the care providers, IGNOU, Manual for caring Elderly, First edition, New Delhi:IGNOU & MOH&FW, 2019.\_
  105. Gupta S. Institutional Care for Elderly. In: Shankardas MK (ed). Ageing Issues and Responses in India. Singapore: Springer; 2020:143-55.
  106. Gupta SK, Bamforth SD, Anderson RH. Artery of the fifth aortic arch. In: Wenovsky G (ed). Anderson's textbook of Pediatric Cardiology. 4th ed. Elsevier; 2019:901-12.
  107. Gupta SK, Spicer DE, Anderson RH, Moore RA. Anomalous systemic venous return. In: Wenovsky G (ed). Anderson's textbook of Pediatric Cardiology. 4th ed. Elsevier; 2019:457-74.
  108. Gupta SK. Congenital Heart Disease. In: Agarwal R (ed). AIIMS NICU protocol. 3rd ed. New Delhi Noble Vision; 2019:150-64.
  109. Gupta SK. Pericardial diseases in children. In: Wenovsky G (ed). Anderson's textbook of Pediatric Cardiology. 4th ed. Elsevier; 2019:1063-75.
  110. Gupta SK. Role of Next Generation Sequencing (NGS) in Hematological Disorders. In: Saxena R, Pati H (eds). Hematopathology - Advances in Understanding. Singapore: Springer; 2019:491-502.
  111. Gyawali S, Deb KS, Chadda RK. Challenge of the magnitude of mental health task. In: Singh PK (ed). Challenge of Psychiatry. Patna: Indian Psychiatric Society; 2020:20-30.
  112. Halder N, Velpandian T. Drugs Used for the Management of Ocular Viral Infections. In: Gupta AK, Vaitheeswaran K (eds). Contemporary Perspectives on Ophthalmology. 10th Ed. New Delhi: Elsevier; 2019:74-80.
  113. Hans G, Gupte S, Gomez EM. Development. Gupte S (ed). The Short Textbook of Pediatrics. 13<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:84-95.
  114. Hari P. Nephrotic syndrome. Tarafdar S. Lecture Notes Nephrology: A Comprehensive Guide to Renal Medicine. Hoboken, USA: Wiley-Blackwell; 2020:111-26.
  115. Hari P. Urinary Tract Infection. In: Vasudev A (ed). IAP Specialty Series on Pediatric Nephrology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:173-83.
  116. Hari S, Sharma S, Dhamija E, Goyal A. The Retroperitoneum. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:497-517.
  117. Imaging in Adult Degenerative Scoliosis Neurosurgery Updates, Vol. I, NSI, Editor: ManasPanigraphy. Publisher: Thieme, 2019.
  118. Ismail J, Sankar J. Environmental Poisons. In: Gupta P (ed). Textbook of Neonatal and Pediatric Emergencies. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:1-7.
  119. Jain D, Arava SK. Pathology, Immunohistochemistry and Driver Mutations of Lung Carcinoma. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumors. New Delhi: Jaypee Brothers and Medical Publishers; 2020:37-44.
  120. Jain V, Singh GP. Trigemino-Cardiac Reflex and Trigeminal Neuralgia. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore:Springer Nature; 2019:11-22.
  121. Jana M, Bhalla AS, Pipavath S. Lung cancer screening. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:83-93.
  122. Jana M, Dawani A, Manchanda S. Neuroendocrine tumors of thorax. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:139-58.
  123. Jana M, Gupta AK. Tuberculosis in the pediatric patient. In: Gupta RK, Sharma R (eds). Imaging in Tuberculosis: Clinicopathological Correlation. New Delhi: Jaypee Brothers Medical Publishers; 2019:207-25.
  124. Jana M, Khan IA. Imaging of thoracic germ cell tumors. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:210-23.

125. Jana M. Spotters. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:468-74.
126. Jat KR, Lodha R. Antitubercular Drugs. In: Singh M, Deorari AK (eds). Drug Dosages in Children. 10<sup>th</sup> ed. New Delhi: CBS Publishers and Distributors; 2020:126-30.
127. Jat KR, Lodha R. Bronchodilators and other Drugs for Asthma. In: Singh M, Deorari AK (eds). Drug Dosages in Children. 10<sup>th</sup> ed. New Delhi: CBS Publishers and Distributors. 2020:139-46.
128. Jat KR. Stridor and foreign body Inhalation. In: Gupta P (ed). Principles of Pediatric and Neonatal Emergencies. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers. 2020:167-73.
129. Jetley P, Soni K. Care of potential Organ Donor in ICU. In: Gurjar M (ed). Textbook of Ventilation, Fluids Electrolytes and Blood Gases. New Delhi: Jaypee Brothers & Medical Publishers. 2020:396-404.
130. Jhanjee S. Challenge of the magnitude of mental health task. In: Panda R, Mathur MR (eds). Tobacco Cessation: A Practice Manual for Primary Care Physicians. New Delhi: CRC Press-Taylor & Francis; 2019:39.
131. Kabra SK. Upper Respiratory Tract Infection. In: Menon PSN, Nair MKC (eds). IAP Text Book of Pediatrics. 7<sup>th</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:635-63.
132. Kandasamy D, Gamanagatti S, Gupta AK. Radiology Information System and Picture Archiving and Communication System. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances in Imaging Technology. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:389-94.
133. Kandasamy D, Sharma R, Gupta AK. Imaging of the Adrenal Gland. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:473-96.
134. Kandasamy D, Sharma R. Diffusion-weighted Magnetic Resonance Imaging. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances in Imaging Technology. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:175-94.
135. Kandasamy D, Wani GM. Imaging Modalities in Chest Tumors: Role and Techniques. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:3-11.
136. Kapila AT, Gupta A, Sachdeva J. Neuroimmunology- Specific focus in women. In: Chhabra ST, Kapila AT (eds). Clinical Approach and Management Strategies of Medical Ailments in Women: Oorja- The Power of Her. New Delhi: Jaypee Brothers & Medical Publishers. 2020:195-212.
137. Kapoor I, Han R. Fluids and electrolyte management. In: Prabhakar H, Mahaja C, Kapoor I (eds). Essentials of Geriatric Neuroanesthesia. Boca Raton: Taylor & Francis, CRC Press; 2019:271-8.
138. Kapoor I, Mahaja C, Prabhakar H. Robot assisted neurosurgery. In: Prabhakar H, Ali Z (eds). Text book of Neuroanesthesia and Critical Care. Singapore: Springer; 2019:503-10.
139. Kapoor I. Scales and Scores. In: Prabhakar H. Neurointensive Care. New Delhi: Oxford University Press; 2019:751-4.
140. Kapoor PM. Extracorporeal Membrane Oxygenation and Heart Failure. In: Chopra HK, Nanda NC, Narula J (eds). Advances and Innovation in Heart Failure (AIHF): Textbook of Cardiology. New Delhi: Jaypee Brothers Medical Publishers; 2020:885-95.
141. Kapoor PM. Sudden Cardiac Arrest In Women With Migraine. In: Chhabra S (ed). Clinical Approach and Management Strategies of Medical Ailments in Women: Oorja- The Power of Her. Ludhiana: Jaypee Brothers Medical Publishers; 2020:82-8.
142. Kashyap L, Magesh P. Double-lumen endotracheal tubes: from history to present and the future. In: Sehgal R, Trikha A (eds). Yearbook of Anesthesiology 9. New Delhi: Jaypee Brothers Medical Publishers; 2020:293-307.
143. Kaur P, Jauhari P. Approach to Acute Vision Loss. In: Soans TS, Chawla N (eds). IAP Textbook of Pediatric and Neonatal Emergencies. 1<sup>st</sup> Ed. New Delhi: Jaypee Brothers & Medical Publishers. 2019:35-40.
144. Kedia S, Gupta D, Suri A. Traumatic Brain Injuries. In: Gupta P (ed). Principles of Pediatric Neonatal Emergencies. 4<sup>th</sup> ed. New Delhi: Jaypee Brother & Medical Publishers. 2020: 821-35.
145. Khan J, Vishwakarma MK, Rawat R. Development of Digital Library for the Thesis and Dissertation through Open Source Software (DSpace) of AIIMS, New Delhi: A case Study. In: Sharma VK (ed). Emerging Trends in Medical Information and Technologies. Haryana: Medical Library Association of India; 2019:146-64.
146. Khandelwal A, Rath GP. Neural Prolotherapy for Trigeminal Neuralgia. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:201-5.
147. Kharbanda OP, Sagar R. Psychological implications of malocclusion and orthodontic treatment. Kharbanda OP. Orthodontics: Diagnosis of & Management of Malocclusion & Dentofacial Deformities. 3<sup>rd</sup> ed. New Delhi: Elsevier India; 2020:99-108.
148. Kim SD, Sung GT, Eto M, Tatsugami K, Garg H, Kumar R, et al. Development of Robotic Urologic Surgery in Asia. In: Chan ES, Matsuda T (eds). Endourology Progress. Singapore: Springer; 2019:35-48.

149. Kulshrestha V. Medical Management of Uterine Fibroids. In: Rajaram S, Gupta B (eds). Evidence Based Management of Fibroid Uterus. New Delhi: Evangel; 2019:92-108.
150. Kumar A, Das CJ. Tools and drugs in Interventional radiology. In Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:310-28.
151. Kumar A, Gamanagatti S. Urinary Tract Trauma. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:518-36.
152. Kumar A, Gupta A, Soni KD. Trauma cases in ICU. In: Mehta Y, Sharma J (eds). Atlas of Critical Care. New Delhi: Jaypee Brothers & Medical Publishers; 2019:383-402.
153. Kumar G, Gupta N, M Vanathi. Chlamydial infections of the eye. In: Chaudhari Z, Vanathi M (eds). Postgraduate Ophthalmology. 2nd Ed. New Delhi: Jaypee Brothers and medical Publishers; 2020:3.8.
154. Kumar L, Malik PS. Principles of drug treatment of cancer. In: Kamath Sa (ed). API Text Book of Medicine Vol 2 Set. 11th ed. 2019:1009-16.
155. Kumar L. Ovarian Cancer. In: Sanchetee S (ed). A Text book of Clinical Oncology in the Indian context. Jodhpur: Raj Cancer Cure Hospital pvt Ltd; 2019:786-95.
156. Kumar L. Plasma Cell Neoplasms. In: Sanchetee S (ed). A Text book of Clinical Oncology in the Indian context. Jodhpur: Raj Cancer Cure Hospital pvt Ltd; 2019:981-92.
157. Kumar M, Singh D, Deepak KK. Power spectrum analysis of heart rate variability during internally and externally operative attention. In: Paul S, Bhatia D (ed). Smart Healthcare for Disease Diagnosis and Prevention. Chennai: Academic press; 2020:43-9.
158. Kumar N, Singh S, Neuromodulation. In: Goyal SK (ed). Essentials of Psychiatry. New Delhi: Wolters kluwer; 2019:264-71.
159. Kumar P, Kabra SK. Antimicrobial Therapy in Lower Respiratory Tract Infection. In: Singhal T (ed). Rational Antimicrobial Practice in Pediatrics. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:216-27.
160. Kumar P, Pandey AK. Radiation hazards and radiation units. In: Gupta AK, Garg A, Sandhu MS (eds). Diagnostic radiology – Advances in imaging technology. 3rd ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:407-22.
161. Kumar P, Singh UB, Lamichhane G, Story-Roller E. Repurposing of Carbapenems for the Treatment of Drug-Resistant Tuberculosis. In: Hasnain SE, Ehtesham NZ, Grover S (eds). Mycobacterium Tuberculosis: Molecular Infection Biology, Pathogenesis, Diagnostics and New Interventions. Singapore: Springer; 2019:497-514.
162. Kumar R, Hemal AK. Genitourinary Tuberculosis. In: Singh SK, Mohan A (eds). Textbook of Tuberculosis and Nontuberculous Mycobacterial Diseases. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:368-78.
163. Kumar R, Khosla D. Brachytherapy in Breast Cancer. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. Singapore: Springer Singapore; 2020:129-32).
164. Kumar R, Khosla D. Radiation Facility Development. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. Singapore: Springer Singapore; 2020:85-8.
165. Kumar R, Kumar M. Microsurgery for male infertility. In: Parekattil S, Esteves S, Agarwal A (eds). Male Infertility. 2<sup>nd</sup> ed. Switzerland: Springer; 2020:187-96.
166. Kumar R, Miriyala R, Tanwar P. Adrenal Tumors. In: Sanchetee S (ed). A Textbook of Clinical Oncology in the Indian context. Jodhpur: Raj Cancer Cure Hospital pvt Ltd; 2019:829-35.
167. Kumar R, Miriyala R, Tanwar P. Thyroid Cancer. In: Sanchetee S (ed). A Textbook of Clinical Oncology in the Indian context. Jodhpur: Raj Cancer Cure Hospital pvt Ltd; 2019:813-22.
168. Kumar R, Tripathi M. Current status of Nuclear Medicine in Urinary Tract Imaging. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI IMAGING SERIES Diagnostic Radiology: Genitourinary Imaging. 4th ed. New Delhi: Jaypee Brothers and Medical Publishers; 2020:38-56.
169. Kumar RR, Arya K. Traditions, Globalization and Drug Abuse in North-East India Highlighting the Renewed Concerns of an organized drug crime. In: Dey J (ed). Globalisation and the Concerns of Social Landscape in India New Delhi: Renu Publishers; 2019: 95-106.
170. Kumar S, Kumar R, Tanwar P. Parathyroid Tumors. In: Sanchetee S (ed). A Textbook of Clinical Oncology in the Indian context. Jodhpur: Raj Cancer Cure Hospital pvt Ltd; 2019:823-8.
171. Kumar S, Ojha V, Sharma S. Renovascular Hypertension. In: Garg A, Sandhu MS, Gupta AK (eds). Diagnostic Radiology, Genitourinary Imaging. 4th ed. New Delhi: Jaypee Brothers and Medical Publishers; 2019:173-95.
172. Kumar S, Dadhwal V, Sharma KA. Tuberculosis in Pregnancy. In: Sharma SK (ed). Textbook of Tuberculosis and Non-Tuberculosis Mycobacterial Disease. 3rd Ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:346-53.

173. Lamsal R, Rath GP. Introduction to Trigeminal Neuralgia. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:3-9.
174. Lamsal R, Rath GP. Neuromodulation in Trigeminal Neuralgia. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:187-93.
175. Mahaja C, Kapoor I, Prabhakar H. Aneurysmal Subarachnoid Hemorrhage. In: Prabhakar H, Rajan S, Kapoor I, Mahajan (eds). Problem Based Learning Discussion in Neuroanesthesia and Neurocritical Care. Singapore: Springer, Singapore; 2020: 51-62.
176. Mahajan C, Kapoor I, Prabhakar H. Minimally invasive neurosurgery. In: Prabhakar H, Mahajan C, Kapoor I. Essentials of Geriatric Neuroanesthesia. Boca Raton: CRC Press, Taylor and Francis Group; 2019:149-58.
177. Mahapatra M, Mishra DK. Approach to Anemia & Polycythemia. In: Kamath S (eds). API Textbook of Medicine. 11th Ed. Mumbai: Association of Physicians of India; 2019:882-6.
178. Mahey R, Pai H. What is new in Assisted Reproduction Technology. In: Nandita Pashetkar et al(eds). New Trends in ART. New Delhi: Jaypee Brothers Medical Publishers; 2019:566-9.
179. Makharia GK. Abdominal tuberculosis. In: Sharma SK, Mohan Alladi. Textbook of Tuberculosis and Non-tuberculous Mycobacterial diseases. 3rd Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:208-21.
180. Malhotra R, Mittal V, Pillai SS. Diagnosis of Osteoporosis. In: Chhabra HS, Dave B (eds). The ASSI Monographs Osteoporosis and Spine. New Delhi: Thieme; 2019:23-36.
181. Mallick S, Benson R, Rath GK. Radiation Toxicity. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:287-98.
182. Mallick S, Benson R. Helical Tomotherapy. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:69-72.
183. Mallick S, Benson R. Linear Accelerator. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:63-8.
184. Mallick S, Kumar C, Benson R, Rath GK. Cancer in India. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:299-300.
185. Mallick S, Rath GK. Altered Fractionation Radiotherapy. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:185-90.
186. Mallick S, Rath GK. Beam Modifying Devices. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:41-8.
187. Mallick S, Rath GK. Extremity Soft Tissue Sarcoma. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:239-44.
188. Mallick S, Rath GK. Intraoperative Radiotherapy. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:89-94.
189. Mallick S, Rath GK. Brachytherapy in Head and Neck Cancers. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:117-20.
190. Mallick S. Proton Therapy. In: Mallick S, Rath GK, Benson R (eds). Practical Radiation Oncology. New Delhi: Springer; 2019:79-84.
191. Manchanda S, Bhalla AS. Approach to Thoracic Masses. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:395-410.
192. Manchanda S, Bhalla AS. Thoracic Malignancies in Special Situations. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:309-26.
193. Manchanda S, Khan IA. Carcinoma Lung: Staging. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:59-82.
194. Manchanda S, Sharma R, Wani GM. Imaging of Thymic Epithelial Tumors. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:193-209.
195. Manchanda S, Vyas S, Jana M. Imaging of Malignant Ovarian and Tubal disease. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:312-31.
196. Mansoori N, Bansil R, Borkar SA, Sinha S. Translational Research in Spine Injury. In: Sinha S, Deora H (ed). Handbook of Neurotrauma. Vol.1-Spinal Trauma. Noida: Salubris Medical Publisher; 2020:192-8.
197. Mansoori N, Bansil R, Borkar SA, Sinha S. Cell based regenerative therapies in Spinal Cord Injury. In: Sinha S, Deora H (ed). Handbook of Neurotrauma. Vol.1-Spinal Trauma. Noida: Salubris Medical Publisher. 2020:186-91.
198. Mathew G, Sinha A. Nephrocalcinosis. In: Nedunchelian K (ed). Differential Diagnosis in Pediatrics. New Delhi: Jaypee Brothers Medical Publishers; 2019:388-93.

199. Mathur P. Infection Control in Operating Rooms: Sterilization. In: Prabhakar H, Ali Z (eds). *Textbook of Neuroanesthesia and Neurocritical Care: Volume I-Neuroanesthesia*. Singapore: Springer Nature; 2019:351-8.
200. Mishra R, Rath GP. Complementary Medicine in Trigeminal Neuralgia. In: Rath GP (ed). *Handbook of Trigeminal Neuralgia*. Singapore: Springer Nature; 2019:207-13.
201. Mittal S, Mittal R. Intra-articular Fractures: Principles of Fixation. In: Doral MN, Karlsson J, Nyland J, Benedetto KP (eds). *Intraarticular fractures*. Switzerland: Springer; 2019:15-23.
202. Mohan VK, Bhoi D. Percutaneous Microballoon Compression for Trigeminal Neuralgia. In: Rath GP (ed). *Handbook of Trigeminal-Neuralgia*. New Delhi: Springer Singapore; 2019:151-60.
203. Mohindra R, Aggarwal P. Lymphadenopathy. In: Richhariya D (ed). *Signs and Symptoms in Clinical Practice*. New Delhi: Jaypee Brothers Medical Publishers; 2020:485-94.
204. Moksha L, Velpandian T. Immunosuppressive Agents in Ophthalmology. In: Gupta AK, Vaitheeswaran K (eds). *Contemporary Perspectives on Ophthalmology*. 10th Ed. New Delhi: Elsevier; 2019:116-23.
205. Muneer A, Singh S, Narwal M, Malhotra P, Mohammed A, Rathore S. Cellular Homeostasis and Cell Signalling in Malaria Parasite: Role of Autophagy. In: Hameed S, Fatima Z (eds). *Pathogenicity and Drug Resistance of Human Pathogens Mechanisms and Novel Approaches*. Singapore: Springer; 2020:213-32.
206. Nag TC. Age-related changes in the human retina: a role for oxidative stress. In: PC Rath (ed). *Models, Molecules and Mechanisms in Biogerontology: Physiological Abnormalities, Diseases and Interventions*. Singapore: Springer Nature; 2019:127-48.
207. Naranje P, Bhalla AS. Approach to pulmonary neoplasms. In: Bhalla AS, Jana M (eds). *Clinico Radiological Series: Imaging of Chest Tumours*. New Delhi: Jaypee Brothers Medical Publishers; 2020:428-42.
208. Naranje P, Shera TA, Bhalla AS. Neurogenic Tumors of Thorax. In: Bhalla AS, Jana M (eds). *Clinico Radiological Series: Imaging of Chest Tumours*. New Delhi: Jaypee Brothers Medical Publishers; 2020:224-40.
209. Naranje P, Yadav M. Thoracic involvement in hematologic malignancies. In: Bhalla AS, Jana M (eds). *Clinico Radiological Series: Imaging of Chest Tumours*. New Delhi: Jaypee Brothers Medical Publishers; 2020:276-88.
210. Naranje P, Yadav R. Tumors of airway and other lung tumors. In: Bhalla AS, Jana M (eds). *Clinico Radiological Series: Imaging of Chest Tumours*. New Delhi: Jaypee Brothers Medical Publishers; 2020:119-38.
211. Nath M, Velpandian T. Antifungal Drugs for Ophthalmic Use. In: Gupta AK, Vaitheeswaran K (eds). *Contemporary Perspectives on Ophthalmology*. 10th Ed. New Delhi: Elsevier; 2019:81-6.
212. Nayyar R, Pethe S. Approach to a patient with hematuria. In: Singh R, Mishra A (eds). *Proceedings of 37<sup>th</sup> Surgery Update*. 37<sup>th</sup>. New Delhi: MAMC. 2019:138-42.
213. Panigrahi A, Soni KD. Trauma Scores and ICU management of trauma patients. In: Jha SK (ed). *ISCCM Manual of Trauma Care*. New Delhi: Jaypee Brothers & Medical Publishers; 2019:228-37.
214. Panwar R, Pal S, Sahni P. Surgery for non-cirrhotic portal hypertension. In: Haribhakti S. (ed). *Surgical Gastroenterology*. 3rd edition, Hyderabad: Paras Medical Publisher; 2019: 1582-93.
215. Parshad R, Kumar A, Joshi G. Barrett's Esophagus. In: Puneet (ed). *Roshan Lall Gupta's Recent Advances in Surgery*. 16<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:108-28.
216. Phalak M, Kale SS. Tuberculosis of the thoracic spine – When and how to operate. In: Chandra PS (ed). *Current Practice in Neurosciences*. New Delhi: Neurological Society of India; 2019:1-12.
217. Pirabhu S, Mittal P, Thakar A. Vagal Paraganglioma and Schwannoma—Surgical or Non-surgical Management. In: Gooi Z, Agarwal N (eds). *Difficult Decisions in Head and Neck Oncologic Surgery*. New Delhi: Springer; 2019:185-205.
218. Prabhat KC, Goyal L, Rana, SS, Dhingra K, Kshetrimayum N. Nanocomposites and Nano-Inomers for Orthodontic Bracket Bonding. In: Inamuddin, Asiri AM, Mohammad A (eds). *Application of nano-composite material in dentistry*. Philadelphia, USA: Elsevier; 2019:171-9.
219. Pramanik R, Sharma A. Cancer Screening and Prevention. In: Kamath SA (ed). *API Textbook of Medicine 2 Volumes Set*. 11th Ed. Association of Physicians of India; 2019:1004-8.
220. Raheja A, Couldwell WT. Suprasellar craniopharyngioma: Open transcranial approaches. In: Evans JJ, Kenning TJ, Farrell CJ, Kshetry V. *Endoscopic and Keyhole cranial surgery*. Cham: Springer international Publishing AG; 2019:252-5.
221. Rajan R, Kishore A. Movement Disorders: Gender issues and management strategies. In: Chhabra ST, Kapila AT (eds). *Clinical Approach and Management Strategies of Medical Ailments in Women: Oorja- The Power of Her*. New Delhi: Jaypee Brothers & Medical Publishers. 2020:180-6.
222. Rajan R. Microelectrode recording and Complications of Deep Brain Stimulation (DBS). In: Kuniyil SOT, Varma RG (eds). *Handbook of Deep Brain Stimulation*. New York: Nova Science Publishers; 2020:53-66.

223. Ramanujam B. Neurologist, Seven Years' Experience, India. In: Steven C. Schachter. Non-Epileptic Seizures in Our Experience: Accounts of Health Care Professionals. New York: Oxford University Press; 2020:223.
224. Rath GP, Sharma D. Perioperative Challenges during Diagnostic and Preoperative MRI. In: Brambrink AM, Kirsch J (eds). Essentials of Neurosurgical Anesthesia & Critical Care Strategies for Prevention, Early Detection, and Successful Management of Perioperative Complications. 2nd ed. Switzerland: Springer Nature; 2020:263-9.
225. Rawat S, Gupta S, Bhat M, Dinda AK, Mohanty S. Efficient Labeling of Human Mesenchymal Stem Cells Using Iron Oxide Nanoparticles. In: Turksen K. (ed). Imaging and Tracking Stem Cells. Methods & protocols. New York: Humana Press; 2019:113-20.
226. Rawat S, Gupta S, Mohanty S. Mesenchymal Stem Cells Modulate the Immune System in Developing Therapeutic Interventions. In: Tyagi R (ed). Immune Response Activation and Immunomodulation. London: IntechOpen; 2019:1-24.
227. Richa Aggarwal – Ventilator associated pneumonia. En\_Prabhakar\_Textbook of Neuroanesthesia and Neurocritical Care- Chapter 25.
228. Richa Aggarwal . Nutrition in critically ill patients. Published in year book of anaesthesiology 9th edition
229. Richa Aggarwal, et al. Approach to trauma and burn patient to improve outcome. In critical care update
230. Sagar R, Mahapatra A. Mental Health and Reproductive Rights. In: Banerjee S, Adhikari A (eds). Claiming Dignity- Using Law to Advance Reproductive and Sexual Health Rights. 3<sup>rd</sup> ed. New Delhi: Human Rights Law Network; 2019:466-78.
231. Sagar R, Patra BN, Shukla T. Child and Adolescent Psychopharmacology. In: Sagar R, Sarkar S (eds). Drug Therapy for Psychiatric Disorder. Jaypee Brothers Medical Publishers; 2020:119-37.
232. Sagar R. Child Emotional/Psychological Abuse: Recognition, Response and Management. In: Seth R, Srivastava RN, Jagadeesh N, Saldanha S, Sagar R (eds). Child Abuse: Recognition and Response. New Delhi: Jaypee Brothers Medical Publishers; 2020:37-43.
233. Sagar S, Kataria K, Singhal M. Burn management. In: Chawla R, Todi S (ed). ICU Protocols: A stepwise Approach Vol II. 2<sup>nd</sup> ed. Singapore: Springer; 2020:137-47.
234. Sagar S, Kataria K, Singhal M. Burn Management. In: Chawla R (ed). ICU Protocol Book. 3rd Ed. Singapore: Springer; 2020:137-47.
235. Saint AV, Arnim AV, Sankar J, Argent AC, Fink EL. Challenges for Pediatric Critical Care in Resource-Poor Settings. In: Zimmerman J, Rotta AT (eds). Fuhrman and Zimmerman's Pediatric Critical Care. 6<sup>th</sup> ed. Philadelphia: Elsevier; 2020:51-7.
236. Sankar J, Mahadevan S. Scorpion Sting. In: Gupta P (ed). Textbook of Neonatal and Pediatric Emergencies. 4 Ed. New Delhi. Jaypee Brothers and Medical Publishers; 2019:1-9.
237. Sankar J, Singhi S. Sepsis and Septic Shock: Pediatric Considerations. In: Todi S, Dixit SB (eds). Critical Care Update 2020 (ISCCM). 2<sup>nd</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers. 2019:499-507.
238. Sankara-narayanan R, Ramadas K, Bhatla N, Basu P. Early detection of cancer by screening and early diagnosis. In: Sanchette S (ed). A Text Book of Clinical Oncology in the Indian context. Jodhpur: Jodhpur San Hos; 2019:352-61.
239. Sathyaprakash, Sharan P. Personality disorders. In: Goyal SK (ed). Essentials of Psychiatry. New Delhi: Wolters Kluwer; 2020:203-15.
240. Seth R, Singh A. Late effects of cancer therapy in children. In: Sanchette S (ed). A Text Book of Clinical Oncology in the Indian Context. Jodhpur: San Hos; 2019:1067-73.
241. Seth R, Singh A. Fever with a Rash. In: Gupta P (ed). Principles of Pediatric and Neonatal Emergencies. 4<sup>th</sup> ed. New Delhi: Jaypee Brothers and Medical Publishers; 2020:459-70.
242. Seth T. Myelodysplastic syndrome. In: Kamath S (eds). API Textbook of Medicine. 11th Ed. Mumbai: Association of Physicians of India; 2019: 938-42.
243. Sharan P, Singh S, Kumar S. Psychopharmacology for the primary care physicians. In: Sagar R, Sarkar S (eds). Drug Therapy for Psychiatric Disorder. Jaypee Brothers Medical Publishers; 2020:148-73.
244. Sharan S, Kapoor PM. Physiology during Extracorporeal Membrane Oxygenation Support. Rajesh Chandra Mishra. ISCCM Manual of RRT & ECMO in ICU. New Delhi: Jaypee Brothers Medical Publishers; 2020:212-9.
245. Sharma KA, Bharti J. Update on Antenatal Care. In: Nigam A (ed). Recent Advances in Obstetrics and Gynaecology. New Delhi: Evangel; 2020:3-15.
246. Sharma KA, Khoiwal K. Antiphospholipid Antibody Syndrome. In: Sharma A (ed). Obstetrics Algorithms in Clinical Practice. New Delhi: Jaypee Brothers Medical Publishers; 2019:3-6.
247. Sharma KA, Khoiwal K. Pregnancy and Anemia: Special Situations, Severe Anemia in Labor, Decompensated Antepartum Patient. In: Arora M (ed). World Clinics Obstetrics & Gynecology Anemia Volume 7. New Delhi: Jaypee

- Brothers Medical Publishers; 2019:138-49.
248. Sharma KA, Rai G. Diabetes. In: Sharma A (ed). Labor room emergencies. Singapore: Springer; 2020:95-102.
  249. Sharma M, Singh T, Hans G, Gupte S. Development, Behavioral and Psychiatric Disorders. In: Gupte S. The Short Textbook of Pediatrics. 13<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:96-115.
  250. Sharma R, Borkar SA, Sinha S. Management of Neuropathic pain, Spasticity and Autonomic dysreflexia after acute spinal cord injury. In: Sinha S, Deora H (ed). Handbook of Neurotrauma. Vol.1-Spinal Trauma. Noida: Salubris Medical Publisher; 2020:199-210.
  251. Sharma R, Kandasamy D. MRI in medicine. In: Kamath SA (eds). API Text Book Of Medicine. 11<sup>th</sup> ed. New Delhi: CBS Publishers & Distributors Pvt. Ltd; 2019:2359-71.
  252. Sharma R, Sinha S. Spinal implant attributes. In: Sinha S, Deora H (ed). Handbook of Neurotrauma. Vol.1-Spinal Trauma. Noida: Salubris Medical Publisher; 2020:34-41.
  253. Sharma S, Goyal A, Jana M. Evidence-based Radiology and a Primer on Biostatistics. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:395-406.
  254. Sharma S, Gupta DK. Colonic Interposition for Esophageal Replacement in Children. In: Redkar R (ed). IAPS Textbook of Pediatric Surgery. New Delhi: Jaypee Brothers and Medical Publishers; 2020:352-8.
  255. Sharma S, Gupta DK. Disorders of Sexual Differentiation: An Overview. In: Agarwal K (ed). Text Book of Plastic, Reconstructive & Aesthetic Surgery. Vol IV. New Delhi: Thieme; 2020:295-306.
  256. Sharma S, Gupta DK. Esophageal replacement. In: Puri P (ed). Encyclopedia of Pediatric Surgery. Germany: Springer; 2020:1-20.
  257. Sharma S, Gupta DK. Hirschsprung disease in Adolescents and Adults. In: Puri P (ed). Hirschsprung's Disease and Allied Disorders. 4<sup>th</sup> ed. Switzerland: Springer; 2019:297-303.
  258. Sharma S, Gupta DK. Surgical Manifestations of Parasitic Disease. In: Puri P (ed). Encyclopedia of Pediatric Surgery. Germany: Springer; 2020:1-19.
  259. Sharma S, Hari S, Srivastava DN, Madhusudhan KS. Imaging of Globe and Orbit. In: Khandelwal N, Gupta AK, Garg A (eds). Diagnostic Radiology: Neuradiology, including Head and Neck Imaging. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:503-23.
  260. Sharma S. Radiology Illustrations. In: Sihota R, Tandon R (eds). Parsons' Diseases of the Eye. 23<sup>rd</sup> ed. New Delhi: Elsevier; 2019:569-80.
  261. Sharma S. Radiology Illustrations. In: Sihota R, Tandon R (eds). Parsons' Diseases of the Eye. 23<sup>rd</sup> Ed. New Delhi: Elsevier; 2019:569-80.
  262. Shrivastava P. Research Data Management in Health Science Libraries around the world. In: Sharma VK (ed). Emerging Trends in Medical Information and Technologies. Haryana: Medical Library Association of India; 2019:227-44.
  263. Shrivastava P. Trends in Research Data Preservation in Health Sciences Libraries: A comparative analysis. In: Chidambaram SS, Babbar P, Pandya MK (eds). AMLEE-2019: National Seminar on Access & Availability of Medical Literature in Electronic Environment. New Delhi: Bookwell; 2019:95-105.
  264. Sikka K, Thakar A. Vascular Compression Syndrome and Vertigo. In: Santosh KK (ed). Complicated Cases in Vertigo and Dizziness. 2<sup>nd</sup> ed. New Delhi: Kontentworx; 2019:138-40.
  265. Singh A, Diravyaseelan M, Pethusamy K. Kangaroo Method. In: Vonk J, Shackelford T (eds). Encyclopedia of Animal Cognition and Behavior. Switzerland: Springer Nature; 2020:1-2.
  266. Singh A, Gupta N, Makwana T, Tandon R. Pediatric Ocular Emergencies. In: Soans ST, Chawla N (ed). IAP Textbook of Pediatric & Neonatal Emergencies. New Delhi: Jaypee Brothers Medical Publishers; 2020:499-508.
  267. Singh D, Srivastava A. Abdominal Wall Closure Techniques. In: Kanan J, Desai J (eds). Manual of Basket of Beginners: Start Right, Shine Bright. Lucknow: Jaypee Brothers Medical Publishers; 2020:60-1.
  268. Singh GP. Anatomy of Trigeminal Nerve. In: Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:11-22.
  269. Singh J, Kumar R, Chopra A. Molecular biology of Acute lymphoblastic leukemia. In: Saxena R, Pati H (eds). Hematopathology - Advances in Understanding. Singapore: Springer; 2019:183-95.
  270. Singh N, Yadav A. Role of In vitro fertilization. In: Arora M, Mukhopadhyay N (eds). Recurrent Pregnancy Loss. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:243-6.
  271. Singh P, Makharia GK. Food allergy and food hypersensitivity. In: Rao S, Lee Y, Ghoshal U. Clinical and Basic Neurogastroenterology and Motility. New Delhi: Elsevier Academic Press; 2020:387-95.
  272. Singh U. Frontiers of Rehabilitation. In: Sunder S. Textbook of Rehabilitation. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers

- Medical Publishers; 2020:316-31.
273. Singh Y, Dudeja Y, Chatterjee R. Spine and Spinal cord trauma. In: Jha SK (ed). ISCCM Manual of Trauma Care. New Delhi: Jaypee Brothers Medical Publishers; 2020: 103-23.
  274. Singhal S, Bhatla N. Fertility sparing treatment in young women with Endometrial Cancer. In: Studd J, Tan SL, Chervenak FA (eds). Current Progress in Obstetrics & Gynaecology. Mumbai: TreeLife Media; 2019:213-26.
  275. Soni KD. eFAST Scan. In: Govil D, Srinivasan S, Gupta S (eds). ISCCM Manual of Critical Care Ultrasound. New Delhi: Jaypee Brothers & Medical Publishers. 2019:201-8.
  276. Sprute D, Gu M, Deb KS. Homelessness. In: Domino FJ (ed). The 5-Minute Clinical Consult. 2020 (South Asian Edition). New Delhi: Wolter Kluwer; 2019:486-8.
  277. Srivastava DN, Das CJ. Male Infertility and Erectile Dysfunction. In: Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:456-72.
  278. Srivastava DN, Madhusudhan KS. Fluoroscopy & Digital subtraction angiography. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:287-309.
  279. Stokelman T, Chambers RG, Chaffin S, Deb KS. Human Trafficking. In: Domino FJ (ed). The 5-Minute Clinical Consult 2020 (South Asian Edition). New Delhi: Wolter Kluwer; 2019:486-8.
  280. Sunesh Kumar, JB Sharma. Female Genital Tuberculosis. In: Sharma SK (ed). Textbook of Tuberculosis and Non-Tuberculosis Mycobacterial Disease. 3rd Ed. New Delhi: Jaypee Brothers Medical Publishers; 2019:354-67.
  281. Surabhi V, Madhuri K. Chest wall tumours. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:174-90.
  282. Surabhi V, Madhuri K. Pleural tumours. In: Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:159-73.
  283. Suri V, Kakkar A. Animal Models. In: Sanchette S (ed). Text Book of Clinical Oncology in the Indian Context. Jodhpur: San Hos; 2019:284-86.
  284. SVS Deo, Gowda M. Thoraco-abdominal flap for large post mastectomy defects in LABC. In: SVS Deo (ed). Hand Book on Breast Oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:112-6.
  285. SVS Deo, Kumar N, Royal P. Volume replasment using Mini Latissimus dorsi flap. In: SVS Deo (ed). Hand Book on Breast Oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:53-6.
  286. SVS Deo, Gowda M, Sandeep B. Principles of oncoplastic breast surgery. In: SVS Deo (ed). Hand Book on Breast Oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:26-33.
  287. Thakar A, Sikka K. Trans-oral Laser Microsurgery. In: Bahadur S, Thakar A, Mohanty BK (eds). Carconoma of the Larynx and Hypopharynx. Singapore: Springer; 2019:99-110.
  288. Thakral D, Gupta R. Acute Myeloid Leukaemia: An Update. In: Saxena R, Pati H (eds). Hematopathology - Advances in Understanding. Singapore: Springer; 2019:163-82.
  289. Thukral A, Jat KR. Rational Drug Therapy. In: Paul VK, Bagga A (eds). Ghai Essential Pediatrics. 9<sup>th</sup> ed. New Delhi: CBS Publishers and Distributors. 2019:746-65.
  290. Trikha A, Kaur M. Pregnancy related disorders. In: Verma PK (ed). Principles and Practice of Critical Care. 3<sup>rd</sup> Ed. New Delhi: Wolter Kluwers; 2019:613-32.
  291. Verma PK, Gupta N, Gupta A. Sepsis. In: Verma PK (ed). Principles and Practice of Critical Care. 3<sup>rd</sup> ed. Wolters Kluwer. 2019:97-115.
  292. Verma PK, Gupta N, Jaiswal B. Weaning from Mechanical ventilation. In: Verma PK (ed). Principles and Practice of Critical Care. 3<sup>rd</sup> ed. Wolters Kluwer. 2019:247-57.
  293. Vishwajeet, Singh D, Deepak KK. Investigation of heart rate variability with the help of Welch periodogram in Indian young adults based on body physique. In: Paul S, Bhatia D (ed). Smart Healthcare for Disease Diagnosis and Prevention. Chennai: Academic press; 2020:51-7.
  294. Wadhwa S. Mobility Aids. In: Sharma OP. A Handbook of Geriatric Care. New Delhi: Viva Books; 2019:332-5.
  295. Wadhwa S. Soft Tissue Problems. In: Sharma OP. A Handbook of Geriatric Care. New Delhi: Viva Books; 2019:184-7.
  296. Xess AB, Bala K, Singh UB. Health care Associated Meningitis caused by M. tuberculosis and Non-tuberculous Mycobacteria. In: Dogan KH (ed). Disorders of Consciousness-A Review of Important Issues. London: Intech Open Limited; 2020:1-17.
  297. Yadav D, Kumar S, Pandey D. Monoclonal Antibodies. In: Sharma AK, Keservani RK, Dutt R. (Eds). Nanotechnology and Targeted Drug Delivery System. New Delhi: Studera Press; 2019:321-37.



298. Yadav M, Naranje P, Dhamija E. Advanced Computed Tomography Applications and software. In: Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:100-20.
299. Yadav RK, Agarwal M, Philip NM, Yadav S. Renal and urinary tract disorders in pregnancy. In: Yadav P (ed). Common Medical Disorders in Pregnancy. Agra: Agra Obstetrical& Gynaecological Society; 2020:119-27.
300. Yadav S, Kumar R. Effect of Varicocele Treatment on Natural Pregnancy Outcomes. In: Esteves SC, Cho CL, Majzoub A, Agarwal A (eds). Varicocele and Male Infertility. Switzerland: Springer; 2019:285-94.

## Books

1. Agarwal R, Deorari AK, Paul VK, Sankar MJ, Sachdeva A (eds). Neonatal Protocol Book 2019. 2<sup>nd</sup>Ed. New Delhi: Nobel Vision; 2019:1-733.
2. Bagga A (ed). Principles of Pediatric & Neonatal Emergencies. 4<sup>th</sup>ed. New Delhi: Jaypee Brothers and Medical Publishers; January 2020:1-1026
3. Bhalla AS, Jana M (eds). Clinico Radiological Series: Imaging of Chest Tumours. New Delhi: Jaypee Brothers Medical Publishers; 2020:1-475.
4. Chatterjee P. Health and Wellbeing in Late Life: Perspectives and Narratives from India. Singapore: Springer Open; 2019:1-195.
5. Chidambaram SS, Babbar P, Pandya MK (eds). AMLEE-2019: National Seminar on Access & Availability of Medical Literature in Electronic Environment. New Delhi: Bookwell; 2019:1-206.
6. Deo SVS. Hand Book on Breast oncoplasty & Reconstruction. New Delhi: Selina Publishers; 2019:1-224.
7. Deorari AK (ed). Workbook on CPAP: Science Evidence and Practice. 6<sup>th</sup> ed. New Delhi: Noble Vision; 2020:1-173.
8. Garg A, Sandhu MS, Gupta AK (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Genitourinary Imaging. 4<sup>th</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:1-550.
9. Goswami AK. Dengue Chikungunia and Malaria Booklet, 2<sup>nd</sup> ed, New Delhi: CCM, AIIMS; 2019:1-20
10. Gupta A, Gupta R (eds). ISBI 2019 C-NMC Challenge: Classification in Cancer Cell Imaging. Singapore: Springer Nature; 2019:147.
11. Gupta AK, Garg A, Sandhu MS (eds). AIIMS-MAMC-PGI Imaging Series- Diagnostic Radiology: Advances In Imaging Technology. 3<sup>rd</sup> Ed. New Delhi: Jaypee Brothers Medical Publishers; 2020:1-550.
12. Gupta D, Pandya S (eds). PN Tandon- Closed Doors, Open Windows. Gurgaon: Wolters Kluwer; 2019:1-414.
13. Gupta RK, Sharma R (eds). Imaging in Tuberculosis: Clinico-Pathological Correlation. New Delhi: Jaypee Brothers Medical Publishers; 2019:1-227.
14. Gupta S, Ambekar A, Jhanjee S, Singh S. Guidebook for Nurses on tobacco cessation and drug Dependence treatment. New Delhi: Tobacco Division, MOH&FW; 2019:1-12.
15. Joshi P, Lodha R. Pediatric and Neonatal Nursing Manual. New Delhi: Jaypee Brothes and Publishers; 2020:1-278.
16. Khanna N, De A, Bhari N, (eds). IADVL User's Manual of Systemic & Topical Steroids. New Delhi: CBS Publishers & Distributors Pvt. Ltd; 2020:1-256.
17. Khanna N. Illustrated Synopsis of Dermatology and Sexually Transmitted Diseases. New Delhi: Elsevier; 2020:1-452.
18. Kharbanda OP. Orthodontics: Diagnosis and Management of Malocclusion and Dent facial Deformities. 3<sup>rd</sup> ed. New Delhi: Elsevier; 2019:1-1237.
19. Lodha R, Kabra SK (eds). Antibiotics for Common Infections in Children. 2<sup>nd</sup>. New Delhi: Indian Journal of Pediatrics; 2019:1-145.
20. Malhotra R, Gautam D. Mastering Orthopedic Techniques: Revision Knee Arthroplasty. New Delhi: Jaypee Brothers Medical Publishers; 2019:1-477.
21. Mallick S, Supriya, Rath GK, Benson R (eds). Practical Radiation Oncology. Singapore: Springe; 2020:300.
22. Prabhakar H, Ali Z (ed). Textbook of Neuroanesthesia and Neurocritical care. Singapore: Springer; 2019:1-529.
23. Prabhakar H, Ali Z (ed). Textbook of Neuroanesthesia and Neurocritical care Vol II. Singapore: Springer; 2019:1-461.
24. Prabhakar H, Mahajan C, Kapoor I (eds). Essentials of Geriatric Neuroanesthesia. Boca Raton: CRC Press Taylor and Francis Group; 2019:1-316.
25. Prabhakar H, Mahajan C, Kapoor I. Essentials of Geriatric Neuroanesthesia. Boca Raton: CRC Press, Taylor and Francis Group; 2019:1-316.
26. Prabhakar H, Rajan S, Kapoor I, Mahajan (eds). Problem Based Learning Discussion in Neuroanesthesia and Neurocritical Care. Singapore: Springer, Singapore; 2020:1-457.
27. Prabhakar H. Neurointensive Care. New Delhi: Oxford University Press; 2019:1-767.
28. Randhawa VS, Singh G. Textbook of Microbiology. New Delhi: PeePee Publishers; 2019:1-656.
29. Rath GP (ed). Handbook of Trigeminal Neuralgia. Singapore: Springer Nature; 2019:1-247.
30. Sagar R, Sarkar S (eds). Drug Therapy for Psychiatric Disorder. New Delhi: Jaypee Brothers Medical Publishers; 2020:1-228.
31. Saxena R, Dhiman R, Phuljhele S. AIOS-CME series on Optic Neuritis. New Delhi: AIOS; 2019.

32. Sehgal R, Trikha A (eds). Yearbook of Anesthesiology-9. New Delhi: Jaypee Brothers Medical Publishers; 2020:1-412.
33. Sehgal R, Trikha A. Yearbook of Anaesthesiology-8. New Delhi: Jaypee Brothers Medical Publishers; 2019:1-370.
34. Senjam S, Gupta V, Vashist P. A Handbook of Assistive Technology for People with Visual Disability. New Delhi: Century Publication; 2019:1-44.
35. Sharma P, Saxena R, Phuljhele S, Dhiman R. AIOS-Society Guidelines- National Expert based consensus statement regarding Paediatric eye examination, refraction and amblyopia management. New Delhi: AIOS; 2019.
36. Shukla NK, Manoharan N, Malhotra RK, Rath GK (eds). Cancer Incidence and Mortality in Delhi UT Urban, 2013 & 2014. New Delhi: Delhi Cancer Registry, BRAIRCH; 2019:1-70.
37. Singh A, Diravyaseelan M, Pethusamy K. Kangaroo Method. In: Vonk J, Shackelford T (eds). Encyclopedia of Animal Cognition and Behavior. Switzerland: Springer Nature; 2020:1-2
38. Singh MB, Bhatia R. Emergencies in Neurology Vol 1. 2<sup>nd</sup> ed. Singapore: Springer; 2020:1-335.
39. Singh MB, Bhatia R. Emergencies in Neurology Vol 2. 2<sup>nd</sup> ed. Singapore: Springer; 2020:1-261.
40. Verma IC, Kabra SK (eds). Advances in Pediatrics. New Delhi: Indian Journal of Pediatrics; 2019:1-239.

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES (MAIN)**  
**BALANCE SHEET AS ON 31-03-2020**

		(Amount-Rs.)	
<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>Schedule</b>	<b>2019-20</b>	<b>2018-19</b>
Corpus/Capital fund and Liabilities	<b>1</b>	49,606,208,218.20	45,237,582,250.00
Reserves and Surplus	<b>2</b>	4,038,407,425.00	3,613,521,480.00
Earmarked / Endowment Fund	<b>3</b>	130,153,968.00	98,996,372.00
Secured Loans & Borrowings	<b>4</b>	3,366,900,000.00	-
Unsecured Loans & Borrowings	<b>5</b>	-	-
Deferred Credit Liabilities	<b>6</b>	-	-
Current Liabilities and Provisions	<b>7</b>	4,820,925,595.85	2,534,013,546.00
<b>TOTAL</b>		<b>61,962,595,207.05</b>	<b>51,484,113,648.00</b>
<b>ASSETS</b>			
Fixed Assets	<b>8</b>	38,603,767,032.20	34,969,632,885.00
Investments from Earmarked / Endowment funds	<b>9</b>	72,061,069.00	160,510,000.00
Investments-others	<b>10</b>	156,253,424.00	253,253,424.00
Current Assets, Loan & Advances etc.	<b>11</b>	23,130,513,681.85	16,100,717,339.00
Misc. Expenditure (to the extent not written off or adjusted)			
<b>TOTAL</b>		<b>61,962,595,207.05</b>	<b>51,484,113,648.00</b>
Accounting policies and notes forming part of accounts	<b>24</b>		

**Accounts Officer**

**Financial Advisor**

**Sr.Financial Advisor**

**Director**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES (MAIN)**  
**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2020**

<b>INCOME</b>	<b>Schedule</b>	<b>2019-20</b>	<b>2018-19</b>
Income from Sales/Services	12	317,790,240.00	307,541,206.00
Grants/Subsidies	13	16,212,233,281.00	14,733,402,569.00
Fees/Subscriptions	14	228,411,730.00	212,516,061.00
Income from Investments (Income on Invest. From earmarked/endow.Funds transferred to funds)	15	-	-
Income for Royalty, Publication etc.	16	323,657,672.00	212,591,830.00
Interest Earned	17	189,064,452.00	244,602,000.00
Other Income	18	466,078,550.00	941,858,558.00
Increase/(decrease) in stock of Finished goods and works-in-progress	19	-	-
<b>TOTAL (A)</b>		<b>17,737,235,925.00</b>	<b>16,652,512,224.00</b>
<b>EXPENDITURE</b>			
Establishment Expenses	20	10,669,451,016.00	10,445,535,358.00
Other Administrative Expenses etc.	21	3,047,677,403.00	2,741,700,557.00
Material and supply	21B	3,589,892,835.00	3,068,411,374.00
Expenditure on Grants, Subsidies etc.	22	6,000,000.00	-
Interest	23	-	-
Depreciation (Net Total at the year-end - corresponding to Schedule 8)			
<b>TOTAL (B)</b>		<b>17,313,021,254.00</b>	<b>16,255,647,289.00</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>		<b>424,214,671.00</b>	<b>396,864,935.00</b>
Transfer to Special Reserve (Specify each)			
Transfer to /from General Reserve			
<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/ CAPITAL FUND</b>		<b>424,214,671.00</b>	<b>396,864,935.00</b>
<b>TOTAL</b>		<b>17,737,235,925.00</b>	<b>16,652,512,224.00</b>

**Accounts Officer**

**Financial Advisor**

**Sr. Financial Advisor**

**Director**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

	(Amount in Rs.)	
	2019-20	2018-19
<b>SCHEDULE 1- CORPUS/CAPITAL FUND:</b>		
Balances as at the beginning of the year	45,237,582,250.00	37,181,444,955.00
Add : Contributions towards Corpus/Capital Fund	4,508,741,964.00	8,131,708,953.00
Less Condemnation during the year	140,115,995.80	75,571,658.00
<b>BALANCE AS AT THE YEAR-END</b>	<b>49,606,208,218.20</b>	<b>45,237,582,250.00</b>
<b>SCHEDULE 2- RESERVES AND SURPLUS:</b>		
<b>1. Capital Reserve:</b>		
As per last Account	2,926,811.00	2,914,919.00
Addition during the year	671,274.00	11,892.00
Less: Deductions during the year		
<b>2. Revaluation Reserve</b>		
As per last Account		
Addition during the year	3,598,085.00	
Less: Deductions during the year		
<b>3. Special Reserves</b>		
As per last Account		
Addition during the year		
Less: Deductions during the year		
<b>4. General Reserve</b>		
As per last Account	3,610,594,669.00	3,213,729,734.00
Addition during the year	424,214,671.00	396,864,935.00
Less: Deductions during the year	-	-
<b>TOTAL</b>	<b>4,038,407,425.00</b>	<b>3,610,594,669.00</b>
		<b>3,613,521,480.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS</b>	<b>2019-20</b>	<b>2018-19</b>
a) Opening balance of the funds	98,996,372.00	
b) Additions to the Funds:		
i. Donations/grants	4,753,820.00	87,153,435.00
ii. Income from investments made on account of funds	732,947.00	9,139,788.00
iii. CSR Hospital Billing AIIMS	22,967,680.00	
iv. Other additions (specify nature)CSR	2,703,149.00	2,703,149.00
<b>TOTAL (a+b)</b>	<b>130,153,968.00</b>	<b>98,996,372.00</b>
c) Utilisation/Expenditure towards objectives of funds		
i. <u>Capital Expenditure</u>	-	
- Fixed Assets		
- Others		
ii. <u>Revenue Expenditure</u>		
- Salaries, Wages and allowances etc.		
- Rent		
- Other Administrative expenses		
<b>Total</b>	-	
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>	<b>130,153,968.00</b>	<b>98,996,372.00</b>

(Amount-Rs.)

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 4-SECURED LOANS AND BORROWINGS:</b>	(Amount-Rs.)	
	2019-20	2018-19
1. Central Government		
2. State Government		
3. Financial Institutions		
a) Term Loans		
b) Interest accrued and due		
4. Banks:		
a) Term Loans		
- Interest accrued and due		
b) Other Loans (specify)		
- Interest accrued and due		
5. Other Institutions and Agencies #		
Less- Repayment of Loan (262500000*2)	4,153,400,000.00	
Less- Repayment of Loan (261500000*1)	525,000,000.00	
6. Debentures and Bonds	261,500,000.00	
7. Others (Specify)		
<b>TOTAL</b>	<b>3,366,900,000.00</b>	<b>0</b>

# This amount includes Rs.282 crore received last year from HEFA, which left for inclusion in the last year's accounts, now included in this year's accounts

**Accounts Officer**

**Financial Advisor**



**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 5 - UNSECURED LOANS AND BORROWING</b>	<b>2019-20</b>	<b>2018-19</b>
1. Central Government		
2. State Government		
3. Financial Institutions		
4. Banks:		
a) Term Loans		
b) Other Loans (specify)		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Fixed Deposits		
8. Others (Specify)		
<b>TOTAL</b>	<b>0</b>	<b>0</b>

Note: Amounts due within one year

<b>SCHEDULE 6 - DEFERRED CREDIT LIABILITIES:</b>	<b>2019-20</b>	<b>2018-19</b>
a) Acceptances secured by hypothecation of capital equipment and other assets		
b) Others		
<b>TOTAL</b>	<b>0</b>	<b>0</b>

Note: Amount due within one year

**Accounts Officer**

**Financial Advisor**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount -Rs.)

SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS	2019-20	2018-19
<b>A. CURRENT LIABILITIES AND PROVISIONS</b>		
1. Acceptances		
2. Sundry Creditors:		
i) For Goods (Custom Duty to be paid)		
ii) Others (Grants for HEFA Loan)	24,645,418.00	34,220,408.00
3. Advances Received		
4. Interest accrued but not due on:		
a) Secured Loans/borrowings		
a) Unsecured Loans/borrowings		
5. Statutory Liabilities:		
a) Overdue		
a) Others	4,796,280,177.85	2,499,793,138.00
6. Other current Liabilities		
<b>TOTAL (A)</b>	<b>4,820,925,595.85</b>	<b>2,534,013,546.00</b>
<b>B. PROVISIONS</b>		
1. For Taxation		
2. Gratuity		
3. Superannuation/Pension		
6. Accumulated Leave Encashment		
6. Trade Warranties/Claims		
6. Others (specify)		
<b>TOTAL (B)</b>		
<b>TOTAL (A+B)</b>	<b>4,820,925,595.85</b>	<b>2,534,013,546.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES (MAIN)  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount - Rs.)

SCHEDULE-8 (Fixed Assets) FIXED ASSETS DISCRPTION	GROSS BLOCK				DEPRECIATION			NET BLOCK		
	Cost/valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost/ Valuation at the year end	As at the beginning of the year	On additions during the year	On Deductions during the year	Total up to the year-end	2019-20	2018-19
<b>A</b> <b>FIXED ASSETS:</b>										
<b>1 LAND:</b>										
a) Freehold / Leasehold	841,194,087.00	-	-	841,194,087.00	0	0	0	0	841,194,087.00	841,194,087.00
<b>2 BUILDINGS:</b>										
a) On Freehold Land	19,314,080,178.00	2,160,715,530.00	-	21,474,795,708.00	0	0	0	0	21,474,795,708.00	19,314,080,178.00
b) On Leasehold Land	-	-	-	-	-	-	-	-	-	-
c) Ownership Flats/ Premises	-	-	-	-	-	-	-	-	-	-
<b>3 PLANT MACHINERY &amp; EQUIPMENT</b>	13,407,747,932.00	1,530,099,468.00	140,115,995.80	14,797,731,404.20	0	0	0	0	14,797,731,404.20	13,407,747,932.00
<b>4 Vehicles</b>	50,456,960.00	6,867,032.00	-	57,323,992.00	0	0	0	0	57,323,992.00	50,456,960.00
<b>5 Furniture &amp; Fixure</b>	-	-	-	-	0	0	0	0	-	-
<b>6 Office Equipment</b>	224,336,516.00	14,765,495.00	-	239,102,011.00	0	0	0	0	239,102,011.00	224,336,516.00
<b>7 Computer/Peripherals</b>	1,131,817,212.00	61,802,618.00	-	1,193,619,830.00	0	0	0	0	1,193,619,830.00	1,131,817,212.00
<b>8 Library Books</b>										
<b>TOTAL OF CURRENT</b>	<b>34,969,632,885.00</b>	<b>3,774,250,143.00</b>	<b>140,115,995.80</b>	<b>38,603,767,032.20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38,603,767,032.20</b>	<b>34,969,632,885.00</b>

Accounts Officer

Financial Advisor

**AII INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount-Rs.)

	2019-20	2018-19
<b>SCHECULE 9 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>		
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others Fixed Deposits (Endowment fund)	72,061,069.00	160,500,000.00
7. Seed money for opening of Bank Account (Donatior	-	10,000.00
<b>TOTAL</b>	<b>72,061,069.00</b>	<b>160,510,000.00</b>

	2019-20	2018-19
<b>SCHECULE 10 - INVESTMENTS - OTHERS</b>		
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others (NPS Fixed Deposit)	140,000,000.00	240,000,000.00
7. Investment of Donations	16,253,424.00	13,253,424.00
<b>TOTAL</b>	<b>156,253,424.00</b>	<b>253,253,424.00</b>

Accounts Officer

Financial Advisor

**AI I INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

	2019-20	2018-19
<b>SCHEDULE II - CURRENT ASSETS, LOANS, ADVANCES ETC.</b>		
<b>A CURRENT ASSETS:</b>		
1. <u>Inventories:</u>		
a) Stores and Spares		
b) Loose Tools		
c) Stock-in-trade		
Finished Goods		
Work-in-progress		
Raw Material		
2. <u>Sundry Debtors:</u>		
a) Debts Outstanding	109,488,452.00	56,242,163.00
b) Others (outside recoveries)	-	-
c) Misc. recoveries receivable from Centre		
3. <u>Cash balances in hand (including cheques/ drafts and imprest)</u>	1,003,650.00	918,650.00
4. <u>Bank Balances:</u>		
a) <u>With Scheduled Banks:</u>		
On Current Accounts	1,501,657,295.85	2,024,883,864.00
On Deposit Accounts (includes margin money)	13,784,126.00	18,489,924.00
On Savings Accounts		
b) <u>With non-Scheduled Banks</u>		
On FDRs	4,500,000,000.00	2,000,000,000.00
on FDRs Research Sector	207,301,827.00	
On Savings Accounts		
5. <u>Post Office - Savings Accounts</u>		
<b>TOTAL (A)</b>	<b>6,333,235,350.85</b>	<b>4,100,534,601.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rs.)	2019-20	2018-19
<b>SCHEDULE 11- CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>		
<b>B <u>LOANS, ADVANCES AND OTHER ASSETS</u></b>		
1. <u>Loans:</u>		
a) Staff	5,050,502.00	3,990,673.00
b) Other Entities engaged in activities/objectives similar to that of Entity		
c) Other (Adv for purchase of iron and steel	2,340,588.00	2,340,588.00
2. <u>Advances and other amounts recoverable in cash or in kind or for value to be received:</u>		
a) On Capital Account		
b) Prepayments		
c) Others (Advance Payments)	16,789,887,241.00	11,993,851,477.00
3. <u>Income Accrued:</u>		
a) On Investments from Earmarked / Endowment Funds		
b) On Investments - Others		
c) On Loans and Advances		
d) Others (includes income due unrealised - Rs. ....)		
4. <u>Claims Receivable:</u>		
<b>TOTAL (B)</b>	<b>16,797,278,331.00</b>	<b>12,000,182,738.00</b>
<b>TOTAL (A + B)</b>	<b>23,130,513,681.85</b>	<b>16,100,717,339.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**

**SCHEDULES FORMING PART OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31-03-2020  
(Amount - Rs.)**

<b>SCHECULE 12 - INCOME FROM SALES / SERVICES</b>		<b>2019-20</b>	<b>2018-19</b>
<b>1) Income from Sales</b>			
1. Sale of Finished Goods			
2. Sale of Raw Material			
3. Sale of Scraps			
<b>2) Income from Services</b>		317,790,240.00	307,541,206.00
a) Hospital receipts			
b) Professional / Consultancy Services			
c) Agency Commission and Brokerage			
d) Maintenance Services (Equipment/Property)			
e) Others (Specify) Hospital Receipt			
<b>TOTAL</b>		<b>317,790,240.00</b>	<b>307,541,206.00</b>

<b>SCHECULE 13 - GRANTS /SUBSIDIES</b>		<b>2019-20</b>	<b>2018-19</b>
<b>(Irrevocable Grants &amp; Subsidies Received)</b>			
1. Central Government		16,132,233,281.00	14,733,402,569.00
2. State Government(s)			
3. Government Agencies			
4. Institutions/ Welfare Bodies			
5. International Organisations		80,000,000.00	
6. Others (Specify) PMJAY Transf. from Hospital			
<b>TOTAL</b>		<b>16,212,233,281.00</b>	<b>14,733,402,569.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

<b>SCHEDULE 14 - FEES/SUBSCRIPTIONS</b>		<b>(Amount-Rs.)</b>	
		<b>2019-20</b>	<b>2018-19</b>
1. Tuition Fee		94,495,413.00	69,283,146.00
2. Licence Fee		39,474,476.00	49,832,288.00
3. Seminar/Program Fees		-	-
4. Exam. Receipt		-	-
5. Others (Specify) EHS		94,441,841.00	93,400,627.00
<b>TOTAL</b>		<b>228,411,730.00</b>	<b>212,516,061.00</b>

	<b>Investment from Earmarked Fund</b>		<b>Investment-Others</b>
	<b>2019-20</b>	<b>2018-19</b>	
	<b>2019-20</b>	<b>2018-19</b>	
<b>SCHEDULE 15 - INCOME FROM INVESTMENTS</b>			
(Income on Invest. From Earmarked/Endowment Funds transferred to Funds)			
1. Interest			
a) On Govt. Securities			
a) Other Bonds/Debentures			
2. Dividends:			
a) On Shares			
a) On Mutual Fund Securities			
3. Rents			
4. Others (Specify)			
<b>TOTAL</b>	0	0	-
<b>TRANSFERRED TO EARMARKED/EDNOWNMENT FUNDS</b>			

Accounts Officer

Financial Advisor



**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED**  
**31-03-2020**

(Amount-Rs.)	
	2018-19
<b>SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATION ETC.</b>	<b>2019-20</b>
1. Income from Royalty	
2. Income from Publications	323,657,672.00
3. Others (specify) NPS	212,591,830.00
<b>TOTAL</b>	<b>212,591,830.00</b>
<b>SCHEDULE 17 - INTEREST EARNED</b>	<b>2019-20</b>
1. On Term Deposits:	
a) With Scheduled Banks	243,180,431.00
b) With Non-Scheduled Banks	
c) With Institutions	
d) Others	
2. On Savings Accounts:	
a) With Scheduled Banks	
b) With Non-Scheduled Banks	
c) Post Office Savings Accounts	
d) Others	
3. On Loans:	
a) Employees/Staff	1,421,569.00
b) Others	
4. Interest on Debtors and other Receivables	
<b>TOTAL</b>	<b>189,064,452.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

		<b>(Amount-Rs.)</b>	
<b>SCHEDULE 18 - OTHER INCOME</b>		<b>2019-20</b>	<b>2018-19</b>
1. Misc. Receipt		30,571,312.00	15,031,001.00
2. Estb. Receipt (Scheme)		42,610,150.00	60,199,321.00
3. Exam Section Receipt		292,897,088.00	866,628,236.00
4. General Donations		-	-
5. Research Other Income		100,000,000.00	-
	<b>TOTAL</b>	<b>466,078,550.00</b>	<b>941,858,558.00</b>
<b>SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>		<b>2019-20</b>	<b>2018-19</b>
a) Closing stock			
- Finished Goods			
- Work-in-progress			
b) Less: Opening Stock			
- Finished Goods			
- Work-in-progress			
			-
<b>NET INCREASE/(DECREASE) [a+b]</b>			
<b>SCHEDULE 20 - ESTABLISHMENT EXPENSES</b>		<b>2019-20</b>	<b>2018-19</b>
Salaries and Wages		8,547,491,230.00	8,195,420,979.00
Travelling Allowance		42,608,365.00	39,120,542.00
Contribution to Provident Fund			17,351,441.00
Contribution to Other Fund (Scheme Cell)			120,000.00
Staff Welfare Expenses (DLIS)		-	1,992,389,599.00
Expenses on Employees ": Retirement and Terminal Benefits"		1,785,435,582.00	197,709,959.00
Others (NPS )		289,992,743.00	3,422,838.00
Leave Salary Pension Contribution		3,923,096.00	
	<b>TOTAL</b>	<b>10,669,451,016.00</b>	<b>10,445,535,358.00</b>

**Accounts Officer**

**Financial Advisor**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED**  
**31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES E</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases of hospital stores		
b) Labour and processing expenses		
c) Cartage and Carriage Inwards		
d) Electricity and power	713,227,340.00	685,677,911.00
e) Water charges	47,815,600.00	50,139,349.00
f) Insurance		
g) Repairs and maintenance (AMC/CAMC)	-	-
h) Repairs and maintenance of Buildings	752,766,276.00	733,955,308.00
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses	86,386,825.00	73,843,579.00
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Fees		
q) bAuditors Remuneration		
r) Hospitality Expenses		
s) Professional Charges		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Packing Charges		
w) Hostel		
x) Bank Charges	351,519.00	360,891.00
y) Advertisement and Publicity		
z) Others (specify)(Contingency charge)	1,447,129,843.00	1,197,723,519.00
<b>TOTAL</b>	<b>3,047,677,403.00</b>	<b>2,741,700,557.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED**  
**31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 21B - Material and Supplies</b>	<b>2019-20</b>	<b>2018-19</b>
Hospital stores	3,589,892,835.00	3,068,411,374.00
<b>Total</b>	<b>3,589,892,835.00</b>	<b>3,068,411,374.00</b>

Accounts Officer

Financial Advisor

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES (MAIN)**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

		(Amount-Rs.)	
<b>SCHEDULE 22- EXPENDITURE ON GRANTS, SUBSIDIES ETC.</b>		<b>2019-20</b>	<b>2018-19</b>
a).	Grants given to Institutions/Organizations	6,000,000.00	
b).	Subsidies given to Institutions/organisations		
<b>Total</b>		<b>6,000,000.00</b>	<b>0</b>
<b>Note</b> - name of the Entities, their activities along with the amount of grants/subsidies are to be disclosed			

		<b>2019-20</b>	<b>2018-19</b>
<b>SCHEDULE 23- INTEREST</b>			
a)	On fixed Loans		
b)	On other Loans ( including Bank charges)		
c)	Ohters( Specify) Endowment intrrest transfer to Research Section	-	0
<b>Total</b>		-	0

Accounts Officer

Financial Advisor

ALL INDIA INSTITUTE OF MEDICAL SCIENCES , NEW DELHI				
Receipts and Payment accounts of General Provident Funds for the Financial year 2019-20				
Receipts	19-20	18-19	Payments	18-19
Opening Balance	179370129.13	198612428.75	GPF Withdrawal	1180062261.81
Time barred cheque to A/C	0.00	0.00	Investment during the year	3143471139.88
Subscription/Receipts	1173264338.00	1268799781.00	Bank Charges	4425.00
Interest	496836551.40	244739500.00	Closing Balance	179370129.13
Investment Maturity	2369800000.00	2262935496.79		
<b>Total</b>	<b>4219271018.53</b>	<b>3975087206.54</b>	<b>Total</b>	<b>4219271018.53</b>

INCOME AND EXPENDITURE STATEMENT OF GENERAL PROVIDENT FUNDS OF AIIMS FOR FY 2019-20				
Expenditure	19-20	18-19	Income	18-19
Interest paid on Subscription	524195837.00	466488427.00	Interest received	244739500.00
Bank Charges	4071.00	4425.00	Excess of Exp. Over Income	221753352.00
<b>Total</b>	<b>524199908.00</b>	<b>466492852.00</b>	<b>Total</b>	<b>466492852.00</b>

Accounts Officer GPF

F & CAO

**BALANCE SHEET OF GENERAL PROVIDENT FUNDS FOR THE AIIMS AS ON 31st MARCH 2020**

<b>Liabilities</b>	<b>19-20</b>	<b>18-19</b>	<b>Assets</b>	<b>19-20</b>	<b>18-19</b>
Opening Balance (GPF)	6316554609.00	5761328663.00	Investment Opening Balance	5793226006.81	5440511113.00
GPF Sub. Recd. During the year	1173264338.00	1268799780.83	Add: investment made	3143471139.88	2615650390.60
Add: Interest Credited to GPF Account	524195837.00	466488427.00	Less: investment Maturity	2369800000.00	2262935496.79
Less: Withdrawal /Payment	958656539.00	1180062261.81			
			<b>Total</b>	<b>6566897146.69</b>	<b>5793226006.81</b>
			Cash Book closing balance	117139268.65	179370129.13
			Add: excess of expenditure over income during the year	27363356.60	221753352.00
			Excess of expenditure over income	343958473.06	122205121.00
<b>Total</b>	<b>7055358245.00</b>	<b>6316554609.00</b>	<b>Total</b>	<b>7055358245.00</b>	<b>6316554609.00</b>

Accounts Officer GPF

F & CAC

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI				
RECEIPTS AND PAYMENTS FOR THE YEAR 2019-20				
	2019-20	2018-19	2019-20	2018-19
RECEIPTS			PAYMENTS	(Amount-Rs.)
<b>Opening Balance</b>			<b>Expenses</b>	
i) Cash in Hand	918,650.00	931,150.00	i) Establishment Expenses (Scheduled 20A)	10,669,451,016.00
ii) Bank Balances			ii) Others Administrative Expenses (Scheduled 2)	3,027,266,449.00
i) In current accounts	2,024,883,864.00	3,754,443,504.00	iii) Purchase of Hospital stores	3,589,892,835.00
ii) In FDRs	2,000,000,000.00		iv) SAP (Expenditure)	28,819,480.00
iii) In Deposit Accounts	18,489,924.00	15,315,377.00		42,572,573.00
<b>Grants Received from Govt. of India</b>			<b>Expend on Capital/Work-in-Progress</b>	
i) Revenue	25,809,000,000.00	23,295,000,000.00	i) Purchase of Fixed Assets	1,237,018,536.00
ii) Capital	7,171,900,000.00	8,730,000,000.00	ii) Advance on Capital Work in progress	3,291,961,101.00
iii) HEFA	971,000,000.00	2,600,000,000.00	<b>HEFA</b>	
iv) HEFA LOAN (Release)	4,153,400,000.00		i) HEFA (Interest)	525,000,000.00
<b>NDDTIC</b>			ii) HEFA (payment to HSCC/HITES)	209,042,599.00
i) Revenue	276,224,956.00	205,000,000.00	iii) HEFA (Interest)	4,153,400,000.00
ii) Capital	-	117,500,000.00	<b>Govt. Grants transferred to Centres</b>	
<b>Grants received for specific purpose</b>			<b>Dr. R.P. Centre</b>	
i) Scheme Cell (Cashier)	40,599,573.00	779,518,927.00	i) Capital Assets	400,000,000.00
ii) Grants received in patient treatment A/c	103,619,959.00	139,410,415.00	ii) Grant in Aid Salary	930,000,000.00
iii) Swatchita, Actlon Pain	-	5,000,000.00	iii) Grant in Aid General	400,000,000.00
iv) Patient treatment at AIIMS(Main)	241,715,024.00	2,69,092,883.00	<b>C.N. Centre</b>	
v) Grant Receipt (Geniatric Medicine)	-	547,500,000.00	i) Capital Assets	318,885,000.00
<b>Endowment/Donation</b>			ii) Grant in Aid Salary	2,728,000,000.00
i) Poor patient A/c	5,770,210.00		iii) Grant in Aid General	764,000,000.00
<b>Income on Investments from</b>			SSSK Scheme	4,000,000.00
i) NPS (Interest)	12,279,702.00	17,401,106.00	<b>Dr. B.R.A.I.R.C.H.</b>	
ii) On Bank deposits	189,064,452.00	255,682,500.00	i) Capital Assets	266,680,553.00
iii) Loans, Advances etc.	-	1,421,569.00	ii) Grant in Aid Salary	911,296,695.00
<b>RECEIPTS</b>			iii) Grant in Aid General	660,000,000.00
i) GPF	701,494,643.00	651,512,119.00	<b>J.P.N. APEX TRAUMA CENTRE</b>	
ii) Out side recoveries	1,509,583,346.00	1,318,110,934.00	i) Capital Assets	138,646,715.00
iii) Receipt Legacy date (NPS)	56,266,012.00	42,302,779.00	ii) Grant in Aid (General)	840,000,000.00
iv) FD Maturity Accounts (NPS)	290,000,000.00	20,000,000.00	iii) Grant in Aid (Salary)	1,085,166,374.00
v) FD Maturity (Poor Pt. A/c)	794,202.00	2,874,547.00	<b>CENTRE FOR DENTAL EDUCATION &amp; RESEARCH</b>	
<b>Other Income</b>			i) Capital Assets	20,353,849.00
i) Misc Receipts	30,571,312.00	15,931,001.00	ii) Grant in Aid General	117,001,513.00
ii) Examination Receipt	292,897,088.00	850,003,808.00	iii) Grant in Aid Salary	263,700,000.00
iii) Hospital Receipts	317,790,240.00	301,062,438.00	<b>CIMR</b>	
iv) Tuition Fee	94,495,413.00	69,283,146.00	i) Capital Assets	865,989.00
v) Licence Fee	39,474,476.00	49,832,288.00	ii) Grant in Aid General	1,499,164.00
vi) Employees Health Scheme (EHS)	94,441,841.00	93,400,627.00	<b>NCL Bhatjar</b>	
vii) A/c No. 10874585570 Closed (Examination)	-	16,624,428.00	i) Capital Assets	7,976,994.00
<b>IX. Other Receipts</b>			ii) Grant in Aid General	390,000,000.00
			iii) Grant in Aid Salary	164,122,146.00
			Intra Mural Grant	50,000,000.00





**ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI**  
**SCHEDULES FORMING PART OF RECEIPTS AND PAYMENTS FOR THE PERIOD/YEAR**  
**ENDED 31.03.2019**  
**ESTABLISHMENT EXPENSES**

	2019-20	2018-19	(Amount-Rs.)
<b>Scheduled 20 A</b>			
a) Salaries and Wages	8547491230	8195420979	
b) Travelling Allowance (TA)	42608365	39120542	
c) Leave Salary Pension Contribution			
Payment	3923096		3422838
less Receipts	0		0
d) Expenses on Employees "Retirement and Terminal Benefits"	1785435582		1992389599
e) Deposit Linked Insurance Scheme			120000
f) Others			
<b>New Pension Scheme</b>			
Deposit to National Securities Depository Ltd.	514826716.00		
Deposit to NPS A/c			
Less Receipts (NPS) from the employees	224833973.00	289992743.00	197709959
<b>TOTAL</b>	<b>10669451016</b>	<b>10428183917</b>	

**Accounts Officer**

**Financial Advisor**

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI  
SCHEDULES FORMING PART OF RECEIPTS AND PAYMENTS FOR THE  
OTHERS ADMINISTRATIVE EXPENSES**

		(Amount-Rs.)
Scheduled 21A	2019-20	2018-19
a) Repairs and maintenance	752750442.00	733720168
b) Travelling and conveyance Expenses	86386825.00	73843579
c) Contingency office	1426718889.00	1164840879
d) Electricitiy and power	713227340.00	685677911
e) Water charges	47815600.00	50139349
d) Others (Bank Charges)	367353.00	362484
<b>TOTAL</b>	<b>3027266449.00</b>	<b>2708584370</b>
<b><u>Accounts Officer</u></b>		<b><u>Financial Advisor</u></b>

## SCHEDULED 24

### Accounting Policies and Notes forming part of Accounts

1. The Activities of the Institute is mainly funded from the grants from Government of India and Accounts of the Institute are prepared in accordance with Generally accepted Accounting principles.
2. The accounts have been prepared on cash basis i.e. on actual Receipt and Payments basis.
3. No depreciation on Assets i.e. Machinery & Equipments, vehicles, buildings etc have been provided in the accounts and assets are carried out at the historical cost. Assets at the time of condemnation on completion of useful life are removed from the Assets as well as from the capital corpus.
4. No provisions for liability of Gratuity, pension and leave encashment etc have been made in the accounts as the grants from the Government of India are received for actual expenditure. The payment of Gratuity, pension and leave encashment etc are accounted in the accounts only at the time of actual payments.
5. No closing stock of Store and supplies at the end of accounting period is incorporated in the accounts as all expenditure on stores and supplies are treated as final expenditure at the time of payments in the accounts.
6. Income of the Institute is exempted from Income-Tax under Section 11 of the Income Tax Act, 1961.
7. All Assets ( Machinery & Equipments, vehicles etc ) funded from the grants for the Research projects are used for the activities of the Research projects and are not included in the assets of the Institute . Such Assets (Machinery & Equipments, vehicles etc,) are either returned to the funding agencies or used in the Departments after the completions of the projects as per sanction of the funding agencies.
8. A statement showing the expenditure made by various Project Investigators for Research Projects during 2019-20 and balance amount lying with the Institute as on 31-03-2020 is attached with the Accounts.
9. Since, the centre are administered separately their final accounts are also maintained separate. However, the amount of grant released to their Centers are reflected in the final accounts of AIIMS Main. Accounts of various Centre's of the Institute as on 31-03-2020 are annexed with the AIIMS Main Accounts.
10. Advances for treatment under the packages were treated as revenue and expenditure incurred against those treatments was shown in expenditure. During the current year advances received against the packages for treatment are shown under the revolving fund and expenditure incurred against the revolving fund. Balances in the revolving fund shown as liability. The impact of these changes of accounting policy is not assessable and not significant.
11. Accounts for the year ended 31-03-2020 are prepared in the new format and grouping and regrouping and classification, wherever necessary have been changed /adopted for better presentation.
12. Assets of the Institute in every Departments/Centre's are physically verified once in year by the faculty officer nominated for the purpose and no significant /major deviations have been reported.
13. Stores and supplies of the Institute in every Departments/Centre's are physically verified once in year by the faculty/ officer nominated for the purpose and no significant /major deviations have been reported.
14. Institute is maintaining various Revolving funds for test/procedures required for patients care and same are included in the concerned Accounts of the Institute.
15. Donations/receipts from various sources without any attached conditions are treated as income of the concerned centre or of Institute as the case may be.
16. All Accounting policies and Notes Forming Part of Accounts listed above are also applied in the preparation of the Accounts of the Centers also.

Accounts Officer

Financial Advisor  
Director

Sr. Financial Advisor

**BILLING SECTION (AIIMS)**  
**STATEMENT OF ACCOUNT OF RECEIPTS AND PAYMENTS**  
**NATIONAL ILLNESS ASSISTANCE FUND (NIAF) : 2019-20**

	<b>RECEIPTS</b>	<b>Rs</b>	<b>PAYMENT</b>	<b>Rs</b>
1.	Opening balance as on 01.04.2019	<b>89472793.53</b>	Payment made during the Year 2019-20	<b>110744521.00</b>
2.	Grant received during the year 2019-20	<b>192314906.00</b>	Bank clearing charges debited by the bank during the year	<b>NIL</b>
3.	Interest received from Bank during the year 2019-20	<b>4751988.00</b>	Interest earned transferred to AIIMS Main A/c	<b>6754938.00</b>
4.	<b>F D INTEREST</b>	<b>19457284.00</b>	Closing balance as on 31.03.2020 (CASH BOOK) 1. Cash at bank Rs. 189074841.88 2. FDR Rs. 250000000 3. FDR Rs. 50000000	<b>188497512.53</b>
	<b>TOTAL</b>	<b>305996971.53</b>	<b>TOTAL</b>	<b>305996971.53</b>

**ACCOUNTS OFFICER**  
**HOSPITAL BILLING SECTION**

**HOSPITAL BILLING SECTION (AIIMS)**  
**RECEIPTS AND PAYMENTS DETAILS**  
**A/C No: 33477690609**  
**AIIMS DELHI AROGYA KOSH: 2019-20**

	<b>RECEIPTS</b>	<b>Amount (Rs)</b>	<b>PAYMENT</b>	<b>Amount (Rs)</b>
1.	Opening balance as on 01.04.2019	18247833	Payment made during the Year	20008647
2.	Grant received during the year 2019-20	6495604	Bank Charges	1003
3.	Interest received from Bank		Closing Balance as on 31.03.2020	4733787
	<b>TOTAL</b>	<b>24743437</b>		<b>24743437</b>

Dealing Asstt.

Jr. Accounts Officer

Accounts Officer (HBS)

# Cardio-Thoracic & Neuro Sciences Centre (Consolidate)

Balance Sheet as at 31.03.2020

		(Amount in Rs.)	
<u>CORPUS/CAPITAL FUND AND LIABILITIES</u>	Schedule	Current Year	Previous Year
Corpus/Capital Fund	1	6,971,653,221	6,721,192,017
Reserves and Surplus	2	164,567,873	68,515,493
Earmarked/ Endowment Funds	3	31,561,675	99,050,549
Revolving Funds	4	915,888,213	778,954,058
Secured Loans and Borrowings	5		-
Unsecured Loans and Borrowings	6		-
Deferred Credit Liabilities	7	-	-
Current Liabilities and Provisions	8	64,093,439	61,674,526
<b>TOTAL</b>		<b>8,147,764,421</b>	<b>7,729,386,643</b>
<u>ASSETS</u>			
Fixed Assets	9	6,508,383,303	6,230,814,067
Investments-From Earmarked/Endowment Funds	10	-	-
Investment-Others	11	571,600,000	551,600,000
Current Assets, Loans, Advances Etc.	12	1,067,781,118	946,972,576
Miscellaneous Expenditure		-	-
(To the extent not written off or adjusted)			
Balance of excess of expenditure over income			
<b>TOTAL</b>		<b>8,147,764,421</b>	<b>7,729,386,643</b>
Significant Accounting Policies	25		
Contingent Liabilities and Notes on Accounts	26		

**CHIEF, CTC**

**CHIEF, NSC**

**ACCOUNTS OFFICER, CNC**

# Cardio-Thoracic & Neuro Sciences Centre

Income and Expenditure Account for the year ending on 31.03.2020

	Schedule	Current Year	Previous Year
<b>(Amount Rs.)</b>			
<b>INCOME</b>			
Income from Sales/services	13	62,582,703	70,885,415
Grants/Subsidies	14	3,850,200,000	3,492,000,000
Fees/Subscriptions	15	-	-
Income from Investments (Income on Invest. From earmarked/endow. Funds Transferred to Funds)	16	-	-
Income from Royalty, publications etc.	17	-	-
Interest Earned	18	52,413,943	57,151,499
Other Income	19	3,263,892	1,993,616
Increase/(decrease) of Finished goods and works-in-progress	20	-	-
<b>TOTAL(A)</b>		<b>3,968,460,538</b>	<b>3,622,030,530</b>
<b>EXPENDITURE</b>			
Establishment Expenses	21	3,090,454,286	2,726,562,030
Other Administrative Expenses etc.	22	358,675,893	368,053,449
Adjustment of Advances	22 (A)	-	2,998,292
Material & Supply	23	423,254,862	462,847,016
Expenditure on Grants, Subsidies Etc.	24	-	-
Interest & Finance Expenses	25	23,117	14,903
Depreciation (Net Total at the year-end-corresponding to Schedule 11)			
<b>TOTAL (B)</b>		<b>3,872,408,158</b>	<b>3,560,475,691</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>			
Transfer to Special Reserve (Specify each)		96,052,380	61,554,839
Transfer to/from General Reserve		-	-
<b>Balance being surplus/(deficit) carried to corpus/capital fund</b>		<b>96,052,380</b>	<b>61,554,839</b>
Significant Accounting Policies	26		
Contingent Liabilities and Notes on Accounts	27		

CHIEF, CTC

CHIEF, NSI

ACCOUNTS OFFICER, CNC

## Cardio-Thoracic & Neuro Sciences Centre

### Schedules forming part of the Balance Sheet as at 31.03.2020

Schedule 1 - Corpus/Capital Funds	Current Year	Pervious Year
Balance as at the beginning of the year (CNC Main)	6,669,800,314	-
<u>Add:</u> Contributions towards Corpus/Capital Fund (Through Aims Main)	250,461,204	6,669,800,314
Less: Refund to AIIMS Main	265000000	
Add: Corpus/Capital Created out of Donation	14538796	
<u>Add/Deduct:</u> Balance of net income / (expenditure) transferred from the Income and Expenditure Account	51,391,703	51,391,703
<b>Balance as at the end of the year</b>	<b>6,971,653,221</b>	<b>6,721,192,017</b>

Schedule 1 (a) - Reserves and Surplus	Current Year	Pervious Year
<b>1. Capital Reserve</b>		
Balance as at the beginning of the year	68,515,493	68,515,493
<u>Add:</u> Additions during the year	96,052,380	
2. Revaluation Reserves		
Balance as at the beginning of the year	-	-
<u>Add:</u> Additions during the year	-	-
<u>Less:</u> Deductions during the year	-	-
3. Special Reserve		
Balance as at the beginning of the year	-	-
<u>Add:</u> Additions during the year	-	-
<u>Less:</u> Deductions during the year	-	-
4. General Reserve		
Balance as at the beginning of the year	-	-
<u>Add:</u> Additions during the year	-	-
<u>Less:</u> Deductions during the year	-	-
5. Excess of income over expenditure	-	-
<b>TOTAL</b>	<b>164,567,873</b>	<b>68,515,493</b>

(Amount in Rs.)

Schedule-3 Earmarked/Endowment Funds	Cardiology	CTVS	Neurology	Neuro-Surgery	Other	Swachhta Action Plan (SAP)		Current Year Total	Previous Year Total
						CTC	NSC		
<b>a) Opening balance of the funds</b>									
b) Additions to the Funds	64,306	188,750	834,508	2,116,505	18,531	47,923,423	47,904,526	99,050,549	102,338,619
i. Donations/grants	-	-	-	560,000	19,316	-	-	-	-
ii. Income from Investments made on account of funds	-	-	-	-	-	-	-	579,316	325,000
iii. Received from patients	-	-	-	-	-	-	-	-	-
iv. Other additions (specify nature )	-	-	-	-	-	-	-	-	-
<b>TOTAL (a+b)</b>	<b>64,306</b>	<b>188,750</b>	<b>834,508</b>	<b>2,676,505</b>	<b>37,847</b>	<b>47,923,423</b>	<b>47,904,526</b>	<b>99,629,865</b>	<b>102,663,619</b>
<b>c) Utilisation/Expenditure towards objectives of funds</b>									
i. Capital Expenditure									
Fixed Assets	-	-	-	-	-	34,029,637	34,038,553	68,068,190	3,363,251
Others	-	-	-	-	-	-	-	-	-
<b>TOTAL (c.i)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>34,029,637</b>	<b>34,038,553</b>	<b>68,068,190</b>	<b>3,363,251</b>
ii. Revenue Expenditure									
Salaries, Wages and allowances etc.	-	-	-	-	-	-	-	-	-
Rent	-	-	-	-	-	-	-	-	-
Bank Charges	-	-	-	-	-	-	-	-	-
Other Administrative expenses	-	-	-	-	-	-	-	-	249,819
<b>TOTAL c (ii)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>249,819</b>
<b>TOTAL (c)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>34,029,637</b>	<b>34,038,553</b>	<b>68,068,190</b>	<b>249,819</b>
<b>d) Refunds to Patients</b>									
<b>NET BALANCE AS AT THE YEAR-END (a+b-c-d)</b>	<b>64,306</b>	<b>188,750</b>	<b>834,508</b>	<b>2,676,505</b>	<b>37,847</b>	<b>13,893,786</b>	<b>13,865,973</b>	<b>31,561,675</b>	<b>99,050,549</b>



Schedule -4 Revolving Fund	Current Year											Previous Year	
	Lab Test	Cardiac Test	Stress Thallium	MRI	Stem Cell	Neurology Pt. Fund	CT. Pt. A/c	Gamma Knife A/c	Angio Pts. A/c	NS Pts. A/c	RAN	Total	Total
a) <b>Opening balance of the Funds</b>													
b) Additions to the Funds													
i. Received From Patients	40,757,500	28,495,270	198,670	14,712,380	816,000	32,551,207	123,448,267	361,665,831	85,961,794	90,347,139		778,954,058	798,407,127
ii. Grant received from Alims CNC (Angio Pts. A/c) for Exemption/BPL Pts	11,758,840	5,100,660	2,132,750	3,319,100	812,000	15,108,253	267,360,019	43,139,138	199,009,439	146,544,388		694,284,587	753,368,985
iii. Grant transfer from (GIA - General)- CNC						617,361			36,124,727	-		36,742,088	-
iv. Grant received (Others)											9,135,000	9,135,000	
PM JAY Scheme						24,280,811		5,400,000	4,858,018	8,463,054		43,001,883	
<b>TOTAL (a+b)</b>	<b>52,516,340</b>	<b>33,595,930</b>	<b>2,331,420</b>	<b>18,031,480</b>	<b>1,628,000</b>	<b>47,659,460</b>	<b>415,706,458</b>	<b>410,204,969</b>	<b>325,953,978</b>	<b>245,354,581</b>	<b>9,135,000</b>	<b>1,552,982,616</b>	<b>1,551,776,112</b>
c) <b>Utilisation/Expenditure towards objectives of Funds</b>													
i. <b>Capital Expenditure</b>													
Fixed Assets	-	-	-	-	-	-	-	-	-	-	-	-	-
Others (Specify)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL (c.i)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
ii <b>Revenue Expenditure</b>													
Material & Supply	-	513,129	2,086,150	-	-	6,337,865	195,431,615	321,683	151,706,600	101,571,656	2,421,372	460,390,070	596,301,218
Refund to Patients							60,140,061	1,351,000	26,472,658	31,207,958		119,171,677	175,180,996
Poor/BPL Patient treatment expenditure							554,731			1,673,570		2,228,301	-
Free Procedure									26,094,278			26,094,278	-
PM JAY Scheme						743,194			4,858,018	8,463,054		37,601,883	-
Transfer to various pts. A/c													
Others (Specify)													1,339,840
<b>TOTAL (c.ii)</b>	-	<b>513,129</b>	<b>2,086,150</b>	-	-	<b>7,081,059</b>	<b>280,407,218</b>	<b>1,672,683</b>	<b>209,131,554</b>	<b>142,916,238</b>	<b>2,421,372</b>	<b>646,229,403</b>	<b>772,822,054</b>
<b>TOTAL (c)</b>	-	<b>513,129</b>	<b>2,086,150</b>	-	-	<b>7,081,059</b>	<b>280,407,218</b>	<b>1,672,683</b>	<b>209,131,554</b>	<b>142,916,238</b>	<b>2,421,372</b>	<b>646,229,403</b>	<b>772,822,054</b>
<b>Balance as at the end of the year (a+b-c)</b>	<b>52,516,340</b>	<b>33,082,801</b>	<b>245,270</b>	<b>18,031,480</b>	<b>1,628,000</b>	<b>40,578,401</b>	<b>135,299,240</b>	<b>408,532,286</b>	<b>116,822,424</b>	<b>102,438,343</b>	<b>6,713,628</b>	<b>915,888,213</b>	<b>778,954,058</b>

(Amount in Rs.)

<b>Schedule 5 - Secured Loans And Borrowings</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1. Capital Government</b>	-	-
<b>2. State Government (Specify)</b>	-	-
<b>3. Financial Institutions</b>		
a) Term Loans	-	-
b) Interest accrued and due	-	-
<b>4. Banks</b>		
a) Term Loans		
- Interest accrued and due	-	-
b) Other Loans (specify)		
- Interest accrued and due	-	-
<b>5. Other Institutions and Agencies</b>	-	-
<b>6. Debentures and Bonds</b>	-	-
<b>7. Others (specify)</b>	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>
<b>Note:</b> Amounts due within one year		

Schedule 6- Unsecured Loans And Borrowings		(Amount in Rs.)	
	Current Year	Previous Year	
<b>1. Capital Government</b>	-	-	
<b>2. State Government (Specify)</b>	-	-	
<b>3. Financial Institutions</b>	-	-	
a) Term Loans			
b) Interest accrued and due			
<b>4. Banks</b>			
a) Term Loans			
- Interest accrued and due			
b) Other Loans (specify)			
- Interest accrued and due			
<b>5. Other Institutions and Agencies</b>			
<b>6. Debentures and Bonds</b>			
<b>7. Others (specify)</b>			
<b>TOTAL</b>	-	-	
<b>Note:</b> Amounts due within one year			

Schedule 7- Deferred Credit Liabilities		(Amount in Rs.)	
	Current Year	Previous Year	
a) Acceptance secured by hypothecation of capital equipment and other assets	-	-	
b) Others	-	-	
<b>TOTAL</b>	-	-	
<b>Note:</b> Amount due within one year			

(Amount in Rs.)

<b>Schedule 8-Current Liabilities</b>	<b>Current Year</b>	<b>Pervious Year</b>
<b>A. Current Liabilities</b>		
1. <i>Acceptances</i>	-	-
2. <i>Sundry Creditors</i>		
a) For Goods	-	-
b) Others	-	-
3. <i>Advances Received</i>	-	-
4. <i>Interest accrued but not due on</i>		
a) Secured Loans/borroings	-	-
b) Unsecured Loans/borrowings	-	-
5. <i>Statutory Liabilities</i>		
a) Overdue	-	-
b) Others	-	-
6. <i>Other Current Liabilities</i>	572,233	1,252,320
Addition during the year	824,345,051	
Deduction during the year	825,025,138	
7. <i>EMD</i>	63,191,789	60,092,789
Addition during the year	5,545,000	
Deduction during the year	2,446,000	
8. <i>Imprest</i>	20,000	20,000
9. <i>Aiims Neuro Sciences Poor Pts. A/c</i>	309,417	309,417
<b>TOTAL (A)</b>	<b>64,093,439</b>	<b>61,674,526</b>
<b>B. Provisions</b>		
1. For Taxation	-	-
2. Gratuity	-	-
3. Superannuation/ Pension	-	-
4. Accumulated Leave Encashment	-	-
5. Trade Warranties/ Claims	-	-
6. Accumulated Depreication	-	-
7. Others	-	-
<b>TOTAL (B)</b>	<b>-</b>	<b>-</b>
<b>TOTAL (A)+(B)</b>	<b>64,093,439</b>	<b>61,674,526</b>

(Amount in Rs.)

Particulars	GROSS BLOCK						DEPRECIATION			NET BLOCK			
	Cost/Valuation as at beginning of the year	Additions during the year	Deductions during the year	Additions during the year (Letter of Credit)	Additions during the year (PDA)	Additions during the year (Custom Duty)	Cost/Valuation at the year-end	As at the begni. of the year	For the year	On ded. during the year	Total up to the year-end	As at the current year-end	As at the previous year-end
<b>FIXED ASSETS</b>													
<b>LAND</b>													
a) Freehold	-	-	-	-	-	-	-	-	-	-	-	-	-
b) Leasehold	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>BUILDINGS</b>													
a) On Freehold Land	-	-	-	-	-	-	-	-	-	-	-	-	-
b) On Leasehold Land	-	-	-	-	-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>INTANGIBLE FIXED ASSETS</b>													
a) Software	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PLANT, MACHINERY &amp; EQUIPMENT*</b>	5,582,818,097	125,346,477		119,956,779	210,875	27,889,354	5,856,221,582					5,856,221,582	5,582,818,097
Spare & Accessories (CTC)	65,573,564			65,573,564			65,573,564					65,573,564	65,573,564
Spare & Accessories (NSC)	86,631,063			86,631,063			86,631,063					86,631,063	86,631,063
Letter of Credit Spare & Accessories (NSC)	11,918,584			11,918,584			11,918,584					11,918,584	11,918,584
Letter of Credit Spare & Accessories (CTC)	556,416			556,416			556,416					556,416	556,416
<b>VEHICLES</b>	4,381,989			4,381,989			4,381,989					4,381,989	4,381,989
<b>FURNITURE, FIXTURES</b>	8,490,172	1,425,179		9,915,351			9,915,351					9,915,351	8,490,172
<b>COMPUTER/ PERIPHERALS</b>	10,140,482	2,740,572		12,881,054			12,881,054					12,881,054	10,140,482
<b>ELECTRIC INSTALLATIONS</b>													
<b>LIBRARY BOOKS</b>													
Tube well & Water-supply													
<b>OFFICE EQUIPMENT</b>													
<b>TOTAL OF CURRENT YEAR</b>	5,770,510,367	129,512,228		119,956,779	210,875	27,889,354	6,048,079,603					6,048,079,603	5,770,510,367
<b>PREVIOUS YEAR</b>													
<b>CAPITAL WORK-IN-PROGRESS</b>	460,303,700						460,303,700					460,303,700	460,303,700
<b>TOTAL</b>	6,230,814,067	129,512,228		119,956,779	210,875	27,889,354	6,508,383,303					6,508,383,303	6,230,814,067

(Date to be given to cost of assets on hire purchase basis included above)

(Amount in Rs.)

<u>Schedule 10 - Investments from Earmarked/Endowment Funds</u>	Current Year	Previous Year
1. In Government Securities	-	-
2. Other approved Securities	-	-
3. Shares	-	-
4. Debentures and Bonds	-	-
5. Subsidiaries and Joint Ventures	-	-
6. Others (to be specified)	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>

(Amount in Rs.)

<u>Schedule 11 - Investments Others</u>	Current Year	Previous Year
1. In Government Securities	-	-
2. Other approved Securities	-	-
3. Shares	-	-
4. Debentures and Bonds	-	-
5. Subsidiaries and Joint Ventures	-	-
6. Others (to be specified)	-	-
i. Fixed Deposit (Gamma Knife)	360,000,000	360,000,000
ii. Fixed Deposit (Angio Pts. A/c)	79,800,000	79,800,000
iii. Fixed Deposit (Neuro Surgery Pts. A/c)	51,800,000	31,800,000
iv. Fixed Deposit (C T Pts. A/c)	80,000,000	80,000,000
<b>TOTAL</b>	<b>571,600,000</b>	<b>551,600,000</b>

(Amount in Rs.)

<b>Schedule 12-Current Assets, Loans, Advances Etc.</b>		<b>Current Year</b>	<b>Previous Year</b>
<b>A. Current Assets</b>			
<b>1. Inventories</b>			
a) Stores and Spares	-	-	-
b) Loose Tools	-	-	-
c) Stock in trade	-	-	-
Finished Goods	-	-	-
Work-in-progress	-	-	-
Raw Materials	-	-	-
<b>2. Sundry Debtors</b>			
a) Debts outstanding for a period exceeding six months	5,786,970	5,786,970	5,786,970
b) Patient Treatment (CGHS)	3,245,441	3,245,441	3,245,441
c) Others			
<b>3. Cash balances in hand (Including cheques/drafts and imprest)</b>			
a) Imprest	76,000	76,000	66,000
<b>4. Bank Balances</b>			
a) With Scheduled Banks:			
-On Current Accounts	358,416,461	358,416,461	338,844,328
Gamma Knife	99,818,732	99,818,732	28,062,452
Angio Pts. A/c	51,679,718	51,679,718	15,338,949
C.T. Pts. A/c	63,448,187	63,448,187	46,015,445
Neuro Surgery Pts. A/c	57,120,999	57,120,999	61,842,809
CNC RAN A/c	6,713,451	6,713,451	-
Aiiims Neuro Sciences Poor Pts. A/c	305,953	305,953	306,602
-On Deposit Accounts (Includes margin money)	-	-	-
-On Savings Accounts	-	-	-
b) With Non-Scheduled Banks:			
-On Current Accounts	-	-	-
-On Deposit Accounts	-	-	-
-On Savings Accounts	-	-	-
<b>5. Post Office - Savings Accounts</b>			
	-	-	-
<b>TOTAL (A)</b>	<b>646,611,911</b>	<b>646,611,911</b>	<b>499,508,997</b>

(Amount in Rs.)

<b>SCHEDULE 12-CURRENT ASSETS LOANS, ADVANCES ETC. (CONTD.)</b>	<b>Current Year</b>	<b>Pervious Year</b>
<b>B. LOANS, ADVANCES AND OTHER ASSETS</b>		
<b>1. Loans</b>		
a) Staff	7,054,220	6,240,560
b) Other Entities engaged in activities/objectives similar to that of the Entity		
c) Other (Patient Treatment- CGHS)		
<b>2. Advances and other amounts recoverable in cash or in kind or for value to be received</b>		
a) On Capital Accounts		
b) Prepayments		
c) Temporary Contingent Advances		
d) Others		
<b>3. Income Accrued</b>		
a) On Investments fro Earmarked / Endowment Funds		
b) On Investments-Others		
c) On Loans and Advances		
d) Others		
(Includes income due unrealized-Rs.....)		
<b>4. Claims Receivable</b>		
<b>5. Letter of Credit</b>	102,199,369	121,207,172
Addition during the year	100,948,976	
Deduction during the year	119,956,779	
<b>6. Custom Duty</b>	85,494,139	93,383,493
Addition during the year	20,000,000	
Deduction during the year	27,889,354	
<b>7. Pre-Deposits Advance</b>	89,973	300,848
Addition during the year	-	
Deduction during the year	210,875	
<b>8. TDR</b>		-
<b>9. Advance Against Work</b>	174,596,762	174,596,762
<b>10. Advance Payment DAVP</b>	2,709,744	2,709,744
<b>11. Mach. &amp; Equipt Trf From CT Patients A/c</b>	49,025,000	49,025,000
<b>TOTAL (B)</b>	<b>421,169,207</b>	<b>447,463,579</b>
<b>TOTAL (A)+(B)</b>	<b>1,067,781,118</b>	<b>946,972,576</b>



(Amount in Rs.)

SCHEDULE 13-INCOME FROM SALES/SERVICE	Current Year	Previous Year
<b>1) Income from sales</b>		
a) Sales of Finished Goods	-	-
b) Sales of Raw Material	-	-
c) Sales of Scraps	-	-
<b>2) Income from Services</b>		
a) Labour and Processing Charges	-	-
b) Professional/Consultancy Service	-	-
c) Agency Commission and Brokerage	-	-
d) Maintenance Services (Equipment/Property)	-	-
e) Hospital Receipts (CNC Main)	62,582,703	69,123,455
f) Patient Treatment CGHS	-	1,761,960
g) Others (Specify) Suspence Receipt	-	-
<b>TOTAL</b>	<b>62,582,703</b>	<b>70,885,415</b>

SCHEDULE 14-GRANTS/SUBSIDIES	Current Year	Previous Year
<b>(Irrevocable Grant &amp; Subsidies Received)-Through Aiims Main</b>		
1) Central Government	-	-
<b>Revenue General (Plan)</b>		
(ii) Grant in Aid- (Salary)	-	-
(iii) Grant in Aid- (General)	-	-
<b>Non Plan</b>		
(iii) Grant in Aid- (General)	764,000,000	764,000,000
(ii) Grant in Aid- (Salary)	3,086,200,000	2,728,000,000
Grant in Aid (SAP)- CTC	-	-
Grant in Aid (SAP) - NSC	-	-
2) State Government(s)	-	-
3) Governments Agencies	-	-
4) Institutions/Welfare Bodies	-	-
5) International Organisations	-	-
6) Others (Specify)	-	-
<b>TOTAL</b>	<b>3,850,200,000</b>	<b>3,492,000,000</b>

<b>SCHEDULE 15- FEES/SUBSCRIPTIONS</b>			(Amount in Rs.)	
	Current Year	Previous Year		
1) Entrance Fees	-	-		
2) Annual Fees/Subscriptions	-	-		
3) Seminar/Program Fees	-	-		
4) Consultancy Fees	-	-		
5) Tender Fees	-	-		
<b>TOTAL</b>	-	-		
<b>Note-</b> Accounting Policies towards each item are to be disclosed				

<b>SCHEDULE 16- INCOME FROM INVESTMENTS</b>					(Amount in Rs.)	
	Investment from Earmark Fund		Investment Other			
	Current Year	Previous Year	Current Year	Previous Year	Current Year	Previous Year
<b>(Income on Invest. Earmarked/Endowment Funds transferred to Funds)</b>						
<b>1) Interest</b>						
a) On Govt. Securities	-	-	-	-	-	-
b) Other Bonds/Debentures	-	-	-	-	-	-
<b>2) Dividends</b>						
a) On Shares	-	-	-	-	-	-
b) On Mutual Fund Securities	-	-	-	-	-	-
<b>3) Rents</b>	-	-	-	-	-	-
<b>4) Other (Specify)</b>	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-
<b>Note-</b> Transferred to earmarked/endowment funds						

(Amount in Rs.)		
<b>SCHEDULE 17- INCOME FROM ROYALTY, PUBLICATION ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
1) Income from Royalty	-	-
2) Income from Publications	-	-
3) Others (Specify)	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>

(Amount in Rs.)		
<b>SCHEDULE 18- INTEREST EARNED</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1) On Term Deposits</b>		
a) with Schedule Banks (CNC Main)	12,014,238	29,093,970
with Schedule Banks (Gamma Knife)	24,890,651	16,746,881
with Schedule Banks (Angio Pts. A/c)	5,482,440	5,538,841
with Schedule Banks (C.T. Pts. A/c)	5,590,884	2,677,133
with Schedule Banks (Neuro Surgery Pts. A/c)	3,192,973	1,113,232
b) With Non-Scheduled Banks		-
c) With Institutions		-
d) Others		-
<b>2) On Savings Accounts</b>		
a) with Schedule Banks		-
b) With Non-Scheduled Banks		-
c) With Institutions		-
d) Others		-
<b>3) On Loans</b>		
a) Employee/Staff	1,242,757	1,981,442
b) Others		-
<b>4) Interest on Debtors and Other Receivables</b>		
<b>TOTAL</b>	<b>52,413,943</b>	<b>57,151,499</b>

**Note-** Tax deducted at source to be indicated

(Amount in Rs.)

<b>SCHEDULE 19- OTHER INCOME</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1) Profit on Sale/disposal of Assets</b>		
a) Owned assets	-	-
b) Assets acquired out of grants, or received free of cost	-	-
<b>2) Export Incentives realized</b>		
a) Liquid Damage	-	-
<b>3) Fees for Miscellaneous Services</b>	-	-
<b>4) Miscellaneous Receipt</b>	3,263,892	1,993,616
<b>5) Lice. Fee Recovery</b>		-
<b>TOTAL</b>	<b>3,263,892</b>	<b>1,993,616</b>

(Amount in Rs.)

<b>SCHEDULE 20- INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>a) Closing stock</b>		
Finished Goods	-	-
Work-In-Progress	-	-
<b>b) Less: Opening Stock</b>		
Finished Goods	-	-
Work-In-Progress	-	-
<b>NET INCREASE/(DECREASE) [a-b]</b>	<b>-</b>	<b>-</b>

(Amount in Rs.)

<b>SCHEDULE 21- ESTABLISHMENT EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Salaries and Wages	2,939,032,735	2,631,606,750
b) Contribution to Provident Fund		-
c) Contribution to Other Fund - (NPS)	142,414,553	87,133,450
d) Staff Welfare Expenses		-
e) Expenses on Employees Retirement and Terminal Benefits		-
f) Travelling and Conveyance Expenses	9,006,998	7,821,830
g) Others (specify)	-	-
<b>TOTAL</b>	<b>3,090,454,286</b>	<b>2,726,562,030</b>

(Amount in Rs.)

<b><u>SCHEDULE 22- OTHER ADMINISTRATIVE EXPENSES ETC.</u></b>	<b>Current Year</b>	<b>Previous Year</b>
Labour and processing expenses	-	-
Cartage and Carriage Inwards	-	-
Office Maintenance Exp.	3,561,798	5,734,144
Delegation Fee	-	-
Gas Charges	156,982	226,090
Vehicles Running and Maintenance	876,387	731,450
Postage, Telephone and Communication Charges	50,305	45,324
Advertisement	-	-
Repairs and maintenance of Building	60,096,928	42,954,315
Repairs and maintenance of Machinery	5,907,194	17,107,937
Vehicles Running and Maintenance	-	-
Maintenance of Minor Works	17,575,700	26,576,143
Printing and Stationary	-	-
Spare & Accessories (CTC)	38,291,785	32,798,832
Spare & Accessories (NSC)	45,528,768	60,148,578
Trf. to Patients A/c	36,742,088	-
NSC Poor patients fund	694,106	-
Security Services	59,932,849	55,481,496
Manpower Outsourcing Charges (BECIL/Sulabh/MRT etc.)	89,261,003	74,984,746
Sanitation Service (BVG)	-	51,264,394
Others (specify)	-	-
<b>TOTAL</b>	<b>358,675,893</b>	<b>368,053,449</b>

(Amount in Rs.)

<b><u>SCHEDULE 22 (A) Adjustment of Advances</u></b>	<b>Current Year</b>	<b>Previous Year</b>
Advance Payment of DAVP	-	2,998,292
Others (specify)	-	-
<b>TOTAL</b>	<b>-</b>	<b>2,998,292</b>

(Amount in Rs.)

<b><u>SCHEDULE 23- Material &amp; Supply</u></b>	<b>Current Year</b>	<b>Previous Year</b>
Material & Supply	384,439,207	400,215,957
JSSK	6,014,681	1,993,270
Exp. Of Consumable and Regent used to M & E	24,721,801	60,637,789
Neurology Emergency fund	8,079,173	-
<b>TOTAL</b>	<b>423,254,862</b>	<b>462,847,016</b>

(Amount in Rs.)		
<b>SCHEDULE 24- EXPENDITURE ON GRANTS SUBSIDIES ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Grants given to Institutions/Organisations	-	-
b) Subsidies given to Institutions/Organisations	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>
<b>Note-</b> Name of the Entities, their Activities along with the amount of Grants/Subsidies are to be disclosed.		

(Amount in Rs.)		
<b>SCHEDULE 25- INTEREST &amp; FINANCE EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
On Fixed Loans	-	-
On Other Loans (including Bank Charges)	-	-
Bank Charges (CNC Main)	4,060	1,537
Bank Charges (Gamma Knife)	826	1,357
Bank Charges (Angio Pts. A/c)	2,301	3,540
Bank Charges (C. T. Pts. A/c)	9,115	4,543
Bank Charges (Neuro Surgery A/c)	5,989	3,277
Bank Charges (Poor Pts. A/c)	649	649
Bank Charges (RAN)	177	-
Others (specify)	-	-
<b>TOTAL</b>	<b>23,117</b>	<b>14,903</b>

# Cardio-Thoracic & Neuro Sciences Centre (Consolidate)

Receipts and Payments for the year ended 31.03.2020

Receipts	2019-20	2018-19	Payments	2019-20	2018-19
<b>I. Opening balances</b>			<b>I. Expenses</b>		
<b>a) cash in Hand</b>	66,000	66,000	a) Establishment Expenses (corresponding to schedule 21)	3,090,454,286	2,726,562,030
			b) Administrative Expenses (corresponding to Schedule 22)	358,675,893	368,053,449
<b>b) Fixed Deposits</b>			c) Material & Supply (Corresponding to Schedule 23)	423,254,862	462,847,016
Fixed Deposits (Gamma Knife)	360,000,000	240,000,000			
Fixed Deposits (Angio Pts. A/c)	79,800,000	109,800,000			
Fixed Deposits (Neuro Surgery Pts. A/c)	31,800,000	31,800,000			
Fixed Deposits (CT. Pts. A/c)	80,000,000	50,000,000			
<b>c) Bank Balances</b>					
(i) In current Account					
CNC Main	338,844,328	245,439,239			
Gamma Knife	28,062,452	89,945,198			
Angio Pts. A/c	15,338,949	38,587,244			
Neuro Surgery Pts. A/c	61,842,809	52,893,371			
C.T. Pts. A/c	46,015,445	91,101,096			
Aiims Neuro Sciences Poor Pts. A/c	306,602	257,251			
(ii) In Deposit Account	-	-			
(iii) In Savings Account	-	-			
<b>II. Grant Received</b>			<b>II. Payments made against funds for various Projects</b>		
<b>a) From Government of India--Through Aiims Main Capital (Assets New)</b>					
(i) Grant in Aid (Plan) - M&E	265,000,000	338,885,000	Grant Refund to AIIMS Main - (M&E)	14,538,796	20,000,000
<b>Revenue General</b>			<b>II. Payments made against funds for various Projects</b>		
(ii) Grant in Aid- (Salary)	3,086,200,000	2,728,000,000			
(iii) Grant in Aid- (General)	764,000,000	764,000,000			
(iv) Grant in Aid- (SAP)- CTC	-	-	(iv) Grant in Aid- (SAP)- CTC	34,029,637	1,672,177
(v) Grant in Aid- (SAP)- NSC	-	-	(v) Grant in Aid- (SAP)- NSC	34,038,553	1,691,074
b) From State Government					

Receipts	2019-20	2018-19	Payments	2019-20	2018-19
c) From Other Sources (RAIN)	9,135,000				
<b>(Grant for capital and Revenue expenditure to shown</b>					
<b>III. Income on Investments From</b>					
a) Earmarked Funds/ Endowments funds	-	-	III. Investments and deposits made	-	-
<b>b) Revolving Fund</b>			a) Out of Earmarked/Endowment funds		
i) Blood Test/Lab Test	11,758,840	11,863,700	<b>b) Revolving Fund</b>		
ii) Cardiac Test	5,100,660	5,105,750	i) Blood Test/Lab Test	513,129	428,475
iii) Stress Thallium	2,132,750	2,488,000	ii) Cardiac Test	2,086,150	855,205
IV) Neurology Patients Fund	15,108,253	10,384,063	iii) Stress Thallium	6,337,865	5,931,121
			IV) Neurology Patients Fund		17,631,067
			Trf. To Various Pts. A/c From Neurology Patient A/c	743,194	1,339,840
V) MRI Charges	3,319,100	3,479,750			
vi) Stem Cell	812,000	742,000			
<b>Patient Receipt</b>					
Gamma Knife A/c	41,788,138	44,001,710	Gamma Knife A/c	321,683	2,629,980
Angio Pts. A/c	172,536,781	186,714,129	Angio Pts. A/c	151,706,600	245,497,725
Ct. Pts. A/c	207,219,958	336,404,457	Ct. Pts. A/c	195,431,615	354,162,698
NS Pts. A/c	115,336,430	152,185,426	NS Pts. A/c	101,571,656	144,345,943
CNC RAN A/c			CNC RAN A/c	2,421,372	
c) Own Funds (Other Investments)	-	-			
<b>PM JAY (Scheme)</b>			<b>PM JAY (Scheme)</b>		
Gamma Knife A/c	5,400,000		Gamma Knife A/c		
Angio Pts. A/c	4,858,018		Angio Pts. A/c	4,858,018	
Ct. Pts. A/c	24,280,811		Ct. Pts. A/c	24,280,811	
NS Pts. A/c	8,463,054		NS Pts. A/c	8,463,054	
<b>IV. Interest Received</b>			<b>IV. Expenditure on Fixed Assets &amp; Capital</b>		
a) On Bank Deposits (CNC Main)	12,014,238	29,093,970	Work-in-Progress		
On Bank Deposits (Gamma Knife)	24,890,651	16,746,881	a) Purchase of Fixed Assets	129,512,228	88,820,261
On Bank Deposits (Angio Pts. A/c)	5,482,440	5,538,841	b) Expenditure on Capital Work-in-progress	-	-
On Bank Deposits (Neuro Surgery Pts. A/c)	3,192,973	1,113,232	c) Letter of Credit (M&E)	100,948,976	151,064,739
On Bank Deposits (C.T. Pts. A/c)	5,590,884	2,677,133	<b>V. Refund of surplus money/Loans</b>		
			a) To the Government of India	-	-
b) loans And Advances etc.	1,242,757	1,981,442	b) To the State Government	-	-
<b>V. Other Income</b>			c) To other providers of funds	-	-
Miscellaneous Receipt	3,263,892	1,993,616	<b>VI. Finance Charges (Interest)</b>		
Hospital Receipt (CNC Main)	62,582,703	69,123,455	Bank Charges (CNC Main)	4,060	1,537
			Bank Charges (Gamma Knife)	826	1,357
<b>VI. Amount Borrowed</b>			Bank Charges (Angio Pts. A/c)	2,301	3,540
			Bank Charges (Neuro Surgery Pts. A/c)	5,989	3,277



Receipts	2019-20	2018-19	Payments	2019-20	2018-19
			Bank Charges (C.T. Pts. A/c)	9,115	4,543
			Bank Charges (CNC RAN A/c)	177	
			Bank Charges (Aiiims Neuro Sciences Poor)	649	649
<b>VII. Any Other Receipts (Give Details)</b>			<b>VII. Other Payments (Specify)</b>		
a) Donation	579,316	325,000	Donation/Grant		249,819
b) Earnest Money Deposits	5,545,000	7,115,000	Earnest Money Deposits	2,446,000	2,878,995
<b>Grant received from Aiiims CNC (CT. Pts. A/c) for Exemption/BPL Pts</b>			<b>Poor BPL Patient Treatment / Free Procedure</b>		
Gamma Knife A/c			Gamma Knife A/c		
Angio Pts. A/c	36,124,727		Angio Pts. A/c	26,094,278	
Ct. Pts. A/c	617,361		Ct. Pts. A/c	554,731	
NS Pts. A/c			NS Pts. A/c	1,673,570	
<b>Employee Recovery</b>			<b>Employee Recovery</b>		
1. Aiiims Recoveries	19,562,414	18,667,362	1. Aiiims Recoveries	19,543,574	18,650,280
2. Outside Recoveries	476,252,186	422,344,020	2. Outside Recoveries	476,245,291	422,344,020
3. GPF (Subscription & Advance)	216,228,535	285,389,498	3. GPF (Subscription & Advance)	216,228,535	285,389,498
4. NPS Recovery	107,861,395	91,176,281	4. NPS Recovery	108,003,292	91,198,015
<b>Loan,Advances &amp; Other Assets/Recovery</b>			<b>Loan,Advances &amp; Other Assets/Recovery</b>		
Computer Advance Recovery	458,500	505,700	Computer Advance	300,000	1,050,000
Car/Scooter Advance Recovery	32,300	279,600	Car/Scooter Advance Recovery	-	-
House Building Advance Recovery	395,540	525,350	House Building Advance	1,400,000	3,564,600
Festival Advance Recovery	-	2,925	Festival Advance	-	-
Recovery/Deduction (Engg. Works)	4,440,521	2,981,932	Recovery/Deduction (Engg. Works)	5,004,446	2,074,481
Patient Treatment (CGHS)		249,375	Return RTGS	-	-
Aiiims Neuro Sciences Poor Pts. A/c		50,000	Advance Paid to DAVP	-	-
TDR			Custom Duty	20,000,000	79,000,000
			PDA	-	-
		50,000,000	TDR (CNC Main A/c)		
			<b>VIII. Closing Balances</b>		
			<b>a) Cash in hand</b>	76,000	66,000
			<b>b) Fixed Deposits</b>		
			Fixed Deposits (Gamma Knife)	360,000,000	360,000,000
			Fixed Deposits (Angio Pts. A/c)	79,800,000	79,800,000
			Fixed Deposits (Neuro Surgery Pts. A/c)	51,800,000	31,800,000
			Fixed Deposits (CT Pts. A/c)	80,000,000	80,000,000



**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**BALANCE SHEET AS AT 31-03-2020**

		(Amount in Rupees)	
<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>Schedule</b>	<b>2019-20</b>	<b>2018-19</b>
CORPUS/CAPITAL FUND	<b>1</b>	3836471076	3606471076
RESERVES AND SURPLUS	<b>2</b>	166562337	72101573
EARMARKED/ ENDOWMENT FUNDS	<b>3</b>	90696632	77148456
SECURED LOANS AND BORROWINGS	<b>4</b>		
UNSECURED LOANS AND BORROWINGS	<b>5</b>		
DEFERRED CREDIT LIABILITIES	<b>6</b>		
CURRENT LIABILITIES AND PROVISIONS	<b>7</b>	28536843	29163997
<b>TOTAL</b>		<b>4122266888</b>	<b>3784885102</b>
<b>ASSETS</b>			
FIXED ASSETS	<b>8</b>	3523325628	3293547341
INVESTMENTS-FROM EARMARKED/ENDOWMENT FUNDS	<b>9</b>		
INVESTMENTS-OTHERS	<b>10</b>		
CURRENT ASSETS, LOANS , ADVANCES ETC.	<b>11</b>	598941260	491337761
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)			
<b>TOTAL</b>		<b>4122266888</b>	<b>3784885102</b>

**ACCOUNTS OFFICER**

**CHIEF, RPC**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2020**

		(Amount in Rupees)	
		2019-20	2018-19
<b>INCOME</b>	Schedule		
Income from Sales/Services (Hospital Receipts)	12	35179071	36551342
Grants/Subsidies	13	1379538400	1330000000
Fees/Subscriptions	14		
Income from Investments (Income on Invest. From earmeked/endow.Funds transferred to funds)	15		
Income for Royalty, Publication etc.	16		
Interest Earned	17	8608456	8269995
Other Income	18	292733	492743
Increase/(decrease) in stock of Finished goods and works-in-progress	19		
<b>TOTAL (A)</b>		<b>1423618660</b>	<b>1375314080</b>
<b>EXPENDITURE</b>			
Establishment Expenses	20	981291416	939015472
Other Administrative Expenses etc.	21	347866480	427437756
Expenditure on Grants, Subsidies etc.	22	0	77055214
Interest	23		
Depreciation (Net Total at the year-end - corresponding to Schedule 8)			
<b>TOTAL (B)</b>		<b>1329157896</b>	<b>1443508442</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>			
Transfer to Special Reserve (Specify each)		94460764	-68194362
Transfer to /from General Reserve			
<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/ CAPITAL FUND</b>		<b>1423618660</b>	<b>1375314080</b>

ACCOUNTS OFFICER

CHIEF, RPC





All India Institute of Medical Sciences, New Delhi  
Dr. Rajendra Prasad Centre for Ophthalmic Sciences  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

(Amount in Rupees)

	2019-20		2018-19	
<b><u>SCHEDULE 1- CORPUS/CAPITLA FUND:</u></b>				
Balances as at the beginning of the year	3606471076		3206471076	
Add : Contributions towards Corpus/Capital Fund	230000000		400000000	
Less : Fixed Assets Condemned during the year	0	3836471076	0	3606471076
<b>BALANCE AS AT THE YEAR-END</b>		<b>3836471076</b>		<b>3606471076</b>

	Current Year		Pervious Year	
<b><u>SCHEDULE 2- RESERVES AND SURPLUS:</u></b>				
1. <u>Capital Reserve:</u>				
As per last Account				
Addition during the year				
Less: Deductions during the year				
2. <u>Revaluation Reserve</u>				
As per last Account				
Addition during the year				
Less: Deductions during the year				
3. <u>Special Reserves</u>				
As per last Account				
Addition during the year	72101573		140295935	
Less: Deductions during the year	94460764	166562337	-68194362	72101573
4. <u>General Reserve</u>				
As per last Account				
Addition during the year				
Less: Deductions during the year				
<b><u>TOTAL</u></b>	<b>0</b>	<b>166562337</b>	<b>0</b>	<b>72101573</b>

ACCOUNTS OFFICER

All India Institute of Medical Sciences, New Delhi  
Dr. Rajendra Prasad Centre for Ophthalmic Sciences  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS	Patient Treatment Account		Scheme Non-RPC		TOTALS	
			Scheme Non-RPC	SAP*	2019-20	2018-19
a) Opening balance of the funds		30578209	25686792	0	0	402571885
b) Additions to the Funds:		266586376	0			
i. Donations/grants			15754906		0	0
ii. Income from investments made on account of funds		880943	583095			
iii. Other additions (specify nature)						0
iv. Less Expenditure during the year						
<b>TOTAL (a+b)</b>		<b>298045528</b>	<b>42024793</b>	<b>0</b>	<b>340070321</b>	<b>402571885</b>
c) Utilisation/Expenditure towards objectives of funds						
i. Capital Expenditure						
- Fixed Assets						
- Others						
ii. Revenue Expenditure						
- Salaries, Wages and allowances etc.						
- Rent						
- Other Administrative expenses			21269275		0	
- Exp on kits for patients		228104414				
<b>Total</b>		<b>228104414</b>	<b>21269275</b>	<b>0</b>	<b>249373689</b>	<b>325423429</b>
<b>TOTAL (c)</b>		<b>228104414</b>	<b>21269275</b>	<b>0</b>	<b>249373689</b>	<b>325423429</b>
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>		69941114	20755518	0	90696632	77148456

\* Swachhta Action Plan

ACCOUNTS OFFICER



**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 4-SECURED LOANS AND BORROWINGS:</b>	<b>2019-20</b>		<b>2018-19</b>	
1. Central Government				
2. State Government				
3. Financial Institutions				
a) Term Loans				
b) Interest accrued and due				
4. Banks:				
a) Term Loans				
- Interest accrued and due				
b) Other Loans (specify)				
- Interest accrued and due				
5. Other Institutions and Agencies				
6. Debentures and Bonds				
7. Others (Specify)				
<b><u>TOTAL</u></b>	0	0	0	0

**ACCOUNTS OFFICER**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 5 - UNSECURED LOANS AND BORROWING</b>	<b>2019-20</b>	<b>2018-19</b>
1. Central Government		
2. State Government		
3. Financial Institutions		
4. Banks:		
a) Term Loans		
b) Other Loans (specify)		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Fixed Deposits		
8. Others (Specify)		
<b><u>TOTAL</u></b>	0	0

<b>SCHEDULE 6 - DEFERRED CREDIT LIABILITIES:</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Acceptances secured by hypothecation of capital equipment and other assets		
b) Others		
<b><u>TOTAL</u></b>	0	0

**ACCOUNTS OFFICER**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS</b>	<b>2019-20</b>		<b>2018-19</b>	
<b>A. CURRENT LIABILITIES AND PROVISIONS</b>				
1. Acceptances				
2. Sundry Creditors:				
a) For Goods				
b) Others (Engg. Outstanding )	1421013			1421013
c) Engg. Outstanding payment -2019-20 )	1421013	0		
3. Advances Received for patients from Govt Agencies				
i) NIAF				
Opening Balance	1655532		1555040	
Received during the year	1373164		248705	
Expenditure during the year	538305	2490391	148213	1655532
4. Projects Grants				
ii) NPCB		827		827
5. Interest accrued but not due on:				
a) Secured Loans/borrowings				
a) Unsecured Loans/borrowings				
6. Statutory Liabilities:				
a) Overdue				
a) Others				
7. Security Deposits (EMD)				
Opening Balance	6785496		9236734	
Received during the year	2042000		2932938	
Refund during the year	2083000	6744496	5384176	6785496
6. Other current Liabilities		227078		227078
9. Amt against NPS to be remitted to AIIMS (MAIN)		0		0
Opening Balance	19074051		33282385	
Less : Remitted to AIIMS (MAIN)	0	19074051	14208334	19074051
10. Custom Duty to be paid to Store (D.O.)	0	0		
Opening Balance	0			
Less : Remitted to Research AIIMS (MAIN)	0	0		0
<b>TOTAL (A)</b>		<b>28536843</b>		<b>29163997</b>

<b>B. PROVISIONS</b>				
1. For Taxation				
2. Gratuity				
3. Superannuation/Pension				
6. Accumulated Leave Encashment				
6. Trade Warranties/Claims				
6. Others (specify)				
<b>TOTAL (B)</b>				
<b>TOTAL (A+B)</b>		<b>28536843</b>		<b>29163997</b>

ACCOUNTS OFFICER

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<u>SCHEDULE 8-FIXED ASSETS</u>	<u>GROSS BLOCK</u>				<u>DEPRECIATION</u>			<u>NET BLOCK</u>			
	<u>DISCRIPTION</u>	Cost/valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost/ Valuation at the year end	As at the beginning of the year	On additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end	As at the Previous year-end
A.	<b><u>FIXED ASSETS:</u></b>										
1	<u>LAND:</u>										
	a) Freehold										
	b) Leasehold										
2	<u>BUILDINGS:</u>	233443859	0	0	233443859	0	0	0	0	233443859	233443859
	a) On Freehold Land										
	b) On Leasehold Land										
	c) Ownership Flats/ Premises										
	d) Superstructures on Land not belonging to the entity										
	PLANT MACHINERY & EQUIPMENT	3032902692	229760175	0	3262662867	0	0	0	0	3262662867	3032902692
4	VEHICLES	8996266	0	0	8996266	0	0	0	0	8996266	8996266
5	FURNITURE, FIXTURES	18204524	18112	0	18222636	0	0	0	0	18222636	18204524
6	OFFICE EQUIPMENT										
7	COMPUTER/PERIPHERALS										
8	ELECTRIC INSTALLATIONS										
9	LIBRARY BOOKS										
10	TUBEWELLS & W. SUPPLY										
11	OTHER FIXED ASSETS										
	<b>TOTAL OF CURRENT YEAR</b>	3293547341	229778287	0	3523325628	0	0	0	0	3523325628	3293547341
	<b>PREVIOUS YEAR</b>										
B.	<b>CAPITAL WORK-IN-PROGRESS</b>										
	<b>TOTAL</b>										

ACCOUNTS OFFICER

All India Institute of Medical Sciences, New Delhi  
Dr. Rajendra Prasad Centre for Ophthalmic Sciences  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 9 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>	<b>2019-20</b>	<b>2018-19</b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		0
6. Others (to be specified)		
<b>TOTAL</b>	<b>0</b>	<b>0</b>

<b>SCHEDULE 10 - INVESTMENTS - OTHERS</b>	<b>2019-20</b>	<b>2018-19</b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others (to be specified)		
<b>TOTAL</b>	<b>0</b>	<b>0</b>

ACCOUNTS OFFICER

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

		(Amount in Rupees)			
<b>SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.</b>		<b>2019-20</b>		<b>2018-19</b>	
<b>A</b>					
<b>CURRENT ASSETS:</b>					
<b>1. Advances for Procurement</b>					
a) M&E Foreign Purchases		Opening Balance	192270582	109002733	
		Addition during the year	119423111	169150628	
		Adjusted during the year	169150628	85882779	192270582
b) Material and Supply		Opening Balance	9782099	10658362	
		Addition during the year	0	0	
		Adjusted during the year	0	876263	9782099
c) Stock-in-trade		Finished Goods			
		Work-in-progress			
		Raw Material			
<b>2. Sundry Debtors:</b>					
a) Debts Outstanding for a period exceeding six months			76253		76253
b) Others					
<b>3. Cash balances in hand (including cheques/ drafts and imprest)</b>			30500		32500
<b>4. Bank Balances:</b>					
<b>a) With Scheduled Banks:</b>					
		On Current Accounts	295667442		201260596
		Patient Treatment Account	69883419		30578209
		RPC Research Account	21158395		25686792
		On Deposit Accounts (includes margin money)			
		On Savings Accounts			
<b>b) With non-Scheduled Banks:</b>					
		On Current Accounts			
		On Deposit Accounts			
		On Savings Accounts			
<b>5. PDA Advance</b>		opening balance	341250	350055	
		adjusted during the year	63495	8805	341250
<b>6. Custom Duty Advance</b>		Opening Balance	31121127	30781224	
		Added during the year	30000000	30000000	
		Adjusted during the year	1708648	29660097	31121127
				0	
<b>TOTAL (A)</b>			<b>598831407</b>		<b>491149408</b>

ACCOUNTS OFFICER

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

	(Amount in Rupees)	
2018-19	2019-20	2018-19
<b>SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>		
<b>B</b>		
<b>LOANS, ADVANCES AND OTHER ASSETS</b>		
<b>1. Loans:</b>		
a) Staff		
i) Motor car	Opening Balance	0
	Less : Recovered during the year	0
		0
ii) House Building Advance	Opening Balance	0
	Less : Recovered during the year	0
		0
iii) Computer Advance	Opening Balance	166500
	Less : Recovered during the year	78500
	Add: Addition during the year	0
		88000
iv) Festival Advance	Opening Balance	21853
	Less : Recovered during the year	0
	Add: Addition during the year	0
		21853
<b>2. Advances and other amounts recoverable in cash or in kind or for value to be received:</b>		
a) On Capital Account		
b) Prepayments		
c) Others		
<b>3. Income Accrued:</b>		
a) On Investments from Earmarked / Endowment Funds		
b) On Investments - Others		
c) On Loans and Advances		
d) Others		
	(includes income due unrealised - Rs.....)	
<b>4. Claims Receivable:</b>		
<b>TOTAL (B)</b>	<b>109853</b>	<b>188353</b>
<b>TOTAL (A + B)</b>	<b>598941260</b>	<b>491337761</b>

ACCOUNTS OFFICER

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b><u>SCHECULE 12 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</u></b>	<b>2019-20</b>	<b>2018-19</b>
<b><u>1) Income from Sales</u></b>		
1. Hospital receipts	33636878	35608158
2. Administrative charges (Projects)	1542193	943184
3. Sale of Scraps		
<b><u>2) Income from Services</u></b>		
a) Labour and Processing Charges		
b) Professional / Consultancy Services		
c) Agency Commission and Brokerage		
d) Maintenance Services (Equipment/Property)		
e) Others (Specify) Hospital Receipt		
<b><u>TOTAL</u></b>	<b>35179071</b>	<b>36551342</b>

<b><u>SCHECULE 13 - GRANTS /SUBSIDIES</u></b>	<b>2019-20</b>	<b>2018-19</b>
<b><u>1) Income from Sales</u></b>		
<b><u>(Irrevocable Grants &amp; Subsidies Received)</u></b>		
1. Central Government (Through AIIMS Main)	1379538400	1330000000
2. State Government(s)		
3. Government Agencies		
4. Institutions/ Welfare Bodies		
5. International Organisations		
6. Others (Specify)		
<b><u>TOTAL</u></b>	<b>1379538400</b>	<b>1330000000</b>

**ACCOUNTS OFFICER**



All India Institute of Medical Sciences, New Delhi  
Dr. Rajendra Prasad Centre for Ophthalmic Sciences  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

<b>SCHEDULE 14 - FEES/SUBSCRIPTIONS</b>	(Amount in Rupees)	
	2019-20	2018-19
1. Tuition & Examination Fee		
2. Licence Fee		
3. Seminar/Program Fees		
4. Consultancy Fees		
5. Others (Specify) EHS		
<b>TOTAL</b>	<b>0</b>	<b>0</b>

<b>SCHEDULE 15 - INCOME FROM INVESTMENTS</b> (Income on Invest. From Earmarked/Endowment Funds transferred to Funds)	Investment from Earmarked Fund		Investment-Others	
	2019-20	2018-19	2019-20	2018-19
1. Interest				
a) On Govt. Securities				
a) Other Bonds/Debentures				
2. Dividends:				
a) On Shares				
a) On Mutual Fund Securities				
3. Rents				
4. Others (Specify)				
<b>TOTAL</b>				
<b>TRANSFERRED TO EARMARKED/EDNOWNMENT FUNDS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

ACCOUNTS OFFICER

All India Institute of Medical Sciences, New Delhi  
Dr. Rajendra Prasad Centre for Ophthalmic Sciences  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020

(Amount in Rupees)

<b><u>SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATION ETC.</u></b>	<b>2019-20</b>	<b>2018-19</b>
1. Income from Royalty		
2. Income from Publications		
3. Others (specify)		
<b><u>TOTAL</u></b>	0	0

<b><u>SCHEDULE 17 - INTEREST EARNED</u></b>	<b>2019-20</b>	<b>2018-19</b>
1. On Term Deposits:		
a) With Scheduled Banks	8386321	7915922
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2. On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) Post Office Savings Accounts		
d) Others		
3. On Loans:		
a) Employees/Staff	222135	354073
b) Others		
4. Interest on Debtors and other Receivables		
<b><u>TOTAL</u></b>	<b>8608456</b>	<b>8269995</b>

ACCOUNTS OFFICER

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

**(Amount in Rupees)**

<b>SCHEDULE 18 - OTHERS INCOME</b>	<b>2019-20</b>	<b>2018-19</b>
1. Misc. Receipt	292733	492743
2. Estb. Receipt (Scheme)		
3. Others (specify)		
<b>TOTAL</b>	<b>292733</b>	<b>492743</b>

<b>SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	<b>2019-20</b>	<b>2018-19</b>
a) Closing stock		
- Finished Goods		
- Work-in-progress		
b) Less: Opening Stock		
- Finished Goods		
- Work-in-progress		
<b>NET INCREASE/(DECREASE) [a+b]</b>	<b>0</b>	<b>0</b>

<b>SCHEDULE 20 - ESTABLISHMENT EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
Salaries and Wages	946577538	910451812
Allowances and Bonus		
Travelling Allowances	11535938	10871019
Contribution to NPS	23177940	17692641
Contribution to Other Fund (Scheme Cell)		
Staff Welfare Expenses		
Expenses on Employees "Retirement and Terminal Benefits"		
Others (NPS & LSPC)		
<b>TOTAL</b>	<b>981291416</b>	<b>939015472</b>

**ACCOUNTS OFFICER**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**  
**(Amount in Rupees)**

<b>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)	167683035	239132104
b) Material received against advance paid during last years	0	876263
c) Office Expenses	24772323	7313374
d) Securities	41127611	35526612
e) Other Outsourcing Agency	4007908	14735314
f) Administrartive Charges (Research Projects)	545613	537725
g) Repairs and maintenance (M&E)	19924099	16781216
h) Bank charges RPC, Patient Treatment Account and research project	504090	27117
i) Payment to AIIMS RPC Patient Treatment A/C		0
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Sanitation	55100296	49770997
q) Maintaince of Buildings (Minor Work RG)	8207583	30974166
r) Payment to Engg.	1421013	
s) Maintaince of Building (Non-plan)	24572909	31762868
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Swap Charges (IDBI Debit/Credit Card Commission)	0	0
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Insurance		
z) Advertisement and Publicity		
aa) Others (specify)(Contingency charge)		
<b>TOTAL</b>	<b>347866480</b>	<b>427437756</b>

**ACCOUNTS OFFICER**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF RECEIPT & PAYMENT FOR THE YEAR ENDED 31-03-2020**  
**(Amount in Rupees)**

<b>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)	167683035	239132104
b) Office Expenses	24772323	7313374
c) Securities	41127611	35526612
d) Other Outsourcing Agency	4007908	14735314
e)SAP Payment	0	0
f) Payment to AIIMS RPC Patient Treatment A/C	0	0
g) Repairs and maintenance (M&E)	19924099	16781216
h) Excise Duty		
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Sanitation	55100296	49770997
q) Maintaince of Buildings (Minor Work RG)	8207583	30974166
r) Payment to Engg.	0	0
s) Maintaince of Building (Non-plan)	25993922	30341855
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Swap Charges/Bank charges (IDBI Debit/Credit Card Commission)	0	0
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity		
z) Others (specify)(Contingency charge)		
<b>TOTAL</b>	<b>346816777</b>	<b>424575638</b>

**ACCOUNTS OFFICER**

**All India Institute of Medical Sciences, New Delhi**  
**Dr. Rajendra Prasad Centre for Ophthalmic Sciences**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 22- EXPENDITURE ON GRANTS, SUBSIDIES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a). Grants given to RPC Research Account	0	27055214
b). Grant given to RPC Patient Treatment Account	0	50000000
b). Subsidies given to Institutions/organisations		
<b>Total</b>	<b>0</b>	<b>77055214</b>

SCHEDULE 23- INTEREST	<b>2019-20</b>	<b>2018-19</b>
a) On fixed Loans		
b) On other Loans ( including Bank charges)		
c) Others( Specify)		
<b>Total</b>	<b>0</b>	<b>0</b>

**ACCOUNTS OFFICER**

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS**  
**BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>Schedule</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
CORPUS/CAPITAL FUND	1	2,804,054,126	2,761,091,131
RESERVES AND SURPLUS	2	85,943,750	56,284,082
EARMARKED/ENDOWMENT FUNDS	3	214,337,816	157,228,257
SECURED LOANS AND ABORROWINGS	4	-	-
UNSECURED LOANS AND BORROWINGS	5	-	-
DEFERRED CRDIT LIABILITIES	6	.....	.....
CURRENT LIABILITIES AND PROVISIONS	7	2,193,820	9,796,232
<b>TOTAL</b>		<b>3,106,529,512</b>	<b>2,984,399,702</b>
<b>ASSETS</b>			
FIXED ASSETS	8	2,431,383,334	2,380,561,426
INVESTMENTS – FROM EARMARKED/ENDOWMENT FUNDS	9	-	-
INVESTMENTS – OTHERS	10	-	-
CURRENT ASSETS, LOANS, ADVANCES ETC.	11	675,146,178	603,838,276
MISCELLANEOUS EXPENDITURE (Balance of excess of expenditure over income) (to the extent not written off or adjusted)		-	-
<b>TOTAL</b>		<b>3,106,529,512</b>	<b>2,984,399,702</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

**F & CAO**

**Chief (Dr.BRAIRCH)**

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL , AIIMS  
INCOME AND EXPENDITURE ACCOUNT FOR THE FINANCIAL YEAR 2019-20**

(Amount in ₹)

<b>INCOME</b>	<b>Schedule</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
Income form sales/services	12	27,067,493	25,275,987
Grants/Subsidies	13	1,509,005,496	1,571,296,695
Fees/Subscriptions	14		-
Income from Investments (Income on Invest, from earmarked/endow. Fund transferred to Funds)	15		-
Income from Royalty, Publication etc.	16		
Interest Earned	17	4,325,062	6,696,406
Other Income	18	-	-
Increase/(decrease) in stock of Finished goods and works-in-progress	19	-	-
<b>TOTAL(A)</b>		<b>1,540,398,051</b>	<b>1,603,269,088</b>
<b>EXPENDITURE</b>			
Establishment Expenses	20	968,554,264	905,629,239
Other Administrative Expenses etc.	21	542,145,059	674,972,163
Expenditure on Grants, Subsidies etc.	22	-	-
Interest	23		-
Depreciation (Net Total at the year-end – corresponding to schedule 8)			-
<b>TOTAL(B)</b>		<b>1,510,699,323</b>	<b>1,580,601,402</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>		<b>29,698,728</b>	<b>22,667,686</b>
Transfer to Special Reserve (Specify each)			
Transfer to /from General Reserve			-
<b>BALANCE BEING SURPLUS/(DEFICIT) (Adjusted in Income &amp; Expenditure)</b>		<b>29,698,728</b>	<b>22,667,686</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

(F & CAO)

Chief (Dr.BRAIRCH)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
RECEIPTS AND PAYMENTS FOR THE FINANCIAL YEAR 2019-20**

(Amounts in ₹)

RECEIPTS	Current Year 2019-20	Previous Year 2018-19	PAYMENTS	Current Year 2019-20	Previous Year 2018-19
<b>I. Balances (Opening)</b>			<b>I. Expenses</b>		
(a) Cash In hand	-		a) Establishment Expenses (corresponding to schedule 20)	968,554,264	905,629,239
(b) Bank Balances			b) Administrative Expenses (corresponding to schedule 21)	542,145,059	674,972,163
(i) Current Accounts	205,945,979	208,495,385	c) NPS Amount transferred to GFF	1,657,293	5,476,603
(ii) Deposit Account	30,000,000	30,000,000	<b>NSDL (NPS) Transfer to Director, AIIMS A/c.</b>	8,622,338	
<b>(a) Grant received from Government of India through AIIMS (Main)</b>			a) Out of Earmarked/Endowment funds		
(i) Grant in Aid (Capital Assets)	80,000,000	266,680,553	b) Revolving funds		
(ii) Grant in Aid (Salary)	969,005,496	911,296,695	(i) R T Revolving Fund	-	-
(iii) Grant in Aid (General)	540,000,000	660,000,000	(ii) Medical Oncology Fund	-	-
(iv) Swachhta Action Plan	-	-	(iii) Poor Patient A/c	932,765	107,355
(c) From Other Sources-Scrap Sales	330,600	217,120	(iv) Patient Treatment A/c	106,888,016	123,312,506
<b>II. On Investments from</b>			(v) HMC PF A/c	13,566,536	1,568,212
(a) Earmarked/Endow. Funds			(vii) Swachhta Action Plan	4,163,988	35,910,080
(b) Revolving Funds			<b>III. Expenditure on Fixed Assets &amp; Capital Work-in-progress</b>		
(i) R T Revolving Fund	2,915,925	2,955,000	a) Purchase of Fixed Assets	38,646,039	163,646,279
(ii) Medical Oncology Fund	801,400	471,100	b) Advance for M&E	42,754,872	84,365,482
(iii) Poor Patient A/c	601,000	1,000,384	b) Custome duty advance	-	20,000,000
(iv) Patient Treatment A/c	154,089,109	125,710,793	<b>IV. Refund of surplus money/Loans</b>		
(v) HMC PF A/c	22,000,000	-	a) To the Government of India		
NPS funds received from NSDL	2,886,219	12,870,015	b) To the State Government		
			c) To other providers of fund		





**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

		(Amount in ₹)	
		Current Year 2019-20	Previous Year 2018-19
<b>SCHEDULE 1 -CORPUS/CAPITAL FUND:</b>			
Balance as at the beginning of the year		2,761,091,131	2,49,4,410,578
Add: Contributions towards Corpus/Capital Fund		80,000,000	266,680,553
Less: M & E Condemned		37,037,005	-
Less: Excess Capitalized		-	-
Add/ (Deduct) : Balance of net income/(expenditure) Transferred from the Income and Expenditure Account		42,962,995	266,680,553
<b>BALANCE AS AT THE YEAR-END</b>		<b>2,804,054,126</b>	<b>2,761,091,131</b>
<b>SCHEDULE 2 -RESERVES AND SURPLUS:</b>			
<b>1. Capital Reserve :</b>		<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
As per last Account		.....	.....
Additional during the year		.....	.....
Less : Deductions during the year		.....	.....
<b>2. Revaluation Reserve :</b>		.....	.....
As per last Account		.....	.....
Additional during the year		.....	.....
Less : Deductions during the year		.....	.....
<b>3. Special Reserves :</b>		.....	.....
As per last Account		.....	.....
Additional during the year		.....	.....
Less : Deductions during the year		.....	.....
<b>4. General Reserves :</b>		.....	.....
As per last Account		.....	.....
Additional during the year		.....	.....
Less : Deductions during the year		.....	.....
<b>5. Excess of Income over Expenditure</b>		.....	.....
As per last Account		56,284,082	33,616,396
Less : Transfer to NCI Accounts		39,060	-
Additional during the year		29,698,728	22,667,686
<b>TOTAL</b>		<b>85,943,750</b>	<b>56,284,082</b>

( F & CAO )

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

		(Amount in ₹)	
<b>SCHEDULE 4 - SECURED LOANS AND BORROWINGS:</b>		Current Year 2019-20	Previous Year 2018-19
1.	Central Government		.....
2.	State Government (Specify)		.....
3.	Financial Institutions	.....	
a)	Terms Loans	.....	
b)	Interest accrued and due	.....	
4.	Banks:		
a)	Term Loans	.....	
-	Interest accrued and due	.....	
b)	Other Loans (Specify)	.....	
-	Interest accrued and due	.....	
5.	Other Institutions and Agencies	.....	
6.	Debentures and Bonds	.....	
7.	Others (Specify)	.....	
<b>TOTAL</b>			
<b>Note : Amounts due within one year</b>			

( F & CAO )

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 5 - UNSECURED LOANS AND BORROWINGS:	Current Year 2019-20	Previous Year 2018-19
1. Central Government	.....	.....
2. State Government (Specify)	.....	.....
3. Financial Institutions	.....	.....
4. Banks:		
a) Term Loans	.....	.....
b) Other Loans (Specify)	.....	.....
5. Other Institutions and Agencies	.....	.....
6. Debentures and Bonds	.....	.....
7. Fixed Deposits	.....	.....
8. Others (Specify)	.....	.....
Total		
<b>Note : Amounts due within one year</b>		

SCHEDULE 6 – DEFERRED CREDIT LIABILITIES:	Current Year 2019-20	Previous Year 2018-19
a) Acceptances secured by hypothecation of capital equipment and other assets	.....	.....
b) Others		
<b>TOTAL</b>	.....	.....
<b>Note : Amounts due within one year</b>		

( F & CAO )

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 7 – CURRENT LIABILITIES AND PROVISIONS	Current Year 2019-20		Previous Year 2018-19	
<b>A. CURRENT LIABILITIES</b>				
1. Acceptance				
2. Sundry Creditors:				
a) For Goods		.....		.....
b) Others	.....		.....	
3. Advances Received	.....		.....	
4. Interest accrued but not due on:				
a) Secured Loans/borrowings		.....		.....
b) Unsecured Loans/borrowings	.....		.....	
5. Statutory Liabilities:				
a) Overdue				.....
NPS (PRAN) Opening Balance	73,93,412			
Add : NPS during 2019-20	2886219		12,870,015	
Less NPS Amonut transfer to GPF 2019-20	1657293	-	5,476,603	7,393,412
Less : Paid during the year Refund (Director, AIIMS)	8622338	NIL	-	7,393,412
6. Other current liabilities				
a) Bank Overdraft (as per Cash Book)		-		-
b) EMD/ Security Deposits			-	
Opening Balance	2402820		3,912,820	
Add During 2019-20	262000		365,000	
Less Payment During 2019-20	471000	2,193,820	1,875,000	
c) FDR Issued			-	2,402,820
<b><u>TOTAL (A)</u></b>		<b>2,193,820</b>		<b>9,796,232</b>
<b>A. PROVISIONS</b>				
1. For Taxation		.....		-
2. Gratuity		.....		
3. Superannuation/Pension				
4. Accumulated Leave Encashment				
5. Trade Warranties/Claims				
Others (Specify)		.....		-
<b><u>TOTAL (B)</u></b>				-
<b><u>TOTAL (A+B)</u></b>		<b>2,193,820</b>		<b>9,796,232</b>

( F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

<b>SCHEDULE 9 – INVESTMENTS FROM EARMARKED/ENDOWMENT FUNDS</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
1. In Government Securities	.....	
2. Other approved Securities	.....	
3. Shares	.....	
4. Debentures and Bonds	.....	
5. Subsidiaries and joint Ventures	.....	
6. Others (to be specified)	.....	
<b><u>TOTAL</u></b>	.....	

<b>SCHEDULE 10 – INVESTMENTS - OTHERS</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
1. In Government Securities	.....	
2. Other approved Securities	.....	
3. Shares	.....	
4. Debentures and Bonds	.....	
5. Subsidiaries and joint Ventures	.....	
6. Others (to be specified)	.....	
<b><u>TOTAL</u></b>	.....	

( F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 11 – CURRENT ASSETS, LOANS, ADVANCES ETC.	Current Year 2019-20		Previous Year 2018-19	
A. CURRENT ASSETS:				
1. Inventors:				
a) Stores and Spares	-		-	
b) Loose Tools	-		-	
c) Stock-in-trade				
Finished Goods	-		-	
Work-in-progress	-		-	
Raw Materials	-	-	-	-
2. Sundry Debtors:				
a) Debts Outstanding for a period exceeding six months	-		-	
b) Others	-	-	-	-
3. Cash balance in hand (including cheques/drafts and imprest)	-		7,590	
4. Bank Balances:				
a) With Scheduled banks:				
-On Current Accounts (IRCH)	118,844,876		98,451,346	
On Current Accounts (NCI)	-		31,470	
-On Current Accounts (PATIENT TREATMENT A/C)	147,326,936		100,125,843	
-On Current Accounts (POOR PATIENT A/C)	9,012,603		7,090,938	
-On Current Accounts (HMCPF)	8,711,316		277,852	
-On Deposit Accounts (PATIENT TREATMENT A/C)(FDR)	30,000,000		30,000,000	
-On Deposit Accounts (IRCH) (FDR)	-	-	-	
b) With non-Scheduled Banks:				
-On Current Accounts	-		-	
-On Deposit Accounts	-		-	
-On Saving Accounts	-		-	
	-	313,895,731	-	235,985,039
5. Post Office Saving Accounts				
<b>TOTAL (A)</b>		313,895,731		235,985,039

( F & CAO )

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)		Current Year 2019-20	Previous Year 2018-19
<b>SCHEDULE 11 – CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>			
<b>B. LOANS, ADVANCES AND OTHER ASSETS</b>			
1. Loans:			
a) Staff -	Opening Balance Add: During the year Less recovering during 2019-20	643,848 - 144,788	178,000 580,000 114,152
b) Other Entities engaged in activities/objectives similar to that of the Entity			643,848
c) Other (Specify)			
2. Advances and other amounts recoverable in cash or in kind or for value to be received:			
a) On Capital Account Machinery and Equipment			
Opening Balance		314,181,664	283,489,616
Add: Addition during the year		42,754,872	84,365,482
Less : Adjusted during the year		43,626,441	53,673,434
Customs Duty/PDA Advance			
Opening Balance		50,401,725	54,503,411
Add: Addition during the year		-	20,000,000
Less : Adjusted during the year		5,586,433	24,101,686
Less : Previous year adjustment		-	-
b) NDMC (Security Deposit)			50,401,725
c) Others			2,626,000
3. Income Accrued:			
a) On Investments from Earmarked/Endowment Funds			
b) On Investments – Others			
c) On Loans and Advances			
d) Others			
(includes income due unrealized Rs.....)			
4. Claims Receivable			
<b>TOTAL (B)</b>		361,250,447	367,853,237
<b>TOTAL (A+B)</b>		675,146,178	603,838,276

(F & CAO)



**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)	
SCHEDULE 12 – INCOME FROM SALES/SERVICES	Previous Year 2018-19
Current Year 2019-20	Previous Year 2018-19
1) Income from Sales	
a) Sale of Finished Goods	
b) Sale of Raw Material	217,120
c) Sale of Scraps	330,600
2) Income from Services	
a) Hospital Receipts	
b) Professional/Consultancy Services	25,058,867
c) Agency Commission and Brokerage	26,736,893
d) Maintenance Services (Equipment/property)	
e) Others (Specify)	
<b>TOTAL</b>	<b>27,067,493</b>
	<b>25,275,987</b>
SCHEDULE 13 – GRANTS/SUBSIDIES	Previous Year 2018-19
Current Year 2019-20	Previous Year 2018-19
(Irrevocable Grants & Subsidies Received)	
1) Central Government (Through AIIMS Main)	
2) State Government(s)	1,571,296,695
3) Government Agencies	
4) Institutions/Welfare Bodies	
5) International Organizations	
<b>TOTAL</b>	<b>1,571,296,695</b>
	<b>1,509,005,496</b>

(F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

<u>SCHEDULE 14 – FEES/SUBSCRIPTIONS</u>	Current Year 2019-20	Previous Year 2018-19
1) Entrance Fees		
2) Annual Fees/subscriptions		
3) Seminar/Program Fees		
4) Consultancy Fees		
5) Others (Specify)		
<b>TOTAL</b>		

Note – Accounting Policies towards each item are to be disclosed

<u>SCHEDULE 15 – INCOME FROM INVESTMENTS</u> (Income on Invest. From Ear4marked/Endowment Funds transferred to funds)	Investment from Earmarked Fund		Investment - Others	
	Current Year 2019-20	Previous Year 2018-19	Current Year 2019-20	Previous Year 2018-19
1) Interest				
a) On Govt. Securities				
b) Other Bonds/Debentures				
2) Dividends:				
a) On Shares				
b) On Mutual Fund Securities				
3) Rents				
4) Others (Specify)				
<b>TOTAL</b>				
<b>TRANSFERRED TO EARMARKED/ENDOWMENT FUNDS</b>				

(F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL,AIMS  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 16 – INCOME FROM ROYALTY, PUBLICATIONS ETC.	Current Year 2019-20	Previous Year 2018-19
1) Income from Royalty		
2) Income from Publications		
3) Others (Specify)		
<u>TOTAL</u>		

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL,AIMS  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

SCHEDULE 17 – INTEREST EARNED	Current Year 2019-20	Previous Year 2018-19
1) On Term Deposits:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2) On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) Post Office Savings Accounts		
d) Others		
3) On Loans:		
a) Employees/Staff		
b) Others		
4) Interest on Debtors and Other Receivables		
<b>TOTAL</b>	4,325,062	6,696,406
Note – Tax deducted at source to be indicated		

(F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL,AIIMS  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

<b>SCHEDULE 18 – OTHER INCOME</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
1) Profit on sale/disposal of Assets:		
a) Owned assets		
b) Assets acquired out of grants, or received free of cost		
2) Export Incentives realized		
3) Fees for Miscellaneous Services		
4) Miscellaneous-Adjustment on account of Festival and computer advance	-	-
<b><u>TOTAL</u></b>	-	-

<b>SCHEDULE 19 – INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
a) Closing Stock		
-Finished Goods		
-Work-in-progress		
b) Less: Opening Stock		
-Finished Goods		
-Work-in-progress		
<b>NET INCREASE/(DECREASE) (a+b)</b>		

<b>SCHEDULE 20 – ESTABLISHMENT EXPENSES</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
a) Salaries and Wages	958,772,845	890,450,458
b) Travelling Allowance	9,781,419	15,178,781
c) Contribution to Provident Fund		.....
d) Contribution to Other Fund (Specify)	....	.....
e) Staff Welfare Expenses	....	.....
f) Expenses on Employees Retirement and Terminal Benefits	...	.....
g) Others :Computer advance excess adjstuted to salary and wages		.....
<b><u>TOTAL</u></b>	968,554,264	905,629,239

**(F & CAO)**

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL,AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 22 – EXPENDITURE ON GRANTS, SUBSIDIES ETC.	Current Year 2019-20	Previous Year 2018-19
a) Grants given to Institutions/Organisations		
b) Subsidies given to Institutions/Organisations		
<b><u>TOTAL</u></b>		

Note – Name of the Entities, their Activities along with the amount of Grants/subsidies are to be disclosed.

(Amount in ₹)

SCHEDULE 23 – INTEREST	Current Year 2019-20	Previous Year 2018-19
a) On Fixed Loans		
b) On Other Loans (including bank Charges)		
c) Others (specify)		
<b><u>TOTAL</u></b>		

(F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL,AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 21 – OTHER ADMINISTRATIVE EXPENSIVE ETC.	Current Year 2019-20	Previous Year 2018-19
a) Purchase (Material and Supply)	305,436,301	420,321,204
b) Regents	48,323,293	79,038,583
c) Hiring of Manpower	83,134,196	72,771,772
d) Minor Works (Engineering)	5,396,209	12,006,115
e) Sanitation Expenses	19,803,608	6,328,894
f) Maintenance of Building	26,333,491	22,682,249
g) Repairs and maintenance (M&E)	10,021,720	17,128,957
h) CAMC	42,101,408	36,975,261
i) Others (specify) Contingency Bill	1,594,833	7,719,128
<b><u>TOTAL</u></b>	<b>542,145,059</b>	<b>674,972,163</b>

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS	FUND-WISE BREAK UP						TOTALS	
	R.T. Revolving Fund	Medical Oonology Revolving Fund	Poor Patient A/c Fund	Patient Treatment A/c Fund	HMCPF	Swachhata Action Plan	Current Year 2019-20	Previous Year 2018-19
a) Opening balance of the funds	11,820,723	3,235,219	7,090,938	130,125,843	277,852	4,677,682	157,228,257	186,492,645
b) Additions to the Funds:								
i) Donations/grants	2,915,925	801,400	601,000	154,089,109	22,000,000		180,407,434	130,137,277
ii) Income from investments made on account of funds	-	-	-	-	-	-	-	-
iii) Other additions (specify nature)			2,253,430				2,253,430	1,496,488
<b>TOTAL (a+b)</b>	<b>14,736,648</b>	<b>4,036,619</b>	<b>9,945,368</b>	<b>284,214,952</b>	<b>22,277,852</b>	<b>4,677,682</b>	<b>339,889,121</b>	<b>318,126,410</b>
a) Utilization/Expenditure towards objectives of funds								
i) Capital Expenditure								
- Fixed Assets	-	-	-	-	-	-	-	-
- Others	-	-	932,765	106,888,016	13,566,536	4,163,988	125,551,305	160,898,153
Total	-	-	932,765	106,888,016	13,566,536	4,163,988	125,551,305	160,898,153
ii) Revenue Expenditure								
- Salaries, Wages and allowances etc.	-	-	-	-	-	-	-	-
- Other Administrative expenses	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-
<b>TOTAL (c)</b>	<b>-</b>	<b>-</b>	<b>932,765</b>	<b>106,888,016</b>	<b>13,566,536</b>	<b>4,163,988</b>	<b>125,551,305</b>	<b>160,898,153</b>
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>	<b>14,736,648</b>	<b>4,036,619</b>	<b>9,012,603</b>	<b>177,326,936</b>	<b>8,711,316</b>	<b>513,694</b>	<b>214,337,816</b>	<b>157,228,257</b>
<b>Notes</b>								
1. Disclosures shall be made under relevant heads based on conditions attaching to the grants								
2. Plan fund received from Central/State Governments are to be shown as separate Funds and not be mixed up with any other funds.								

(F & CAO)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 8 – FIXED ASSETS	GROSS BLOCK					DEPRECIATION					NET BLOCK	
	Cost/valuation as at beginning of the year	Additions during the year	Deductions during the year	Cost/valuation at the year-end	As at the beginning of the year	On Additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end	As at the previous year-end		
<b>A. FIXED ASSETS:</b>												
<b>1. LAND:</b>												
a) Freehold												
b) Leasehold												
<b>2. BUILDINGS:</b>												
a) On Freehold Land	339,060,768			339,060,768					339,060,768	339,060,768		
b) On Leasehold Land												
c) Ownership Flats/Premises												
d) Superstructures on Land												
Not belonging to the entity												
<b>3. PLANT MACHINERY &amp; EQUIPMENT</b>												
a) Plant Machinery	2,025,921,010	87,500,539	37,037,005	2,076,384,544					2,076,384,544	2,025,921,010		
b) Equipment	3,563,988	-		3,563,988					3,563,988	3,563,988		
c) Vehicles	12,015,660	358,374		12,374,034					12,374,034	12,015,660		
<b>4. FURNITURE, DIXTURES</b>												
<b>5. OFFICE EQUIPMENT</b>												
<b>6. COMPUTER/PERIPHERALS</b>												
<b>7. ELECTRIC INSTALLATIONS</b>												
<b>8. LIBRARY BOOKS</b>												
<b>9. TUBEWELLS &amp; W.SUPPLY</b>												
<b>10. OTHER FIXED ASSETS</b>												
<b>TOTAL OF CAURRENT YEAR</b>	<b>2,380,561,426</b>	<b>87,858,913</b>	-	<b>2,431,383,334</b>	-	-	-	-	<b>2,431,383,334</b>	<b>2,380,561,426</b>		
<b>PREVIOUS YEAR</b>	<b>2,139,140,027</b>	<b>241,421,399</b>	-	<b>2,380,561,426</b>	-	-	-	-	<b>2,380,561,426</b>	<b>2,139,140,027</b>		

(F & CAO)

(Note to be given as to cost of assets on hire purchase basis include above)

**All India Institute of Medical Sciences, New Delhi**

अखिल भारतीय आयुर्विज्ञान संस्थान

**Jai Prakash Narayan Apex Trauma Centre**

जय प्रकाश नारायण एपेक्स ट्रॉमा सेंटर

**BALANCE SHEET AS AT 31-03-2020**

तुलन पत्र ३१ मार्च, २०२० तक

(Amount in Rupees)

	Schedule	2019-20	2018-19
<b><u>CORPUS/CAPITAL FUND AND LIABILITIES</u></b>			
CORPUS/CAPITAL FUND	1	3,183,920,671.00	3,080,668,244.00
RESERVES AND SURPLUS	2	118,975,614.47	162,126,645.00
EARMARKED/ ENDOWMENT FUNDS	3	25,801,285.00	26,958,208.00
SECURED LOANS AND BORROWINGS	4		
UNSECURED LOANS AND BORROWINGS	5		
DEFERRED CREDIT LIABILITIES	6		
CURRENT LIABILITIES AND PROVISIONS	7	46,678,036.00	46,214,776.00
<b>TOTAL</b>		<b>3,375,375,606.47</b>	<b>3,315,967,873.00</b>
<b><u>ASSETS</u></b>			
FIXED ASSETS	8	3,058,103,381.00	2989866526.00
INVESTMENTS-FROM EARMARKED/ENDOWMENT FUNDS	9		
INVESTMENTS-OTHERS	10		
CURRENT ASSETS, LOANS, ADVANCES ETC.	11	317,272,227.29	326,101,347.82
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)			
<b>TOTAL</b>		<b>3,375,375,608.29</b>	<b>3,315,967,873.82</b>

AO

CHIEF, JPNATC



**All India Institute of Medical Sciences, New Delhi**

अखिल भारतीय आयुर्विज्ञान संस्थान

**Jai Prakash Narayan Apex Trauma Centre**

जय प्रकाश नारायण एपेक्स ट्रॉमा सेंटर

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2019**

आय और व्यय का खाता

	<b>Schedule</b>	<b>2019-20</b>	<b>2018-19</b>
<b>INCOME</b>			
Income from Sales/Services (Hospital Receipts)	12	30,625,746.77	32,445,169.00
Grants/Subsidies	13	2,001,700,000.00	1,925,166,374.00
Fees/Subscriptions	14		-
Income from Investments (Income on Invest. From earmeked/endow. Funds transferred to funds)	15		
Income for Royalty, Publication etc.	16		
Interest Earned	17	7,951,442.00	13,752,061.00
Other Income	18		
Increase/(decrease) in stock of Finished goods and works-in-progress	19		
<b>TOTAL (A)</b>		<b>2,040,277,188.77</b>	<b>1,971,363,604.00</b>
<b>EXPENDITURE</b>			
Establishment Expenses	20	1,218,707,909.00	1,085,166,374.00
Other Administrative Expenses etc.	21	864,720,309.30	878,010,667.00
Expenditure on Grants, Subsidies etc.	22		
Interest	23		
Depreciation (Net Total at the year-end - corresponding to Schedule 8)			
<b>TOTAL (B)</b>		<b>2,083,428,218.30</b>	<b>1,963,177,041.00</b>
<b>Balance being excess of Expenditure over income (B-A)</b>		<b>(-43151030.53)</b>	<b>8,186,563.00</b>
Transfer to Special Reserve (Specify each)			
Transfer to /from General Reserve			
<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/CAPITAL FUND</b>		<b>(-43151030.53)</b>	<b>8,186,563.00</b>

Accounts Officer

CHIEF, JPNATC

All India Institute of Medical Sciences, New Delhi

अखिल भारतीय आयुर्विज्ञान संस्थान

Jai Prakash Narayan Apex Trauma Centre

जय प्रकाश नारायण एपेक्स ट्रीमा सेंटर

RECEIPT AND PAYMENTS FOR THE YEAR ENDED 31-03-2019

आय और व्यय का खाता

	(Amount in Rupees)		(Amount in Rupees)	
	2019-20	2018-19	2019-20	2018-19
<b>Receipts</b>			<b>Payments</b>	
<b>1. Opening Balances</b>			<b>1. Expenses</b>	
(a) Cash in Hand		4.00	(a) Establishment Expenses (corresponding to schedule 20)	1,218,707,909.00
(b) Bank Balances	204,653,632.82	206,493,093.00	(b) Administrative Expenses (Corresponding to schedule 21A)	867,786,256.00
(i) In current accounts			RIGS Charges and Other Bank Charges	8,909.30
(ii) In deposit accounts			<b>2. Payments made against funds for various projects</b>	
(iii) In saving accounts			(a) Non-RPC Scheme	
			(b) SAP	1,156,923.00
<b>2. Grant Received</b>			<b>3. Investments and deposits made</b>	
(a) From Government of India through AIIMS (Main)			(a) Out of Earmarked/Endowment Funds	
(i) Grant in Aid (Plan) (Salaries)	1,161,700,000.00	1,085,166,374.00	(b) Out of Own funds (Investments-others)	
(ii) Grant in Aid (General)	840,000,000.00	840,000,000.00		
(iii) Grant in Aid (Capital Assets)	134,100,000.00	138,646,715.00	<b>4. Expenditure on Fixed Assets &amp; Capital Work-in-Progress</b>	
(iv) Swachhita Action Plan		-	(a) Purchase of Fixed Assets	97,520,744.00
(v) Grant from Ministry of Ayush		330,000.00	(b) Expenditure on capital work-in-progress	
(b) From state Government			(c) Custom Duty	30,000,000.00
			(d) Letter of Credit	6,579,256.00
(c) From other sources (Schemes)			<b>5. Refund of surplus money/loans</b>	
<b>3. Income on Investment from</b>			(a) To the Government of India	
(a) Earmarked/Endow. Funds			(b) To the State Government	
(b) Own funds (Oth. Investments)			(c) To other provides of funds	
			<b>6. Finance Charges (Interest)</b>	
<b>4. Interest received</b>			<b>NEFT charges</b>	
(a) On bank deposits	7,951,442.00	13,752,061.00	<b>7. Other Payments</b>	
(b) Loans, Advances etc.			NIAF	
LC margin	3,074,856.00		Refund of Earnest Money Deposit	2,179,000.00
Car			<b>Employees Recovery payment</b>	
HBA			Recoveries from employees remitted to AIIMS (Main)	
Computer			Outside Recoveries	
Scooter				

<b>5. Other Income</b>					iii) GPF (Subscription and Advances)		
(i) Hospital Receipts					iv) NPS Recovery		
ii) Fee	30,625,746.77	32,416,584.00			v) NPS Recovery (without PRAN)		
iii) Credit Advise		28,585.00					
<b>6. Amount Borrowed</b>					<b>Loan, Advances and Other Assets</b>		
<b>7. Any other receipts</b>					Advance payment for purchase of Material and Supply		
(a) NIAF					Computer Advance		
(b) Earnest Money Deposits	2,674,000.00	3,838,000.00			Festival Advance		
(c) Employees Recovery					Recovery/Deductions (Engg Works)		
i) Recoveries from employees (Festival)					Recovery/Deductions (other than Engg Works)		
ii) Outside Recoveries					CTRF		
iii) GPF (Subscription and Advances)					AITSC		
iv) NPS Recovery					Project		
v) NPS fund received from NSDL		4,550,190.00			Patitent Expenses	2,155,949.00	2,062,320.00
					ATLS		
<b>Loan, Advances and Other Assets/Recovery</b>							
Car Advance Recovery					<b>8. Closing Balances</b>		
Computer Advance Recovery					(a) Cash in hand		-
House Building Advance Recovery					(b) Bank Balances		
Festival Advance Recovery					(i) In currents accounts	160,808,940.29	204,653,632.82
Recovery/Deductions (Engg Works)					(ii) In deposit accounts		
Recovery/Deductions (other than Engg Works)					(iii) In saving accounts		
AITSC							
CTRF							
PATIENT RECEIPTS /GRANT	2,046,537.00	4,714,260.00					
ATLS							
RIA LAB							
PROJECT							
CANCEL CHEQUE	77,672.00	5,373,706.00					
M&E Liabilities							
Engg. Liabilities							
<b>Total</b>	<b>2,386,903,886.59</b>	<b>2,335,309,572.00</b>			<b>Total</b>	<b>2,386,903,886.59</b>	<b>2,335,309,572.82</b>

Account Officer (TC)

CHIEF, JPNATC

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

	<b>2019-20</b>		<b>2018-19</b>	
<b>SCHEDULE 1- CORPUS/CAPITAL FUND:</b>				
Balances as at the beginning of the year		3,080,668,244.00	2,982,352,665.00	
Add : Contributions towards Corpus/Capital Fund		134,100,000.00	138,646,715.00	
Less : Fixed Assets Condemned during the year		30,847,573.00	40,331,136.00	3,080,668,244.00
<b>BALANCE AS AT THE YEAR-END</b>		<b>3,183,920,671.00</b>	<b>3,183,920,671.00</b>	<b>3,080,668,244.00</b>
<b>SCHEDULE 2- RESERVES AND SURPLUS:</b>	<b>Current Year</b>		<b>Previous Year</b>	
1. Capital Reserve:				
As per last Account				
Addition during the year				
Less: Deductions during the year				
2. Revaluation Reserve				
As per last Account				
Addition during the year				
Less: Deductions during the year				
3. Special Reserves				
As per last Account				
Addition during the year				
Less: Deductions during the year				
4. General Reserve				
As per last Account		162,126,645.00	153,940,082.00	
Addition during the year		(-43151030.53)	8,186,563.00	
Less: Deductions during the year				
<b>TOTAL</b>		<b>118,975,614.47</b>	<b>118,975,614.47</b>	<b>162,126,645.00</b>

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCHEDULE 3 - EARMARKED/ENDOWMENT FUN	Scheme Non-JPNATC						Scheme Non-JPNATC			Scheme Non-JPNATC			TOTALS						
	RIA Lab	SAP	Ayush	RIA Lab	SAP	Ayush	RIA Lab	SAP	Ayush	RIA Lab	SAP	Ayush	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	
a) Opening balance of the funds	41650.00	26586558.00	330000.00	41650.00	45688405.00		41650.00	45688405.00		41650.00			41650.00	45730055.00	45730055.00	41650.00			
b) Additions to the Funds:																			
i. Donations/grants from AYUSH				0.00	0.00	330000.00													50000000.00
ii. Income from investments made on account of funds																			
iii. Other additions (specify nature)																			
iv. Less Expenditure during the year																			
<b>TOTAL (a+b)</b>	<b>41650.00</b>	<b>26586558.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>45688405.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>45688405.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>50000000.00</b>	<b>50000000.00</b>	<b>41650.00</b>	<b>45730055.00</b>	<b>45730055.00</b>	<b>50041650.00</b>	<b>50041650.00</b>	<b>50041650.00</b>	<b>50041650.00</b>
c) Utilisation/Expenditure towards objectives of funds																			
i. <u>Capital Expenditure</u>																			
- Fixed Assets		1156923.00			19101847.00														4311595.00
- Others																			
ii. <u>Revenue Expenditure</u>																			
- Salaries, Wages and allowances etc.																			
- Rent																			
- Other Administrative expenses																			
<b>Total</b>					19101847.00			19101847.00											0.00
<b>TOTAL (c)</b>		<b>1156923.00</b>			<b>19101847.00</b>			<b>19101847.00</b>					<b>4311595.00</b>	<b>4311595.00</b>	<b>4311595.00</b>	<b>4311595.00</b>	<b>4311595.00</b>	<b>4311595.00</b>	<b>4311595.00</b>
<b>NET BALANCE AS AT THE YEAR-END(a+b-c)</b>	<b>41650.00</b>	<b>25429635.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>26586558.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>26586558.00</b>	<b>330000.00</b>	<b>41650.00</b>	<b>50000000.00</b>	<b>50000000.00</b>	<b>41650.00</b>	<b>26958208.00</b>	<b>26958208.00</b>	<b>26958208.00</b>	<b>26958208.00</b>	<b>26958208.00</b>	<b>26958208.00</b>

\* Swachhita Action Plan

All India Institute of Medical Sciences, New Delhi  
 Jai Prakash Narayan Apex Trauma Centre  
 SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

	(Amount in Rupees)		
<b>SCHEDULE 4-SECURED LOANS AND BORROWINGS:</b>	<u>2019-20</u>	2018-19	2017-18
1. Central Government			
2. State Government			
3. Financial Institutions			
a) Term Loans			
b) Interest accrued and due			
4. Banks:			
a) Term Loans			
- Interest accrued and due			
b) Other Loans (specify)			
- Interest accrued and due			
5. Other Institutions and Agencies			
6. Debentures and Bonds			
7. Others (Specify)			
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>

All India Institute of Medical Sciences, New Delhi  
 Jai Prakash Narayan Apex Trauma Centre  
 SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

	(Amount in Rupees)		
	2019-20	2018-19	2017-18
<b>SCHEDULE 5 - UNSECURED LOANS AND BORROWING</b>			
1. Central Government			
2. State Government			
3. Financial Institutions			
4. Banks:			
a) Term Loans			
b) Other Loans (specify)			
5. Other Institutions and Agencies			
6. Debentures and Bonds			
7. Fixed Deposits			
8. Others (Specify)			
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>

	Current Year	Previous Year	Previous Year
<b>SCHEDULE 6 - DEFERRED CREDIT LIABILITIES:</b>			
a) Acceptances secured by hypothecation of capital equipment and other assets			
b) Others			
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS</b>	<b>2019-20</b>		<b>2018-19</b>	
<b>A. CURRENT LIABILITIES AND PROVISIONS</b>				
1. Acceptances				
2. Sundry Creditors:				
a) For Goods				
a) Others				
3. Advances Received for patients from Govt Agencies				
i) NIAF				
Opening Balance				
Received during the year				
Expenditure during the year				
4. Projects Grants				
ii) NPCB				
5. Interest accrued but not due on:				
a) Secured Loans/borrowings				
a) Unsecured Loans/borrowings				
6. Statutory Liabilities:				
a) Overdue				
a) Others				
7. Security Deposits (EMD)				
Opening Balance	9,061,968.00		9,813,968.00	
Received during the year	2,674,000.00		3,838,000.00	
Refund during the year	2,179,000.00	9,556,968.00	4,590,000.00	9,061,968.00
6. Other current Liabilities		37,121,068.00		37,152,808.00
9. Amt against recoveries to be remitted to AIIMS (MAIN)				
Opening Balance			3,078,017.00	
Add : Create during the year			-	
Less : Remitted to AIIMS (MAIN)			3,078,017.00	-
10. Custom Duty to be paid to Store (D.O.)				
Opening Balance				
Less : Remitted to AIIMS (MAIN)				
<b>TOTAL (A)</b>		<b>46,678,036.00</b>		<b>46,214,776.00</b>
<b>B. PROVISIONS</b>				
1. For Taxation				
2. Gratuity				
3. Superannuation/Pension				
6. Accumulated Leave Encashment				
6. Trade Warranties/Claims				
6. Others (specify)				
<b>TOTAL (B)</b>				
<b>TOTAL (A+B)</b>		<b>46,678,036.00</b>		<b>46,214,776.00</b>

AO



All India Institute of Medical Sciences, New Delhi  
Jai Prakash Narayan Apex Trauma Centre  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

SCHEDULE & FIXED ASSETS DESCRIPTION	GROSS BLOCK			GROSS BLOCK			NET BLOCK		
	Cost/valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost/valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost/ Valuation at the year end	As at the Current year-end	As at the Previous year-end
A. <b>FIXED ASSETS:</b>									
1. <b>LAND:</b>									
a) Freehold	54,310,794.00			54,310,794.00			54,310,794.00	54,310,794.00	54,310,794.00
b) Leasehold									
2. <b>BUILDING</b>									
a) On Freehold Land	689,076,549.00			689,076,549.00			689,076,549.00	689,076,549.00	689,076,549.00
b) On Leasehold Land									
c) Ownership Flats/ Superstructures on Land not belonging to the entity									
3. <b>EQUIPMENT</b>	2,219,455,359.00	97,493,549.00	30,847,573.00	2,114,916,592.00	144,869,903.00	40,331,136.00	2,219,455,359.00	2,289,176,191.00	2,114,916,592.00
4. <b>VEHICLES</b>	8,395,972.00			8,395,972.00			8,395,972.00	8,395,972.00	8,395,972.00
5. <b>FURNITURE, FIXTURES &amp; OFFICE EQUIPMENT</b>	18,627,852.00	1,590,879.00		15,294,125.00	3,333,727.00		18,627,852.00	20,218,731.00	15,294,125.00
6. <b>OFFICE EQUIPMENT</b>									
7. <b>ELECTRIC</b>									
8. <b>LIBRARY BOOKS</b>									
9. <b>TUBEWELLS &amp; W.</b>									
10. <b>OTHER FIXED ASSETS</b>									
<b>TOTAL OF CURRENT YEAR</b>	<b>2,989,866,526.00</b>	<b>99,084,428.00</b>	<b>30,847,573.00</b>	<b>2,881,994,032.00</b>	<b>148,203,630.00</b>	<b>40,331,136.00</b>	<b>2,989,866,526.00</b>	<b>3,061,178,237.00</b>	<b>2,989,866,526.00</b>
<b>B. CAPITAL WORK-IN-PROGRESS</b>									
<b>TOTAL</b>									

AO

*Purchased of Assets (M&E) During the Year*

Amount	2019-20	2018-19
<i>Assets During the Year as per Receipts and Payment Account</i>	134,100,000.00	138,646,715.00
<i>Less- Furniture Purchased during the Year</i>	1,590,879.00	3,333,727.00
<i>Less- L.C. Margin During the Year (Separately showed in Schedule 11)</i>		
<i>Less- M&amp;E Payable Set off during the Year</i>	6,579,256.00	13,071,577.00
<i>Less- Custom Duty Incorporation during the year</i>		-
<i>Add- Custom Duty Incorporation Adjusted during the Year</i>	30,000,000.00	5,000,000.00
<i>Add- PDA Incorporation Adjusted during the Year</i>	95,929,865.00	117,241,411.00
<i>Net Assets (M&amp;E) Purchased during the year</i>	1,560,934.00	27,386,132.00
	2,750.00	243,360.00
	<b>97,493,549.00</b>	<b>144,869,903.00</b>

All India Institute of Medical Sciences, New Delhi  
 Jai Prakash Narayan Apex Trauma Centre  
 All India Institute of Medical Sciences, New Delhi

(Amount in Rupees)

<b>SCHECULE 9 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>	<b>2019-20</b>	<b>2018-19</b>	<b>2017-18</b>
1. In Government Securities			
2. Other approved Securities			
3. Shares			
4. Debenutres and Bonds			
5. Subsidiaries and Joint Venutres			0
6. Others (to be specified)			
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>SCHECULE 10 - INVESTMENTS - OTHERS</b>	<b>2019-20</b>	<b>2018-19</b>	<b>2017-18</b>
1. In Government Securities			
2. Other approved Securities			
3. Shares			
4. Debenutres and Bonds			
5. Subsidiaries and Joint Venutres			
6. Others (to be specified)			
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>	<b>0</b>

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2019**

<b>SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.</b>		<b>(Amount in Rupees)</b>			
		<b>2019-20</b>		<b>2018-19</b>	
<b>A CURRENT ASSETS:</b>					
<b>1. Advances for Procurement</b>					
a) M&E Foreign Purchases	Opening Balance	89,078,600.00		76,007,023.00	
	Addition during the year	6,579,256.00		13,071,577.00	
	Addition during the year	-			
	Adjusted during the year		95,657,856.00		89,078,600.00
b) Material and Supply	Opening Balance				
	Addition during the year				
	Adjusted during the year				
c) Stock-in-trade	Finished Goods				
	Work-in-progress				
	Raw Material				
<b>2. Sundry Debtors:</b>					
a) Debts Outstanding for a period exceeding six months					
b) Others					
<b>3. Cash balances in hand (including cheques/ drafts and imprest)</b>					
<b>4. Bank Balances:</b>					
a) With Scheduled Banks:					
On Current Accounts			160,808,940.29		204,653,632.82
On Deposit Accounts (includes margin money)					
On Savings Accounts					
b) With non-Scheduled Banks:					
On Current Accounts					
On Deposit Accounts					
On Savings Accounts					
<b>5. PDA Advance</b>					
	opening balance	7,709,265.00		7,951,625.00	
	adjusted during the year	2,750.00	7,706,515.00	242,360.00	7,709,265.00
<b>6. Custom Duty Advance</b>					
	Opening Balance	9,676,170.00		32,062,302.00	
	Added during the year	30,000,000.00		5,000,000.00	
	Adjusted during the year	1,560,934.00	38,115,236.00	27,386,132.00	9,676,170.00
<b>8. Others</b>					
a. HSCC			6,500,000.00		6,500,000.00
b. NDMC			5,979,000.00		5,979,000.00
c. IGL			1,334,680.00		1,334,680.00
d. TRIGEN			1,170,000.00		1,170,000.00
<b>TOTAL (A)</b>			<b>317,272,227.29</b>		<b>326,101,347.82</b>



**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 12 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>								<b>2019-20</b>	<b>2018-19</b>
<b>1) Income from Sales</b>									
	1. Hospital receipts							30,625,746.77	32,445,169.00
	2. Administrative charges (Projects)								-
	3. NSDL Employee's Share								-
	4. NSDL Employer's Share								-
<b>2) Income from Services</b>									
	a) Labour and Processing Charges								
	b) Professional / Consultancy Services								
	c) Agency Commission and Brokerage								
	d) Maintenance Services (Equipment/Property)								
	e) Others (Specify) Fees								-
<b>TOTAL</b>								<b>30,625,746.77</b>	<b>32,445,169.00</b>
<b>SCHEDULE 13 - GRANTS /SUBSIDIES</b>									<b>2018-19</b>
<b>1) Income from Sales</b>									
<b>(Irrevocable Grants &amp; Subsidies Received)</b>									
	1. Central Government (Through AIIMS Main)							2,001,700,000.00	1,925,166,374.00
	2. State Government(s)								
	3. Government Agencies								
	4. Institutions/ Welfare Bodies								
	5. International Organisations								
	6. Others (Specify) Grant from Ministry of Ayush								-
<b>TOTAL</b>								<b>2,001,700,000.00</b>	<b>1,925,166,374.00</b>

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-20**

**(Amount in Rupees)**

<b>SCHEDULE 14 - FEES/SUBSCRIPTIONS</b>	<b>2019-20</b>	<b>2018-19</b>
1. Tuition & Examination Fee		
2. Licence Fee		
3. Seminar/Program Fees		28,585.00
4. Consultancy Fees		
5. Others (Specify) EHS		
<b>TOTAL</b>	<b>0</b>	

<b>SCHEDULE 15 - INCOME FROM INVESTMENTS</b>	<b>Investment from Earmarked Fund</b>	
(Income on Invest. From Earmarked/Endowment Funds transferred to)	<b>2019-20</b>	<b>2018-19</b>
1. Interest		
a) On Govt. Securities		
a) Other Bonds/Debentures		
2. Dividends:		
a) On Shares		
a) On Mutual Fund Securities		
3. Rents		
4. Others (Specify)		
<b>TOTAL</b>		
<b>TRANSFERRED TO EARMARKED/EDNOWMENT FUNDS</b>	<b>0</b>	-

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

**(Amount in Rupees)**

<b>SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATION E</b>	<b>2019-20</b>	<b>2018-19</b>
1. Income from Royalty		
2. Income from Publications		
3. Others (specify)		
<b><u>TOTAL</u></b>		
<b>SCHEDULE 17 - INTEREST EARNED</b>	<b>2019-20</b>	<b>2018-19</b>
1. On Term Deposits:		
a) With Scheduled Banks	7,951,442.00	13,752,061.00
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2. On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) Post Office Savings Accounts		
d) Others		
3. On Loans:		
a) Employees/Staff		
b) Others		
4. Interest on Debtors and other Receivables		
<b><u>TOTAL</u></b>	<b>7,951,442.00</b>	<b>13,752,061.00</b>

**Accounts Officer**

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

<b><u>SCHEDULE 18 - OTHERS INCOME</u></b>	<b><u>2019-20</u></b>	<b><u>2018-19</u></b>
1. Misc. Receipt		
2. Estb. Receipt (Scheme)		
3. Others (specify)		
<b><u>TOTAL</u></b>		
<b><u>SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</u></b>	<b><u>2019-20</u></b>	<b><u>2018-19</u></b>
a) Closing stock		
- Finished Goods		
- Work-in-progress		
b) Less: Opening Stock		
- Finished Goods		
- Work-in-progress		
<b><u>NET INCREASE/(DECREASE) [a+b]</u></b>		
<b><u>SCHEDULE 20 - ESTABLISHMENT EXPENSES</u></b>	<b><u>Current Year</u></b>	<b><u>Previous Year</u></b>
Salaries and Wages	₹ 1,218,707,909.00	₹ 1,081,937,255.00
Allowances and Bonus		
Travelling Allowances		₹ 3,229,119.00
Contribution to NPS		
Contribution to Other Fund (Scheme Cell)		
Staff Welfare Expenses		
Expenses on Employees "Retirement and Terminal Benefits"		
Others (NPS & LSPC)		
<b><u>TOTAL</u></b>	<b>₹ 1,218,707,909.00</b>	<b>₹ 1,085,166,374.00</b>



**All India Institute of Medical Sciences, New Delhi**

**Jai Prakash Narayan Apex Trauma Centre**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

**(Amount in Rupees)**

<b>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES ETC</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)	475,193,231.00	489,153,948.00
b) Material received against advance paid during last years		
c) Office Expenses		
d) Securities	81,512,110.00	68,571,200.00
e) Other Outsourcing Agency	112,614,169.00	100,782,470.00
f) Administrative Charges (Projects)		
g) Engg. Maintenances	176,400,925.00	191,553,312.00
h) Bank charges	8,909.30	4,956.00
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Sanitation		
q) Maintaince of Buildings (Minor Work RG)		3,144,063.00
r) Maintaince of M&E (CAMC/AMC)		
s) Maintaince of Building (Non-plan)		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Swap Charges (IDBI Debit/Credit Card Commission)		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Insurance		
z) Advertisement and Publicity		
aa) Others (specify)(Contingency charge)	18,990,965.00	24,800,718.00
<b>TOTAL</b>	<b>864,720,309.30</b>	<b>878,010,667.00</b>

**Accounts Officer**

**Other Current Liabilities**

	<b>2019-20</b>		<b>2018-19</b>	
<b>i) ATLS</b>				
Opening	629739.00		629,739.00	
Add - Received During the Year				
Less- Expenditure During the Year				
ATLS on Closing Date		629739.00		629,739.00
<b>ii) AITSC</b>				
Opening	8998.00		8,998.00	
Add - Received During the Year				
Less- Expenditure During the Year				
Less Adjusted During the Year				
AITSC on Closing date		8998.00		8,998.00
<b>iii) Grant /Receipt for Patients</b>				
Opening Balance	15450239.00		12,798,299.00	
Add- Receipts During the year	2046537.00		4,714,260.00	
Add- Adjusted Durign the year	2,155,949.00		2,062,320.00	
Deduct - Expenditure during the year			-	
Project on Closing Date		15340827.00		15,450,239.00
<b>v) Unadjusted Cancel Cheque during the year</b>				
	6461055.00		1,087,349.00	
Add - Cancel Cheques During the Year	77,672.00		5,373,706.00	
Less- Cheque Cleared During the Year			-	
Cancel Cheque on Closing Date		6538727.00		6,461,055.00
<b>vi) Performance Bank Gurantee</b>	131000.00	131000.00		131,000.00
<b>vii) Festival Advance from Main AIIMS</b>		7350.00		7,350.00
<b>viii) CTRF</b>				
Opening	84000.00		84,000.00	
Add - Received During the Year				
Less- Expenditure During the Year				
CTRF on Closing Date		84000.00		84,000.00
<b>ix) NSDL Employer's Share</b>		4,550,190.00		4,550,190.00
<b>x) Other Liabilities</b>				-
<b>xi) M&amp;E Payble</b>				
Opening	9,830,237.00		9,830,237.00	
Add - Received During the Year			-	
Less- Expenditure During the Year			-	
M&E Payble on Closing Date		9830237.00		9,830,237.00
		<b>37121068.00</b>		<b>37,152,808.00</b>

**All India Institute of Medical Sciences, New Delhi**  
**Jai Prakash Narayan Apex Trauma Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(Amount in Rupees)

<b>SCHEDULE 21A - OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)(478268087.00-3074856)	475,193,231.00	489,153,948.00
b) Material received against advance paid during last years		
c) Office Expenses		
d) Securities	81,512,110.00	68,571,200.00
e) Other Outsourcing Agency	112,614,169.00	100,782,470.00
f) Administrative Charges (Projects)		
g) Engg. Maintenances	176,400,925.00	191,553,312.00
h) Bank charges	8,909.30	4,956.00
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Sanitation		
q) Maintaince of Buildings (Minor Work RG)		3,144,063.00
r) Maintaince of M&E (CAMC/AMC)		
s) Maintaince of Building (Non-plan)		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Swap Charges (IDBI Debit/Credit Card Commission)		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Insurance		
z) Advertisement and Publicity		
aa) Others (specify)(Contingency charge)	18,990,965.00	24,800,718.00
<b>TOTAL</b>	<b>864,720,309.30</b>	<b>878,010,667.00</b>

Accounts Officer

**All India Institute of Medical Sciences, New Delhi**  
 अखिल भारतीय आयुर्विज्ञान संस्थान  
**Jai Prakash Narayan Apex Trauma Centre**  
 जय प्रकाश नारायण एपेक्स ट्रॉमा सेंटर  
**RECEIPT AND PAYMENTS FOR THE YEAR ENDED 31-03-2019**  
 आय और व्यय का खाता

**Poor Patients Fund A/c Trauma Centre**

Receipts	Amount In Rupees	Payments	Amount In Rupees
<b>Opening Balance as on 02.04.2019</b>			
Received against ch. No. 736703 Sh Shekh Ali	40,000.00	AC keeping fee deducted by the bank dt. 27.01.2020	1,297.00
Received against Ch. 315813	75,000.00	AC Keeping fee deducted by the bank dt 12.03.20	649.00
Received against Ch. 000312	5,000.00	<b>Balance as on 31.03.2020</b>	118,054.00
<b>Total</b>	<b>120,000.00</b>	<b>Total</b>	<b>120,000.00</b>

Accounts Officer  
 Trauma Centre, AIIMS

**CENTRE FOR DENTAL EDUCATION & RESEARCH  
ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI  
RECEIPTS AND PAYMENTS FOR THE PERIOD/YEAR ENDED 31.03.2020**

RECEIPTS	2019-20	2018-19	PAYMENTS	2019-20	2018-19
<b>1. Opening Balance</b>					
a) Cash in Hand	5,000.00	5,000.00	<b>I. Expenses</b>		
b) Bank Balances			a) Establishment Expenses (Schedule 20)	270,905,625.60	64,935,117.00
i) In current accounts			b) Administrative Expenses (Schedule 21A)	116,997,730.00	126,630,245.00
CDER-10874584984	88,354,704.00	87,038,803.00			
ii) In deposit accounts		-			
iii) saving accounts		-			
<b>II. Grants Received</b>			<b>projects</b>		
a) From Government of India (Through AIIMS)			Dental Council of India		21,000.00
<b>Capital (Assets New)</b>			Patient Treatment fund	972,818.00	1,475,478.00
Grant-in-Aid (Plan)	30000000		Ayush meeting		
(Return to AIIMS Main)	9646151	20,088,421.00	Project NOHP	4,583,758.00	3,876,581.00
<b>Revenue General</b>			Project PIT & FISSURE		330,950.00
a) Grant-in-Aid (Salary)	263700000		Project SUGAR		3,000.00
(Return to AIIMS Main)	0	64,935,117.00	Project Web & Mobile App		
b) Grant-in-Aid (General)	117500000	127,500,000.00	Workshop Drafting Policy	281,360.00	18,177.00
(Return to AIIMS Main)	498487		Swachhta Action Plan (SAP)	12,526,649.00	2,709,125.00
c) From State Government			WHO		9,435.00
d) From other sources			WHO (MOOC)	1,556,360.00	-
e) Grants received for specific purpose					
<b>Funds received for various projects</b>			<b>III. Investments and deposits made</b>		
Dental Council Of India		21,000.00	a) out of Earmarked/Endow. Funds		
Patient Treatment fund	1,174,818.00	1,509,200.00	b) out of Own Funds(Oth. Investment)	40,000,000.00	-
Project MoHWF			<b>IV. Expenditure on Fixed Assets &amp; Capital Work-in-Progress</b>		
Project NOHP		4,337,440.00	a) Purchase of Fixed Assets	13,174,250.00	14,282,562.00
Project PIT & FISSURE		236,914.00	b) Expenditure on Capital Work-in-Progress		-
Project SUGAR			c) Letter of Credit	5,728,631.00	5,805,859.00

Project Web & Mobile App	90,435.00	-	d) Custom Duty	5,000,000.00	
Workshop Drafting Policy		300,000.00	e) PDA	500,000.00	
Swachhta Action Plan (SAP)		-	<b>V. Refund of Surplus money/loans</b>		
WHO		96,225.00	a) To the Government of India		
WHO (MOOC)	1,200,000.00	400,000.00	b) To the State Government		
			c) To other providers of funds		
<b>III. Income on Investments from</b>					
a) Earmarked/Endow. Funds		-			
b) Own Funds(Oth. Investment)		-	<b>VI. Finance Charges (Interest)</b>	6,153.00	2,415.00
<b>IV. Interst Received</b>			<b>VII. Other Payments</b>		
a) On Bank deposits	-	3,837,361.00	a) Employee Recovery		20,687,167.00
b) Loans, Advances etc.			b) Outside Recovery		1,538,030.00
			c) Engg. Recovery		3,347,544.00
<b>V. Other Income</b>			d) Contingency Advance		
Hospital Receipt	1,957,065.00	2,183,330.00	e) EMD	42,000.00	1,181,000.00
Miscellaneous Receipt	337,956.00	219,801.00			
<b>VI. Amount Borrowed</b>					
			<b>VIII. Closing Balances</b>		
<b>VII. Any other receipts</b>			a) Cash in Hand	5,000.00	5,000.00
Employee Recovery		20,687,167.00	b) Bank Balances		
Outside Recovery		1,538,030.00	i) In current accounts		
			CDER-10874584984	22,063,005.40	88,354,704.02
Engg. Recovery		-	ii) In deposit accounts		
Contingency Advance		1,580.00	iii) saving accounts		
EMD	168,000.00	278,000.00			
<b>TOTAL</b>	<b>494,343,340.00</b>	<b>335,213,389.00</b>	<b>TOTAL</b>	<b>494,343,340.00</b>	<b>335,213,389.02</b>

Chief, CDER

Accounts Officer (CDER)

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity** CENTRE FOR DENTAL EDUCATION & RESEARCH  
**BALANCE SHEET AS AT 31-03-2020**

		(Amount-Rs.)	
	Schedule	Current Year	Pervious Year
<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>			
CORPUS/CAPITAL FUND	1	650,505,049.00	630,151,200.00
RESERVES AND SURPLUS	2	25,594,507.40	30,507,482.00
EARMARKED/ ENDOWMENT FUNDS	3	34,869,667.00	52,325,359.00
SECURED LOANS AND BORROWINGS	4	-	-
UNSECURED LOANS AND BORROWINGS	5	-	-
DEFERRED CREDIT LIABILITIES	6	-	-
CURRENT LIABILITIES AND PROVISIONS	7	7,899,112.00	7,773,112.00
<b>TOTAL</b>		<b>718,868,335.40</b>	<b>720,757,153.00</b>
<b>ASSETS</b>			
FIXED ASSETS	8	637,063,995.00	623,297,295.00
INVESTMENTS-FROM EARMARKED/ENDOWMENT FUNDS	9	-	-
INVESTMENTS-OTHERS	10	-	-
CURRENT ASSETS, LOANS , ADVANCES ETC.	11	81,804,340.40	97,459,858.00
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)			
<b>TOTAL</b>		<b>718,868,335.40</b>	<b>720,757,153.00</b>
SIGIFICANT ACCOUNTING POLICIES	24		-
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

**Chief, CDER**

(Accounts Officer)  
**CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**

**INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31-03-2020**

<b>INCOME</b>	<b>Schedule</b>	<b>Current Year</b>	<b>Previous Year</b>
Hospital Receipts	12	1,957,065.00	2,183,330.00
Grants/Subsidies	13	380,701,513.00	192,435,117.00
Fees/Subscriptions	14	-	-
Income from Investments (Income on Invest. From earmeked/endow.Fund transferred to funds)	15	-	-
Income for Royalty, Publication etc.	16	-	-
Interest Earned	17	-	3,837,361.00
Other Income	18	337,956.00	219,801.00
Increase/(decrease) in stock of Finished goods and works-in-progress	19	-	-
<b>TOTAL (A)</b>		<b>382,996,534.00</b>	<b>198,675,609.00</b>
<b>EXPENDITURE</b>			
Establishment Expenses	20	270,905,625.60	64,935,117.00
Other Administrative Expenses etc.	21	116,997,730.00	126,630,245.00
Adjusment of Advances	21 (A)	-	23,420.00
Expenditure on Grants, Subsidies etc.	22	-	-
Interest	23	6,153.00	2,415.00
Depreciation (Net Total at the year-end - corresponding to Schedule 8)			
<b>TOTAL (B)</b>		<b>387,909,508.60</b>	<b>191,591,197.00</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>			
Transfer to Special Reserve (Specify each)		-4,912,974.60	7,084,412.00
Transfer to /from General Reserve			
<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/ CAPITAL FUND</b>			

**Chief, CDER**

**(Accounts Officer) CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b><u>SCHEDULE 1- CORPUS/CAPITLA FUND:</u></b>	<b>Current Year</b>	<b>Previous Year</b>
Balances as at the begining of the year	630,151,200.00	
Add : Contributions towards Corpus/Capital Fund	20,353,849.00	630,151,200.00
Less : Fixed Assets Condemned during the year		
<b>BALANCE AS AT THE YEAR-END</b>	<b>650,505,049.00</b>	<b>630,151,200.00</b>

<b><u>SCHEDULE 2- RESERVES AND SURPLUS:</u></b>		
1. Capital Reserve:		
As per last Account		
Addition during the year		
Less: Deductions during the year		
2. Revaluation Reserve		
As per last Account		
Addition during the year		
Less: Deductions during the year		
3. Special Reserves		
As per last Account		
Addition during the year		
Less: Deductions during the year		
4. General Reserve		
As per last Account	30,507,482.00	30,507,482.00
Addition during the year	-4,912,974.60	
Less: Deductions during the year		
<b><u>TOTAL</u></b>	<b>25,594,507.40</b>	<b>30,507,482.00</b>

(Accounts Officer) CDER



**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS	FUND-WISE BREAK UP										TOTALS		
	NOHP	SAP Fund	NRRIDS	Sugar Fund	Pit & Fissure	Web & Mobile App Project	Patient Treatment	WHO	WHO (MOOC)	Workshop Drafting Policy	Current Year	Previous Year	
a) Opening balance of the funds	5,023,419.00	45,237,848.00	-	33,924.00	6,861.00	841,972.00	412,722.00	86,790.00	400,000.00	281,823.00	52,325,359.00	53,868,326.00	
b) Additions to the Funds:													
i. Donations/grants	-	-	-	-	-	90,435.00	1,174,818.00	-	1,200,000.00	-	2,465,253.00	6,900,779.00	
ii. Income from investments made on account of funds													
iii. Other additions (specify nature)													
<b>TOTAL (a+b)</b>	<b>5,023,419.00</b>	<b>45,237,848.00</b>	<b>-</b>	<b>33,924.00</b>	<b>6,861.00</b>	<b>932,407.00</b>	<b>1,587,540.00</b>	<b>86,790.00</b>	<b>1,600,000.00</b>	<b>281,823.00</b>	<b>54,790,612.00</b>	<b>60,769,105.00</b>	
c) Utilisation/Expenditure towards objectives of funds													
i. Capital Expenditure													
- Fixed Assets													
- Others													
ii. Revenue Expenditure													
- Salaries, Wages and allowances etc.													
- Rent													
- Other Administrative expenses	4,583,758.00	12,526,649.00	-	-	-	-	972,818.00	-	1,556,360.00	281,360.00	19,920,945.00	8,443,746.00	
Total													
<b>TOTAL (c)</b>	<b>4,583,758.00</b>	<b>12,526,649.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>972,818.00</b>	<b>-</b>	<b>1,556,360.00</b>	<b>281,360.00</b>	<b>19,920,945.00</b>	<b>8,443,746.00</b>	
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>	<b>439,661.00</b>	<b>32,711,199.00</b>	<b>-</b>	<b>33,924.00</b>	<b>6,861.00</b>	<b>932,407.00</b>	<b>614,722.00</b>	<b>86,790.00</b>	<b>43,640.00</b>	<b>463.00</b>	<b>34,869,667.00</b>	<b>52,325,359.00</b>	

(Accounts Officer)  
**CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2019**

<b>SCHEDULE 4-SECURED LOANS AND BORROWINGS:</b>		
1. Central Government		
2. State Government		
3. Financial Institutions		
a) Term Loans		
b) Interest accrued and due		
4. Banks:		
a) Term Loans		
- Interest accrued and due		
b) Other Loans (specify)		
- Interest accrued and due		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Others (Specify)		
<b><u>TOTAL</u></b>	0	0
<u>Note</u> : Amounts due within one year		

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2019**

<b>SCHEDULE 5 - UNSECURED LOANS AND BORROWING</b>	<b>(Amount-Rs.)</b>	
	<b>Current Year</b>	<b>Previous Year</b>
1. Central Government		
2. State Government		
3. Financial Institutions		
4. Banks:		
a) Term Loans		
b) Other Loans (specify)		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Fixed Deposits		
8. Others (Specify)		
<b><u>TOTAL</u></b>	0	0
<u>Note</u> : Amounts due within one year		

<b>SCHEDULE 6 - DEFERRED CREDIT LIABILITIES:</b>	<b>Current Year</b>	<b>Previous Year</b>
	a) Acceptances secured by hypothecation of capital equipment and other assets	
b) Others		
<b><u>TOTAL</u></b>	0	0
<u>Note</u> : Amount due within one year		

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**

Name of Entity **CENTRE FOR DENTAL EDUCATION & RESEARCH**

**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 7 - CURRENT LIABILITIES AND PR</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>A. CURRENT LIABILITIES AND PROVISIONS</b>		
<b>1. Acceptances</b>		
<b>2. Sundry Creditors:</b>		
a) For Goods		
a) Others		
<b>3. Advances Received</b>		
<b>4. Interest accrued but not due on:</b>		
a) Secured Loans/borrowings		
a) Unsecured Loans/borrowings		
<b>5. Statutory Liabilities:</b>		
a) Overdue		
a) Others		
<b>6. Other current Liabilities</b>		
<b>Less: Paid during the year</b>		
<b>Addition : Created during the year</b>		
<b>7. Security Deposits (Opening Balance)</b>		
<b>Add: Received during the year</b>		
<b>Less: Refunded during the year</b>	7,899,112.00	7,773,112.00
<b>TOTAL (A)</b>	<b>7,899,112.00</b>	<b>7,773,112.00</b>
<b>B. PROVISIONS</b>		
1. For Taxation	-	-
2. Gratuity	-	-
3. Superannuation/Pension	-	-
6. Accumulated Leave Encashment	-	-
6. Trade Warranties/Claims	-	-
6. Others (specify)	-	-
<b>TOTAL (B)</b>	-	-
<b>TOTAL (A+B)</b>	<b>7,899,112.00</b>	<b>7,773,112.00</b>

**(Accounts Officer)**  
**CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount - Rs.)

SCHEDULE 8-FIXED ASSETS <u>DISCRPTION</u>	GROSS BLOCK				DEPRICIATION				NET BLOCK		
	Cost/valuation As at beginning of the year	Additions during the year	Additions during the year (LC)	Deductions during the year	Cost/Valuation at the year end	As at the beginning of the year	On additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end	As at the Previous year-end
<b>A. <u>FIXED ASSETS:</u></b>											
1.00 <u>LAND:</u>											
a) <u>Freehold</u>											
b) <u>Leasehold</u>											
2.00 <u>BUILDINGS:</u>											
a) On Freehold Land	308,762,005.00	-			308,762,005.00					308,762,005.00	308,762,005.00
b) On Leasehold Land											
c) Ownership Flats/ Premises											
d) Superstructures on Land not belonging to the entity											
PLANT MACHINERY &											
3.00 EQUIPMENT	314,535,290.00	13,766,700.00			328,301,990.00					328,301,990.00	314,535,290.00
4.00 VEHICLES											
5.00 FURNITURE, FIXTURES											
6.00 OFFICE EQUIPMENT											
7.00 COMPUTER/PERIPHERALS											
8.00 ELECTRIC INSTALLATIONS											
9.00 LIBRARY BOOKS											
#### TUBEWELLS & W. SUPPLY											
#### OTHER FIXED ASSETS											
<b>TOTAL OF CURRENT YEAR</b>	<b>623,297,295.00</b>	<b>13,766,700.00</b>			<b>637,063,995.00</b>					<b>637,063,995.00</b>	<b>623,297,295.00</b>
<b>PREVIOUS YEAR</b>											
<b>CAPITAL WORK-IN-</b>											
<b>TOTAL</b>	623,297,295.00	13,766,700.00			637,063,995.00					637,063,995.00	623,297,295.00

**PLANT MACHINERY & EQUIPMENT**

M&E Purchase during the Year 13,174,250.00  
 Custom Duty Adjusted during the year 576,205.00  
 PDA adjusted during the year 16,245.00  
**Total Assets 13,766,700.00**

**(Accounts Officer)**  
**CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**

Name of Entity **CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2019**

(Amount - Rs.)

<b><u>SCHEDULE 9 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</u></b>	<b><u>Current Year</u></b>	<b><u>Previous Year</u></b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres	0	0
6. Others (to be specified)		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

<b><u>SCHEDULE 10 - INVESTMENTS - OTHERS</u></b>	<b><u>Current Year</u></b>	<b><u>Previous Year</u></b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others (to be specified)		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>A</b>		
<b><u>CURRENT ASSETS:</u></b>		
1. <u>Inventories:</u>		
a) Stores and Spares		
b) Loose Tools		
c) Stock-in-trade		
Finished Goods		
Work-in-progress		
Raw Material		
2. <u>Sundry Debtors:</u>		
a) Debts Outstanding for a period exceeding six months		
b) Others		
3. <u>Cash balances in hand (including cheques/ drafts and imprest)</u>	5,000.00	5,000.00
4. <u>Bank Balances:</u>		
a) <u>With Scheduled Banks:</u>		
On Current Accounts		
CDER- 10874584984	22,063,005.40	88,354,704.00
On Deposit Accounts (includes margin money)		
On Savings Accounts		
b) <u>With non-Scheduled Banks:</u>		
On Current Accounts		
On Deposit Accounts		
On Savings Accounts		
5. <u>Post Office - Savings Accounts</u>		
6. <u>Investment- (TDR)</u>	40,000,000.00	
<b>TOTAL (A)</b>	<b>62,068,005.40</b>	<b>88,359,704.00</b>

(Accounts Officer) CDER

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 11 (II) - CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>		<b>Current Year</b>	<b>Previous Year</b>
<b>B</b>			
<b><u>LOANS, ADVANCES AND OTHER ASSETS</u></b>			
<b>1. <u>Loans:</u></b>			
a) Staff			
b) Other Entities engaged in activities/objectives similar to that of Entity			
c) Other (specify) Advance to Iron & steel and Hindustan steel			
<b>2. <u>Advances and other amounts recoverable in cash or in kind or for value to be received:</u></b>			
a) On Capital Account			
b) Prepayments			
c) Others			
<b>3. <u>Income Accrued:</u></b>			
a) On Investments from Earmarked / Endowment Funds			
b) On Investments - Others			
c) On Loans and Advances			
d) Others			
(includes income due unrealised - Rs.....)			
<b>4. <u>Claims Receivable:</u></b>			
<b>5. <u>Other Advance</u></b>			
i. Advance Paid to NDMC		2,364,500.00	2,364,500.00
ii. Security Deposit to NDMC		3,000,000.00	3,000,000.00
iii. Advance paid to DGS&D		469,471.00	469,471.00
iv. Letter of Credit		8,994,814.00	3,266,183.00
	Opening Balance	3,266,183.00	
	LC Issued	5,728,631.00	
	Machinery Rec.		
	<b>Closing Balance</b>	<b>8,994,814.00</b>	
v. Custom Duty		-	
	Opening Balance		
	Custom Duty paid	5,000,000.00	
	Custom Duty Adjusted	576,205.00	4,423,795.00
vi. PDA			
	Opening Balance		
	PDA paid	500,000.00	
	PDA Adjusted	16,245.00	
		483,755.00	
<b>TOTAL (B)</b>		<b>19,736,335.00</b>	<b>9,100,154.00</b>
<b>TOTAL (A + B)</b>		<b>81,804,340.40</b>	<b>97,459,858.00</b>

(Accounts Officer)  
CDER

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount - Rs.)

<b><u>SCHECULE 12 - INVESTMENTS FROM EARMARKED / ENDOWMENT</u></b>	<b><u>Current Year</u></b>	<b><u>Previous Year</u></b>
<b><u>1) Income from Sales</u></b>		<b><u>Current Year</u></b>
1. Sale of Finished Goods		
2. Sale of Raw Material		
3. Sale of Scraps		
<b><u>2) Income from Services</u></b>		
a) Labour and Processing Charges		
b) Professional / Consultancy Services		
c) Agency Commission and Brokerage		
d) Maintenance Services (Equipment/Property)		
e) Others (Specify) Hospital Receipt	1,957,065.00	2,183,330.00
<b><u>TOTAL</u></b>	<b>1,957,065.00</b>	<b>2,183,330.00</b>
<b><u>SCHECULE 13 - GRANTS /SUBSIDIES</u></b>	<b><u>Current Year</u></b>	<b><u>Previous Year</u></b>
<b><u>1) Income from Sales</u></b>		
<b><u>(Irrevocable Grants &amp; Subsidies Received)</u></b>		
1. Central Government		
2. State Government(s)		
<b>3. Government Agencies</b>		
Grant in Aid (Salary)	263,700,000.00	64,935,117.00
Grant in Aid (General)	117,001,513.00	127,500,000.00
4. Institutions/ Welfare Bodies		
5. International Organisations		
6. Others (Specify)		
<b><u>TOTAL</u></b>	<b>380,701,513.00</b>	<b>192,435,117.00</b>

(Accounts Officer)  
CDER



**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

	(Amount-Rs.)	
	Current Year	Previous Year
<b><u>SCHEDULE 14 - FEES/SUBSCRIPTIONS</u></b>		
1. Tuition & Examination Fee		
2. Licence Fee		
3. Seminar/Program Fees		
4. Consultancy Fees		
5. Others (Specify) EHS		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>
<b>Note</b> - Accounting Policies towards each item are to be disclosed		

	Investment from Earmarked Fund		Investment-Others	
	Current Year	Previous Year	Current Year	Previous Year
<b><u>SCHEDULE 15 - INCOME FROM INVESTMENTS</u></b>				
(Income on Invest. From Earmarked/Endowment Funds transferred to Funds)				
1. Interest				
a) On Govt. Securities				
a) Other Bonds/Debentures				
2. Dividends:				
a) On Shares				
a) On Mutual Fund Securities				
3. Rents				
4. Others (Specify)				
<b><u>TOTAL</u></b>				
<b>TRANSFERRED TO EARMARKED/EDNOWNMENT FUNDS</b>				

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**

Name of Entity **CENTRE FOR DENTAL EDUCATION & RESEARCH**

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

**(Amount-Rs.)**

<b>SCHEDULE 18 - OTHERS INCOME</b>	<b>Current Year</b>	<b>Previous Year</b>
1. Misc. Receipt	337,956.00	219,801.00
2. Estb. Receipt (Scheme)		
3. Others (specify)	-	-
<b>TOTAL</b>	<b>337,956.00</b>	<b>219,801.00</b>

<b>SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; W</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Closing stock		
- Finished Goods		
- Work-in-progress		
b) Less: Opening Stock		
- Finished Goods		
- Work-in-progress		
<b>NET INCREASE/(DECREASE) [a+b]</b>		

<b>SCHEDULE 20 - ESTABLISHMENT EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
Salaries and Wages	270,905,625.60	64,935,117.00
Allowances and Bonus		
Contribution to Provident Fund		
Contribution to Other Fund (Scheme Cell)		
Staff Welfare Expenses		
Expenses on Employees ":Retirement and Terminal Benefits"		
Others (NPS & LSPC)		
<b>TOTAL</b>	<b>270,905,625.60</b>	<b>64,935,117.00</b>

**(Accounts Officer) CDER**

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR**  
**ENDED 31-03-2020**

<b>(Amount-Rs.)</b>		
<b><u>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES</u></b>	<b>Current Year</b>	<b>Previous Year</b>
<b><u>ETC.</u></b>		
a) Purchases of Material & Supply	38,531,174.00	38,686,005.00
b) Labour and processing expenses		
c) Cartage and Carriage Inwards		
d) Electricity and power		
e) Water charges		
f) Insurance		
g) Out sourced manpower services		
i) Security services	44,890,969.00	16,651,709.00
ii) Sanitation services		13,521,880.00
iii) Man Power		17,221,096.00
h) Repairs and maintenance	33,170,493.00	39,633,996.00
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses on Seminar/Workshops		
o) Subscription Expenses		
p) Expenses on Fees		
r) Hospitality Expenses		
s) Professional Charges		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Packing Charges		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity		
z) Others (specify)(Contingency charge)	405,094.00	915,559.00
<b><u>TOTAL</u></b>	<b>116,997,730.00</b>	<b>126,630,245.00</b>

(Accounts Officer)  
CDER

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

<b>(Amount-Rs.)</b>		
<b><u>SCHEDULE 21 (A) Adjustment of Advances</u></b>	<b>Current Year</b>	<b>Previous Year</b>
1. Contingency Advance		23420
2. Others (specify)	-	-
<b><u>TOTAL</u></b>	<b>0</b>	<b>23,420.00</b>

(Accounts Officer)  
CDER

**FORM OF FINANCIAL STATEMENTS (NON-PROFIT ORGANISATIONS)**  
**Name of Entity CENTRE FOR DENTAL EDUCATION & RESEARCH**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

<b>(Amount-Rs.)</b>		
<b><u>SCHEDULE 22- EXPENDITURE ON GRANTS, SUBSIDIES ETC.</u></b>	<b>Current Year</b>	<b>Previous Year</b>
a). Grants given to Institutions/Organizations	-	-
b). Subsidies given to Institutions/organisations	-	-
<b><u>Total</u></b>	-	-
<b><u>Note</u></b> - name of the Entities, their activities along with the amount of grants/subsidies are to be disclosed.		

<b>SCHEDULE 23- INTEREST</b>	<b>Current Year</b>	<b>Previous year.</b>
a) On fixed Loans		
b) On other Loans ( including Bank charges)	6153	2415
c) Others( Specify)		
<b><u>Total</u></b>	<b>6153</b>	<b>2415</b>

(Accounts Officer)  
CDER

**NATIONAL REFERRAL AND RESEARCH INSTITUTE FOR HIGHER DENTAL STUDIES (NARRIDS)**

**CENTRE FOR DENTAL EDUCATION & RESEARCH  
ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI  
RECEIPTS AND PAYMENTS FOR THE PERIOD/YEAR ENDED 31.03.2020**

<b>Income</b>	<b>Amount</b>	<b>Expenditure</b>	<b>Amount</b>
To Opening Balance			
Current Account - 37619267325	91,424,260.50	By Expenditure incurred	3,766,978.00
To Interest Earned	5,841,471.00	By Closing Balance	
		Current Account - 37619267325	93,498,753.50
	<b>97,265,731.50</b>		<b>97,265,731.50</b>

**CHIEF, CDER**

**ACCOUNTS OFFICER, CDER**

**NCI JHAJJAR, AIIMS**  
**BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

		(Amount in ₹)	
CORPUS/CAPITAL FUND AND LIABILITIES	Schedule	Current Year 2019-20	Previous Year 2018-19
CORPUS/CAPITAL FUND	1	7,976,994	-
RESERVES AND SURPLUS	2	2,188,705	-
EARMARKED/ENDOWMENT FUNDS	3	-	-
SECURED LOANS AND BORROWINGS	4	-	-
UNSECURED LOANS AND BORROWINGS	5	-	-
DEFERRED CREDIT LIABILITIES	6	-	-
CURRENT LIABILITIES AND PROVISIONS	7	-	-
<b>TOTAL</b>		<b>10,165,699</b>	<b>-</b>
<b>ASSETS</b>			
FIXED ASSETS	8	7,976,994	-
INVESTMENTS – FROM EARMARKED/ENDOWMENT FUNDS	9	-	-
INVESTMENTS – OTHERS	10	-	-
CURRENT ASSETS, LOANS, ADVANCES ETC.	11	2,188,705	-
MISCELLANEOUS EXPENDITURE (Balance of excess of expenditure over income) (to the extent not written off or adjusted)		-	-
<b>TOTAL</b>		<b>10,165,699</b>	<b>-</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

F & CAO  
(Accounts Officer)

Head (NCI Jhajjar)

**NCI JHAJJAR, AIIMS**  
**INCOME AND EXPENDITURE ACCOUNT FOR THE FINANCIAL YEAR - 2019-20**

INCOME	Schedule	Current Year 2019-20	Previous Year 2018-19
Income form sales/services	12	3,384,763	39,060
Grants/Subsidies	13	554,122,146	-
Fees/Subscriptions	14	-	-
Income from Investments (Income on Invest, from earmarked/endow. Fund transferred to Funds)	15	-	-
Income from Royalty, Publication etc.	16	-	-
Interest Earned	17	1,472,326	-
Other Income	18	-	-
Increase/(decrease) in stock of Finished goods and works-in-progress	19	-	-
<b>TOTAL(A)</b>		558,979,235	39,060
<b>EXPENDITURE</b>			
Establishment Expenses	20	165,688,176	-
Other Administrative Expenses etc.	21	391,141,414	-
Expenditure on Grants, Subsidies etc.	22	-	-
Interest	23	-	-
Depreciation (Net Total at the year-end – corresponding to schedule 8)		-	-
<b>TOTAL(B)</b>		556,829,590	-
<b>Balance being excess of Income over Expenditure (A-B)</b>		2,149,645	39,060
Transfer to Special Reserve (Specify each)		-	-
Transfer to /from General Reserve		-	-
<b>BALANCE BEING SURPLUS/(DEFICIT) (Adjusted in Income &amp; Expenditure)</b>		2,149,645	39,060
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

(Amount in ₹)

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS  
RECEIPTS AND PAYMENTS FOR THE FINANCIAL YEAR 2019-20**

(Amounts in ₹)

RECEIPTS	Current Year 2019-20	Previous Year 2018-19	PAYMENTS	Current Year 2019-20	Previous Year 2018-19
<b>I. Balances (Opening)</b>			<b>I. Expenses</b>		
(a) Cash In Hand	7,590		a) Establishment Expenses (corresponding to schedule 20)	165,688,176	
(b) Bank Balances			b) Administrative Expenses (corresponding to schedule 21)	391,141,414	
(i) Current Accounts	31,470				
<b>(a) Grant received from Government of India through AIIMS (Main)</b>			<b>II. Expenditure on Fixed Assets &amp; Capital Work-in-progress</b>		
(i) Grant in Aid (Capital Assets)	7,976,994		a) Purchase of Fixed Assets	7,976,994	
(ii) Grant in Aid (Salary)	164,122,146		b) Advance for M&E		
(iii) Grant in Aid (General)	390,000,000		b) Custom duty advance	-	
<b>II. Interest Received</b>			<b>III. Other Payments (specify)</b>		
			(a) Donation/Grant		



(a) On Bank deposits			(b) EMD		
Interest on TDR	1,472,326				
				-	
<b>III. Other Income (Specify)</b>			<b>IV. Closing Balances</b>		
(a) Donation/Grant			a) Cash in hand		7,590
(b) Hospital Receipts	3,384,763		b) Cash at Bank	2,188,705	
(c) TDR Issued	-		i) In current accounts		31,470
<b>IV. Employee Recovery (Advances)</b>					
(i) Conveyance Advance					
(ii) Computer Advances					
<b>Total</b>	<b>566,995,289</b>		<b>Total</b>	<b>566,995,289</b>	<b>39,060</b>

(F & CAO) (Accounts Officer)

Head (NCI Jhajjar)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 1 - CORPUS/CAPITAL FUND:	Current Year 2019-20	Previous Year 2018-19
Balance as at the beginning of the year	-	
Add: Contributions towards Corpus/Capital Fund	7,976,994	
Less: M & E Condemned	-	
Less: Excess Capitalized	-	
Add/ (Deduct) : Balance of net income/(expenditure) Transferred from the Income and Expenditure Account	7,976,994	
<b>BALANCE AS AT THE YEAR-END</b>	<b>7,976,994</b>	

SCHEDULE 2 - RESERVES AND SURPLUS:	Current Year 2019-20	Previous Year 2018-19
<b>1. Capital Reserve :</b>		
As per last Account	....	....
Additional during the year	....	....
Less : Deductions during the year	(..)	(..)
	-----	-----
<b>2. Revaluation Reserve :</b>		
As per last Account	....	....
Additional during the year	....	....
Less : Deductions during the year	(..)	(..)
	-----	-----
<b>3. Special Reserves :</b>		
As per last Account	....	....
Additional during the year	....	....
Less : Deductions during the year	(..)	(..)
	-----	-----
<b>4. General Reserves :</b>		
As per last Account	....	....
Additional during the year	-	-
Less : Deductions during the year	-	-
	-----	-----
<b>5. Excess of Income over Expenditure</b>		
As per last Account	39,060	39,060
Additional during the year	2,149,645	2,188,705
Less : Deductions during the year	-	-
<b>TOTAL</b>	<b>2,188,705</b>	<b>2,188,705</b>

(Accounts Officer)

(F & CAO)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)



**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 5 - UNSECURED LOANS AND BORROWINGS:	Current Year 2019-20	Previous Year 2018-19
1. Central Government	....	....
2. State Government (Specify)	....	....
3. Financial Institutions	....	....
4. Banks:		
a) Term Loans	....	....
b) Other Loans (Specify)	..	....
5. Other Institutions and Agencies	.....	....
6. Debentures and Bonds	.....	....
7. Fixed Deposits	.....	....
8. Others (Specify)	....	.....
Total		
<b>Note : Amounts due within one year</b>		

SCHEDULE 6 – DEFERRED CREDIT LIABILITIES:	Current Year 2019-20	Previous Year 2018-19
a) Acceptances secured by hypothecation of capital equipment and other assets	.....	....
b) Others		
<b>TOTAL</b>	.....	.....
<b>Note : Amounts due within one year</b>		

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

<b>SCHEDULE 7 – CURRENT LIABILITIES AND PROVISIONS</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>
(Amount in ₹)		
<b>A. CURRENT LIABILITIES</b>		
1. Acceptance		
2. Sundry Creditors:		
a) For Goods	.....	.....
b) Others	.....	.....
3. Advances Received	.....	.....
4. Interest accrued but not due on:		
a) Secured Loans/borrowings	.....	.....
b) Unsecured Loans/borrowings	.....	.....
5. Statutory Liabilities:		
a) Overdue	.....	.....
6. Other current liabilities		
a) Bank Overdraft (as per Cash Book)	-	
b) EMD/ Security Deposits		
Opening Balance		
Add During 2019-20		
Less Payment During 2019-20		
c) FDR Issued	-	-
<b>TOTAL (A)</b>	-	-
<b>A. PROVISIONS</b>		
1. For Taxation	.....	
2. Gratuity	.....	
3. Superannuation/Pension		
4. Accumulated Leave Encashment		
5. Trade Warranties/Claims		
Others (Specify		
<b>TOTAL (B)</b>	.....	.....
<b>TOTAL (A+B)</b>	-	-

**(F & CAO)**

**(Accounts Officer)**

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 9 – INVESTMENTS FROM ARMARKEDED/ENDOWMENT FUNDS	Current Year 2019-20	Previous Year 2018-19
1. In Government Securities	....	
2. Other approved Securities	....	
3. Shares	....	
4. Debentures and Bonds	....	
5. Subsidiaries and joint Ventures	....	
6. Others (to be specified)	....	
<b><u>TOTAL</u></b>	....	

SCHEDULE 10 – INVESTMENTS - OTHERS	Current Year 2019-20	Previous Year 2018-19
1. In Government Securities	....	
2. Other approved Securities	....	
3. Shares	....	
4. Debentures and Bonds	....	
5. Subsidiaries and joint Ventures	....	
6. Others (to be specified)	....	
<b><u>TOTAL</u></b>	....	

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)		Previous Year 2018-19	Current Year 2019-20
<b>SCHEDULE 11 – CURRENT ASSETS, LOANS, ADVANCES ETC.</b>			
<b>A. CURRENT ASSETS:</b>			
1. Inventors:			
a) Stores and Spares		-	-
b) Loose Tools		-	-
c) Stock-in-trade		-	-
	Finished Goods		
	Work-in-progress		
	Raw Materials		
2. Sundry Debtors:			
a) Debts Outstanding for a period exceeding six months		-	-
b) Others		-	-
3. Cash balance in hand (including cheques/drafts and imprest)		7,590	-
4. Cash at Bank:			
a) With Scheduled banks:			
On Current Accounts (NCI)		31,470	2,188,705
-On Deposit Accounts (IRCH) (FDR)		-	-
b) With non-Scheduled Banks:			
-On Current Accounts		-	-
-On Deposit Accounts		-	-
-On Saving Accounts		-	-
5. Previous year Closing Balance transfer to NCI A/c.		-	2,188,705
Post Office Saving Accounts		-	-
	<b>TOTAL (A)</b>	39,060	2,188,705

( F & CAO )

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

	Current Year 2019-20	Previous Year 2018-19
<b>(Amount in ₹)</b>		
<b>SCHEDULE 11 – CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>		
<b>B. LOANS, ADVANCES AND OTHER ASSETS</b>		
1. Loans:		
a) Staff -	-	
Opening Balance		
Add: During during the year		
Less recovering during 2019-20		
b) Other Entities engaged in activities/objectives similar to that of the Entity		
c) Other (Specify)		
2. Advances and other amounts recoverable in cash or in kind or for value to be received:		
a) On Capital Account		
Machinery and Equipment	-	-
Opening Balance	-	-
Add: Addition during the year	-	-
Less : Adjusted during the year	-	-
Customo Duty/PDA Advance	-	-
Opening Balance	-	-
Add: Addition during the year	-	-
Less : Adjusted during the year	-	-
Less : Previous year adjustment	-	-
b) NDMC		
c) Others		
3. Income Accrued:		
a) On Investments from Earmarked/Endowment Funds	-	-
b) On Investments – Others	-	-
c) On Loans and Advances	-	-
d) Others	-	-
(includes income due unrealized Rs. ....)		
4. Claims Receivable	-	-
<b>TOTAL (B)</b>	-	-
<b>TOTAL (A+B)</b>	2,188,705	

(F & CAO)

(Accounts Officer)



**NCI JHAJJAR,AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

<b>SCHEDULE 12 – INCOME FROM SALES/SERVICES</b>	<b>Current Year 2019-20</b>	<b>Previous Year 2018-19</b>	<b>(Amount in ₹)</b>
1) Income from Sales			
a) Sale of Finished Goods			
b) Sale of Raw Material			
c) Sale of Scraps			
2) Income from Services			39,060
a) Hospital Receipts	3,384,763		
b) Professional/Consultancy Services			
c) Agency Commission and Brokerage			
d) Maintenance Services (Equipment/property)			
e) Others (Specify)			
<b>TOTAL</b>	<b>3,384,763</b>		<b>39,060</b>
<b>SCHEDULE 13 – GRANTS/SUBSIDIES</b>			
<b>(Irrevocable Grants &amp; Subsidies Received)</b>			
1) Central Government (Through AIIMS Main)			
2) State Government(s)	554,122,146		
3) Government Agencies			
4) Institutions/Welfare Bodies			
5) International Organizations			
<b>TOTAL</b>	<b>554,122,146</b>		<b>-</b>

**(F & CAO)**

**Accounts Officer)**

**NCI JHAJJAR,AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

<b>SCHEDULE 14 – FEES/SUBSCRIPTIONS</b>	Current Year 2019-20	Previous Year 2018-19
1) Entrance Fees 2) Annual Fees/subscriptions 3) Seminar/Program Fees 4) Consultancy Fees 5) Others (Specify)		
<b>TOTAL</b>		
<b>Note – Accounting Policies towards each item are to be disclosed</b>		

(Amount in ₹)

SCHEDULE 15 – INCOME FROM INVESTMENTS (Income on Invest. From Ear4marked/Endowment Funds transferred to funds)	Investment from		Investment - Others
	Current Year 2019-20	Previous Year 2018-19	Current Year 2019-20 Previous Year 2018-19
1) Interest a) On Govt. Securities b) Other Bonds/Debentures 2) Dividends: a) On Shares b) On Mutual Fund Securities 3) Rents 4) Others (Specify)	..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... .....
<b>TOTAL</b>			
<b>TRANSFERRED TO EARMARKED/ENDOWMENT FUNDS</b>			

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR,AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

	Current Year 2019-20	Previous Year 2018-19
(Amount in ₹)		
<b>SCHEDULE 16 – INCOME FROM ROYALTY, PUBLICATIONS ETC.</b>		
1) Income from Royalty		
2) Income from Publications		
3) Others (Specify)		
<b>TOTAL</b>		

	Current Year 2019-20	Previous Year 2018-19
(Amount in ₹)		
<b>SCHEDULE 17 – INTEREST EARNED</b>		
<b>NCI JHAJJAR,AIIMS</b>		
<b>SCHEDULES FORMING PART OF INCOME &amp; EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20</b>		
1) On Term Deposits:		
a) With Scheduled Banks	1,472,326	
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2) On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) Post Office Savings Accounts		
d) Others		
3) On Loans:		
a) Employees/Staff		
b) Others		
4) Interest on Debtors and Other Receivables		
<b>TOTAL</b>	1,472,326	-
Note – Tax deducted at source to be indicated		

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

<b>SCHEDULE 18 – OTHER INCOME</b>	Current Year 2019-20	Previous Year 2018-19
1) Profit on sale/disposal of Assets:		
a) Owned assets		
b) Assets acquired out of grants, or received free of cost		
2) Export Incentives realized		
3) Fees for Miscellaneous Services	-	-
4) Miscellaneous-Adjustment on account of Festival and computer advance		
<b><u>TOTAL</u></b>	-	-

<b>SCHEDULE 19 – INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	Current Year 2019-20	Previous Year 2018-19
a) Closing Stock		
-Finished Goods		
-Work-in-progress		
b) Less: Opening Stock		
-Finished Goods		
-Work-in-progress		
<b>NET INCREASE/(DECREASE) (a+b)</b>		

<b>SCHEDULE 20 – ESTABLISHMENT EXPENSES</b>	Current Year 2019-20	Previous Year 2018-19
a) Salaries and Wages	162,935,133	
b) Travelling Allowance	2,753,043	
c) Contribution to Provident Fund		.....
d) Contribution to Other Fund (Specify)	.....	.....
e) Staff Welfare Expenses	.....	.....
f) Expenses on Employees Retirement and Terminal Benefits	.....	.....
g) Others :Computer advance excess adjstuted to salary and wages		
<b><u>TOTAL</u></b>	165,688,176	-

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 22 – EXPENDITURE ON GRANTS, SUBSIDIES ETC.	Current Year 2019-20	Previous Year 2018-19
a) Grants given to Institutions/Organisations		
b) Subsidies given to Institutions/Organisations		
<b><u>TOTAL</u></b>		

Note – Name of the Entities, their Activities along with the amount of Grants/subsidies are to be disclosed.

(Amount in Rs.)

SCHEDULE 23 – INTEREST	Current Year 2019-20	Previous Year 2018-19
a) On Fixed Loans		
b) On Other Loans (including bank Charges)		
c) Others (specify)		
<b><u>TOTAL</u></b>		

F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 21 – OTHER ADMINISTRATIVE EXPENSIVE ETC.	Current Year 2019-20	Previous Year 2018-19
a) Purchase (Material and Supply)	133,066,836	
b) Maintenance of Building	7,635,345	
c) Hiring of Manpower	125,785,932	
d) Electirc Bills	118,951,300	
e) Telephone Bills/Internet Charges	5,702,001	
f) CAMC		
i) Others (specify) Contingency Bill		
<b><u>TOTAL</u></b>	<b>391,141,414</b>	-

(F & CAO)

(Accounts Officer)

**NCI JHAJJAR, AIIMS**  
**SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS	FUND-WISE BREAK UP					TOTALS
a) Opening balance of the funds						
b) Additions to the Funds:						
i) Donations/grants						
ii) Income from investments made on account of funds						
iii) Other additions (specify nature)						
<b>TOTAL (a+b)</b>						
a) Utilization/Expenditure towards objectives of funds						
i) Capital Expenditure						
- Fixed Assets						
- Others						
Total						
ii) Revenue Expenditure						
- Salaries, Wages and allowances etc.						
- Other Administrative Expenses						
Total						
<b>TOTAL (c)</b>						
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>						

**Notes**

1. Disclosures shall be made under relevant heads based on conditions attaching to the grants
2. Plan fund received from Central/State Governments are to be shown as separate Funds and not be mixed up with any other funds.

(F & CAO)

(Accounts Officer)

**DR. BHIM RAO AMBEDKAR INSTITUTE ROTARY CANCER HOSPITAL, AIIMS  
SCHEDULES FORMING PART OF BALANCE SHEET FOR THE FINANCIAL YEAR - 2019-20**

(Amount in ₹)

SCHEDULE 8 – FIXED ASSETS	GROSS BLOCK					DEPRECIATION					NET BLOCK	
	Cost/valuation as at beginning of the year	Additions during the year	Deductions during the year	Cost/valuation at the year-end	As at the beginning of the year	On Additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end	As at the previous year-end		
<b>A. FIXED ASSETS:</b>												
1. LAND:												
a) Freehold												
b) Leasehold												
2. BUILDINGS:												
a) On Freehold Land	-											
b) On Leasehold Land												
c) Ownership Flats/Premises												
d) Superstructures on Land												
Not belonging to the entity												
3. PLANT MACHINERY & EQUIPMENT		7,976,994		7,976,994					7,976,994			
4. VEHICLES												
5. FURNITURE, DIXTURES												
6. OFFICE EQUIPMENT												
7. COMPUTER/PERIPHERALS												
8. ELECTRIC INSTALLATIONS												
9. LIBRARY BOOKS												
10. TUBEWELLS & W.SUPPLY												
11. OTHER FIXED ASSETS												
<b>TOTAL OF CAURRENT YEAR</b>	-	<b>7,976,994</b>	-	<b>7,976,994</b>	-	-	-	-	<b>7,976,994</b>	-	-	-
PREVIOUS YEAR												

(F & CAO)

(Accounts Officer)

**National Drug Dependence Treatment Centre**  
**RECEIPT AND PAYMENTS FOR THE YEAR ENDED 31-03-2020**

Receipts	2019-20	2018-19	Payments	2019-20	2018-19
<b>1. Opening Balances</b>			<b>1. Expenses</b>		
(a) Cash in Hand			(a) Establishment Expenses (Schedule 20)	154,572,718.00	138,631,377.00
(b) Bank Balances			(b) Administrative Expenses (Schedule 21A)	148,322,009.00	107,351,051.00
(i) In current accounts	36,293,687.00	60,305,453.00			
(ii) In deposit accounts			<b>2. Advance payment</b>		
(iii) In saving accounts			(i) Material and Supply	120,000.00	132,635.00
			(ii) Temp adv for training programme (DTCs Scheme)	20,000.00	27,901,917.00
			(iii) For Nurses Training Programm	240,000.00	
<b>2. Grant Received</b>			<b>3. Investments and deposits made</b>		
(a) From Government of India (Ministry of H&FW)			(a) Out of Earmarked/Endowment Funds		
Grant in Aid (Capital Assets)	10,474,468.00	15,000,000.00	(b) Out of Own funds (Investments-others)		
Grant in Aid (General)	104,429,940.00	117,500,000.00			
Grant in Aid (Salaries)	124,882,683.00	145,000,000.00	<b>4. Expenditure on Fixed Assets &amp; Capital Work-in-Progress</b>		
Grant in aid (General/DTCs Scheme)	36,437,865.00	45,000,000.00	(a) Purchase of Fixed Assets (Schedule 8)	20,941,032.00	18,391,691.00
Grant in aid (Nurses training programme)	330,600.00		(b) Expenditure on capital work-in-progress	-	-
<b>3. Income on Investment from</b>			<b>5. Refund of surplus money/loans</b>		
a) Earmarked/endow.funds			(a) To the Government of India		
b) own funds(oth.investments)			(b) To the State Government		
			(c) Repayment of loan to AIIMS (Schedule 7)	15,000,000.00	85,000,000.00
<b>4. Interest received</b>			(d) Refund to UNDCP A/c		11,221.00
(a) On bank deposits			<b>6. Finance Charges (Interest)</b>		
(b) Loans, Advances etc.					
			<b>7. Other Payments (Specify)</b>		
<b>5. Income from Hospital Services</b>			Outside Recoveries (GPF, NPS, HBA, Income Tax, License Fee etc.)		
Hospital Receipts	675,275.00	689,040.00	(a) Projects		
<b>6. Other Income</b>			(b) Refund of Earnest Money Deposit		50,000.00
Miscellaneous receipt	358,743.00	31,679.00	(c) Employees Recovery payment		
Receipts 5% Admin.cost from UNDCAP A/c	3,231,270.00		(j) Recoveries from employees remitted to AIIMS (Main)	918,962.00	915,054.00
Wrongly receipt form UNDCP A/c		11,221.00			
<b>7. Amount Borrowed</b>			(i) Outside Recoveries	25,386,021.00	21,671,504.00
Loan from AIIMS (Main)	37,500,000.00	30,000,000.00	(ii) GPF (Subscription and Advances)	12,613,758.00	13,477,375.00
Loan from UNDCP A/c	5,000,000.00		(iv) NPS Recovery	5,152,376.00	4,187,563.00
<b>8. Any other receipts</b>			(v) NPS Recovery (without PRAN)	277,798.00	280,370.00
a) Projects			Previous year Recovery		
(b) Earnest Money Deposits	75,000.00		<b>Loan, Advances and Other Assets</b>		



**National Drug Dependence Treatment Centre  
RECEIPT AND PAYMENTS FOR THE YEAR ENDED 31-03-2020**

Receipts	2019-20	2018-19	Payments	2019-20	2018-19
(c) Employees Recovery(Income Tax)		213,031.00	Advance payment for purchase of Material and Supply		
j) Recoveries from employees	918,962.00	920,209.00	Computer Advance		
ii) Outside Recoveries	25,386,021.00	21,679,504.00	Festival Advance		
iii) GPF (Subscription and Advances)	12,613,758.00	13,477,375.00	Recovery/Deductions (Engg Works)	3,082,277.00	1,737,119.00
iv) NPS Recovery	5,152,376.00	4,187,563.00	Recovery/Deductions (other than Engg Works)		
v) NPS Recovery (without PRAN)	277,798.00	280,370.00	Repayment of loan (UNDCP)		
			<b>8. Closing Balances</b>		
<b>9.Loan, Adv. and Other Assets/Recovery</b>			(a)Cash in hand		
Car Advance Recovery		-	(b)Bank Balances		
Computer Advance Recovery		-	(i)In current accounts	20,473,772.00	36,293,687.00
House Building Advance Recovery		-	(ii)In deposit accounts		
Festival Advance Recovery		-	(iii)In saving accounts		
Recovery/Deductions (Engg Works)		-			
Recovery/Deductions (other than Engg Works)	3,082,277.00	1,737,119.00			
<b>Total</b>	<b>407,120,723.00</b>	<b>456,032,564.00</b>	<b>Total</b>	<b>407,120,723.00</b>	<b>456,032,564.00</b>

A.O.,NDDTC,AIIMS

CHIEF ,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31-03-2020**

<u>INCOME</u>	Schedule	2019-20	2018-19
Income from Sales/Services (Hospital Receipts)	12	675,275.00	689,040.00
Grants/Subsidies	13	266,081,088.00	307,500,000.00
Fees/Subscriptions	14		
Income from Investments (Income on Invest. From earmeked/endow.Funds transferred to funds)	15		
Income for Royalty, Publication etc.	16	-	-
Interest Earned	17		
Other Income	18	3,590,013.00	31,679.00
Increase/(decrease) in stock of Finished goods and works-in-progress	19		
<b>TOTAL (A)</b>		<b>270,346,376.00</b>	<b>308,220,719.00</b>
<u>EXPENDITURE</u>			
Establishment Expenses	20	154,572,718.00	138,631,377.00
Other Administrative Expenses etc.	21	161,262,903.00	142,980,098.00
Expenditure on Grants, Subsidies etc.	22		
Interest	23		
Depreciation (Net Total at the year-end - corresponding to Schedule 8)			
<b>TOTAL (B)</b>		<b>315,835,621.00</b>	<b>281,611,475.00</b>
<b>Balance being excess of Expenditure over income (B-A)</b>		(45,489,245.00)	26,609,244.00
Transfer to Special Reserve (Specify each)			
Transfer to /from General Reserve			
<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/ CAPITAL FUND</b>		<b>270,346,376.00</b>	<b>308,220,719.00</b>

A.O.,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**NATIONAL DURG DEPENDENCE TREATMENT CENTRE  
BALANCE SHEET AS AT 31-03-2020**

		(Amount in Rupees)	
	Schedule	2019-20	2018-19
<b><u>CORPUS/CAPITAL FUND AND LIABILITIES</u></b>			
CORPUS/CAPITAL FUND	1	275,463,393.00	266,672,470.00
RESERVES AND SURPLUS	2	1,000,518.00	46,489,763.00
EARMARKED/ ENDOWMENT FUNDS	3	-	-
SECURED LOANS AND BORROWINGS	4	-	-
UNSECURED LOANS AND BORROWINGS	5	-	-
DEFERRED CREDIT LIABILITIES	6	-	-
CURRENT LIABILITIES AND PROVISIONS	7	42,986,370.00	15,411,370.00
<b>TOTAL</b>		<b>319,450,281.00</b>	<b>328,573,603.00</b>
<b><u>ASSETS</u></b>			
FIXED ASSETS	8	295,017,813.00	275,760,326.00
INVESTMENTS-FROM EARMARKED/ENDOWMENT FUNDS	9	-	-
INVESTMENTS-OTHERS	10	-	-
CURRENT ASSETS, LOANS , ADVANCES ETC.	11	24,432,468.00	52,813,277.00
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)			
<b>TOTAL</b>		<b>319,450,281.00</b>	<b>328,573,603.00</b>

AO.,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 1- CORPUS/CAPITLA FUND:</b>	<b>(Amount-Rs.)</b>	
	<b>2019-20</b>	<b>2018-19</b>
Balances as at the beginning of the year	266,672,470.00	251,672,470.00
Add : Contributions towards Corpus/Capital Fund	10,474,468.00	15,000,000.00
Less : Fixed Assets Condemned during the year	1,683,545.00	275,463,393.00
<b>BALANCE AS AT THE YEAR-END</b>	<b>275,463,393.00</b>	<b>266,672,470.00</b>

<b>SCHEDULE 2- RESERVES AND SURPLUS:</b>	<b>(Amount-Rs.)</b>	
	<b>2019-20</b>	<b>2018-19</b>
<b>1. Capital Reserve:</b>		
As per last Account		
Addition during the year		
Less: Deductions during the year		
<b>2. Revaluation Reserve</b>		
As per last Account		
Addition during the year		
Less: Deductions during the year		
<b>3. Special Reserves</b>		
As per last Account		
Addition during the year		
Less: Deductions during the year (AIIMS LOAN REVERSE)	46,489,763.00	46,489,763.00
<b>4. General Reserve</b>		
As per last Account	1,000,518.00	
Adjusted during the year	(45,489,245.00)	
<b>TOTAL</b>	<b>1,000,518.00</b>	<b>46,489,763.00</b>

AO.,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

<b>SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS</b>		(Amount-Rs.)	
		<b>TOTALS</b>	
		<b>2019-20</b>	<b>2018-19</b>
		<b>Scheme Non</b>	
		<b>Scheme</b>	
a)	Opening balance of the funds		
b)	Additions to the Funds:		
	i. Donations/grants		
	ii. Income from investments made on account of funds	0	
	iii. Other additions (specify nature)		
	iv. Less Expenditure during the year	0	
	<b>TOTAL (a+b)</b>	<b>0</b>	<b>0</b>
c)	Utilisation/Expenditure towards objectives of funds		
	i. <u>Capital Expenditure</u>		
	- Fixed Assets		
	- Others		
	ii. <u>Revenue Expenditure</u>		
	- Salaries, Wages and allowances etc.		
	- Rent		
	- Other Administrative expenses		
	<b>Total</b>		
	<b>TOTAL (c)</b>	<b>0</b>	<b>0</b>
<b>NET BALANCE AS AT THE YEAR-END (a+b-c)</b>			<b>0</b>

AO.,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 4-SECURED LOANS AND BORROWINGS:</b>	<b>2019-20</b>		<b>2018-19</b>	
1. Central Government				
2. State Government				
3. Financial Institutions				
a) Term Loans				
b) Interest accrued and due				
4. Banks:				
a) Term Loans				
- Interest accrued and due				
b) Other Loans (specify)				
- Interest accrued and due				
5. Other Institutions and Agencies				
6. Debentures and Bonds				
7. Others (Specify)				
<b><u>TOTAL</u></b>	0	0	0	0
<b>Note :</b> Amounts due within one year				

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 5 - UNSECURED LOANS AND BORROWING</b>	<b>2019-20</b>	<b>2018-19</b>
1. Central Government		
2. State Government		
3. Financial Institutions		
4. Banks:		
a) Term Loans		
b) Other Loans (specify)		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Fixed Deposits		
8. Others (Specify)		
<b><u>TOTAL</u></b>	0	0
<b>Note:</b> Amounts due within one year		

<b>SCHEDULE 6 - DEFERRED CREDIT LIABILITIES:</b>	<b>2019-20</b>	<b>2018-19</b>
a) Acceptances secured by hypothecation of capital equipment and other assets		
b) Others		
<b><u>TOTAL</u></b>	0	0
<b>Note:</b> Amount due within one year		

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount -Rs.)

<b>SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS</b>	<b>2019-20</b>		<b>2018-19</b>	
<b>A. CURRENT LIABILITIES AND PROVISIONS</b>				
1. Acceptances				
2. Sundry Creditors:				
a) For Good:				
b) Others (Outside recoveries to be paid to AIIMS	13,155.00	13,155.00		13,155.00
i) AIIMS Employyes (OB)				
ii) Outside recoveries(OB)				
Opening Balance				
Less adjust during the year				
3. Advances Received for patients from Govt Agencies				
i) NIAF				
4. Projects Grants				
ii) NPCB				
5. Interest accrued but not due on:				
a) Secured Loans/borrowings				
a) Unsecured Loans/borrowings				
6. Statutory Liabilities:				
a) Overdue				
a) Others				
7. Security Deposits (EMD)				
Opening Balance	285,000.00			285,000.00
Received during the year	75,000.00			
Refund during the year		360,000.00		
6. Other current Liabilities	113,215.00	113,215.00		113,215.00
Refund to UNDCP A/c				
9. Loan from UNDCP A/c	5,000,000.00			
Less : Loan refund to UNDCP A/c	-	5,000,000.00		-
10. Loan from AIIMS (Main) (OB)	15,000,000.00			-
Loan from AIIMS (Main)	37,500,000.00			15,000,000.00
Loan refund to AIIMS (Main)	15,000,000.00	37,500,000.00		
<b>TOTAL (A)</b>		<b>42,986,370.00</b>		<b>15,411,370.00</b>
<b>B. PROVISIONS</b>				
1. For Taxation				
2. Gratuity				
3. Superannuation/Pension				
6. Accumulated Leave Encashment				
6. Trade Warranties/Claims				
6. Others (specify)				
<b>TOTAL (B)</b>				
<b>TOTAL (A+B)</b>		<b>42,986,370.00</b>		<b>15,411,370.00</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rs.)

DESCRIPTION	GROSS BLOCK				DEPRECIATION			NET BLOCK		
	Cost/ valuation as at beginning of the year	Additions during the year	Deductions during the year	Cost/ valuation at the year-end	As at the beginning of the year	On Additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end 19-20	As at the previous year-end 18-19
<b>A. FIXED ASSETS:</b>										
1. LAND:										
a) Freehold										
b) Leasehold										
2. BUILDINGS:										
a) Engineering related capital work	121,273,254.00	3,799,575.00		125,072,829.00				-	125,072,829.00	121,273,254.00
b) On Leasehold Land										
c) Ownership Flats/Premises										
d) Superstructures on Land										
Not belonging to the entity										
3. PLANT MACHINERY & EQUIPMENT	78,810,211.00	4,217,837.00	1,030,472.00	81,997,576.00					81,997,576.00	78,810,211.00
4. VEHICLES	13,331,349.00			13,331,349.00					13,331,349.00	13,331,349.00
5. FURNITURE, FIXTURES	13,740,723.00	2,317,064.00	653,073.00	15,404,714.00					15,404,714.00	13,740,723.00
6. OFFICE EQUIPMENT										
7. COMPUTER/PERIPHERALS										
8. ELECTRIC INSTALLATIONS										
9. LIBRARY BOOKS										
10. TUBEWELLS & W.SUPPLY	46,471,229.00	10,606,556.00		57,077,785.00					57,077,785.00	46,471,229.00
11. OTHER FIXED ASSETS (SAP)	2,133,560.00			2,133,560.00					2,133,560.00	2,133,560.00
<b>TOTAL OF CAURRENT YEAR</b>	<b>275,760,326.00</b>	<b>20,941,032.00</b>	<b>1,683,545.00</b>	<b>295,017,813.00</b>					<b>295,017,813.00</b>	<b>275,760,326.00</b>
PREVIOUS YEAR										
<b>B. CAPITAL WORK-IN-PROGRESS</b>										
<b>TOTAL</b>	<b>275,760,326.00</b>	<b>20,941,032.00</b>	<b>1,683,545.00</b>	<b>295,017,813.00</b>					<b>295,017,813.00</b>	<b>275,760,326.00</b>

AO., NDDTC, AIIMS



**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount - Rs.)

<b><u>SCHEDULE 9 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</u></b>	<b><u>2019-20</u></b>	<b><u>2018-19</u></b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others (to be specified)		0
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

<b><u>SCHEDULE 10 - INVESTMENTS - OTHERS</u></b>	<b><u>2019-20</u></b>	<b><u>2018-19</u></b>
1. In Government Securities		
2. Other approved Securities		
3. Shares		
4. Debenutres and Bonds		
5. Subsidiaries and Joint Venutres		
6. Others (to be specified)		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.	(Amount - Rs.)	
A	2019-20	2018-19
<b>CURRENT ASSETS:</b>		
1. <u>Advances for Procurement</u>		
a) <u>Material and Supply</u>		
Opening Balance	255,000.00	255,000.00
Addition during the year	120,000.00	132,635.00
Adjusted during the year	120,000.00	132,635.00
b) <u>Nurses Training programme:</u>		
Opening Balance	-	
Addition during the year	240,000.00	
Adjusted during the year	115,000.00	
2. <u>Advance for training Programme</u>		
Opening Balance	15,823,882.00	23,418,377.00
Addition during the year	20,000.00	27,901,917.00
Adjusted during the year	12,705,894.00	35,496,412.00
3. <u>Sundry Debtors:</u>		
a) <u>Debts Outstanding for a period exceeding six months</u>		
b) <u>Others Over payment under salaries head (Income tax)</u>		
Opening balance		
Adjusted during the year		
4. <u>Cash balances in hand (including cheques/ drafts and imprest)</u>	-	-
5. <u>Bank Balances:</u>		
a) <u>With Scheduled Banks:</u>		
On Current Accounts		
On Deposit Accounts (includes margin money)		
On Savings Accounts	20,473,772.00	36,293,687.00
b) <u>With non-Scheduled Banks:</u>		
On Current Accounts		
On Deposit Accounts		
On Savings Accounts	400,000.00	400,000.00
6. <u>Customs Duty Advance</u>	40,708.00	40,708.00
7. <u>Outside Recovery</u>		
<b>TOTAL (A)</b>	<b>24,432,468.00</b>	<b>52,813,277.00</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount - Rs.)

<b>SCHEDULE 11B - CURRENT ASSETS, LOANS, ADVANCES ETC. (Contd.)</b>	<b>2019-20</b>	<b>2018-19</b>
<b>B LOANS, ADVANCES AND OTHER ASSETS</b>		
1. <u>Loans:</u>		
a) Staff		
i) Motor car		
ii) House Building Advance		
iii) Computer Advance		
iv) Festival Advance		
2. <u>Advances and other amounts recoverable in cash or in kind or for value to be received:</u>		
a) On Capital Account		
b) Prepayments		
c) Others		
3. <u>Income Accrued:</u>		
a) On Investments from Earmarked / Endowment Funds		
b) On Investments - Others		
c) On Loans and Advances		
d) Others (includes income due unrealised - Rs.....)		
4. <u>Claims Receivable:</u>		
<b>TOTAL (B)</b>	<b>0</b>	<b>0</b>
<b>TOTAL (A + B)</b>	<b>24,432,468.00</b>	<b>52,813,277.00</b>

AO.,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE PERIOD/YEAR ENDED 31-03-2020**

(Amount - Rs.)

<b>SCHEDULE 12 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>	<b>2019-20</b>	<b>2018-19</b>
<b>1) Income from Sales</b>		
1. Hospital receipts	675,275.00	689,040.00
2. Administrative charges(Project)		
3. Sales of scraps		
<b>2) Income from Services</b>		
a) Labour and Processing Charges		
b) Professional / Consultancy Services		
c) Agency Commission and Brokerage		
d) Maintenance Services (Equipment/Property)		
e) Others (Specify) Hospital Receipt		
<b>TOTAL</b>	<b>675,275.00</b>	<b>689,040.00</b>

<b>SCHEDULE 13 - GRANTS /SUBSIDIES</b>	<b>2019-20</b>	<b>2018-19</b>
<b>1) Income from Sales</b>		
<u>(Irrevocable Grants &amp; Subsidies Received)</u>		
1. Central Government	266,081,088.00	307,500,000.00
2. State Government(s)		
3. Government Agencies		
4. Institutions/ Welfare Bodies (SAP)		
5. International Organisations		
6. Others (Specify) LOAN FROM AIIMS		
<b>TOTAL</b>	<b>266,081,088.00</b>	<b>307,500,000.00</b>

AO.,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

<b><u>SCHEDULE 14 - FEES/SUBSCRIPTIONS</u></b>	<b>2019-20</b>	<b>2018-19</b>
1. Tuition & Examination Fee		
2. Licence Fee		
3. Seminar/Program Fees		
4. Consultancy Fees		
5. Others (Specify) EHS		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>
<b>Note-</b> Accounting Policies towards each item are to be disclosed		

<b><u>SCHEDULE 15 - INCOME FROM INVESTMENTS</u></b> (Income on Invest. From Earmarked/Endowment Funds transferred to Funds)	<b>Investment from Earmarked Fund</b>		<b>Investment-Others</b>	
	<b>2019-20</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2018-19</b>
1. Interest				
a) On Govt. Securities				
a) Other Bonds/Debentures				
2. Dividends:				
a) On Shares				
a) On Mutual Fund Securities				
3. Rents				
4. Others (Specify)				
<b><u>TOTAL</u></b>				
<b>TRANSFERRED TO EARMARKED/EDNOWNMENT FUNDS</b>				

AO, NDDTC, AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATION ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
1. Income from Royalty		
2. Income from Publications		
3. Others (specify)		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

<b>SCHEDULE 17 - INTEREST EARNED</b>	<b>2019-20</b>	<b>2018-19</b>
1. On Term Deposits:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2. On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) Post Office Savings Accounts		
d) Others		
3. On Loans:		
a) Employees/Staff		
b) Others		
4. Interest on Debtors and other Receivables		
<b><u>TOTAL</u></b>	<b>0</b>	<b>0</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2021**

<b>SCHEDULE 18 - OTHERS INCOME</b>	<b>(Amount-Rs.)</b>	
	<b>2019-20</b>	<b>2018-19</b>
1. Misc Receipts	358,743.00	31,679.00
2. Receipts 5% Admn. Cost form UNDCAP A/c	3,231,270.00	
3. Others (specify)		
<b>TOTAL</b>	<b>3,590,013.00</b>	<b>31,679.00</b>

<b>SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	<b>2019-20</b>	<b>2018-19</b>
a) Closing stock		
- Finished Good:		
- Work-in-progress		
b) Less: Opening Stock		
- Finished Good:		
- Work-in-progress		
<b>NET INCREASE/(DECREASE) [a+b]</b>	<b>-</b>	<b>-</b>

<b>SCHEDULE 20 - ESTABLISHMENT EXPENSES</b>	<b>2019-20</b>	<b>2018-19</b>
Salaries	144,572,490.00	134,025,070.00
Salaries expenditure under 5% Admn. Cost received from UNDCAP A/C contribution fo NPS	2,072,718.00	
Contribution to Other Fund (Scheme Cell)	7,927,510.00	4,606,307.00
Staff Welfare Expenses		
Expenses on Employees "":Retirement and Terminal Benefits"		
Others (NPS & LSPC)		
<b>TOTAL</b>	<b>154,572,718.00</b>	<b>138,631,377.00</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)	56,257,449.00	53,073,788.00
b) Housekeeping services	21,452,084.00	18,204,715.00
c) Misc expenditure (Adj. of advances)	120,000.00	132,635.00
d) Wages for security and contractual staff	32,913,376.00	21,353,767.00
e) Misc Exp from Impres	95,751.00	99,586.00
f) Imrest adjusted (19-20) Misc expenditure		
g) Repairs and maintenance (M&E)		
h) Excise Duty		
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charge:		
l) Printing and Stationary		
m) Nurses Training program (Adjustment of Advances)	115,000.00	
n) Expenses under Nurses Training programme	46,314.00	
o) Expenses under DTCs Scheme	37,476,165.00	11,035,948.00
p) Expenses on Sanitation (SAP)	80,870.00	3,583,247.00
q) Maintenance of Buildings (Minor Work RG)		
r) Maintenance of M&E (CAMC/AMC)		
s) Maintenance of Building (Non-plan)		
t) Provision for Bad and Doubtful Debts/Advance		
u) Irrecoverable Balances Written-off		
v) Swap Charges (IDBI Debit/Credit Card Commission)		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity		
z) Others (specify) Training programme	12,705,894.00	35,496,412.00
<b>TOTAL</b>	<b>161,262,903.00</b>	<b>142,980,098.00</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF RECEIPTS & PAYMENT FOR THE YEAR ENDED 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 21A - OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a) Purchases (Material and Supply)	56,257,449.00	53,073,788.00
b) HOUSEKEEPING SERVICES (SAP)	21,452,084.00	18,204,715.00
c) Misc expenditure (Adj. of advances)		
d) Wages for security and contractual staff	32,913,376.00	21,353,767.00
e) Water charges		
f) Imrest adjusted (18-19)	95,751.00	99,586.00
g) Repairs and maintenance (M&E)		
h) Excise Duty		
i) Rent, Rates and Taxes		
j) Vehicles, Running and Maintenance		
k) Postage, Telephone and Communication Charges		
l) Printing and Stationary		
m) Travelling and Conveyance Expenses		
n) Expenses under Nurses Training programme	46,314.00	
o) Expenses under DTCs Scheme	37,476,165.00	11,035,948.00
p) Expenses on Sanitation (SAP)	80,870.00	3,583,247.00
q) Maintenance of Buildings (Minor Work RG)		
r) Maintenance of M&E (CAMC/AMC)		
s) Maintenance of Building (Non-plan)		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Swap Charges (IDBI Debit/Credit Card Commission)		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity		
z) Others (specify)(Contingency charge)(Adj. of advances)		
<b>TOTAL</b>	<b>148,322,009.00</b>	<b>107,351,051.00</b>

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(Amount-Rs.)

<b>SCHEDULE 22- EXPENDITURE ON GRANTS, SUBSIDIES ETC.</b>	<b>2019-20</b>	<b>2018-19</b>
a). Grants given to Institutions/Organizations		
b). Subsidies given to Institutions/organisations		
<b>Total</b>	0	0

**Note** - name of the Entities, their activities along with the amount of grants/subsidies are to be disclosed.

<b>SCHEDULE 23- INTEREST</b>	<b>2019-20</b>	<b>2018-19</b>
a) On fixed Loans		
b) On other Loans ( including Bank charges)		
c) Others( Specify)		
<b>Total</b>	0	0



**UNDCP ACCOUNT**  
**ALL INDIA INSTITUTE OF MEDICAL SCIENCE**  
**RECEIPTS AND PAYMENT ACCOUNT**  
**FOR THE YEAR ENDED ON 31st MARCH,2020**

RECEIPTS	2019-20	2018-19	PAYMENTS	2019-20	2018-19
<b>I. Opening Balance</b>			<b>I. Expenses</b>		
a) Cash in hand			a) Establishment Expenses ( Schedule No.5)	2,364,869	1,924,206
b) Bank Balances			b) Administrative Expenses (Schedule No.6)	8,158,170	4,390,985
(i) In current accounts	60,122,247	73,732,674	c) Bank charges (Schedule No.7)	649	649
(ii) In deposit accounts			<b>V. Refund of Surplus Money/Loans</b>	5,000,000	
(iii) Savings accounts			a) To the Government of India		
			b) Grant refund to WHO		
			c) To other providers of Funds		
<b>II. Grants Received</b>					
a) From WHO	257,550	85,850			
b) From Ministry of Finance	874,628		<b>VI. Expenditure on fixed assets (Schedule No.2)</b>	28,947,635	7,499,950
c) From MOSJE	192,725,400	119,513			
			<b>VII. Other Payments</b>		
<b>V. Other Income</b>			a) Engg. Maintenances		
a) Hospital Receipts			b) Minor Works.		
b) Misc. Receipts			c) Misc Expenditure		
			d) Festival Advance Paid		
<b>VII. Any other receipts</b>			h) Patient Treatment		
a) Imprest			i) Advances paid as Custom Duty		
b) AITSC					
c) INCPT			<b>VIII. Closing Balances</b>		
d) Other Misc.			a) Cash in hand		
			b) Bank Balances		
			i) In Current accounts	209,508,502	60,122,247
			ii) In Deposit accounts		
			iii) Savings accounts		
	253,979,825	73,938,037		253,979,825	73,938,037

AO, NDDTC, AIIMS

CHIEF, NDDTC, AIIMS

**ALL INDIA INSTITUTE OF MEDICAL SCIENCE  
INCOME AND EXPENDITURE ACCOUNT**

INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR 31.3.2020

<b>INCOME</b>	<b>SCHEDULE</b>	<b>2019-20</b>	<b>2018-19</b>
Income from Services			
Grants/Subsidies	4	193,857,578.00	205,363
Fees/Subscriptions			
Income from Investments ( Income on Investment from earmarked/endow. Funds)			
Income from Royalty, Publication			
Intrest Earned			
Other Income			
<b>Total (A)</b>		193,857,578.00	<b>205,363</b>
<b>EXPENDITURE</b>			
Establishment Expenses	5	2,364,869.00	1,924,206
Other Administrative Expenses	6	8,158,170.00	4,390,985
Expenditure on Grants, Subsidies			
Bank Charges	7	649.00	649
Depreciation			
Others			0
<b>Total (B)</b>		10,523,688	6,315,840
<b>Balance being excess of income over expenditure (A-B)</b>		183,333,890	-6,110,477
Transfer to Special Reserve (Specify Each)			
Transfer to General Reserve			
<b>Balance Being Surplus/ Deficit carried to General Reserve</b>		183,333,890	-6,110,477
		193,857,578	205,363

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**ALL INDIA INSTITUTE OF MEDICAL SCIENCE  
BALANCE SHEET as at 31st March, 2020**

<b>CORPUS / CAPITAL FUND AND LIABILITIES</b>	<b>Schedule</b>	<b>2019-20</b>	<b>2018-19</b>
CORPUS / CAPITAL FUND			
RESERVE AND SURPLUS	1	251,001,087.00	67,667,197.00
EARMARKED / ENDOWMENT FUNDS			
SECURED LOANS AND BORROWINGS			
UNSECURED LOANS AND BORROWINGS			
DEFERRED CREDIT LIABILITIES			
CURRENT LIABILITIES AND PROVISIONS			
<b>Total Capital Fund and Liabilities</b>		<b>251,001,087.00</b>	<b>67,667,197.00</b>
<b>ASSETS</b>			
FIXED ASSETS			
INVESTMENTS - FROM EARMARKED / ENDOWMENT FUNDS	2	36,447,585.00	7,499,950.00
INVESTMENTS - OTHERS			
CURRENT ASSETS, LOANS, ADVANCES ETC.	3	214,553,502.00	60,167,247.00
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)			
<b>Total Assets</b>		<b>251,001,087.00</b>	<b>67,667,197.00</b>

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**ALL INDIA INSTITUTE OF MEDICAL SCIENCE  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.2020**

Schedule 1 - Reserve and Surplus	2019-20	2018-19
<b>1. Capital Reserve :</b>		
As per last Account		
Addition during the year		
Less : Deduction During the year		
<b>2. Revaluation Reserve :</b>		
As per last Account		
Addition during the year		
Less : Deduction During the year		
<b>3. Special Reserves :</b>		
As per last Account		
Addition during the year		
Less : Deduction During the year		
<b>4. General Reserve :</b>		
As per last Account	67,667,197.00	
Less:- Excess of Expenditure over Income	73,777,674.00	
Add :- Excess of Income over Expenditure	183,333,890.00	67,667,197.00
Less : Grant refund to ministry	251,001,087.00	
<b>Closing Balance</b>	<b>251,001,087.00</b>	<b>67,667,197.00</b>

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**National Drug Dependence Treatment Centre**  
**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

(Amount in Rs.)

SCHEDULE 2 – FIXED ASSETS											
DESCRIPTION	GROSS BLOCK			DEPRECIATION			NET BLOCK				
	Cost/ valuation as at beginning of the year	Additions during the year	Deductions during the year	Cost/ valuation at the year-end	As at the beginning of the year	On Additions during the year	On Deductions during the year	Total up to the year-end	As at the Current year-end 19-20	As at the previous year-end 18-19	
A. FIXED ASSETS:											
1. LAND:											
a) Freehold Leasehold											
2. BUILDINGS:											
a) On Freehold Land (construction)											
b) On Leasehold Land											
c) Ownership Flats/Premises											
d) Superstructures on Land											
Not belonging to the entity											
3. PLANT MACHINERY & EQUIPMENT	7,499,950.00	28,947,635.00		36,447,585.00					36,447,585.00	7,499,950.00	
4. VEHICLES											
5. FURNITURE, DIXTURES											
6. OFFICE EQUIPMENT											
7. COMPUTER/PERIPHERALS											
8. ELECTRIC INSTALLATIONS											
9. LIBRARY BOOKS											
10. TUBEWELLS & W.SUPPLY											
11. OTHER FIXED ASSETS (SAP)											
<b>TOTAL OF CAURENT YEAR</b>	<b>7,499,950.00</b>	<b>28,947,635.00</b>	<b>-</b>	<b>36,447,585.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>36,447,585.00</b>	<b>7,499,950.00</b>	
PREVIOUS YEAR											
B. CAPITAL WORK-IN-PROGRESS											
<b>TOTAL</b>	<b>7,499,950.00</b>	<b>28,947,635.00</b>	<b>-</b>	<b>36,447,585.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>36,447,585.00</b>	<b>7,499,950.00</b>	

AO, NDDTC, AIIMS

CHIEF, NDDTC, AIIMS

**ALL INDIA INSTITUTE OF MEDICAL SCIENCE  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.3.2020**

Schedule 3 Current Assets, Loans, Advances	2019-20	2018-19
<b>1. Cash in hand ( including cheques/drafts and imprest)</b>		
<b>2. Bank Balances:</b>		
a) Current Account	209,508,502.00	60,122,247.00
b) Deposit Account ( Fixed Deposit )		
<b>3. Loans:</b>		
a) To Employees of Entity		
<b>5. Advances and Other amounts recoverable:</b>		
a) From Employees of Entity		
b) From Others (NDDTC) loan for NDDTC	5,000,000.00	
Less :- Adjustment during the year		-
<b>6. Others</b>		
<b>Advances</b>	45,000.00	45,000.00
<b>Less- Advance adjust during the year</b>		
<b>Balance as at the Year End</b>	<b>214,553,502.00</b>	<b>60,167,247.00</b>

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**FORM OF FINANCIAL STATEMENTS  
ALL INDIA INSTITUTE OF MEDICAL SCIENCE  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE ENDED 31.3.2020**

Schedule 4 - Grants and Subsidies	2019-20	2018-19
a) From WHO	257,550.00	85,850.00
b) From Ministry of Finance	874,628.00	
c) From MOSJE	192,725,400.00	119,513.00
<b>Total</b>	<b>193,857,578.00</b>	<b>205,363.00</b>

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**FORM OF FINANCIAL STATEMENTS  
ALL INDIA INSTITUTE OF MEDICAL SCIENCE**

SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31.3.2020

<b>Schedule 5- Establishment Expenditure</b>	<b>2019-20</b>	<b>2018-19</b>
Establishment Charges (Salaries)	2,364,869.00	1,924,206.00
<b>Total</b>	<b>2,364,869.00</b>	<b>1,924,206.00</b>

<b>Schedule 6- Other Administrative Expenses Etc.</b>	<b>2019-20</b>	<b>2018-19</b>
Purchase (Material & Supply )	3,961,901.00	4,182,693.00
Transfer of funds to various centre	752,000.00	
Travelling Expenditure	207,999.00	119,513.00
5% of grants transferred to NDDTC	3,231,270.00	
Miscellaneous Expenditure	5,000.00	88,779.00
<b>Total</b>	<b>8,158,170.00</b>	<b>4,390,985.00</b>

AO,NDDTC,AIIMS

CHIEF,NDDTC,AIIMS

**FORM OF FINANCIAL STATEMENTS  
ALL INDIA INSTITUTE OF MEDICAL SCIENCE**

SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31.3.2020

<b>Schedule 7- Bank Charges</b>	<b>2019-20</b>	<b>2018-19</b>
Bank Charges	649	649
<b>Total</b>	<b>649</b>	<b>649</b>

AO,NDDTC,AIIMS



**Centre For Integrative Medicine & Research (AIIMS)**  
**Balance Sheet as at 31.03.2020**

		(Amount in Rs.)	
<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>Schedule</b>	<b>Current Year</b>	<b>Previous Year</b>
Corpus/Capital Fund	1	17,040,904	16,174,915
Reserves and Surplus	2	12,276	6,671
Earmarked/ Endowment Funds	3	-	-
Revolving Funds	4	-	-
Secured Loans and Borrowings	5	-	-
Unsecured Loans and Borrowings	6	-	-
Deferred Credit Liabilities	7	-	-
Current Liabilities and Provisions	8	95,000	95,000
<b>TOTAL</b>		<b>17,148,181</b>	<b>16,276,586</b>
<b>ASSETS</b>			
Fixed Assets	9	17,033,853	16,167,864
Investments-From Earmarked/Endowment Funds	10	-	-
Investment-Others	11	-	-
Current Assets, Loans, Advances Etc.	12	114,328	108,722
Miscellaneous Expenditure		-	-
(To the extent not written off or adjusted)			
Balance of excess of expenditure over income			
<b>TOTAL</b>		<b>17,148,181</b>	<b>16,276,586</b>
Significant Accounting Policies	25		
Contingent Liabilities and Notes on Accounts	26		

**PROFESSOR I/C, CIMR**

**Accounts Officer, CNC**

**Centre For Intergrative Medicine & Research (AIIMS)**  
**Income and Expenditure Account for the year ending on 31.03.2020**

<u>INCOME</u>	Schedule	Current Year	Pervious Year
Income from Sales/services	13	5,605	3,698
Grants/Subsidies	14	1,499,163	699,245
Fees/Subscriptions	15	-	-
Income from Investments (Income on Invest. From earmarked/endow. Funds Transferred to Funds)	16	-	-
Income from Royalty, publications etc.	17	-	-
Interest Earned	18	-	-
Other Income	19	-	-
Increase/(decrease) of Finished goods and works-in-progress	20	-	-
<b>TOTAL(A)</b>		<b>1,504,768</b>	<b>702,943</b>
<u>EXPENDITURE</u>			
Establishment Expenses	21	-	-
Other Administrative Expenses etc.	22	300,566	293,861
Payment made against fund for various projects	22 (A)	-	-
Material & Supply	23	1,198,597	405,359
Expenditure on Grants, Subsidies Etc.	24	-	-
Interest & Finance Expenses	25	-	-
Depreciation (Net Total at the year-end-corresponding to Schedule 11)			
<b>TOTAL (B)</b>		<b>1,499,163</b>	<b>699,220</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>			
Transfer to Special Reserve (Specify each)		5,605	3,723
Transfer to/from General Reserve		-	-
<b>Balance being surplus/(deficit) carried to corpus/capital fund</b>		<b>5,605</b>	<b>3,723</b>
Significant Accounting Policies	25		
Contingent Liabilities and Notes on Accounts	26		

Accounts Officer

PROFESSOR I/C, CIMR

**Centre For Integrative Medicine & Research (AIIMS)**

**Schedules forming part of the Balance Sheet as at 31.03.2020**

	(Amount in Rs.)	
	Current Year	Pervious Year
<b>Schedule 1 - Corpus/ Capital Funds</b>		
Balance as at the beginning of the year	16,174,915	16,174,915
Add: Contributions towards Corpus/Capital Fund (Through Aiims Main)	865,989	
Add: Corpus/Capital Created out of Donation		
<b>Add/Deduct:</b> Balance of net income/(expenditure) transferred from the Income and Expenditure Account	-	-
<b>Balance as at the end of the year</b>	<b>17,040,904</b>	<b>16,174,915</b>

	(Amount Rs.)	
	Current Year	Pervious Year
<b>Schedule 2 - Reserves and Surplus</b>		
<b>1. Capital Reserve</b>		
Balance as at the beginning of the year	6,671	6,671
CIMR A/c	5,605	
<b>Add:</b> Additions during the year		
CIMR A/c		
2. Revaluation Reserves		
Balance as at the beginning of the year	-	-
<b>Add:</b> Additions during the year		
<b>Less:</b> Deductions during the year		
3. Special Reserve		
Balance as at the beginning of the year	-	-
<b>Add:</b> Additions during the year		
<b>Less:</b> Deductions during the year		
4. General Reserve		
Balance as at the beginning of the year	-	-
<b>Add:</b> Additions during the year		
<b>Less:</b> Deductions during the year		
5. Excess of income over expenditure		
<b>TOTAL</b>	<b>12,276</b>	<b>6,671</b>

(Amount in Rs.)

Schedule -3 Earmarked/ Endowment Funds	XXX	YYY	Current Year	Previous Year
			Total	Total
<b>a) Opening balance of the funds</b>	-	-	-	-
b) Additions to the Funds	-	-	-	-
i. Donations/grants	-	-	-	-
ii. Income from Investments made on account of funds	-	-	-	-
iii. Received from patients	-	-	-	-
iv. Other additions (specify nature )	-	-	-	-
<b>TOTAL (a+b)</b>	-	-	-	-
<b>c) Utilisation/Expenditure towards objectives of funds</b>				
i. Capital Expenditure				
Fixed Assets	-	-	-	-
Others	-	-	-	-
<b>TOTAL (c.i)</b>	-	-	-	-
ii. Revenue Expenditure				
Salaries, Wages and allowances etc.	-	-	-	-
Rent	-	-	-	-
Bank Charges	-	-	-	-
Other Administrative expenses	-	-	-	-
<b>TOTAL c (ii)</b>	-	-	-	-
<b>TOTAL (c)</b>	-	-	-	-
<b>d) Refunds to Patients</b>	-	-	-	-
<b>NET BALANCE AS AT THE YEAR-END (a+b-c-d)</b>	-	-	-	-

(Amount in Rs.)

Schedule -4 Revolving Fund	Current Year			Previous Year
	XX	YY	Total	Total
<b>a) Opening balance of the funds</b>	-	-	-	-
b) Additions to the Funds				
i. Received From Patients	-	-	-	-
ii. Grant Receive (17-18)	-	-	-	-
<b>TOTAL (a+b)</b>	-	-	-	-
<b>c) Utilisation/Expenditure towards objectives of funds</b>				
i. Capital Expenditure				
Fixed Assets	-	-	-	-
Others (Specify)	-	-	-	-
<b>TOTAL (c.i)</b>	-	-	-	-
ii. Revenue Expenditure				
Material & Supply	-	-	-	-
Others (Specify)	-	-	-	-
Transfer to various pts. A/c	-	-	-	-
<b>TOTAL (c.ii)</b>	-	-	-	-
<b>TOTAL (c)</b>	-	-	-	-
<b>Balance as at the end of the year (a+b-c)</b>	-	-	-	-

(Amount in Rs.)

<b>Schedule 5 - Secured Loans And Borrowings</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1. Capital Government</b>	-	-
<b>2. State Government (Specify)</b>	-	-
<b>3. Financial Institutions</b>		
a) Term Loans	-	-
b) Interest accrued and due	-	-
<b>4. Banks</b>		
a) Term Loans		
- Interest accrued and due	-	-
b) Other Loans (specify)		
- Interest accrued and due	-	-
<b>5. Other Institutions and Agencies</b>	-	-
<b>6. Debentures and Bonds</b>	-	-
<b>7. Others (specify)</b>	-	-
<b>TOTAL</b>	-	-
<b>Note:</b> Amounts due within one year		

<b>Schedule 6- Unsecured Loans And Borrowings</b>		(Amount in Rs.)	
	<b>Current Year</b>	<b>Previous Year</b>	
<b>1. Capital Government</b>	-	-	
<b>2. State Government (Specify)</b>	-	-	
<b>3. Financial Institutions</b>			
a) Term Loans	-	-	
b) Interest accrued and due	-	-	
<b>4. Banks</b>			
a) Term Loans			
- Interest accrued and due	-	-	
b) Other Loans (specify)			
- Interest accrued and due	-	-	
<b>5. Other Institutions and Agencies</b>	-	-	
<b>6. Debentures and Bonds</b>	-	-	
<b>7. Others (specify)</b>	-	-	
<b>TOTAL</b>	-	-	
<b>Note:</b> Amounts due within one year			

<b>Schedule 7- Deferred Credit Liabilities</b>		(Amount in Rs.)	
	<b>Current Year</b>	<b>Previous Year</b>	
a) Acceptance secured by hypothecation of capital equipment and other assets	-	-	
b) Others	-	-	
<b>TOTAL</b>	-	-	
<b>Note:</b> Amount due within one year			

(Amount in Rs.)

<b>Schedule 8-Current Liabilities</b>	<b>Current Year</b>	<b>Pervious Year</b>
<b>A. Current Liabilities</b>		
1. <i>Acceptances</i>	-	-
2. <i>Sundry Creditors</i>		
a) For Goods	-	-
b) Others		
3. <i>Advances Received</i>	-	-
4. <i>Interest accrued but not due on</i>		
a) Secured Loans/borrowings	-	-
b) Unsecured Loans/borrowings	-	-
5. <i>Statutory Liabilities</i>		
a) Overdue	-	-
b) Others	-	-
6. <i>Other Current Liabilities</i>	-	-
7. <i>Security Deposit</i>	95,000	95,000
8. <i>Imprest</i>	-	-
9. <i>Aiims Neuro Sciences Poor Pts. A/c</i>	-	-
<b>TOTAL (A)</b>	<b>95,000</b>	<b>95,000</b>
<b>B. Provisions</b>		
1. For Taxation	-	-
2. Gratuity	-	-
3. Superannuation/ Pension	-	-
4. Accumulated Leave Encashment	-	-
5. Trade Warranties/ Claims	-	-
6. Accumulated Depreciation		
7. Others	-	-
<b>TOTAL (B)</b>	<b>-</b>	<b>-</b>
<b>TOTAL (A)+(B)</b>	<b>95,000</b>	<b>95,000</b>

Particulars	GROSS BLOCK						DEPRECIATION				NET BLOCK		
	Cost/Valuation as at beginning of the year	Additions during the year	Deductions during the year	Additions during the year (Letter of Credit)	Additions during the year (PDA)	Additions during the year (Custom Duty)	Cost/Valuation at the year-end	As at the begni. of the year	For the year	On ded. during the year	Total up to the year-end	As at the current year-end	As at the previous year-end
<b>FIXED ASSETS</b>													
LAND													
a) Freehold	-	-	-	-	-	-	-	-	-	-	-	-	-
b) Leasehold	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>BUILDINGS</b>													
a) On Freehold Land	-	-	-	-	-	-	-	-	-	-	-	-	-
b) On Leasehold Land	-	-	-	-	-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity													
<b>INTANGIBLE FIXED ASSETS</b>													
a) Software													
PLANT, MACHINERY & EQUIPMENT*	14,675,269	865,989	-	-	-	-	-	-	-	-	-	15,541,258	14,675,269
VEHICLES	-	-	-	-	-	-	-	-	-	-	-	-	-
FURNITURE, FIXTURES	906,555	-	-	-	-	-	-	-	-	-	-	906,555	906,555
COMPUTER/ PERIPHERALS	586,040	-	-	-	-	-	-	-	-	-	-	586,040	586,040
ELECTRIC INSTALLATIONS	-	-	-	-	-	-	-	-	-	-	-	-	-
LIBRARY BOOKS	-	-	-	-	-	-	-	-	-	-	-	-	-
Tube well & Water-supply	-	-	-	-	-	-	-	-	-	-	-	-	-
OFFICE EQUIPMENT	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL OF CURRENT YEAR</b>	<b>16,167,864</b>	<b>865,989</b>	-	-	-	-	-	-	-	-	-	<b>17,033,853</b>	<b>16,167,864</b>
<b>PREVIOUS YEAR</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CAPITAL WORK-IN-PROGRESS</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>16,167,864</b>	<b>865,989</b>	-	-	-	-	-	-	-	-	-	<b>17,033,853</b>	<b>16,167,864</b>

(Amount in Rs.)

**SCHEDULE 9 - FIXED ASSETS**



(Amount in Rs.)	
<b>Schedule 10 - Investments from Earmarked/Endowment Funds</b>	<b>Previous Year</b>
<b>Current Year</b>	<b>Previous Year</b>
1. In Government Securities	-
2. Other approved Securities	-
3. Shares	-
4. Debentures and Bonds	-
5. Subsidiaries and Joint Ventures	-
6. Others (to be specified)	-
<b>TOTAL</b>	-

(Amount in Rs.)	
<b>Schedule 11 - Investments Others</b>	<b>Previous Year</b>
<b>Current Year</b>	<b>Previous Year</b>
1. In Government Securities	-
2. Other approved Securities	-
3. Shares	-
4. Debentures and Bonds	-
5. Subsidiaries and Joint Ventures	-
6. Others (to be specified)	-
i. Fixed Deposit (Gamma Knife)	
ii. Fixed Deposit (Angio Pts. A/c)	
iii. Fixed Deposit (Neuro Surgery Pts. A/c)	
<b>TOTAL</b>	-

(Amount in Rs.)

<b>Schedule 12-Current Assets, Loans, Advances Etc.</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>A. Current Assets</b>		
<b>1. Inventories</b>		
a) Stores and Spares	-	-
b) Loose Tools	-	-
c) Stock in trade		
Finished Goods	-	-
Work-in-progress	-	-
Raw Materials	-	-
<b>2. Sundry Debtors</b>		
a) Debts outstanding for a period exceeding six months		
b) Others		
<b>3. Cash balances in hand (Including cheques/drafts and imprest)</b>		
a) Imprest		
<b>4. Bank Balances</b>		
a) With Scheduled Banks:		
-On Current Accounts	114,328	108,722
-On Deposit Accounts (Includes margin money)		-
-On Savings Accounts	-	-
b) With Non-Scheduled Banks:		
-On Current Accounts	-	-
-On Deposit Accounts	-	-
-On Savings Accounts	-	-
<b>5. Post Office - Savings Accounts</b>	-	-
<b>TOTAL (A)</b>	<b>114,328</b>	<b>108,722</b>

(Amount in Rs.)

<b>SCHEDULE 12-CURRENT ASSETS LOANS, ADVANCES ETC. (CONTD.)</b>	<b>Current Year</b>	<b>Pervious Year</b>
<b>B. LOANS, ADVANCES AND OTHER ASSETS</b>		
<b>1. Loans</b>		
a) Staff		
b) Other Entities engaged in activities/objectives similar to that of the Entity		
c) Other (Patient Treatment- CGHS)		
<b>2. Advances and other amounts recoverable in cash or in kind or for value to be received</b>		
a) On Capital Accounts		
b) Prepayments		
c) Temporary Contingent Advances		
d) Others		
<b>3. Income Accrued</b>		
a) On Investments fro Earmarked / Endowment Funds		
b) On Investments-Others		
c) On Loans and Advances		
d) Others		
(Includes income due unrealized-Rs.....)		
<b>4. Claims Receivable</b>		
<b>5. Letter of Credit</b>		
<b>6. Custom Duty</b>		
<b>7. Pre-Deposits Advance</b>		
<b>TOTAL (B)</b>	-	-
<b>TOTAL (A)+(B)</b>	<b>114,328</b>	<b>108,722</b>

(Amount in Rs.)

<b>SCHEDULE 17- INCOME FROM ROYALTY, PUBLICATION ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
1) Income from Royalty	-	-
2) Income from Publications	-	-
3) Others (Specify)	-	-
<b>TOTAL</b>	-	-

(Amount in Rs.)

<b>SCHEDULE 18- INTEREST EARNED</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1) On Term Deposits</b>		
a) with Schedule Banks (CNC Main)		
with Schedule Banks (Gamma Knife)		
with Schedule Banks (Angio Pts. A/c)		
with Schedule Banks (C.T. Pts. A/c)		
with Schedule Banks (Neuro Surgery Pts. A/c)	-	
b) With Non-Scheduled Banks	-	-
c) With Institutions	-	-
d) Others	-	-
<b>2) On Savings Accounts</b>		
a) with Schedule Banks	-	-
b) With Non-Scheduled Banks	-	-
c) With Institutions	-	-
d) Others	-	-
<b>3) On Loans</b>		
a) Employee/Staff		
b) Others	-	-
<b>4) Interest on Debtors and Other Receivables</b>	-	-
<b>TOTAL</b>	-	-
<b>Note-</b> Tax deducted at source to be indicated		

(Amount in Rs.)

<b>SCHEDULE 13-INCOME FROM SALES/SERVICE</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1) Income from sales</b>		
a) Sales of Finished Goods	-	-
b) Sales of Raw Material	-	-
c) Sales of Scraps	-	-
<b>2) Income from Services</b>		
a) Labour and Processing Charges		
b) Professional/Consultancy Service	-	-
c) Agency Commission and Brokerage	-	-
d) Maintenance Services (Equipment/Property)	-	-
e) Hospital Receipts		
f) Others (Specify) Suspence Receipt	5,605	3,698
<b>TOTAL</b>	<b>5,605</b>	<b>3,698</b>

<b>SCHEDULE 14-GRANTS/SUBSIDIES</b>	<b>Current Year</b>	<b>Current Year</b>
<b>(Irrevocable Grant &amp; Subsidies Received)-Through Aiims Main</b>		
1) Central Government	-	-
<b>Revenue General (Plan)</b>		
(ii) Grant in Aid- (Salary)	-	-
(iii) Grant in Aid- (General)	-	-
<b>Non Plan</b>		
(iii) Grant in Aid- (General)	1,499,163	699,245
(ii) Grant in Aid- (Salary)	-	-
2) State Government(s)		-
3) Governments Agencies	-	-
4) Institutions/Welfare Bodies	-	-
5) International Organisations	-	-
6) Others (Specify)	-	-
<b>TOTAL</b>	<b>1,499,163</b>	<b>699,245</b>

	(Amount in Rs.)	
	Current Year	Previous Year
<b>SCHEDULE 15-FEES/SUBSCRIPTIONS</b>		
1) Entrance Fees	-	-
2) Annual Fees/Subscriptions	-	-
3) Seminar/Program Fees	-	-
4) Consultancy Fees	-	-
5) Tender Fees	-	-
6) Other Income	-	-
<b>TOTAL</b>	-	-
<b>Note-</b> Accounting Policies towards each item are to be disclosed		

	(Amount in Rs.)			
	Investment from Earmark Fund		Investment Other	
	Current Year	Previous Year	Current Year	Previous Year
<b>SCHEDULE 16- INCOME FROM INVESTMENTS</b>				
<b>(Income on Invest. Earmarked/Endowment Funds transferred to Funds)</b>				
<b>1) Interest</b>				
a) On Govt. Securities	-	-	-	-
b) Other Bonds/Debentures	-	-	-	-
<b>2) Dividends</b>				
a) On Shares	-	-	-	-
b) On Mutual Fund Securities	-	-	-	-
<b>3) Rents</b>	-	-	-	-
<b>4) Other (Specify)</b>	-	-	-	-
<b>TOTAL</b>	-	-	-	-
<b>Note-</b> Transferred to earmarked/endowment funds				

(Amount in Rs.)

<b>SCHEDULE 19- OTHER INCOME</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>1) Profit on Sale/disposal of Assets</b>		
a) Owned assets	-	-
b) Assets acquired out of grants, or received free of cost	-	-
<b>2) Export Incentives realized</b>		
a) Liquid Damage	-	-
<b>3) Fees for Miscellaneous Services</b>	-	-
<b>4) Miscellaneous Receipt</b>		
<b>5) Lice. Fee Recovery</b>		-
<b>TOTAL</b>	-	-

(Amount in Rs.)

<b>SCHEDULE 20- INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS &amp; WORK IN PROGRESS</b>	<b>Current Year</b>	<b>Previous Year</b>
<b>a) Closing stock</b>		
Finished Goods	-	-
Work-In-Progress	-	-
<b>b) Less: Opening Stock</b>		
Finished Goods	-	-
Work-In-Progress	-	-
<b>NET INCREASE/(DECREASE) [a-b]</b>	-	-

(Amount in Rs.)

<b>SCHEDULE 21- ESTABLISHMENT EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Salaries and Wages (Plan)		
b) Salaries and Wages (Non-Plan)		
c) Contribution to Provident Fund		
d) Contribution to Other Fund - (NPS)		
e) Staff Welfare Expenses		
f) Expenses on Employees Retirement and Terminal Benefits		
g) Travelling and Conveyance Expenses	-	-
h) Others (specify)	-	-
<b>TOTAL</b>	-	-

(Amount in Rs.)

<b>SCHEDULE 22- OTHER ADMINISTRATIVE EXPENSES ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
Imprest	-	
Manpower (Outsources)	300,566	293,861
Refreshments	-	
Others (specify)		
<b>TOTAL</b>	<b>300,566</b>	<b>293,861</b>

(Amount in Rs.)

<b><u>SCHEDULE 22 (A) PAYMENTS MADE AGAINST FUNDS FOR VARIOUS PROJECTS</u></b>	<b>Current Year</b>	<b>Previous Year</b>
NSC Poor Patients	-	-
Others (specify)		
<b>TOTAL</b>	-	-

(Amount in Rs.)

<b>SCHEDULE 23- Material &amp; Supply</b>	<b>Current Year</b>	<b>Previous Year</b>
Material & Supply	1,198,597	405,359
Others (Specify)		
<b>TOTAL</b>	<b>1,198,597</b>	<b>405,359</b>

(Amount in Rs.)

<b>SCHEDULE 24- EXPENDITURE ON GRANTS SUBSIDIES ETC.</b>	<b>Current Year</b>	<b>Previous Year</b>
a) Grants given to Institutions/Organisations	-	-
b) Subsidies given to Institutions/Organisations	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>
<b>Note-</b> Name of the Entities, their Activities along with the amount of Grants/Subsidies are to be disclosed.		

(Amount in Rs.)

<b>SCHEDULE 25- INTEREST &amp; FINANCE EXPENSES</b>	<b>Current Year</b>	<b>Previous Year</b>
a) On Fixed Loans	-	-
b) On Other Loans (including Bank Charges)	-	-
c) Bank Charges	-	-
d) Others (specify)	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>



**Centre For Integrative Medicine & Research (AIIMS)  
Receipts and Payments for the year ended 31.03.2020**

Receipts	2019-2020	2018-19	Payments	2019-2020	2018-19
<b>I. Opening balances</b>			<b>I. Expenses</b>		
a) cash in Hand		-	a) Establishment Expenses (corresponding to schedule 21)	-	-
<b>b) Bank Balances</b>			b) Administrative Expenses (corresponding to Schedule 22)	300,566	293,861
(i) In current Account	108,722	110,953	c) Material & Supply	1,198,597	405,359
(ii) In Deposit Account		-			
(iii) In Savings Account		-	<b>II. Payments made against funds for various Projects</b>		
<b>c) Fixed Deposits</b>					
<b>II. Grant Received</b>			<b>III. Investments and deposits made</b>		
a) From Government of India--Through Aiims Main Capital (Assets New)			a) Out of Earmarked/Endowment funds	-	-
(i) Grant in Aid (M&E)	1,000,000	1,490,358	b) Revolving Fund	-	-
Refund to Aiims Main	134,011		<b>IV. Expenditure on Fixed Assets &amp; Capital</b>		
<b>Revenue General</b>			Work-in-Progress		
(ii) Grant in Aid- (General)	1,600,000	699,245	a) Purchase of Fixed Assets	865,989	1,483,312
Refund to Aiims Main	100,836		b) Expenditure on Capital Work-in-progress	-	-
			c) Letter of Credit (M&E)	-	-
b) From State Government		-	<b>V. Refund of surplus money/Loans</b>		
c) From Other Sources (details)		-	a) To the Government of India	-	-
<b>(Grant for capital and Revenue expenditure to shown</b>			b) To the State Government	-	-
<b>III. Income on Investments From</b>			c) To other providers of funds	-	-
a) Earmarked Funds/ Endowments funds			<b>VI. Finance Charges (Interest)</b>		
b) Revolving Fund			Bank Charges	-	-
<b>IV. Interest Received</b>			<b>VII. Other Payments (Specify)</b>		
a) On Bank Deposits			Donation/Grant	-	-
b) loans And Advances etc.			Earnest Money Deposits		13,000
<b>V. Other Income</b>			<b>Loan,Advances &amp; Other Assets/Recovery</b>		
Tender Fee		-	Advance to Employee	-	-
<b>VI. Amount Borrowed</b>			<b>VIII. Closing Balances</b>		
			a) Cash in hand	-	-

Receipts	2019-2020	2018-19	Payments	2019-2020	2018-19
<b>VII. Any Other Receipts (Give Details)</b>			<b>b) Bank Balances</b>		
a) Donation			(i) In current Account	114,328	108,722
b) Earnest Money Deposits		-	ii) In deposit accounts	-	-
c) Miscellaneous Receipt	5,605	-	iii) Savings accounts	-	-
<b>Loan, Advances &amp; Other Assets/Recovery</b>		3,698			
Advance to Employee			<b>c) Fixed Deposits</b>		
<b>Total</b>	<b>2,479,480</b>	<b>2,304,254</b>	<b>Total</b>	<b>2,479,480</b>	<b>2,304,254</b>

**PROFESSOR I/C, CIMR**

**Accounts Officer**

PARTICULARS		RECEIPT	AMOUNT	PARTICULARS	OTHER PAYMENTS	PAYMENTS	UNDISBURSED PAYMENTS	AMOUNT (in Rs.)
					ESTB. PAYMENTS			TOTAL PAYMENTS
<b>To Opening Balance:</b>								
DRDO		13,702,498.60			8,510,319.00			8,510,319.00
AYUSH		23,456,414.00			15,063,116.50			15,063,116.50
DBT		281,073,286.27			293,848,984.00			293,848,984.00
DIETY		46,169.00			2,934.50			2,934.50
AI/FO01 (BIRAC-BIG GRANT)		-			-			-
DST		115,339,416.00			171,100,457.04			171,100,457.04
ICMR		297,410,916.00			471,703,126.32			471,703,126.32
<b>SCHEME CELL:</b>								
Balance as per Cash Book		333,233,976.18			124,714.00			124,714.00
Balance in Fixed Deposit		1,00,000,000.00	1,164,262,676.05		6,285,947.00			6,285,947.00
<b>To Receipts during the Year:</b>								
DRDO		3,752,503.00			338,860.00	76,000.00		414,860.00
AYUSH		3,287,733.00			459,007.00	67,278.00		526,285.00
DBT		180,204,774.00			80,989.00	21,700.00		1,02,689.00
DIETY		1,581.00			6,720.00	19,023.00		25,743.00
AI/FO01 (BIRAC-BIG GRANT)		1,026,712.00			52,745.00	-		52,745.00
DST		155,286,632.00			967,665.00	5,922.00		973,587.00
ICMR		628,276,947.00			291,188.00	33,000.00		324,188.00
SCHEME CELL:								
Bill & Melinda Gates Foundation, USA		1,026,712.00			34,801,769.00	703,219.00		35,504,988.00
Boehringer Ingelheim India Private Ltd		155,286,632.00			827,229.00	34,058.00		861,287.00
ICMR		628,276,947.00			1,282,607.00	92,381.00		1,374,988.00
SCHEME CELL:								
Aimil Pharmaceutical India Ltd.		1,260,000.00			1,241,748.00	53,706.00		1,295,454.00
Airport Authority of India (AAI)		1,460,000.00			1,049,244.00	-		1,049,244.00
AIKEM Laboratories Ltd		672,769.41			1,543,479.00	99,712.00		1,643,191.00
Ambrosia Life Sciences Pvt. Ltd.		324,000.00			701,190.00	13,500.00		714,690.00
AnaZeal Analyticals & Research Pvt. Ltd.		217,000.00			678,063.00	94,397.00		772,460.00
AO Spine Asia		190,227.00			20,000.00	48,559.00		68,559.00
APLAR		873,744.00			519,702.00	108,592.00		628,294.00
Astra Seneca Singapore Pvt Ltd, Singapore		421,459.20			119,850,575.00	7,518,718.00		127,369,293.00
Bharat Serum & Vaccine Ltd.		266,463.00			965,986.00	-		965,986.00
Bigtec Private Limited		330,000.00			2,010,273.00	262,360.00		2,272,633.00
Boehringer Ingelheim India Private Ltd		41,030,195.00			1,353,897.00	201,680.00		1,555,577.00
BRISTOL MYER SQUIBB(BMS), USA		923,811.00			2,576,719.00	299,769.00		2,876,488.00
Bristol Myer Squibb India Private Ltd.		537,056.00			894,939.00	117,703.00		1,012,642.00
Bristol Myer Squibb India Private Ltd.		997,120.00			288,899.00	40,000.00		328,899.00
Cadila Health Care Ltd.		158,615.00			1,690,217.00	135,722.00		1,825,939.00
Cambridge University		495,000.00			3,786,951.00	403,292.00		4,190,243.00
Centers for Disease Control and Prevention (CDC), USA		1,101,149.00			847,199.00	10,000.00		966,953.00
Central Council for Research in Ayurvedic Science (CCRAS)		161,955,114.00			345,213.00	30,000.00		375,213.00
Central Council for Research in Homoeopathy (CCRH)		2,623,600.00			65,135.00	-		65,135.00
Central Council for Research in Unani Medicine		2,016,798.00			3,667,299.00	33,917.00		3,701,216.00
CONQUER CANCER FOUNDATION		3,097,686.00			481,600.00	43,680.00		525,280.00
CONQUER CANCER FOUNDATION					528,726.00	-		528,726.00

Centre for Health Research and Innovation (CHRI)	1,247,196.00	Delhi Rheumatology Association	97,038.00	-	97,038.00	-	97,038.00
CEO,Azure Software Pvt Ltd.	200,000.00	Delhi State Control Society/AIIDS	626,043.00	-	626,043.00	-	626,043.00
Christian Medical College,Vellore	1,399,115.00	Department of Health Research	682,332.00	-	682,332.00	-	682,332.00
Christoffel Blindnessmission(CBM) India	6,717,530.76	Diagno Searchlifesciences Pvt Ltd.	902,627.00	189,669.00	1,092,296.00	-	1,092,296.00
CLINIRX Tangent RESEARCH PVT. LTD. GURGAON, HARYANA	1,197,540.00	DNDI Switzerland	5,581,776.00	753,209.00	6,334,985.00	-	6,334,985.00
Cochlear implant group of India	100,000.00	Donations/Grants	4,412.00	-	4,412.00	-	4,412.00
Cognitive Health Rehabilitation Systems LLP	350,000.00	Dr. Reddys Lab. , Ltd.	497,201.00	-	497,201.00	-	497,201.00
CSIR	4,983,675.00	Duke University Usa	487,537.00	-	487,537.00	-	487,537.00
Cuddles Foundation	799,816.00	Eli Lilly and Company Pvt. Ltd	560,850.00	64,502.00	625,352.00	-	625,352.00
Dabur India Ltd	565,396.00	Excel Life Sciences Pvt Ltd.	189,600.00	-	189,600.00	-	189,600.00
Delhi Rheumatology Association	25,000.00	Earnest Money Deposit	1,716,745.00	-	1,716,745.00	-	1,716,745.00
Delhi State Control Society/AIIDS	385,125.00	FDC Limited	586,409.00	-	586,409.00	-	586,409.00
Diagno Searchlifesciences Pvt Ltd.	1,888,680.00	Find India	659,450.00	-	659,450.00	-	659,450.00
Directorate of Education (NSS)	213,750.00	GILEAD Sciences, Inc., California	589,857.00	68,524.00	658,381.00	-	658,381.00
DNDI Switzerland	9,012,787.00	Glaxo Smith Kline	213,767.00	-	213,767.00	-	213,767.00
Donations/Grants	4,412.00	Hamilton Health Sciences Corporation, Canada	237,280.00	24,091.00	261,371.00	-	261,371.00
Dr. Reddys Lab. , Ltd.	17,520.00	Hetero Biopharma Limited	611,129.00	145,753.00	756,882.00	-	756,882.00
ECHO, INDIA	870,121.00	Hindustan latex Ltd.	387,500.00	8,000.00	395,500.00	-	395,500.00
Earnest Money Deposit	2,138,928.00	IADR, U.S.A.	1,114,800.00	-	1,114,800.00	-	1,114,800.00
Entod Pharmaceuticals Ltd. (India)	506,000.00	IADVL	201,849.00	-	201,849.00	-	201,849.00
Eli Lilly and Company Pvt. Ltd	396,090.00	ICON Clinical Reserach India Pvt. Ltd.	1,757,130.00	143,744.00	1,900,874.00	-	1,900,874.00
Excel Life Sciences Pvt Ltd.	6,730.00	ICSSR	392,412.00	16,000.00	408,412.00	-	408,412.00
GILEAD Sciences, Inc., California	685,244.00	IFCL	9,130,027.00	-	9,130,027.00	-	9,130,027.00
Glenmark Pharmaceuticals Ltd.	135,000.00	INCLEN	82,976.00	8,298.00	91,274.00	-	91,274.00
Hamilton Health Sciences Corporation, Canada	240,907.00	India Medtronic Pvt. Ltd	630,194.00	-	630,194.00	-	630,194.00
Hetero Biopharma Limited	1,369,100.00	Indian Council of Agriculture Research	592,714.00	-	592,714.00	-	592,714.00
Hindustan Latex Ltd.	814,500.00	Indian Institute of Public Health Hyderabad	28,829.00	-	28,829.00	-	28,829.00
ICON Clinical Reserach India Pvt. Ltd.	2,189,775.60	Indo German Science and Technology Centre, Govt of India	102,241.00	224,633.00	326,874.00	-	326,874.00
ICSSR	476,270.00	Indo US - Sciences & Technology Forum	379,313.00	500.00	379,813.00	-	379,813.00
INCLEN	82,976.00	Indo-US Science & Technology Forum	154,238.00	104,725.00	258,963.00	-	258,963.00
India Medtronic Pvt. Ltd	161,100.00	Inmacel Tech Pvt Ltd.	18,608.00	-	18,608.00	-	18,608.00
Indo-US Science & Technology Forum	1,048,500.00	INSA	241,970.00	-	241,970.00	-	241,970.00
Indian Association of Dermatology & Venereology Grant	364,875.00	INTAS Pharmaceuticals Ltd.	377,532.00	16,574.00	394,106.00	-	394,106.00
INSA	230,000.00	International Atomic Energy Agency	1,347,055.00	195,284.00	1,542,339.00	-	1,542,339.00
INTAS Pharmaceuticals Ltd.	165,735.00	Intramural Research	68,414,594.00	-	68,414,594.00	-	68,414,594.00
International Atomic Energy Agency	1,953,324.00	Ipsca Labortoris	198,361.00	6,160.00	204,521.00	-	204,521.00
I.S.H.T.M.	5,337,470.00	I.S.H.T.M.	4,192,334.00	533,690.00	4,726,024.00	-	4,726,024.00
Janssen	200,000.00	Janssen	347,742.00	20,000.00	367,742.00	-	367,742.00
JIV Daya Foundation	2,269,031.00	JIV Daya Foundation	2,246,858.00	185,083.00	2,431,941.00	-	2,431,941.00
KlinEra	903,233.00	Kempegowda Institute of Medical Sciences	131,193.00	-	131,193.00	-	131,193.00
LadyTata Memorial Trust	900,000.00	KlinEra	2,497,705.00	107,560.00	2,605,265.00	-	2,605,265.00
Lambda Therapeutic Research Ltd.	351,783.00	Lady Tata Memorial Trust	663,758.00	90,000.00	753,758.00	-	753,758.00
Lebara Foundation	916,667.00	Lambda Therapeutic Research Ltd.	248,443.00	35,180.00	283,623.00	-	283,623.00
LUPIN LIMITED	1,152,800.00	Lebara Foundation	838,991.00	91,666.00	930,657.00	-	930,657.00
Maharishi Ayurveda Products Pvt. Ltd.	684,922.00	Mc Master University Canada	3,495,753.00	397,656.00	3,893,409.00	-	3,893,409.00
Max Neeman International	65,699.00	Meril Life Sciences Pvt Ltd.	100,000.00	-	100,000.00	-	100,000.00
Mc Master University Canada	3,976,562.65	Micro Labs Limited	488,131.00	23,879.00	512,010.00	-	512,010.00
Meril Life Sciences Pvt Ltd.	118,800.00	Ministry of Comu. and Infor. & Tech.	880,162.00	151,000.00	1,031,162.00	-	1,031,162.00
Micro Labs Limited	1,268,774.00	Ministry of Environment, Forest & Climate Change	1,616,241.00	2,69,900.00	1,886,141.00	-	1,886,141.00
Ministry of Comu. and Infor. & Tech.	1,510,000.00	Ministry of Health And Family Welfare(N.A.C.O)	15,208,142.00	-	15,208,142.00	-	15,208,142.00
Ministry of Environment, Forest & Climate Change	2,699,000.00	Ministry of Health & Family Welfare	16,253,297.00	513,280.00	16,766,577.00	-	16,766,577.00
Ministry of Health And Family Welfare(N.A.C.O)	20,880,106.00	Ministry of Health & Family Welfare (Ayush)	159,699.00	-	159,699.00	-	159,699.00
Ministry of Health & Family Welfare	10,901,488.00	Ministry of Health & Family Welfare-DHR	285,509.00	-	285,509.00	-	285,509.00

Ministry of Home Affair	36,843,018.00		Ministry of Home Affair	34,269,546.00	1,842,151.00	-	36,111,697.00
Ministry of Social Justice and Empowerment	39,743,429.00		Ministry of Social Justice and Empowerment	12,229,393.00	3,969,960.00	-	16,199,353.00
Ministry of Health, Govt of Odisha	1,200,000.00		M/S Beckman Coulter Pvt. Ltd.	465,427.00	-	-	465,427.00
Michael J Fox Foundation	3,693,400.00		M/s Gilead Sciences Inc. USA	3,067,399.00	887,927.00	-	3,955,326.00
M/s Gilead Sciences Inc. USA	7,445,861.00		NIE (N-000)	41,340,403.62	-	-	41,340,403.62
MSD ,Pharmaceuticals Pvt. Ltd.	298,383.57		National Cancer Grid Reserch	1,707,560.00	169,964.00	-	1,877,524.00
N-000	122,446,081.62		National Innovation Foundation	875,864.00	-	-	875,864.00
NACO	2,600,183.00		National Institute for Health Research	4,954,058.94	-	-	4,954,058.94
National Cancer Grid Reserch	1,875,279.00		National Institute of Health, USA	49,236,114.94	5,499,272.00	-	54,735,386.94
National Institute for Health Research	1,048,859.00		National Institute of Mental Health, NH USA	633,044.00	11,737.00	-	644,781.00
National Institute of Health, USA	54,360,721.00		National Institute of Social Defence	354,000.00	72,975.00	-	426,975.00
National Institute of Mental Health, NH USA	235,685.00		National Perinatal Epidemiology Unit, University O	68,327.00	-	-	68,327.00
National Institute of Social Defence	729,750.00		NCDC	20,000.00	971,575.00	-	991,575.00
NCDC	42,016.00		Newron Pharmaceuticals S.P.A.	1,065,421.00	122,895.00	-	1,188,316.00
NCDC, MOH&FW	9,675,000.00		Next Gen Pharma India Private Limited	42,000.00	-	-	42,000.00
Newron Pharmaceuticals S.P.A.	1,228,950.00		NIPER NEW Delhi-110001.	590,225.00	-	-	590,225.00
New India Biopharma Pvt. Ltd.	134,541.00		Niti Aayog	2,337,559.00	259,323.00	-	2,596,882.00
Niti Aayog	2,593,224.00		Nova Nordisk India Pvt. Ltd.	2,534,837.00	473,296.00	-	3,008,133.00
Nova Nordisk India Pvt. Ltd.	2,484,044.00		NOVARTIS	1,513,493.00	196,496.00	-	1,709,989.00
NOVARTIS	2,658,053.43		Novartis Healthcare Pvt Ltd.	945,233.00	26,330.00	-	971,563.00
Novartis India Ltd.	17,040.00		Novartis India Ltd.	45,152.00	-	-	45,152.00
Novartis Pharmaceuticals	194,000.40		Novartis Pharmaceuticals	556,868.00	135,800.00	-	692,668.00
NSRC, Ministry of Health & Family Welfare	2,047,578.00		NSRC, Ministry of Health & Family Welfare	1,963,834.00	47,777.00	-	2,011,611.00
Office of the Principal Scientific Adviser, GOI	1,885,000.00		Office of Science and Technology, Officer of Naval Research Global, US	148,517.00	-	-	148,517.00
Orbis	1,743,549.00		Office of the Principal Scientific Adviser, GOI	15,167,670.00	-	-	15,167,670.00
PAREXEL INTERNATIONAL, Clinical Research Pvt. Ltd	916,343.35		Oncology Forum	142,322.00	-	-	142,322.00
Parexel International Ltd. (U.K.)	238,025.42		Others	-	-	-	-
Pharmazindia Pvt. Ltd.	48,886.00		PAREXEL INTERNATIONAL, Clinical Research Pvt Ltd	716,395.00	82,518.00	-	798,913.00
Phoenix Cardiac	1,444,650.00		Parexel International Ltd. (U.K.)	634,684.00	23,803.00	-	658,487.00
PHRI, ONTARIO CANADA	2,272,068.35		Pfizer Ltd.	102,606.00	-	-	102,606.00
Physicians Research Foundation Research Grant	281,000.00		Pharmazindia Pvt. Ltd.	315,094.00	29,189.00	-	344,283.00
PPD Pharmaceutical Development India Pvt. Ltd.	196,306.00		PHFI	2,267,758.00	-	-	2,267,758.00
PPD Therapeutics Inc. USA	1,314,636.00		PHRI, ONTARIO CANADA	2,173,624.00	227,206.00	-	2,400,830.00
Raj Gardhiya Liver Unit	74,786.00		Physicians Research Foundation Research Grant	205,027.00	6,500.00	-	211,527.00
REC Power Distribution Company Ltd.	650,000.00		PPD Pharmaceutical Development India Pvt. Ltd.	31,000.00	19,631.00	-	50,631.00
Saksin Lifesciences Pvt. Ltd.	812,057.00		PTC Therapeutics Inc. USA	327,984.00	131,464.00	-	459,448.00
Sanofi-Aventis Recherche & Development, France	450,000.00		Quintile Spectral India	130,319.00	-	-	130,319.00
Sanofi Synthelabo (India) Private Limited	29,552.24		Ranbaxy/Eliilly & Company Pvt. Ltd.	16,456.00	-	-	16,456.00
Sanofi	124,200.00		Rapim Research Ltd	334,851.00	-	-	334,851.00
SciFormix Technologies private limited	297,888.00		REC Power Distribution Company Ltd.	1,287,259.00	65,000.00	-	1,352,259.00
SeqIndia Labs Pvt. Ltd.	607,200.00		Sanofi	25,400.00	-	-	25,400.00
Sight Savers	838,695.00		Saksin Lifesciences Pvt. Ltd.	646,453.00	81,206.00	-	727,659.00
Singapore Clinical Research Institute, Singapore	118,009.00		Sanofi Synthelabo (India) Private Limited	482,281.00	221,468.00	-	703,749.00
SIRO CLIN PHARMA PVT. LTD	383,968.00		SciFormix Technologies private limited	180,833.00	29,789.00	-	210,622.00
SPARC	1,299,970.00		Seqindia Labs Pvt. Ltd.	457,419.00	60,720.00	-	518,139.00
State Health Society, Delhi Govt.	1,602,000.00		Sight Savers	2,232,133.00	141,131.00	-	2,373,264.00
Stempeutics Research Pvt Ltd	49,612.00		Singapore Clinical Research Institute, Singapore	1,085.00	11,692.00	-	12,777.00
Swami Sivananda Memorial Institute	1,000,187.00		Sinopharm India Pvt Ltd	14,326.00	-	-	14,326.00
SWAYAM (Ministry of HRD)	3,564,529.00		State Health Society, Delhi Govt.	1,060,739.00	80,100.00	-	1,140,839.00

Synapsica Technologies Private Limited	685,000.00				15,000.00	4,962.00		19,962.00
Tech Observer India Pvt. Ltd	59,400.00				1,288,445.00	100,000.00		1,388,445.00
The Cancer Foundation	1,000,000.00				3,762,080.00	350,000.00		4,112,080.00
The Medical Research Council, United Kingdom	1,098,941.00				51,217.00	5,940.00		57,157.00
THSTI	1,510,977.00				213,824.00	-		213,824.00
Torrent Pharmaceutical Ltd.	1,699,680.00				890,133.00	-		890,133.00
UCLAN, UK	2,064,213.00				1,685,167.00	-		1,685,167.00
UNICEF	18,666,894.00				1,322,660.00	214,224.00		1,536,884.00
Unique Biotech Ltd	300,000.00				1,622,612.00	202,714.00		1,825,326.00
Universal Elementary Education Mission, Deptt. of Education	2,880,000.00				1,197,302.00	-		1,197,302.00
Universitair Ziekenhuis Antwerpen (UZA), Belgium	870,623.00				16,541,854.00	279,142.00		16,820,996.00
University of Pittsburgh	5,249,048.00				1,217,463.00	30,000.00		1,247,463.00
Unnique Biotech Ltd.	1,500,000.00				2,041,516.00	524,905.00		2,566,421.00
USV Private Limited	801,850.00				1,026,828.00	150,000.00		1,176,828.00
Veeda Clinical Research Pvt Ltd	906,898.00				721,394.00	80,185.00		801,579.00
Warwick University, UK	2,848,284.00				283,707.00	87,398.00		371,105.00
WHO	13,376,148.22				11,371.00	-		11,371.00
National Health System Resource Centre	1,063,125.00				267,851.00	-		267,851.00
					3,175,025.00	282,382.00		3,457,407.00
					331,814.00	-		331,814.00
<b>To Recovery of Charges</b>								
TDS - Contractor	189,060.00				14,276,336.00	30,973.00		14,307,309.00
TDS - Professional	115,873.00				25,000.00	73,000.00		98,000.00
RTGS Charges	5,360.00				59,214.00	32,400.00		91,614.00
To Interest earned by bank on FDR	7,301,827.00				427,851.00	87,374.00		515,225.00
					858,661.00	2,700.00		2,700.00
					-	485,040.00		1,343,701.00
					-	100,000.00		100,000.00
					-	28,697.00		28,697.00
					-	21,375.00		21,375.00
					-	188,500.00		188,500.00
					-	87,012.00		203,323.00
					-	500.00		500.00
					117,000.00	50,600.00		167,600.00
					-	52,639.00		52,639.00
					-	200,234.00		200,234.00
					71,037.00	36,488.00		107,525.00
					-	115,280.00		115,280.00
					284,607.00	68,492.00		353,099.00
					-	6,570.00		6,570.00
					355,612.00	109,894.00		109,894.00
					538,266.00	369,340.00		724,952.00
					201,161.00	29,838.00		658,266.00
					57,620.00	260,018.00		230,999.00
					865,220.00	172,723.00		317,638.00
					110,500.00	26,908.00		1,037,943.00
					70,000.00	10,000.00		137,408.00
					264,014.00	171,967.00		80,000.00
					-	14,465.00		435,981.00
					-	2,388.00		14,465.00
					820,434.00	92,025.00		912,459.00



ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
RESEARCH SECTION

STATEMENT SHOWING THE EXPENDITURE OF THE GRANT RECEIVED FOR THE VARIOUS RESEARCH PROJECTS FOR THE YEAR 2019-20

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
A	Defence Research and Development Organization (DRDO)	13,434,235.60	-	3,752,503.00	8,111,374.00	398,945.00	-	8,676,419.60	-
B	Department of Science and Technology (DST)	82,411,429.00	-	155,286,632.00	152,740,767.04	18,359,690.00	-	66,597,603.96	-
C	Indian Council of Medical Research (ICMR)	305,158,689.18	-	628,276,947.00	431,449,428.32	40,253,698.00	-	461,732,509.86	-
D	Department of Biotechnology (DBT)	314,025,292.14	-	180,204,774.00	269,400,924.00	24,448,060.00	-	200,381,082.14	-
E	Department of Information Technology	3,230,523.00	-	1,581.00	2,934.50	-	-	3,229,169.50	-
F	Ministry of Ayush	22,867,782.72	-	3,287,733.00	14,586,261.50	476,855.00	-	11,092,399.22	-
G	AIFD001 (BIRAC Big Grant)	-	-	1,026,712.00	-	-	-	1,026,712.00	-
H	Others:								
1	Abbot health care pvt. Ltd	664,416.00	-	-	-	-	-	664,416.00	-
2	Abbot Laboratories GmbH	-	(406,716.00)	-	124,714.00	-	-	-	(531,430.00)
3	Abbot vascular USA	482,902.00	-	-	-	-	-	482,902.00	-
4	Ace Pharmaceuticals BV NETHERLAND	6,439.00	-	-	-	-	-	6,439.00	-
5	AIIMS- IIT DELHI Collaborative Project	-	-	-	6,285,947.00	-	-	-	(6,285,947.00)
6	Aimil Pharmaceutical India Ltd	-	(500,000.00)	1,260,000.00	338,860.00	76,000.00	-	345,140.00	-
7	Airport Authority of India	-	-	1,460,000.00	25,000.00	73,000.00	-	1,362,000.00	-
8	Ajinomoto Co JAPAN	67,328.00	-	-	-	-	-	67,328.00	-
9	Alkem Laboratories Ltd.	-	(174,611.00)	672,769.41	459,007.00	67,278.00	-	-	(28,126.59)
10	Ambrosia Life Sciences Pvt. Ltd.	-	-	324,000.00	59,214.00	32,400.00	-	232,386.00	-
11	American Academy of Paediatrics	519,226.00	-	-	-	-	-	519,226.00	-
12	Angen Technolgy Private Limited	1,427,224.00	-	-	-	-	-	1,427,224.00	-
13	AnaZeal Analyticals & Research Pvt. Ltd.	3,000.00	-	217,000.00	80,989.00	21,700.00	-	117,311.00	-
14	AO spine india	30,614.00	-	190,227.00	6,720.00	19,023.00	-	195,098.00	-
15	AO spine international, hongkong	116.00	-	-	-	-	-	116.00	-
16	AO Trauma Asia Pacific	539,817.00	-	-	52,745.00	-	-	487,072.00	-
17	APLAR	-	-	873,744.00	427,851.00	87,374.00	-	358,519.00	-
18	Appasamy Associates, Chennai	21,434.00	-	-	-	-	-	21,434.00	-
19	Astra Seneca Singapore Pvt Ltd. Singapore	100,002.00	-	421,459.20	-	-	-	521,461.20	-
20	Atomic Energy Regulatory Board	335,185.00	-	-	-	-	-	335,185.00	-
21	Auxilium Technical & Management Services Pvt Ltd	400.00	-	-	-	-	-	400.00	-
22	Avents Pharmaceuticals, USA	14,135.00	-	-	-	-	-	14,135.00	-
23	AYUSH (Payments made from Scheme Cell)	-	-	-	159,699.00	-	-	-	(159,699.00)
24	Beijing Toshihi Pharmaceuticals Co Ltd	180,235.00	-	-	-	-	-	180,235.00	-
25	Bharat Biotech International Ltd	12,241.00	-	-	-	-	-	12,241.00	-
26	Bharat Serum & Vaccines Ltd.	987,155.00	-	266,463.00	967,665.00	5,922.00	-	280,031.00	-
27	Bigtec private limited	157,583.00	-	330,000.00	291,188.00	33,000.00	-	163,395.00	-
28	Bill & Melinda Gates Foundation, USA	12,643.00	-	-	-	-	-	12,643.00	-
29	Bill & Melinda Gates Foundation, USA	1,293,805.00	-	41,030,195.00	34,801,769.00	703,219.00	-	6,819,012.00	-
30	Biogen Idec Limited, UK	167,198.00	-	-	-	-	-	167,198.00	-



S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
31	Biogenomics Limited	-	-	-	-	2,700.00	-	-	(2,700.00)
32	Biomerieux India (P)Ltd	12,011.00	-	-	-	-	12,011.00	-	-
33	Biotechnology Industry Research Assistance Council (BIRAC)	-	-	-	858,661.00	485,040.00	-	-	(1,343,701.00)
34	Boehringer ingelheim India Pvt Ltd	679,163.00	-	341,112.00	827,229.00	34,058.00	-	158,988.00	-
35	BONE & JOINT DECADE INDIA	130.00	-	-	-	-	130.00	-	-
36	Brains Gate Ltd ISRAEL	132.00	-	-	-	-	132.00	-	-
37	Bristol Meyer Squibb India Pvt Ltd	186,996.60	-	537,056.00	1,241,748.00	53,706.00	-	709,590.00	(571,401.40)
38	Bristol Meyer Squibb (BMS), USA	1,160,767.00	-	923,811.00	1,282,607.00	92,381.00	-	3,277.00	-
39	BRITISH COUNCIL, UK	3,277.00	-	-	-	-	-	-	-
40	British Heart Foundation, UK	252,175.00	-	-	1,049,244.00	-	-	-	(797,069.00)
41	BRNS,Mumbai	34,851,907.00	-	997,120.00	1,543,479.00	99,712.00	-	34,205,836.00	-
42	Cadila Health care ltd	27,062.00	-	158,615.00	701,190.00	13,500.00	-	-	(529,013.00)
43	Cadila Pharmaceutical Ltd	69,556.00	-	495,000.00	678,063.00	94,397.00	-	-	(207,904.00)
44	Cambridge University	-	-	485,583.00	20,000.00	48,559.00	-	417,024.00	-
45	CANNECTIN, Canada	64,436.00	-	-	-	-	-	64,436.00	-
46	CCDC	4,511,387.00	-	1,101,149.00	519,702.00	108,592.00	-	4,984,242.00	-
47	CD Pharma India Pvt Ltd	1,433,515.00	-	-	-	-	-	1,433,515.00	-
48	Cefipra, French	1,114,046.00	-	-	-	-	-	1,114,046.00	-
49	Centers for Disease Control and Prevention (CDC), USA	7,381,349.00	-	161,955,114.00	119,850,575.00	7,518,718.00	-	41,967,170.00	-
50	Centocor Research & Development, USA	4,797.00	-	-	-	-	-	4,797.00	-
51	Central Council for Research in Ayurveda & Sidha	776,710.00	-	-	965,986.00	-	-	-	-
52	Central Council for Research in Ayurvedic Science(CCRAS)	2,327,588.00	-	2,623,600.00	2,010,273.00	262,360.00	-	2,678,555.00	-
53	Central Council for Research in Homoeopathy (CCRH), New Delhi	496,778.00	-	2,016,798.00	1,353,897.00	201,680.00	-	957,999.00	-
54	Central Council for Research in Unani Medicine	675,802.00	-	3,097,686.00	2,576,719.00	299,769.00	-	897,000.00	-
55	Central Council for Research in Yoga And Naturopathy	17,652.00	-	-	-	-	-	17,652.00	-
56	Central Scientific Instruments Organisation	135,557.00	-	-	-	-	-	135,557.00	-
57	Centre For Chronic Disease Control New Delhi	1,466,054.00	-	-	-	-	-	1,466,054.00	-
58	Centre For Disease Control, New Delhi	4,003,373.00	-	-	-	-	-	4,003,373.00	-
59	Centre for Health Research and Innovation (CHRI)	48,957.00	-	1,247,196.00	894,939.00	117,703.00	-	283,511.00	-
60	Centre Franco-Indien Pour La Preomotion De La Recherche Advance (CEFIPRA), France	82,886.00	-	-	-	-	-	82,886.00	-
61	CEO Azure Software Pvt Ltd.	7,749.00	-	200,000.00	288,899.00	40,000.00	-	-	(121,150.00)
62	Charak Pharma (P)Ltd	1,144.00	-	-	-	-	-	1,144.00	-
63	Christian Medical collage vellore	875,566.00	-	1,399,115.00	1,690,217.00	135,722.00	-	448,742.00	-
64	Christofel Bindenmission (CBM) India	918,704.00	-	6,717,530.76	3,786,951.00	403,292.00	-	3,445,991.76	-
65	CLINCYTE, USA	665.00	-	-	-	-	-	665.00	-
66	Clinical Marketing Pvt Ltd	8,372.00	-	-	-	-	-	8,372.00	-
67	CLINIRX RESEARCH PVT LTD GURGAON, HARYANA	71,079.00	-	1,197,540.00	847,199.00	119,754.00	-	301,666.00	-
68	Cochlear implant group of india	-	-	100,000.00	85,067.00	10,000.00	-	4,933.00	-
69	CODMAN & SHURTLIFF, INC, USA	42,138.00	-	-	-	-	-	42,138.00	-
70	Cognitive Health Rehabilitation Systems LLP	43,978.00	-	350,000.00	345,213.00	30,000.00	-	18,765.00	-

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance	
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit
71	CONARD, USA	591.00	-	-	-	-	591.00	-
72	CONQUER CANCER FOUNDATION	65,127.00	-	-	-	65,135.00	-	(8.00)
73	Convatee Saybb	2,328.00	-	-	-	-	2,328.00	-
74	CORVENTIS, USA	4,454.00	-	-	-	-	4,454.00	-
75	Covance India Pharma Pvt Ltd.	395,522.00	-	-	-	-	366,825.00	-
76	CPWW Jersulam	6,534.00	-	-	-	-	6,534.00	-
77	Criterion	16,211.00	-	-	-	-	16,211.00	-
78	CSIR	3,424,434.00	-	4,983,675.00	-	3,667,299.00	4,706,893.00	-
79	CTC/ICDS	237,738.00	-	-	-	-	237,738.00	-
80	Cuddies Foundation	133,233.00	-	799,816.00	-	712,957.00	140,110.00	-
81	Curehealth Diagnostic Pvt Ltd	1,731.00	-	-	-	-	1,731.00	-
82	Cystic Fibrosis/World Wide, USA	14,605.00	-	-	-	-	14,605.00	-
83	Dabur India Ltd	-	-	565,396.00	-	481,600.00	40,116.00	-
84	Dabur Research & development Centre	8,913.00	-	-	-	-	8,913.00	-
85	Dabur Research Foundation	1,095,999.00	-	-	-	-	1,095,999.00	-
86	DANIDA RESEARCH COUNCIL	19.00	-	-	-	-	19.00	-
87	DEFENSE INSTIT. OF PHY. & ALLIED SCIENCES (DIPAS)	332,457.00	-	-	-	528,726.00	-	(196,269.00)
88	Delhi Rheumatology Association	67,500.00	-	25,000.00	-	97,038.00	-	(4,538.00)
89	Delhi State Control Society/AIDS	17,963.00	-	385,125.00	-	626,043.00	-	(222,955.00)
90	DELHI TAPEDIK UNMULAN SAMITI	10,824.00	-	-	-	-	10,824.00	-
91	Department of Health and Human Services Centers for disease control, USA	4,036,384.51	-	-	-	-	4,036,384.51	-
92	Department of Health Research	3,925,672.00	-	-	-	682,332.00	3,243,340.00	-
93	Department of Information & Technology Upto 31st Dec	-	(3,222,572.00)	-	-	-	-	(3,222,572.00)
94	DEPTT OF ELECTRONICS	171.00	-	-	-	-	171.00	-
95	Dept of Pharmaceuticals	27,904.00	-	-	-	-	27,904.00	-
96	Dept Of woman & child Development	148,354.00	-	-	-	-	148,354.00	-
97	Diagno Searchlifesciences Pvt Ltd.	663,042.00	-	-	-	902,627.00	1,459,426.00	-
98	DIGENE CORPORATION, USA	42,184.00	-	1,888,680.00	-	-	42,184.00	-
99	Directorate General of Health Services	-	(57,267.00)	-	-	-	-	(57,267.00)
100	Directorate of Education (NSS)	-	(10,378.00)	213,750.00	-	-	181,997.00	-
101	DNDI Switzerland	1,516,870.00	-	9,012,787.00	-	5,581,776.00	4,194,672.00	-
102	Donations/Grants	-	-	4,412.00	-	4,412.00	-	-
103	Dr Reddys Lab / Pvt Ltd	313,705.90	-	17,520.00	-	497,201.00	-	(165,975.10)
104	DRDE(Gwallior)	362,354.00	-	-	-	-	362,354.00	-
105	Duke University Usa	641,748.00	-	-	-	487,537.00	154,211.00	-
106	Earnest Money Deposit	1,528,769.90	-	2,138,928.00	-	1,716,745.00	1,950,952.90	-
107	ECHO, INDIA	-	-	870,121.00	-	116,311.00	666,798.00	-

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance	
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit
108	Eli Lilly	-	(87,027.00)	396,090.00	560,850.00	64,502.00	-	(316,289.00)
109	Emcure Pharmaceutical Ltd	-	(6,380.00)	-	-	-	-	(6,380.00)
110	EMMES Corporation, Maryland, USA	3,297.00	-	-	-	-	3,297.00	-
111	Endronic Society of India	-	(22,435.00)	-	-	500.00	-	(22,935.00)
112	Entod Pharmaceuticals Ltd. (India)	-	-	506,000.00	117,000.00	50,600.00	338,400.00	-
113	European Commission	1,292,302.00	-	-	-	-	1,292,302.00	-
114	Excel Life Sciences Pvt Ltd.	752,926.00	-	6,730.00	189,600.00	-	570,056.00	-
115	FDC Limited	600,514.00	-	-	586,409.00	-	14,105.00	-
116	Fermish Clinical Technologist Pvt Ltd	263,226.00	-	-	-	-	263,226.00	-
117	Find India	3,853,956.00	-	-	659,450.00	-	3,194,506.00	-
118	Flamentera AG, Switzerland	48,193.00	-	-	-	-	48,193.00	-
119	Fogarty International Centre, NIH, USA	5,807.00	-	-	-	-	5,807.00	-
120	Fondazione Angelo Bianchi Bonomi, Milan- Italy	106,888.00	-	-	-	-	106,888.00	-
121	FREEDOM TRIAL	86,353.00	-	-	-	-	86,353.00	-
122	Fulford India Ltd	96,246.00	-	-	-	-	96,246.00	-
123	Genellife Clinical Research Pvt Ltd.	-	(37,180.00)	-	-	-	-	(37,180.00)
124	GILEAD Sciences, Inc., California	1,610,063.00	-	685,244.00	589,857.00	68,524.00	1,636,926.00	-
125	Glaxo Smith Kline	350,533.00	-	-	213,767.00	-	136,766.00	-
126	GlaxoSmith Kline Asia Private Ltd	3,642.00	-	-	-	-	3,642.00	-
127	Glenmark Pharmaceuticals Ltd.	-	-	135,000.00	-	52,639.00	82,361.00	-
128	Global Cancer Concern India	-	-	-	-	-	3,647.00	-
129	GW Pharma Ltd UK	3,647.00	-	-	-	-	9,381.00	-
130	Hamilton Health Sciences & McMaster University, Canada	9,381.00	-	-	237,280.00	24,091.00	274,549.00	(256,216.00)
131	Hamilton Health Sciences Corporation, Canada	5,155.00	-	240,907.00	-	-	-	(200,234.00)
132	Health Effects Institute	33,642.00	-	1,369,100.00	611,129.00	145,753.00	1,026,002.00	(138,013.00)
133	Hetero Biopharma Limited	413,784.00	-	814,500.00	387,500.00	8,000.00	2,540,884.00	(151,949.00)
134	Hindustan Latex Family Planning Promotion	2,121,884.00	-	-	-	-	-	-
135	Hindustan Latex Limited	1,394,877.00	-	-	1,114,800.00	-	280,077.00	-
136	Horiba India Pvt Ltd	305,437.00	-	-	201,849.00	-	103,588.00	-
138	IADVL	-	(74,861.00)	-	-	-	-	(74,861.00)
139	ICCSR	12,032.00	-	-	-	-	-	-
140	ICGE&B	471,700.00	-	2,189,775.60	1,757,130.00	143,744.00	12,032.00	-
141	ICON Clinical Research Pvt. Ltd.	-	(79,411.00)	476,270.00	392,412.00	16,000.00	760,601.60	-
142	ICCSR	-	-	-	9,130,027.00	-	5,692,528.00	(11,553.00)
143	IIFCL	14,822,555.00	-	-	-	-	-	-

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
144	Imperial Life Sciences(P) Ltd	16,350.00	-	-	-	-	-	16,350.00	-
145	INCLEN	-	(497,349.00)	82,976.00	82,976.00	-	8,298.00	-	(505,647.00)
146	INCLEN & USAID	24.00	-	-	-	-	-	24.00	-
147	India Medtronic Pvt Ltd	1,426,696.00	-	161,100.00	630,194.00	-	-	957,602.00	-
148	Indian Association of Dermatology & Venereology Grant	-	-	364,875.00	71,037.00	-	36,488.00	257,350.00	-
149	Indian Council of Agriculture Research	1,290,681.00	-	-	592,714.00	-	-	697,967.00	-
150	Indian council of Philosophical Research	-	(176,320.00)	-	-	-	-	-	(176,320.00)
151	Indian Heart Rhythm Society	2,560.00	-	-	-	-	-	2,560.00	-
152	Indian Institute of public health, Hydrabad	28,876.00	-	-	28,829.00	-	-	47.00	-
153	Indian Institute of Technology	-	(257,018.00)	-	-	-	-	-	(257,018.00)
154	Indian Society for bone & Mineral Research	-	(60,000.00)	-	-	-	-	-	(60,000.00)
155	Indo German Science & Technology centre	103,407.00	-	-	102,241.00	-	224,633.00	-	(60,000.00)
156	Indo-French Centre for the Promotion of Advanced Research	2,663,583.00	-	-	-	-	-	2,663,583.00	-
157	Indo-US Science & Technology Forum	295,155.22	-	1,048,500.00	533,551.00	-	104,725.00	705,379.22	-
158	INMAS (DRDO)	-	(870,046.00)	-	-	-	-	-	(870,046.00)
159	Innaccel Tech Pvt Ltd.	135,000.00	-	-	18,608.00	-	-	116,392.00	-
160	INSA	35,304.00	-	230,000.00	241,970.00	-	-	23,334.00	-
161	INSA	230,000.00	-	-	-	-	-	230,000.00	-
162	Institute of Genomics & Integrative Biology	766,226.00	-	-	-	-	-	766,226.00	-
163	Institute Research Grant (IRG)	41,993,488.00	-	-	68,414,594.00	-	500.00	-	(26,421,606.00)
164	Intas Biopharmaceuticals Ltd.	-	(50,063.00)	-	-	-	-	-	(50,063.00)
165	Intas pharmaceuticals Ltd.	95,871.00	-	165,735.00	377,532.00	-	16,574.00	-	(132,500.00)
166	International Union Against Tuberculosis and Lung Diseases	17,975.00	-	-	-	-	-	17,975.00	-
167	International Atomic Energy Agency	-	(861,128.00)	1,953,324.00	1,347,055.00	-	195,284.00	-	(450,143.00)
168	International Paediatrics Nephrology Association	43,061.00	-	-	-	-	-	43,061.00	-
169	International Union Against Cancer (UICC)	95,273.00	-	-	-	-	-	95,273.00	-
170	International Union Against Tuberculosis and Lung Disease	-	(16.00)	-	-	-	-	-	(16.00)
171	Invictus Oncology	-	(710,716.00)	-	-	-	-	-	(710,716.00)
172	Ipcalab laboratoris	-	(751,341.00)	-	198,361.00	-	6,160.00	-	(955,862.00)
173	ISHM	401,854.00	-	5,337,470.00	4,192,334.00	-	533,690.00	1,013,300.00	-
174	Janssen	71,608.00	-	200,000.00	347,742.00	-	20,000.00	-	(96,134.00)
175	JIV DAYA FOUNDATION	-	(366,435.50)	2,269,031.00	2,246,858.00	-	185,083.00	-	(529,345.50)
176	JOHN HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH (JHBSPH)	260,845.00	-	-	-	-	-	260,845.00	-
177	Johnson & Johnson	-	(81,671.00)	-	-	-	-	-	(81,671.00)
178	JSS Medical Research India Pvt Ltd.	-	-	-	-	-	-	-	-
179	Kempegowda Institute of Medical Sciences	131,220.00	-	-	131,193.00	-	-	27.00	-
180	KHANDELWAL LABORATORIES LTD	55,608.00	-	-	-	-	-	55,608.00	-
181	KlinEra	1,803,870.00	-	903,233.00	2,497,705.00	-	107,560.00	101,838.00	-
182	KLPF,USA	-	-	-	-	-	-	-	-

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
183	KOBE, JAPAN	10,221.00	-	-	-	-	-	10,221.00	-
184	Lab India Healthcare	145,054.00	-	-	-	-	-	145,054.00	-
185	Lady Tata Memorial Trust	632,256.00	-	900,000.00	663,758.00	90,000.00	-	778,498.00	-
186	Lajolla Pharmaceutical Company, California	487.00	-	-	-	-	-	487.00	-
187	Lambda Therapeutic Research Ltd	508,120.00	-	351,783.00	248,443.00	35,180.00	-	576,280.00	-
188	Lebara Foundation	138,210.00	-	916,667.00	838,991.00	91,666.00	-	124,220.00	-
189	LG Chemicals India Pvt Ltd	-	-	-	-	-	-	-	-
190	LG Life Sciences India Pvt Ltd	75,186.00	-	-	-	-	-	75,186.00	-
191	Liver Foundation	155,987.00	-	-	-	-	-	155,987.00	-
192	London School of Hygiene & Tropical Medicine, UK	146,225.00	-	-	-	-	-	146,225.00	-
193	Lupin Limited	129,798.00	-	1,152,800.00	-	115,280.00	-	1,167,318.00	-
194	M/s ARCHIMEDES DEVELOPMENT LTD, UK	47,204.00	-	-	-	-	-	47,204.00	-
195	M/S ASPREVA PHARMACEUTICAL CORPORATION, CANADA	-	(41,266.00)	-	-	-	-	-	(41,266.00)
196	M/S Beckman Coulter Pvt. Ltd.	549,372.00	-	-	465,427.00	-	-	83,945.00	-
197	M/s Gilead Sciences Inc USA	12,109,563.00	-	7,445,861.00	3,067,399.00	887,927.00	-	15,600,098.00	-
198	M/s janacare solution pvt Ltd	-	(558,290.00)	-	-	-	-	-	(558,290.00)
199	M/S Markansas Research Division	-	-	-	-	-	-	-	-
200	M/s Merck Sharp & Dohme Corp, USA	56,728.00	-	-	-	-	-	56,728.00	-
201	M/s Merck Sharp & Dohme Corporation USA	-	(161,155.00)	-	-	-	-	-	(161,155.00)
202	Macleods Pharmaceutical Ltd	18.00	-	-	-	-	-	18.00	-
203	Maharishi Ayurveda Product Pvt. Ltd.	-	(6,352.00)	684,922.00	284,607.00	68,492.00	-	325,471.00	-
204	Max Neeman International	-	-	65,699.00	-	6,570.00	-	59,129.00	-
205	MBI Kits	8,867.00	-	-	-	-	-	8,867.00	-
206	McMaster University, Canada	2,317,140.00	-	3,976,562.65	3,495,753.00	397,656.00	-	2,400,293.65	-
207	Media Lab Asia	-	-	-	-	-	-	-	-
208	Medpace	-	-	-	-	-	-	-	-
209	Medtronic India Pvt Ltd	122,167.00	-	-	-	-	-	122,167.00	-
210	Merck Pharmaceuticals Ltd	-	-	-	-	-	-	-	-
211	MERCK SERONO INTERNATIONAL SA, SWITZERLAND	217,685.00	-	-	-	-	-	217,685.00	-
212	Merilife Sciences Pvt Ltd	171,722.00	-	118,800.00	100,000.00	-	-	190,522.00	-
213	MERK & CO, INC USA	729,223.80	-	-	-	-	-	729,223.80	-
214	MERK & CO, INC USA	-	(67,291.00)	-	-	-	-	-	(67,291.00)
215	Metrohm India Ltd	28,657.00	-	-	-	-	-	28,657.00	-
216	Michael J Fox Foundation	-	-	3,693,400.00	355,612.00	369,340.00	-	2,968,448.00	-
217	Micro Labs Limited	-	-	1,268,774.00	488,131.00	23,879.00	-	756,764.00	-
218	Ministry of Chemical and Petrochemicals	-	(14,820.00)	-	-	-	-	-	(14,820.00)
219	Ministry of Communication and Information & Technology	2,776,381.00	-	1,510,000.00	880,162.00	151,000.00	-	3,255,219.00	-
220	Ministry of Defence (DRDO)	65,850.00	-	-	-	-	-	65,850.00	-
221	Ministry of Earth Science	184,977.00	-	-	-	-	-	184,977.00	-
222	Ministry of Environment, Forest & Climate Change	-	(42,383.00)	2,699,000.00	-	269,900.00	-	770,476.00	-
223	Ministry of Health And Family Welfare(NACO)	6,292,777.00	-	23,480,289.00	15,265,762.00	-	-	14,507,304.00	-
224	Ministry of Health and Family Welfare	3,475,966.03	-	10,901,488.00	16,253,297.00	513,280.00	-	-	(2,389,122.97)

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
225	Ministry of Health, Govt of Odisha	-	-	1,200,000.00	538,266.00	120,000.00	-	541,734.00	-
226	Ministry Of Home Affair	3,002,028.00	-	36,843,018.00	34,269,546.00	1,842,151.00	-	3,733,349.00	-
227	Ministry of Health and Family (AYUSH) DHR	-	-	-	285,509.00	-	-	-	(285,509.00)
228	Ministry of Social Justice and Empowerment	7,944,573.00	-	39,743,429.00	12,229,393.00	3,969,960.00	-	31,488,649.00	-
229	Ministry of welfare	2,100.00	-	-	-	-	-	2,100.00	-
230	Morphotek Inc USA	98,823.58	-	-	-	-	-	98,823.58	-
231	MSD (India) Pvt Ltd	236,463.00	-	-	-	-	-	303,847.57	-
232	Nag foundation, pune	342,138.00	-	298,383.57	201,161.00	29,838.00	-	342,138.00	-
233	NAIP	-	(59,810.00)	-	-	-	-	-	(59,810.00)
234	NAMS	-	(231,005.00)	-	-	-	-	-	(231,005.00)
235	NATCO Pharma India	1,10,079.00	-	-	-	-	-	1,10,079.00	-
236	National AIDS Control Organisation	-	-	-	-	260,018.00	-	-	(260,018.00)
237	National Cancer Grid Research	2,465.00	-	1,875,279.00	1,707,560.00	169,964.00	-	220.00	(577,597.00)
238	National Commission for Protection of Child Rights	889,923.00	-	-	-	-	-	889,923.00	-
239	National Commission for protection of child Rights	-	-	-	-	-	-	-	-
240	National disaster management authority	4,020,350.00	-	-	-	-	-	4,020,350.00	-
241	National Health and Medical Research Council , Australia	532,000.00	-	-	-	-	-	532,000.00	-
242	National Health System Resource Centre	-	-	1,063,125.00	865,220.00	172,723.00	-	-	-
243	National Information Centre	47,745.00	-	-	-	-	-	47,745.00	-
244	National Innovation Foundation	2,103,396.00	-	-	875,864.00	-	-	1,227,532.00	-
245	National Institute for Health Research	4,209,092.00	-	1,048,859.00	4,954,058.94	-	-	303,892.06	-
246	NATIONAL INSTITUTE OF HEALTH, USA	26,180,456.18	-	54,360,721.00	49,236,114.94	5,499,272.00	-	25,805,790.24	-
247	NATIONAL INSTITUTE OF MENTAL HEALTH, NIH USA	308,588.00	-	235,685.00	633,044.00	11,737.00	-	-	(100,508.00)
248	National Institute of Nutrition (NIN) Hyderabad	109.00	-	-	-	-	-	109.00	-
249	National Institute of pharmaceutical Education & Research	12,439.00	-	729,750.00	-	-	-	12,439.00	-
250	National Institute of Social Defence	331,672.00	-	-	354,000.00	72,975.00	-	302,775.00	-
251	National Knowledge Commission	444,629.55	-	-	-	-	-	331,672.00	-
252	National Perinatal Epidemiology Unit, University of Oxford, UK	79,837.00	-	-	68,327.00	-	-	376,302.55	-
253	NCBIR	-	-	-	-	-	-	79,837.00	-
254	NCDC	-	-	42,016.00	20,000.00	4,075.00	-	17,941.00	-
255	NCDC, MOH&FW	-	-	9,675,000.00	-	967,500.00	-	8,707,500.00	-
256	NCPvt Ltd	37,117.00	-	-	-	-	-	37,117.00	-
257	NCT	33,584.00	-	-	-	-	-	33,584.00	-
258	Neeman Medical International Asia Ltd	237,385.00	-	-	-	-	-	237,385.00	-
259	New India Biopharma Pvt. Ltd.	-	-	134,541.00	110,500.00	26,908.00	-	-	(2,867.00)
260	Newcastle University, UK	-	-	-	-	-	-	-	-
261	Newtron Pharmaceuticals S.P.A.	61,441.00	-	1,228,950.00	1,065,421.00	122,895.00	-	102,075.00	-
262	Next Gen Invitro Diagnostics Pvt Ltd.	19,589.00	-	-	-	-	-	19,589.00	-
263	Next Gen Pharma India Pvt. Ltd	295,489.00	-	-	42,000.00	-	-	253,489.00	-
264	NIE (Others)	-	-	130,058,201.71	42,610,149.62	-	-	335,527,076.18	-
265	NIE (Advance Payment for Custom Duty)	248,079,024.09	-	-	10,000,000.00	-	-	-	(10,000,000.00)

S. No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance	
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit
266	NIPER, New Delhi 110001	5,993,650.00	-	-	590,225.00	-	5,403,425.00	-
267	Niti Aayog	-	-	2,593,224.00	2,337,559.00	259,323.00	-	(3,658.00)
268	Nova Nordisk India Pvt Ltd	3,650,560.00	-	2,484,044.00	2,534,837.00	473,296.00	3,126,471.00	-
269	NovaBay Pharmaceuticals	54,353.69	-	194,000.40	-	-	248,354.09	-
270	Novartis	488,416.25	-	2,658,053.34	1,513,493.00	196,496.00	1,436,480.59	-
271	Novartis Health Care Pvt Ltd	953,595.25	-	-	945,233.00	26,330.00	-	(17,967.75)
272	Novartis India Ltd	40,841.22	-	17,040.00	45,152.00	-	12,729.22	-
273	Novartis Pharmaceuticals	-	-	-	556,868.00	135,800.00	-	(692,668.00)
274	NRDC	29,510.00	-	-	-	-	29,510.00	-
275	NSD (Security Deposit)	2,973,194.00	-	-	-	-	2,973,194.00	-
276	NSRC, Ministry of Health & Family Welfare	955,345.00	-	2,047,578.00	1,963,834.00	47,777.00	991,312.00	-
277	Nurithm Private Labs	-	-	-	70,000.00	10,000.00	-	(80,000.00)
278	Office of Science & Technology officer of naval research golbal, USA	200,398.00	-	-	148,517.00	-	51,881.00	-
279	Office of the Principal Scientific Adviser, GOI	20,219,607.00	-	1,885,000.00	15,167,670.00	188,500.00	6,748,437.00	-
280	Oncology Forum	135,000.00	-	-	142,322.00	-	-	(7,322.00)
281	Outside Recovery	-	(706,346.00)	-	-	-	-	(706,346.00)
282	Orbis	-	-	1,743,549.00	264,014.00	171,967.00	1,307,568.00	-
283	Ovation Pharmaceuticals, USA	37,222.00	-	-	-	-	37,222.00	-
284	Ovrseas associates	190.00	-	-	-	-	190.00	-
285	Oxford University, UK	-	(121,244.75)	-	-	-	-	(121,244.75)
286	Others	-	-	(0.00)	-	-	-	(0.00)
287	OxIGENE, USA	215,126.84	-	-	-	-	215,126.84	-
288	Ozone pharmaceuticals ltd	239.00	-	-	-	-	239.00	-
289	Panacea biotech Ltd	8,084.00	-	-	-	-	8,084.00	-
290	Parexel International Clinical Research Pvt. Ltd	1,553,703.00	-	916,343.35	716,395.00	82,518.00	1,671,133.35	-
291	PAREXEL INTERNATIONAL LTD, UK	2,222,704.27	-	238,025.42	634,684.00	23,803.00	1,802,242.69	-
292	Path/One world Health	-	(130,278.00)	-	-	-	-	(130,278.00)
293	Peregrine Pharmaceuticals, USA	-	(26,577.00)	-	-	-	-	(26,577.00)
294	Pfizer Ltd	52,020.00	-	-	102,606.00	-	-	(50,586.00)
295	Pharmacia India Pvt Ltd	-	-	-	-	-	-	-
296	Pharmacosmos A/S, Denmark	-	-	-	-	-	-	-
297	Pharmazz india Pvt. Ltd.	322,261.00	-	48,886.00	315,094.00	29,189.00	26,864.00	-
298	PHARM-OLAM INTERNATIONAL, LTD	16,923.00	-	-	-	-	16,923.00	-
299	PHFI	2,762,050.00	-	-	2,267,758.00	-	494,292.00	-
300	Phonix Cardic	7,761.00	-	-	-	-	7,761.00	-
301	PHRI, ONTARIO CANADA	4,118,644.00	-	144,650.00	-	14,465.00	137,946.00	-
302	Physicians Research Foundation Research Grant	-	-	2,272,068.35	2,173,624.00	227,206.00	3,989,882.35	-
303	Piramal Healthcare Ltd	-	-	281,000.00	205,027.00	6,500.00	69,473.00	-
304	Piramal Life Sciences	210,987.00	-	-	-	-	210,987.00	-
305	PPD Pharmaceutical Development India Pvt Ltd	36,211.00	-	-	-	-	36,211.00	-
306	PTC Therapeutics Inc. USA	-	(167,881.72)	196,306.00	31,000.00	19,631.00	855,188.00	(22,206.72)
307	QED PHARMACEUTICAL SERVICES PVT LTD	577,043.00	-	1,314,636.00	327,984.00	131,464.00	577,043.00	-

S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance	
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit
308	Qiagen Inc/India	3,709.00	-	-	-	3,709.00	-	-
309	Quintiles Spectral India	3,046,971.56	-	-	130,319.00	2,916,652.56	-	-
310	Rahe Life Science	-	(66,157.00)	-	-	2,388.00	-	(2,388.00)
311	Raj Gardhiya Liver Unit	-	-	74,786.00	-	-	8,629.00	-
312	Rajiv Gandhi Cancer Institute and Research Centre	54.00	-	-	-	-	54.00	-
313	Ranbaxy /Eliilly & company pvt Ltd	1,816,383.00	-	-	16,456.00	-	1,799,927.00	-
314	Raptim Research Ltd	142,784.00	-	-	334,851.00	-	-	(192,067.00)
315	REC Power distribution company Ltd.	1,646,973.00	-	650,000.00	1,287,259.00	65,000.00	944,714.00	-
316	Reliance Clinical Research Services (P) Ltd	-	-	-	-	-	-	-
317	Reliance Clinical Research Services (P) Ltd	566,593.50	-	-	-	-	566,593.50	-
318	Relisys Medical Devices Ltd	-	(3,433.00)	-	-	-	-	(3,433.00)
319	Revolving Funds for Drugs / SNMC	195,710.00	-	-	-	-	195,710.00	-
320	ROCHE Products(India) Pvt Ltd	168,443.00	-	-	-	-	168,443.00	-
321	Russan Pharma Ltd Mumbai	433,750.00	-	-	-	-	433,750.00	-
322	Saksin Lifesciences Pvt. Ltd.	-	(80,464.00)	812,057.00	646,453.00	81,206.00	3,934.00	-
323	Sanat Product Ltd	-	(77,996.00)	-	-	-	-	(77,996.00)
324	SANOFI	35,743.00	-	124,200.00	25,400.00	-	134,543.00	-
325	Sanofi Pasteur India Pvt Ltd	123,346.00	-	-	-	-	123,346.00	-
326	Sanofi Synthelabo (India) Private Limited	100,778.00	-	479,552.24	482,281.00	221,468.00	-	(123,418.76)
327	Sarabhai Chemicals	-	(4,868.00)	-	-	-	-	(4,868.00)
328	Saver Biotech Limited	223,123.00	-	-	-	-	223,123.00	-
329	SAVING NEWBORN LIVES, USA	-	-	-	-	-	-	-
330	SCA Global hygien products india pvt Ltd	59,214.00	-	297,888.00	180,833.00	29,789.00	59,214.00	-
331	Sciformix Technologies private limited	-	-	607,200.00	457,419.00	60,720.00	373,110.00	-
332	SeqIndia Labs Pvt. Ltd.	284,049.00	-	-	-	-	-	-
333	SERICARE	-	(182,191.00)	-	-	-	-	(182,191.00)
334	Shanta Biotechics Pvt Ltd	89,952.00	-	-	-	-	89,952.00	-
335	Shire Human Genetic Therapies, Inc, USA	1,114,905.40	-	-	-	-	1,114,905.40	-
336	Siemens Ltd	208,797.00	-	-	-	-	208,797.00	-
337	Sight savers	-	(127,782.00)	838,695.00	2,232,133.00	141,131.00	-	(1,662,351.00)
338	Singapore Clinical Research Institute, Singapore	-	(81,335.00)	118,009.00	1,085.00	11,692.00	23,897.00	-
339	Sinopharm India Pvt Ltd	-	(17,964.00)	-	14,326.00	-	-	(32,290.00)
340	SIRO CLIN PHARMA PVT LTD	-	(35,171.00)	383,968.00	820,434.00	92,025.00	-	(563,662.00)
341	SMB Corporation of India	-	(166,623.00)	-	-	-	-	(166,623.00)
342	Smith & Nephew Health care pvt It	5,443.00	-	-	-	-	5,443.00	-
343	Society of American Gastrointestinal and Endoscopic Surgeons	7,001.00	-	-	-	-	7,001.00	-
344	Solumiks Herbeaceuticals Limited	13.00	-	-	-	-	13.00	-
345	Solvey Pharma Ltd	13,465.00	-	-	-	-	13,465.00	-
346	SPARC	-	-	1,299,970.00	277,692.00	129,997.00	892,281.00	-
347	St Jude Medical Hong Kong	-	(5,014.00)	-	-	-	-	(5,014.00)
348	ST Jude Medical India Pvt Ltd	-	(44,021.00)	-	-	-	-	(44,021.00)
349	State Health Society, Delhi Govt.	-	-	1,602,000.00	1,060,739.00	80,100.00	461,161.00	-



S.No.	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance	
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit
350	Stempeutics Research Pvt Ltd	96,334.00	-	49,612.00	15,000.00	4,962.00	125,984.00	-
351	Sterling Synergy System (P) Ltd	58,580.00	-	-	-	-	58,580.00	-
352	Stryker Global Technology Center Pvt Ltd.	-	(6,816.00)	-	-	-	-	(6,816.00)
353	Sun Pharmaceuticals	3,384.00	-	-	-	-	3,384.00	-
354	Swami Sivananda Memorial Institute	552,398.00	-	1,000,187.00	1,288,445.00	100,000.00	164,140.00	-
355	SWAYAM (Ministry of HRD)	590,509.00	-	3,564,529.00	3,762,080.00	350,000.00	42,958.00	-
356	Synergy Enironics Ltd.	-	(118,329.00)	-	-	-	-	(118,329.00)
357	Synapsica Technologies Private Limited	-	(27,061.00)	685,000.00	33,627.00	68,500.00	582,873.00	-
358	Synergy Network India Pvt Ltd,	1,498.00	-	-	-	-	-	(27,061.00)
359	Tech Observer India Pvt. Ltd	16,237.00	-	59,400.00	51,217.00	5,940.00	3,741.00	-
360	Texas A&M Research Foundation (TAMRF) USA	294,113.00	-	-	-	-	16,237.00	-
361	The Cancer Foundation	7,775.00	-	1,000,000.00	213,824.00	100,000.00	980,289.00	-
362	The Energy and Resources Institute	228,458.32	-	-	-	-	7,775.00	-
363	The George Institute for International Health, Australia	90,845.00	-	-	-	-	228,458.32	-
364	The Indian Asthma Care Society	408.00	-	-	-	-	90,845.00	-
365	The International Society for Paediatric Neurosurgery (ISPN)	77,500.00	-	-	-	-	408.00	-
366	The Media Lab Asia	725,090.00	-	1,098,941.00	890,133.00	109,894.00	77,500.00	-
367	The Medical Research Council, UK	-	-	-	-	-	824,004.00	-
368	THE MICRONUTRIENT INITIATIVE, ASIA	-	(8,445.00)	-	-	-	-	(8,445.00)
369	The Service de Dermatologie, France	5,163.00	-	-	-	-	5,163.00	-
370	The University of Alabama, USA	-	(71,269.00)	-	-	-	-	(71,269.00)
371	The University of Edinburgh and NHS Lothian	-	-	-	-	-	-	-
372	THRESHOLD PHARMACEUTICALS, USA	-	(115,130.00)	1,510,977.00	1,685,167.00	-	1,223,603.00	-
373	THSTI	1,060,807.00	-	1,699,680.00	1,322,660.00	214,224.00	108,951.00	-
374	Torrent Pharmaceutical Ltd	108,951.00	-	-	-	-	1,619,167.00	-
375	Troika Pharmaceuticals Ltd	1,380,280.00	-	2,064,213.00	1,622,612.00	202,714.00	-	-
376	UCLAN, UK	-	(1,875,215.00)	-	1,197,302.00	-	-	(3,072,517.00)
377	UGC	53,106.00	-	-	-	-	53,106.00	-
378	UN International Drug and crime Control Programme	1,624,225.00	-	18,666,894.00	16,541,854.00	279,142.00	3,470,123.00	-
379	UNICEF	485,388.00	-	300,000.00	1,217,463.00	30,000.00	-	-
380	Unique Biotech Ltd	-	-	2,880,000.00	50,000.00	144,000.00	2,686,000.00	-
381	Universal Elementary Education Mission, Deptt. of Education	137,577.00	-	870,623.00	-	87,062.00	921,138.00	-
382	Universitair Ziekenhuis Antwerpen (UZA), Belgium	369,583.00	-	-	-	-	369,583.00	-
383	University of Bergen, Norway	57,187.00	-	-	-	-	57,187.00	-
384	UNIVERSITY OF CALGARY, CANADA	90,282.00	-	-	-	-	90,282.00	-
385	University of Maryland	1,974.00	-	-	-	-	1,974.00	-
386	University of Nottingham, UK	14,283,068.00	-	5,249,048.00	2,041,516.00	524,905.00	16,965,695.00	-
387	University of Pittsburgh	275,673.00	-	2,848,284.00	3,175,025.00	282,382.00	-	-
388	University of Warwick UK	4,687.00	-	-	-	-	4,687.00	-
389	UNM HSC	1,025,705.00	-	1,500,000.00	1,026,828.00	150,000.00	1,348,877.00	-
390	Unnique Biotech Ltd.	-	-	-	-	-	-	-

S.No	Funding Agency	Opening Balance		Receipt	Payments		Closing Balance		
		Credit	Debit		Other Expenses	Estb. Expenses	Credit	Debit	
391	US Science & Technology Forum, USA	399,323.00	-	-	-	-	-	399,323.00	-
392	USV Private Limited	-	-	801,850.00	721,394.00	-	80,185.00	271.00	-
393	Veeda Clinical Research Pvt Ltd	600,641.00	-	906,898.00	283,707.00	-	87,398.00	1,136,434.00	-
394	Veloce Biopharma LLC	143,028.00	-	-	-	-	-	143,028.00	-
395	Venus Remedies Ltd	14,330.00	-	-	11,371.00	-	-	2,959.00	-
396	Vsquare Medi Enterprises	-	-	-	-	-	6,500.00	-	(6,500.00)
397	Vulimiri Ramalingaswami Foundation	162,000.00	-	-	-	-	-	162,000.00	-
398	Vyome Bioscience pvt Ltd	10,548.00	-	-	-	-	-	10,548.00	-
399	Walter Bushnell	845,286.00	-	-	267,851.00	-	-	577,435.00	-
400	Welcome Trust London, UK	145,869.25	-	-	331,814.00	-	-	-	(185,944.75)
401	WFPICCS	18,049.33	-	-	-	-	-	18,049.33	-
402	WHO	19,982,345.12	-	13,376,148.22	14,276,336.00	-	30,973.00	19,051,184.34	-
403	Wockhardt, Mumbai	1,176,899.00	-	-	-	-	-	1,176,899.00	-
404	Wyeth Pharmaceuticals Inc	225,950.00	-	-	-	-	-	225,950.00	-
405	Zenotech	32,037.00	-	-	-	-	-	32,037.00	-
406	Zimmer India Pvt Ltd	81,593.00	-	-	-	-	40,076.00	41,517.00	-
407	Zuventus	146,250.00	-	-	-	-	-	146,250.00	-
408	Credit in Scheme Fund Account instead of AYUSH Account	2,518,897.00	-	-	-	-	-	2,518,897.00	-
409	Ministry of Health And Family Welfare(N.A.C.O)	15,078.00	-	-	-	-	-	15,078.00	-
410	NOVARTIS	160,290.65	-	-	-	-	-	160,290.65	-
411	Veeda Clinical reserach Pvt. Ltd.	201,947.00	-	-	-	-	-	201,947.00	-
412	Micro Labs Limited	350,982.00	-	-	-	-	-	350,982.00	-
413	India Medtronic Pvt. Ltd	161,000.00	-	-	-	-	-	161,000.00	-
414	Meril Life Sciences Pvt Ltd.	118,800.00	-	-	-	-	-	118,800.00	-
	<b>TOTAL</b>	<b>1,351,679,571.65</b>	<b>(16,043,607.97)</b>	<b>1,669,425,853.22</b>	<b>1,475,901,727.86</b>	<b>120,827,754.00</b>	<b>1,480,320,787.33</b>	<b>(71,988,452.29)</b>	

Jr. Accounts Officer  
Research Section

Accounts Officer  
Research Section

Dean  
Research Section



## 13.2. Audit Report

### Separate Audit Report of the Comptroller & Auditor General of India on the Accounts of All India Institute of Medical Sciences (AIIMS), New Delhi for the year ended 31 March 2020

We have audited the attached Balance Sheet of the **All India Institute of Medical Sciences (AIIMS), New Delhi** as at 31 March 2018, the Income & Expenditure Account and Receipts & Payments Account for the year ended on that date, under Section 19 (2) of the Comptroller and Auditor General's (Duties, Powers & Conditions of Service) Act, 1971 read with section 18 (2) of the AIIMS Act, 1956. These financial statements are the responsibility of the AIIMS management. Our responsibility is to express an opinion on these financial statements based on our audit. **However, we are not able to form an opinion on the accounts of All India Institute of Medical Sciences (AIIMS), New Delhi for the year ended 31 March 2020 in view of the below:**

No depreciation has been charged by the AIIMS on fixed assets of Rs 5461.68 crore i.e., machinery and equipment, vehicles, buildings, Computers/Peripherals and library books etc., as required under AS - 6 of ICAI. In the absence of which audit is unable to certify the actual value of fixed assets and its impact on accounts. This issue has featured in our comments since the year 2015-16, however, AIIMS has not taken any corrective measures and has not yet charged depreciation on the fixed assets. Due to the absence of the actual value of fixed assets, we are not able to form an opinion on correctness of fixed assets.

There are eleven Centres including AIIMS (Main) which are maintaining separate accounts. However, AIIMS has not prepared consolidated accounts by combining the accounts of all the Centres. The same issue has been commented on since the year 2016-17, however, AIIMS has not taken any corrective measures. In view of this, a complete picture of the accounts cannot be arrived at.

The accounts of "AIIMS Delhi AROGYA KOSH" have not been consolidated in the annual accounts of AIIMS (Main). Instead, the Receipt and Payment account of this account has been attached without inclusion of the figures in the balance sheet. Thus, non-inclusion of this account has resulted in understatement of Liabilities as well as Current Assets by Rs 0.47 crore.

The accounts of "National Illness Assistance Fund (NIAF)" have not been consolidated in the annual accounts of AIIMS Main. Instead the receipt and payment account of this account has been attached without inclusion of the figures in the balance sheet. Thus, non-inclusion of this account has resulted in understatement of Liabilities by Rs 46.43 crore, understatement of Income by Rs 2.42 crore and understatement of Current Assets by Rs 48.85 crore. Similarly, the Account of Poor Patient Fund, Trauma Centre has not been included in the annual accounts of AIIMS Jai Prakash Narayan Apex Trauma Centre.

An amount of Rs 14.00 crore has been depicted as NPS fixed deposit. But, during physical verification, it was verified that fixed deposit of Rs 7.00 crore only was in place. The reasons for difference may be investigated and reconciled.

Schedule 8 – 'Fixed Assets', of the annual accounts of the AIIMS (Main) and other centres of the AIIMS disclosed assets valued at Rs 5461.68 crore as on 31 March 2020. However, an Assets Register required to be maintained in Form GFR-22 under General Financial Rules 2017 was not maintained by AIIMS.

An amount of Rs 27.83 crore has been shown as liability on account of New Pension Scheme (NPS). However, an incorrect entry of Rs 14 crore has been added resulting in overstatement of Liabilities by Rs 14 crore. Moreover, overstatement of Rs 2 crore which was also pointed out in the previous year's SAR has also not been rectified. Therefore, the Liabilities on account of NPS is overstated by Rs 16 crore.

An amount of Rs 32.37 crore has been shown as Others (specify) NPS in Schedule – 16 (Income from Royalty, Publication etc.). It included Rs 29.00 crore, which was received due to the maturing of FDRs pertaining to the NPS. As the amount of FDRs matured is not an Income, treating this amount as Income resulted into the overstatement of Income and overstatement of Liabilities by Rs 29.00 crore.

The Grant-in-Aid received from the Ministry is being invested by AIIMS in short term FDRs to earn interest. During the year 2019-20, AIIMS earned Rs 10.90 crore as interest on account of investment in FDRs. However, this amount has not been shown as refundable to the Ministry This has resulted in overstatement of Income and understatement of Liabilities by the like amount.

For and on behalf of the C& AG of India

Principal Director of Audit  
(Health Welfare & Rural Development)

New Delhi

Date: 04.12.2020



शरीरमाद्यं खलु धर्मसाधनम्