



**Government of West Bengal**  
**Institute of Postgraduate Medical Education & Research**  
Centre of Excellence in Medical Education & Research

## Microbiology

### FACULTY

Prof. Dr. Raja Ray, DTM&H, MD, PhD	Professor and Head of the Department
Prof. Dr. Kumkum Bhattacharyya, MD	Professor
Prof. Dr. Chitrita Bhattacharyya Chattopadhyay, MD	Professor
Dr. HIRAK JYOTI RAJ, MD	Associate Professor
Dr. NUPUR PAL, DCH, MD	Associate Professor
Dr. HASINA BANU, MD	Assistant Professor
Dr. DIPANKAR PAUL, DCH, MD	Assistant Professor (from 27/11/2021)
Dr. REHENA SARKAR, MD	Assistant Professor (from 30/11/2021)
Dr. ABIRLAL SANYAL, MD	Demonstrator ( from 19/02/2021)

### Senior Residents (other than PGTs of 2018-21 session)

Dr. Namrata Jain, MD (CMO/SR)
Dr. Mohana Chakraborty, MD (CMO/SR)

### Postgraduate trainees

Session 2020-23	Session 2019-22	Session 2018-21
Yet to join.	Dr. Arunima Chakravarty Dr. Puskar Mistry Dr. Arijit Baidya	Dr. Hossain Najma Banu Dr. Ananda Sanchayeeta Mandal Dr. Sayan Pal Dr. Asis Kumar Ghosh

### Research scholars and non-teaching staff

Ms. Archi Ghosh	PhD scholar, 2018 onwards (Calcutta University)
Mrs. Rehana Parveen	PhD scholar, 2018 onwards (Calcutta University) Recently submitted PhD thesis
Ms. Moonmoon Sinha	PhD Scholar, 2018 onwards (Calcutta University) Recently submitted PhD thesis

### TRANSFERS, POSTINGS AND SUPERANNUATIONS

Prof. Dr. Chitrita Bhattacharyya Chattopadhyay, MD	Professor (was initially on detailment from NRS Medical College and Hospital, Kolkata-14 on 14/08/2020 Permanently posted at IPGMER and SSKM Hospital, Kolkata-20 on 12/07/2021FN)
Dr. Munmun Sarkar, MD	Demonstrator (Permanently posted at COM & SDH, Kamarhati, Kolkata on and from

	11/02/2021 FN)
Dr. Anirban Bhaduri, DPH, MD	Promoted to the post of Associate Professor, Microbiology and transferred to ID&BG Hospital, Kolkata-10 on 30/11/2021.
Dr. Rehana Sarkar, MD	Promoted to the post of Assistant Professor, Microbiology under WBMES and joined the Department of Microbiology, IPGME&R and SSKM Hospital, Kolkata-20 on 30/11/2021 FN.

## NONTEACHING AND PROJECT STAFFS

I) **Medical Technologist:** 1 Mallika Dubey 2 Bhabataran Manna (on deputation to Trauma Care Centre since 1st August, 2019) 3 Ramkrishna Sahu 4 Subrata Biswas 5 Ajit Kr Pal 6. Jagadishwar Sashmal (superannuated) 7. Kumar Kanti Som Chowdhury (superannuated) 7. Sourav Ghosh 8. Sumona Kundu 9. Prasanta Ghose. 10. Mr. Uttam Kumar Das 11. Mr. Arup Barai 12. Mr. Subhomay Bhattacharya 13. Mr. Suparno Bhowmick 14. Mr. Anik Roy 15. Mrs. Maitrayee Guha 16. Souvik Dey 17. Mr. Prakash Ghara.

II) **Group D staff:** 1. Gopal Sardar 2. Rama Dutta 3. Sunny Hela 4. Pradyut NabaBarua 5. Sambhu Nath Pal.

III) **IDSP and National Vector Borne Diseases Control Programme**-Nodal Officer Prof Dr Raja Ray. Mr. Biswanath Das is working as Executive Assistant (Facility) of IDSP, NVBDCP.

IV) **AIIMS-CDC-ICMR** Project staff- Ujjaini Roy (JRF), Sani Safi (DEO, CDC-AIIMS project), Mehraj Khatoon (HICN). PI-Prof Dr Raja Ray. Co-PI-Dr Hirak Jyoti Raj.

V) **VRDL Staff:** PI, Project-Prof. Dr Raja Ray. Co PI-Dr Hirak Jyoti Raj, Dr Aritra Biswas (Res. Scientist, Non-med), Jayeeta Halder (Res. Asstt., Non-medical.) Ms. Halder resigned from this post (November, 2021), Mr. Rajesh Adak and Ms Payel Dutta (Lab Technicians under VRDL project).

VI) **AMRSP-ICMR** Project-PI (Prof Raja Ray), Co-PI-Prof Kumkum Bhattacharyya, Dr Hirak Jyoti Raj, Ms Swati Ganguly (MT, Lab), Mr Pradip Bala (DEO).

VII) **NVHCP under NHM**.-Nodal Officer, State Referral Lab (Prof Dr Raja Ray), Co-PI-Dr Hirak Jyoti Raj, Technical Officer-Dr Ananya Pal, PhD.

VIII) **Project Research Fellow & PhD scholars:** Moonmoon Sinha, Rehana Parveen, Archi Ghosh.

## FACULTY NEWS

### Prof. Raja Ray, HOD, Microbiology

- Course coordinator for MD Microbiology, MBBS Microbiology since beginning role as Professor in the department. Organizing seminars including selecting topics of current day importance in Microbiology and recent advances, organizing journal clubs, organizing classes for MD students. Training postgraduates on reporting of laboratory reporting in the realm of diagnostic stewardship, organizing mock tests and daily interaction with postgraduates MD Microbiology students on clinical microbiology issues along with other departmental faculty Regularly took theoretical lecture classes in MBBS on critical areas like Introduction to Microbiology, Growth, Physiology and Metabolism of microbes, Classification of Bacteria, Tuberculosis, Typhoid, Syphilis, Malaria, Filariasis Immunology, AIDS, etc.
- Taking classes for DMLT and B. Sc Nursing students and Post-basic B. Sc Nursing students.
- Guiding MD thesis of WBUHS, Microbiology and PhD thesis of candidates (Calcutta University) (currently two completed and one registered and working).
- Guiding summer/winter short-term projects of MSc candidate (Microbiology, Bio-Technology) (external candidates/externs (Saint Xaviers, Techno India etc )
- Recently served as a guide for completion of summer internship project titled as 'Prevalence of viral hepatitis types among suspected cases attending a tertiary care hospital and in-vitro diagnosis by screening and confirmatory methods'
- Convener and Internal examiner of MD Microbiology of August, 2021, Convener and Internal Examiner 2nd MBBS Microbiology 2021. External & Internal Examiner of BSc Nursing August 2021. Paper setter MBBS Microbiology January 2021 and MD Microbiology, March, 2021.
- Adjudicator of 3 MD thesis in Microbiology under WBUHS January 2021

- 8 publications , 5 national & 3 international during the period under review
- Maintained functioning status of 5 central government funded projects at IPGMER, Microbiology -(1. VRDL (including COVID 19 Lab, IPGMER), 2.AMRSP, 3.AMSP, 4.CDC-AIIMS),NVHCP(National Health Programme) and two state govt. programmes -IDSP,NVBDCP,
- he first was Viral research and Diagnostic Laboratory (DHR-ICMR) as Principal Investigator under which testing for eleven viruses in addition to Hep-A, Hep-B continuing. Transplant screening for Toxoplasma, CMV, Herpes Simplex 1,2, Varicella Zoster, Epstein Barr Viruses testing kits by Microelisa initiated and continuing. Entire Hepatitis viral range and Hepatitis profile like IgMAnti HBc, Anti-Hbs, HBEag and AntiHBe being done. Currently COVID19 Lab has started functioning under VRDL Lab since 17.03.2020 with permission from DG-ICMR and currently testing more than 4lakh,75 thousand (approx) samples tested till date. Equipment like -80 deg Deep Freeze,-20 deg Deep freezer, RT-PCR instrument (4 donated by UNICEF) Refrigerated Centrifuge, the rest provided by Govt of West Bengal, WBMSCL.
- The second project-AIIMS-CDC-ICMR funded project entitled" Capacity building and Strengthening of Hospital Infection Control to detect and prevent antimicrobial resistance in India initiated in our hospital as Principal Investigator along with Co-PI, Dr Hirak Jyoti Raj, under which surveillance of hospital infection respect to CLABSI, CAUTI, VAP in ITUs, ICUs has been strengthened plus CLABSI prevention tool kit has been initiated as Quality assurance initiative to cut down on CLABSI rates at ICUs. New antibiotic discs and MIC Agar dilution screen for Vancomycin resistance in Staph and Enterococci introduced and MIC Broth dilution for Colistin initiated methods pioneered in AST.
- Antimicrobial Resistance Surveillance Project initiated as Principal Investigator wherein IPGMER has been selected as West Bengal Regional Centre for Antimicrobial resistance surveillance under which cumulative antibiogram data acquisition and formulation of Antibiotic policy for clinicians has been initiated and achieved by June,2021 this year..In addition, endorsement of Hospital Infection Control Committee by hospital authorities, ongoing analysis of cumulative antibiogram data and new phenotypic screening, confirmatory and special tests like Colistin Broth Microdilution, RAPID ECCARBANP, E-Test for Oxacillin-Vancomycin Agar Screen, have already begun and continuing.
- Antimicrobial Stewardship Project, a sister project of AMRSP which commenced in March,2019 and is continuing-benefits are constructing hospital antibiogram to guide clinicians in choice of antibiotic.

#### **Other roles/responsibilities**

- Member secretary of Hospital infection control committee constituted by MSVP 01/04/2020 31/03/202102 Member of rapid response team under secretary (PHP) and MD(NHM), Dept of Health & Family Welfare under order of DME01/04/2020 31/03/202103 Member, Rapid Response Team for COVID 19 01/04/2020 31/03/202104.
- Member of expert committee of Medical Board constituted by MSVP, Kolkata
- Member of Hostel Supervisory Committee of UG & PG, IPGMER.
- Member of the PhD committee of IPGMER along with the other responsibilities
- Principal Investigator in the following projects :
  - 1) Viral Research and Diagnostic Centre, DHR-ICMR, at IPGMER (Medical College Level VRDL)
  - 2) Principal Investigator of the "ICMR, West Bengal Regional Centre for Antimicrobial Resistance"
  - 3) Principal Investigator of AIIMSCDC-ICMR collaborative project on "Capacity Building and Strengthening of Hospital Infection Control to detect and treat Antimicrobial resistance in India"
  - 4) Nodal Microbiologist, IDSP and NVBDCP, IPGMER, Kolkata.
- In Charge Lab testing of CB-NAAT/TRU NAAT for tuberculosis testing under collaboration with Pulmonary Medicine department
- Co-PI in the Antimicrobial Stewardship Programme commenced since August,2019.
- In June 2021, Hospital Antibiotic Policy was published and distributed amongst clinicians of this institute for serving as a guide to rational antibiotic usage.
- Nodal Officer, State Referral Laboratory, National Viral Hepatitis Control Programme.
- Lab In Charge of COVID 19 Testing Lab at IPGMER under approval from DG-ICMR since March, 2020.
- Member, Skill Lab Committee, IPGME&R
- Attended Workshop cum PI meeting (on 7/04/2021) by CDC-AIIMS.
- Attended Xth Workshop cum PI meeting (on 29-30/06/2021) by CDC-AIIMS on the subject of "Surveillance of HAI".
- Data validation and i-AMRSS Workshop on 14-15<sup>th</sup> September, 2021 under ICMR-AMRSP project.
- Organized three MT Lab training workshops and 2 Medical Officer orientation workshops organized during the period Dec,2020 till Nov,2020 (Prof Raja Ray, Dr Hirak Jyoti Raj, Dr Anaya PAL-Technical Officer, NVHCP).

- Peer-Reviewer of research articles in Indian Journal of Public Health and Journal of Evolution in Medical and Dental Sciences.
- Attended e-HISICON on 29<sup>th</sup> -31<sup>st</sup> July,21.

**Prof. Kumkum Bhattacharyya**

- Chairperson and Convener of Mucormycosis multidisciplinary team, May, 2021 onwards.
- Member of Institutional Bio-safety Committee (IBSC), IPGME&R.
- Co-Investigator in AMRSP project under ICMR.

**Prof. Chitrita Bhattacharyya Chattopadhyay**

- In-charge of Serology Laboratory
- Presently involved in day to day academic and laboratory activities of the department.
- Guide of ongoing MD thesis works.
- Examiner of DMLT examination (WBSMF).
- External examiner of MBBS examination (WBUHS)
- Guide of short project of BSc and MSc Microbiology and Biotechnology students
- Training personnel for the execution of concept of Centre of Excellence of Pediatric Tuberculosis.

**Dr. Hirak Jyoti Raj**

- Acted as Examiner in 2nd Professional MBBS exam inside and outside the state of West Bengal.
- Acted as scrutinized in MD Microbiology Exam 2021
- Resource person and Organizer in SRL level workshops under National Viral Hepatitis Control Program
- Acting as Co Investigator in Four Projects ongoing in Dept of Microbiology.

**Dr Nupur Pal**

- In-charge of Mycology & Mycobacteriology Lab, Co-in charge of CBNAAT Lab.
- Presently involved in day to day academic and laboratory activities of the department.
- Involved in COVID-19 laboratory duties under VRDL, IPGME&R and SSKM Hospital, Kolkata-20,
- Co-Guide of ongoing MD thesis works.
- Examiner of DMLT examination (WBSMF).
- External examiner of MBBS examination (WBUHS).
- In-charge of short project of BSc and MSC Microbiology and Biotechnology students
- Member of RNTCP Core Committee (IPGME&R).
- Resource person in Workshop training programme from 16 to 18th November 2021, under the National Viral Hepatitis Control Programme.
- Attended e-HISICON, 2021.
- Successfully completed 3days RBCW ( 26TH -28TH Aug, 2021).
- Member of rapid response team of Mucormycosis from May, 2021 onwards.

**Dr. Hasina Banu**

- Joined on 06.02.2021, presently involved in day to day academic and laboratory activities of the department.
- Involved in COVID-19 laboratory duties under the aegis of VRDL, IPGME&R and SSKM Hospital, Kolkata-20, since February, 2021.
- Supervisor of COVID-19 Vaccination Programme, IPGME&R and SSKM Hospital, Kolkata-20, since March, 2021.
- Examiner of DMLT examination(WBSMF).
- Scrutinizer in DMLT Examination (WBSMF).
- Resource person in Workshop training Programme from 22nd to 24th March 2021& 16 to 18thNovember 2021,under the National Viral Hepatitis Control Programme.
- Scrutinizer in DMLT Examination (WBSMF).
- In-charge of HMIS online microbiological report approval.

- Attended HISICON 2021 as delegate on 29th to 31st July, 2021.
- Successfully completed Basic Course In Biomedical Research by NPTEL ( March – June 2021 Session, Cycle 4 )
- Successfully completed 3days RBCW ( 26TH -28TH Aug, 2021).

#### **Dr. Dipankar Paul**

- Presently involved in day to day academic and laboratory activities of the department.
- Involved in COVID-19 laboratory duties under the aegis of VRDL, IPGME&R and SSKM Hospital.
- Nodal Officer, Rapid Antigen Test for COVID-19 for this institution.
- Took part in the PPE donning and doffing demonstration program at SNPH Hospital on 19.4.21.
- Attended e-MYCOCON as delegate organized by FISF on 26th to 28th March,2021
- Resource person in Workshop training Programme from 22nd to 24th March 2021,under the National Viral Hepatitis Control Programme.
- Attended HISICON 2021 as delegate on 29th to 31st July, 2021
- Took part in HMIS online microbiological report approval.
- Promoted to the post of Assistant Professor, Department of Microbiology on 27.11.21
- Successfully completed Basic Course In Biomedical Research by NPTEL ( March – June 2021 Session, Cycle 4 )

#### **Dr. Rehana Sarkar**

- Promoted to the post of Assistant Professor, Microbiology under WBMES and joined the Department of Microbiology, IPGME&R and SSKM Hospital, Kolkata-20 on 30/11/2021 FN.

#### **Dr. Abirlal Sanyal**

- Got selected as Demonstrator, Microbiology by WBHRB (Feb, 2021) and joined WBMES on 19th February, 2021 at IPGME&R-SSKM Hospital, Kolkata-20 after serving as Senior Resident, Microbiology(from 03/08/2018 to 18/02/2021 AN).
- Carrying out duty at the COVID-19 laboratory, under the aegis of VRDL, Department of Microbiology, IPGME&R and SSKM Hospital from 10th May, 2020 – till date.
- Involved in online teaching of 2nd Professional MBBS students, DMLT students, mail based teaching of nursing students during the ongoing COVID-19 pandemic.
- Acted as a co-Guide of two Final year MBBS students in carrying out and drafting their project based on Knowledge-Attitude-Practice(KAP)amongst HCW in the COVID-19 era, under guidance of Prof. Dr. Kumkum Bhattacharyya, Professor, Microbiology, IPGME&R and SSKM Hospital, Kolkata-20.
- Was involved in arranging MD practical examinations(2021) with other faculty members.
- Attended e-HISICON, 2021(29th to 31st July, 2021) and numerous online CMEs and talks.
- Attended CIDSCON Virtual meeting (held on 25th to 29th August, 2021)
- Presently, carrying out day to day academic and laboratory activities of the department, including online UG teaching and online examination of MBBS, DMLT students.
- Involved in regular official activities of the department, additions and changes in HMIS reporting (Microbiology), drafting of documents and other communications, data collection etc.
- Acted as Scrutinizer in the 2nd Professional MBBS Practical and Viva voce examinations held in the month of November, 2021.
- Assisted and actively took part in mycological diagnosis and assessment of 'COVID-19 associated Mucormycosis', May, 2021 onwards under guidance of Prof. Dr. Kumkum Bhattacharyya, Professor, Microbiology, IPGME&R and SSKM Hospital, Kolkata-20.
- At present undergoing Basic Course in Biomedical research (NIE, Chennai under aegis of ICMR, New Delhi) in the 5th cycle.

#### **Dr. Namrata Jain**

- Posted as Senior Resident to act as CMO in the VRDL as Covid Lab Supervisor since June 2020 (Pandemic)
- Also involved in the Mucormycosis Project as Senior Resident since May 2021.

#### **Dr. Mohana Chakraborty**

- Posted as Senior Resident to act as CMO in the VRDL as Covid Lab Supervisor since June 2020 (Pandemic).
- Also involved in the Mucormycosis Project as Senior Resident since May 2021.

### **DEPARTMENTAL ACADEMIC ACTIVITY**

1. Teaching and organizing examinations of MBBS, MD,DNB, DMLT, BPT, DCLT, BSc Nursing.
2. Organizing Journal club, Seminars, Lecture Classes and guiding thesis for MD & PhD candidates.
3. Organizing summer and winter projects for MSc/BSc (Microbiology/ Biotechnology) students of different reputed colleges of W.B. like Amity University, Techno India, St. Xavier's College and also other states, approaching our institute.
4. Inter-departmental advisory role in issues relating to Hospital Infection Control, Antibiotic Policy/Antibiogram / integrated teaching.
5. Participating in Medical Boards as Subject experts.
6. Participating in State, National and International Conferences related to the subject of Microbiology.

### **PUBLICATION BY FACULTY, STUDENTS AND RESEARCH SCHOLARS**

1. Manotosh Sutradhar, Hirak Jyoti Raj, RajaRay, Ashutosh Ghosh "Antimicrobial Resistance pattern of Bacterial Isolates Among Nosocomial Infections(UTI and BSI)from the Intensivecareunit of a tertiary care Government Hospital in India. Journal of Evolution in Medical and Dental Sciences.publication.August,2020.P ISSN 2278-4878 E ISSN 2278-4802PG 2284-2288
- 2.Moonmoon Sinha, Raja Ray, et al "In vitro evaluation of the antiviral effects of the Eupatorium Perfoliatum Extract on Dengue Virus infected HEPG2 and murine primary hepatic cell culture".International Journal of Pharmaceutical Sciences andResearch[E-ISSN;0975-8232;P-ISSN:2320-5148]DOI:10.13040/IJPSR.0975-8232.Published January,2020,
3. Sanyal Abirlal , Ray Raja,Sarkar Manas."Bacteriological and Demographic profile of geriatric urinary tract infections at a tertiary care hospital. International Journal of Dental and Medical Sciences Research.2020;2(4):40-50(published 19<sup>th</sup>October,2020)
4. Mathur Purva, Guleria Randip, Walia Kamini, Ray Raja, Jyoti Raj Hirak,et al. "Assessment of core capacities for antimicrobial stewardship practices in Indian hospitals:report from a multi-centric initiative of global health security agenda. Indian Journal of Medical Microbiology. 2019;37:309-17.Published online:20/1/2020
5. Biswas Aritra, Halder Jayeeta, Ray Raja, Raj Hirak Jyoti, Ray Raja. "Evolving trends of patients with SARS CoV 2 in West Bengal, India Original Research paper, Indian Journal of Applied Research (International). Volume10, Issue9, September 2020.Journal.
6. Mathur Purva, Malpedi Paul, Walia Kamini, Guleria Randip, Ray Raja, et al. "Surveillance of Healthcare associated Bloodstream and Urinary Tract infection in National Level network Indian Hospital. Abstract published in Journal of Infection Control and Hospital Epidemiology/Vol41/IssueS1/October2020/
7. A Systematic Review on disinfection,airborne precautions and biomedical waste management for prevention of infection by SARS CoV 2:evidences and adoptable practices in healthcare settings".Journal of Medical and Allied Sciences2021,11(1)..Print ISSN:2231 1696 Online ISSN : 22.8. Moonmoon Sinha , Urmita Chakraborty , Anirban Kool , Mousumi Chakravarti , Souvik Das , Sandip Ghosh , Lovnish Thakur , Anil Khuranna , Debadatta Nayak , Biswarup Basu , Subhabrata Kar , Raja Ray , Satadal Das "In-vitro antiviral action of Eupatorium perfoliatum against dengue virus infection: Modulation of mTOR signaling and autophagy. Published online 9 September 2021 0378-8741/© 2021 Published by Elsevier B.V.Journal of Ethnopharmacology 282 (2022) 114627
9. Pal N, Pal S, Maiti PK, Chatterjee G. Two simultaneous eumycetomas in different sites of the same patient with the discharge of black and white grains: First case in India. Indian J Med Microbiol 2021;39(2): 256-258
10. Shreya Singha, Nupur Pal, Jagdish Chander, Raman Sardanad, Bella Mahajane, Noyal Joseph, et al. Mucormycosis caused by Syncephalastrum spp: clinical profile, molecular characterization, antifungal susceptibility and review of literature. Clinical Infection in Practice,2021;11:100074
- 11.T Haldar, K Rit, N Pal.A study of aerobic and anaerobic bacterial profile along with In vitro antibiotic susceptibility pattern in cases of puerperal, postabortion sepsis in a Tertiary Care Hospital.CHRISMED Journal of Health and Research2020; 7 (3): 182

12. Mandira Chakraborty<sup>1</sup>, Hasina Banu, Manoj Kumar Gupta. Epidemiology and antifungal susceptibility of Candida Species causing blood stream infections: an eastern India perspective. Journal of the Association of Physicians of India, 2021; 69. 11-12.
13. Mamta Chawla Sarkar, Harsha Raheja, Nidhan K Biswas, Sohini Chakraborti, Animesh Kumar Singh, Shekhar Ghosh, Sumanta Sarkar, Subrata Patra, Rajiv Kumar Mondal, Trinath Ghosh, Ananya Chatterjee, Hasina Banu, Agniva Majumdar, Sreedhar Chinnaswamy, Narayanaswamy Srinivasan, Shanta Dutta, Saumitra DAS. Mutations in SARS-CoV-2 viral RNA identified in Eastern India: Possible implications for the ongoing outbreak in India and impact on viral structure and host susceptibility. Journal of Biosciences, 2020; 45.

## RESEARCH PROJECTS AND ACTIVITY

1. **Dr. Hossain Najma Banu**, Dr. Ananda Sanchayeeta, Mandal, Dr. Sayan Pal, Dr. Asis Kumar Ghosh (Session 2018-2021) appeared in the MD Microbiology Examinations, 2021 and passed. **Dr. Hossain Najma Banu stood 2<sup>nd</sup> in MD examinations, 2021 conducted by WBUHS.** Dr. Asis Kumar Ghosh returned back to the WBPH&AS cadre on Supy. duty, rest 3 pass-outs are carrying out their duties as Senior Residents, 28<sup>th</sup> August, 2021 onwards.
2. **Dr. Arunima Chakravarty**, 3<sup>rd</sup> year MD PGT received 2<sup>nd</sup> runners up prize for best paper titled "Study of carbapenemase producers among clinical isolates of multidrug resistant Gram-negative bacilli at IPGMER & SSKM hospital." (Dr. Arunima Chakravarty, Prof. Dr. Raja Ray) on 65<sup>th</sup> Annual day academic session, held on 15<sup>th</sup>-16<sup>th</sup> January, 2021.
- 3) **Dr. Puskar Mistry**, 3<sup>rd</sup> year MD PGT attended the following:
  - -IPGME&R foundation day award paper participation titled "A patient of post-traumatic brain injury with inconclusive laboratory findings: a curious case of Candida auris blood stream infection" Dr. Puskar Mistry, Dr. Abirlal Sanyal, Prof. Dr. Kumkum Bhattacharyya on 15th January, 2021
  - -E poster Presentation titled "Candida auris : some unfinished business!" (Dr. Puskar Mistry, Dr. Abirlal Sanyal, Prof. Dr. Kumkum Bhattacharyya at HISICON 2021 (29th July to 31<sup>st</sup> July)
  - -CIDSCON Virtual meeting on 25th to 29th August, 2021.
  - -Participated on 2<sup>nd</sup> edition of Bug tales on 9<sup>th</sup> October 2021, hosted by Society of clinical microbiologist, Mumbai.
- 4) **Dr. Arijit Baidya**, 3<sup>rd</sup> year MD PGT attended e-MICROCON-2021 and CIDSCON Virtual meeting on 25th to 29th August, 2021.
- 5) **Dr. Debalina Nag**, 2<sup>nd</sup> year post graduate trainee participated in XVII Annual conference of Hospital Infection Society - India, held on 29th - 31st July 2021.
  - Dr. Nag attended workshop on Surveillance of Healthcare Associated Infections.
  - Presented oral paper titled "IMPACT OF VACCINATION ON SARS-COV-2 INFECTION IN A TERTIARY CARE HOSPITAL, KOLKATA." (Co-authored by Prof. Dr. Raja Roy, Prof. Dr. Chitrita Bhattacharya Chattopadhyay, Dr. Nupur Pal, Dr. Aritra Biswas and Dr. Jayeeta Halder. Department of Microbiology, IPGME&R, Kolkata-20).
  - Participated in CME Workshop on Diagnostic Challenges and Complications in Post COVID-19 Infections. In E-MICROCON 2020. The 1st virtual annual congress of Indian Association of Medical Microbiologists, held on 8th to 11th December 2020.
- 6) **Dr. Subhalakshmi Gupta**, 2<sup>nd</sup> year post-graduate trainee presented a paper titled "A case of long standing obstructive jaundice: serendipitous discovery of Fasciola hepatica" on 65<sup>th</sup> Annual day academic session, held on 15<sup>th</sup>-16<sup>th</sup> January, 2021. (Dr. Subhalakshmi Gupta, Postgraduate trainee, Dr. Abirlal Sanyal, Demonstrator, Prof. Dr. Kumkum Bhattacharyya, Professor, Dept of Microbiology)
  - Dr. Gupta attended XVII Annual conference of Hospital Infection Society - India, held on 29th - 31st July 2021 and presented a paper titled "Burden of Cholera among acute diarrhoeal disease (ADD) cases in rural areas of West Bengal: Diagnostic challenges and limitations in detection of Vibrio cholerae" (Dr. Subhalakshmi Gupta, Postgraduate trainee, Dr. Hasina Banu, Assistant professor, Dr. Dipankar Paul, Assistant professor, Prof. Dr. Raja Ray, Head of the department and Professor, Prof. Dr. Kumkum Bhattacharyya, Professor, Department of Microbiology, IPGMER.
- 7) **Dr. Paulami De**, 2<sup>nd</sup> year post-graduate trainee attended XVII Annual conference of Hospital Infection Society - India, held on 29th - 31st July 2021 and presented a paper titled "Nosocomial infections burns patients: its variations" (Dr. Paulami De, Dr. Abirlal Sanyal, Dr. Hirak Jyoti Raj, Associate Professor, Prof. Dr. Kumkum Bhattacharyya, Professor, Microbiology.

- 8) **Dr. Rituparna Sinha**, 2<sup>nd</sup> year post-graduate trainee attended XVII Annual conference of Hospital Infection Society - India, held on 29<sup>th</sup> - 31<sup>st</sup> July 2021 and presented an e-poster titled "A rare case of Cryptococcus and Histoplasma co-infection in an immunocompetent child" (Dr. Rituparna Sinha, Dr. Nupur Pal, Dr. HIRAK Jyoti Raj, Dr. Hasina Banu, Prof. Kumkum Bhattacharyya, Prof. Dr. Raja Ray, Dr. Sananda Pati, Prof. Dr. Supratim Datta)

#### MD Thesis submitted (December, 2021):

<b>Dr. Arunima Chakravarty</b>	Dr. Raja Ray [P & HOD- MIC] Dr. HIRAK Jyoti Raj [ASP - MIC]	Incidence of carbapenem resistant Gram-negative bacterial infections in a tertiary care hospital and formulation of treatment guidelines and infection control measures to combat them.
<b>Dr. Arijit Baidya</b>	Dr. Raja Ray [P & HOD - MIC] Dr. Nupur Pal [ASP - MIC]	Clinical, laboratory and epidemiological study of hepatitis B amongst suspected viral hepatitis cases attending tertiary care hospital, using selective biomarkers.
<b>Dr. Puskar Mistry</b>	Dr. Kumkum Bhattacharyya [P - MIC] Dr. Prasanta Kumar Maiti [P - MIC]	Effects of silver nanoparticles on infected mice model induced by five common clinical bacterial isolates.

#### Ongoing MD Thesis work

<b>Dr. Paulami De</b>	Dr. Raja Ray [P & HOD- MIC] Dr. HIRAK Jyoti Raj [ASP - MIC]	Study of antifungal susceptibility pattern of clinical isolates of various <i>Candida</i> species with special reference to conventional and automated methods in a tertiary care hospital.
<b>Dr. Rituparna Sinha</b>	Dr. Raja Ray [P & HOD- MIC] Dr. Sishir Naskar [Super, M R Bangur Hospital]	Role of serial estimation of cycle threshold value by real time-reverse transcription polymerase chain reaction for assessment of clinical prognosis of a patient infected with SARS-CoV-2.
<b>Dr. Subhalakshmi Gupta</b>	Dr. Kumkum Bhattacharyya [P - MIC] Dr. Avijit Hazra [P - PHA]	Microbiological profile of blood stream infection patients with special reference to determination of antimicrobial resistance and MIC by various methods in a tertiary care hospital.
<b>Dr. Debalina Nag</b>	Dr. Chitrita Chattopadhyay Bhattacharyya [P - MIC] Dr. Niladri Sarkar [P - MED]	Prevalence and demographic profile of scrub typhus and the contribution of the same with respect to acute encephalitis syndrome in a tertiary care hospital.
<b>Dr. Sanjoy Patua</b> (PGT Emergency Medicine)	Dr. Tanmay Datta [ASP - EMM/ORTHO] Dr. Raja Ray [P & HOD - MICRO]	Bacteriological study and their role in the management of open fractures of upper & lower limbs in patients coming to Trauma Care Center (Level 1), IPGIMER & SSKM Hospital: an institutional based study.

#### Ongoing PhD works and activities of PhD scholars:

**Ms. Rehana Parveen** Registered for PhD Microbiology at the University of Calcutta. Entitled "Preparation and evaluation of antimicrobial silver nano-particles using conventional and novel bio-compatible agents". Guide: Prof. PK Maiti. Recently submitted her PhD thesis.

**Ms. Archi Ghosh** Registered for PhD Microbiology at the University of Calcutta. "Study for correlation between physical and antimicrobial assay for some nano-antimicrobial agents"; Guide: Prof. PK Maiti

Ms Archi Ghosh participated in 'Applied Nanotechnology and Nanosciences International Conference' held on 24<sup>th</sup> March-26<sup>th</sup> March, 2021, at Paris, France. Paper presented titled "Characterization and in-vitro hemolysis evaluation of carboxy-methyl cellulose(CMC)-capped nanoparticles (Ms. Archi Ghosh, Dr. Mahua Ghosh Chaudhuri(JU), Prof. P.K.Maiti, Prof. Dr. Kumkum Bhattacharyya). Ms. Ghosh presented a paper titled "Characterization of anti-microbial nanoparticles by physical parameters and antimicrobial assay" (Ms. Archi Ghosh, Dr. Mahua Ghosh Chaudhuri(JU), Prof. P.K.Maiti, Prof. Dr. Kumkum Bhattacharyya) on 65<sup>th</sup> Foundation day of IPGIMER and SSKM Hospital.

**Ms. Moonmoon Sinha** recently submitted her PhD thesis.

#### SHORT PROJECTS



- 1) Identification and antimicrobial susceptibility testing with special reference to determination of MIC of clinical isolates in a tertiary care hospital” Soumyadeep Biswas (Integrated M.Tech, KIIT, Odisha) under Prof. Dr. Kumkum Bhattacharyya (August-September, 2021)
- 2) “Correlation between HBV-DNA and HBeAg with the biomarkers of liver in chronic hepatitis B patient in a tertiary care hospital” Ms. Seena Basu (M.Sc Microbiology,MAKAUT) under guidance of Prof. Dr. Chitrita Bhattacharyya Chattopadhyaya ( ongoing).
- 3) “Prevalance of Carbapenem resistance among ITU patients along with demographic pattern”. Ms. Anwesha Adhikari (M.Sc Microbiology,MAKAUT) under guidance of Dr. Nupur Pal (ongoing).
- 4) “Comparison of demographic pattern among Carbapenem sensitive and resistance in IPD and OPD patients” Ms. Triparna Roy (MTech Biotechnology, BITS, Mesra, Ranchi) under guidance of Dr. Hasina Banu.(ongoing)

## SERVICE INFORMATION

**Tests done in Microbiology Laboratory: 01/12/2020 to 30/11/2021 (Total = 1,28,824)**

**Bacteriology (Total = 44605)**

SAMPLE	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-2020	Total
Urine	2122	2285	1590	2003	1103	1466	2178	2452	2638	2430	2572	1944	<b>24783</b>
Throat swab	198	198	200	185	119	193	239	234	222	359	245	05	<b>2397</b>
Wound/Pus	218	185	269	175	140	204	259	237	276	220	220	236	<b>2639</b>
Blood C/S (Conven.)	277	226	358	248	208	225	239	199	223	219	177	262	<b>2861</b>
Blood C/S (Automated)	83	74	13	04	04	66	59	73	97	85	137	677	<b>1372</b>
Body fluids	131	116	100	97	84	121	62	91	106	93	93	114	<b>1208</b>
Sputum	198	198	200	185	119	193	239	234	200	350	266	204	<b>2388</b>
Other swabs	-	-	-	02	05	01	02	01	02	04	04	15	<b>36</b>
CSF	32	42	24	46	17	29	47	22	14	22	11	42	<b>348</b>
Special cases (ECMO etc.)	<b>Blood C/S= 19, Respiratory samples(ET tube suction + Sputum=29, Wound/Pus=7, Urine=08 from patients on ECMO.</b>												<b>63</b>
OT swab	496	412	719	666	499	483	579	491	426	613	612	448	<b>6444</b>
Stool culture and Investigation of outbreaks	7	12	45	43	04	-	04	05	04	05	-	-	<b>129</b>
<b>Grand Total</b>	<b>3762</b>	<b>3748</b>	<b>3518</b>	<b>3654</b>	<b>2302</b>	<b>2981</b>	<b>3907</b>	<b>4039</b>	<b>4208</b>	<b>4400</b>	<b>4337</b>	<b>3947</b>	<b>44605</b>

**Mycology and Mycobacteriology (Total = 6913)**

TEST	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-2020	Total
Fungal stain	55	57	62	40	30	47	76	60	63	52	58	67	612
Fungal culture	15	18	16	15	12	14	24	18	20	18	27	20	217
AFB culture	20	19	28	24	21	26	25	24	25	29	26	18	285
CBNAAT/TRUNAAT	325	305	372	176	99	131	187	352	374	259	312	-	3411
Slit skin smear	14	11	09	12	15	18	24	16	14	23	18	14	188
India Ink	02	02	01	-	01	03	02	01	02	03	02	03	22
AFB stain	165	224	208	140	93	133	124	194	164	184	151	188	1968
Suspected Mucormycosis cases	-	-	-	01	28	101	27	26	14	08	05	-	210
<b>Grand total</b>	<b>596</b>	<b>636</b>	<b>696</b>	<b>408</b>	<b>299</b>	<b>473</b>	<b>489</b>	<b>691</b>	<b>593</b>	<b>576</b>	<b>599</b>	<b>310</b>	<b>6913</b>

**Serology (Total = 71439)**

TEST	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-2020	Total
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RA	115	118	120	127	140	162	176	195	245	251	266	98	2013
ASO	42	43	49	53	45	72	98	121	135	141	178	151	1128
CRP	61	60	52	58	50	80	87	83	86	90	108	92	907
Widal test	30	32	35	21	20	35	60	58	55	45	70	68	529
Typhidot IgG/IgM								33	31	35	31	-	130
VDRL	202	215	230	255	190	270	514	501	518	519	530	359	4303
HbsAg (by ICT)	2266	2683	2929	3000	1248	2266	2860	2202	3346	2791	2720	2050	30361
Anti-HCV(by ICT)	2260	2650	3289	2197	1200	2260	2845	2200	3345	2500	2600	2039	27405
Mantoux test	38	77	79	60	36	33	52	91	105	68	116	42	797
Dengue IgM ELISA	63	38	42	42	14	46	78	59	96	122	254	69	923
Dengue NS1Ag ELISA	81	65	67	80	40	76	90	103	161	225	289	88	1365
JE IgM ELISA	11	14	20	15	06	05	08	18	16	15	11	09	148
Scrub Typhus IgM ELISA	36	44	48	44	19	24	69	87	134	122	104	48	779
Chikungunya IgM ELISA	-	-	-	-	-	-	-	-	-	-	02	02	04
Leptospira IgM	-	10	13	-	-	-	-	-	20	34	18	-	95
TORCH Panel	15	06	20	17	07	17	15	18	40	18	16	26	273
Toxoplasma IgG/IgM	13	06	19	16	07	17	15	18	34	16	14	29	204
Rubella IgG/IgM	13	06	19	16	07	17	15	18	34	16	14	30	205
GRAND TOTAL	5246	6067	7031	6001	3029	5380	6982	5772	8370	6973	7310	5200	71566

### Tests under VRDL (Total = 5867)

TEST	Jan-2021	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-2020	Total
HAV	25	27	32	18	14	27	26	28	39	36	28	24	324
HEV	25	27	32	18	14	27	26	28	39	36	28	24	324
HBeAg-	75	69	96	91	30	58	71	102	112	125	159	82	1070
Anti- HBe[ EIA]	75	69	96	91	30	58	71	102	112	125	159	82	1070
MicroELISA anti-HBs titre	-	-	1	-	-	-	-	-	-	2	-	-	03
HSV1 and HSV2 IgG,IgM	13	03	19	16	07	17	15	18	33	15	15	29	203
MicroELISA VZV IgG,IgM	-	-	-	-	-	-	-	-	-	-	-	-	0
MicroELISA EBV IgG IgM	1	2	3	-	-	-	-	-	-	-	-	-	06
MicroELISA CMV IgG,IgM	16	06	20	17	07	17	15	18	37	18	15	31	217
HCV-RNA RT-PCR	77	47	66	66	31	30	55	81	104	68	79	51	755
HBV DNA Quantitative assay	148	132	146	140	92	81	152	211	262	210	180	141	1895
Grand Total	455	382	511	457	225	315	431	588	738	635	663	464	5867
RT-PCR for SARS-CoV-2 (COVID-19)													5,79,542

N.B.: Tests done in Central Lab during evening & night shifts are not included. Tests for HIV done in ICTC; Malaria partly done in Pathology deptt. under Malaria clinic.

### SPECIAL CONTRIBUTIONS TO FIGHT AGAINST COVID-19

Department of Microbiology, IPGMER, Kolkata pioneered the testing for SARS-CoV-2 in BSL 2 Lab (under VRDL Lab, DHR-ICMR) in West Bengal along with NICED, Kolkata. As per recognition of DG-ICMR, Covid-19 lab started functioning from March, 2020 in the midst of the Covid-19 pandemic and served the KMC area, Non-KMC areas including South 24 Parganas, North 24 Parganas, Howrah, Hooghly, West and East Midnapore, West and East Burdwan. Subsequently our laboratory trained lab techs and faculty from different new up and coming RT-PCR Labs all over West Bengal (thirty labs), thus helping the state government to decentralize the testing process all over the state. Our Covid-19 lab participates in EQAS INITIATED BY NIV, Pune and NICED, Kolkata.

Our VRDL Covid-19 lab is entrusted with RNA extraction kit validation and RT-PCR kit validation as and when required by WBMSCL.

Our VRDL lab staff (Dr Raja Ray, Medical Scientist, Dr Aritra Biswas, Non-medical Scientist, Dr Jayeeta Halder (Research Assistant), and PI and Co-PI-Prof Dr Raja Ray, Dr Hirak Jyoti Raj have worked tirelessly throughout the entire period of last two years, subsequently all faculty including Prof Kumkum Bhattacharya, Prof Chitrita Chatterjee, Dr. Nupur Pal, Dr. Dipankar Pal, SR Dr Abirlal Sanyal, MD (PGTs), Research associates and Lab techs Swati Ganguly, Rajesh Adak, Payel Dutta, Prasanta Ghosh, Subrata Biswas, and lab techs subsequently joined, DEOs Sani Safi, Pradip Bala, KMC DEOS-Saikat Ray and his team, and staff from other departments like Pharmacology, Endocrinology, SDLD, Surgery, Pathology, Biochemistry and MRU, PGTs, DEOs all joined in the fray. The contribution of Prof Mitali Chatterjee, HOD, Pharmacology, Dr Soma Banerjee, Associate Professor, Hepatology (SDLD), Prof Abhijit Chowdhury, Professor, Hepatology, Dr. Simanti Dutta, Associate Professor, SDLD are acknowledged with deep sense of gratitude.

Prof Dr Raja Ray was selected Member, Expert Committee, Lab testing Experts by Principal Secretary, Health and still continues to serve in that capacity.

IPGMER, Covid-19 lab participates in genome sequencing studies of SARS CoV 2 strains twice a month with NIBMG, Kalyani with Dr Aritra Biswas serving as Nodal officer

IPGMER, Covid-19 lab participates twice a month in Sentinel Surveillance of Covid-19 lab for tracking prevalence and demarcating micro-containment zones for epidemiologic measures to be taken by Swasthya Bhawan with Prof Raja Ray as Nodal Officer

Prof Dr Raja Ray was nominated for the "Chikitsa Jyoti Award" on Doctor's day for his pioneering contribution to laboratory diagnostics of SARS CoV2 which he received on 6th January, 2021.

The laboratory-Total number of cases tested by RT-PCR till date 5,79,542 and is continuing uninterrupted 24x7x365 even on Sundays and public holidays. The departmental faculty hereby acknowledge the whole hearted support of the Hospital administration and the Department of Health and Family Welfare for making this patient care service available to the people of West Bengal totally free of cost and providing financial support throughout.

#### **Other special achievements of the department**

- 1) Prof Raja Ray initiated testing for screening of CMV, Herpes Simplex 1 and 2, Varicella Zoster, Toxoplasma, Rubella viruses for transplant and pregnant patients (TORCH panel) and also initiated testing for Swine flu detection by Real Time PCR. Scrub typhus, Micoelisa and Chikunguniya Microelisa testing was continued, Typhidot and Leptospirosis testing initiated this year under the NVBDCP during this period.
- 2) HCV & HBV quantitative viral load detection by RT-PCR under NVHCP with Automated RT PCR platform (Roche Cobas Amplicor) was initiated on 14th December, 2020 onward.
- 3) Continued usage of Vitek 2 Compact ID-AST testing to generate MIC level data for choice of antibiotics by Clinicians (Diagnostic Stewardship). In addition, multidrug resistant strains have been regularly sent to CMC, Vellore, PGIMER, Chandigarh, JIPMER, Puducherry for genotyping and detection of drug resistance profile under AMRSP project. Data has been published in IJMM, August, 2018 on molecular analysis and has been discussed this year in 12<sup>th</sup> and 13<sup>th</sup> Annual Review meeting of AMRSP. Under this project, SOP Bacteriology introduced and IQAS measures have been initiated at our laboratory. The department has enrolled in EQAS program in nationally reputed organization (IAMM-EQAS and AMR-EQAS) where our laboratory has acquired 100% marks in the last two EQAS assessments.
- 4) CB-NAAT/TRUNAAT testing for Mycobacterium tuberculosis which has increased the sensitivity of diagnosis of Tuberculosis continues, currently our department is also testing samples from IOP and other hospitals and quality assurance testing under RNTCP is in place.

- 5) Automated Testing of Blood Culture by BacT Alert system and the Automated ID-AST Vitek 2 Compact system initiated as Co-PI along with Ex-PI, Prof. P.K. Maiti, Ex-HOD under the West Bengal DST-FIST project is continuing.
  - 6) Initiated and continued the COVID19 testing and also worked as State training centre for setting up 30 new COVID-19 labs at different institutes. Member of Covid Testing Experts Committee appointed by Principal Secretary, Health
  - 7) Member of Expert Committee on procurement of Automated RNA extraction kits for COVID 19 appointed by DME, Govt of West Bengal and Member of Tender and Procurement Committee of WBMSCL for procurement of Equipment, Kits and Logistics for Covid Testing Labs, Govt of West.
  - 8) Member of Tender and Procurement fro procurement of equipments for NVHCP, Govt of West Bengal
  - 9) Selected as Nodal officer for validation centre at Covid-19 Lab, IPGMER of RAPID ANTIGEN TESTING KITS by comparing with RT PCR by DHR-ICMR 04 3) I have actively initiated to start the testing of COVID- 19 by RTPCR at our VRDL lab since March 2020 after receiving approval and guidance from the ICMR.
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