

1. Highlights & Achievements –

Patient Care

In 2017, the department successfully cleared the desk top assessment for continued **NABL accreditation** as per ISO 15189:2012 for all the tests carried out in its divisions of bacteriology, mycobacteriology, mycology, parasitology, serology and virology and immunology valid for a period of one year. The department has **performed consistently well in the EQAS** administered by Indian Association of Medical Microbiologists, PGIMER Chandigarh, RNTCP, NACO, NARI as applicable. **TB culture and drug susceptibility testing laboratory** has been installed. Department of Microbiology has been identified as one of the medical college laboratories under the **Virus Research and Diagnostic Laboratory (VRDL)** Network under DHR/ICMR. **Hepatitis B vaccination drive** for Class IV employees was successfully carried out with 1159 recipients by K.E.M.H.I.C.

Education – Nil

Research

The departmental faculty successfully conducted research projects funded by MRU (GSMC), Research Society or other agencies.

2. Patient care –

Clinical microbiology services are provided by different divisions of the Microbiology Department. Emergency laboratory services are available after routine hours.

New service :Fluorescent microscopy for detection of mycobacteria has been introduced due to its superior sensitivity and as recommended by RNTCP using LED fluorescent microscopy. **Genexpert based HIV viral load** testing is currently provided for patients referred from ART centre.

The annual workload for the different service divisions of the department was as follows:

Section	Workload
Bacteriology including Emergency laboratory	
• Samples processed	61000
• AMST	44000
	1000

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<ul style="list-style-type: none"> • Vitek rapid ID and ABS 	106000
Total	
Virology	
<ul style="list-style-type: none"> • Serological tests (HIV,HBV,HCV serology) 	103630
<ul style="list-style-type: none"> • RPR 	3116
<ul style="list-style-type: none"> • CD4 count 	12338
<ul style="list-style-type: none"> • Viral Load 	3277
Total	122361
Serology including Emergency laboratory	
<ul style="list-style-type: none"> • Leptospirosis 	33510
<ul style="list-style-type: none"> • Dengue 	60185
<ul style="list-style-type: none"> • Widal 	2470
<ul style="list-style-type: none"> • Others 	5934
Total	102099
Mycobacteriology	
<ul style="list-style-type: none"> • Microscopy – LED fluorescence (pulmonary) 	18700
<ul style="list-style-type: none"> • Microscopy – LED fluorescence (extra-pulmonary) 	3495
<ul style="list-style-type: none"> • GeneXpert 	
Total	5400
	27795
Mycology	3700
Parasitology	
<ul style="list-style-type: none"> • Stool examination (routine) 	7800
<ul style="list-style-type: none"> • Stool for opportunistic parasites 	885
<ul style="list-style-type: none"> • Malaria Antigen Test(including emergency lab) 	17953
Total	26638

3. Community care –

The department provided Integrated Counseling and Testing services for direct walk-in clients.

4. Education –

- The department carried out undergraduate training for MBBS, B.Sc.(OT) , B.Sc. (PT), BPMT, and B.Sc.(nursing) students. Post graduate training was provided to MD (Microbiology), M.Sc. (Microbiology) by research, PGDMLT and Ph.D. students.
- Six students have registered for MD Microbiology this year.
- The pass percentage for M.D in 2016 was 100 %.
- Library (Departmental Library) Books – 110
Journals – IJMM, JPGM
- Internet facility is available for all staff and students
- Conducted hands on training on HIV testing for lab technicians from facility integrated counseling and testing centers in collaboration with MDACS and PATH
- Conducted hands on training for all DOTS centre technicians from Mumbai on LED fluorescent microscopy

5. Research –

Themes of ongoing projects

PG Dissertations

- Evaluation of PREVI FLUO TB method using LED microscopy for diagnosis of pulmonary TB
- Prevalence of intestinal parasites in pregnant women attending antenatal clinic.
- Prevalence of intestinal parasites in patients with chronic idiopathic urticaria.
- Prevalence of *Malassezia furfur* associated seborrheic dermatitis in HIV positive and negative patients.
- Risk factors and clinical outcome of patients harbouring carbapenem resistant Enterobacteriaceae in a tertiary care teaching hospital.
- Performance of LED fluorescent microscopy and Xpert MTB/RIF assay in extra-pulmonary tuberculosis.
- Incidence, bacteriological spectrum and risk factors associated with surgical site infection in total hip replacement or total knee replacement surgeries
- Prevalence of Hepatitis C virus genotypes in patients with Hepatitis C infection in a tertiary care hospital
- Rifampicin resistant TB in paediatric patients :risk factors and prevalence

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- Level of environmental contamination with nosocomial pathogens with special reference to *Acinetobacter* in a medical intensive care unit of a tertiary care hospital
- Sensitivity & specificity of loop mediated isothermal amplification assay Nu LAMP for diagnosis of extrapulmonary TB. Biofilm forming uropathogenic *E. coli* and their antimicrobial susceptibility patterns
- Prevalence of symptomatic and asymptomatic bacteriuria in pregnant women attending antenatal clinic in tertiary care centre.

Projects

- Prospective Study for the diagnosis and prevalence of Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococci (PANDAS) in Mumbai Population
- Determination of MIC distribution of fosfomycin, biapenem and other antibiotics against gram negative clinical isolates: A prospective study.
- Study of secondary bacterial infections in scabies cases of Mumbai with special reference to Microbiome study.
- Effect of Amrutbhallatak and Panchvalkal on biofilm production and expression of adhesion related genes of *Staphylococcus* spp. and *Candida albicans*
- Determination of Disease specific epitopes to monitor disease activity in Acute Rheumatic Fever (ARF)/ Rheumatic Heart Disease (RHD)
- Pattern of anti-microbial resistance among the isolates of *H. pylori* in Mumbai.
- Where do we stand? Operation Theatre Protocols with respect to Sterilization and disinfection – a questionnaire based survey
- Challenges and solutions for implementation 2016 biomedical waste management rules issued by MoEFCC – a survey of hospitals in Maharashtra
- Changing trends in bacterial etiology and drug resistance pattern in a tertiary care hospital.
- Hepatitis B vaccination status amongst dentists and their approach towards Hepatitis B infected patients-A survey from Maharashtra

Collaborations

Projects are being undertaken in collaboration with ICMR / NIRRH / NACO / MDACS / NARI, Pune / inter-departmental , KEMH

6. Publications –

- Shivani Shinde, Rajarshi Gupta, Shweta S. Raut, Gita Nataraj, and Preeti R. Mehta Carba NP as a simpler, rapid, costeffective, and a more sensitive alternative to other phenotypic tests for detection of carbapenem resistance in routine diagnostic laboratories. *J Lab Physicians*. 2017 Apr Jun;9(2): 100–103.
- Sujata Lall, Gita Nataraj, Preeti Mehta Use of culture- and ELISA-based toxin assay for detecting Clostridium Difficile, a neglected pathogen: A single-center study from a tertiary care setting *J Lab Physicians* 2017; 9(4) : 254-259 .
- Lall S, Nataraj G, Mehta P Estimation of prevalence and risk factors for clostridium difficile infection: a neglected pathogen in a tertiary care setting in India *Intl J Med Res Rev* 2017; 5(3) : 298-309.
- Rahul Sarode, Nayana Ingole, Bonny Jasani, Gita Nataraj, Ruchi Nanavati, Preeti Mehta. Role of CD64 in the diagnosis of neonatal sepsis. *International Journal of Contemporary Medical Research* 2017;4(9):1960-1964.
- Swapna Kanade, Shreshtha Tiwari, Gita Nataraj & Preeti Mehta Utility of Urinary Lipoarabinomannan (LAM) Antigen Detection Assay for Diagnosis of Pediatric Pulmonary Tuberculosis. *International Journal of Current Medical And Applied Sciences*, 2017, March, 14(1),01-05.
- Shashir Wanjare, Swati Vijay, Preeti Mehta. Candida parapsilosis: An emerging pathogen, its distribution and antifungal susceptibility to fluconazole and Amphotericin B. *International Journal of Health Sciences and Research*, 2017, April, 7(4) :119-126.
- Riddhi Hathiwala, Preeti R. Mehta, Gita Nataraj, Siddhi Hathiwala LED fluorescence microscopy: Novel method for malaria diagnosis compared with routine methods *J Infection and Public Health* 2017
- Caspofungin MIC distribution amongst commonly isolated candida species in a tertiary care centre-An Indian experience. Shashir Wanjare, Rajarshi Gupta, Preeti R. Mehta, *Journal of Clinical and Diagnostic Research*, 2017, 11-13.
- Rupali S. Suryawanshi, Sashir W. Wanjare, Avani Koticha. Onychomycosis: Dermatophytes to yeasts-an experience in and around Mumbai, Maharashtra, India. *International Journal of Research in Medical Sciences*, 2017, 15 (5):1959-2903.

- RachanaChaturvedi, AshviniKolhe, KirtiPardeshi, Leena Naik, Sashir Wanjare. Primary cutaneous aspergillosis, mimicking malignancy, a rare presentation in an immunocompetent patient. *Diagnostic Cytopathology*,2017.
- P. Lahane, S. Kanade, G. Nataraj & P. Mehta Alarming Increase in Drug Resistant Extrapulmonary Tuberculosis at a Tertiary Care Centre*International Journal of Current Medical And Applied Sciences*, 2016, August,11(3),138-142.
- Shweta Raut, Swapna Kanade, Gita Nataraj, and Preeti Mehta Unusual Presentation of Multibacillary Nodular Leprosy*J Lab Physicians*. 2017 Jan-Mar; 9(1): 57–59.
- Dr. BadrunissaKhatun, Dr. Swapna Kanade, Dr. Gita Nataraj, Dr. Preeti Mehta. Prevalence of rifampicin resistance in newly diagnosed and previously treated cases of pulmonary tuberculosis by Xpert MTB/RIF assay. *International Journal of Scientific Research*. 2017, 6 (5) : 59-62.
- AmitaAthavale, Hariharan Iyer, Aditi D Punwani, Jeenam J Shah,GitaNataraj, Jairaj P Nair, Rakesh Kumar, Lakshmi R Menon, Aparna N Iyer, Sagar J Raiya Association of Environmental Factors, Prevalence of Asthma and Respiratory Morbidity in Mumbai: Need of a Public Health Policy *J Assoc. Physicians India* 2017;65:48-54.
- Karnik PP, Dave NM, Nataraj G, Gupta R,Garasia M. Comparison of efficacy and cost-effectiveness of 0.55% ortho-phthalaldehyde and 2% glutaraldehyde for disinfection of laryngoscopes: A prospective pilot study. *Indian J Anaesth* 2017;61:490-3.
- Aditya Kapoor, Amit Vora, Gita Nataraj, Sundeep Mishra, PrafullaKerker,C.N. Manjunath Guidance on reuse of cardio-vascular catheters and devices in India: A consensus document*Indian Heart J* 2017 ;69:357-363.
- Anand Manoharan, Vikas Manchanda, Sundaram Balasubramanian, Sanjay Lalwani, Meera Modak, Sushama Bai, Ajith Vijayan, Anita Shet, Savitha Nagaraj, Sunil Karande, Gita Nataraj, Vijay N Yewale, Shrikrishna A Joshi, Ranganathan N Iyer, Mathuram Santosham, Geoff rey D Kahn, Maria Deloria Knoll, for the Alliance for Surveillance of Invasive Pneumococci (ASIP) Study Group Invasive pneumococcal disease in children aged younger than 5 years in India: a surveillance study *Lancet Infect Dis* 2017; 17: 305–12.

7. In the Limelight –

Nil

8. Awards & Honors –

- Dr. Gita Nataraj – Member, Committee on State Antibiotic Policy
- Dr. Nayana Ingole – Member, committee to formulate National Guidelines on Viral Load Testing (NACO).
- Dr. Nayana Ingole was invited by Central TB division to conduct initial assessment and gap analysis for TB Culture and DST laboratories.
- Dr. Nayana Ingole - Resource person, Training on QMS in CD4 testing by NACO.
- Dr. Swapna Kanade received Dr A.N Supe best published paper award for 2016 for paper titled “Fluorescein diacetate vital staining for detecting viability of acid-fast bacilli in patients on antituberculosis treatment”.
- Travel Grant awarded to Ms. Devi Bavishi (MBBS student) for presenting paper entitled ‘**Are we neglecting *Streptococcus agalactiae* vaginal colonization in India?**’ co-authored by Dr M.G Karmarkar and Dr Preeti Mehta at 1st International Symposium on *Streptococcus agalactiae* Disease (ISSAD), Cape Town, South Africa, 20th- 23rd February 2018
- Dr J.P Panda, PG student, received the first prize in quiz during the “Teaching Pathologists and Microbiologists Meet” held in April 2017.
- Dr. Richa Thakkar PG student, received the second prize in quiz during the “Teaching Pathologists and Microbiologists Meet” held in March 2017.
- Dr Pinaki Patil , PG student, received the first prize in the oral paper presentation competition for residents, held by staff society, Seth GSMC & KEMH.

9. Donations & Grants –

S. No	Name of donor	Amount (Rs.)	Activity	Type
1	MDACS	75000/-	ICTC-M, EQAS and ART activities	Patient care
9	GSMC & KEMH Research Society	50,000	For study - LAMP for extrapulmonary TB	Research
	TOTAL	125000/		

10. Looking Ahead

- Accreditation of TB culture and DST laboratory

- Establishing Viral Research and Diagnostic Laboratory

11. Committees –

I. Dr. Preeti Mehta

Local

- Member, Steering Committee, Development of Healthcare Management Information System by MCGM
- Treasurer, Dept. Development Fund
- Member, Executive Committee, Medical Education Unit
- Member, Hospital Infection Control Committee
- Member, Academic Committee
- Member, AIDS Core Committee
- Member, RNTCP Core Committee
- Member, Editorial Board, JPGM

State

- Member, UG Board of Studies in paraclinical subjects, Faculty of Medicine, MUHS
- Member, PG Board of Studies in paraclinical subjects, Faculty of Medicine, MUHS

National

- Nodal Officer, Regional Resource Centre, Seth G S Medical College & KEM Hospital, National Medical College Network, MoHFW, Govt. of India
- Member, Regional STI Centre National Mentoring Committee, NACO, Ministry of Health and Family Welfare, Govt. of India
- Member, Governing Council, AIDS Society of India
- Member, Editorial Board, Indian Journal of Medical Microbiology
- Internal auditor, NABL ISO 15189:2012
- Technical assessor, NABL ISO 15189:2012

International

Member, Editorial Board, Austin Journal of HIV/AIDS Research

II . Dr. Gita Nataraj

Local

- General Secretary, Hospital Infection Society, Mumbai Forum

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- Convenor, Hospital Infection Control Committee
- Secretary, Gosumec Alumni Association
- Member, RNTCP Core Committee
- Member – TPMU , RRC-KEMH
- Member – Library Committee, GSMC & KEMH
- Member – CFHC, GSMC & KEMH
- Member, GTB Hospital, Infection Control Committee

State – Member, State Antibiotic Policy Committee

National

- Associate Editor, Journal of Patient Safety and Infection Control
- Internal Auditor, NABL ISO 15189: 2012

III. Dr. M. G. Karmarkar

- Treasurer, Research Society
- Chairman, Ethics Committee, National Inst. of Immunohaematology
- Member, Ethics Committee, Enterovirus Research Centre

IV. Dr. Nayana Ingole

- Secretary, GSMC –UNESCO Bioethics Unit
- Member, PIMM, Project Implementation
- Member – TPMU , RRC-KEMH

V. Dr. Priyanka Prasad

- Member, Executive Committee, Staff Society

12. Photographs-



TB culture and drug susceptibility testing laboratory, 5th floor, MSB

13. Contact Information

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