

MICRONEWS

PGIMER & DR RML Hospital
New del hi-110001

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FROM ASHES TO FULLY FUNCTIONAL LAB

Department had a very major unfortunate fire incident on 24/01/17(Midnight). The whole reception area having our important equipments, records, files, furniture and much more turned into ashes. Thank God!!! There were no casualties. As one says that “Show must go on” we started afresh and for the time being the samples were collected and sent to LHMC for processing. Our doctors and technicians were posted at LHMC for transportation, processing and reporting of the samples.



We are grateful to our Medical Superintendent for supporting us in all possible ways to make our lab functional again. We are grateful to LHMC Microbiology Deptt. from core of our heart for extending their support in the time of need. We also thank our Additional MS for all kind of support from their side. We are also thankful to our CPWD team both Civil and Electrical who worked day and night to revive our Dept within 10 days. We cannot forget to thank the chairman, e-governance and telephone exchange for their continued support.

Last but not the least, we vouch that this incidence proved to be a strong evidence wherein the Microbiology staff stood united and acted as a family working round the clock to make it functional in whatever way possible.

The pictures given below show, how a combined team work helped us to give a renovated new look to the Deptt. One has to visit the Deptt. to see the difference.





A QUICK BRUSH UP of changing trends in Enteric fever

Enteric fever (typhoid and paratyphoid fevers) is caused by feco-oral transmission of *Salmonella enterica* serotypes Typhi or paratyphi. About 22 million people suffer from enteric fever each year, with about 200 000 deaths, almost exclusively in the developing world.¹ The incidence of this neglected illness in some parts of South Asia is as high 1600 per 100 000 population.¹ Scarcity of diagnostic facilities in areas of high typhoid endemicity has probably led to an underestimation of the burden of typhoid fever worldwide. Population-based studies have demonstrated a wide variation in the incidence of typhoid fever both globally and within India.

The disease is endemic in India and carries a significant morbidity and mortality in both paediatric and adult populations. Reliable data from which to estimate the burden of disease in these areas is difficult to obtain. Many hospitals lack facilities for blood culture and up to 90% of patients with fever are treated as outpatients. In Asia, disease burden estimates have normally relied on clinically diagnosed cases of typhoid fever compiled by government hospitals, usually with uncertain denominators. Population-based estimates of blood culture confirmed typhoid cases are sparse. This highlights the need for more population based studies in different regions of the country. This would help to prioritise the use of health-care resources for disease control and target vaccination and other preventive health measures in the community.

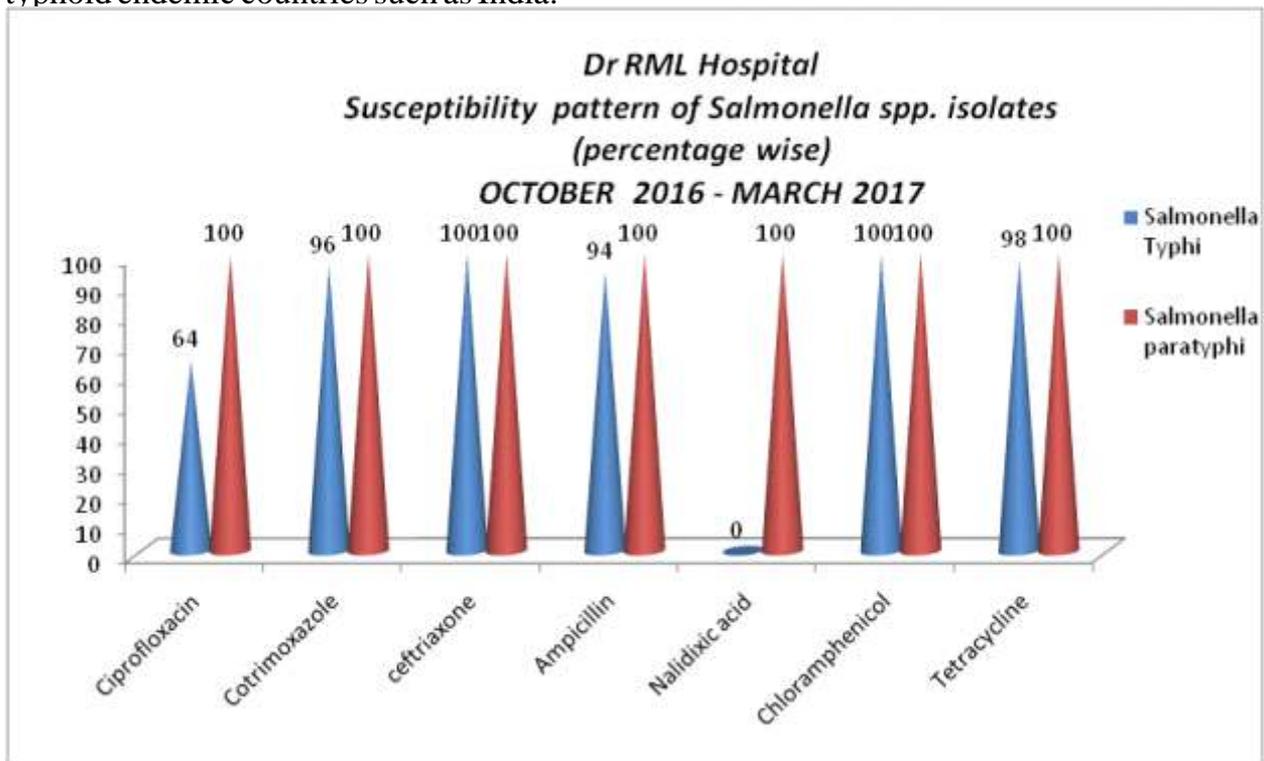
Recent reports suggest that the clinical symptoms and complication rates are similar in Typhi and paratyphi A infections, in contrast to past belief that paratyphi A was a milder infection. Hence the treatment of paratyphoid fever needs to be carried out as aggressively as treatment for typhoid fever. Crucially, current typhoid vaccines do not protect against paratyphoid fever—a major drawback of the present vaccine. Hence, paratyphoid is on the rise in South Asia.²

Although effective treatment with chloramphenicol was introduced in 1948 but in 1980's and 90's, *Salmonella* Typhimurium DT104 emerged in the U.S which was resistant to ampicillin, chloramphenicol, streptomycin, sulfisoxazole, and tetracycline.³ Since 1996, the National Antimicrobial Resistance Monitoring System (NARMS) in US has identified increasing numbers of *Salmonella* isolates resistant to many antimicrobial agents tested: amoxicillin/clavulanate, ampicillin, cefoxitin, ceftiofur, cephalothin, chloramphenicol, streptomycin, sulfamethoxazole, and tetracycline.⁴ Currently, fluoroquinolones and third generation cephalosporins are drugs of choice for treatment of typhoid fever. However, NARST (Nalidixic-acid-resistant *S. Typhi*), with high-level ciprofloxacin-resistant evolved with decreased susceptibility to ciprofloxacin causing therapeutic failure, emerged worldwide and became endemic in the Indian subcontinent.⁵

Improvements in the provision of clean water and sanitation are critical to reduce the burden of typhoid in developing countries. Use of combination chemotherapy, availability of cheap,

new active drugs and wider use of effective, low cost vaccination in endemic areas are useful to control typhoid fever.⁶

High burden of typhoid infection occurs in children which can be prevented by effective vaccine especially in developing countries like India. Currently two types of vaccines are available in India: Vi-PS conjugate and Vi-PS (polysaccharide) vaccines. Typhoid conjugate vaccine should be preferred over un-conjugated Vi- PS vaccine as it can be given as early as 6 months of age. As per the vaccination schedule, conjugate vaccine is given as a single dose at 9 to 12 months of age followed by a booster at 2 years of age. Vi-Ps (unconjugated) vaccine is given as a single dose at 2 yrs of age followed by revaccination every 3 years.⁷ The impact of drug resistance may improve the cost effectiveness of mass vaccination programs in typhoid endemic countries such as India.



References:

1. <https://wwwnc.cdc.gov/travel/yellowbook/2016/infectious-diseases-related-to-travel/typhoid-paratyphoid-fever>.
2. Maskey AP, Day JN, Tuan PQ, et al. Salmonella enterica Typhi and Paratyphi A cause indistinguishable clinical syndromes in Kathmandu, Nepal. Clin Infect Dis 2006; 42: 1247-1253.
3. Wedel SD, Bender JB, Leano FT, Boxrud DJ, Hedberg C, and Smith KE. 2005. Antimicrobial-drug Susceptibility of Human and Animal Salmonella Typhimurium, Minnesota, 1997-2003. EID. 11(12):1899-1906.

4. CDC. National Antimicrobial Resistance Monitoring System for Enteric Bacteria (NARMS): Human Isolates Final Report, 2006. Atlanta, Georgia: U.S. Department of Health and Human Services, CDC, 2009.
5. Capoor MR, Nair D, Hasan AS, Aggarwal P, Gupta B. Typhoid fever: Narrowing therapeutic options in India. *Southeast Asian J Trop Med Public Health*. 2006;37:1170–4.
6. Atul Kothari, Amit Pruthi, Tulsi D. Chugh. The burden of enteric fever. *J Infect Developing Countries* 2008; 2(4): 253-259.
7. Indian Academy of Paediatrics, Advisory Committee on Vaccines & Immunization Practices 2016, Typhoid vaccines.

Departmental involvement in various interdisciplinary committees

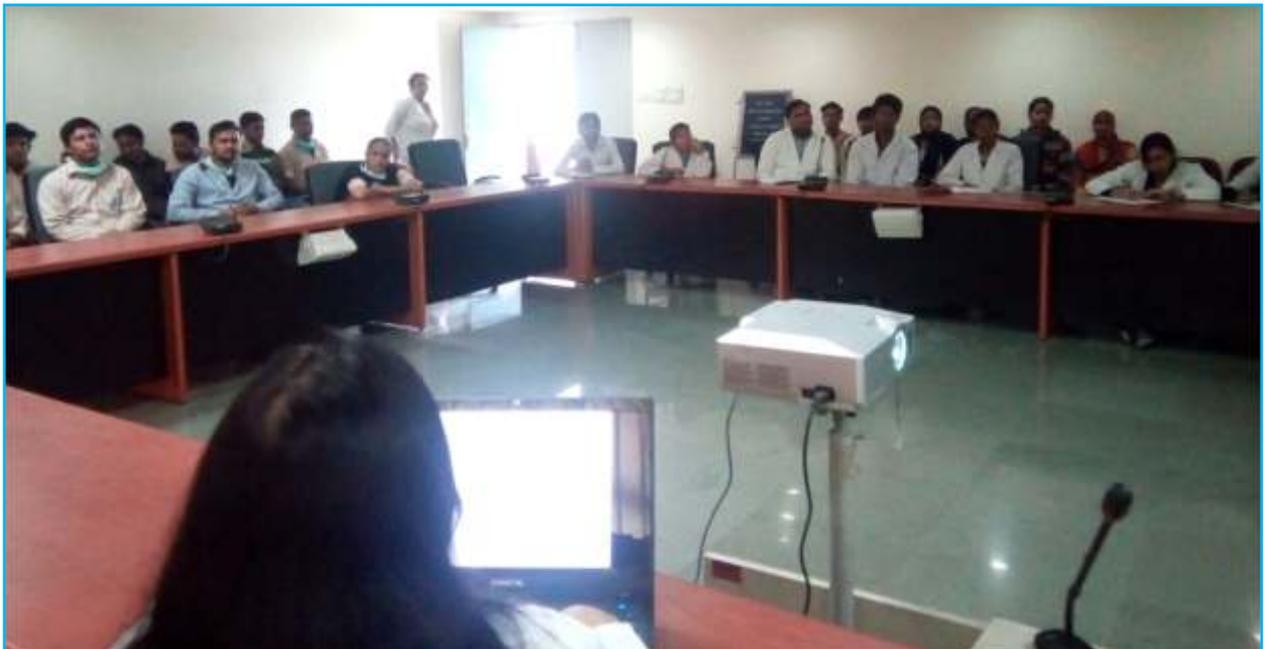
(OCTOBER 2016 - MARCH 2017)

- Antibiotic policy committee meeting was organised in December 2016 and thereafter in February 2017 to discuss the empiric treatment guidelines for Infective endocarditis and infections in Burns & Plastic surgery patients under the chairmanship of HOD, Medicine.
- Infection control committee meeting was held in October 2016, December 2016 and March 2016 to discuss the various issues pertaining to infection control, under the chairmanship of MS.
- Biomedical waste management committee meeting was held in December 2016 to discuss the various issues under the chairmanship of MS.

Arrival of New Biomedical waste management Rules 2016!!

➤ Biomedical waste management Rules 2016 reorientation classes

Deptt took the responsibility to appraise all the categories of healthcare workers with the new rules. For this Biomedical waste management Rules 2016 reorientation classes were taken by the faculty every Wednesday during the month of November 2016.



➤ **A tailor-made programme for our Resident Doctors**

In order to cover the pillar strength of our hospital i.e SRs, JRs & PGs, a Full day Biomedical waste management and Infection Control training programme has been initiated to be held on every Friday. An effort will be made to cover all the possible aspects of Infection control & BMWM. Deptt wishes to carryon this programme forward to enlighten our resident Doctors.



**NOT TO MISS
Extracurricular activities**

Faculty took active part in the Diwali cultural programme held on 27th October 2016

Teaching Activities

- **Classes for B. Sc Nursing students**
Classes were organised to cover the Microbiology curriculum for BSc Nursing students of Dr RML Hospital.
- **Reorientation class on Infection control practices** was taken for CTVS staff in the month of March 2017 and the queries related to the above subject were sorted out with them.
- Regular Seminars, Journal club and culture exercises are conducted every week.

Ongoing research work with the Deptt.

1. Role of rapid serological tests in early diagnosis of enteric fever and their comparison with blood culture
2. Evaluate disc diffusion and E test methods of Antimicrobial susceptibility testing against broth dilution method for determining sensitivity of colistin in *Acinetobacter* species
3. Evaluation of diagnostic techniques for detection of enteric coccidian parasites in patients with HIV
4. Study of *Candida* species from suspected cases of fungal urinary tract infections amongst paediatric patients

Restructuring of the Faculty

- Dr Preeti has been nominated for a training course on Epidemiological intelligence surveillance at NCDC, New Delhi for two years.
- Deptt welcomes the following faculty:
- ✓ Dr Shweta Sharma joined as Assistant Professor on contract basis in the month of January 2017.
- ✓ Dr Stuti Kansra (Medical Officer) joined the Deptt in the month of March 2017

Gaining Knowledge through academic programmes

- ❖ The faculty attended the CME held at PGIMER & Dr RMLH on World Bioethics Day
- ❖ Annual conference of IAMM Delhi Chapter held on 19th November 2016 at Indian Habitat Centre was attended by the Doctors of the Deptt.
- ❖ Conference on Obesity day held on 26th November at PGIMER & Dr RMLH was a great treat.
- ❖ Faculty attended the CME on World Kidney Day celebrated at PGIMER & Dr RMLH
- ❖ Quaterly meet of IAMM-Delhi Chapter held on 25th March 2017 at AIIMS, New Delhi was also welcoming to attend.

Departmental contribution to Delhi Chapter meet of Indian Association of Medical Microbiologists

1. Oral Paper Presentation

In the annual conference of Indian Association of Medical Microbiologists -Delhi Chapter held at Indian Habitat centre on 19th November 2016 on the following topic:

“Role of serum procalcitonin, interleukin-6 and C-reactive protein in suspected cases of sepsis”

2. Posters presented in Annual conference held at Indian Habitat centre on 19th November 2016:

- Study of pattern of Streptococcus spp. isolated in skin and soft tissue infections
- Study of Acute Bacterial Meningitis Cases With Phenotypic Characterization and Antibigram of CSF Pathogens in A Tertiary Care Hospital, India
- Prevalence of candiduria in a tertiary care hospital

3. Posters presented in Quarterly meet held at AIIMS on 25/03/17:

- Determination Of CD4 Profile In HIV Positive Patients Co-Infected With TB
- Prevalence of Tuberculosis in HIV positive patients from a tertiary health care center
- Bacteriological profile and antimicrobial sensitivity pattern in pleural fluid from a tertiary care hospital.

Faculty
Department of Microbiology

<i>Dr (Prof) Nandini Duggal</i>	<i>Consultant & Head</i>
<i>Dr (Prof) R K Mahajan</i>	<i>Consultant</i>
<i>Dr (Prof) Nirmaljit Kaur</i>	<i>Consultant</i>
<i>Dr (Prof) Shalini Malhotra</i>	<i>Senior Microbiologist</i>
<i>Dr Anuradha</i>	<i>Assistant Professor</i>
<i>Dr Preeti Madan</i>	<i>Senior Medical Officer</i>
<i>Dr Shweta Sharma</i>	<i>Assistant Professor</i>
<i>Dr Stuti Kansra</i>	<i>Medical Officer</i>

**"TO WONDER AND QUESTION IS THE FIRST STEP OF MIND TOWARD
DISCOVERY"**

-LOUIS PASTEUR

Correspondence for any further queries:

Dr (Prof) Nirmaljit Kaur : njkhatia@yahoo.co.in, 9910463661
Dr Anuradha : dranuradha.pgirml@gmail.com, 9582011810

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