



MICROBIOLOGY NEWSLETTER



Department of Microbiology
Dr. Ram Manohar Lohia Institute of Medical Sciences
Lucknow



Department of Microbiology



Prof. Jyotsna Agarwal, HoD
Incharge: Virology/COVID Lab & Hospital
Infection Surveillance



Prof. Vineeta Mittal
Incharge: Mycobacteriology & Immunology Lab



Prof. Manodeep Sen
Incharge: Bacteriology, Parasitology & Hospital
Infection Surveillance



Prof. (Jr.) Anupam Das
Incharge: Bacteriology, ICTC & Mycology lab



Prof (Jr.) Jaya Garg
Incharge: Serology, Immunology, Virology
/COVID Lab



Dr Vikramjeet Singh
Assistant Professor
Co-Incharge: Bacteriology, COVID-19
Laboratory & Hospital Infection Surveillance



Dr Akanksha Gupta
Assistant Professor
Co-incharge: Immunology, Serology & ICTC

Editor

Prof. Jyotsna Agarwal

Editorial Board

Prof. Vineeta Mittal
Prof. Manodeep Sen
Dr. Anupam Das
Dr. Jaya Garg
Dr. Vikramjeet Singh
Dr. Akanksha Gupta

Editorial Assistants

Dr. Pranshu Pandey
Dr. Apurva Rautela



MESSAGE FROM THE DIRECTOR



प्रो० एस०नित्यानन्द
निदेशक
Prof. Soniya Nityanand
MD, PhD, FNASc, FASc
DIRECTOR

डा० राम मनोहर लोहिया आयुर्विज्ञान संस्थान,
विभूति खण्ड, गौमतीनगर, लखनऊ-226010
Dr. Ram Manohar Lohia Institute of Medical Sciences
Vibhuti Khand, Gomti Nagar, Lucknow-226010



Message from Director

It is a matter of pleasure and pride to note that the Department of Microbiology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow is organizing an annual CME on the theme 'Race against extinction: save antibiotics' and also bringing out their 10th Annual Newsletter on 17th February 2023. It is heartening to note that in a continued effort towards enhancement of knowledge, they have invited Dr Subhash Todi, Director-Critical Care and Emergency Medicine, Head, Department of Academics & Health Research at AMRI Hospitals, Kolkata, India, and a doyen in antimicrobial stewardship, to deliver a lecture on "Current treatment strategies for drug resistant Gram-negative infection".

Global antimicrobial resistance is a burning problem and this may make simple infections incurable and life threatening. The CME is focussed on this important topic and the annual antibiogram data in the Microbiology newsletter will aid in facilitating our Institute's patient care services.

I congratulate and extend my warm wishes to the Faculty members, residents and staff of the Department of Microbiology for organizing the CME and the release of the release of their 10th Annual Microbiology News Letter.

S. Nityanand
Prof. Soniya Nityanand
(Director)

Phone Office: +0522-6692000/6692101 (O) Fax: 0522-4918506
E-mail: director@rmlims@gmail.com Website: www.rmlims.ac.in



MESSAGE FROM THE DEAN



Dr. Ram Manohar Lohia Institute of Medical Sciences
Vibhuti Khand, Gomti Nagar, Lucknow-226010

Ph No. (0522) 4918504, 6692000 Fax No.- 0522- 4918506, Website- www.drmlims.ac.in



Message from Dean

I am glad to note that the Department of Microbiology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow is organizing annual CME on the theme '**Race against extinction: save antibiotics**' and also bringing out their 10th annual newsletter on 17th February 2023.

Current treatment strategies for drug resistant Gram-negative infection is a relevant topic for a thought provoking strategic discussion by Dr Subhash Todi, Director-Critical Care and Emergency Medicine, HOD-Dept. of Academics & Health Research at AMRI Hospitals, Kolkata, India.

It's high time we give a serious thought to the rising menace of antimicrobial resistance. I am sure the CME on the theme '**Race against extinction: save antibiotics**' organized by the Department of Microbiology will serve as food for thought to sensitize the microbiologists and clinicians.

I especially commend the efforts of all Faculty members, residents and staff members of the department who have consistently brought out this annual newsletter maintaining its continuity & quality over the past decade.


Nuzhat Husain MD
(Dean)



MESSAGE FROM THE CHIEF MEDICAL SUPERINTENDENT



**Dr. Ram Manohar Lohia Institute of Medical Sciences,
Vibhuti Khand, Gomti Nagar, Lucknow-226010**

Phone no: 0522 4918555, 4918504, 2991411 Fax no. 0522 4918506 website: www.drrmlims.in



Message from Chief Medical Superintendent

It gives me immense pleasure and pride to note that department of microbiology, Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow is organizing annual CME on the theme '**Race against extinction: save antibiotics**' and also bringing out their 10th annual newsletter on 17th February 2022. The distinguished keynote speaker is Dr Subhash Todi, Director-Critical Care and Emergency Medicine, HOD-Dept. of Academics & Health Research at AMRI Hospitals, Kolkata, India who will be delivering lecture on **Current treatment strategies for drug resistant Gram-negative infection**.

The theme is quite relevant in the era of multidrug resistance infection in health care settings specially ICU, which has seriously compromised the armamentarium of antibiotics available with clinicians.

The tenth annual newsletter from the department contains antibiogram and relevant laboratory data from January to December 2022. Every year this newsletter aids our clinician to keep track of susceptibility rates and resistant trends across the hospital. The newsletter also displays various activities and achievements which the department of microbiology has accomplished during the previous year ranging from curricular to extracurricular.

My best wishes and congratulations to all Faculty members and residents of the Microbiology department for their continued efforts in contributing to the academic milieu of the Institute.

Prof. Rajan Bhatnagar
Chief Medical Superintendent



From Editor's Desk

Hello Everyone,
Season's Greetings!

We are back with the Annual Antibigrams in form of Microbiology Newsletter along with other relevant laboratory data from Microbiology for use for patient care and antibiotic stewardship. This year for the release of 10th issue of Newsletter, we are organizing our annual CME on the **theme: 'Race against extinction: save Antibiotics'** and the key note speaker is none other than **Dr. Subhash Todi**, acclaimed Intensivist, member of Indian Society of Critical Care Medicine and a prolific orator.

Having successfully handled the COVID diagnostics during the pandemic, our BSL-2 lab has been approved for up gradation to BSL-3 lab by Government! With COVID pandemic hopefully and safely behind us, it's time to look at other "hidden pandemic", and we have our cover page dedicated to this and also a thought provoking write up on this ticking time bomb of *Rising Antimicrobial Resistance* by Dr. Vikramjeet in this issue.

On academic front, our MD seats increased from 5 to 10, within five years of having started the MD Microbiology program in the department. We are trying to introduce few new tests in coming months including for swine flu. Tuberculosis section under able guidance of Prof. Vineeta is being upgraded too. It's been more than a year we shifted our offices to the academic block and over last 6 months we have been able to smoothly shift the entire diagnostic and teaching Microbiology to 3rd floor in Academic block. In the year gone by our faculty and residents won many accolades, Dr. Jaya in national conference, Dr. Vikramjeet in our Institute Research show case and our JR3 in national PG assembly. Faculty have got extramural, intramural projects, total publications in last 1 year from our department were 14.

In extracurricular too we have been in the forefront; Prof. Vineeta was instrumental in organizing first ever RMLIMS Alumni meet which was a grand success, Dr. Anupam Das was felicitated at Institute Foundation day by the hon'ble Governor of Uttar Pradesh for his outstanding contribution in the growth of Institute as Sub dean NMC; Dr. Jaya bagged the best faculty participation award for the cultural and sports fest!! All in all, another good year for the department and we hope to continue the upwards graph in years to come.

None of this was possible without the hard work and dedication of each and every person in the department, the staff, residents and my faculty colleagues; my heartfelt thanks are due to each one of them.

Jyotsna Agarwal

Cover page features:

1. Picture depicting demonic nature of Antimicrobial Resistance: **Dr. Sushant Kumar (JR2)**
2. Agar Art winning entry: **Dr. Sushant Kumar (JR2)**: Landscape
3. Dr. RMLIMS building, early morning by **Dr. Anupam Das, Professor (Jr Grade)**



Abbreviations

Lactose fermenters	<i>Escherichia coli, Citrobacter spps, Klebsiella spps, Enterobacter spp</i>
Non fermenters	<i>Pseudomonas spps., Acinetobacter spps., Burkholderia spp, Stenotrophomonas spp</i>
Non Lactose fermenter	<i>Proteus spp, Providencia spp, Morganella morganii</i>
Other Staphylococcus spps	Coagulase Negative Staphylococcus spps (CoNS)

AS	Ampicillin-Sulbactam	DOX	Doxycycline	NOVO	Novobiocin
AT	Aztreonam	E	Erythromycin	NF	Nitrofurantoin
AMIKA	Amikacin	ETP	Ertapenem	NETIL	Netilmicin
AB	Amphotericin B	FLU	Flucytosine	OFLOX	Ofloxacin
CAS	Caspofungin	FLC	Fluconazole	PIT	Piperacillin-Tazobactam
CAZ	Ceftazidime	FOS	Fosfomycin	PENI	Penicillin
CX	Cefoxitin	GENTA	Gentamicin	TOB	Tobramycin
CZ	Cefazolin	HLG	High level Gentamicin	TET	Tetracycline
CPM	Cefipime	IMI	Imipenem	TEICO	Teicoplanin
CHLOR	Chloramphenicol	LZ	Linezolid	VRC	Voriconazole
CD	Clindamycin	LEVO	Levofloxacin	VA	Vancomycin
CIPRO	Ciprofloxacin	MERO	Meropenem	NOR	Norfloxacin
DORI	Doripenem	MYC	Micafungin		

IPD	In-Patient Department
ICU	Intensive Care Unit
OPD	Out Patient Department

Colour codes for Antibiogram interpretation	
	>90% isolates susceptible
	70-90% isolates susceptible
	< 70% isolates susceptible

I. Ongoing Research Projects- *Extramural*

- Project Title:** Impact of rapid direct identification of microorganisms and common antibiotic resistance by MALDI TOF MS from positive blood culture on antibiotic and diagnostic stewardship in ICU settings.
Sanctioned by: Council of Science and technology, UP; in October 2022 for duration of 3 years
Principal Investigator: Prof Jyotsna Agarwal
- Project Title:** Circadian Rhythm related with COVID-19 vaccination
Funded by: ICMR, New Delhi
Co - investigator: Dr Jaya Garg, Prof Jyotsna Agarwal

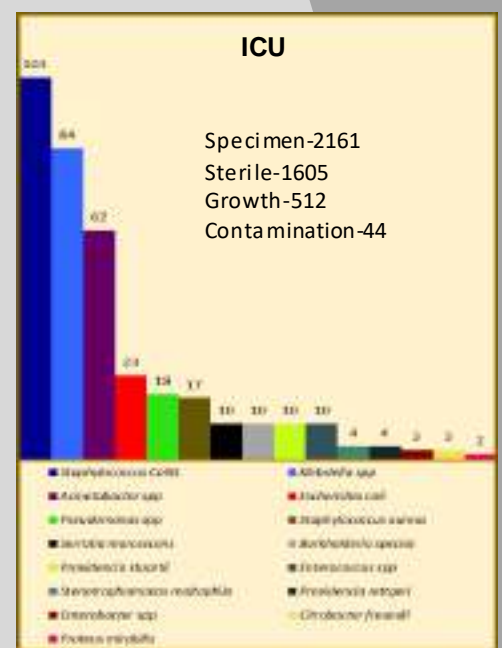
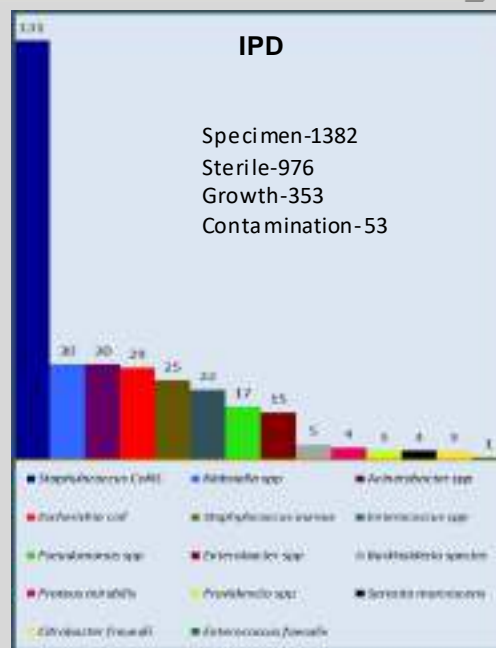
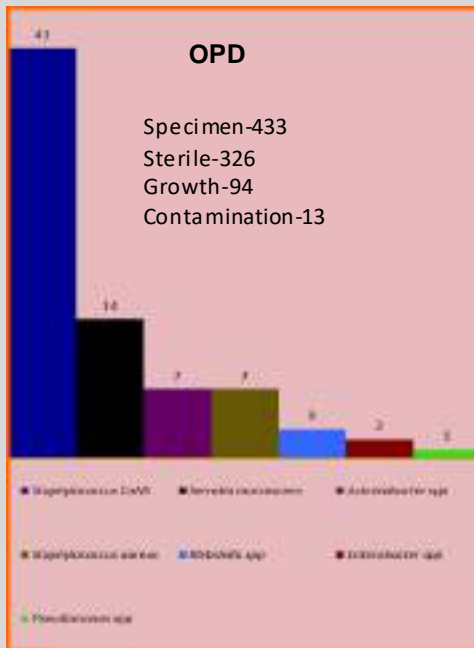
II. Ongoing Research Projects- *Intramural*

- Project Title:** Study of cytokine assay in patients of dengue fever in a tertiary care center of UP
Principal Investigator: Prof. Vineeta Mittal
- Project Title:** To evaluate synergistic antimicrobial effects of bacteriophages isolated from water and silver nanoparticle synthesized from *Calotropis gigantea*.
Principal Investigator: Dr. Anupam Das



Blood (January-December 2022)

Total sample received and analyzed = 3976



Colour codes for Antibigram interpretation	
	>90% isolates susceptible
	70-90% isolates susceptible
	< 70% isolates susceptible

Percentage sensitivity

OPD	ICU
	IPD

Lactose fermenters	Number	AS	AT	TET	DOX	PT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMIKA	CZ	CX	EIP
	77	16	19	27	35	21	17	23	23	27	23	19	16	22	4	4	9
	113	3	4	35	26	10	8	12	16	20	7	5	4	14	1	2	6

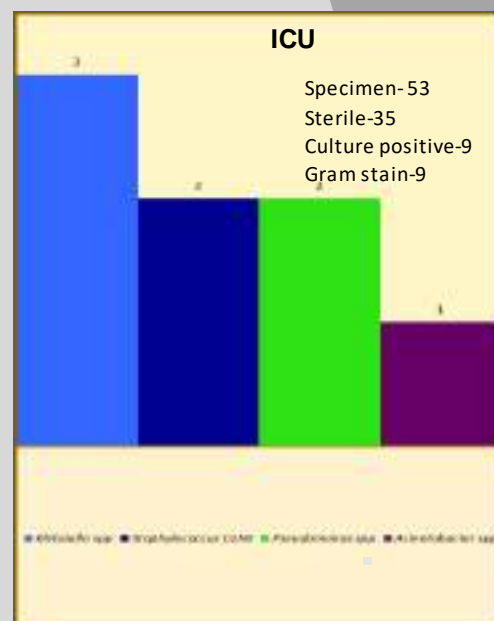
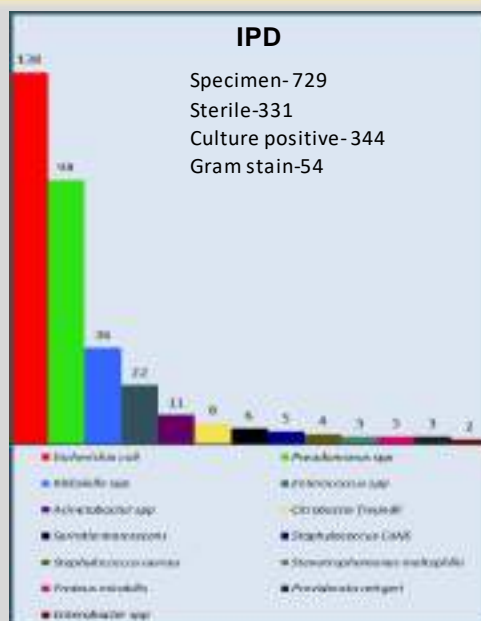
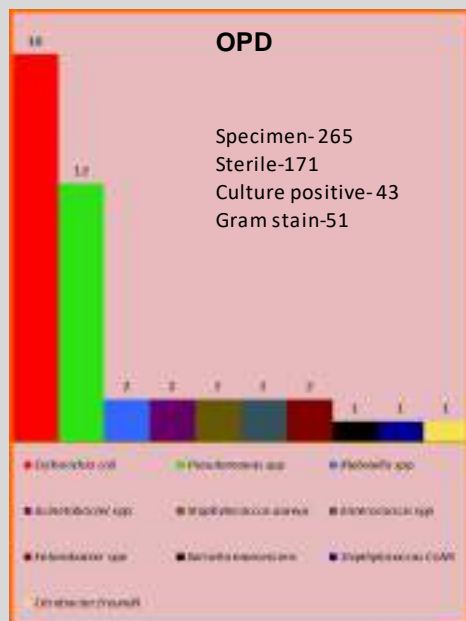
Other Staphylococcus spp.	Number	CX	CD	GENTA	PENI	E	CIPRO	DOX	TET	LZ	CHLOR	LEVO
	41	15	36	59	12	7	37	70	58	83	71	17
	131	33	40	47	21	16	30	78	69	90	73	31
	103	20	23	37	14	7	21	69	64	86	58	20

Acinetobacter spp.	Number	AS	CAZ	DORI	DOX	PT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMIKA
	30	20	23	40	53	37	37	27	30	20	13	27	33	17
	62	5	8	16	15	16	6	6	8	10	6	6	8	6



*Body fluids (January-December 2022)

Total sample received and analyzed=1047



Percentage sensitivity

Colour codes for Antibigram interpretation	
	>90% isolates susceptible
	70-90% isolates susceptible
	< 70% isolates susceptible

OPD	ICU
IPD	

	Number	AS	AT	TET	DOX	PIT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMKA	CZ	CX	ETP
Lactose fermenter	184	10	21	28	28	41	15	52	58	58	36	24	16	54	7	22	27

	Number	CAZ	DORI	NETIL	OFLOX	AT	PIT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMKA
Pseudomonas Spp.	98	20	17	20	13	21	59	23	32	27	26	28	24	26	35

*Sterile body fluids including CSF

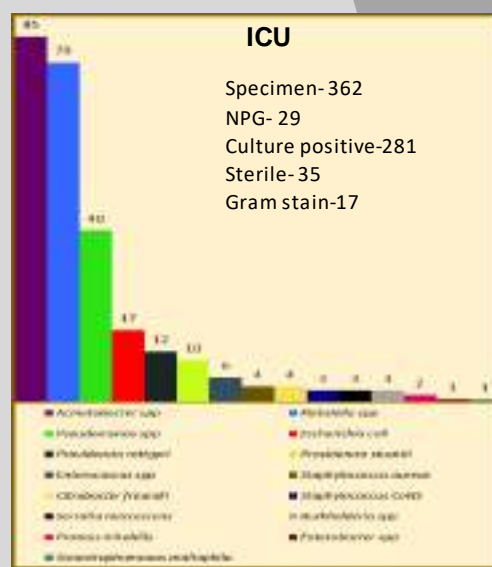
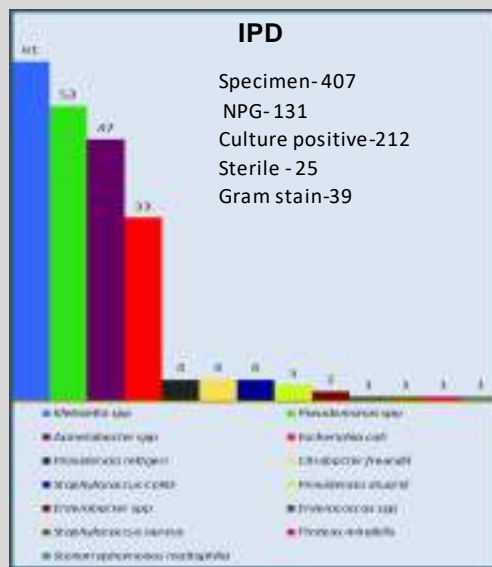
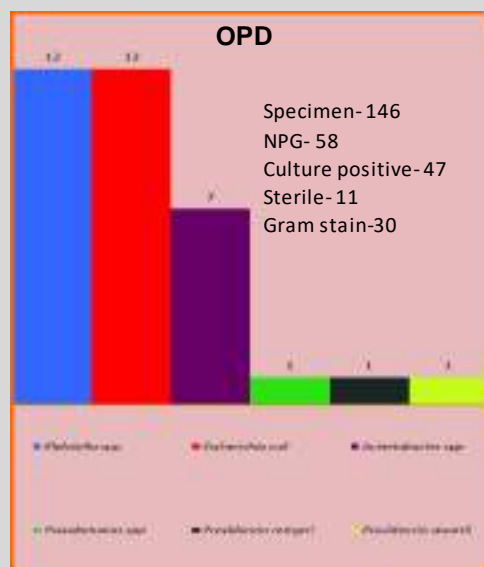
For statistically significant antibiograms, as per recommendations by CLSI, antibiotic susceptibility of at least **30 organisms** should be available. Thus we have clubbed some bacteria in groups

Complete list of investigations carried out in department, along with volume of sample & type of container is available at <http://www.drmlims.ac.in/hostipalservices.php.php> under **click here** segment of Microbiology



*Respiratory specimen (January-December 2022)

Total sample received & analyzed= 915



Percentage sensitivity

OPD ICU

IPD

<i>Klebsiella pneumoniae</i>	Number	AS	AT	TET	DOX	PIT	CIPRO	GENT A	MERO	IMI	TOB	CPM	LEVO	AMIKA	CX	ETP
	61	3	77	19	16	29	14	18	32	39	13	11	14	19	14	18
	79	3	10	26	16	8	6	15	15	21	11	7	6	12	10	12

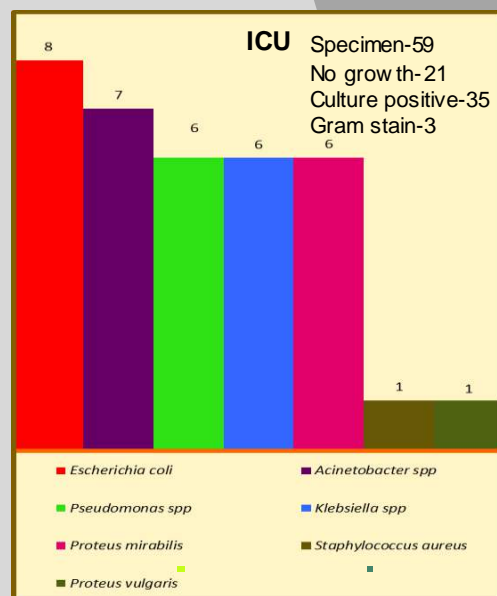
Lactose fermenters other than <i>Klebsiella pneumoniae</i>	Number	AS	AT	TET	DOX	PIT	CIPRO	GENT A	MERO	IMI	TOB	CPM	LEVO	AMIKA	CX	ETP
	39	3	7	15	10	43	2	51	58	53	35	15	2	71	12	20

<i>Acinetobacter spp.</i>	Number	AS	CAZ	DORI	DOX	PIT	CIPRO	GENT A	MERO	IMI	TOB	CPM	LEVO	AMIKA
	47	3	4	8	12	8	2	4	8	8	4	6	2	4
	85	3	0	9	8	6	0	1	5	2	1	0	1	1

<i>Pseudomonas spp.</i>	Number	CAZ	DORI	NETIL	OFLOX	AT	PIT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMIKA
	53	52	64	35	37	49	58	58	52	60	56	56	43	50	60
	40	27	42	10	12	30	50	25	22	30	30	20	12	17	32

*Sputum, BAL, Throat swab, Nasal swab, Bronchial aspirate, Endotracheal aspirate

Total sample received & analyzed=1466, 48 samples showed polymicrobial growth



OPD	ICU
IPD	

Newsletter, Department of Microbiology, Dr. RMLIMS, Lucknow



Continued from previous page; Pus antibiogram

<i>Pseudomonas aeruginosa</i>	Number	CAZ	DORI	NETIL	OFLOX	AT	PIT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMIKA
	30	33	37	13	23	37	40	30	30	37	40	27	23	30	30
	106	32	47	37	23	38	57	36	42	45	36	37	29	31	51

<i>Acinetobacter spp.</i>	Number	AS	CAZ	DORI	DOX	PIT	CIPRO	GENTA	MERO	IMI	TOB	CPM	LEVO	AMIKA
	43	16	15	44	26	18	15	19	26	25	16	15	21	21

*Pus, Pus swab, Catheter tip, CVP line, Shunt, Tissue, Bone marrow, Vaginal fluid, Semen, Ear discharge, Ear swab, Endometrial discharge, Vaginal swab, Stool, Urethral swab

2nd



3rd



4th

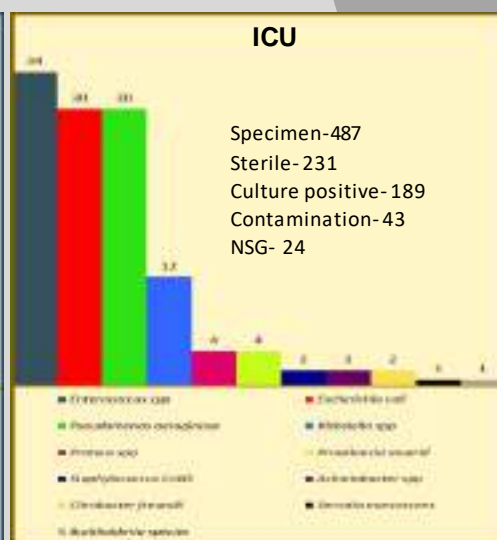
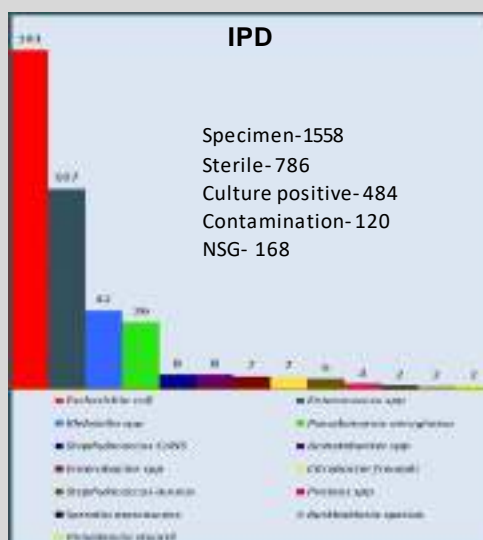
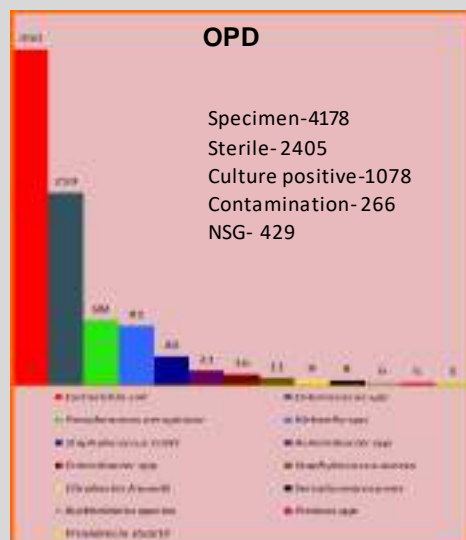


Fifth Annual Agar art competition held in department of Microbiology, RMLIMS
First Position: Dr Sushant (JR2)- Landscape is featured on the cover; **Second Position:** Dr Himanshi (JR3)- The beauty of Teachers; **Third position:** Dr Vikas (JR1)-Smiling Microbiologist; **Fourth position:** Dr Anu (JR1)-Dreaming to become a Microbiologist



Urine (January-December 2022)

Total sample received and analyzed = 6223



Percentage sensitivity

OPD ICU

IPD

	Number	CX	GENA	OFLOX	PENI	DOX	TET	NF	NX	LZ
<i>Other staphylococcus spp.</i>	40	27	37	7	12	60	47	87	10	90

	Number	AS	AT	TET	DOX	PIT	GENA	MERO	IMI	TOB	CPM	AMKA	CZ	CX	NF	ETP	NX	FOS
<i>Escherichia coli</i>	450	26	34	28	30	61	53	68	74	38	34	66	14	49	74	56	13	83
	181	22	31	31	32	59	51	68	70	41	32	66	12	40	80	49	12	87
	30	16	20	26	26	30	50	36	40	26	30	60	10	23	63	26	13	73
<i>Klebsiella Spp.</i>	81	28	39	59	50	53	50	54	59	41	40	48	27	37	45	39	33	-
	42	4	21	33	28	28	23	33	33	16	21	28	9	16	23	16	9	-

	Number	CAZ	DORI	NETIL	OFLOX	AT	PIT	GENA	MERO	IMI	TOB	CPM	AMKA	NX
<i>Pseudomonas Spp.</i>	88	31	39	19	21	42	53	29	36	40	27	35	34	21
	36	25	27	13	19	41	58	30	30	22	30	27	33	22
	30	10	10	-	10	16	23	16	6	13	10	6	13	6



Continued from previous page: Urine antibiogram

	Number	PENI	DOX	TET	TEICO	NF	VA	LZ	HLG	NX
<i>Enterococcus</i> <i>Spp.</i>	259	45	29	16	77	74	77	87	35	7
	107	26	26	16	71	61	71	81	21	5
	34	26	47	14	55	44	55	88	17	3

Note- Norfloxacin disk diffusion and MIC breakpoints have been reinstated for urinary isolates (*Enterobacterales*, *Staphylococcus spp*, *Enterococcus spp*) in 2020.

Dr. RMLIMS Super Speciality Block Surveillance for Infection Control, 2022

Sr No.	Site	Number of Air Culture	Total Swabs	Sr No.	Site	Number of Air Culture	Total Swabs
1.	ICU	14	71	16.	CSSD	2	10
2.	CVTS ICU	6	28	17.	Oncosurgery OT 1 and 2	38	148
3.	Neurology ICU	3	16	18.	Oncosurgery Post op 1 and 2	18	51
4.	Neurology Ward	4	20	19.	Gastrosurgery OT 3 and 4	40	160
5.	Gastrosurgery Ward	2	12	20.	Gastrosurgery Post op 3 and 4	4	20
6.	Neurosurgery Ward	2	10	21.	Neurosurgery OT 1 and 2	36	152
7.	Cardiac ICCU	3	14	22.	Neurosurgery Post op 1 and 2	18	51
8.	Cath lab	2	14	23.	D.S.A. Intervention OT	4	4
9.	K.T.U.	3	28	24.	Neurosurgery OT Gallery	1	-
10.	Dialysis Unit	20	53	25.	Pain OT	8	28
11.	Nephrology Ward	2	12	26.	Arthroplasty OT	20	53
12.	Urology Ward 1st	5	25	27.	CVTS OT	24	122
13.	Urology Ward 2nd	5	15	28.	Urology OT 1st and 2nd	40	136
14.	Lithotripsy Unit	5	17	29.	Urology Post op 1st and 2nd	18	51
15.	Gastromedicine Ward	3	19				

Surveillance work from District Hospitals of Lucknow and Adjoining Areas, 2022

S. No.	Center	Total Swabs
1	Veerangna Jhalkari Bai Referral Center, Lucknow	230
2	Veerangna Avanti Bai Mahila Hospital ,Lucknow	197
3	Lok Bandhu Raj Narayan Combined Hospital Lucknow	212
4	District Hospital Raebareilly	44
5	UCHC Silver Jubilee Lucknow	18
6	CHC, Gonda	4



Surveillance work from Dr. RMLIMS Hospital Block, 2022

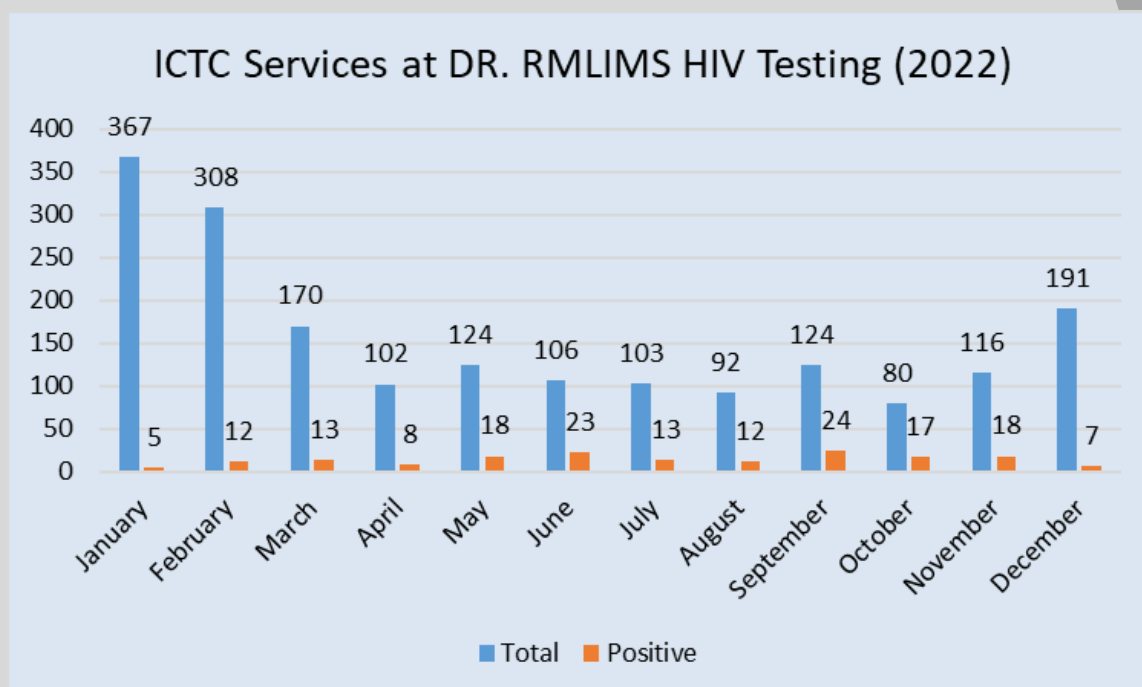
SR. NO.	Site	Number of Air Culture	Total Swabs
1.	Ophtha OT	13	60
2.	Ortho OT	14	60
3.	ENT OT - 3	13	52
4.	Gynaecology OT - 4	6	24
5.	General Surgery OT - 5	13	52
6.	General Surgery OT - 6	13	52
7.	Emergency Gynae OT	11	44
8.	S.N.C.U 1st	7	28
9.	S.N.C.U 2nd	6	24
10.	Dialysis Unit	15	56
11.	Blood Bank	-	22
12.	USG Unit	-	33
13.	X – Ray Digital	-	11
14.	M.R.I	-	11
15.	C.S.S.D	-	50
16.	Modern Kitchen Area	-	82
17.	Elective OT	3	13
18.	Paediatric OT	1	7
19.	Ventilator Unit	3	12
20.	C – Arm OT	4	19
21.	D.S.A OT	4	20
22.	Urology Ward	2	8
23.	New Urology ward	2	5
24.	Lithotripsy Unit	2	5
25.	Pediatric Surgery ward	2	16
26.	P.I.C.U	1	4
27.	H.D.U. Air	1	3
28.	N.I.C.U Air	1	4
29.	STEP DOWN	1	3
30.	D.D. Unit	2	4
31.	Isolation Unit	2	4
32.	M.I.C.U.	1	4
33.	Emergency OT Ground Floor	1	12

Surveillance work from RPG Hospital, Dr. RMLIMS, 2022

Sr No.	Site	Number of Air Culture	Total Swabs
1.	Pediatric OT 3 rd floor	13	115
2.	Elective OT	20	84
3.	Emergency Gynaecology OT	15	66
4.	P.I.C.U	1	5
5.	H.D.U	1	3
6.	N.I.C.U	1	3
7.	S.N.C.U.	1	3
8.	STEP DOWN	1	3



ICTC DATA, Jan-Dec, 2022



Vancomycin susceptibility pattern of *Staphylococcus spp.* by Vitek 2 compact (Biomérieux) January-December 2022

Organism	Detectable MIC Range Lower than Susceptible MIC breakpoint ($\mu\text{g/ml}$)			Susceptible ($\mu\text{g/ml}$)	Intermediate ($\mu\text{g/ml}$)
	<0.5	1		2	4
<i>S. aureus</i>	1	3		-	-

Organism	Detectable MIC Range Lower than Susceptible MIC breakpoint ($\mu\text{g/ml}$)			Susceptible ($\mu\text{g/ml}$)	Intermediate ($\mu\text{g/ml}$)	
	<0.5	1	2	4	6	8
Other <i>Staphylococcus spp</i>	1	5	3	-	-	-




Happy faces: JR-3 (MD batch-2020) after thesis submission



Colistin Susceptibility in Gram Negative isolates by VITEK 2® COMPACT (BioMérieux); January-December 2022

Microorganism (Number)	Detectable MIC range lower than Intermediate MIC breakpoint		Intermediate	Resistant	Detectable MIC Range higher than Resistant MIC breakpoint	
	≤ 0.5 ($\mu\text{g/ml}$) (% isolates)	1 ($\mu\text{g/ml}$) (% isolates)	2 ($\mu\text{g/ml}$) (% isolates)	> 4 ($\mu\text{g/ml}$) (% isolates)	8 ($\mu\text{g/ml}$) (% isolates)	≥ 16 ($\mu\text{g/ml}$) (% isolates)
<i>Escherichia coli</i> (28)	89%	-	-		3%	7%
<i>Klebsiella pneumoniae</i> (49)	67%	6%	6%	4%	-	14%
<i>Acinetobacter baumannii</i> (38)	86%	-	7%	-	-	5%
<i>Pseudomonas aeruginosa</i> (21)	52%	4%	23%	-	-	19%
<i>Pseudomonas spp</i> (8)	37%	-	-	-	12%	5

❖ Clinical and PK-PD data demonstrate Colistin and Polymyxin B have limited clinical efficacy for isolates with MIC $< 2\text{mg/L}$. Alternative agents are strongly preferred. CLSI 31st ed 2022 has therefore removed susceptibility category for Colistin and Polymyxin B for *Enterobacterales*, *P.aeruginosa* & *Acinetobacter spp*- Now only 2 categories $\leq 2 \mu\text{g/ml}$ (Intermediate) and $\geq 4 \mu\text{g/ml}$ (Resistant).



MICROBIOLOGY EXTERNAL QUALITY ASSURANCE SCHEME

Under the aegis of Indian Association of Medical Microbiology

IAMM EQAS New Delhi

Department of Clinical Microbiology and Immunology
Sir Ganga Ram Hospital, Rajinder Nagar, New Delhi-110060

Dr. Chandan Mittal
Chairman - EQAS

Dr. Anurag K. Oberoi
PT Coordinator - EQAS

Dr. Hemant Goel
PT Coordinator - EQAS

Dr. Sanghamitra Datta
PT Quality Manager - EQAS

Dr. Renuka Ramachandran
PT Technical Manager - EQAS

Result (Code No: DLH532 / Dr Ram Manohar Lohia Institute of Medical Sciences)

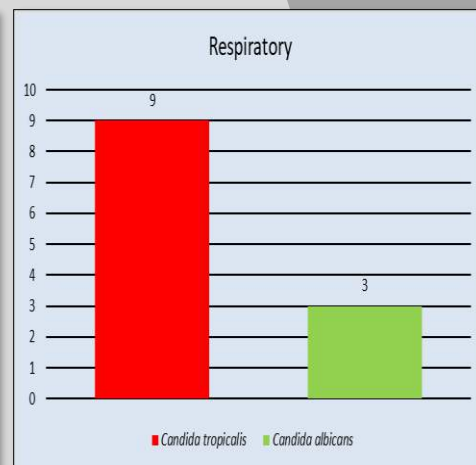
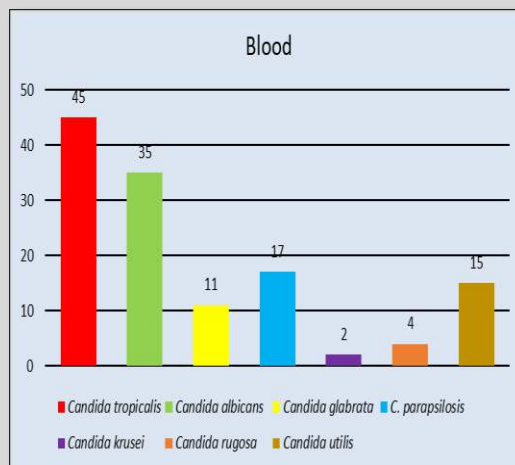
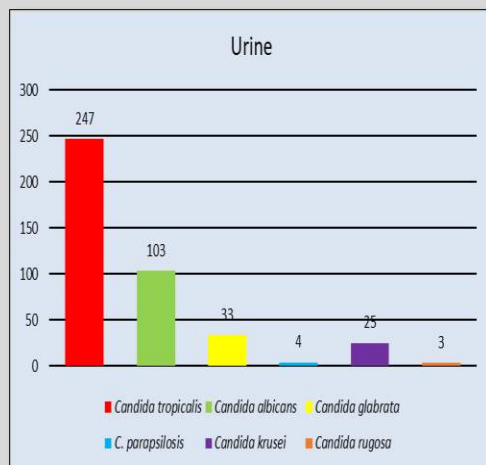
Batch Name	31st QC, November	Batch Marks	82
Start By Date	21-Nov-2022	Submit By Date	21-Dec-2022

Grand Total Marks : 82
Marks Obtained: 82

Not Only quantity, Department of Microbiology strives for quality results also. We are regularly participating in EQAS for Bacteriology, Mycology, Parasitology and Molecular sections. This year also, in All India EQAS conducted by National Body- IAMM (Indian Association of Medical Microbiologist), Microbiology department of Dr.RMLIMS, Lucknow scored 100%.



Mycology data



Percentage sensitivity

Antifungal Susceptibility Testing : was carried out only when requested

SAMPLE	ISOLATE	TOTAL NUMBER	VRC	CAS	MYC	AB	FLU
Blood	<i>Candida parapsilosis</i>	6	100	67	67	100	83
	<i>Candida auris</i>	6	**	50		33	33
	<i>Candida albicans</i>	11	45	64	64	36	64
	<i>Candida tropicalis</i>	2	100	100	100	100	100
	<i>Candida glabrata</i>	2	100	100	100	100	-
Respiratory sample*	<i>Candida tropicalis</i>	2	50	100	100	50	50
	<i>Candida albicans</i>	2	100	100	100	50	100
Urine	<i>Candida auris</i>	6	**	100		17	50
	<i>Candida tropicalis</i>	12	92	83	83	92	83
	<i>Candida albicans</i>	10	70	90	90	70	80
	<i>Candida glabrata</i>	5	60	80	80	80	-

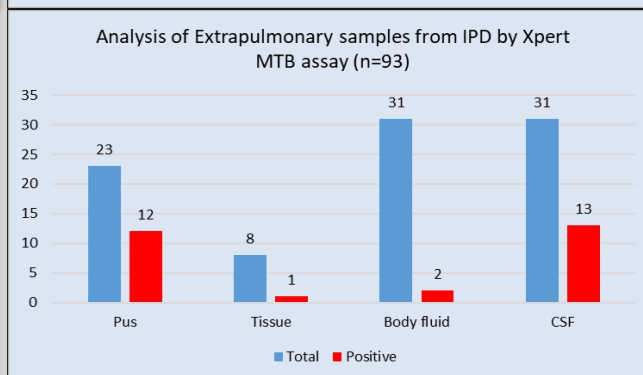
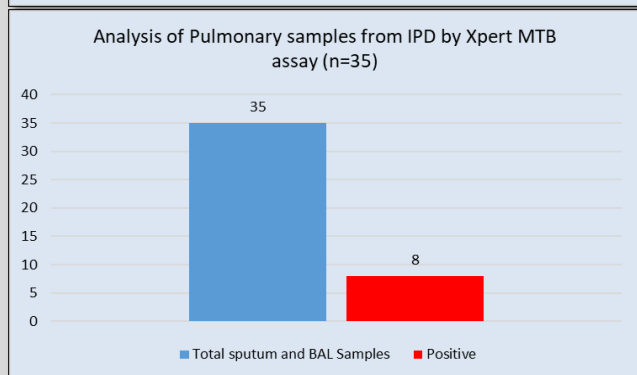
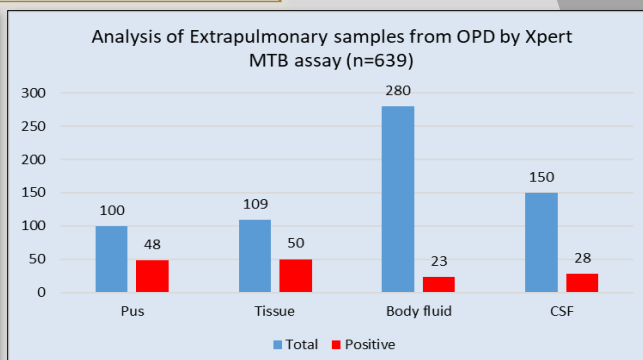
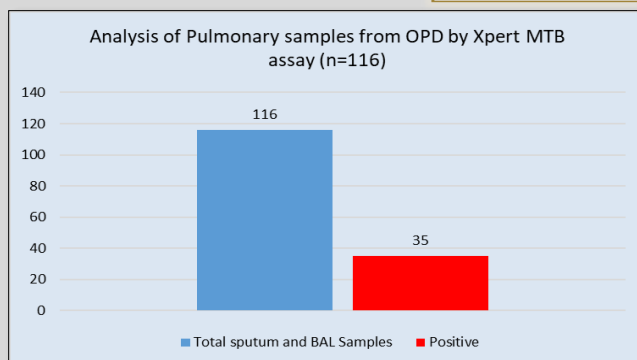
*Include BAL, Sputum and Endotracheal aspirate

**Fluconazole may be used as surrogate marker for other triazoles

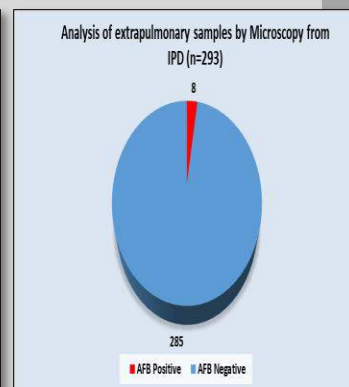
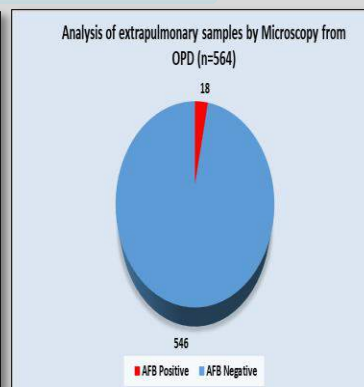
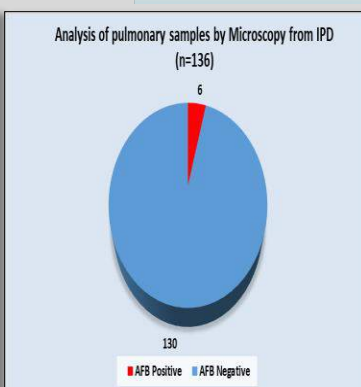
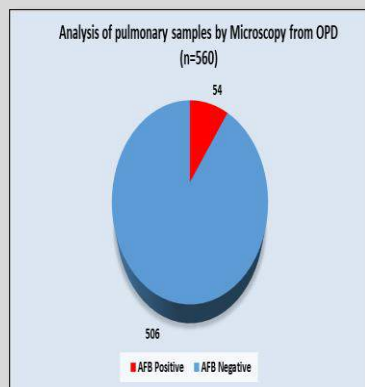
***Candida auris* is the most notorious *Candida* species**



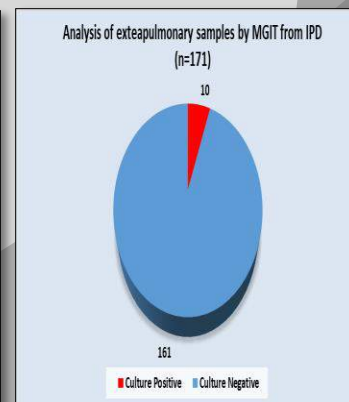
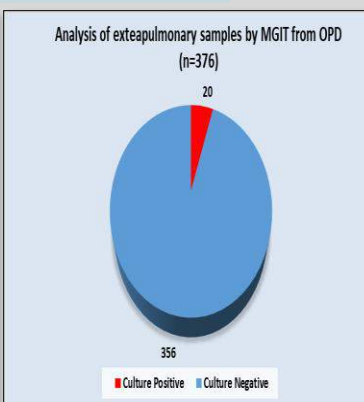
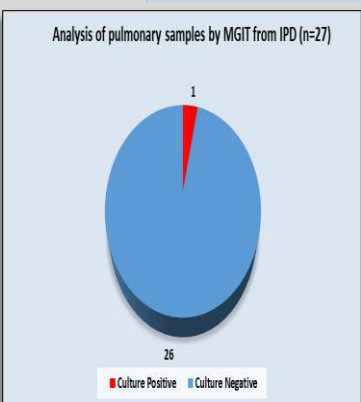
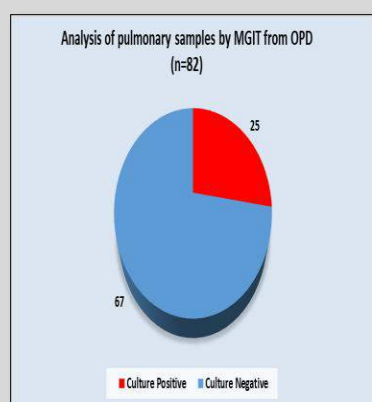
Tuberculosis lab data, 2022



AFB MICROSCOPY DATA



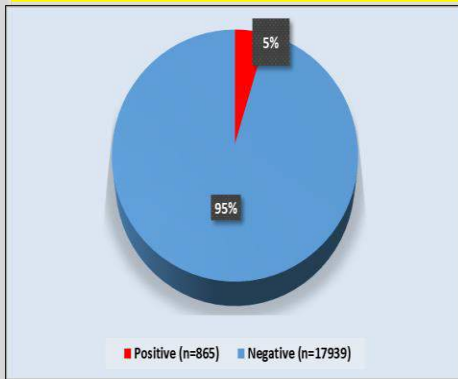
TB CULTURE DATA



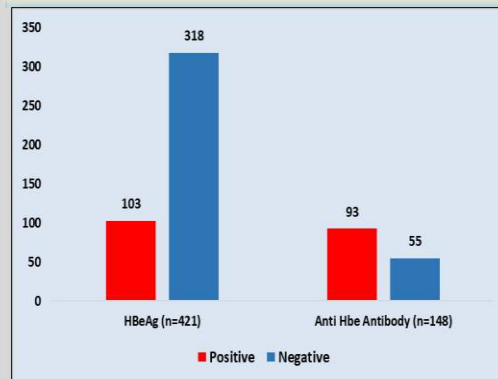


Serology/Immunology lab data, 2022

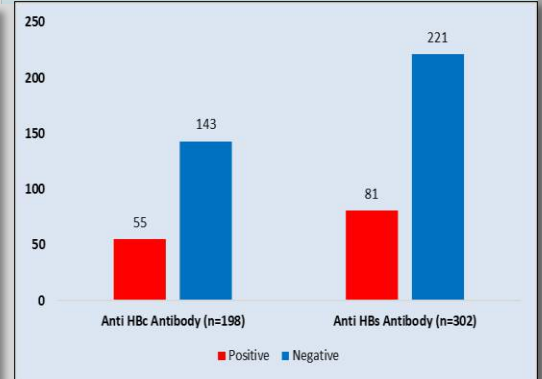
HBsAg (n=18804)



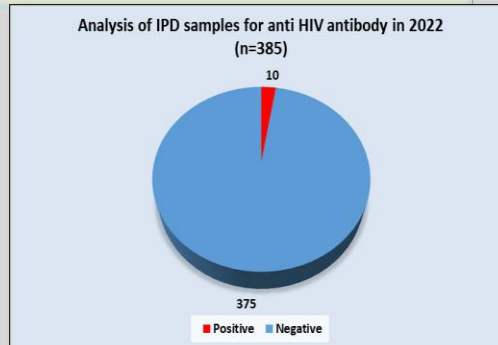
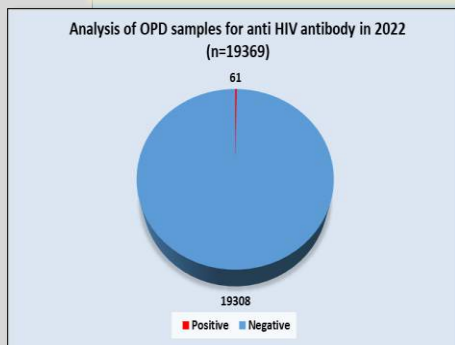
HBeAg and Anti Hbe Antibody



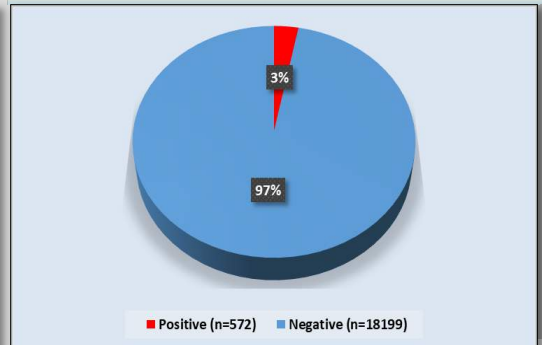
Anti HBc Antibody and Anti HBs Antibody



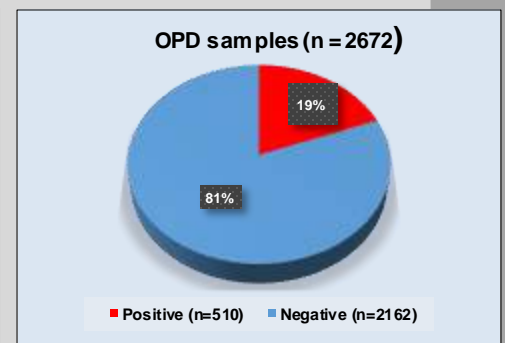
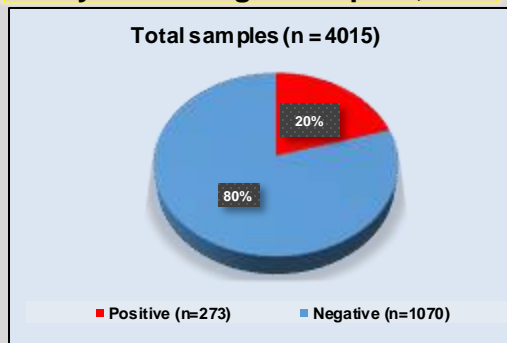
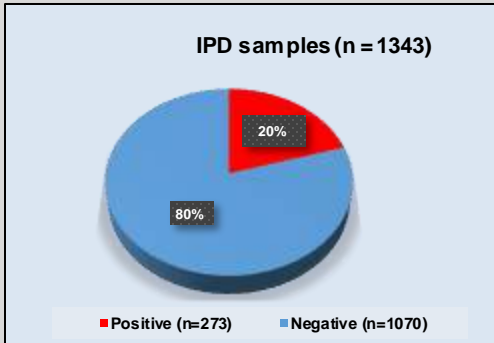
Analysis of samples for Anti HIV Antibody in 2022



Anti HCV IgM Antibody (n=18771)

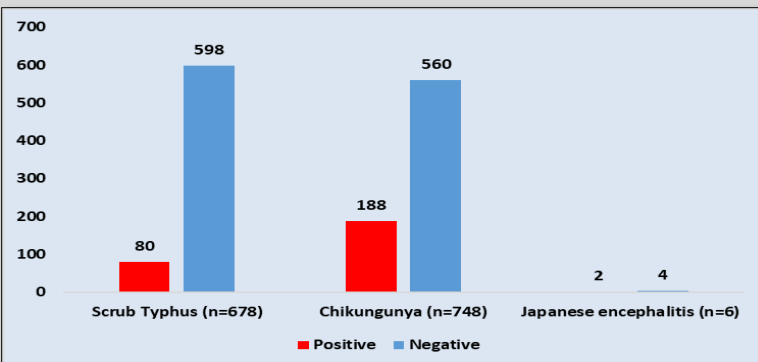


Analysis of dengue samples , 2022

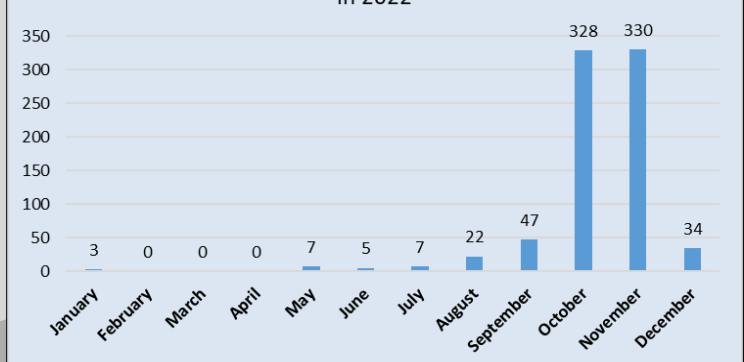


**Positive include all samples positive for NS1 or positive/equivocal for IgM or both.
Maximum Dengue cases appeared during September to December 2022**

Result of Scrub Typhus IgM ELISA, Chikungunya IgM ELISA and Japanese Encephalitis IgM ELISA

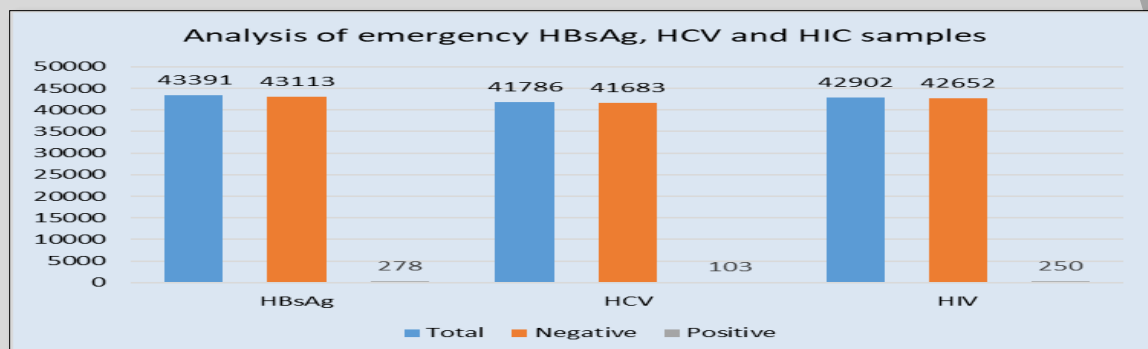


Monthly analysis of samples positive for Dengue serology in 2022

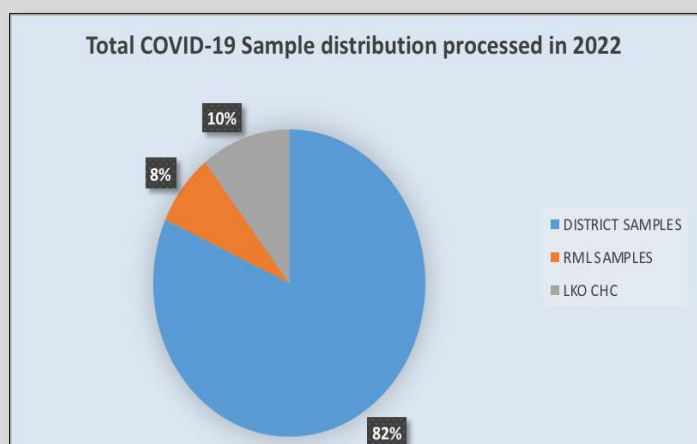




Emergency lab data, 2022: Analysis of samples for HIV, HBsAg, HCV



COVID LAB DATA, 2022

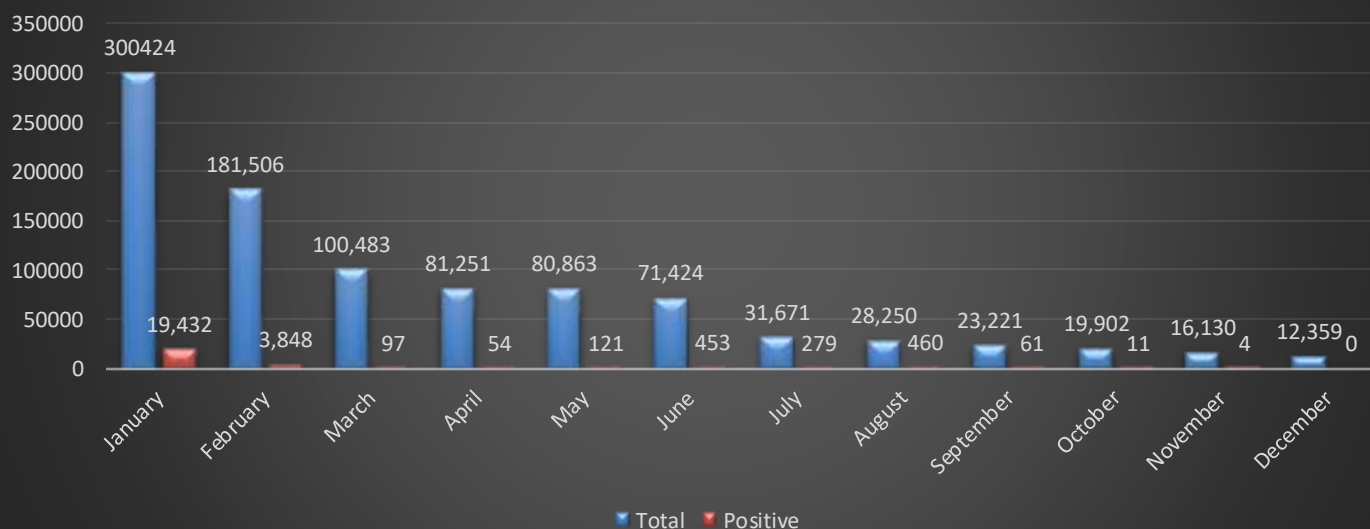


Cumulative test done in the COVID Lab from April 2020, till 31st December 2022

- ❖ Cumulative RTPCR – 40,49,404
- ❖ Cumulative TrueNat – 49,483

Our BSL-2 laboratory has been approved for upgradation to BSL-3 and renovation of existing BSL-2 laboratory by Government of Uttar Pradesh

Total RTPCR Month wise Results (2022) (District + Dr. RMLIMS)





What Pandemonic Antimicrobial Resistance says to Pandemic COVID-19 : YOU are BAD but I am YOUR DAD!!

Dr Vikramjeet Singh, Assistant Professor, Department of Microbiology, Dr RMLIMS, Lucknow

Before the coronavirus 2019 (COVID-19) pandemic began, antimicrobial resistance (AMR) was threatening public health globally leaving treating physicians with few treatment options. When we talk about top 10 global health threats, WHO ranks AMR as one of them, although often more silent than the COVID-19 pandemic, it can have more devastating consequences to patients and their family. From 2017 to 2022, the number of countries reporting AMR rates to WHO's Global Antimicrobial Resistance and Use Surveillance System (GLASS) exponentially grew from 729 in 22 countries to more than 64000 in 66 countries which is still less than the number of BSL-2 laboratories developed during the COVID-19 pandemic in last 3years which was 1614 to more than >1lakh.

As COVID-19 raged on, surveillance of AMR took a reduced drive and the pandemic of AMR continues in the shadows with the same pace of devastation. However, the effects of the COVID-19 pandemic has definitely threatened the progress made and are thought to be having wide-reaching impacts on AMR surveillance, prevention and control efforts. The toll taken by AMR on patients is largely masked but is reflected in prolonged bacterial infections that extended their hospital stays and caused needless mortalities in severe and critical COVID-19 patients.

The year 2020 to 2021 will be remembered for the SARS-CoV-2 coronavirus pandemic, responsible for more than 20 million cases and more than 500 000 deaths in those years, and receiving unprecedented political and social attention. The global public health forum should have drawn more attention to shadowed pandemic crisis of AMR also at that time because what they reported later was that AMR was responsible for 700 000 annual deaths worldwide excluding 230 000 of them from multi-drug-resistant tuberculosis annually. Not all COVID-19 strains are harmful to human being but all drug resistant genes are harmful for present and future generations. Therefore, it is more urgent than ever to prioritize efforts towards AMR containment and support countries to improve the detection, characterization and rapid response to emerging AMR.

The COVID-19 pandemic has fueled the ongoing antimicrobial resistance (AMR) global crisis due to the increase in the use of antibiotics to treat COVID-19 patients, disruptions to infection prevention and control practices in overwhelmed health systems, and diversion of manpower and financial resources away from surveillance for responding the AMR threats. Experts have also highlighted the same link between COVID-19 and AMR and this underlines the importance of maintaining AMR surveillance to monitor trends during the COVID-19 pandemic, which we failed . In Simpler words, in last 3years every 7 seconds one person died of COVID-19 but in last 10 years to present day every 1 second 5 persons die of AMR. By the time you complete reading this article with your undivided attention, more than 100 people have died because of AMR. So it's high time that all disciplines of health sciences take one step forward to beat this menace because everyone's one single step can lead to one giant leap for AMR control.



A Revolutionary Step towards PG Teaching!! An Online Series of PG Master Classes

Dr Akanksha Gupta, Assistant Professor, Department of Microbiology, Dr RMLIMS, Lucknow

It is an online world today, be it shopping, meeting, ordering food and education. The Covid pandemic restricted the offline gatherings thus further strengthening the online networking. Online networking not only made things easier but it also brought us close to the Best of the Best. This marked the way to the monthly online series of Master Classes from eminent Microbiologists across the country for MD Microbiology students from all over India.

This is the first ever series of online classes of its kind with pan India coverage. The seeds of the concept of these monthly online classes for the MD students were sown in the month of September by the Head of the Department of Microbiology Prof. Jyotsna Agarwal and it took its form in the month of October 2022 with the first online class of none other than Prof. Pallab Ray from PGIMER Chandigarh on the topic 'Best Practices in Blood Culture'. The first online class received a magnificent response with more than 200 budding microbiologists from across the country connecting online via Zoom link. The real motive of initiating such a series is to expose the PG students to the important areas of the subject by none other than the experts themselves. This series of online classes since its first class has spread its wings and has covered four classes by profound microbiologists (till the newsletter's release). All the classes were attended by not less than 200 online participants. The series of classes covered and those in the pipeline are detailed below:

Sl No	Lecture taken by	Date/Month	Topic
1	Prof. Pallab Ray	12th Oct 2022	Best practices in blood culture
2	Prof. Arunaloake Chakrabarti	07th Nov 2022	Introduction to medical mycology
3	Prof. Amita jain	02nd Dec 2022	Diagnostic Approach to a patient with suspected AES
4	Prof. Camilla Rodrigues	12th Jan 2023	Recent advances in diagnosis of TB
5	Prof. Subhash Chandra Parija	Feb 2023	Principles of lab diagnosis of parasitic infection
6	Prof. Arti Kapil	March 2023	Bacteriology

These classes though were especially meant for PG students pursuing MD Microbiology, but were also attended by some noteworthy microbiologists themselves. The online participation of the distinguished microbiologists as viewers further speaks volumes about the success of this online series of PG Master Classes. Participants joined in from various medical institutes, colleges, hospitals and even those working in private laboratories, to name a few of them:

- I. Sikkim Manipal Institute Of Medical Sciences, Sikkim
- II. Institute Of Medical Sciences, BHU, Varanasi
- III. Yenopaya Medical College, Mangalore
- IV. St. Martha's Hospital, Karnataka
- V. Christian Medical College and Hospital, Ludhiana
- VI. Post Graduate Institute Of Child Health, Noida
- VII. KGMU, Lucknow
- VIII. SGPGI, Lucknow
- IX. Shri Guru Ram Rai Institute Of Medical And Health Sciences, Dehradun
- X. Surat Municipal Institute of Medical Education and Research (SMIMER), Surat
- XI. Gandhi Medical College, Bhopal
- XII. AIIMS, Gorakhpur



The online classes are for 40 minutes duration with around 10 minutes at the end for answering queries and discussions with the participants. The participants across the country have a meaningful interaction with the speakers. Below are shown few screenshots of the chats, valuable feedbacks of the participants and our eminent speakers.



```

Very good initiative.
We are all delighted by this House Class event.

One of my PE school teacher colleagues will be there. We could listen again and again to it.

Just I wanted to know whether you will be relaxing in "to you" via the House.

Over Time

Enjoy as the model.

Once again thank you most...for this initiative.

Dr. T Howard Baker
tob@lupinus.com
404-732-1444

11:00:01 From Dr. Sethuramalingam : Thank you man
11:00:01 From Lakshmi Kumar Karanth : Thank you so much, indeed. It was of immense help.
11:00:01 From Dr. Subhakar Kumar : Thank you so much
11:00:03 From Dr. Senthil Selvi : Thank you so much, indeed.
11:00:03 From Dr. David : Thank you so much
11:00:04 From Subhakar Kumar [DR] : Thank u man
11:00:04 From sathish kumar : Thank you so much
11:00:04 From s : Thank u man.
11:00:05 From s : Thank u. I'm in love the model! lol
11:00:05 From Lakshmi Kumar : Thank you so much
11:00:11 From Dr. Senthil Selvi : Thank you so much
11:00:11 From Dr. Subhakar : Thank you for this informative session man lol

```

From: Sulmer : Thank you so much sir
From: Dr Bashamuddin Sheikh : Thank you very much Sir and Madam
From: DR.Dhruva Gangavari : kindly share the recording
ran@gmail.com
From: Priyanka : nice session
From: Arun : Thanks
From: MANISH MISHRA : THANK YOU Sir
From: Dr Mahesh Mandiyala : Dr Mahesh Mandiyala Guntur Medical College Guntur
From: ranani : Dr Ranani, TQWMS, Puducherry
From: Aishwarya Sanjayam : aishwarya
College, Mangalore
From: Arun : Dr. Arun B
From: Santoshi : Thank you so much...Santoshi Singh medanta hospital lucknow
From: Sumaiya Mallan : kindly share recording Dr. Sumaiya Mallan
From: dr.m.krishna : tqm sir for valuable suggestions
From: Dr. Hitin Kumbhar : Thank you Sir for the beautiful session
From: Dr RLL Srivastava : Thank you sir
From: Ramkumar Kandasamy : Dr. Ramkumar dr.ranani3@gmail.com
From: Diksha's AZZ : Thanku so much diksha Soni
From: Sarbjit Sharma : Dr Sarbjit sharma

Acute Encephalitis Syndrome

Definition: a person of any age, at any time of year with the acute onset of fever and a change in mental status (including symptoms such as confusion, disorientation, coma, or inability to talk) AND/OR new onset of seizures (excluding simple febrile seizures) (WHC)

- Nonspecific/ MIXED POT

① **Introduction**



Introduction to Medical Mycology




A quick walk down the road... to where we are today



PG Master Class in Microbiology

Best practices in
BLOOD CULTURE

Dr. Sachin Khar

Ranking molecular TB DST tests by complexity

WADA (Watershed Assay)

IS6110-based

IS6110-based

IS6110-based

IS6110-based

IS6110-based

IS6110-based

Low complexity, no drug target, probe based
Speed (100, 100) / (100, 100) / (100, 100) / (100, 100)



Scientific Publications from Department in 2022

1. Tiwari V, Agarwal J, Pathak AK, Singh S. Dynamic changes in circulatory cytokines and chemokines levels in mild to severe COVID-19 patients. Indian Journal of Clinical Biochemistry. 2023;
2. Radera S, Srivastava S, Agarwal J. Virulence genotyping and multidrug resistance pattern of escherichia coli isolated from community-acquired and Hospital-acquired Urinary Tract infections. Cureus. 2022;
3. Awasthi NP, Mishra S, Tiwari V, Agarwal J, Das PK, Jain P, et al. Monocyte HLADR and immune dysregulation index as biomarkers for covid-19 severity and mortality. Indian Journal of Clinical Biochemistry. 2022;
4. Kumar V, Mishra S, Sharma R, Agarwal J, Ghoshal U, Khanna T, et al. Development of RNA-Based Assay for Rapid Detection of SARS-CoV-2 in Clinical samples. Intervirology, 2022.
5. Agarwal J, Srivastava S, Verma B P, Mehrotra P. Age Group-Specific Assessment of Changing Seroepidemiology of Hepatitis A Virus Infection in North India. Cureus. 2022
6. Singh A, Agarwal J, Rastogi S, Nandy A, Gupta A, Kostova I. Can the therapeutic spectrum of probiotics be extended: Exploring potential of gut microbiome. Recent Advances in Anti-Infective Drug Discovery. 2022;18.
7. Shukla S, Mittal V, Karoli R, Singh A, Singh P. 'Leptospirosis in central and eastern Uttar Pradesh among underreported disease: a prospective cross sectional study.' Indian J Med Res 155, January 2022, pp 66-72
8. Srivastava S, Tiwari V, Sen M. Rare Cases of Filarial Chyluria in Children. Int Med Case Rep J. 2022;15:135-139
9. Yadav, P., Sen, M., Srivastava, J. K., Das, A., & Chatterji, T. (2022). Fatal cryptococcal meningitis in a non-HIV patient: A case report. International Journal of Health Sciences, 6(S1), 5653–5664.
10. Hari P, Kumar A, Sen M, Agarwal J. 2022, SARS COV-2 Pandemic: Challenges In The Management of Biomedical Waste. Int J Recent Sci Res. 13(04): 1003-1007.
11. Pandey P, Singh V, Agarwal J, Das A, Garg J, Sen M. 2022 COVID-19 Pandemic and Medical Education: A Clinical Microbiology Perspective. Int J Recent Sci Res. 13(05), pp. 1093-1096
12. Islahi S, Sen M, Agarwal J, Trivedi S. Microbiological surveillance of dialysis unit-prefogging verses postfogging in a tertiary care hospital: A cross-sectional study. Indian J Microbiol Res 2022;9(2):140-143.
13. Gautam, T., Das, A., Agarwal, J., Singh, V., Sen, M., Kumar, M., & Gupta, T. (2022). A Fatal Case of Otomycosis due to *Lichtheimia Spp* in an Immunocompromised Patient with a Brief Review of *Lichtheimia*. International Journal of Innovative Research in Medical Science, 7(10), 522–527.
14. Sen M, Pandey P, Rautela A, Jafar H, Singh V, Garg J, Das A, Agarwal J, Imported malaria with chikungunya co-infection: A case report. IP Int J Med Microbiol Trop Dis 2022;8(4):342-344
15. Maurya MK, Sharma G, Kumar A, Das A, Maurya S, Singh D, Sujatha R. Phenotypic identification, Diagnosis and Isolation of Dermatophytes from Kanpur Region, India: A Cross Sectional study. International Journal of Current Medical Microbiology and Applied Sciences. (2022)11 (02):38-44
16. Yadav. P, Sen M, Srivastava J.K., Das A & Chatterji T. Bone marrow invasion by Cryptococcus in HIV infected patients with asymptomatic meningitis: a case report. Research Journal of Biotechnology vol.17(8) August (2022)



Department released its 9th issue of Annual Newsletter on 5th February 2022 & a CME on “An insight into SARS CoV-2 Mutations & its impact on vaccination” was organized, key note speaker was Dr. Priya Abraham from NIV Pune; An intercollege debate competition (hybrid mode) on “Omicron a Ray of Hope” was held & Dr Apurva Rautela (SR) bagged the first prize.



Dr Vikramjeet Singh, Assistant Professor and Dr Pranshu Pandey, Senior Resident in Department of Microbiology were felicitated with certificate of appreciation for exemplary work during the pandemic by DGME, UP, presented by the Director on 5th February, 2022

Department the training module on “Specimen collection for Microbiological investigations” & “Hand Hygiene and BMW”, as part of Resident Development Programme for all 1st year Post graduate residents in Sept 2022





Dr Shipra Dobhal (JR3) and Dr Himanshi Srivastava (JR3) were awarded certificates for outstanding performance during National PG assembly held by IAMM at SMS, Jaipur in September 2022



Dr Jaya Garg was awarded best free oral paper award in category viral infections, SARS CoV-2 and COVID-19 on the topic "Diagnostic evaluation of HCV core antigen assay for a hidden iceberg: Acute Hepatitis C limited settings"



Prof. Vineeta Mittal delivered a talk on "Leprosy: Recent Advances and Current Scenario" in pre conference CME

National
Microcon
2022
Highlights



Dr Anupam Das's photography skills made a mark at national level photography exhibition, where his picture was displayed at Kala Strot Art Gallery on 19th August, 2022 on occasion of World Photography Day





Dr Vikramjeet Singh, Assistant Professor, was awarded Best Paper Award for unpublished research at Research Showcase organized on the occasion of Foundation day, Dr. RMLIMS, September 2022



Dr. Pranshu Pandey (MD Batch 2018) and Dr Nikhil Raj (MD Batch 2019) received Gold Medal for scoring highest marks in University Examination from Hon'ble Governor of Uttar Pradesh, on 2nd Foundation Day of Dr. RMLIMS, September 2022



Dr Anupam Das was awarded Director's Appreciation award by Hon'ble Governor of Uttar Pradesh, for his outstanding contribution in the growth of Institute, on occasion of 2nd Foundation Day, Dr. RMLIMS, 2022



National Workshop on identifying predatory Journals & reference management using Mendeley, organised by Dept. Of Community Medicine, Dr. RMLIMS on 17th May, 2022.



Faculty dinner with External Examiners



Dr. Anupam Das at 21st Congress of International Society of Human and Animal Mycologist (ISHAM)

Alumni Talk

“To have a long-term success you need a strong foundation” And Dr RMLIMS Microbiology is one such place. You realise it even more when you leave and join other institutes. Microbiology department of Dr. RMLIMS made me actually like my subject. We were the first batch and still we had the best environment, education and equipments. I was really lucky to have the faculties and seniors who not just taught us the subject but also life. I still remember all the small things that our teachers used to tell us, which then meant so much less than what it does now. Thank you, Dr. Jyotsna Ma’am, Dr. Vineeta Ma’am, Dr. Manodeep Sir, Dr. Anupam Das Sir (my guide), Dr. Jaya Ma’am for your immense faith and love. Thank you to all my seniors, juniors, staff and technicians for everything. Dr. RMLIMS will always have a special place in my heart. **Dr Kriti Maurya, 2017 MD Batch Alumnus**



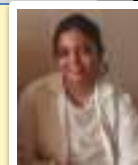


Department of Microbiology conducted an Intercollege MBBS Quiz competition for 2020 batch students in October 2022.



Alumni Talk

Life@Lohia



It was the day of PG counselling, and I met a familiar face and yes there she was!!! Dr Kriti, my MBBS immediate senior and now my 1st colleague on the road to PG. While sitting in the counselling hall and waiting for my document deposition a passerby was saying to his friend that he took Microbiology of RML, probably my 2nd colleague..... Dr. Amit. Who else?? Were we three enough to form a good bacteriological broth or is some component still missing?? The still missing component was already a pre-component, our all-time great grand boss, Peetam Boss. He had joined the department in the prior counselling itself and accordingly is the 1st alumni of the Department of Microbiology, Dr RMLIMS. We were the first batch of post-graduate students enrolled on the microbiology department of RML. "The Guinea Pigs" were subjected to discrete experiments as per Internal quality control (IQC: Rules of Lohia) and External quality assurance (EQA: Rules of NMC). All different kinds of templates were designed (like book reviews, clinical presentations, ICU rounds and posting at SGPGI) for Whole Genome Sequencing of our Microbiological DNA. Among all the templates, the most efficiently designed was the 'Clinical Presentation' which has the highest sensitivity and specificity to catch hold of nanoscopic error in our preparation. Logbook!!! another red flag sign because ours was the first batch to pen down the departmental work done by the JR's. The journey from Crystal Violet of Gram Stain to Matrix of MALDI-TOF is nostalgic. Burdensome days of bacteriology and mycobacteriology posting, aiding automation of serology and immunology lab, beautiful blue of LPCB & starry night of India-Ink in mycology lab and not to forget 'The Pandora's Box', stool sample of parasitology lab kept us engaged for the most of year. The sanctity of the molecular lab was maintained by visiting it only at the time of posting. The real nightmares were increasing AST plate numbers for reading and interpretation, immunology lab posting during the dengue season and the hefty burden of TB samples. But lest we forget, the icing on the cake was night postings during the COVID-19 pandemic.....soo much done and soo much learnt & as rightly said "Every experience makes you grow". Time spent at Microbiology Laboratory with the teachers, seniors, colleagues, juniors, technicians, and other staff members is my forever invaluable memories. Department of Microbiology of DRRMLIMS is the witness of my transformation from caterpillar (Junior Resident 1) to butterfly (M.D Microbiology) and I am merely thankful to them for imparting beautiful colors to my wing.

Dr Shalini Trivedi, 2017 MD Batch Alumnus



Participation of Department of Microbiology in Extra curricular activities. Dr Jaya Garg won medal for "best faculty" during the cultural and sports festival *Esperanza*. The microbiology team won inter departmental relay race; Dr Manoj, Dr Jaya and Dr Vikram getting laurels in slow cycle, shot put, discus throw and athletics



Bidding Adieu to MD Batch 2019 & Welcoming MD Batch 2021 in the Department of Microbiology



Celebrations are a never ending task in the Department of Microbiology. These pictures are a proof of it. Celebrating Holi, Independence Day, Diwali and finally New Year in the Department



Teachers' Day Breakfast: Faculty & Residents, has become an annual tradition



Institute and Departmental Teacher's Day celebration at Dr RMLIMS, Lucknow



Some lighter moments in the Department pantry!!



Our new DIAGNOSTIC LABORATORIES & MBBS PRACTICAL LAB on 3RD Floor, Academic block



Faculty and Residents: From Top to bottom and Left to right

1. Dr. Sukant, Dr. Vikram Pratap Singh, Dr. Vikas, Dr. Ankit, Dr. Neeraj; 2. Dr. Fatima, Dr. Ankita, Dr. Anu, Dr. Qi Mimi, Dr. Nikhil (JR-1); 3. Dr. Shailaja, Dr. Shaili, Dr. Sushant (JR-2); 4. Dr. Amit, Dr. Harshita, Dr. Himanshi, Dr. Shipra, Dr. Manoj (JR-3); 5. Dr. Pranshu, Dr. Apurva, Dr. Sangeeta, Dr. Riddhi, Dr. Nikhil (SRs); 6. (Faculty): Dr. Akanksha Gupta, Dr. Anupam Das, Dr. Jaya Garg, Dr. Jyotsna Agarwal, Dr. Vineeta Mittal, Dr. Manodeep Sen, Dr. Vikramjeet Singh



In 21st Congress of International Society of Human & Animal Mycologist (ISHAM), Dr Vikramjeet Singh Won 1st prize in Young ISHAM Twitter contest, Euro 250 cash prize on "How well you can promote recent research and studies in Mycology using online platform Twitter for global audience."

Congratulations!!! Department of Microbiology wishes happy married life to senior resident - Dr Apurva Rautela



BIOMÉRIEUX

BE A GAME CHANGER

You can make a difference

with the right diagnostic tests that give you the power to fight infectious diseases and save lives



BACT/ALERT® 3D



VITEK® 2



BIOFIRE®



VIDAS®



VITEK® MS PRIME



VIRTUO®

PIONEERING DIAGNOSTICS

This Newsletter is for private circulation only