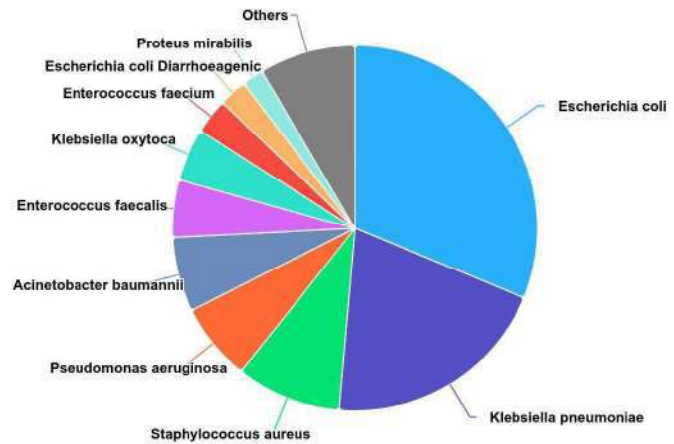


The isolation distribution of top 10 pathogens isolated in different healthcare.

<i>Organism</i>	<i>Total</i>
<i>Escherichia coli</i>	2001
<i>Klebsiella pneumoniae</i>	1295
<i>Staphylococcus aureus</i>	597
<i>Pseudomonas aeruginosa</i>	439
<i>Acinetobacter baumannii</i>	422
<i>Enterococcus faecalis</i>	327
<i>Klebsiella oxytoca</i>	304
<i>Enterococcus faecium</i>	196
<i>Escherichia coli Diarrhoeagenic</i>	162
<i>Proteus mirabilis</i>	122
<i>Others</i>	542



The data shows the prevalence of various bacterial pathogens:

Escherichia coli leads with 2001 cases, indicating it's a major cause of infections like UTIs and sepsis. *Klebsiella pneumoniae* (1295 cases) is commonly associated with hospital-acquired infections such as pneumonia. *Staphylococcus aureus* (597) is a frequent cause of skin and serious systemic infections. *Pseudomonas aeruginosa* (439) and *Acinetobacter baumannii* (422) are notable for healthcare-associated infections and antibiotic resistance. *Enterococcus faecalis* (327) and *Enterococcus faecium* (196) contribute to UTIs and bacteremia, especially in hospitals. Other notable pathogens include *Klebsiella oxytoca* (304) and *Proteus mirabilis* (122).

No of culture isolated and cultures for which AST was done:

Month	Total Sample received	No. of culture isolated	Isolation rate (%)
Jul-23	1451	435	29.99
Aug-23	1732	527	30.43
Sep-23	1632	482	29.54
Oct-23	1460	550	37.67
Nov-23	1470	502	34.15
Dec-23	1534	482	31.49
Jan-24	1475	480	32.54
Feb-24	1539	460	29.89
Mar-24	1704	575	33.74
Apr-24	1508	614	40.72
May-24	1832	690	37.67
Jun-24	1582	610	38.56

Total Samples Received (Jul-23 to Jun-24): 18,917

Total Cultures Isolated (Jul-23 to Jun-24): All: 6,407

Overall Isolation Rate: 33.9 %

DENOMINATOR DATA

Following table represent denominator data specimen wise as well as location wise.

Specimen type	No. of specimens received for culture	No. of culture positive
Blood	1894	300
Urine	10947	3088
LRT	2443	974
Superficial Infection	1626	1575
Deep Infection	12	6
CSF	118	1
SS	821	48
Faeces	485	195
Others	571	220

Location Wise

Specimen location	OPD	WARD	ICU
No. of specimen received for culture	8829	8330	1758
No. of culture positive isolates	2592	2928	887
Isolation Rate (%)	29.35%	35.15%	50.45%

AMR data:

- ✓ AMR data of all the clinical isolates obtained in laboratory had been entered manually on monthly basis on the AMR portal website includes patient's information, hospital information, sample information and susceptibility test values.
- ✓ Data has been validated by the regional admin.
- ✓ Analysis of the accepted data is done using iAMRSN portal to evaluate isolation rate susceptibility rate, yearly and monthly isolation trends for RIMS, Hospital, Imphal.
- ✓ Detailed analysis of the data for 2023 – 2024 is mentioned in this report.

Detailed analysis of results indicating contributions made towards increasing the state of knowledge in the subject.

ALL SPECIMEN

Isolation Rates

Analysis Duration: 01st July 2023 to 30th June 2024

Isolate	Culture positive																			
	Total		Blood		Urine		LRT		Superficial Infection		Deep Infection		CSF		SS		Faeces		Others	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
No. culture positive	6407 (100)	100	300 (100)	4.68	3089 (100)	48.2	974 (100)	15.2	1575 (100)	24.6	6 (100)	0.09	1 (100)	0.02	48 (100)	0.75	195 (100)	3.04	220 (100)	3.43
Ward (non-ICU) incl HDU	2928 (45.71)	100	174 (58)	5.9	1383 (44.79)	47.2	298 (30.63)	10.2	890 (56.54)	30.4	3 (50)	0.1	0 (0)	0	22 (45.83)	0.8	44 (22.56)	1.5	114 (51.82)	3.9
OPD	2592 (40.47)	100	51 (17)	2	1515 (49.06)	58.4	276 (28.37)	10.6	539 (34.24)	20.8	2 (33.33)	0.1	0 (0)	0	21 (43.75)	0.8	150 (76.92)	5.8	38 (17.27)	1.5
ICU	887 (13.82)	100	75 (25)	8.5	190 (6.15)	21.5	399 (41.01)	45.1	145 (9.21)	16.4	1 (16.67)	0.1	1 (100)	0.1	5 (10.42)	0.6	1 (0.51)	0.1	68 (30.91)	7.7
Enterobacterales (except Salmonella)	3925 (61.28)	100	77 (25.67)	2	2354 (76.23)	60	582 (59.82)	14.8	736 (46.76)	18.8	3 (50)	0.1	1 (100)	0	27 (56.25)	0.7	21 (10.77)	0.5	124 (56.36)	3.2
Enterococci	631 (9.85)	100	9 (3)	1.4	491 (15.9)	77.8	34 (3.49)	5.4	70 (4.45)	11.1	0 (0)	0	0 (0)	0	3 (6.25)	0.5	1 (0.51)	0.2	23 (10.45)	3.6
Faecal isolates	172 (2.69)	100	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	172 (88.21)	100	0 (0)	0
Fungi	1 (0.02)	100	1 (0.33)	100	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0
NFGNB	884 (13.8)	100	57 (19)	6.4	178 (5.76)	20.1	303 (31.14)	34.3	293 (18.61)	33.1	0 (0)	0	0 (0)	0	8 (16.67)	0.9	0 (0)	0	45 (20.45)	5.1
Invasive Salmonella	3 (0.05)	100	2 (0.67)	66.7	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	1 (0.51)	33.3	0 (0)	0
Staphylococci	779 (12.16)	100	154 (51.33)	19.8	63 (2.04)	8.1	51 (5.24)	6.5	472 (29.99)	60.6	3 (50)	0.4	0 (0)	0	9 (18.75)	1.2	0 (0)	0	27 (12.27)	3.5
Streptococcus	10 (0.16)	100	0 (0)	0	2 (0.06)	20	3 (0.31)	30	3 (0.19)	30	0 (0)	0	0 (0)	0	1 (2.08)	10	0 (0)	0	1 (0.45)	10

This table provides an analysis of culture-positive isolates across various specimen sources and locations (wards, ICU, OPD). Here's a shortened breakdown:

Total Culture Positive: 6,407 cases, with the highest from urine (48.2%), followed by superficial infection (24.6%), and lower respiratory tract (LRT) (15.2%).

Ward (Non-ICU): Accounts for 45.71% of isolates, primarily from urine (47.2%) and superficial infection (30.4%).

OPD: Contributes 40.47% of isolates, again dominated by urine (58.4%) and superficial infection (20.8%).

ICU: Represents 13.82% of cases, with most from LRT (45.1%) and superficial infection (16.4%).

Key Organisms:

Enterobacterales: Major group, 61.28% of all isolates, especially from urine (60%) and superficial infection (18.8%).

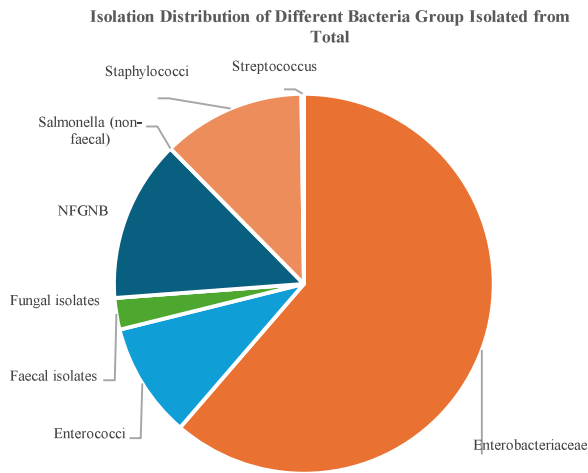
Staphylococci: Significant at 12.16%, mostly from superficial infections (60.6%).

NFGNB (Non-fermenting Gram-negative bacilli): 13.8%, mainly from LRT (34.3%) and superficial infections (33.1%).

Enterococci: 9.85%, primarily found in urine (77.8%).

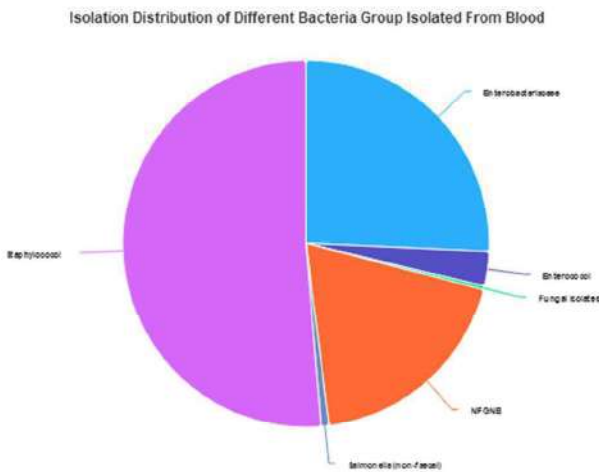
Figure 1.1 Specimen wise distributions of major groups organisms

A. All Specimen:



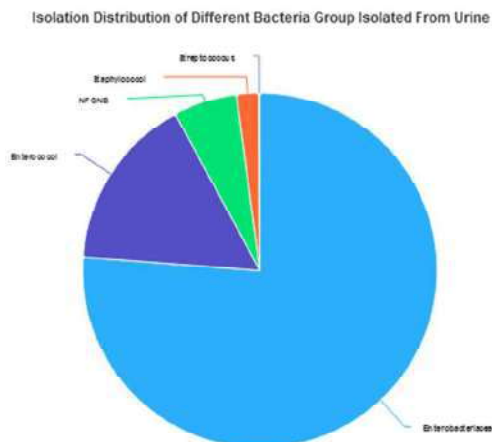
Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Enterobacteriales	3926	61.3
Enterococci	631	9.8
Faecal isolates	172	2.7
Fungal isolates	1	0
NFGNB	885	13.8
Salmonella (non-faecal)	3	0
Staphylococci	779	12.2
Streptococcus	10	0.2
Total	6407	100

B. Blood



Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Enterobacteriaceae	77	25.7
Enterococci	9	3
Fungal isolates	1	0.3
NFGNB	57	19
Salmonella (non-faecal)	2	0.7
Staphylococci	154	51.3
Total	300	100

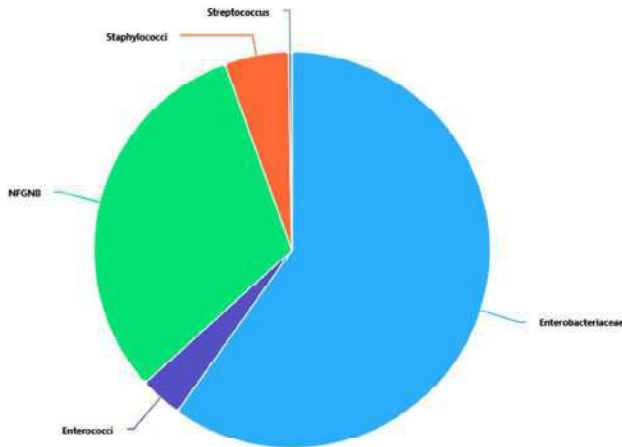
C. Urine



Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Enterobacteriaceae	2354	76.2
Enterococci	491	15.9
NFGNB	178	5.8
Staphylococci	63	2
Streptococcus	2	0.1
Total	3088	100

D. Lower Respiratory Tract (LRT):

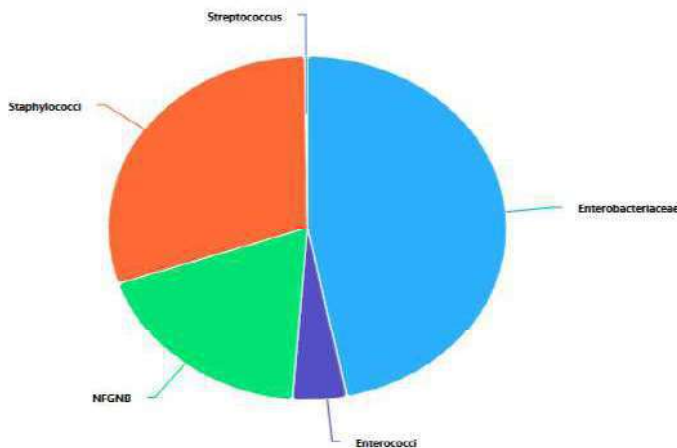
Isolation Distribution of Different Bacteria Group Isolated From LRT



Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Enterobacteriaceae	582	59.8
Enterococci	34	3.5
NFGNB	304	31.2
Staphylococci	51	5.2
Streptococcus	3	0.3
Total	974	100

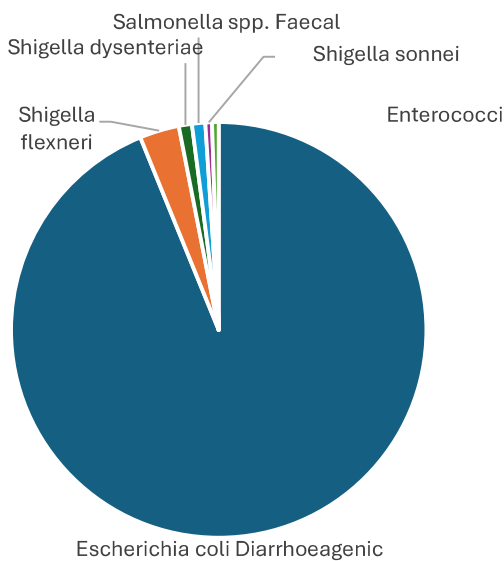
E. Superficial Infection:

Isolation Distribution of Different Bacteria Group Isolated From SI



Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Enterobacteriaceae	737	46.8
Enterococci	70	4.4
NFGNB	293	18.6
Staphylococci	472	30
Streptococcus	3	0.2
Total	1575	100

F. Faeces:

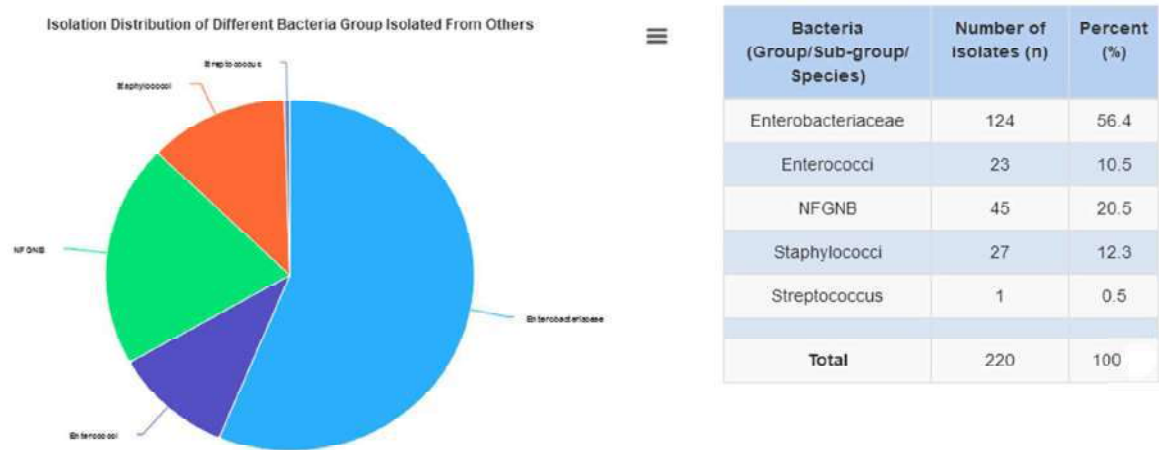


Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Escherichia coli Diarrhoeogenic	183	93.85%
Shigella flexneri	6	3.08%
Shigella dysenteriae	2	1.03%
Salmonella spp. Faecal	2	1.03%
Shigella sonnei	1	0.51%
Enterococci	1	0.51%
Total	195	100.00%

G. Sterile Site



H. Others



The presented data includes the relative isolation rate of various species obtained from patients in different healthcare units: Outpatient (OPD), Wards and Intensive Care Unit (ICUs)

The data is provided in below table 1.2

Total Isolated:

OPD : 2592 (40.5%)

Ward : 2928 (45.7%)

ICU : 887 (13.8%)

Bacteria	Location			
	Total	OPD	Ward	ICU
<i>Escherichia coli</i>	2001	1011	855	135
<i>Klebsiella pneumoniae</i>	1295	425	605	265
<i>Staphylococcus aureus</i>	597	353	209	35
<i>Pseudomonas aeruginosa</i>	439	94	250	95
<i>Acinetobacter baumannii</i>	422	45	198	179
<i>Enterococcus faecalis</i>	327	126	175	26
<i>Klebsiella oxytoca</i>	304	107	151	46
<i>Enterococcus faecium</i>	196	37	123	36
<i>Escherichia coli Diarrhoeagenic</i>	162	122	39	1
<i>Proteus mirabilis</i>	122	60	52	10
<i>Others</i>	542	212	271	59

Table 1.2 Distribution of species of organisms in isolates from OPD, Ward and ICU

Key Bacteria:

Escherichia coli: 2001 cases (34.1%) – Most common in OPD (50.55%)

Klebsiella pneumoniae: 1295 cases (22.1%) – Dominates in Wards (46.7%) and ICU (20.5%)

Location Highlights:

OPD: High presence of *E. coli* and *Staphylococcus aureus*, suggesting outpatient infections.

Ward: *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* are prevalent, indicating hospital-acquired infections.

ICU: *Klebsiella pneumoniae* and *Acinetobacter baumannii* are dominant, known for multidrug resistance.

Chapter-1 Enterobacteriales:

Enterobacteriales, excluding Salmonella, represent **3925 cases (61.28%)** of the total culture-positive results, making them a major contributor to infections in both hospital and outpatient settings. *(As detailed in table 1.3)*

Distribution Across Wards: In non-ICU wards (including HDU), there are **1383 cases (44.79%)**, with **47.2%** of total positive cultures being attributed to Enterobacteriales. In the **OPD**, there are **1515 cases (49.06%)**, where **58.4%** of all culture positives are from this bacterial group, indicating a high presence in outpatient settings.

ICU-Specific Insights: The ICU reports **190 cases (6.15%)** of Enterobacteriales infections, accounting for **21.5% of total ICU culture-positive cases**. Though the ICU has a smaller share of total cases, Enterobacteriales still make up a significant portion of the infections in critical care environments.

Isolate Distribution: 60% of the Enterobacteriales isolates are from OPD, 18.8% from non-ICU wards, and 14.8% from ICU, showing their widespread presence across different healthcare settings.

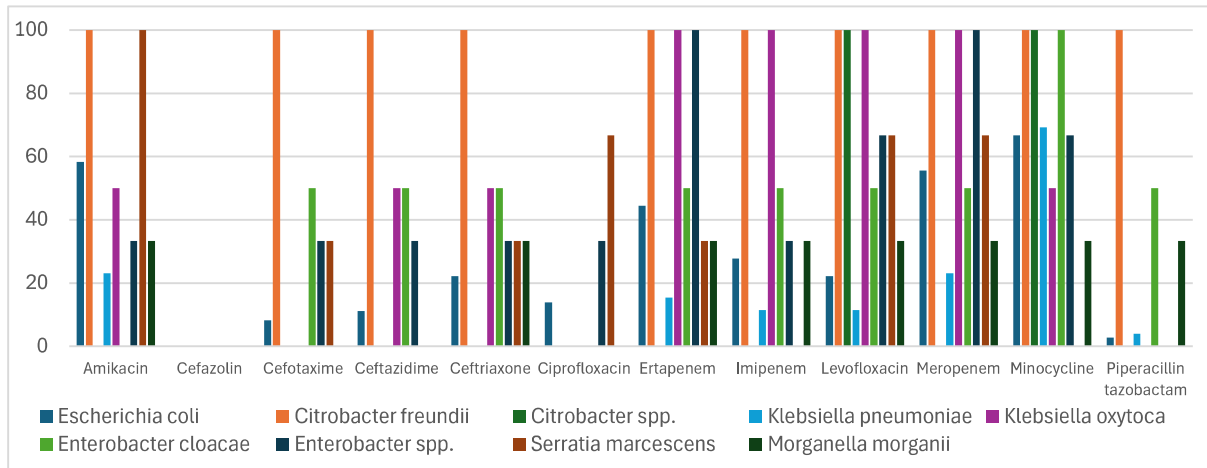
Isolate	Culture positive																			
	Total		Blood		Urine		LRT		Superficial Infection		Deep Infection		CSF		SS		Faeces		Others	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	n=6407		n=300		n=3088		n=974		n=1575		n=6		n=1		n=48		n=195		n=220	
No. culture positive	6407	100	300	4.7	3088	48	15	974	1575	24.6	6	0.1	1	0	48	0.8	195	3	220	3.4
Escherichia coli	2001	100	36	1.8	1513	76	83	4.1	299	14.9	0	0	0	0	13	0.6	21	1	36	1.8
	(31.23)		(12)		(49)	(8.52)	(8.52)		(18.98)		(0)		(0)		(27.08)		(10.77)		(16.36)	
Citrobacter +	62	100	2	3.2	34	55	7	11	15	24.2	0	0	0	0	3	4.8	0	0	1	1.6
	(0.97)		(0.67)		(1.1)	(0.72)	(0.72)		(0.95)		(0)		(0)		(6.25)		(0)		(0.45)	
Klebsiella +	1604	100	28	1.7	702	44	467	29	317	19.8	1	0.1	1	0.1	10	0.6	0	0	78	4.9
	(25.04)		(9.33)		(22.73)	(22.73)	(47.95)		(20.13)		(16.67)		(100)		(20.83)		(0)		(35.45)	
Enterobacter +	43	100	5	12	14	33	9	21	13	30.2	0	0	0	0	1	2.3	0	0	1	2.3
	(0.67)		(1.67)		(0.45)	(0.45)	(0.92)		(0.83)		(0)		(0)		(2.08)		(0)		(0.45)	
Enterobacter spp	36	100	3	8.3	14	39	7	19	10	27.8	0	0	0	0	1	2.8	0	0	1	2.8
	(0.56)		(1)		(0.45)	(0.45)	(0.72)		(0.63)		(0)		(0)		(2.08)		(0)		(0.45)	
Serratia marcescens	12	100	3	25	5	42	4	33	0	0	0	0	0	0	0	0	0	0	0	0
	(0.19)		(1)		(0.16)	(0.16)	(0.41)		(0)		(0)		(0)		(0)		(0)		(0)	
Proteus +	190	100	0	0	82	43	11	5.8	87	45.8	2	1.1	0	0	0	0	0	0	8	4.2
	(2.97)		(0)		(2.66)	(2.66)	(1.13)		(5.52)		(33.33)		(0)		(0)		(0)		(3.64)	
Morganella morganii	12	100	3	25	3	25	1	8.3	5	41.7	0	0	0	0	0	0	0	0	0	0
	(0.19)		(1)		(0.1)	(0.1)	(0.1)		(0.32)		(0)		(0)		(0)		(0)		(0)	
Providencia +	2	100	0	0	1	50	0	0	1	50	0	0	0	0	0	0	0	0	0	0
	(0.03)		(0)		(0.03)	(0.03)	(0)		(0.06)		(0)		(0)		(0)		(0)		(0)	

Table 1.3 specimen wise distribution of major species

Susceptible Pattern (Enterobacterales)

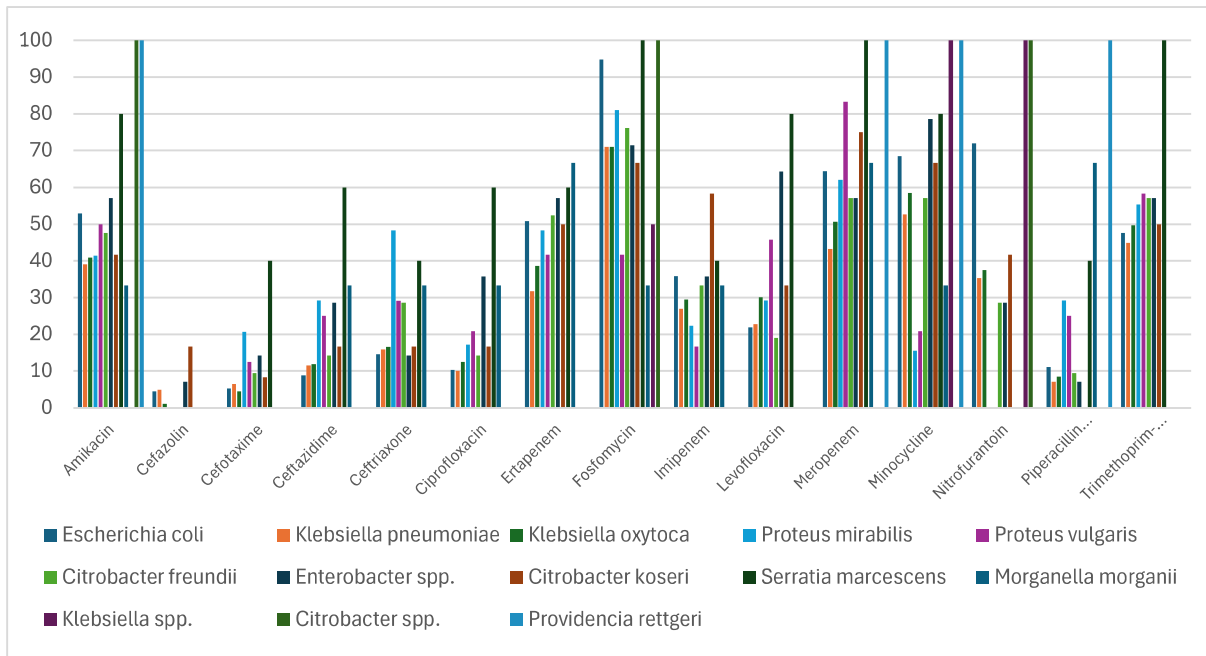
BLOOD:

Organism	# Isolate	Amikacin	Cefazolin	Cefotaxime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Imipenem	Levofloxacin	Meropenem	Minocycline	Piperacillin-tazobactam
<i>Escherichia coli</i>	36	58.3	0	8.3	11.1	22.2	13.9	44.4	27.8	22.2	55.6	66.7	2.8
<i>Citrobacter freundii</i>	1	100	0	100	100	100	0	100	100	100	100	100	100
<i>Citrobacter spp.</i>	1	0	0	0	0	0	0	0	0	100	0	100	0
<i>Klebsiella pneumoniae</i>	26	23.1	0	0	0	0	0	15.4	11.5	11.5	23.1	69.2	4
<i>Klebsiella oxytoca</i>	2	50	0	0	50	50	0	100	100	100	100	50	0
<i>Enterobacter cloacae</i>	2	0	0	50	50	50	0	50	50	50	50	100	50
<i>Enterobacter spp.</i>	3	33.3	0	33.3	33.3	33.3	33.3	100	33.3	66.7	100	66.7	0
<i>Serratia marcescens</i>	3	100	0	33.3	0	33.3	66.7	33.3	0	66.7	66.7	0	0
<i>Morganella morganii</i>	3	33.3	0	0	0	33.3	0	33.3	33.3	33.3	33.3	33.3	33.3



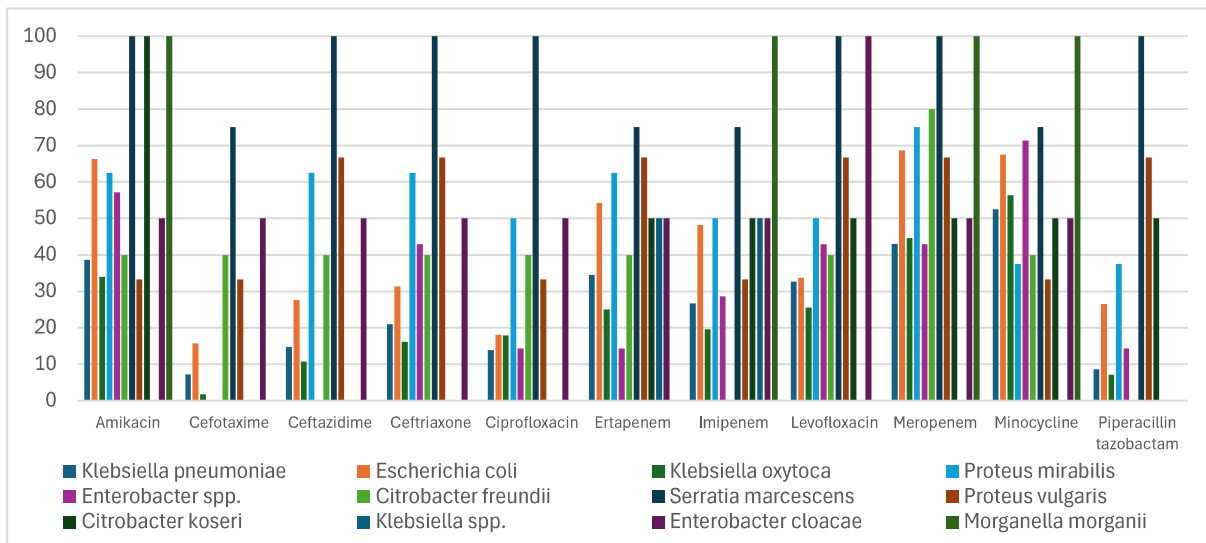
URINE:

AMA	# Isolates	Amikacin	Cefazolin	Cefotaxime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Fosfomycin	Imipenem	Levofloxacin	Meropenem	Minocycline	Nitrofurantoin	Piperacillin-tazobactam	Trimethoprim-sulfamethoxazole
<i>Escherichia coli</i>	1513	52.9	4.5	5.3	8.9	14.6	10.4	50.8	94.8	35.8	21.9	64.4	68.5	72	11.1	47.6
<i>Klebsiella pneumoniae</i>	524	39.1	5	6.5	11.6	15.9	10.1	31.7	71	27	22.8	43.3	52.7	35.3	7.1	44.9
<i>Klebsiella oxytoca</i>	176	40.9	1.1	4.5	11.9	16.6	12.5	38.6	71	29.5	30.1	50.6	58.5	37.5	8.5	49.7
<i>Proteus mirabilis</i>	58	41.4	0	20.7	29.3	48.3	17.2	48.3	81	22.4	29.3	62.1	15.5	0	29.3	55.4
<i>Proteus vulgaris</i>	24	50	0	12.5	25	29.2	20.8	41.7	41.7	16.7	45.8	83.3	20.8	0	25	58.3
<i>Citrobacter freundii</i>	21	47.6	0	9.5	14.3	28.6	14.3	52.4	76.2	33.3	19	57.1	57.1	28.6	9.5	57.1
<i>Enterobacter spp.</i>	14	57.1	7.1	14.3	28.6	14.3	35.7	57.1	71.4	35.7	64.3	57.1	78.6	28.6	7.1	57.1
<i>Citrobacter koseri</i>	12	41.7	16.7	8.3	16.7	16.7	16.7	50	66.7	58.3	33.3	75	66.7	41.7	0	50
<i>Serratia marcescens</i>	5	80	0	40	60	40	60	60	100	40	80	100	80	0	40	100
<i>Morganella morganii</i>	3	33.3	0	0	33.3	33.3	33.3	66.7	33.3	33.3	0	66.7	33.3	0	66.7	0
<i>Providencia rettgeri</i>	1	100	0	0	0	0	0	0	0	0	0	100	100	0	100	0



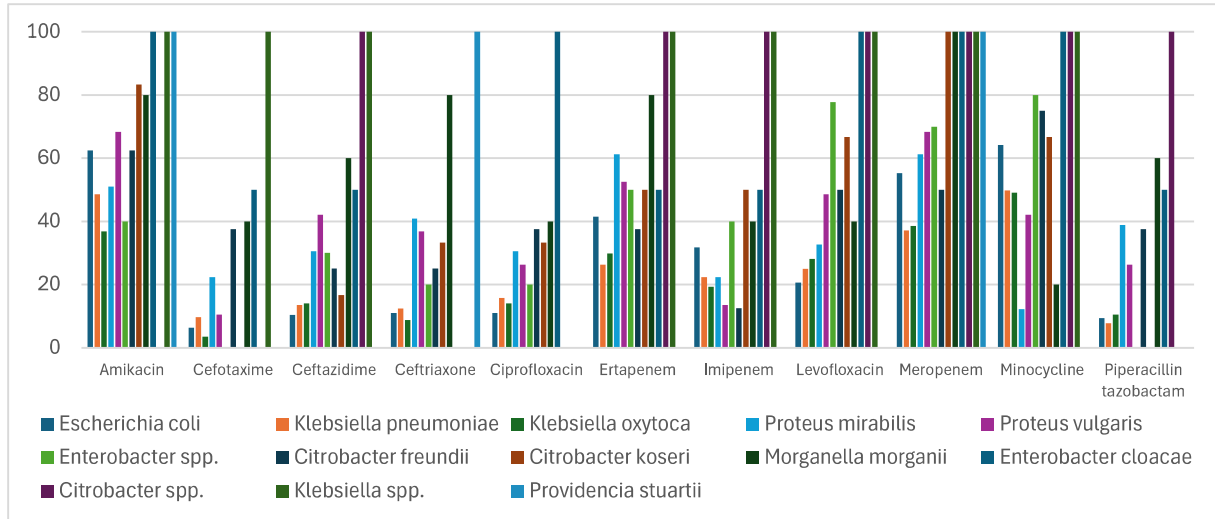
LOWER RESPIRATORY TRACT:

AMA	#Isolates	Amikacin	Cefotaxime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Imipenem	Levofloxacin	Meropenem	Minocycline	Piperacillin-tazobactam
Klebsiella pneumoniae	409	38.6	7.2	14.7	21	13.9	34.5	26.7	32.6	43	52.5	8.6
Escherichia coli	83	66.3	15.7	27.7	31.3	18.1	54.2	48.2	33.7	68.7	67.5	26.5
Klebsiella oxytoca	56	33.9	1.8	10.7	16.1	17.9	25	19.6	25.5	44.6	56.4	7.1
Proteus mirabilis	8	62.5	0	62.5	62.5	50	62.5	50	50	75	37.5	37.5
Enterobacter spp.	7	57.1	0	0	42.9	14.3	14.3	28.6	42.9	42.9	71.4	14.3
Citrobacter freundii	5	40	40	40	40	40	40	0	40	80	40	0
Serratia marcescens	4	100	75	100	100	100	75	75	100	100	75	100
Proteus vulgaris	3	33.3	33.3	66.7	66.7	33.3	66.7	33.3	66.7	66.7	33.3	66.7
Citrobacter koseri	2	100	0	0	0	0	50	50	50	50	50	50
Klebsiella spp.	2	0	0	0	0	0	50	50	0	0	0	0
Enterobacter cloacae	2	50	50	50	50	50	50	50	100	50	50	0
Morganella morganii	1	100	0	0	0	0	0	100	0	100	100	0

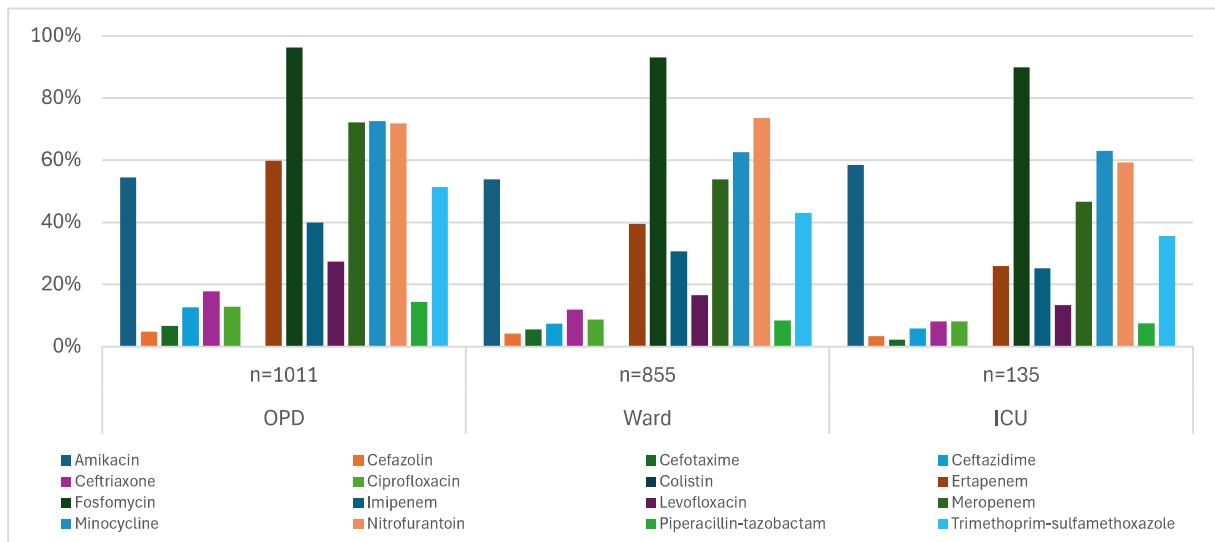


SUPERFICIAL INFECTION:

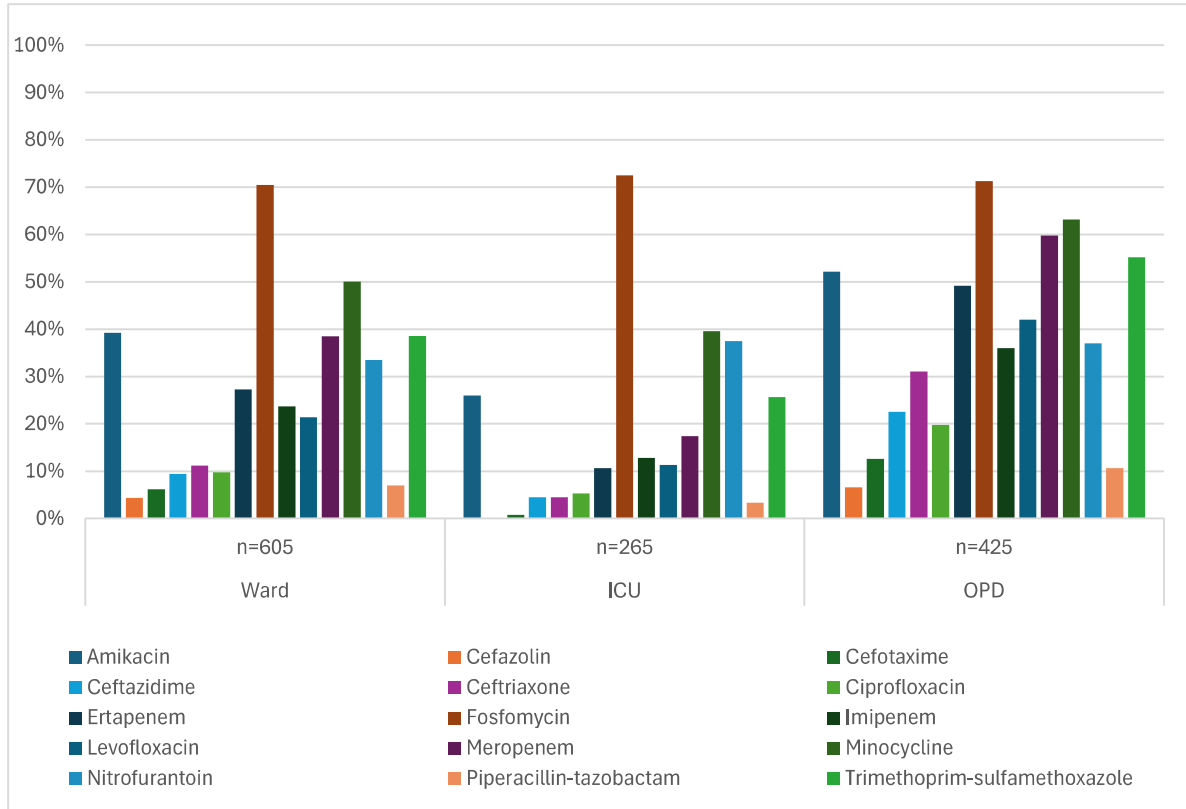
AMA	#Isolates	Amikacin	Cefotaxime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Imipenem	Levofloxacin	Meropenem	Minocycline	Piperacillin-tazobactam
<i>Escherichia coli</i>	299	62.5	6.4	10.4	11	11	41.5	31.8	20.7	55.2	64.2	9.4
<i>Klebsiella pneumoniae</i>	259	48.6	9.7	13.5	12.4	15.8	26.3	22.4	24.9	37.1	49.8	7.7
<i>Klebsiella oxytoca</i>	57	36.8	3.5	14	8.8	14	29.8	19.3	28.1	38.6	49.1	10.5
<i>Proteus mirabilis</i>	49	51	22.4	30.6	40.8	30.6	61.2	22.4	32.7	61.2	12.2	38.8
<i>Proteus vulgaris</i>	38	68.4	10.5	42.1	36.8	26.3	52.6	13.5	48.6	68.4	42.1	26.3
<i>Enterobacter spp.</i>	11	40	0	30	20	20	50	40	77.8	70	80	0
<i>Citrobacter freundii</i>	8	62.5	37.5	25	25	37.5	37.5	12.5	50	50	75	37.5
<i>Citrobacter koseri</i>	6	83.3	0	16.7	33.3	33.3	50	50	66.7	100	66.7	0
<i>Morganella morganii</i>	5	80	40	60	80	40	80	40	40	100	20	60
<i>Enterobacter cloacae</i>	2	100	50	50	0	100	50	50	100	100	100	50
<i>Citrobacter spp.</i>	1	0	0	100	0	0	100	100	100	100	100	100
<i>Klebsiella spp.</i>	1	100	100	100	0	0	100	100	100	100	100	0
<i>Providencia stuartii</i>	1	100	0	0	100	0	0	0	0	100	0	0



Susceptibility of *E.coli* from OPD, Ward & ICU

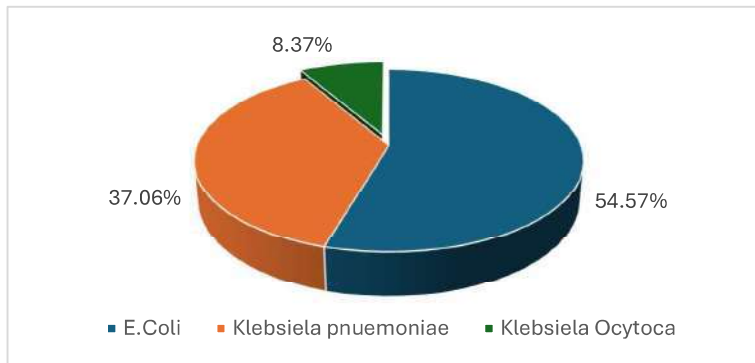


Susceptibility of *Klebsiella pneumoniae* from OPD, Ward & ICU

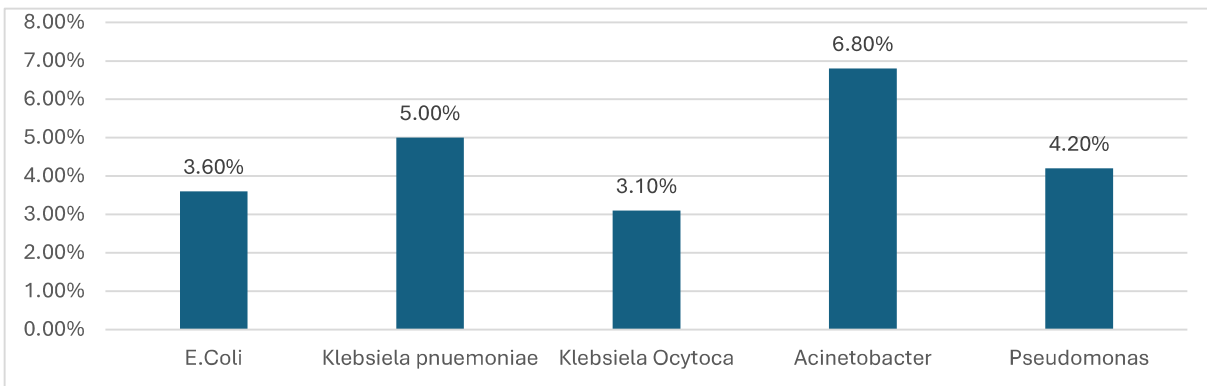


Phenotypic Tests (Enterobacteriales)

ESBL Producing Enterobacteriales

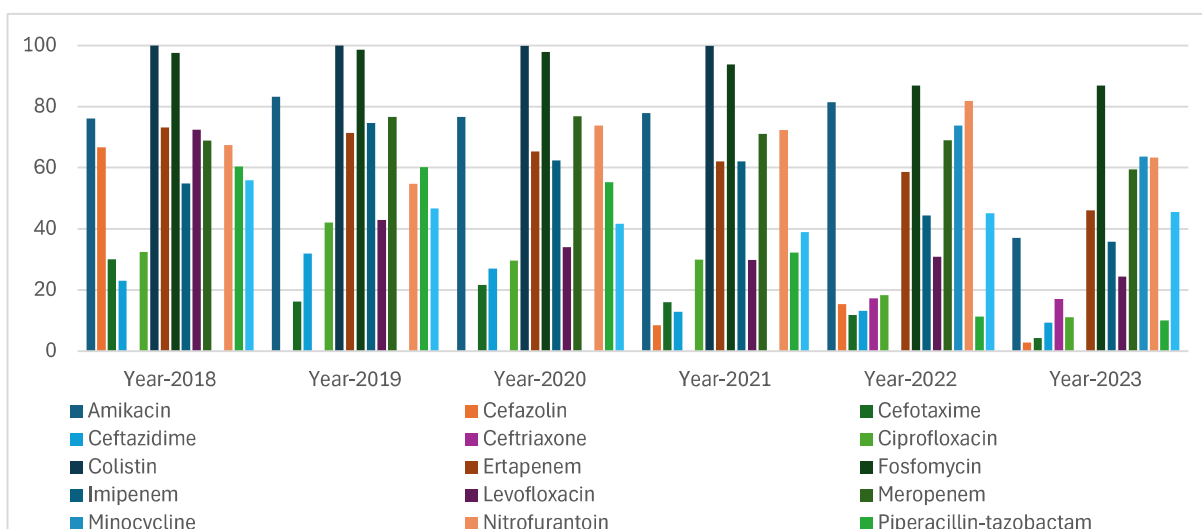


Carbapenemase Producers



Enterobacterales yearly trends

AMA	Year-2018	Year-2019	Year-2020	Year-2021	Year-2022	Year-2023
	(%)	(%)	(%)	(%)	(%)	(%)
	n=428	n=1656	n=982	n=1324	n=2305	n=3213
Amikacin	76.06	83.12	76.54	77.87	81.34	37.04
Cefazolin	66.67	0	0	8.47	15.33	2.73
Cefotaxime	30	16.21	21.62	15.99	11.85	4.2
Ceftazidime	23.03	31.9	27	12.87	13.17	9.22
Ceftriaxone	0	0	0	0	17.2	17.04
Ciprofloxacin	32.46	42.07	29.65	29.95	18.31	11.17
Ertapenem	73.15	71.31	65.32	62.12	58.64	46.03
Fosfomycin	97.54	98.63	97.77	93.76	86.88	86.87
Imipenem	54.86	74.64	62.44	62.1	44.36	35.81
Levofloxacin	72.46	42.89	33.91	29.87	30.89	24.41
Meropenem	68.91	76.58	76.88	71.02	68.94	59.41
Minocycline	0	0	0	0	73.79	63.68
Nitrofurantoin	67.44	54.71	73.85	72.37	81.9	63.26
Piperacillin-tazobactam	60.47	60.17	55.17	32.18	11.32	10.03
Trimethoprim sulfamethoxazole	55.86	46.69	41.63	38.83	45.08	45.47



The table shows the percentage of antimicrobial susceptibility patterns for various antibiotics (AMA) from 2018 to 2023, based on different sample sizes (n) each year. It illustrates the effectiveness of each antibiotic, measured as a percentage of susceptibility, for a range of antibiotics, including Amikacin, Cefazolin, Cefotaxime, Colistin, and many others. Over time, certain antibiotics show a decrease in effectiveness (like Amikacin and Ciprofloxacin), while others, such as Fosfomycin, remain relatively effective.

Amikacin: High susceptibility in early years (76-83%) drops significantly by 2023 (37%).

Cefazolin: Sharp decline from 2018 (67%) to almost negligible susceptibility by 2023 (2.73%).

Carbapenems (Imipenem, Meropenem): Show decreasing trends in susceptibility, with Meropenem dropping from 76.88% in 2020 to 59.41% in 2023.

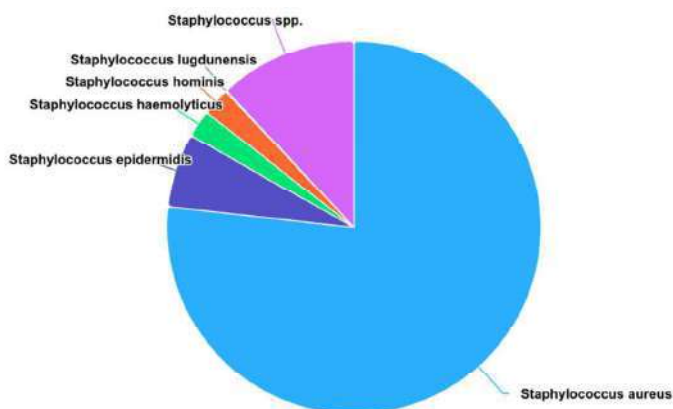
Nitrofurantoin: Shows fluctuating patterns but remains moderately susceptible by 2023 (63%).

Piperacillin-tazobactam: Decreased in susceptibility from 60% in 2018 to 10% by 2023.

The data reflects an overall declining trend in the susceptibility of many antibiotics, suggesting growing antimicrobial resistance over time.

Chapter 2 Staphylococci:

Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
<i>Staphylococcus aureus</i>	597	76.6
<i>Staphylococcus spp.</i>	93	11.9
<i>Staphylococcus epidermidis</i>	50	6.4
<i>Staphylococcus haemolyticus</i>	19	2.4
<i>Staphylococcus hominis</i>	19	2.4
<i>Staphylococcus lugdunensis</i>	1	0.1
TOTAL	779	100

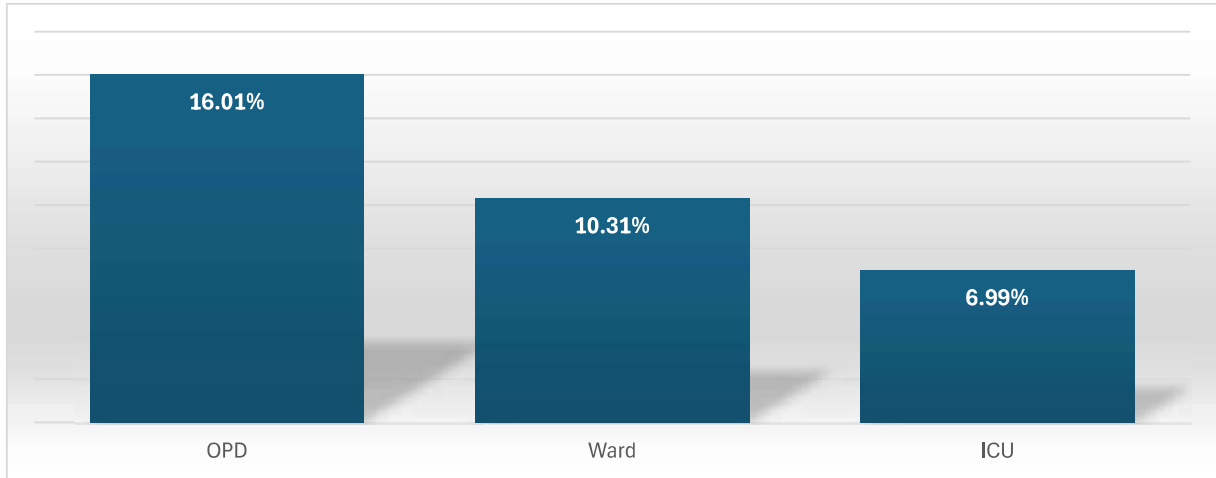


Staphylococci account for **779 (12.16%)** of total culture-positive cases. They predominantly cause superficial infections (**472 cases, 60.6%**) and bloodstream infections (154 cases, 19.8%). Infections are also observed in the urine (63 cases, 8.1%), lower respiratory tract (51 cases, 6.5%), surgical sites (9 cases, 1.2%), and other sites (27 cases, 3.5%). There are fewer cases in deep infections (3 cases, 0.4%), and none in CSF and faeces.

Staphylococcus aureus dominating at 597 isolates (76.6%), known for its role as a major human pathogen. *Staphylococcus spp.* except *Staphylococcus aureus* (93 isolates, 11.9%) and *Staphylococcus epidermidis* (50 isolates, 6.4%), the latter being an opportunistic pathogen in patients with medical devices. Additionally, *Staphylococcus haemolyticus* and *Staphylococcus hominis* each had 19 isolates (2.4%), while *Staphylococcus lugdunensis* had 1 isolate (0.1%).

	Total n=6407		Blood n=300		Urine n=3088		LRT n=974		Superficial Infection n=1575		SS n=48		Others n=220	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
No. culture positive	6407 (100)	100	300 (100)	4.7	3088 (100)	48.2	974 (100)	15.2	1575 (100)	24.6	48 (100)	0.7	220 (100)	3.4
Staphylococci	779 (12.2)	100	154 (51.3)	19.8	63 (2)	8.1	51 (5.2)	6.5	472 (30)	60.6	9 (18.8)	1.2	27 (12.3)	3.5
- CoNS	182 (2.8)	100	105 (35)	57.7	21 (0.7)	11.5	5 (0.5)	2.7	46 (2.9)	25.3	2 (4.2)	1.1	3 (1.4)	1.6
- <i>Staphylococcus aureus</i>	597 (9.3)	100	49 (16.3)	8.2	42 (1.4)	7	46 (4.7)	7.7	426 (27)	71.4	7 (14.6)	1.2	24 (10.9)	4

Location wise distribution:



OPD: Staphylococci infections are the highest in the outpatient department (OPD), accounting for 16.01% of cases.

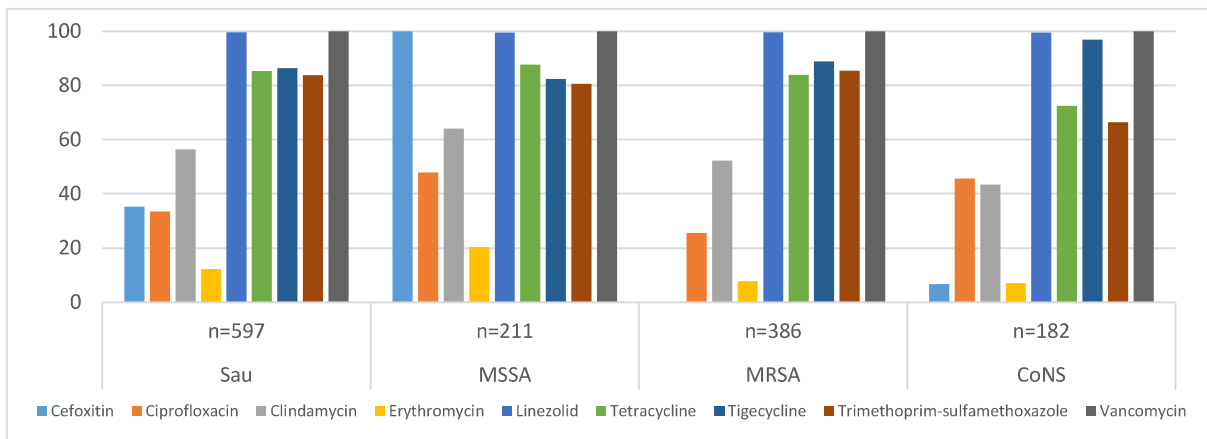
Ward: The percentage of Staphylococci infections in the ward is 10.31%.

ICU: The lowest incidence is in the ICU, where Staphylococci make up 6.99% of infections.

This suggests that Staphylococci infections are more prevalent in OPD cases compared to inpatients in the wards and ICU.

Percentage susceptibility of Staphylococcus aureus, CoNS, MRSA, MSSA isolated from all samples

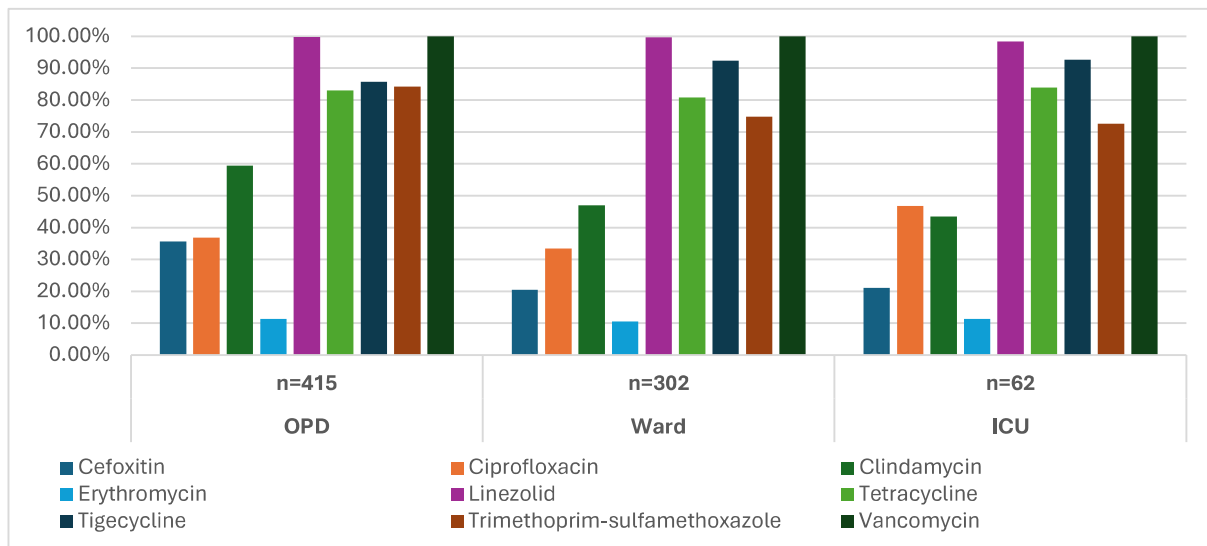
AMA	Sau	MSSA	MRSA	CoNS
	n=597	n=211	n=386	n=182
Cefoxitin	35.3	100	0	6.6
Ciprofloxacin	33.5	47.9	25.6	45.6
Clindamycin	56.4	64	52.3	43.4
Erythromycin	12.2	20.4	7.8	7.1
Linezolid	99.7	99.5	99.7	99.5
Tetracycline	85.3	87.7	83.9	72.5
Tigecycline	86.3	82.3	88.9	96.9
Trimethoprim-sulfamethoxazole	83.8	80.6	85.5	66.5
Vancomycin	100	100	100	100



This above data represents antibiotic susceptibility patterns of different bacterial isolates: Aminoglycoside-resistant Staphylococcus aureus (AMA), methicillin-susceptible Staphylococcus aureus (MSSA), methicillin-resistant Staphylococcus aureus (MRSA), and coagulase-negative staphylococci (CoNS). The table shows varying levels of resistance to antibiotics like ceftiofloxacin, ciprofloxacin, clindamycin, erythromycin, linezolid, tetracycline, tigecycline, trimethoprim-sulfamethoxazole, and vancomycin. Vancomycin demonstrates 100% susceptibility across all groups, while ceftiofloxacin shows a sharp contrast between MSSA (100%) and MRSA (0%). Linezolid maintains nearly perfect effectiveness against all isolates.

Susceptible pattern of Staphylococci isolated in different health care areas from all specimens (except urine and faeces).

AMA	OPD	Ward	ICU
	n=415	n=302	n=62
Cefoxitin	35.70%	20.50%	21%
Ciprofloxacin	36.90%	33.40%	46.80%
Clindamycin	59.50%	47%	43.50%
Erythromycin	11.30%	10.60%	11.30%
Linezolid	99.80%	99.70%	98.40%
Tetracycline	83.10%	80.80%	83.90%
Tigecycline	85.80%	92.40%	92.70%
Trimethoprim-sulfamethoxazole	84.30%	74.80%	72.60%
Vancomycin	100%	100%	100%

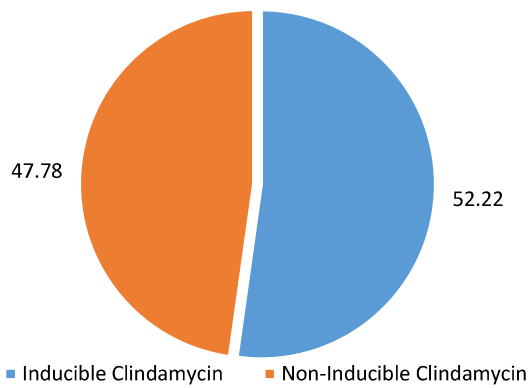


The susceptibility patterns of Staphylococci across OPD, Ward, and ICU indicate varying resistance trends, with newer drugs like Linezolid, Tigecycline, and Vancomycin showing excellent efficacy (near or at 100%) across all areas, while older drugs such as Cefoxitin and Erythromycin demonstrate significant resistance, particularly in the Ward and ICU. Ciprofloxacin shows moderate susceptibility, highest in ICU (46.8%), and Clindamycin is more effective in OPD (59.5%) than in ICU (43.5%). Tetracycline and Trimethoprim-sulfamethoxazole maintain relatively high susceptibility in OPD but show a decline in critical care areas like the ICU.

Susceptible percentages of CoNS isolated from all specimens.

Organism	# Isolates	Cefoxitin	Ciprofloxacin	Clindamycin	Erythromycin	Linezolid	Tetracycline	Tigecycline	Trimethoprim sulfamethoxazol	Vancomycin
Staphylococcus spp.	92	8.6	40.9	41.9	9.7	98.9	75.3	94.4	67.7	100
Staphylococcus epidermidis	49	6	62	50	4	100	80	100	70	100
Staphylococcus haemolyticus	*18	-	-	-	-	-	-	-	-	-
Staphylococcus hominis	*18	-	-	-	-	-	-	-	-	-

Inducible Clindamycin



MRSA & MSSA Trends for last 5 (five) Years



— MRSA — MSSA

Staphylococci Yearly trends

AMA	Year-2018	Year-2019	Year-2020	Year-2021	Year-2022	Year-2023
	(%)	(%)	(%)	(%)	(%)	(%)
	n=172	n=539	n=222	n=292	n=561	n=719
Cefoxitin	34.3	45.54	31.53	22.97	29.08	23.64
Ciprofloxacin	51.48	44.84	27.65	28.28	27.09	24.34
Clindamycin	63.37	72.76	77.83	72.76	60.36	58.28
Erythromycin	26.38	22.98	28.18	34.38	15.54	11.13
Linezolid	92.98	93.13	98.58	99.65	99.82	96.11
Teicoplanin	91.11	92.06	0	100	83.33	0
Tetracycline	81.21	83.52	81.51	76	66.91	75.07
Tigecycline	0	0	0	100	58.33	80.99
Trimethoprim-sulfamethoxazole	49.7	57.26	68.12	64.23	58.29	68.57
Vancomycin	0	100	100	100	100	100

The table shows antimicrobial susceptibility (AMS) trends from 2018 to 2023 for various antibiotics. Cefoxitin susceptibility fluctuated, peaking in 2019 (45.54%) and dropping to 23.64% in 2023, while Ciprofloxacin susceptibility steadily increased from 51.48% in 2018 to 24.34% in 2023. Clindamycin susceptibility remained low, peaking at 77.83% in 2020 but increasing to 58.28% by 2023. Erythromycin saw a notable increase in susceptibility, from 26.38% in 2018 to 11.13% in 2023. Linezolid remained highly effective with over 90% susceptibility, though slightly lower in 2023 (96.11%). Teicoplanin showed variable effectiveness, with full susceptibility in some years and missing data in others. Tetracycline susceptibility fluctuated, dropping in 2022 (66.91%) but rising again in 2023 (75.07%). Tigecycline, first introduced in 2021, saw susceptibility drop to 80.99% by 2023. Trimethoprim-sulfamethoxazole susceptibility decreased consistently, reaching 68.57% in 2023. Vancomycin remained highly effective, showing full. Overall, the data highlight shifting antibiotic susceptibility patterns over time.

Chapter-3 NFGNB

NFGNB (Non-Fermenting Gram-Negative Bacilli) isolates account for **13.8% of the total culture-positive cases (884 out of 6407)**.

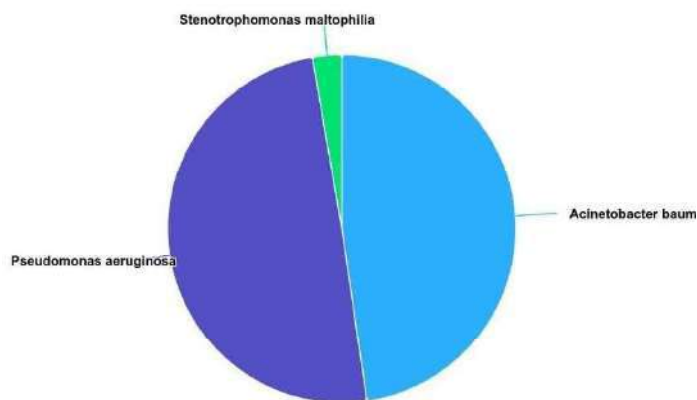
High Incidence in LRT and SI: The highest percentage of NFGNB cases are from the lower respiratory tract (34.3%) and superficial infections (33.1%).

Bloodstream Infections: NFGNB accounts for 6.4% of blood culture-positive cases, indicating their role in sepsis, although to a lesser extent compared to other infections.

Urinary Infections: 20.1% of NFGNB isolates are from urine cultures, suggesting a role in urinary tract infections (UTIs), especially in hospital settings, often linked with catheter use.

Isolation pattern of NFGNB isolated from all specimens

Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
Acinetobacter baumannii	422	47.7
Pseudomonas aeruginosa	438	49.6
Stenotrophomonas maltophilia	24	2.7
TOTAL	884	100



Isolation rates of different NFGNB from different specimens

Isolate	Total n=6407		Blood n=300		Urine n=3088		LRT n=974		Superficial Infection n=1575		SS n=48		Others n=220	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
No. culture positive	6407 (100)	100	300 (100)	4.7	3088 (100)	48.2	974 (100)	15.2	1575 (100)	24.6	48 (100)	0.7	220 (100)	3.4
NFGNB	884 (13.8)	100	57 (19)	6.4	178 (5.8)	20.1	304 (31.2)	34.4	293 (18.6)	33.1	8 (16.7)	0.9	45 (20.5)	5.1
Pseudomonas	438 (6.9)	100	32 (10.7)	7.3	109 (3.5)	24.8	112 (11.5)	25.5	164 (10.4)	37.4	3 (6.3)	0.7	19 (8.6)	4.3
+Acinetobacter	422 (6.6)	100	12 (4)	2.8	67 (2.2)	15.9	190 (19.5)	45	123 (7.8)	29.1	4 (8.3)	0.9	26 (11.8)	6.2
Acinetobacter baumannii	422 (6.6)	100	12 (4)	2.8	67 (2.2)	15.9	190 (19.5)	45	123 (7.8)	29.1	4 (8.3)	0.9	26 (11.8)	6.2
Stenotrophomonas maltophilia	24 (0.4)	100	13 (4.3)	54.2	2 (0.1)	8.3	2 (0.2)	8.3	6 (0.4)	25	1 (2.1)	4.2	0 (0)	0

Acinetobacter baumannii:

Susceptible percentages isolated from different specimen (except faeces).

AMA	Blood	LRT	Superficial Infection	Urine
	n=*12	n=190	n=123	n=67
Amikacin	-	32.6	27.6	55.2
Cefepime	-	5.8	5.7	18.2
Ceftazidime	-	6.3	4.1	13.4
Imipenem	-	11.6	13	40.3
Levofloxacin	-	20	18.7	50.7
Meropenem	-	20.5	17.9	52.2
Minocycline	-	32.1	43.9	76.1
Piperacillin-tazobactam	-	17.9	12.2	40.3

Antibiotic susceptibility rates for Amikacin, Cefepime, Ceftazidime, Imipenem, Levofloxacin, Meropenem, Minocycline, and Piperacillin-tazobactam in four types of infections: Blood (n=12), Lower Respiratory Tract (LRT) (n=190), Superficial Infection (n=123), and Urine (n=67).

For LRT and Superficial Infections, Minocycline has higher susceptibility (32.1% and 43.9%) compared to the other antibiotics. In Urine tract infections, Minocycline and Amikacin have the highest susceptibility rates (76.1% and 55.2%). Cefepime, Ceftazidime, and Piperacillin-tazobactam show generally lower susceptibility across most infections, with Cefepime and Ceftazidime being particularly less susceptible in LRT and Superficial infections.

Susceptible pattern isolated in different health care areas from all specimens (except faeces).

AMA	Total	OPD	Ward	ICU
	n=422	n=45	n=198	n=179
	S %	S %	S %	S %
Amikacin	35.5	75.6	35.4	25.7
Cefepime	8.1	22.2	10.2	2.2
Ceftazidime	7.1	24.4	6.1	3.9
Imipenem	17.1	44.4	20.7	6.1
Levofloxacin	25.6	64.4	28.8	12.3
Meropenem	25.4	68.9	28.8	10.6
Minocycline	43.6	82.2	51.5	25.1
Piperacillin-tazobactam	20.6	62.2	20.7	10.1

The antibiotic susceptibility rates for 422 isolates across different hospital settings: OPD (45 samples), wards (198 samples), and ICUs (179 samples). Amikacin shows relatively high susceptibility in the OPD (75.6%) but drops significantly in the ICU (25.7%). Cefepime and ceftazidime demonstrate very low susceptibility, especially in the ICU, where their susceptibility is around 2-4%. Imipenem and meropenem, both carbapenems, show moderate susceptibility overall (17.1% and 25.4%, respectively), with better performance in OPD but reduced susceptibility in ICU. Minocycline shows the highest susceptibility in OPD (82.2%) and wards (51.5%) but is less effective in ICU (25.1%). Piperacillin-tazobactam also shows moderate performance, with 62.2% susceptibility in OPD, decreasing to 10.1% in ICU. This data suggests a significant decrease in antibiotic susceptibility in more critical settings like ICUs.

Pseudomonas aeruginosa:

Susceptible percentages isolated from different specimen (except faeces).

AMA	Blood	LRT	Superficial Infection	Urine
	n=32	n=112	n=164	n=109
Amikacin	93.8	80.4	86.6	69.7
Cefepime	84.4	35.1	36.6	28.7
Ceftazidime	71.9	36.6	32.3	32.1
Imipenem	62.5	42.9	44.5	29.4
Levofloxacin	71.9	47.3	36.6	29.4
Meropenem	78.1	66.1	79.9	54.1
Piperacillin-tazobactam	81.3	69.6	67.7	56

Antibiotic susceptibility rates for Amikacin, Cefepime, Ceftazidime, Imipenem, Levofloxacin, Meropenem, and Piperacillin-tazobactam were evaluated in Blood (n=32), LRT (n=112), Superficial Infections (n=164), and Urine (n=109). Amikacin shows the lowest resistance across all infections, especially in Superficial (13.4%) and LRT (19.6%). Cefepime, Ceftazidime, and Imipenem exhibit high resistance, particularly in LRT and Urine. Meropenem and Piperacillin-tazobactam show moderate resistance, with better susceptibility in Superficial and LRT infections. Overall, Amikacin is the most susceptible, while Cefepime and Ceftazidime are the most resistant.

Susceptible pattern isolated in different health care areas from all specimens (except faeces).

AMA	Total	OPD	Ward	ICU
	n=438	n=93	n=250	n=95
	S %	S %	S %	S %
Amikacin	81.5	89.4	82.8	70.5
Cefepime	37.8	40.9	40.4	27.7
Ceftazidime	36.9	42.6	36.8	31.6
Ciprofloxacin	43.3	52.1	43.2	34.7
Gentamicin	82.7	88.3	84	73.7
Imipenem	42.4	45.7	43.2	36.8
Levofloxacin	40.8	52.1	39.2	33.7
Meropenem	69.2	74.5	75.2	48.4
Piperacillin-tazobactam	66.3	78.7	66	54.7
Tobramycin	86.7	93.6	88.3	75.8

The antibiotic susceptibility patterns (S%) across different hospital units (OPD, Ward, ICU) for 439 bacterial isolates. Amikacin, gentamicin, and tobramycin show the highest overall susceptibility, especially in OPD and Ward settings, with ICU showing lower susceptibility. Cefepime, ceftazidime, imipenem, and levofloxacin demonstrate lower susceptibility, especially in ICU cases.

NFGNB Yearly trends

AMA	Year-2018	Year-2019	Year-2020	Year-2021	Year-2022	Year-2023	Year-2024
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	n=86	n=301	n=284	n=378	n=546	n=706	n=884
Amikacin	51.76	68.47	53.24	62.75	62.45	58.1	56.77
Cefepime	38.16	50.83	28.06	16.29	20.78	22.9	24.74
Ceftazidime	42.31	40.99	35.87	11.97	12.04	22.73	14.33
Ciprofloxacin	70.83	67.88	54.17	62.09	36.46	45.95	45.24
Gentamicin	78.05	74.23	69.62	81.67	73.82	84.68	72.51
Imipenem	55.38	52.94	34.07	36.84	44.06	36.74	18.69
Levofloxacin	75.32	61.93	40.16	35.47	34.15	33.14	35.83
Meropenem	71.43	71.59	50	58.21	59.81	50	40.6
Minocycline	40	91.11	83.33	74.71	77.1	56.66	48.15
Piperacillin-tazobactam	60.71	50	36	23.03	48.77	47.16	40.02
Tobramycin	71.79	83.54	84.38	83.85	77.04	85.96	78.99
Trimethoprim-sulfamethoxazole	100	0	66.67	81.82	92.31	100	100

The data summarizes the antimicrobial susceptibility percentages of various antibiotics from 2018 to 2024, with sample sizes ranging from 86 to 884 each year. Key trends include:

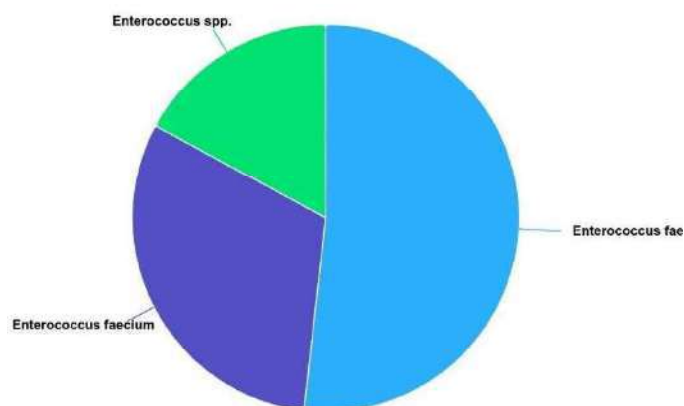
- Amikacin: Stable susceptibility (56-69%).
- Cefepime: Decreasing trend from 38.16% in 2018 to 24.74% in 2024.
- Ceftazidime: Significant drop to 11.97% in 2021, with slight recovery afterward.
- Ciprofloxacin: Fluctuates around 45% in recent years, down from 70.83% in 2018.
- Gentamicin: High susceptibility, peaking in 2023.
- Imipenem: Decreases sharply from 55.38% to 18.69%.
- Levofloxacin: Below 40% in the last three years.
- Meropenem: Declines to 40.6% in 2024.
- Minocycline: High in 2019 (91.11%) but decreasing since.
- Piperacillin-tazobactam: Drops from 60.71% to 40.02%.
- Tobramycin: Generally high, with some fluctuation.
- Trimethoprim-sulfamethoxazole: Starts at 100%, drops to 0% in 2019, then returns to 100% in 2024.

Overall, the data highlights trends in antibiotic resistance, with varying susceptibility among all antibiotics.

Chapter-4 Enterococci

Enterococci accounted for **631 (9.85%)** of the total 6407 culture-positive cases. The majority of Enterococci isolates were from urine samples, with 491 cases (77.8%), followed by lower respiratory tract (5.4%), superficial infections (11.1%), and other sites (3.6%). Blood cultures had only 9 cases (1.4%), while CSF, deep infections, and surgical sites reported no isolates. This highlights urine as the predominant source of Enterococci infections in the dataset.

Bacteria (Group/Sub-group/Species)	Number of isolates (n)	Percent (%)
<i>Enterococcus faecalis</i>	327	51.8
<i>Enterococcus faecium</i>	196	31.1
<i>Enterococcus spp.</i>	108	17.1
TOTAL	631	100



Susceptible percentages of Enterococci isolated from different specimen (except urine).

AMA	All Specimens (except urine)		LRT	Superficial Infection	
	Enterococcus faecalis	Enterococcus faecium	Enterococcus faecalis	Enterococcus faecalis	Enterococcus faecium
	n=77	n=33	n=20	n=42	n=*15
Ampicillin	54.5	9.1	50	54.8	-
Gentamicin_HL	81.8	66.7	95	73.8	-
Linezolid	96.1	100	95	97.6	-
Penicillin	57.1	9.1	45	59.5	-
Teicoplanin	79.2	97	65	81	-
Vancomycin	97.4	100	100	97.6	-

Note: Analysis is not performed for samples sizes lesser than 20 isolates.

The antimicrobial susceptibility data for *Enterococcus faecalis* and *Enterococcus faecium* isolates from various infection sites, including all specimens (except urine), the lower respiratory tract (LRT), and superficial infections, reveals distinct trends.

For *E. faecalis*, ampicillin shows moderate susceptibility, particularly in all specimens (54.5%) and LRT isolates (50%), while susceptibility for *E. faecium* is notably lower. High-level gentamicin (HL) exhibits excellent susceptibility, especially for LRT *E. faecalis* (95%), though slightly lower for other categories. Linezolid demonstrates excellent activity across all groups, with susceptibility ranging from 95% to 100%. Penicillin mirrors ampicillin trends, while teicoplanin shows high susceptibility overall, though lower for LRT *E. faecalis* (65%). Vancomycin remains highly effective, with nearly 100% susceptibility in most groups. Some data for *E. faecium* is incomplete for certain antibiotics.

Susceptible percentages of Enterococci isolated from Urine.

AMA	Urine	
	Enterococcus faecalis	Enterococcus faecium
	n=250	n=163
Ampicillin	41.2	11.7
Ciprofloxacin	16	9.8
Gentamicin_HL	61	52.1
Linezolid	95.6	100
Nitrofurantoin	70.7	45.4
Penicillin	39.6	14.1
Teicoplanin	96.4	93.9
Vancomycin	99.2	100

The antimicrobial susceptibility of *Enterococcus faecalis* (n=250) and *Enterococcus faecium* (n=163) isolates from urine samples. *E. faecalis* showed higher susceptibility to ampicillin (41.2%), ciprofloxacin (16%), gentamicin (61%), nitrofurantoin (70.7%), and penicillin (39.6%) compared to *E. faecium*, which had lower susceptibility rates for the same antibiotics: ampicillin (11.7%), ciprofloxacin (9.8%), gentamicin (52.1%), nitrofurantoin (45.4%), and penicillin (14.1%). Both species displayed high susceptibility to linezolid (*E. faecalis* 95.6%, *E. faecium* 100%), teicoplanin (*E. faecalis* 96.4%, *E. faecium* 93.9%), and vancomycin (*E. faecalis* 99.2%, *E. faecium* 100%). This highlights higher resistance in *E. faecium*, especially to β -lactam antibiotics.

Susceptible pattern of *Enterococci* isolated in different health care areas from all specimens (except faeces).

AMA	Enterococcus faecalis				Enterococcus faecium			
	Total	OPD	Ward	ICU	Total	OPD	Ward	ICU
	n=327	n=126	n=175	n=26	n=195	n=37	n=122	n=36
Ampicillin	44.3	52.4	42.9	15.4	11.3	29.7	9	0
Ciprofloxacin	16	18.6	15.6	-	9.8	18.2	9.6	0
Fosfomycin	52	48.5	51.9	-	-	-	-	-
Gentamicin_HL	66	76.2	60.9	50	54.9	67.6	54.9	41.7
Linezolid	95.7	95.2	96.6	92.3	100	100	100	100
Nitrofurantoin	70.7	78.4	65.7	-	45.4	60.6	40.4	46.2
Penicillin	43.7	51.6	41.7	19.2	13.3	29.7	11.5	2.8
Teicoplanin	92.4	93.7	92.6	84.6	94.4	97.3	92.6	97.2
Vancomycin	100	100	97.7	100	100	100	100	100

This antimicrobial susceptibility profile evaluates the resistance of *Enterococcus faecalis* and *Enterococcus faecium* from various clinical settings—OPD, wards, and ICU.

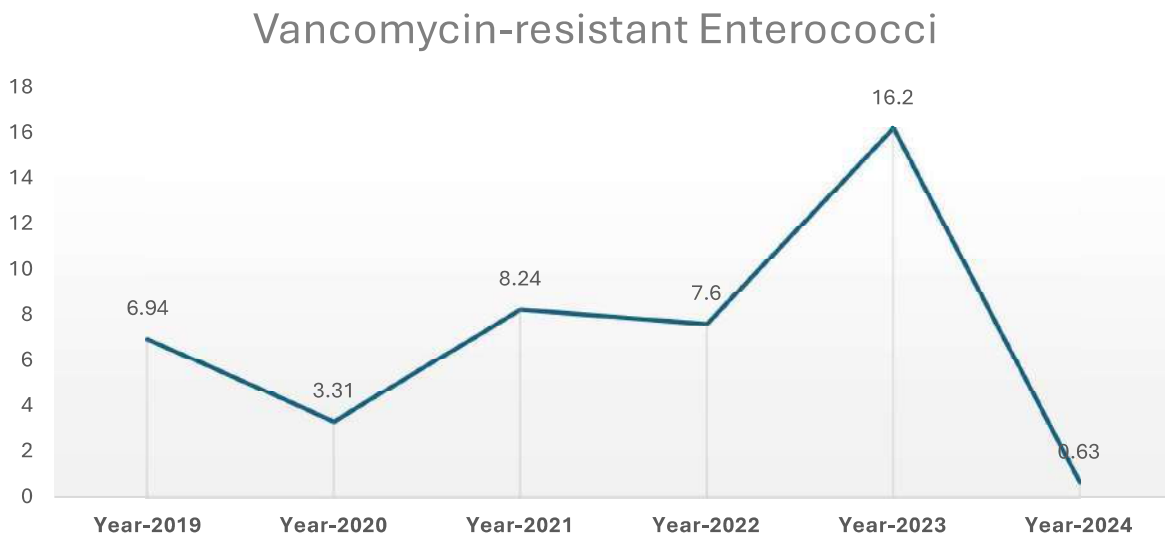
Among 327 *E. faecalis* isolates, Ampicillin susceptibility was 44.3%, highest in OPD (52.4%) and lowest in ICU (15.4%). Susceptibility rates for Ciprofloxacin and Fosfomycin were 16% and 52%, respectively. High-level Gentamicin susceptibility was 66%, while Linezolid showed a high sensitivity of 95.7%. Vancomycin showed susceptibility at 100%

For 195 *E. faecium* isolates, Ampicillin susceptibility was lower at 11.3%. Linezolid and Vancomycin both showed 100% sensitivity. Nitrofurantoin and Penicillin susceptibility were significant, especially in the ICU, with rates of 46.2% and 2.8%, respectively. Teicoplanin also showed high susceptibility at 94.4%. Overall, the data indicate varying susceptibility patterns across clinical settings, particularly in the ICU.

Year wise susceptibility trends of Enterococci from all samples

AMA	Year-2018	Year-2019	Year-2020	Year-2021	Year-2022	Year-2023	Year-2024
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	n=41	n=145	n=154	n=254	n=387	n=550	n=635
Ampicillin	35.71	37.88	23.08	22.73	16.84	31.45	28.19
Ciprofloxacin	23.33	36.36	28.57	26.47	13.73	12.2	12.38
Fosfomycin	75	96.72	93.69	86.34	70.81	60.2	38.29
Gentamicin_HL	64.86	52.86	56.67	57.26	64.34	63.5	62.52
Linezolid	65.85	89.58	92	95.97	88.63	85.64	97.64
Nitrofurantoin	64.52	54.17	50.89	67.36	71.13	59.37	60.9
Penicillin	0	0	0	0	0.83	17.09	27.09
Teicoplanin	90.32	90.71	95.27	92.4	86.49	87.82	95.11
Vancomycin	100	93.06	96.69	91.76	92.4	83.8	99.37

Vancomycin-resistant Enterococci yearly trends



Yearly trends of isolation rate (%) of Enterococcus

