

Central Salt Lake County, UT

Antibiograms summarize local antimicrobial resistance profiles, supporting clinicians in selecting appropriate empiric antibiotics prior to the availability of organism-specific susceptibility. The tables below show the **percentage of microbial isolates susceptible to various antibiotics**. The data was collected in 2024 from Intermountain Health emergency departments and inpatient facilities within the stated geographical region.

Definitive antibiotic therapy should be based on the causative organism(s) susceptibility profile and clinical context once identified.

Susceptibility Rates (%) of Gram-Negative Isolates to Common Antimicrobials

N (#)	Species/Organism	Amoxicillin/ Clavulanate	Ampicillin/ Sulbactam	Cefazolin	Cefepime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Ertapenem	Gentamicin	Levofloxacin	Meropenem	Nitrofurantoin*	Piperacillin/ Tazobactam	Tetracycline	Tobramycin	TMP/SMX
59	<i>Citrobacter freundii</i> complex				90	69	61	88	100	97	92	100	93	85	68	98	88
41	<i>Citrobacter koseri</i>	97	100	95	100	95	100	100	100	98	100	100	70	98	100	98	100
207	<i>Enterobacter cloacae</i> complex				87	73	64	86	87	97	90	99	40	82	83	96	88
2620	<i>Escherichia coli</i>	80	60	81	89	88	88	74	100	89	79	100	94	98	68	90	72
106	<i>Klebsiella aerogenes</i> (Enter)				95	70	61	97	92	100	100	97	26	82	90	99	99
176	<i>Klebsiella oxytoca</i>	84	70	20	89	90	85	89	99	91	95	99	86	89	81	90	85
647	<i>Klebsiella pneumoniae</i>	83	78	82	85	84	84	81	99	93	90	100	50	96	81	92	82
45	<i>Morganella morganii</i>		13		93	76	80	69	98	76	67	100		98		80	60
266	<i>Proteus mirabilis</i>	94	86	78	98	98	96	71	100	89	73	100		100		89	76
422	<i>Pseudomonas aeruginosa</i>				87	88		79			77	91		85		98	
50	<i>Serratia marcescens</i>				92	62	72	92	98	100	94	98		82	14	96	93

Susceptibility Rates (%) of Gram-Positive Isolates to Common Antimicrobials

N (#)	Species/Organism	Ampicillin	Azithromycin	Ceftriaxone†	Clindamycin	Not For UTI	Daptomycin	Levofloxacin	Linezolid	Nafcillin	Nitrofurantoin*	Penicillin†	Tetracycline	TMP/SMX	Vancomycin
660	<i>Enterococcus faecalis</i>	99				57	84*	99		99	99	21		99	
142	<i>Enterococcus faecium</i>	39				68	21*	95		74	35	51		65	
350	MRSA				76	94		100		100	1	84	94	100	
804	MSSA				87	100		100	100	100	21	93	100	100	
228	<i>Staphylococcus epidermidis</i>				58	98		100	36	100	8	83	59	100	
43	<i>Staphylococcus lugdunensis</i>				100	100		100	91	100	47	96	100	100	
268	<i>Streptococcus anginosus</i> group	100	68	99	80		100	100			99			98	
55	<i>Streptococcus species</i> , Group A	100	100	98	82		98	100			98			100	
37	<i>Streptococcus species</i> , Group B	100		97	56		100	100			97			100	
63	<i>Streptococcus pneumoniae</i>	100	75	100	78		100	100			83	83	61	100	
74	<i>Streptococcus viridans</i> group	90	33	100	90		100	100			57	100		99	

* For cystitis only

† Not for meningitis

TMP/SMX=
trimethoprim/
sulfamethoxazole

- In 2024, 10% of *E. coli*, 8.5% of *K. oxytoca*, 2% of *P. mirabilis*, and 14% of *K. pneumoniae* screened positive for extended spectrum β -lactamase (ESBL).
- Aminoglycoside monotherapy is not recommended for most infections. Gentamicin is no longer recommended for *P. aeruginosa*.
- Certain organisms, including *Enterobacter cloacae*, *Klebsiella aerogenes*, and *Citrobacter freundii* can become resistant to 3rd-generation cephalosporins (ceftriaxone, cefotaxime, ceftazidime) during treatment of severe infections despite initial *in vitro* susceptibility. Cefepime may be an alternative option and higher doses may be required.
- Enterococcus* spp. are intrinsically resistant to cephalosporins. Fluoroquinolones (e.g., ciprofloxacin, levofloxacin) should not be used to treat any enterococcal infection except uncomplicated cystitis in patients with severe penicillin allergy.
- Ertapenem is not active against *Pseudomonas*, *Acinetobacter*, or *Enterococcus* spp.

- Beta-lactamase positive *Haemophilus* spp. are resistant to penicillin, ampicillin, and amoxicillin.
- Beta-hemolytic streptococci (Groups A, B, C, G) are universally susceptible to β -lactams (penicillins, cephalosporins) and vancomycin; therefore routine susceptibility testing is not needed for these agents. However, resistance to clindamycin and azithromycin can be present.
- Methicillin-susceptible *Staphylococcus aureus* (MSSA) are resistant to penicillin, ampicillin, and amoxicillin. First-line agents are nafcillin/dicloxacillin and cefazolin/cephalexin. Second-line agents include: amoxicillin/clavulanate, ampicillin/sulbactam, cefuroxime, and ceftriaxone.
- S. aureus* bacteremia in adults must be treated with intravenous antibiotics and infectious diseases should be consulted. Outcomes with β -lactam treatment for MSSA are better than vancomycin. ***S. aureus* in the blood is never a contaminant.**