

Using this Antibioqram

- This antibiogram serves as a valuable tool for guiding empiric antimicrobial therapy when a presumptive diagnosis has been made and a likely causative organism is suspected.
- The numerical values in the chart represent the percentage of isolates that are susceptible to each antimicrobial agent. To ensure accuracy, only the first isolate of a given species per patient is included in the susceptibility calculations.
- Cefazolin susceptibility may differ significantly between urine and non-urine sources. Non-urine isolates typically demonstrate higher resistance rates.
- An absence of reported data indicates either intrinsic resistance of the organism to the antibiotic or insufficient isolate numbers (fewer than ten) to generate a reliable percentage.
- Resistance patterns may vary across hospital units. Organisms isolated from intensive care or specialized units may exhibit higher resistance compared with those from general medical floors. Susceptibility data should therefore be applied thoughtfully, with careful consideration of the clinical context.
- Footnotes contain important clarifications and recommendations relevant to antimicrobial selection and should be reviewed carefully. Pharmacy or microbiology consults are available.
- Once patient-specific culture and susceptibility results are available, antimicrobial therapy should be reassessed and modified as appropriate to ensure optimal treatment.
- Pharmacy and microbiology teams are available for consultation as needed.

Contact Information

Pharmacy Services	Ext. 5063
Kasie Landin, ID Pharmacist	Ext. 4718
Microbiology Lab	Ext. 2338
Kimberly Jennings, Microbiology Supervisor	Ext. 2452

Footnotes are adapted from the Clinical and Laboratory Standards Institute (CLSI) M100-36th Edition

a = Methicillin (Oxacillin) resistant staphylococci (MRS) are considered resistant to currently available beta-lactam class of agents, i.e., penicillins, β -lactam combination agents, cepheems (except for ceftaroline) and carbapenems.

b = Isolates that are sensitive to tetracycline are also considered sensitive to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycycline and minocycline or both.

c = The following antimicrobial agents should not be used for bacteria isolated from the CSF: agents administered by oral route only, 1st and 2nd generation cephalosporins and cephamycins, doripenem, ertapenem, imipenem, clindamycin, Lefamulin, macrolides, and tetracyclines.

d = Susceptibility to azithromycin and clarithromycin can be predicted by testing erythromycin.

e = Enterobacterales that produce ESBLs (Extended-Spectrum Beta-lactamases) may be clinically resistant to therapy with penicillins, cephalosporins, or aztreonam, despite apparent *in vitro* susceptibility to some of these agents.

f = Combination therapy of ampicillin, amoxicillin, penicillin, or vancomycin (for susceptible strains only), plus an aminoglycoside, is usually indicated for serious enterococcal infections, such as endocarditis, unless high-level resistance to both gentamicin and streptomycin is documented; such combinations are predicted to result in synergistic killing of the enterococci.

g = Not routinely used on organisms from the urinary tract.

h = Recommended for use only against isolates in the urinary tract.

i = Rifampin should not be used alone for antibiotic therapy.

j = *Serratia*, *Pseudomonas/Providencia*, *Acinetobacter*, *Citrobacter*, and *Enterobacter* (SPACE organisms) may develop resistance during prolonged therapy with third-generation cephalosporins due to derepression of AmpC- beta lactamase. As a result, isolates that are initially susceptible may become resistant within a few days after initiation of therapy. Repeat susceptibility testing may be warranted if clinically indicated.

Generic Name	Trade Name	Dosage grams / dose	Dosing schedule	Daily drug cost
Penicillins				
Amoxicillin/clavulanate *	Augmentin	0.5	3	\$
Ampicillin	Omnipen	0.5	4	\$
Ampicillin/sulbactam	Unasyn	1.5	4	\$
Nafcillin *		1	6	\$
Penicillin VK		0.5	4	\$
Penicillin G Potassium		5 MU	4	\$
Piperacillin/tazobactam	Zosyn	3.375	3	\$
Cephalosporins				
Cefazolin	Ancel	1	3	\$
Cefdinir *	Omnicef	0.3	2	\$
Cefoxitin *		1	4	\$
Cefuroxime *	Ceftin	0.5	2	\$
Cefazidime	Fortaz	1	3	\$
Ceftriaxone	Rocephin	1	1	\$
Cefepime	Maxipime	1	3	\$
Cefiderocol	Fetroja	2	3	\$\$\$\$
Ceftaroline *	Teflaro	0.6	2	\$\$\$\$
Cephalexin *	Keflex	0.5	4	\$
Aminoglycosides				
Amikacin		1	1	\$
Gentamicin		0.5	1	\$
Tobramycin *		0.5	1	\$
Macrolides				
Azithromycin *	Zithromax	0.5	1	\$
Erythromycin	Erythrocin	0.25	4	\$
Fluoroquinolones				
Ciprofloxacin	Cipro	0.4	2	\$
Levofloxacin	Levaquin	0.5	1	\$
Monobactams				
Aztreonam	Azactam	1	3	\$\$\$
Carbapenems				
Ertapenem	Invanz	1	1	\$
Meropenem	Merrem	1	3	\$
Others				
Clindamycin	Cleocin	0.6	4	\$
Daptomycin *	Cubicin	0.5	1	\$
Linezolid	Zyvox	0.6	2	\$
Nitrofurantoin	Macrobid	0.1	2	\$
Rifampin	Rifadin	0.6	1	\$\$\$\$\$
Doxycycline *	Vibramycin	0.1	2	\$
Trimethoprim/sulfamethoxazole	Bactrim	1	2	\$
Vancomycin	Vanocin	1	2	\$
* Antimicrobial susceptibility not performed on these antibiotics		Cost key: \$= \$0-25 \$\$= \$25.01-50 \$\$\$= \$50.01-75 \$\$\$\$= \$75.01-100 \$\$\$\$\$= \geq \$100		

2025 ANTIBIOGRAM

Antibiotic Cumulative Summary

2026 Antibiogram Based on 2025 Data

1001 Bellefontaine Avenue | Lima, OH
419-228-3335 | limamemorial.org/physician-portal

 **Lima Memorial**
HEALTH SYSTEM
Affiliate of ProMedica

INPATIENTS Lima Memorial Health System 2025																
% Susceptible	Trade Name	Trade Name														
		<i>Enterobacter cloacae</i> complex ¹	<i>Escherichia coli</i>	<i>Escherichia coli</i> ESBL ^e	<i>Klebsiella oxytoca</i>	<i>Klebsiella pneumoniae</i>	<i>Proteus mirabilis</i>	<i>Pseudomonas aeruginosa</i>	<i>Serratia marcescens</i> ¹	<i>Enterococcus faecalis</i> ^f	<i>Enterococcus faecium</i> VRE	<i>Enterococcus faecium</i>	MRSA (Methicillin-resistant <i>Staphylococcus aureus</i>) ^a	MSSA (Methicillin-sensitive <i>Staphylococcus aureus</i>)		
# Isolates		301	3,093	581	233	1,243	1,030	657	254	979	143	89	1,232	1,505		
Penicillins																
Ampicillin	Omnipen		60	0	0	0	85			100	0	25				
Ampicillin/sulbactam	Unasyn		70	19	87	89	95									
Oxacillin	Bactocil											0	100			
Penicillin	BenPen									99	0	25	0	0		
Piperacillin/tazobactam	Zosyn	87	97	84	100	90	100	91								
Cephalosporins																
Cefazolin ^c	Ancef	0	92	0	88	98	96	2	0							
Cefotaxime ^j	Claforin															
Ceftazadime ^j	Fortaz	85	98	0	100	100	98	93	100							
Ceftriaxone ^j	Rocephin	69	97	0	100	98	97		100							
Cefepime	Maxipime	100	99	5	100	100	97	95	100							
Aminoglycosides																
Amikacin	Amikin	100	100	95	100	100	100	98	100							
Gentamicin	Garamycin	87	93	78	100	96	100	93	100			100	100			
Macrolides																
Erythromycin ^{c, d, g}	Erythrocin									16	8	0	6	73		
Fluoroquinolones																
Ciprofloxacin	Cipro	83	78	11	100	96	82	86	95	88	0	25	22	97		
Levofloxacin	Levaquin	70	76	0	100	89	77	83	83	88	0	25	22	98		
Moxifloxacin	Avelox												43	100		
Monobactam																
Aztreonam	Azactam	85	97	15	100	100	98		100							
Carbapenems																
Ertapenem ^c	Invanz	95	100	97	100	100	98		100							
Meropenem	Merrem	100	100	100	100	100	100	95	100							
Others																
Clindamycin ^{c, g}	Cleocin											62	77			
Linezolid	Zyvox								96	85	100	100	100			
Nitrofurantoin ^h	Macrobid	39	98	84	93	44	0		0	99	15	50	100	100		
Rifampin ⁱ	Rifadin											100	100			
Tetracycline ^{b, c}									27	0	25	68	95			
Trimethoprim/sulfamethox.	Bactrim	91	81	46	100	96	88		100			58	99			
Vancomycin	Vancocin								100	0	100	100	100			

OUTPATIENTS Lima Memorial Health System 2025																
% Susceptible	Trade Name	Trade Name														
		<i>Citrobacter koseri</i> ¹	<i>Enterobacter cloacae</i> complex ¹	<i>Escherichia coli</i>	<i>Escherichia coli</i> ESBL ^e	<i>Klebsiella aerogenes</i> ¹	<i>Klebsiella oxytoca</i>	<i>Klebsiella pneumoniae</i>	<i>Morganella morganii</i>	<i>Proteus mirabilis</i>	<i>Pseudomonas aeruginosa</i>	<i>Serratia marcescens</i> ¹	<i>Enterococcus faecalis</i> ^f	MRSA (Methicillin-resistant <i>Staphylococcus aureus</i>) ^a	MSSA (Methicillin-sensitive <i>Staphylococcus aureus</i>)	
# Isolates		203	644	17,046	970	380	786	1,243	206	1,030	657	254	1,241	1,232	1,505	
Penicillins																
Ampicillin	Omnipen			62	0	0	0	0	85			100				
Ampicillin/sulbactam	Unasyn			70	34	87	93	0	95							
Oxacillin	Bactocil													0	100	
Penicillin	BenPen											99	0	0		
Piperacillin/tazobactam	Zosyn	100	92	98	95	82	100	93	100	100	91					
Cephalosporins																
Cefazolin ^c	Ancef	100	0	97	0	0	88	100	0	96	2	0				
Cefotaxime ^j	Claforin															
Ceftazadime ^j	Fortaz	100	82	99	0	82	100	100	63	98	93	100				
Ceftriaxone ^j	Rocephin	100	79	99	2	82	100	100	95	97		100				
Cefepime ^j	Maxipime	100	100	100	6	100	100	100	100	97	95	100				
Aminoglycosides																
Amikacin	Amikin	100	100	100	97	100	100	100	100	98	100					
Gentamicin	Garamycin	100	100	92	81	100	100	100	86	100	93	100		100	100	
Macrolides																
Erythromycin ^{c, d, g}	Erythrocin												14	6	73	
Fluoroquinolones																
Ciprofloxacin	Cipro	100	94	86	27	96	100	93	86	82	86	95	88	22	97	
Levofloxacin	Levaquin	100	86	85	9	100	100	100	100	77	83	83	89	22	98	
Moxifloxacin	Avelox													43	100	
Monobactams																
Aztreonam	Azactam	100	82	100	18	88	100	100	100	98		100				
Carbapenems																
Ertapenem ^c	Invanz	100	100	100	100	100	100	100	100	98		100				
Meropenem	Merrem	100	100	100	100	100	100	100	100	100	95	100				
Others																
Clindamycin ^{c, g}	Cleocin													62	77	
Linezolid	Zyvox												96	100	100	
Nitrofurantoin ^h	Macrobid	87	41	97	90	14	93	53	0	0		0	100	100	100	
Rifampin ⁱ	Rifadin													100	100	
Tetracycline ^{b, c}													24	68	95	
Trimethoprim/sulfamethox.	Bactrim	100	96	81	45	100	100	100	71	88		100		58	99	
Vancomycin	Vancocin												100	100	100	