

## ➤ Antimicrobial Stewardship and Laboratory Services



### Find antimicrobial stewardship resources.

- **The Antimicrobial Stewardship Website** — A single source for the latest guidelines, care process models, and other resources. Go to [intermountain.net](http://intermountain.net), and find “**Antimicrobial Stewardship**” in the A-to-Z Index or by typing “[abx/](#)” in the address bar. From the left navigation, select:
  - “Tracking and Reporting” for online antibiograms
  - “Guidelines and Education” for related care process models
- **GermWatch** — The best resource for finding out “what’s going around.” Click on “**GermWatch**” in the A-to-Z Index on [intermountain.net](http://intermountain.net). Scroll down to select “Antibiogram Pocket Cards” under Resources.
- **Formulary** — Go to [intermountain.net](http://intermountain.net), hover over “Clinical,” and click on “Pharmacy” listed under Clinical Support Services. Select “Formulary Resources” within the left navigation.
- **Antibiogram Tool** — Access this online, interactive reporting tool by typing “[antibiogram/](#)” in the address bar of either your Google or Internet Explorer browser.



### Consult with infectious disease experts.

Infectious diseases experts can answer your patient-related questions. Consider a full infectious diseases consult for:

- Home IV antibiotic therapy
- *S. aureus* and Candida bloodstream infections
 

**Note:** never bloodstream contaminants
- Endocarditis
- Central nervous system infections
- Resistant organisms
- Herpes simplex virus in children < 60 days old
- Pediatric bone and joint infections
- Non-formulary and these restricted antimicrobials (see formulary):
  - Ceftaroline
  - Ceftazidime/avibactam
  - Ceftolozane/tazobactam
  - Isavuconazole
  - Posaconazole
  - Voriconazole

#### Contact information:

##### Stewardship Pharmacists

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##### Infectious Diseases Pharmacist

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**Antibiograms are internal tools for inpatient use only and represent all sample types. Please do not share with commercial vendors.**

**For organisms with less than 30 isolates, interpret cautiously as they may not be accurate.**

# 2019 Antibiogram

## American Fork, Orem, & Utah Valley Hospitals

Antibiograms help clinicians select empiric antibiotics until organism susceptibility has been determined. Percentages are based on emergency room and inpatient isolates processed in the microbiology lab over the previous one-year period. Determine definitive antibiotic therapy based on the susceptibility profile of the identified organism(s) and the infection site.

### Gram-Negative Bacilli % Susceptible

# Tests	Species / Organism	Amikacin	Ampicillin / Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Gentamicin	Levofloxacin	Meropenem	Nitrofurantoin (CYSTITIS ONLY)	Piperacillin / Tazobactam	Tetracycline	Tobramycin	Trimethoprim / Sulfamethoxazole
1995	<i>Escherichia coli</i>	99	56	92	84	93	93	93	81	91	82	100	98	96	76	91	74
380	<i>Klebsiella pneumoniae</i>	99	81	91	87	92	92	91	92	93	96	100	39	97	79	94	86
238	<i>Pseudomonas aeruginosa</i>	97		81		91	95		83	89	81	90		95		97	
130	<i>Proteus mirabilis</i>	99	74	93	80	98	98	98	60	82	63	100		98		84	55
107	<i>Enterobacter cloacae</i>	100		75		97	73	71	92	98	95	100	15	82	75	98	85
99	<i>Klebsiella oxytoca</i>	98	75	92	46	93	93	92	93	90	99	100	85	95	87	90	91
60	<i>Klebsiella aerogenes</i>	98		90		98	83	83	95	98	98	100	12	83	89	100	97
50	<i>Citrobacter freundii</i>	98		82		94	82	82	90	94	90	98	83	92	85	94	82

### Gram-Positive Cocci % Susceptible

# Tests	Species / Organism	Ampicillin	Ceftriaxone	Ceftriaxone (meningitis)	Clindamycin (NOT FOR UTI)	Daptomycin	Levofloxacin (CYSTITIS ONLY)	Linezolid	Nafcillin	Nitrofurantoin (CYSTITIS ONLY)	Penicillin	Penicillin (meningitis)	Tetracycline	Trimethoprim / Sulfamethoxazole	Vancomycin
510	<i>Staphylococcus aureus</i> MSSA		100		87	100		100	100	100			96	97	100
394	<i>Enterococcus faecalis</i>	99				99	81	99		100	99		24		100
278	<i>Staphylococcus aureus</i> MRSA				70	99		100		100			94	100	100
182	<i>Staphylococcus epidermidis</i>		29		53	98		100	29	100			88	68	99
96	<i>Enterococcus faecium</i>	19				89	15	99		62	17		24		38
57	<i>Staphylococcus sp coag neg</i>		71		71	98		100	71	100			96	85	100
The organisms below have < 30 isolates, interpret cautiously as they may be inaccurate.															
28	<i>Streptococcus pneumoniae</i>		100	100	88		88	100			95	92	81	89	100

#### BASIC COVERAGE TIPS

- Aminoglycoside monotherapy is not recommended to treat any infection except for plague and tularemia.
- Certain organisms, including *Serratia* spp., *Citrobacter* spp., *Enterobacter* spp., and *Klebsiella aerogenes* can become resistant to 3rd-generation cephalosporins (ceftriaxone, cefotaxime, ceftazidime) during treatment for severe infections despite initial in vitro susceptibilities. Consult infectious diseases or antibiotic stewardship if use is desired.
- *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.

- Beta-lactamase positive *Haemophilus* spp. are resistant to penicillin, ampicillin, and amoxicillin.
- $\beta$ -hemolytic streptococci (Groups A, B, C, G) are universally susceptible to  $\beta$ -lactams (penicillins, cephalosporins) and vancomycin, so routine susceptibility testing is not indicated. 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, ceftriaxone, cefepime, piperacillin / tazobactam, and carbapenems. *S. aureus* bacteremia in adults must be treated with intravenous antibiotics and infectious diseases should be consulted. Outcomes with  $\beta$ -lactam treatment for MSSA are better than vancomycin. ***S. aureus* in the blood is never a contaminant.**