Ascension Via Christi Hospitals Wichita (AVCHW)

Antibiogram of Clinical Isolates Collected January 1, 2025 – December 31, 2025

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Infection Prevention and Control	268-5610
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Infectious Diseases Stewardship Physician On-Call	Page through the operator "0"

Clinical Pearls

Diabetic Foot Infections	• Low incidence of *P. aeruginosa* & MRSA isolated from DFI in the US • Empiric therapy should NOT include antipseudomonal treatment unless *P. aeruginosa* previously isolated • Empiric therapy should NOT include anti-MRSA treatment unless MRSA previously isolated, is colonized, or has other MRSA risk factors: Prolonged and/or recent hospitalization, intensive care admission, nursing home admission, recent antibiotic use, invasive procedures, HIV infection, hemodialysis, discharge with long-term central venous access • Consider ampicillin/sulbactam or ceftriaxone + metronidazole for empiric therapy
Enterococcus	• *E. faecalis* is 99% susceptible to ampicillin, so no need to wait for susceptibilities before de-escalating to IV ampicillin or PO amoxicillin (drugs of choice) • *E. faecium* is only 17% susceptible to ampicillin & 37% susceptible to vancomycin, so consider linezolid or daptomycin pending final culture • Cephalosporins do not cover *Enterococcus*
***S. aureus* Bacteremia**	• *S. aureus* isolated from a blood culture is <u>never</u> considered a contaminant and should prompt further investigation for a source • All patients with *S. aureus* bacteremia should have an ID consult as numerous studies have shown decreased mortality • De-escalate to cefazolin or nafcillin (drugs of choice) for MSSA since targeted beta-lactam therapy decreases risk of mortality compared to vancomycin
Gram-Negative Bacteremia	• Uncomplicated GNR bacteremia may be treated for 7 days if clinically improved and source controlled • Consider 10-14+ days and ID consult for complicated bacteremia (severely immunocompromised, retained foreign materials, deep-seated infections) • Repeat blood cultures NOT recommended to confirm clearance • Consider stepping down to highly bioavailable oral antibiotic with clinical improvement: o Amoxicillin 1000 mg PO q8h ~70-80% Bioavailability o Amox-clav 875-1000 mg PO q8h ~70-80% Bioavailability o Cephalexin 1000 mg PO q6-8h ~95% Bioavailability o Ciprofloxacin 750 mg PO q12h ~70% Bioavailability o Levofloxacin 750 mg PO q24h ~99% Bioavailability o TMP-SMX 5 mg/kg PO q12h (based on TMP) ~100% Bioavailability

De-escalation Tips

- Antibiotic time-out at 48 hours (at a minimum) to evaluate the patient and determine if antibiotics are appropriate.
- De-escalation can occur both when specific organisms have been isolated or when no specific organism has been isolated (e.g., Normal flora, MRSA nasal screen negative).
- When narrowing based on C&S, do not compare MIC values because they are specific to each organism and drug. A lower MIC does not necessarily mean a better agent.
- Use the shortest effective treatment duration for each infection.
- De-escalate to the narrowest spectrum agent when possible (e.g., Do not use a 3rd generation cephalosporin like ceftriaxone when an isolate is susceptible to a 1st generation cephalosporin like cefazolin).

Resistance Trends

MRSA*	42%
VRE	19%
ESBL-producing *E. coli*	18%
ESBL-producing *K. pneumoniae*	18%

***Vancomycin MIC ≤1 for 99% of MRSA**

AVCHW Gram-positive Organisms (% susceptible)

	Number of Isolates (n)	Ampicillin	Penicillin	Nafcillin (Oxacillin tested) *d*	Ceftriaxone (Meningitis)	Ceftriaxone (Non-Meningitis)	Gentamicin (Synergy) *e*	Levofloxacin	Clindamycin	Tetracycline *f*	Erythromycin *g*	Nitrofurantoin *h*	Trimethoprim/sulfamethoxazole	Vancomycin	Linezolid
Enterococcus faecalis	**505**	99%					83% SYN			29%		99%		99%	
Enterococcus faecium	**220**	17%					98% SYN			12%		29%		37%	98%
MRSA (Methicillin-resistant *S. aureus*)	**446**			0%					71%	82%	16%		93%	100%	
MSSA (Methicillin-susceptible *S. aureus*)	**599**			100%					74%	91%	65%		98%	100%	
CoNS (Coagulase-negative staphylococci)	**281**			43%					58%	82%	40%		70%	100%	
Streptococcus pneumoniae	**123**		100% *c*		96%	100%		99%		80%	57%		80%	100%	
VGS (Viridans group streptococci)	**218**		75%			96%		95%	80%	66%	62%			100%	
Adjust Dose for Renal Impairment		**Y**	**Y**	**N**	**N**	**N**	**Y**	**Y**	**N**	**N**	**N**	**§**	**Y**	**Y**	**N**
Cost		**$$**	**$$**	**$$$**	**$**	**$**	**$**	**$**	**$**	**$**	**$**	**$**	**$**	**$**	**$$**

a. First isolate from each patient was included

b. Penicillin is the drug of choice for all beta-hemolytic streptococci. Resistance to penicillin has not been documented

c. Based on parenteral (non-meningitis) breakpoints

d. Nafcillin/oxacillin predicts cefazolin (**$**) and cephalexin (**$**) susceptibility

e. SYN=Synergy. Gentamicin must be used in combination only for gram-positive infections

f. Tetracycline predicts doxycycline/minocycline susceptibility

g. Erythromycin predicts azithromycin/clarithromycin susceptibility

h. Urine isolates only for *E. faecalis* (n=182) and *E. faecium* (n=48)

§ Not recommended for use when estimated CrCl <30 mL/min as urine concentrations are generally inadequate

AVCHW Gram-negative Organisms (% susceptible)

	Number of Isolates (n)	Ampicillin	Ampicillin/sulbactam *b*	Piperacillin/tazobactam *c*	Cefazolin	Ceftriaxone	Cefepime *c*	Meropenem	Ciprofloxacin	Trimethoprim/sulfamethoxazole	Gentamicin	Tobramycin	URINE ISOLATES ONLY	Number of Isolates (n)	Ciprofloxacin	Nitrofurantoin	Trimethoprim/sulfamethoxazole
Acinetobacter baumannii	**34**		79%				53%	65%	39%	76%							
Citrobacter freundii	**44**			77%			91%	100%	77%	87%	96%	100%					
Enterobacter cloacae	**215**			80%			91%	99%	93%	92%	98%	95%					
Escherichia coli (18.13% ESBL-producing)	**1428**	50%	63%	96%	67%	81%	91%	100%	63%	75%	90%	91%		**1069 h**	63%	96%	76%
Haemophilus influenzae	**48**	29% Beta-lactamase positive *d*															
Klebsiella aerogenes e	**71**			76%			99%	100%	92%	97%	100%	100%					
Klebsiella oxytoca (4.5% ESBL-producing)	**110**		70%	86%	76%	86%	97%	99%	93%	95%	98%	95%					
Klebsiella pneumoniae (17.9% ESBL-producing)	**514**		79%	95%	80%	82%	91%	99%	81%	95%	94%	91%		**311**	77%	33%	80%
Moraxella catarrhalis	**16**	88% Beta-lactamase positive *d*															
Morganella morganii	**52**			96%		95%	100%	100%	77%	88%	87%	94%					
Proteus mirabilis (1.74% ESBL-producing)	**287**	73%	86%	99%	43%	95%	98%	99%	80%	78%	92%	92%		**130**	76%		76%
Pseudomonas aeruginosa f	**608**			93%			93%	93%	78%			98%					
Stenotrophomonas maltophilia g	**64**									98%							
Serratia marcescens	**63**			88%		81%	95%	98%	96%	98%	98%	96%					
Adjust Dose for Renal Impairment		**Y**	**Y**	**Y**	**Y**	**N**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**			**Y**	**§**	**Y**
Cost		**$$**	**$$**	**$$**	**$**	**$**	**$$**	**$$**	**$**	**$**	**$**	**$**			**$**	**$**	**$**

a. First isolate from each patient was included

b. Ampicillin/sulbactam generally predicts amoxicilin/clavulante (**$**) susceptibility (except for *A. baumannii* which is intrinsically resistant)

c. A proportion of ESBL-producing Enterobacterales may be reported as susceptible to piperacillin/tazobactam or cefepime

d. Beta-lactamase negative strains may be treated with amoxicillin. Beta-lactamase positive strains require amoxicillin/clavulanate or ceftriaxone

e. Formerly named *Enterobacter aerogenes*

f. Optimize dosing to ahieve MIC targets (e.g., high-dose, prolonged infusion beta-lactams)

g. *S. maltophilia* susceptibilities for levofloxacin (89%). Minocycline susceptibilities available for sterile sites or upon request

h. Fosfomycin (**$$**) for ESBL *E. coli* urine isolates 98% susceptible (n=197)

§ Not recommended for use when estimated CrCl <30 mL/min as urine concentrations are generally inadequate

*Data from isolate totals <30 may be statistically unreliable