USING THIS ANTIBIOGRAM: This data represents susceptibility rates in this geographical area.
Use this information to choose EMPIRIC therapy that has expected coverage against suspected bacteria.

Inpatient & Outpatients Jan 2021- Dec 2022 Susceptibilities shown in % susceptible	Class↓	Aminoglycosides (AMG)	Penicillins			Cephalosporins (generation)	Furanes	Glycopeptide	Lincosamide	Oxazolidionone	Fluoroquinolones	Tetracyclines	Sulfonamide
Gram Positive Organisms↓	Number of Organisms	Gentamicin synergy	Ampicillin	Benzylpenicillin (Penicillin G)	Oxacillin	Cefazolin (1st)	Nitrofurantoin	Vancomycin	Clindamycin	Linezolid	Levofloxacin	Tetracycline	SMX/TMP
Susceptibility Breakpoints			GBS & Beta-hemolytic strep. ≤ 0.25; Other ≤ 8	*	lugdenesis & aureus ≤2, Others ≤ 0.5	≤ 8	≤ 32	S. aureus ≤ 2, Strep ≤ 1, Other ≤ 4	Staph ≤ 0.5, Strep ≤ 0.25	Staph ≤ 4, Other ≤ 2	Strep. ≤ 2	Strep. pneumo. ≤ 1; Other ≤ 4	≤ 40
Approx. drug cost/day ‡		$	$	$$	$$	$	$	$	$	$	$	$$	$
Enterococcus faecalis	370	100Δ	98	100			98	96					
Enterococcus faecium	286		35Δ				50Δ	50Δ		100Δ			
MRSA	400							99	58			79	86
MSSA	420				100	100			74			93	99
Coag Neg Staphylococcus	448				54	50Δ		98	62			83	85
Streptococcus agalactiae (GBS)	342		99	99				100	33		97		
Streptococcus pneumoniae	26Δ			88Δ					83Δ		95Δ	75Δ	
Streptococcus pyogenes (GAS)	32		100	100				100	51		93		

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this data represents susceptibility rates in this geographical area. Use this information to choose EMPIRIC therapy that has expected coverage against suspected bacteria.

LEGEND

SMX/TMP: Trimethoprim/Sulfamethoxazole

PIP/TAZO: Piperacillin/Tazobactam

Black: Antibiotic is NOT expected to cover this bacteria, should NOT be used to treat this bacteria or was NOT tested

Δ: Interpret with caution due to low organism count

VRE - 17 isolates
CRE - 11 isolates
ESBL+E.coli - 88
ESBL+Klebsiella - 20

‡: hospital cost based on severe disease in 70kg patient without renal impairment or monitoring

$: 0.01-19.99
$$: $20 - $49.99 per day
$$$: $50 - $74.99 per day
$$$$: $75 - $99.99 per day
$$$$: $100 - $250 per day

*: S. pneumo meningitis: ≤ 0.0625, S. pneumo pneumonia: ≤ 2, Enterococcus ≤ 8; Other: ≤ 0.125

Inpatient & Outpatients Jan 2021- Dec 2022 Susceptibilities shown in % susceptible	Class↓	Aminoglycosides (AMG)			Penicillins				Cephalosporins (generation)				Carbapenems	Furanes	Fluoroquinolones	Sulfonamide
Gram Negative Organisms↓	Number of Organisms	Amikacin	Gentamicin	Tobramycin	Ampicillin	Ampicillin/ Sulbactam	Amoxicillin/ Clavulanate	Pip/Tazo	Cefazolin (1st)	Cefoxitin (2nd)	Ceftriaxone (3rd)	Cefepime (4th)	Meropenem	Nitrofurantoin	Levofloxacin	SMX/TMP
Susceptibility Breakpoints		≤ 16	≤ 4	≤ 4	≤ 8	≤ 8	≤ 8	≤ 16 except Enterobacterales ≤ 8	E. Coli ≤ 16; Proteus ≤ 2; Other ≤ 8	≤ 8	Enterobacteriaceae ≤ 1; Other ≤ 8	Enterobacteriaceae ≤ 2; Other ≤ 8	Enterobacteriaceae ≤ 1; P. aeruginosa ≤ 2; Other ≤ 4	≤ 32	Enterobacteriaceae ≤ 0.5; Other ≤ 2	≤ 40
Approx. drug cost/day‡		$	$	$	$	$$	$	$$	$	$$	$	$$	$$	$	$	$
Acinetobacter baumannii	28		100			75							92		92	81
Citrobacter koseri	50		100					100			100		100	95	100	100
Citrobacter freundii	108		96					89				96	99	92	86	89
Enterobacter cloacae complex	193		98					87				96	98	34	88	88
Escherichia coli	3002	100	94	94	62	71	88	97	89	85	94		99	97	76	82
Klebsiella aerogenes (Enterobacter)	90		97	98				92				100	98	33	91	96
Klebsiella oxytoca	177		97				93	95	66	69	94		100	86	94	96
Klebsiella pneumoniae	640		98			100	97	95	95	90	95		99	44	87	91
Morganella morganii	54		83					96					100		62	74
Proteus mirabilis	397	100	92	94	72	100	100	99	87	91	95		99		64	75
Pseudomonas aeruginosa	383		96	99				91				96	90		77	
Serratia marcescens	84		100								96		100		95	100
Stenotrophamonas maltophilia	33Δ														87Δ	93Δ

PRE-OP ANTIBIOTIC RECOMMENDATIONS

GENERAL		
PROCEDURE	RECOMMENDED	ALTERNATE IF ALLERGIC
Appendectomy for uncomplicated appendicitis	cefoxitin or cefazolin + metronidazole	clindamycin + AMG or aztreonam or FQ OR metronidazole + AMG or FQ
Biliary tract	cefazolin or cefoxitin or ceftriaxone (if infected)	clindamycin or vancomycin + AMG or aztreonam or FQ OR metronidazole + AMG or FQ
Cardiac device insertion (pacer)	cefazolin	clindamycin or vancomycin
Colorectal	cefazolin + metronidazole OR ceftriaxone + metronidazole	clindamycin + AMG aztreonam or FQ OR metronidazole + AMG or FQ
Gastroduodenal	cefazolin	clindamycin or vancomycin + AMG or aztreonam or FQ
HEAD & NECK		
CLEAN	NONE	NONE
Clean with prosthesis (excludes tympanostomy tubes)	cefazolin or cefoxitin	clindamycin
Clean-contaminated (except tonsillectomy and functional endoscopic sinus procedures	cefazolin or cefoxitin + metronidazole	clindamycin
Hernia Repair - clean	cefazolin	clindamycin or vancomycin
C-Section	cefazolin	clindamycin + AMG
Hysterectomy (vaginal or abdominal)	cefazolin or cefoxitin	clindamycin + AMG or aztreonam or FQ OR metronidazole + AMG or FQ
Ophthalmic	neomycin/ polymixin/ B-gramicidin or moxifloxacin or gatifloxacin	
ORTHOPEDIC		
CLEAN W/O IMPLANT	NONE	NONE
Hip fracture, implant of internal fixation device, or total joint replacement	cefazolin	clindamycin or vancomycin
PLASTICS		
CLEAN	NONE	NON
Clean with risk factors or clean-contaminated	cefazolin	clindamycin or vancomycin
SMALL INTESTINE		
Non-obstructed	cefazolin	clindamycin + AMG or aztreonam or FQ
Obstructed	cefazolin + metronidazole OR cefoxitin	metronidazole + AMG or FQ
UROLOGIC		
Lower tract instrumentation with risk factors (includes transrectal prostate biopsy)	FQ or TMP/SMX or cefazolin	AMG +/- clindamycin
Clean w/o entry into tract	cefazolin	clindamycin or vancomycin
...with implanted prosthesis	cefazolin +/- AMG or aztreonam	clindamycin or vancomycin +/- AMG or aztreonam
Clean w/ entry into tract	cefazolin	FQ OR AMG +/- clindamycin
Clean-contaminated	cefazolin + metronidazole OR cefoxitin	FQ OR AMG + metronidazole or clindamycin
Vascular	cefazolin	clindamycin or vancomycin

Bacterial Endocarditis Prophylaxis

Recent guidelines from the American Heart Association and American College of Cardiology are suggesting antimicrobial prophylaxis only for patients having underlying cardiac conditions associated with the highest risk of adverse outcome from infective endocarditis:

- Prosthetic heart valve
- History of endocarditis

Congenital Heart Disease:

- Un-repaired cyanotic CHD, Including palliative shunts or conduits
- Completely repaired congenital heart defect with prosthetic material or device during the first six months after the procedure
- Repaired CHD with residual effects at the site or adjacent to the site of a prosthetic patch or device
- Cardiac transplant recipients with cardiac valvular disease.

Treatment: 30-60 minutes pre-procedure (pediatric doses in parentheses) Dental, Oral, Respiratory Tract or Esophageal procedures**

- Amoxicillin 2 g PO (50mg/kg)
- Ampicillin 2 gram PO/IV (50mg/kg)
- Clindamycin 600 mg PO/ IV (20mg/kg)
- Cephalexin 2 g PO (50mg/kg)
- Ceftriaxone 1 gram IV/IM (50mg/kg)
- Cefoxitin 1 gram IV/IM (50mg/kg)
- Azithromycin 500mg PO (15mg/kg)

**Involving incision, biopsy, of respiratory tract or manipulation of gingival tissue, periapical region of teeth or perforation of oral mucosa (Viridans streptococci (alpha-hemolytic streptococci) most prevalent bacteria)

Infected skin, skin structure or musculoskeletal tissue

- Treat with agents active against staphylococci and beta-hemolytic streptococci: antistaphytococcal PCN (oxacilin) or cephalosporin (see above doses).
- If MRSA suspected in wound/skin structure: (or intolerant of betalactam) Vancomycin 15-20mg/kg for adults up to 2g or (15mg/kg to 1g for children)

GI or Genitourinary Tract
(prophylaxis solely to prevent endocarditis NOT Recommended)

IF: An enterococcal UTI present, treat before an elective GU procedure or include enterococcal coverage perioperatively for non-elective procedures.

IF: Existing GL or GU infection or receiving perioperative antibiotics to prevent surgical site infection or sepsis, it is reasonable to include an agent with activity against enterococci.

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Antibiogram 2023

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References:

1. Bratzler DW, Dellinger EP, Olsen KM, Perl T, Auwaerter, PG, Balon MK, Fish DN, Napolitano LM, Sawyer RG, Slain D, Steinberg JP, Weinstein RA. Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery. Am J Health System Pharm. 2013 Feb 1:70(3):195-283.

2. Performance Standards for Antimicrobial Susceptibility Testing: Twenty-second informational Supplement. Clinical and Laboratory Standards Institute. 2012 Jan:32(3):29.