Antimicrobials Restrictions Policy

Restriction of the use of certain antimicrobial agents based on indication, spectrum of activity, potential for serious adverse effects, or associated toxicities can ensure appropriate use of therapy. By ensuring the appropriate use, the emergence of multi-resistant organisms may be minimized while achieving therapeutic goals and reducing healthcare costs.

See the policy for details on restriction criteria for the following:

- Piperacillin/tazobactam
- Fluoroquinolones
- Ertapenem (Invanz)
- Meropenem (Merrem)
- Daptomycin (Cubicin)
- Linezolid (Zyvox)
- Ceftaroline (Teflaro)
- Ceftazidime/avibactam
- Ceftolozane/tazobactam
- Aztreonam
- Colistimethate (Colistin)
- Fidaxomicin
- Voriconazole
- Isavuconazole
- Posaconazole
- Micafungin

Pre-Op Antimicrobial Prophylaxis Recommendations

SURGERY TYPE	FIRST CHOICE	ALTERNATIVE
Cardiac, Non-cardiac Thoracic, Vascular	Cefazolin* + Vancomycin 15mg/kg**	Vancomycin 15mg/kg
Neurosurgical	Cefazolin* + Vancomycin 15mg/kg**	Vancomycin 15mg/kg
Orthopedic	Cefazolin* + Vancomycin 15mg/kg**	Vancomycin 15mg/kg
Head and Neck	Cefazolin + Metronidazole	Clindamycin
Gastroduodenal, Esophageal, Hernia Repair, PEG Placement	Cefazolin* + Vancomycin 15mg/kg**	Vancomycin 15mg/kg + Gentamicin
Colon and Abdominal	Cefazolin* + Metronidazole **OR** Ertapenem	Levofloxacin + Metronidazole
Gynecological	Cefazolin*	Clindamycin + Gentamicin
Urological	Cefazolin* **OR** Cefazolin + Metronidazole **OR** Cefazolin + Gentamicin	Levofloxacin **OR** Vancomycin 15mg/kg +/- Gentamicin

*Recommended dose is 2 grams in adult patients (3 grams ≥ 120 kg)
** If known MRSA colonization

Only add vancomycin if MRSA coverage is warranted due to previous respiratory isolation or at risk for MRSA infection or recent hospitalization

Risk Factors for MRSA Infection

HOSPITAL SETTING	COMMUNITY SETTING
Recent antibiotic exposure	History of skin trauma
Hemodialysis/Peritoneal Dialysis	Poor personal hygiene
Indwelling vascular catheter	Illicit IV drug use
Diabetes mellitus	Exposure to crowded environments (prisons, day care centers and military quarters)
Immune system dysfunction	
Recent surgical procedures	
Recent infection/colonization with MRSA	

Shorter Duration of Antibiotic Therapy

INFECTION	OLD	NEW
Community Acquired Pneumonia	7 to 14 Days	5 Days
Ventilator Associated Pneumonia	10 to 15 Days	≤ 8 Days
Pyelonephritis	10 to 14 Days	5 to 7 Days
Intra-abdominal Infection	10 Days	4 Days
Cellulitis	10 Days	5 Days
Acute Bacterial Sinusitis	10 Days	5 Days
Acute Exacerbation of Chronic Bronchitis and COPD	≥ 7 Days	≤ 5 Days
Neutropenic Fever	Until ANC > 500	Afebrile x 72 hours

Verigene Resistance Markers

ORGANISMS	RESISTANCE GENE	INTERPRETATION
Staphylococcus aureus OR S. epidermidis	None	None
	MecA	Methicillin Resistance
Enterococcus faecalis OR E. faecium	None	None
	Van A or Van B	Vancomycin Resistance
Escherichia coli, Klebsiella pneumoniae, Klebsiella oxytoca	None	None
	CTX-M	ESBL Producing Organism
	KPC, NDM, OXA or VIM	CRE/MDR Organism*
Proteus species OR Citrobacter species	None	None
	CTX-M	ESBL Producing Organism
Pseudomonas aeruginosa	None	None
	IMP, KPC, NDM, OXA or VIM	CRPA/MDR Organism*
Acinetobacter species	None	None
	IMP, KPC, NDM, OXA or VIM	CRAB/MDR Organism*
Enterobacter species	None	None
	CTX-M	ESBL Producing Organism
	IMP, KPC, NDM or VIM	CRE/MDR Organism*

ID Consult Recommended

Dignity Health.
St. Joseph's Medical Center

Antimicrobial Guideline

Approved by the Antimicrobial Stewardship Committee & Infection Control Committee

2023 Recommended Empiric Antimicrobial Therapy of Selected Infections in Adults Requiring Hospitalization

INFECTION	1ST LINE	ALTERNATIVE / ALLERGY
Community Acquired Pneumonia	Ceftriaxone + Azithromycin	Levofloxacin*
Aspiration Pneumonia	Ceftriaxone ± Metronidazole	Levofloxacin* + Metronidazole
UTI, Uncomplicated	Nitrofurantoin**	Cephalexin
UTI, Complicated	Ceftriaxone	Ciprofloxacin*
Sepsis of Unknown Etiology	Cefepime ± Vancomycin	Levofloxacin*± Vancomycin
Intra-Abdominal Sepsis	Ceftriaxone + Metronidazole	Ciprofloxacin* + Metronidazole
Suspected or confirmed C. difficile infection	Vancomycin PO	Fidaxomicin*
Bacterial Meningitis	Ceftriaxone + Vancomycin ± Ampicillin	Ceftriaxone + Vancomycin ± Bactrim
Health Care Associated Meningitis	Cefepime + Vancomycin ± Ampicillin	Meropenem* + Vancomycin
Pelvic Inflammatory Disease	Cefoxitin + Doxycyline	Clindamycin + Gentamicin
Cellulitis	Ceftriaxone ± Clindamycin	Vancomycin **OR** Clindamycin
Cellulitis, Complicated OR Diabetic Foot Ulcer	Ceftazidime ± Clindamycin **OR** Metronidazole	Ciprofloxacin* ± Vancomycin
Febrile Neutropenia (ANC < 500) based on source and MRSA risk	Cefepime ± Metronidazole ± Vancomycin	Aztreonam* ± Metronidazole ± Vancomycin

* Restrictions for use may apply
** Avoid use in geriatric patients and CrCl less than 30 mL/min
Only add vancomycin if MRSA coverage is warranted due to previous isolation of MRSA, at risk for MRSA infection or recent hospitalization

Ensuring patients receive the right antibiotic, at the right dose, at the right time, and for the right duration reduces mortality, risk of Clostridium difficile-associated diarrhea, hospital stays, overall antimicrobial resistance within the facility, and costs.

St. Joseph's Medical Center - Stockton

Antibiogram 01/01/2022- 12/31/2022

		Penicillins								Cephalosporins					Carbapenems			Aminoglycosides			Fluoroquin-olones		Other								
Percent (%) susceptible	# Tested (n)	Ampicillin	Amoxicillin	Oxacillin	Penicillin	Piperacillin/Tazo	Ticarcillin	Ticar/Clav Acid	Amp/Sulbactam	Cefazolin	Cefepime	Cefotaxime	Ceftazidime	Ceftriaxone	Ertapenem	Imipenem	Meropenem	Amikacin	Gentamicin	Tobramycin	Ciprofloxacin	Levofloxacin	Clindamycin	Erythromycin	Linezolid	Rifampin	Trimeth/Sulfa	Daptomycin	Tetracycline	Vancomycin	Nitrofrurantoin*
Gram negative rods:																															
Acinetobacter baumanii	75	0				44		78	68		61		63	41		66		94	88	95	59	59					56				
Citrobacter freundii	67	0				92			2	2	100		84	80	100	100		100	97	96	92	91									98
Citrobacter koseri	71	0				93				91	93		96	93	97	94		96	96	94	100	100									83
Enterobacter cloacae	165	0				67			0	0	88		75	73	92	92		98	87	84	83	83					82				28
Escherichia coli	3077	48				96			60	75	81		81	81	100	100		99	88	86	72	72					72				97
Klebsiella aerogenes	71	0				88			0	0	99		87	87	99	99		100	100	100	99	99					99				20
Klebsiella oxytoca	98	0				88			67	67	92		92	92	98	100		100	98	98	98	98					91				89
Klebsiella pneumoniae	796	0				90			75	80	82		82	82	98	99		98	91	86	89	92					81				35
Morganella morganii	97	2				97			15	1	97		79	85	100	83		98	84	94	68	67					61				2
Proteus mirabilis	515	76				99			86	84	90		91	89	100			98	87	89	71	73					72		0		0
Providencia stuartii	59	0				93			29	0	93		97	76		93		100	2	2	39	19							0		0
Pseudomonas aeruginosa	683	0				80	69		0		79	0	79	0	0	79	85	97	92	99	81	76					0		0		
Serratia marcescens	81	0				90			1	0	99		94	94	100			100	100	96	99	96									0
Stenotrophomonas maltophilia	82	0					0	37	0			0	36	0	0	0	0	0	0	0		88					95				
Gram positive cocci:																															
Enterococcus faecalis	864	100																			*72	*73			100			100		89	99
Enterococcus faecium	261	15																			*6	*7			99					33	22
Staphylococcus aureus	1132			50															90		54	55	63	38	100	99	95	100	82	100	99
Staphylococcus epidermidis	183			29															80		58	57	48	20	100	95			75	100	100
Staphylococcus lugdunensis	38			79															97		91	91	70	64		100			95	100	
Streptococcus agalactiae	44	100			100						100	100		100									53	42						100	
Streptococcus mitis/oralis	40	84			87						92	93		95									95	42						100	
Streptococcus pneumoniae	44				91							93		98								100					84		92	100	

* Urinary Tract isolates only Non urine >= 5% more resistant 2022 than 2021 >= 5% more sensitive 2022 than 2021

NOTES:

A. Some strains of Escherichia coli, Klebsiella sp., and Proteus mirabilis can produce Extended Spectrum Beta Lactamases (ESBLs). These strains should be considered resistant to all penicillins, cephalosporins, and monobactams. Treatment with a carbapenem is recommended.

B. Emerging resistance in Gram negative rods due to Carbapenemase and Metallo Beta Lactamase production is increasing world wide. These strains should be considered resistant to all penicillins, cephalosporins, carbapenems, and aztreonam. Resistance may also be demonstrated to the aminoglycosides and fluoroquinolones. Infectious Disease consult is recommended.

C. Per SJMC Infection Control Dept. policy for Multi-Drug Resistant Organisms: In addition to appropriate antibiotic therapy, patients must be placed in CONTACT ISOLATION PRECAUTIONS.

D. 50% of the Staphlococcus aureus isolates are MRSA (methicillin resistant) Susceptibility results for both hospital-acquired and community acquired MRSA isolates are combined on this antibiogram. Community acquired isolates tend to be susceptible to a greater number of antibiotics than hospital acquired MRSA strains, but they can be associated with more virulent infections.

E. 0% of the Streptococcus pneumoniae isolates were intermediate for penicillin. High doses of IV penicillins or ampicillin can be used to treat penumococcal pneumonia caused by strains in the intermediate category, however patients with pneumococcal meningitis require therapy with maximum doses of ceftriaxone or cefotaxime.

F. 11% of Haemophilus influenzae are ß-lactamase positive.