

Lakeland Health Antibiotic Prescribing Guidelines

	1st choice	2nd choice	Notes
Community acquired pneumonia	Ceftriaxone 1 gm IV daily	Levaquin 750 mg daily acceptable as a 1st line alternative	
	PLUS azithromycin 500 mg daily or doxycycline 100 mg BID		
Hospital acquired pneumonia	Zosyn 4.5 gm IV q6 hours+ cipro	For penicillin allergy, Levaquin 750 mg + aztreonam 1-2 gm IVq8 hours,	Add linezolid if high risk for MRSA, consider meropenem for ventilator associated pneumonia
	OR ceftazidime + cipro		
Aspiration pneumonia	Unasyn 3 gm IVq6hours	Ertapenem 1 gm IVq24 hours	
	OR		
	Levaquin 750 mg+		
	clindamycin IV 600 mgq8h		
	OR Ceftriaxone 1 GM+ (flagyl or clindamycin)		
OR Zosyn 3.375 gm IVq6h			
Skin/soft tissue – including empiric coverage of MRSA	IV vancomycin pharmacy to dose	Linezolid 600 mg BID, clindamycin, Doxycycline 100 mg BID + Cefazolin, Daptomycin	
Skin/soft tissue (cultures suggestive of MSSA)	Ancef 1.5 gm IVq8 hours	Clindamycin IV/PO	Oral alternatives include keflex and clindamycin
	OR	OR	
	nafcillin 2 gmq4 hours	Vancomycin IV	
Diabetic foot infection	Piperacillin/tazobactam, IV 3.375 gm q6 hours OR ampicillin/sulbactam 3gm IVq6h OR ertapenem 1 gmIVq24 h	Ciprofloxacin IV 400 mg BID and clindamycin IV 600 mgq8h	Add Linezolid or Vancomycin if suspected MRSA (clindamycin has MRSA activity)
Mild to moderate urinary tract infection	Ceftriaxone 1 gm IVq24 hours	Aztreonam 500 mg-1 g q8-12 hours for penicillin allergy	If enterococcus is suspected or confirmed, consider ampicillin or vancomycin.
Severe urinary tract infection	Ceftriaxone 2 gm IVq24 hours, consider adding an aminoglycoside	Piperacillin/tazobactam 3.375 gmIVq6, imipenem 500 mgIV, ceftazidime 500 mg q8-12h, cefepime 1-2 gm lvq12h,	If enterococcus is suspected or confirmed, consider ampicillin or vancomycin (zosyn does cover enterococcus)
Clostridium difficile	Mild-moderate disease, oral metronidazole 500 mg every 8 hours	Oral vancomycin for severe disease (WBC > 15),	Multiple recurrences -treat with po vancomycin-consider ID consult
Intra-abdominal infection	Ceftriaxone 1-2 gm IVq24 hours + metronidazole 500 mg IV q8 hours	Aztreonam 2 gm IVq8h+ flagyl 500q8h	
	OR	OR	
	piperacillin/tazobactam 3.375 gm IVq6 hours	ciprofloxacin IV 400 mg BID + flagyl 500 mgq8h	
	OR	OR	
	Ertapenem 1 gm IV q24 h	imipenem 500mgIVq6y	
		OR	
		Meropenem 1 gmIVq8h	
Neutropenic fever	Cefepime 2gm IVq8 hours	Imipenem 500 mg IVq6 hours or Meropenem 1 gm IVq8 hours	Add vancomycin ONLY IF septic shock, suspected line infection, or soft tissue infection.
	OR		
	piperacillin/tazobactam 3.375 gm IVq6 hours		
Sepsis etiology unknown	Piperacillin + tazobactam 3.375 gm IVq6 hours	For severe penicillin allergy, consider vancomycin IV PTD + aztreonam 2 gm IVq8 hours	Add vancomycin or linezolid if high risk for MRSA
	OR		
	Meropenem 1 gm IVq6 hours		

Susceptibility Patterns of Common Bacteria Isolated from Clinical Specimens

For more information, please write or call:

Client Services
Lakeland Laboratory
 1234 Napier Avenue
 St. Joseph, MI 49085-2158
 (269) 983-8311
 (800) 513-9193

January 2015 - December 2015

Microbiology

Lakeland Hospital, Niles,
 Lakeland Hospital, Watervliet
 Lakeland Medical Center, St. Joseph



Lakeland Hospital, Niles, Lakeland Hospital, Watervliet and Lakeland Medical Center, St. Joseph – 2015 Antibiogram Data of Most common Micro-Organisms % Susceptible.

Bacterial Isolate Type: Gram-Negative	# Isolates	Amikacin	Amoxicillin / clavulanic	Ampicillin / sulbactam	Cefazolin ^{4,5,8}	Ceftazidime ⁸	Ceftriaxone ⁸	Cefepime ⁸	Ciprofloxacin ⁵	Ertapenem ⁸	Gentamicin	Levofloxacin ⁵	Nitrofurantoin ¹	Piperacillin / tazobactam	Trimethoprim/ sulfamethoxazole	Tobramycin	%ESBL Production ⁹
<i>Acinetobacter baumannii</i> complex	66			88		89	21	88	95		95	95			94	91	
<i>Citrobacter braakii</i>	29		0		0 ⁸	95 ⁸	95 ⁸	100 ^{8,11}	96	96 ⁸	100	96	95	100	100	100	
<i>Citrobacter freundii</i>	145					87 ⁸	86 ⁸	100 ^{8,11}	97	100 ⁸	92	97	97	89	82	97	
<i>Citrobacter koseri</i>	111		99		100 ⁸	100 ⁸	100 ⁸	100 ^{8,11}	100	100 ⁸	100	100	86	100	99	100	
<i>Enterobacter aerogenes</i>	117					91 ⁸	88 ⁸	100 ^{8,11}	98	100 ⁸	100	98	11	89	100	100	
<i>Enterobacter cloacae</i> complex	271					86 ⁸	82 ⁸	99 ^{8,11}	95	98 ⁸	98	95	42	82	92	98	
<i>Escherichia coli</i>	5902	100	85	64	94 ⁸	98 ⁸	96 ⁸	97 ^{8,11}	82	100 ⁸	93	82	96	97	78	95	3
<i>Klebsiella oxytoca</i>	205		96	65	84 ⁸	100 ⁸	97 ⁸	99 ^{8,11}	98	100 ⁸	98	97	91	96	95	99	2
<i>Klebsiella pneumoniae</i>	1100		95	88	95 ⁸	96 ⁸	96 ⁸	96 ^{8,11}	95	100 ⁸	98	96	44	95	91	97	4
<i>Morganella morganii</i>	129			5		84 ⁸	87 ⁸	100 ^{8,11}	74	100 ⁸	78	77		93	71	91	
<i>Proteus mirabilis</i>	662		100	85	95 ⁸	98 ⁸	96 ⁸	97 ^{8,11}	66	100 ⁸	82	66		100	74	85	3
<i>Proteus vulgaris</i>	53		100	81		100 ⁸	96 ⁸	100 ^{8,11}	96	100 ⁸	100	96		100	94	100	
<i>Providencia rettgeri</i>	34			0		100 ⁸	100 ⁸	100 ^{8,11}	82	97 ⁸		79		100	85	0	
<i>Providencia stuartii</i>	48	0		0	0 ⁸	100 ⁸	100 ⁸	100 ^{8,11}	8	100 ⁸		8		100	50		
<i>Pseudomonas aeruginosa</i>	631	97				91 ⁸		92 ⁸	80		92	76		99 ⁸		98	
<i>Pseudomonas putida</i>	19	100				95	5	84	63		79	63		50 ⁸		100	
<i>Serratia marcescens</i>	85					99 ⁸	98 ⁸	100 ^{8,11}	99	100 ⁸	99	99			99	89	
<i>Stenotrophomonas maltophilia</i>	54														94		

Yeast	# Isolate	Fluconazole	Capsofungin
<i>Candida albicans</i>	349	98	100
<i>Candida dubliniensis</i>	10	100	100
<i>Candida glabrata</i>	71	86	94
<i>Candida krusei</i>	11	0	100
<i>Candida parapsilosis</i>	42	100	100
<i>Candida tropicalis</i>	30	97	100

Bacterial Isolate Type: Gram-Positive	# Isolates	Ceftriaxone Non-Meningitis (MIC <=1)	Ceftriaxone Meningitis (MIC <=0.5)	Cefotaxime Non-Meningitis (MIC <=1)	Cefotaxime Meningitis (MIC <=0.5)	Ceftriaxone	Clindamycin ^{2,5}	Erythromycin ^{2,3,5}	Gentamicin ⁶	Gentamicin synergy	Levofloxacin ⁵	Linezolid	Nitrofurantoin ¹	Oxacillin ^{12,13}	Penicillin (Oral)	Penicillin Parenteral non-meningitis	Penicillin parenteral meningitis	Quinupristin-dalfopristin	Rifampin ⁶	Tetracycline ^{5,10}	Trimethoprim/ sulfamethoxazole	Cefazolin ^{12,13}	Vancomycin
<i>Vancomycin Susceptible Enterococcus faecalis</i>	1073							11		79	82 ¹	100	100		99 ⁴					29 ¹			100
<i>Vancomycin Resistant Enterococcus faecalis</i>	23							0		18	6 ¹	100	100		86 ⁴					6 ¹			0
<i>Vancomycin Susceptible Enterococcus faecium</i>	53							9		89	24 ¹	100	40		58 ⁴					31 ¹			100
<i>Vancomycin Resistant Enterococcus faecium</i>	57							0		89	0 ¹	100	20		2 ⁴			100 ⁷		6 ¹			0
<i>Staphylococcus aureus</i> methicillin-susceptible (MSSA)	858						82	62	100		87	100	100	100 ¹³	12			100	100	94	99	100 ¹³	100
<i>Staphylococcus aureus</i> methicillin-resistant (MRSA)	756						76	13	98		37	100	100	0 ¹²	0				100	93	93	0	100
<i>Staphylococcus epidermidis</i>	817						67	35	96		65	100	100	53 ¹²	6			100	99	87	59		100
<i>Staphylococcus lugdunensis</i>	104						85	85	99		95	100	100	90 ¹²	31			100	100	98	96		100
<i>Staphylococcus saprophyticus</i>	139								100		100	100	100	50 ¹²	0			100	100	93	94		100
<i>Streptococcus agalactiae</i> (Group B)	202					100	49	32			99	100			100					20	99		100
<i>Streptococcus pneumoniae</i>	61	98	95	98	91			66			100	100			75	67	66			78	82		100

- ¹ Tested on urine isolates only.
 - ² Not routinely used on isolates from the urinary tract.
 - ³ Susceptibility and resistance to azithromycin/clarithromycin/ dirithromycin can be predicted by testing erythromycin.
 - ⁴ Enterococcus susceptible to penicillin are predictably susceptible to ampicillin, amoxicillin, ampicillin-sulbactam, amoxicillin-clavulanate, piperacillin, and piperacillin tazobactam for non-beta-lactamase producing enterococci.
 - ⁵ Not for use on CSF isolates.
 - ⁶ Should not be used alone for antimicrobial therapy.
 - ⁷ For use with Vancomycin Resistant Enterococcus faecium.
 - ⁸ Clinical and Laboratory Standards Institute specific dosing regimen used to establish susceptibility.
 - ⁹ Extended Spectrum Beta Lactamase strains should be interpreted as resistant to penicillins, cephalosporins, and aztreonam.
 - ¹⁰ Organisms that are susceptible to tetracycline are also susceptible to doxycycline and minocycline.
 - ¹¹ Susceptible-Dose Dependent
 - ¹² Oxacillin resistant strains should be interpreted as resistant to all currently available Beta-Lactam antimicrobial agents with the exception of the newer cephalosporins with anti-MRSA activity.
 - ¹³ For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin(cefoxitin) susceptible staphylococci can be considered susceptible to: B-lactam/B-lactamase inhibitor combinations (amoxicillin-clavulanate, ampicillin-sulbactam, piperacillin-tazobactam, ticarcillin-clavulanate), oral cepheims (cefactor, cefdinir, cefpodoxime, cefprozil, cefuroxime, loracarbef), parenteral cepheims including cephalosporins I,II, III, and IV (cefamandole, cefazolin, cefepime, defmetazole, cefonicid, cefoperazone, cefotaxime, cefotetan, ceftizoxime, ceftriaxone, cefuroxime, cephalothin, ceftaroline, moxalactam) and carbapenems (doripenem, ertapenem, imipenem, meropenem)
- Blank cells indicate antibiotic not tested for organism or antibiotic is known to be clinically ineffective for organism