



**Antimicrobial Susceptibility
Profile of Isolates for 2022 (Jan. - Nov.)**

MOORESVILLE

Infection Control.....	528-8973
Microbiology Lab.....	219-803-4804
Pharmacy.....	528-5881
Julie Giddens, ID Pharmacist.....	528-6557
Jacob Quinkert, ID Pharmacy Resident...	528-8903

2022 Mooresville Campus - First Isolate, All Sites																
GRAM-NEGATIVE AEROBES	# Isolates	Amikacin	Gentamicin	Tobramycin	Cefazolin	Cefuroxime	Ceftriaxone	Cefepime	Aztreonam	Imipenem/Meropenem***	Amoxicillin/clavulanate**	Ampicillin	Ampicillin/sulbactam	Piperacillin/tazobactam	Nitrofurantoin**	Trimethoprim/sulfamethox.
MIC Breakpoints (mcg/ml)		≤16	≤4	≤4	≤4†	≤8	≤1	≤8‡	≤8	≤1§	≤8	≤8	≤8	≤16	≤32	≤2/38
<i>Escherichia coli</i>	159	99	91	92	78	86	89	91	89	100	77	61	64	89	97	76
<i>Klebsiella pneumoniae</i>	37	100	97	97	86	95	95	95	95	100	87	-	73	89	53	89
<i>Proteus mirabilis</i>	33	100	97	97	90	91	94	94	94	100	88	82	85	94	-	85

(-) Drug not tested or drug not indicated

Only organisms with 30 or more isolates included for statistical significance and to minimize skewed results

**Amoxicillin/clavulanate and nitrofurantoin urine isolates only tested. Tetracycline not consistently tested; may not represent population therefore not reported.

*** Isolates from urine tested against imipenem only. All other isolates tested against meropenem. Isolates not tested against both antibiotics.

† Cefazolin systemic MIC breakpoint of ≤4 utilized based on optimal dosing inpatient for non-urine isolates. Due to increased urinary concentrations cefazolin MIC breakpoint for UTIs is ≤16 and susceptibility may be higher

‡ Cefepime MIC breakpoint for *Gram negative pathogens* is ≤8 due to optimal dosing for inpatients.

§ Imipenem/Meropenem MIC breakpoint for Enterobacterales is ≤1

All the data is derived by including only patient's first isolate of each organism per hospital stay.

2022 Mooresville Campus - First Isolate, All Sites															
GRAM POSITIVE ISOLATES	# Isolates	Ampicillin	Clindamycin	Daptomycin (≤2)	Daptomycin SDD (≤4)	Erythromycin	Gentamicin	Gentamicin Synergy	Linezolid	Nafcillin/oxacillin	Nitrofurantoin	Rifampin	Tetracycline	Trim/sulfa	Vancomycin
<i>Enterococcus faecalis</i>	41	100	-	100	100	-	-	78	100	-	95	60	24	-	98
Total Enterococcal isolates	47	94	-	100	100	-	-	81	100	-	87	54	23	-	91
Methicillin susceptible <i>S. aureus</i>	36	-	90	100	-	87	97	-	100	100	-	100	88	100	100
Methicillin resistant <i>S. aureus</i>	20	-	75	100	-	13	95	-	100	0	-	95	89	95	100
Total <i>Staphylococcus aureus</i>	56	-	91	100	-	61	96	-	100	64	-	98	88	98	100

* Vancomycin: susceptibility 98% with MIC≤1

A. Serious enterococcal infections usually require combination therapy with ampicillin+gentamicin or vancomycin+gentamicin if susceptible. infections.

Gentamicin or Streptomycin should only be used with a cell wall active antibiotic when treating serious enterococcal infections

B. Some antibiotics only tested for certain isolates: Nitrofurantoin (urine), daptomycin (non-respiratory), linezolid and rifampin (non-urine)

C. Only a portion of enterococcal isolates were tested for linezolid, nitrofurantoin, and gentamicin.

D. Daptomycin breakpoint for *Enterococcus spp.* is ≤2; increased daptomycin (8-12 mg/kg) doses in serious infections may cover MIC of 2-4 (SDD: susceptibility 100%).

Empiric Antimicrobial Recommendation

Type of infection		Antibiotics	Duration of Therapy (Dependent on Clinical Response)
CAP (inpatient)	1st Line	ampicillin/sulbactam + doxycycline	5 days
CAP (outpatient)	1st Line	doxycycline OR amoxicillin + doxycycline	5 days
CAP with PSA risk (inpatient)	1st Line	piperacillin/tazobactam + tobramycin + doxycycline +/- vancomycin	5-7 days
UTI (inpatient)*	1st Line	ampicillin + gentamicin	3-5 days
	2nd Line	PCN allergy: gentamicin	3-5 days
UTI (VRE)	1st Line	amoxicillin OR nitrofurantoin	5 days
	2nd Line	fosfomycin	1 day
UTI (outpatient)	1st Line	nitrofurantoin OR amoxicillin/clavulanate	5 days
	2nd Line	cephalexin	5 days
Intra-abdominal (community)	1st Line	cefazolin + metronidazole	4-7 days with adequate source control
	2nd Line	ampicillin/sulbactam + gentamicin	4-7 days with adequate source control
Intra-abdominal (outpatient)	1st Line	amoxicillin/clavulanate	4-7 days with adequate source control
	2nd Line	cephalexin + metronidazole	4-7 days with adequate source control
SSTI (inpatient)	1st Line	cefazolin + vancomycin	5-7 days
	2nd Line	ampicillin/sulbactam + vancomycin	5-7 days
SSTI (outpatient)	1st Line	cephalexin ± SMP/TMX	5-7 days
	2nd Line	doxycycline or minocycline	5-7 days

CAP: community-acquired pneumonia, PCN: penicillin, PSA: *Pseudomonas aeruginosa*, SSTI: skin/soft tissue infection, UTI: urinary tract infection, VRE: vancomycin-resistant *Enterococcus*

*Oxychlorosene (Clorpectin) has activity against all microbes and may be used as empiric or targeted therapy in patients with urinary catheters

ORAL

<u>Penicillins</u>	<u>acq. cost/dose</u>	<u>Quinolones</u>	<u>acq. cost/dose</u>
Penicillin VK 500mg	\$0.09	Ciprofloxacin 500mg	\$0.10
Penicillin VK 250mg/5ml	\$0.32	Ciprofloxacin 750mg	\$0.17
Amoxicillin 500mg, 875mg	\$0.08/ \$0.16	Moxifloxacin 400mg	\$1.32
Amoxicillin 250mg/5ml	\$0.09		
Amox/clav 500mg	\$0.25	<u>Miscellaneous</u>	
Amox/clav 875mg	\$0.42	Azithromycin 500mg	\$2.42
Amox/clav 250mg/5ml	\$2.97	Azithromycin 200mg/5ml	\$1.98
Amox/clav 600mg/5ml	\$0.47	Clarithromycin ER 500mg	\$5.91
Amox/clav XR 1000 / 62.5mg	\$4.21	Clarithromycin 500mg	\$2.19
		Clarithromycin 250mg/5ml	\$7.11
<u>Cephalosporins</u>		Erythromycin 250mg	\$7.10
Cephalexin 500mg	\$0.25	Erythromycin 200mg/5ml	\$6.24
Cephalexin 250mg/5ml	\$0.54	Minocycline 100mg	\$0.83
Cefuroxime 250mg	\$0.40	Doxycycline 100mg	\$0.28
Cefuroxime 500mg	\$0.59	Clindamycin 150mg	\$0.19
Cefpodoxime 200mg	\$3.40	Metronidazole 500mg	\$0.24
Cefdinir 300mg	\$0.44	Acyclovir 400mg	\$0.22
Cefdinir 125mg/5ml	\$0.74	Acyclovir 800mg	\$0.60
		Valacyclovir 500mg	\$0.21
<u>Antifungals</u>		Valacyclovir 1g	\$0.56
Clotrimazole 10mg	\$0.38	Valganciclovir 450mg	\$25.31
		Trimethoprim/Sulfa DS (160/800mg)	\$0.14
Fluconazole 100mg	\$1.12	Trimethoprim/Sulfa 40-200mg/5ml	\$0.50
Fluconazole 200mg	\$1.64	Rifampin 300mg	\$0.57
Fluconazole 400mg	\$3.28	Linezolid 600mg	\$1.94
Flucytosine 500mg	\$22.93	Nitrofurantoin 100mg	\$2.42
Isavuconazole 372mg	\$178.93		
		Fosfomycin 3g	\$75.39
Itraconazole 100mg cap	\$1.44	Oxychlorosene (Clorpectin) 2g	\$5.46
Itraconazole soln. 10mg/ml	100mg=\$10.34	Vancomycin cap 125 mg	\$2.08
Nystatin 100MU/ml	5ml=\$0.29	Vanc (Firvanq) 125 mg oral susp	\$2.00
Posaconazole 200mg susp	\$64.35		
Posaconazole 300mg tab	\$106.26		
Voriconazole 200mg	\$18.77		

INTRAVENOUS

<u>Penicillins</u>	<u>acq. cost/dose</u>	<u>Aminoglycosides</u>	<u>acq. cost/dose</u>
Penicillin G 10 MU	\$15.42	Amikacin 1g	\$7.94
Ampicillin 1g	\$1.07	Gentamicin 80mg	\$0.78
Ampicillin 2g	\$1.78	Gentamicin 480mg	\$4.68
Nafcillin 2 g	\$6.81	Tobramycin 80mg	\$0.71
Oxacillin 2g	\$8.54	Tobramycin 480mg	\$4.28
Ampicillin/Sulbactam 1.5g	\$1.11		
Ampicillin/Sulbactam 3.0g	\$2.07	<u>Quinolones</u>	
Piperacillin/Tazobactam 2.25g	\$1.69	Ciprofloxacin 400mg	\$2.14
Piperacillin/Tazobactam 3.375g	\$2.10	Moxifloxacin 400mg	\$31.45
Piperacillin/Tazobactam 4.5g	\$2.88		
Piperacillin/Tazobactam 6.75g	\$4.20	<u>Miscellaneous</u>	
		Azithromycin 500mg	\$3.29
<u>Cephalosporins</u>		Erythromycin 500mg	\$73.16
Cefazolin 1g	\$0.82	Doxycycline 100mg	\$15.65
Cefazolin 2g	\$9.68	Eravacycline 100mg	\$98.00
Cefuroxime 750 mg	\$2.47	Minocycline 100mg	\$181.65
Cefuroxime 1.5g	\$4.94	Tigecycline 100mg	\$71.79
Ceftriaxone 1g	\$0.74	Clindamycin 900mg	\$1.90
Ceftaroline 600mg	\$194.85	Metronidazole 500mg	\$1.09
Cefepime 1g	\$2.41	Acyclovir 500mg	\$2.12
Ceftazidime/avibactam 2.5g	\$358.63	Ganciclovir 500mg	\$56.32
Ceftolozane/tazobactam 1.5g	\$112.84	Foscarnet 6g	\$38.52
Cefiderocol 1g	\$172.10	Pentamidine 300mg	\$106.08
		Aztreonam 1g	\$26.95
<u>Antifungals</u>		Meropenem 500mg	\$2.03
Amphotericin B 200mg	\$35.63	Meropenem/vaborbactam 4g	\$147.21
Amphotericin B Liposomal 200mg	\$238.20		
Micafungin 100mg	\$47.40	Imipenem 500mg	\$10.03
Fluconazole 200mg	\$3.75	Imipenem/relebactam 1.25g	\$250.73
Fluconazole 400mg	\$4.13	Trimethoprim/Sulfa 160/800mg	\$7.55
Voriconazole 200mg	\$22.18	Daptomycin 500mg	\$45.53
Posaconazole 300mg	\$398.35	Linezolid 600mg	\$15.77
Isavuconazole 372mg	\$304.47	Rifampin 600mg	\$69.92
		Quinupristin/dalfopristin 500mg	\$328.07
		Telavancin 750mg	\$479.49
		Dalbavancin 1000mg	\$3,055.20
		Oritavancin 1200mg (outpt ONLY)	\$2,768.63
		Vancomycin 1g	\$1.94