Antibiogram 2020

Species with less than 30 isolates, susceptibilities should be interpreted with caution.

Grey boxes indicate organism has intrisic resistance or susceptibilities are not published to corresponding antimicrobial.

Gram Negative NON-URINE Isolate Inpatient and Emergency Department	Total # Isolates	Ampicillin	Ampicillin-Sulbactam	Pipercillin-Tazobactam	Cefazolin	Ceftriaxone	Ceftazidime	Cefepime	Ertapenem	Meropenem	Levofloxacin	Trimethoprim Sulfamethoxazole	Gentamicin	Tobramycin
Organism	# Results	**% Susceptibility**												
Acinetobacter spp.	3					50%	67%	100%		100%	100%	100%	100%	100%
Citrobacter spp.[1]	10		30%	90%	20%	90%		100%	100%	100%	100%	100%	100%	100%
Enterobacter spp.[1]	27			70%		67%		89%	70%[2]	100%	100%	100%	100%	100%
Escherichia coli	105	65%	69%	98%	85%	92%		93%	100%	100%	83%	78%	94%	96%
Klebsiella spp.	47		64%	91%	74%	94%		96%	100%	100%	100%	98%	98%	98%
Klebsiella spp excluding K.aerogenes	41		73%	93%	85%	95%		98%	100%	100%	100%	100%	98%	98%
K. aerogenes	6		0%	83%		83%		83%	100%	100%	100%	100%	100%	100%
Proteus[1]														
P. vulgaris group	2			100%				100%	100%	100%	100%	100%	100%	100%
P. mirabilis	13	75%	92%	92%	92%	100%		100%	100%		77%	85%	77%	77%
Pseudomonas aeruginosa	37			92%			92%	97%		95%	97%		97%	97%
Serratia spp.[1]	6			83%		83%		100%	100%	100%	100%	100%	100%	100%
Stenotrophomonas maltophilia (all locations)	9						100%				78%	100%		

Haemophilus influenzae beta-lactamase positive 25%, n=32

Carbapenem Resistant Ps. aeruginosa (CRPA): 1) NON-URINE 5%, 2) URINE 11%

ESBL Rate (E.coli and Klebsiella): Inpatient: 1) NON-URINE 5%, 2) URINE 4%; Outpatient: 1) NON-URINE 5%, 2) URINE 4%

[1]Citrobacter freundii, Enterobacter, Proteus vulgaris, Klebsiella aerogenes, & Serratia have the potential to induce AmpC beta-lactamase production and become resistant to 3rd generation cephlosporins, aztreonam, piperacillin-tazobactam on therapy. Use those agents with caution. Failure rates appear highest with Enterobacter>>Citrobacter>>Serratia. Cefepime and carbapenems appear to be stable.

[2]None were identified as true CRE at state health

% Susceptible

80% or better

70-79%

<=69%

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Gram Positive NON-URINE Isolates Inpatient and Emergency Department	Total # Isolates	Penicillin G	Penicillin G (meningitis)	Oxacillin[3]	Ceftriaxone	Ceftriaxone (meningitis)	Clindamycin	Levofloxacin	Trimethoprom Sulfamethoxazole	Vancomycin	Gentamycin synergy	Tetracycline	Erythromycin
Organism	# Results	% Susceptability											
Enterococcus spp.[1]	43	91%								93%	91%		
E. faecalis	33	97%								97%	88%		
E. faecium	10	70%								80%	100%		
Streptococcus pneumoniae (all locations)[2]	21	100%	71%		100%	100%	90%	100%	81%	100%			76%
Viridans Strep (includes S.anginosus)[4]	29	97%			100%		X	X		100%			
Streptococcus pyogenes (Group A)	11	100%			100%		73%			100%			73%
Streptococcus agalactiae (Group B)	7	100%			100%		57%			100%			43%
Staphlococcus aureus all locations	859			79%			82%		98%	100%		95%	
Inpatient/ED	255			66%			83%		97%	100%		95%	
Outpatient only	614			85%			82%		98%	100%		94%	
Staphylococcus epidermidis	26			56%			73%					92%	
Staphylococcus lugdunensis (all locations)	44			98%			98%					98%	

[1]Enterococci susceptible to penicillin are predictably susceptible to ampicillin, amoxicillin, ampicillin-sulbactam, amoxicillin-clavulanate and pip/tazo

[2]CLSI requires publication of two breakpoints for all pneumococcal isolates designated: meningitis and non-meningitis. There were 7 blood & 14 Respiratory/Wound isolates.

[3]Oxacillin results can be applied to other anti-staph penicillins and β-lactam/β-lactamase inhibitors, cephalosporins and carbapenems.

[4]Isolate of Viridans Strep non-susceptible to penicillin (n=1) was intermediate (MIC 0.25-2.0).

X=Not recommended

MRSA rate: 1) NON-URINE Inpatient/ED 34% & Outpatient 15%, 2) URINE Inpatient/ED 24% & Outpatient 13%
VRE rate: Inpatient/ED: 1) NON-URINE 7%, 2) URINE 2%; Outpatient Urine 1%

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Antibiogram 2020

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URINE Isolates Inpatient and Emergency Department	Total # Isolates	Penicillin G	Ampicillin	Ampicillin Sulbactam	Oxacillin[2]	Cefazolin	Ceftriaxone	Ceftazidime	Cefepime	Ertapenem	Meropenem	Levofloxacin	Trimethoprim Sulfamethoxazole	Vancomycin	Nitrofurantoin	Tetracycline
Organisms	**# Results**	**% Susceptibility**														
Acinetobacter species	1							100%	100%		100%	100%	100%			
Citrobacter spp,	17						76%		100%	92%	100	94%	94%		71%	88%
Enterobacter spp.	13						85%		100%	91%	100	100%	100%		46%	100%
E.coli	304		63%	67%		93%	94%		94%	100%	100%	88%	80%		98%	77%
Klebsiella spp.																
Klebsiella excluding K.aerogenes	74			81%		91%	95%		95%	100%	100%	97%	93%		63%	86%
K.aerogenes	10			0%		0%	80%		100%	100%	100%	100%	100%		50%	100%
Proteus spp.																
P. mirabilis	20		90%	90%		100%	100%		100%	100%		65%	95%			
P. vulgaris group	1								100%	100%	100%	100%	100%			
Ps. aeruginosa	37							89%	95%		86%	81%				
Serratia marcescens	2						0%		100%	50%	100%	100%				
Stenotrophomonas (All Locations)[1]	5							80%				80%	100%			
Enterococcus spp. Total[2]	45	91%	91%											98%	100%	27%
E. faecalis	39	100%	100%											100%	100%	23%
E. faecium	6	33%	33%											83%	*	50%
Staphylocccus aureus	42				76%								88%	100%	100%	83%
Staph species not aureus	17				29%								*	100%	100%	88%

*in house testing not available

[1]No Stenotrophomonas isoalted from urine collected in 2020, data from 2019

[2]Enterococci susceptible to penicillin are predictably susceptible to ampicillin, amoxicillin, ampicillin-sulbactam, amoxicillin-clavulanate and pip/tazo

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URINE Isolates Outpatient	Total # Isolates	Penicillin G	Ampicillin	Ampicillin Sulbactam	Oxacillin[2]	Cefazolin	Ceftriaxone	Ceftazidime	Cefepime	Ertapenem	Meropenem	Levofloxacin	Trimethoprim Sulfamethoxazole	Vancomycin	Nitrofurantoin	Tetracycline
% organism	**# results**	**% Susceptibility**														
Acinetobacter baumanii	1			100%			100%	100%	100%		100%	100%	100%			
Citrobacter spp.	78			53%		44%	94%				100%	92%	83%		73%	87%
Enterobacter spp.	50						82%				98%	98%	92%		54%	84%
E.coli	1716		67%	71%		93%	95%				100%	91%	82%		99%	79%
Klebsiella spp.																
Klebsiella excluding K. aerogenes	209			81%		92%	96%				100%	99%	94%		63%	92%
K. aerogenes	32			0%		0%	84%				100%	100%	100%		41%	97%
Proteus spp.																
P. mirabilis	64		86%	92%		89%	100%					94%	91%			
P. vulgaris group	7					0%	14%					100%	100%			
Ps. aeruginosa	37							100%	100%		89%	81%				
Serratia marcesens	9						100%				100%	100%	*			
Enterococcus spp.	125	98%	98%											99%	100%	26%
E. faecalis	120	100%	100%											100%	100%	24%
E. faecium	5	20%	20%											80%	*	40%
Staphylocccus aureus	117				87%								97%	100%	100%	96%
Staph species not aureus	56				64%									100%	100%	93%

*In house testing not available.

Cefepime and Ertapenem not reported for outpatent urines Enterobacteriaceae group

Carbapenem Resistant Ps. aeruginosa (CRPA): 1) NON-URINE 5%, 2) URINE 11%

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2020 Yeast All locations[1]	# isolates	Fluconazole	Micafungin	Voriconazole
Organisms	**# Results**	**% Susceptibility**		
Candida albicans	10	100%	100%	100%
Candida glabrata	10	80%	100%	100%
Candida krusei[2]	3	0%	100%	100%
Candida tropicalis	2	100%	100%	50%
Candida parapsilosis	2	100%	100%	100%
Overall	27	89%	100%	96%

[1]Testing performed at Mayo Laboratories

[2]Intrinsically resistant to Fluconazole

Isolate sources:

Peritoneal n=11; Blood n=4;

Urine n=7; Other n=8

% Susceptible

80% or better

70-79%

<=69%

Dose dependent susceptibility. *Consult ID for Guidance.