

Toronto General Hospital ANTIBIOGRAM
Emergency Department
January 1, 2019 - December 31, 2019

Blood Isolates – % Susceptible

		<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> <p>≥80% Susceptible ■</p> <p>70-79% Susceptible ■</p> <p>≤69% Susceptible ■</p> </div> <div style="text-align: center;"> <p>#</p> <p>%</p> </div> </div>																Ampicillin	Amoxicillin-Clavulanic acid	Penicillin	Piperacillin-Tazobactam	Meropenem	Ertapenem	Cloxacillin	Cefazolin	Ceftriaxone	Ceftazidime	Clindamycin	Erythromycin	Doxycycline	Ciprofloxacin	Moxifloxacin	Trimethoprim-Sulfamethoxazole	Gentamicin	Tobramycin	Amikacin	Vancomycin	Linezolid
ALL BACTERIA		838	—	14	32	51	56	53	36	53						64																						
ALL GRAM-NEGATIVE BACTERIA		314	100	14	60	75	99	89	44	72	78			79	64	91	91	99																				
<i>Escherichia coli</i>		173	55	18	64	77	99	99	51	83	83			74	64	88	88	99																				
<i>Klebsiella pneumoniae</i>		61	19	0	84	85	100	100	77	89	89			84	66	90	93	100																				
<i>Pseudomonas aeruginosa</i>		21	7			100	100				100			90		100	100	90																				
<i>Enterobacter cloacae</i>		14	4	0	0	0	93	93	0	0	0			79	86	100	93	100																				
<i>Proteus mirabilis</i>		13	4	67	100	100	100	100	25	100	100			77	77	100	100	100																				
<i>Serratia marcescens</i>		7	2	0	0	0	100	100	0	0	0			100	100	100	86	100																				
<i>Klebsiella oxytoca</i>		7	2	0	100	100	100	100	0	100	100			100	100	100	100	100																				
<i>Haemophilus influenzae</i> ^{^^}		6	2	67																																		
<i>Morganella morganii</i>		5	2	0	0	0	100	100	0	0	0			100	100	100	100	100																				
ALL GRAM-POSITIVE BACTERIA		524	100	15	15	8	37	31	31	22	31	42	60	38		64					100																	
Coagulase-negative staphylococci		294	56			15	15	15	15	15			69	31	92	62					100	100																
<i>Staphylococcus aureus</i> , all isolates		84	16			87	87	87	87	87			76	58	94	100					100	100																
- methicillin-susceptible		73	14			100	100	100	100	100			75	64	95	100					100	100																
- methicillin-resistant (MRSA)		11	2			0	0	0	0	0			82	18	91	100					100	100																
Viridans group streptococci ^o		36	7							94											100																	
<i>Streptococcus pneumoniae</i>		28	5										71		96						100																	
<i>Enterococcus faecalis</i>		28	5	100	100	100															100																	
Group A streptococci**		19	4			100							79	84							100																	
Group B streptococci**		15	3			100							53	47							100																	
<i>Enterococcus faecium</i>		8	2	25	25	25															100																	
Group G streptococci**		6	1			100							50	50							100																	

General Notes:

- Statistical validity of estimates of percent susceptibility for organisms for which there are fewer than 30 isolates reported is limited. Please take this into consideration when interpreting the reported results.
- Some organisms for which there were only very small numbers have been excluded from this report; however the total number of "ALL BACTERIA", "ALL GRAM-NEGATIVE BACTERIA", and "ALL GRAM-POSITIVE BACTERIA" listed includes these organisms.
- Reported susceptibilities for "ALL BACTERIA", "ALL GRAM-NEGATIVE BACTERIA", and "ALL GRAM-POSITIVE BACTERIA" reflect estimates only based on the weighted average of susceptibilities for all organisms included on this report as well as those that have been excluded, with assumptions made for those drugs for which susceptibilities were not tested.
- Susceptibility to doxycycline was predicted based on tetracycline susceptibility testing results.

Year-Specific Notes:

- Only a limited number of coagulase negative staphylococci isolates were tested for susceptibilities. The vast majority of coagulase-negative staphylococci are susceptible to vancomycin. If you have any questions, please contact the UHN/MSH Department of Microbiology.

Organism-Specific Notes:

- ^{^^} *H. influenzae* and *H. parainfluenzae*: Susceptibility to ampicillin was determined using beta-lactamase testing. Beta-lactamase-positive isolates are resistant to ampicillin but are generally susceptible to amoxicillin-clavulanic acid and cefuroxime.
- ^{**} Beta-hemolytic streptococci: Susceptibility testing to penicillin is not routinely performed since resistant strains have not been recognized. All isolates are considered susceptible to penicillin.
- ^o Viridans group streptococci: Please note that only a small proportion of these isolates were tested for susceptibilities. Please take this into consideration when interpreting the reported results.

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Respiratory Isolates – % Susceptible

		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>≥80% Susceptible ■</p> <p>70-79% Susceptible ■</p> <p>≤69% Susceptible ■</p> </div> </div>																								
#	%	Ampicillin	Amoxicillin-Clavulanic acid	Penicillin	Penicillin IV (meningitis)	Penicillin IV (non-meningitis)	Piperacillin-Tazobactam	Meropenem	Ertapenem	Cloxacillin	Cefazolin	Ceftriaxone	Ceftriaxone (meningitis)	Ceftriaxone (non-meningitis)	Ceftazidime	Clindamycin	Erythromycin	Doxycycline	Ciprofloxacin	Moxifloxacin	Trimethoprim-Sulfamethoxazole	Gentamicin	Tobramycin	Amikacin	Vancocycin	Linezolid
ALL BACTERIA	74	—	19	22			76	83	30		22	39									37					
ALL GRAM-NEGATIVE BACTERIA	52	100	21	25			78	88	12			30			75				74		15	92	97	97		
<i>Pseudomonas aeruginosa</i>	31	60					77	81							77				77			90	97	97		
<i>Haemophilus influenzae</i> ^{^^}	11	21	91																							
<i>Enterobacter cloacae</i>	2	4	0	0			0	100	100	0	0	0	0	0	0				100		100	100	100	100		
<i>Serratia marcescens</i>	2	4	0	0			0	100	100	0	0	0	0	0	0				100		100	100	100	100		
<i>Stenotrophomonas maltophilia</i> [*]	2	4																		50	50					
<i>Moraxella catarrhalis</i> [^]	2	4																								
<i>Escherichia coli</i>	1	2	0	100			100	100	100			100			100				0		100	100	100	100		
<i>Proteus mirabilis</i>	1	2	100	100			100	100	100			100			100				100		0	100	100	100		
ALL GRAM-POSITIVE BACTERIA	22	100	14	14	14		73	73	73	59	73	59			50	41					83				91	
<i>Staphylococcus aureus</i> , all isolates	15	68					87	87	87	87	87				40	27	100				100				100	100
- methicillin-susceptible	13	59					100	100	100	100	100				38	31	100				100				100	100
- methicillin-resistant (MRSA)	2	9					0	0	0	0	0				50	0	100				100				100	100
<i>Streptococcus pneumoniae</i>	4	18			75	75						0	100		100	100				100					100	
<i>Mycobacterium tuberculosis complex</i>	2	9																								

General Notes:

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- Susceptibility to doxycycline was predicted based on tetracycline susceptibility testing results.

Organism-Specific Notes:

- [^] *M. catarrhalis*: Susceptibility testing is not routinely performed. Most isolates are resistant to ampicillin and amoxicillin but are generally susceptible to other antibiotics commonly used for respiratory infections.
- ^{^^} *H. influenzae* and *H. parainfluenzae*: Susceptibility to ampicillin was determined using beta-lactamase testing. Beta-lactamase-positive isolates are resistant to ampicillin but are generally susceptible to amoxicillin-clavulanic acid and cefuroxime.
- ^{*} *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

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Skin, Wound and Abscess Isolates – % Susceptible

	#	%	Antibiotics																				
			Ampicillin	Amoxicillin-Clavulanic acid	Penicillin	Piperacillin-Tazobactam	Meropenem	Ertapenem	Cloxacillin	Cefazolin	Ceftriaxone	Ceftazidime	Clindamycin	Erythromycin	Doxycycline	Ciprofloxacin	Moxifloxacin	Trimethoprim-Sulfamethoxazole	Gentamicin	Tobramycin	Amikacin	Vancomycin	Linezolid
ALL BACTERIA	7	—	14	43		86	86	43		29	71						50						
ALL GRAM-NEGATIVE BACTERIA	5	100	20	60		80	80	20			60	80				100		100	100	100			
<i>Haemophilus influenzae</i> ^{^^}	2	40	50																				
<i>Pseudomonas aeruginosa</i>	1	20			100	0					100				100			100	100	100			
<i>Escherichia coli</i>	1	20	0	0	0	100	100		0	0	0				100		0	100	100	100			
<i>Haemophilus parainfluenzae</i> ^{^^}	1	20	0																				
ALL GRAM-POSITIVE BACTERIA	2	100			100	100	100	100	100	100		50	50				100					100	
<i>Staphylococcus aureus</i>	2	100			100	100	100	100	100	100		50	50	0			100					100	100

General Notes:

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- Susceptibility to doxycycline was predicted based on tetracycline susceptibility testing results.

Organism-Specific Notes:

^{^^} *H. influenzae* and *H. parainfluenzae*: Susceptibility to ampicillin was determined using beta-lactamase testing. Beta-lactamase-positive isolates are resistant to ampicillin but are generally susceptible to amoxicillin-clavulanic acid and cefuroxime.

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Urine Isolates – % Susceptible

		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>≥80% Susceptible ■</p> <p>70-79% Susceptible ■</p> <p>≤69% Susceptible ■</p> </div> </div>																				
	#	%	Ampicillin	Amoxicillin-Clavulanic acid	Penicillin	Piperacillin-Tazobactam	Meropenem	Ertapenem	Cloxacillin	Cefazolin	Cephalexin	Ceftriaxone	Ceftazidime	Doxycycline	Ciprofloxacin	Trimethoprim-Sulfamethoxazole	Nitrofurantoin	Gentamicin	Tobramycin	Amikacin	Vancomycin	Linezolid
ALL BACTERIA	1170	—	34	63		77	81	75		9	56	60		58	73	54	74					
ALL GRAM-NEGATIVE BACTERIA	909	100	23	61		73	99	92		6	67	71	77	62	76	64	69	91	88	99		
<i>Escherichia coli</i>	564	62	30	67		77	100	99		6	78	83	83	100	70	64	94	90	87	99		
<i>Klebsiella pneumoniae</i>	131	14	0	85		85	100	100		15	86	87	87		86	73	34	92	82	97		
<i>Pseudomonas aeruginosa</i>	59	6				90	88						93		85			95	100	97		
<i>Proteus mirabilis</i>	47	5	81	93		94	100	100		0	91	94	94		81	70	0	87	88	100		
<i>Enterobacter cloacae</i>	31	3	0	0	0	0	100	90		0	0	0	0		84	77	42	97	97	100		
<i>Klebsiella oxytoca</i>	19	2	0	95		95	100	100			84	100	100		100	89	84	100	100	100		
<i>Citrobacter koseri</i>	16	2	0	0		0	100	100		0	0	0	0		100	94	88	100	100	100		
<i>Morganella morganii</i>	11	1	0	0		0	100	100		0	0	0	0		82	73	0	82	91	100		
<i>Serratia marcescens</i>	9	1	0	0		0	100	89		0	0	0	0		89	100	0	100	100	100		
<i>Citrobacter freundii</i>	8	1	0	0		0	100	100		0	0	0	0		100	100	88	100	100	100		
ALL GRAM-POSITIVE BACTERIA	261	100	71	71		90	19	19	19	19	19	19			44	63	17	92			98	99
<i>Enterococcus faecalis</i>	181	69	100	100		100									35	84		99			99	100
<i>Staphylococcus aureus</i> , all isolates	42	16				95	95	95	95	95	95				90		100	100			100	100
- methicillin-susceptible	40	15				100	100	100	100	100	100				90		100	100			100	100
- methicillin-resistant (MRSA)	2	1				0	0	0	0	0	0				100		100	100			100	100
<i>Enterococcus faecium</i> , all isolates	21	8	5	5		5									19	5		15			86	100
- vancomycin-susceptible	18	7	6	6		6									22	6		17			100	100
- vancomycin-resistant (VRE)	3	1	0	0		0									0	0		0			0	100
<i>Staphylococcus saprophyticus</i>	11	4																				
Coagulase-negative staphylococci	3	1				0	0	0	0	0					100	0	0	100			100	100

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- Susceptibility to doxycycline was predicted based on tetracycline susceptibility testing results.

Organism-Specific Notes:

" *S. saprophyticus* : Susceptibility testing is not routinely performed. Most urinary tract infections due to this organism respond to nitrofurantoin, trimethoprim/sulfamethoxazole or fluoroquinolones.