



**Toronto General Hospital ANTIBIOGRAM**  
**All Inpatients**  
**January 1, 2018 - December 31, 2018**

**Respiratory Isolates – % Susceptible**

		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>≥80% Susceptible <span style="color: green;">■</span></p> <p>70-79% Susceptible <span style="color: yellow;">■</span></p> <p>≤69% Susceptible <span style="color: red;">■</span></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	Vancomycin	Linezolid		
<b>ALL BACTERIA</b>	582	—	10	23			71	86	47		23	51															57	
<b>ALL GRAM-NEGATIVE BACTERIA</b>	414	100	10	29			68	88	34			38			65				65		41	85	89	88				
<i>Pseudomonas aeruginosa</i>	161	39					73	75							75				65			77	89	82				
<i>Haemophilus influenzae</i> <sup>^^</sup>	48	12	69																									
<i>Klebsiella pneumoniae</i>	39	9	0	95			90	100	100			100			100				97		90	100	95	100				
<i>Stenotrophomonas maltophilia</i> <sup>†</sup>	38	9																		84	95							
<i>Escherichia coli</i>	36	9	17	42			44	97	94		0	58			58				44		33	81	72	100				
<i>Enterobacter cloacae</i>	22	5	0	0			0	95	86		0	0			0				91		73	100	100	100				
<i>Serratia marcescens</i>	17	4	0	0			0	100	100		0	0			0				94		82	100	88	100				
<i>Klebsiella oxytoca</i>	15	4	0	87			87	100	100		0	87			87				100		100	100	100	100				
<i>Moraxella catarrhalis</i> <sup>*</sup>	15	4																										
<i>Citrobacter koseri</i>	6	1	0	0			0	100	100		0	0			0				100		100	100	100	100				
<i>Proteus mirabilis</i>	5	1	80	80			80	100	100		0	80			80				80		60	100	100	100				
<i>Acinetobacter baumannii</i> complex	5	1					60	100				20			80				100		60	80	80					
<b>ALL GRAM-POSITIVE BACTERIA</b>	168	100	9	9	9		79	79	79	70	79	80				68	58				96						99	
<i>Staphylococcus aureus</i> , all isolates	143	85					82	82	82	82	82					66	59	97			97					100	100	
- methicillin-susceptible	118	70					99	99	99	99	99					67	65	97			99					100	100	
- methicillin-resistant (MRSA)	25	15					0	0	0	0	0					62	29	96			88					100	100	
<i>Streptococcus pneumoniae</i>	22	13			67	67							78	100		86	55			100						100		
<i>Mycobacterium tuberculosis</i> complex	2	1																										
Group A streptococci**	1	1			100											100	100									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.

**Organism-Specific Notes:**

- <sup>^</sup> *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.
- <sup>^^</sup> *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.
- <sup>\*\*</sup> 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.
- <sup>†</sup> *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

# Toronto General Hospital ANTIBIOGRAM

## All Inpatients

### January 1, 2018 - December 31, 2018

#### Urine Isolates – % Susceptible

	#	%	Antibiotics																				
			Ampicillin	Amoxicillin-Clavulanic acid	Penicillin	Piperacillin-Tazobactam	Meropenem	Ertapenem	Cloxacillin	Cefazolin	Cephalexin	Ceftriaxone	Ceftazidime	Doxycycline	Ciprofloxacin	Trimethoprim-Sulfamethoxazole	Nitrofurantoin	Gentamicin	Tobramycin	Amikacin	Vancomycin	Linezolid	
<b>ALL BACTERIA</b>	936	—	31	58	70	72	64			2	42	45		9	70	44	66						
<b>ALL GRAM-NEGATIVE BACTERIA</b>	662	100	14	53	66	99	88				57	60	69		74	59	60	90	89	99			
<i>Escherichia coli</i>	341	52	21	62	69	100	99			0	71	74	74		60	56	92	87	85	100			
<i>Klebsiella pneumoniae</i>	123	19	0	76	76	99	98			0	76	78	78		83	67	24	88	85	99			
<i>Pseudomonas aeruginosa</i>	61	9			93	97							92		90			97	100	98			
<i>Enterobacter cloacae</i>	45	7	0	0	0	100	89			0	0	0	0		93	80	36	100	100	100			
<i>Proteus mirabilis</i>	32	5	75	94	100	100	100				88	100	100		88	81	0	91	91	100			
<i>Klebsiella oxytoca</i>	20	3	0	80	85	100	100			0	70	90	90		100	90	90	100	95	100			
<i>Citrobacter freundii</i>	13	2	0	0	0	92	100			0	0	0	0	0	93	77	92	100	85	92			
<i>Serratia marcescens</i>	7	1	0	0	0	100	100			0	0	0	0		100	100	0	100	100	100			
<i>Citrobacter koseri</i>	7	1	0	0	0	100	100			0	0	0	0		100	100	100	100	100	100			
<i>Morganella morganii</i>	6	1	0	0	0	100	100			0	0	0	0		83	83	0	83	100	100			
<b>ALL GRAM-POSITIVE BACTERIA</b>	274	100	72	72	78	6	6	6	6	6	6	6			31	60	7	80				93	
<i>Enterococcus faecalis</i> , all isolates	190	69	99	99	99										20	84		98				100	100
- vancomycin-susceptible	190	69	99	99	99										20	84		98				100	100
- vancomycin-resistant (VRE)	0	0																					
<i>Enterococcus faecium</i> , all isolates	58	21	5	5	5										40	3		14				67	100
- vancomycin-susceptible	39	14	5	5	5										44	5		15				100	100
- vancomycin-resistant (VRE)	19	7	5	5	5										32	0		11				0	100
- vancomycin-susceptible (vanA+)	0	0																					
<i>Staphylococcus aureus</i> , all isolates	20	7			85	85	85	85	85	85					100		100	95				100	100
- methicillin-susceptible	17	6			100	100	100	100	100	100					100		100	94				100	100
- methicillin-resistant (MRSA)	3	1			0	0	0	0	0	0					100		100	100				100	100
<i>Enterococcus gallinarum</i>	4	1	75	75	75										75	25		75				100	
<i>Enterococcus species</i>	1	0	100	100	100										0	100		100				100	
<i>Enterococcus casseliflavus</i>	1	0	100	100	100										100	100		100				100	

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

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**All Inpatients**  
**January 1, 2018 - December 31, 2018**

**All Non-Urine Isolates – % Susceptible**

	#	%	Antibiotics																							
			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	Vancomycin
<b>ALL BACTERIA</b>	2272	—	14	25			62	68	52		35	49									61					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	1014	100	43	38			66	94	57		20	46			65				75		56	89	90	97		
<i>Pseudomonas aeruginosa</i>	268	26					76	81							79				75			85	93	89		
<i>Escherichia coli</i>	216	21	24	57			66	98	97		37	69			69				60		61	82	81	100		
<i>Klebsiella pneumoniae</i>	154	15	0	87			86	99	97		67	93			93				91		82	95	91	100		
<i>Enterobacter cloacae</i>	90	9	0	0			0	100	93		0	0			0				97		87	99	98	100		
<i>Haemophilus influenzae</i> <sup>^^</sup>	72	7	85																							
<i>Stenotrophomonas maltophilia</i> <sup>*</sup>	55	5																	76		95					
<i>Klebsiella oxytoca</i>	39	4	0	87			87	100	100		11	90			90				100		97	97	97	100		
<i>Serratia marcescens</i>	36	4	0	0			0	100	100		0	0			0				94		94	100	92	100		
<i>Proteus mirabilis</i>	26	3	77	96			96	100	96		40	96			96				88		85	96	96	100		
<i>Citrobacter freundii</i>	15	1	0	0			0	100	100		0	0			0				80		60	80	67	100		
<i>Acinetobacter baumannii</i> complex	11	1					73	100			36				73				100		82	91	91	100		
<i>Moraxella catarrhalis</i> <sup>^</sup>	10	1																								
<i>Morganella morganii</i>	10	1	0	0			0	100	100		0	0			0				100		100	100	100	100		
<i>Citrobacter koseri</i>	10	1	0	0			0	100	100		0	0			0				100		100	100	100	100		
<b>ALL GRAM-POSITIVE BACTERIA</b>	1258	100	15	15	5		59	48	48	43	48	51			52	43					65				97	
Coagulase-negative staphylococci	523	42					40	40	40	40	40				59	44	91				71				100	100
<i>Staphylococcus aureus</i> , all isolates	391	31					84	84	84	84	84				71	65	95				97				100	100
- methicillin-susceptible	330	26					100	100	100	100	100				74	72	96				98				100	100
- methicillin-resistant (MRSA)	61	5					0	0	0	0	0				57	25	88				93				100	100
<i>Enterococcus faecium</i> , all isolates	127	10	11	11			11																		70	
- vancomycin-susceptible	89	7	16	16			16																		100	
- vancomycin-resistant (VRE)	38	3	0	0			0																		0	100
- vancomycin-susceptible (vanA+)	0	0																								
<i>Enterococcus faecalis</i> , all isolates	108	9	99	99			99																		100	
- vancomycin-susceptible	108	9	99	99			99																		100	
- vancomycin-resistant (VRE)	0	0																								
Viridans group streptococci <sup>*</sup>	59	5		59								92													100	
<i>Streptococcus pneumoniae</i>	30	2					44	94							87	100					88	60			100	
Group A streptococci <sup>**</sup>	12	1					100								100	92									100	
Group B streptococci <sup>**</sup>	8	1					100								38	38									100	

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<sup>^</sup> *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.

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<sup>\*\*</sup> 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.

<sup>\*</sup> 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.

<sup>†</sup> *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.