

**Toronto General Hospital ANTIBIOGRAM**  
**Wards other than ICUs/Emergency/Transplant Unit**  
**January 1, 2023 - December 31, 2023**

**Blood 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>	1376	—	11	22			53	57	54		41	52									70					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	391	100	16	56			70	98	87		40	65			71				67		65	92	90	97		
<i>Escherichia coli</i>	170	43	36	66			73	99	99		51	78			78				56		60	89	86	98		
<i>Klebsiella pneumoniae</i>	93	24	0	77			77	100	99		67	82			82				72		76	93	90	99		
<i>Pseudomonas aeruginosa</i>	30	8					90	90							90					87		90	97	93		
<i>Enterobacter cloacae</i>	22	6	0	0			0	100	95		0	0			0					95		86	95	95	100	
<i>Klebsiella oxytoca</i>	19	5	0	100			100	100	100		39	100			100					89		89	100	100	100	
<i>Proteus mirabilis</i>	18	5	6	94			100	100	100		6	100			100					72		67	89	94	100	
<i>Stenotrophomonas maltophilia</i> <sup>1</sup>	13	3																			85	92				
<i>Serratia marcescens</i>	11	3	0	0			0	100	100		0	0			0					82		100	100	100	91	
<i>Pantoea agglomerans</i>	5	1	0	0			0	100	100		0	0			0					100		100	100	100	100	
<i>Citrobacter freundii</i>	4	1	0	0			0	100	100		0	0			0					100		100	100	100	100	
<i>Morganella morganii</i>	3	1	0	0			0	100	100		0	0			0					100		67	100	100	67	
<i>Pseudomonas putida</i>	3	1					100		0						100					100		0	100	100		
<b>ALL GRAM-POSITIVE BACTERIA</b>	985	100	9	9	4		47	41	41	38	41	47			57	35					73				99	
Coagulase-negative staphylococci	684	69					39	39	39	39	39				62	31	86				78				100	99
<i>Staphylococcus aureus</i> , all isolates	117	12					90	90	90	90	89				78	71	93				100				100	100
- methicillin-susceptible	106	11					99	99	99	99	98				81	77	95				100				100	100
- methicillin-resistant (MRSA)	11	1					0	0	0	0	0				45	18	73				100				100	100
<i>Enterococcus faecium</i> , all isolates	47	5	13	13			13																		74	
- vancomycin-susceptible	35	4	18	18			18																		100	
- vancomycin-resistant (VRE)	12	1	0	0			0																		0	100
- vancomycin-susceptible (vanA+)	0	0																								
<i>Enterococcus faecalis</i> , all isolates	46	5	100	100			100																		100	
- vancomycin-susceptible	46	5	100	100			100																		100	
- vancomycin-resistant (VRE)	0	0																								
Viridans group streptococci <sup>*</sup>	41	4									98															100
Group A streptococci <sup>**</sup>	16	2		100											94	85										100
<i>Streptococcus pneumoniae</i>	14	1											93	100			85				100					100
Group C streptococci <sup>**</sup>	9	1		100											22	22										100
Group B streptococci <sup>**</sup>	6	1		100											83	83										100
Group G streptococci <sup>**</sup>	5	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:**

**\*\*** 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>1</sup> S. maltophilia: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

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**Wards other than ICUs/Emergency/Transplant Unit**  
**January 1, 2023 - December 31, 2023**

**Respiratory 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	Linezolid				
<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; background-color: #90EE90; margin-right: 5px;"></div> ≥80% Susceptible  <div style="width: 15px; height: 10px; background-color: #FFFF00; margin-right: 5px; margin-left: 5px;"></div> 70-79% Susceptible  <div style="width: 15px; height: 10px; background-color: #FF0000; margin-right: 5px; margin-left: 5px;"></div> ≤69% Susceptible         </div>																															
<b>ALL BACTERIA</b>	<b>164</b>	<b>—</b>	<b>2</b>	<b>8</b>				<b>77</b>	<b>85</b>	<b>41</b>		<b>28</b>	<b>42</b>													<b>45</b>					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	<b>109</b>	<b>100</b>		<b>8</b>				<b>74</b>	<b>86</b>	<b>20</b>			<b>19</b>			<b>76</b>				<b>79</b>		<b>20</b>	<b>89</b>	<b>94</b>	<b>91</b>						
<i>Pseudomonas aeruginosa</i>	74	68						81	82							84				82			86	95	90						
<i>Klebsiella pneumoniae</i>	10	9	0	60				60	100	100		0	80			80				80		70	90	100	100						
<i>Moraxella catarrhalis</i> <sup>^</sup>	7	6																													
<i>Escherichia coli</i>	6	6	0	33				67	100	100		0	67			67				83		67	100	100	100						
<i>Enterobacter cloacae</i>	4	4	0	0				0	100	75		0	0			0				50		75	100	75	100						
<i>Stenotrophomonas maltophilia</i> <sup>†</sup>	3	3																			67	67									
<i>Serratia marcescens</i>	2	2	0	0				0	100	100		0	0			0				100		100	100	100	100						
<i>Klebsiella oxytoca</i>	1	1	0	100				100	100				100			100				100		100	100	100							
<i>Citrobacter koseri</i>	1	1	0	0				0	100	100		0	0			0				100		100	100	100	100						
<i>Pseudomonas putida</i>	1	1						100		0						100				100		0	100	100							
<b>ALL GRAM-POSITIVE BACTERIA</b>	<b>55</b>	<b>100</b>	<b>7</b>	<b>7</b>	<b>7</b>			<b>83</b>	<b>83</b>	<b>83</b>	<b>76</b>	<b>83</b>	<b>85</b>			<b>71</b>	<b>65</b>					<b>98</b>								<b>98</b>	
<i>Staphylococcus aureus</i> , all isolates	49	89						86	86	86	86	86				69	63	86				100								100	100
- methicillin-susceptible	42	76						100	100	100	100	100				76	71	93				100								100	100
- methicillin-resistant (MRSA)	7	13						0	0	0	0	0				29	14	43				100								100	100
<i>Streptococcus pneumoniae</i>	5	9						75	75							100	100				100									100	
<i>Mycobacterium tuberculosis complex</i>	1	2																													

**General Notes:**

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- 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> *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

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**All Urine Isolates – % Susceptible**

	#	%	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>	1309	–	21	58	71	72	62			7	2	47		28	67	49	67						
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<b>ALL GRAM-NEGATIVE BACTERIA</b>	928	100	3	55	69	98	85			6		64	73	26	68	66	64	91	55	93		
<i>Escherichia coli</i>	470	51	5	66	74	100	98			9	0	78	78	25	57	69	97	89	39	95		
<i>Klebsiella pneumoniae</i>	177	19	0	78	80	98	86			6	0	84	84	67	70	73	29	93	48	83		
<i>Pseudomonas aeruginosa</i>	88	9			86	87							92		84			89	95	94		
<i>Enterobacter cloacae</i>	52	6	0	0	2	100	96			0	0	0	0		96	80	51	94	100	100		
<i>Proteus mirabilis</i>	49	5	12	83	94	100	83			0		96	96		78	80	0	86	67	100		
<i>Klebsiella oxytoca</i>	32	3	0	77	77	100	100			12		77	77		91	88	90	94	50	100		
<i>Citrobacter koseri</i>	18	2	0	0	0	100	100			0	0	0	0		100	94	94	100	100	100		
<i>Citrobacter freundii</i>	11	1	0	0	0	100	100			0	0	0	0		82	64	100	100	91	91		
<i>Morganella morganii</i>	10	1	0	0	0	100	100			0	0	0	0		60	70	10	90	80	100		
<i>Serratia marcescens</i>	9	1	0	0	0	100	100			0	0	0	0		100	100	0	100	100	100		
<i>Stenotrophomonas maltophilia</i>	4	0														100	0					
<i>Pseudomonas putida</i>	3	0			100		0				0		100		100	0	0	100	100			
<i>Citrobacter braakii</i>	2	0	0	0	0	100	100			0	0	0	0		50	100	100	100	100	100		
<i>Acinetobacter baumannii complex</i>	1	0			100	100				0	0	0	100		100	100	0	100	100	100		
<i>Providencia rettgeri</i>	1	0	0	0	0	100	100			0	0	0	0		0	100	0	100	100	100		
<i>Citrobacter amalonaticus</i>	1	0	0	0	0	100	100			0	0	0	0		100	100	0	100	100	100		

<b>ALL GRAM-POSITIVE BACTERIA</b>	381	100	65	65	73	8	8	8	8	8	8			35	65	9	74				91	99
<i>Enterococcus faecalis</i> , all isolates	239	63	99	99	100									32	87		99				100	100
- vancomycin-susceptible	239	63	99	99	100									32	87		99				100	100
- vancomycin-resistant (VRE)	0	0																				
<i>Enterococcus faecium</i> , all isolates	106	28	10	10	10									24	8		7				69	98
- vancomycin-susceptible	74	19	14	14	14									27	12		8				99	98
- vancomycin-resistant (VRE)	32	8	0	0	0									16	0		6				0	97
- vancomycin-susceptible (vanA+)	0	0																				
<i>Staphylococcus aureus</i> , all isolates	33	9			91	91	91	91	91	91				91	91	97	100				100	100
- methicillin-susceptible	30	8			100	100	100	100	100	100				97	100	100	100				100	100
- methicillin-resistant (MRSA)	3	1			0	0	0	0	0	0				33		67	100				100	100
Coagulase-negative staphylococci	3	1			0	0	0	0	0	0				100		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.
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- Susceptibility to doxycycline was predicted based on tetracycline susceptibility testing results.

**Organism-Specific Notes:**

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

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**January 1, 2023 - December 31, 2023**

**All Specimens – % Susceptible**

≥80% Susceptible <span style="color: green;">■</span> 70-79% Susceptible <span style="color: yellow;">■</span> ≤69% Susceptible <span style="color: red;">■</span>	#	%	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>	2776	—	20	41				67	71	61		31	51									56					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	1545	100	11	48				69	97	80		26	57		72					71		62	91	85	97		
<i>Escherichia coli</i>	625	40	25	65				74	100	99		35	78		78					57		67	89	75	98		
<i>Klebsiella pneumoniae</i>	278	18	0	79				81	99	96		57	85		85					74		76	93	85	96		
<i>Pseudomonas aeruginosa</i>	254	16						86	88						89					86			90	96	94		
<i>Enterobacter cloacae</i>	105	7	0	0				2	100	96		0	2		2					92		86	96	96	100		
<i>Proteus mirabilis</i>	78	5	10	86				94	100	96		7	95		95					78		79	90	85	100		
<i>Klebsiella oxytoca</i>	62	4	0	86				87	100	100		30	88		88					93		91	97	93	100		
<i>Serratia marcescens</i>	35	2	0	0				0	100	100		0	0		0					91		100	100	100	97		
<i>Stenotrophomonas maltophilia</i> <sup>†</sup>	23	1																			82	91					
<i>Citrobacter koseri</i>	23	1	0	0				0	100	100		0	0		0					100		96	100	100	100		
<i>Citrobacter freundii</i>	21	1	0	0				0	100	100		0	0		0					86		75	95	90	95		
<i>Morganella morganii</i>	19	1	0	0				0	100	100		0	0		0					74		74	95	84	95		
<i>Citrobacter braakii</i>	8	1	0	0				0	100	100		0	0		0					75		88	100	88	100		
<i>Moraxella catarrhalis</i> <sup>^</sup>	7	0																									
<i>Pseudomonas putida</i>	7	0						100		0					100					100		0	100	100			

<b>ALL GRAM-POSITIVE BACTERIA</b>	1231	100	31	31	4			65	38	38	34	38	44			41	33					48					95
<i>Staphylococcus aureus</i> , all isolates	366	30						88	88	88	88	87				77	67	94			99					100	100
- methicillin-susceptible	325	26						99	99	99	99	98				79	71	96			100					100	100
- methicillin-resistant (MRSA)	41	3						2	2	2	2	2				61	37	78			93				100	100	
<i>Enterococcus faecalis</i> , all isolates	313	25	99	99				100																		100	
Coagulase-negative staphylococci	239	19						38	38	38	38	38				59	36	90			71					100	100
<i>Enterococcus faecium</i> , all isolates	185	15	11	11				11																		69	
- vancomycin-susceptible	129	10	16	16				16																		99	
- vancomycin-resistant (VRE)	56	5	0	0				0																		0	98
- vancomycin-susceptible (vanA+)	0	0																									
Viridans group streptococci <sup>^</sup>	64	5											98														100
<i>Streptococcus pneumoniae</i>	23	2				60	60							95	100	100	86			100						100	
Group A streptococci**	21	2				100										90	86									100	
Group C streptococci**	11	1				100										27	27									100	
Group B streptococci**	9	1				100										88	88									100	

**General Notes:**

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

**Year-Specific Notes:**

- All specimens exclude surveillance samples.

**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.
- \*\* 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.