

Toronto General Hospital ANTIBIOGRAM
All Inpatients and Outpatients
January 1, 2023 - December 31, 2023

All Specimens – % 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

ALL BACTERIA	922	—	19	37			62	69	64		41	58									62						
ALL GRAM-NEGATIVE BACTERIA	442	100	15	54			68	98	87		39	62			68					66	64	92	91	98			
<i>Escherichia coli</i>	190	43	34	65			72	99	99		51	76			76					55	61	90	87	98			
<i>Klebsiella pneumoniae</i>	99	22	0	76			77	100	99		67	80			80					70	74	93	90	98			
<i>Pseudomonas aeruginosa</i>	41	9					90	85							90					83		93	98	95			
<i>Enterobacter cloacae</i>	29	7	0	0			3	100	97		0	3			3					93	79	90	93	100			
<i>Klebsiella oxytoca</i>	20	5	0	100			100	100	100		37	100			100					90	89	100	100	100			
<i>Proteus mirabilis</i>	19	4	11	94			100	100	100		11	100			100					74	68	89	95	100			
<i>Stenotrophomonas maltophilia</i> [†]	14	3																		86	93						
<i>Serratia marcescens</i>	14	3	0	0			0	100	100		0	0			0					79	100	100	100	93			
<i>Pantoea agglomerans</i>	7	2	0	0			0	100	100		0	0			0					100	100	100	100	100			
<i>Citrobacter freundii</i>	5	1	0	0			0	100	100		0	0			0					100	100	100	100	100			
<i>Morganella morganii</i>	4	1	0	0			0	100	100		0	0			0					100	75	100	100	75			

ALL GRAM-POSITIVE BACTERIA	480	100	22	22	9		56	42	42	34	42	55			46	39				58						96
<i>Staphylococcus aureus</i> , all isolates	135	28					89	89	89	89	89				76	70	93			100					99	100
- methicillin-susceptible	122	25					99	99	99	99	98				79	75	95			100					100	100
- methicillin-resistant (MRSA)	13	3					0	0	0	0	0				50	25	75			100					92	100
Coagulase-negative staphylococci	108	23					39	39	39	39	39				61	32	88			76					100	99
<i>Enterococcus faecium</i> , all isolates	71	15	10	10			10																		72	
- vancomycin-susceptible	51	11	14	14			14																		100	
- vancomycin-resistant (VRE)	20	4	0	0			0																		0	100
<i>Enterococcus faecalis</i> , all isolates	59	12	100	100			100																		100	
Viridans group streptococci*	50	10											96												100	
Group A streptococci**	19	4			100												89	80							100	
<i>Streptococcus pneumoniae</i>	16	3												88	100					100					100	
Group C streptococci**	9	2			100												22	22							100	
Group B streptococci**	8	2			100												75	75							100	
Group G streptococci**	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:

- All specimens exclude surveillance samples.

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.

* 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.

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

Toronto General Hospital ANTIBIOGRAM
All Inpatients and Outpatients
January 1, 2023 - December 31, 2023

Respiratory Isolates – % Susceptible

		≥80% Susceptible ■ 70-79% Susceptible ■ ≤69% Susceptible ■																								
#	%	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
ALL BACTERIA	469	—	1	10			71	87	47		27	45									61					
ALL GRAM-NEGATIVE BACTERIA	312	100	13				66	91	29			24			61				75		43	89	81	87		
<i>Pseudomonas aeruginosa</i>	145	46					84	84							85				85			87	96	91		
<i>Stenotrophomonas maltophilia</i> [†]	33	11																	81	84						
<i>Klebsiella pneumoniae</i>	28	9	0	71			71	96	80		0	75		75				79	75	89	40	80				
<i>Enterobacter cloacae</i>	25	8	0	0			0	100	96		0	0		0				92	92	100	96	100				
<i>Serratia marcescens</i>	19	6	0	0			0	100	100		0	0		0				94	100	100	100	100				
<i>Escherichia coli</i>	18	6	0	33			50	94	75		0	67		67				61	50	83	50	100				
<i>Klebsiella oxytoca</i>	14	4	0	79			79	100			0	86		86				100	100	100						
<i>Moraxella catarrhalis</i> [^]	14	4																								
<i>Proteus mirabilis</i>	6	2	0	83			100	100	100		0	100		100				83	87	83	100	100				
<i>Citrobacter koseri</i>	5	2	0	0			0	100	100		0	0		0				100	100	100	100	100				
<i>Burkholderia cepacia</i>	3	1						67						33						87						
<i>Citrobacter freundii</i>	2	1	0	0			0	100	100		0	0		0				100	100	100	100	100				
ALL GRAM-POSITIVE BACTERIA	157	100	4	4	4		81	81	81	78	81	83			78	69					98					99
<i>Staphylococcus aureus</i> , all isolates	145	92					84	84	84	84	84				77	69	91				99				100	100
- methicillin-susceptible	123	78					99	99	99	99	99				80	74	95				100				100	100
- methicillin-resistant (MRSA)	22	14					0	0	0	0	0				62	43	67				91				100	100
<i>Streptococcus pneumoniae</i>	11	7			50	50							83	100	90	73			100						100	
<i>Mycobacterium tuberculosis complex</i>	1	1																								

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

Toronto General Hospital ANTIBIOGRAM

All Inpatients and Outpatients

January 1, 2023 - December 31, 2023

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

ALL BACTERIA	1382	–	21	58	70	72	62		7	2	47			28	68	49	66						
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ALL GRAM-NEGATIVE BACTERIA	982	100	3	55	69	98	85		6		63	73	25	69	66	64	91	56	93			
<i>Escherichia coli</i>	491	50	5	66	74	100	98		9	0	78	78	25	58	69	97	89	40	95			
<i>Klebsiella pneumoniae</i>	189	19	0	77	78	98	86		6	0	84	84	67	72	73	29	93	48	83			
<i>Pseudomonas aeruginosa</i>	95	10			86	87							91	84			90	96	95			
<i>Enterobacter cloacae</i>	57	6	0	0	2	100	96		0	0	0	0		95	80	50	95	100	100			
<i>Proteus mirabilis</i>	53	5	12	84	94	100	83		0		96	96		79	79	0	85	67	100			
<i>Klebsiella oxytoca</i>	33	3	0	77	77	100	100		22		77	77		91	88	90	94	50	100			
<i>Citrobacter koseri</i>	20	2	0	0	0	100	100		0	0	0	0		100	95	95	100	100	100			
<i>Citrobacter freundii</i>	12	1	0	0	0	100	100		0	0	0	0		83	67	100	100	92	92			
<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	4	0													100	0						
<i>Citrobacter braakii</i>	3	0	0	0	0	100	100		0	0	0	0		67	100	100	100	100	100			
<i>Pseudomonas putida</i>	3	0			100		0			0		100		100	0	0	100	100				
<i>Acinetobacter baumannii</i> complex	1	0			100	100				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			

ALL GRAM-POSITIVE BACTERIA	400	100	64	64	72	8	8	8	8	8	8	8		35	64	9	73				91	99
<i>Enterococcus faecalis</i> , all isolates	249	62	99	99	100									33	87		99				100	100
<i>Enterococcus faecium</i> , all isolates	115	29	8	8	8									23	8		8				70	98
- vancomycin-susceptible	81	20	12	12	12									26	11		9				99	98
- vancomycin-resistant (VRE)	34	9	0	0	0									15	0		6				0	97
<i>Staphylococcus aureus</i> , all isolates	33	8			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

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

Organism-Specific Notes:

⁴ *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

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All Specimens – % 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	
ALL BACTERIA	3363	—	18	38				66	71	60		31	50									57						
ALL GRAM-NEGATIVE BACTERIA	1864	100	10	45				68	97	76		24	54			69				71		62	92	86	97			
<i>Escherichia coli</i>	696	37	25	65				74	100	99		36	78			78				57		67	89	77	97			
<i>Pseudomonas aeruginosa</i>	343	18						86	87							88				86			91	97	94			
<i>Klebsiella pneumoniae</i>	316	17	0	79				81	99	96		55	84			84				75		77	94	85	96			
<i>Enterobacter cloacae</i>	137	7	0	0				2	100	97		0	1			1				92		87	97	97	100			
<i>Proteus mirabilis</i>	86	5	10	86				94	100	96		7	95			95				80		79	89	89	100			
<i>Klebsiella oxytoca</i>	81	4	0	83				85	100	100		31	87			87				92		91	96	91	97			
<i>Stenotrophomonas maltophilia</i> [†]	56	3																		81		89						
<i>Serratia marcescens</i>	55	3	0	0				0	100	100		0	0			0				93		100	100	100	98			
<i>Citrobacter koseri</i>	28	2	0	0				0	100	100		0	0			0				100		96	100	100	100			
<i>Citrobacter freundii</i>	24	1	0	0				0	100	100		0	0			0				88		78	96	91	96			
<i>Morganella morganii</i>	20	1	0	0				0	100	100		0	0			0				75		75	95	85	95			
<i>Moraxella catarrhalis</i> [^]	12	1																										
<i>Citrobacter braakii</i>	10	1	0	0				0	100	100		0	0			0				80		90	100	90	100			
ALL GRAM-POSITIVE BACTERIA	1499	100	28	28	4			63	39	39	35	39	45				43	34				50					95	
<i>Staphylococcus aureus</i> , all isolates	482	32						87	87	87	87	86					78	69	94			99					100	100
- methicillin-susceptible	424	28						99	99	99	99	98					80	73	96			100					100	100
- methicillin-resistant (MRSA)	58	4						2	2	2	2	2					64	41	77			91				98	100	
<i>Enterococcus faecalis</i> , all isolates	347	23	99	99				99																			100	
Coagulase-negative staphylococci	283	19						37	37	37	37	37					59	35	90			70					100	100
<i>Enterococcus faecium</i> , all isolates	232	15	9	9				9																			69	
- vancomycin-susceptible	162	11	13	13				13																			99	
- vancomycin-resistant (VRE)	70	5	0	0				0																			0	99
Viridans group streptococci [*]	76	5			0										97												100	
<i>Streptococcus pneumoniae</i>	32	2				45	45									88	100				100						100	
Group A streptococci ^{**}	24	2																									100	
Group B streptococci ^{**}	12	1																									100	
Group C streptococci ^{**}	11	1																									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:

[^] *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.

^{*} 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.

[†] *S. maltophilia*: Susceptibility to moxifloxacin was predicted based on levofloxacin susceptibility testing results.

Toronto General Hospital ANTIBIOGRAM All Inpatients and Outpatients January 1, 2023 - December 31, 2023

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	Linezolid
ALL BACTERIA	2933	—	10	20			57	62	53		38	48									64						
ALL GRAM-NEGATIVE BACTERIA	1042	100	10	37			67	96	67		26	46			66				72		57	93	92	97			
<i>Escherichia coli</i>	289	28	34	62			70	99	99		48	76			76				54		63	90	86	98			
<i>Pseudomonas aeruginosa</i>	269	26					86	86							87				87			91	97	94			
<i>Klebsiella pneumoniae</i>	165	16	0	79			80	99	98		66	83			83				76		79	93	90	99			
<i>Enterobacter cloacae</i>	86	8	0	0			1	100	95		0	1			1				92		89	98	95	100			
<i>Stenotrophomonas maltophilia</i> [†]	52	5																		82	88						
<i>Klebsiella oxytoca</i>	48	5	0	87			91	100	100		32	94			94				96		93	98	97	97			
<i>Serratia marcescens</i>	46	4	0	0			0	100	100		0	0			0				91		100	100	100	98			
<i>Proteus mirabilis</i>	42	4	7	87			93	100	100		8	95			95				78		78	93	96	96			
<i>Citrobacter freundii</i>	13	1	0	0			0	100	100		0	0			0				92		85	92	85	92			
<i>Moraxella catarrhalis</i> [^]	12	1																									
<i>Morganella morganii</i>	11	1	0	0			0	100	100		0	0			0				91		82	100	91	91			
<i>Citrobacter koseri</i>	9	1	0	0			0	100	100		0	0			0				100		100	100	100	100			
ALL GRAM-POSITIVE BACTERIA	1891	100	10	10	3		52	45	45	42	45	49			56	40					67					98	
Coagulase-negative staphylococci	1019	54					38	38	38	38	38				59	35	90				70					100	100
<i>Staphylococcus aureus</i> , all isolates	463	24					87	87	87	87	86				78	69	94				99					100	100
- methicillin-susceptible	407	22					99	99	99	99	98				80	73	96				100					100	100
- methicillin-resistant (MRSA)	56	3					2	2	2	2	2				67	43	80				93					98	100
<i>Enterococcus faecium</i> , all isolates	135	7	8	8			10																			69	
- vancomycin-susceptible	93	5	12	12			13																			100	
- vancomycin-resistant (VRE)	42	2	0	0			2																			0	100
<i>Enterococcus faecalis</i> , all isolates	120	6	97	97			98																			100	
Viridans group streptococci [*]	76	4			0								97													100	
<i>Streptococcus pneumoniae</i>	32	2			45	45								88	100	91	77			100						100	
Group A streptococci ^{**}	24	1			100										83	77										100	
Group B streptococci ^{**}	12	1			100										82	73										100	
Group C streptococci ^{**}	10	1			100										20	20										100	

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