

# Princess Margaret Hospital ANTIBIOGRAM

## All Inpatients and Outpatients

### January 1, 2017 - December 31, 2017

#### Blood 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	
<b>ALL BACTERIA</b>	443	—	6	15		37	45	37		24	44						52							
<b>ALL GRAM-NEGATIVE BACTERIA</b>	149	100	9	36		63	96	68		28	49	60				60	57	87	86	96				
<i>Escherichia coli</i>	61	41	18	54		62	100	98		38	69	69				46	49	82	80	98				
<i>Pseudomonas aeruginosa</i>	22	15				95	95					95				86		91	91	100				
<i>Klebsiella pneumoniae</i>	21	14	0	86		86	100	100		86	95	95				86		81	86	90	100			
<i>Stenotrophomonas maltophilia</i> <sup>†</sup>	17	11															94	100						
<i>Enterobacter cloacae</i>	12	8	0	0		0	100	92		0	0	0				75		75	92	83	92			
<i>Citrobacter freundii</i>	5	3	0	0		0	100	100		0	0	0				100		100	100	100	100			
<b>ALL GRAM-POSITIVE BACTERIA</b>	294	100	4	4	2	24	22	22	20	22	42			57	33			49					96	
Coagulase-negative staphylococci	159	54				22	22	22	22	22				67	33	93		52					100	100
Viridans group streptococci <sup>*</sup>	61	21									98												100	
<i>Enterococcus faecium</i> , all isolates	33	11	0	0		0																70		
- vancomycin-susceptible	23	8	0	0		0																100		
- vancomycin-resistant (VRE)	10	3	0	0		0																0	100	
- vancomycin-susceptible (vanA+)	0	0																						
<i>Staphylococcus aureus</i> , all isolates	29	10				86	86	86	86	86				80	72	96		100					100	100
- methicillin-susceptible	26	9				96	96	96	96	96				81	77	96		100					100	100
- methicillin-resistant (MRSA)	3	1				0	0	0	0	0				67	33	100		100					100	100
<i>Enterococcus faecalis</i> , all isolates	6	2	100	100		100																	100	
- vancomycin-susceptible	6	2	100	100		100																	100	
- vancomycin-resistant (VRE)	0	0																						

**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 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:**

- 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.

**Princess Margaret Hospital ANTIBIOGRAM**  
**All Inpatients and Outpatients**  
**January 1, 2017 - December 31, 2017**

**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											
≥80% Susceptible <span style="color: green;">■</span> 70-79% Susceptible <span style="color: yellow;">■</span> ≤69% Susceptible <span style="color: red;">■</span>																																						
<b>ALL BACTERIA</b>	<b>81</b>	<b>—</b>	<b>21</b>	<b>30</b>				<b>86</b>	<b>86</b>	<b>28</b>				<b>69</b>													<b>58</b>											
<b>ALL GRAM-NEGATIVE BACTERIA</b>	<b>52</b>	<b>100</b>	<b>31</b>	<b>44</b>				<b>88</b>	<b>100</b>	<b>10</b>				<b>63</b>					<b>83</b>			<b>81</b>				<b>43</b>	<b>95</b>	<b>94</b>	<b>100</b>									
<i>Haemophilus influenzae</i> ^^	23	44	70																																			
<i>Pseudomonas aeruginosa</i>	12	23						92	100										92			92				92	100	100										
<i>Moraxella catarrhalis</i> ^	8	15																																				
<i>Stenotrophomonas maltophilia</i> †	3	6																				100	100															
<i>Enterobacter cloacae</i>	1	2	0	0				0	100	100				0				0				100			100	100	100	100										
<i>Serratia marcescens</i>	1	2	0	0				0	100	100				0				0				100			100	100	0	100										
<i>Citrobacter freundii</i>	1	2	0	0				0	100					0				0				100			100	100	100	100										
<i>Acinetobacter baumannii</i> complex	1	2						100	100					0				0				100			100	100	100	100										
<i>Enterobacter aerogenes</i>	1	2	0	0				0	100	100				0				0				100			100	100	100	100										
<i>Citrobacter koseri</i>	1	2	0	0				0	100	100				0				0				100			100	100	100	100										
<b>ALL GRAM-POSITIVE BACTERIA</b>	<b>29</b>	<b>100</b>	<b>3</b>	<b>3</b>				<b>83</b>	<b>62</b>	<b>62</b>	<b>62</b>	<b>62</b>	<b>62</b>	<b>79</b>					<b>69</b>	<b>62</b>						<b>71</b>										<b>100</b>		
<i>Staphylococcus aureus</i> , all isolates	15	52						100	100	100	100	100							87	87	93				93									100	100			
- methicillin-susceptible	15	52						100	100	100	100	100							87	87	93				93									100	100			
- methicillin-resistant (MRSA)	0	0																																				
<i>Streptococcus pneumoniae</i>	5	17						0	100									100	100					100											100			
<i>Mycobacterium tuberculosis</i> complex	5	17																																				

**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:**

- Susceptibility for ceftazolin are not available for Gram-negative isolates from non-sterile site specimens for the current year.

**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.

## Princess Margaret Hospital ANTIBIOGRAM All Inpatients and Outpatients January 1, 2017 - December 31, 2017

### Skin, Wound and Abscess Isolates – % Susceptible

		≥80% Susceptible 70-79% Susceptible ≤69% Susceptible			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	
#	%																									
<b>ALL BACTERIA</b>	172	—	6	13				78	84	70			64								73					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	64	100	9	28			67	90	53				34	69					81		49	90	90	98		
<i>Pseudomonas aeruginosa</i>	25	39					92	80						92					88			92	92	100		
<i>Escherichia coli</i>	11	17	27	64			70	100	100				91	91					64		64	82	91	100		
<i>Enterobacter cloacae</i>	6	9	0	0			0	100	83				0	0					83		83	100	100	100		
<i>Klebsiella pneumoniae</i>	5	8	0	80			80	100	100				80	80					80		80	80	80	100		
<i>Klebsiella oxytoca</i>	5	8	0	80			80	100	100				80	80					100		100	100	100	100		
<b>ALL GRAM-POSITIVE BACTERIA</b>	108	100	5	5	1	84	81	81	80	81	81				66	65					87				100	
<i>Staphylococcus aureus</i> , all isolates	92	85				92	92	92	92	92					76	74	93				97				100	100
- methicillin-susceptible	85	79				100	100	100	100	100					76	75	94				98				100	100
- methicillin-resistant (MRSA)	7	6				0	0	0	0	0					71	57	86				86				100	100
Coagulase-negative staphylococci	7	6				14	14	14	14	14					14	14	86				57				100	100
<i>Enterococcus faecium</i> , all isolates	4	4	0	0		0																			100	
- vancomycin-susceptible	4	4	0	0		0																			100	
- vancomycin-resistant (VRE)	0	0																								
- vancomycin-susceptible (vanA+)	0	0																								
<i>Enterococcus faecalis</i> , all isolates	4	4	100	100		100																			100	
- vancomycin-susceptible	4	4	100	100		100																			100	
- vancomycin-resistant (VRE)	0	0																								
Group B streptococci**	1	1				100									100	100									100	

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

**Year-Specific Notes:**

- Susceptibility for cefazolin are not available for Gram-negative isolates from non-sterile site specimens for the current year.

**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.

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**January 1, 2017 - December 31, 2017**

**All 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>	564	—	34	66		78	78	74			50	59		10	75	59	77					
<b>ALL GRAM-NEGATIVE BACTERIA</b>	422	100	23	65		76	99	93			62	73	76		80	73	73	92	90	100		
<i>Escherichia coli</i>	252	60	34	75		86	100	99			69	86	86		71	71	98	90	90	100		
<i>Klebsiella pneumoniae</i>	63	15	0	86		86	98	98			89	90	90		92	84	40	95	90	100		
<i>Enterobacter cloacae</i>	25	6	0	0		0	100	88			0	0	0		100	76	52	96	92	100		
<i>Pseudomonas aeruginosa</i>	18	4				89	89						94		89			89	94	100		
<i>Klebsiella oxytoca</i>	18	4	0	100		100	100	100			94	100	100		100	100	89	100	100	100		
<i>Proteus mirabilis</i>	13	3	85	100		100	100	100			100	100	100		92	85	0	85	85	100		
<i>Enterobacter aerogenes</i>	10	2	0	0		0	100	100			0	0	0		100	100	10	100	100	100		
<i>Citrobacter koseri</i>	7	2	0	0		0	100	100			0	0	0		100	100	71	100	100	100		
<b>ALL GRAM-POSITIVE BACTERIA</b>	142	100	68	68		85	17	17	17	17	16	17		40	60	17	90				96	98
<i>Enterococcus faecalis</i> , all isolates	94	66	100	100		100								24	85		99				100	100
- vancomycin-susceptible	94	66	100	100		100								24	85		99				100	100
- vancomycin-resistant (VRE)	0	0																				
<i>Staphylococcus aureus</i> , all isolates	24	17				88	88	88	88	88	88	88		100		100	100				100	100
- methicillin-susceptible	21	15				100	100	100	100	100	100	100		100		100	100				100	100
- methicillin-resistant (MRSA)	3	2				0	0	0	0	0	0	0		100		100	100				100	100
<i>Enterococcus faecium</i> , all isolates	18	13	0	0		0								44	0		28				66	100
- vancomycin-susceptible	13	9	0	0		0								46	0		31				92	100
- vancomycin-resistant (VRE)	5	4	0	0		0								40	0		20				0	100
- vancomycin-susceptible (vanA+)	0	0																				
<i>Staphylococcus saprophyticus</i>	2	1																				

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

**Year-Specific Notes:**

- Susceptibility for cefazolin are not available for Gram-negative isolates from non-sterile site specimens for the current year.

**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.

**Princess Margaret Hospital ANTIBIOGRAM**  
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**All Non-Urine Isolates – % Susceptible**

	#	%	Antibiotic Susceptibility Legend																								
			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>	856	—	7	15				59	66	51			57														64
<b>ALL GRAM-NEGATIVE BACTERIA</b>	305	100	12	35				70	96	52			46		68				71		53	90	90	97			
<i>Escherichia coli</i>	77	25	21	58				66	100	99			74		74				51		53	82	82	99			
<i>Pseudomonas aeruginosa</i>	76	25						91	91						91				91			95	96	100			
<i>Klebsiella pneumoniae</i>	29	10	0	86				86	100	100			93		93				86		83	86	90	100			
<i>Haemophilus influenzae</i> <sup>**</sup>	26	9	62																								
<i>Enterobacter cloacae</i>	23	8	0	0				0	100	87			0		0				83		83	96	91	96			
<i>Stenotrophomonas maltophilia</i> <sup>†</sup>	22	7																			95	100					
<i>Moraxella catarrhalis</i> <sup>^</sup>	9	3																									
<i>Klebsiella oxytoca</i>	8	3	0	88				88	100	100			88		88				100		100	100	100	100			
<i>Citrobacter freundii</i>	7	2	0	0				0	100	100			0		0				86		86	100	86	100			
<i>Acinetobacter baumannii</i> complex	6	2						83	83				0		67				67		67	83	83	67			
<i>Serratia marcescens</i>	5	2	0	0				0	100	100			0		0				100		100	100	60	100			
<b>ALL GRAM-POSITIVE BACTERIA</b>	551	100	5	5	2			53	50	50	49	50	62			60	49				70					97	
<i>Staphylococcus aureus</i> , all isolates	218	40						92	92	92	92	92				76	72	95			98				100	100	
- methicillin-susceptible	200	36						100	100	100	100	100				76	74	96			99				100	100	
- methicillin-resistant (MRSA)	18	3						0	0	0	0	0				78	44	89			89				100	100	
Coagulase-negative staphylococci	198	36						34	34	34	34	34				58	39	92			61				100	100	
<i>Enterococcus faecium</i> , all isolates	38	7	0	0				0																	71		
- vancomycin-susceptible	27	5	0	0				0																	100	100	
- vancomycin-resistant (VRE)	11	2	0	0				0																	0	100	
- vancomycin-susceptible (vanA+)	0	0																									
Viridans group streptococci <sup>†</sup>	63	11											98													100	
<i>Enterococcus faecalis</i> , all isolates	15	3	100	100				100																		100	
- vancomycin-susceptible	15	3	100	100				100																		100	
- vancomycin-resistant (VRE)	0	0																									
<i>Streptococcus pneumoniae</i>	8	1				88	88							100	100	75	50				100					100	
<i>Mycobacterium tuberculosis</i> complex	6	1																									
Group B streptococci <sup>**</sup>	5	1				100										100	80									100	

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

**Year-Specific Notes:**

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**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> 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.