

ANTIBIOTIC PROFILE

January - December 2018

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Total Patients

GRAM NEGATIVE		Total Isolates	Ampicillin	Amoxicillin/ Clavulanate	Cefazolin Nonurine	Cefoxitin	Ceftazidime	Ceftioxone	Cefepime	Piperacillin/ Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Minocycline	Trimethoprim/ Sulfamethoxazole	Nitrofurantoin Urine Isolates Only	Cefazolin** Urine Isolates Only	
ORGANISMS	#	% SUSCEPTIBILITY																			
Achromobacter Xylooxidans	41					90					95	15	44	17	10	12	68	85			
Acinetobacter Baumannii Complex	47					67	11	85	74	93			91	96	93	91	93	87			
Citrobacter Species	35					92	94	100	92	100	97	100	97	97	97			97	70		
Enterobacter Cloacae	146					78	74	90	70	100	97	99	100	100	94	92		85	21		
Enterobacter Species	60					67	71	93	68	100	100	100	100	97	97			93			
Escherichia Coli	2045	38	72	3	88	93	90	95	90	100	86	86	100	88	88			60	95	87	
Klebsiella Pneumoniae	335		82	10	83	87	86	92	86	99	90	93	100	90	87			78	27	85	
Klebsiella Species Not Pneumoniae	87		82	2	83	85	81	95	80	100	90	97	98	88	85			82	77		
Proteus Mirabilis	163	60	95	10	97	99	99	100	99	100	97	98	99	94	94			82	0	95	
Pseudomonas Aeruginosa	412					90		93	88	98	94	94	97	91	98						
Salmonella Species Not Typhi	49	80				96	95				90	94						100			
Serratia Species	83					94	89	95	92	98	99	99	93	90	84			97			
Stenotrophomonas Maltophilia	54					37						91					100	98			
Cystic Fibrosis Isolates																					
Achromobacter Xylooxidans (CF)	44					60					68	7	30				57	73			
Pseudomonas Aeruginosa (CF)	272					77		78	73	84	77	89	70	61	79						
Stenotrophomonas Maltophilia (CF)	59					39						64					100	92			
GRAM POSITIVE		Total Isolates	Ampicillin	Ceftioxone	Ceftriaxone Meningitis	Ceftriaxone Nonmeningitis	Clindamycin	Gentamicin High Level	Levofloxacin	Linezolid	Meropenem	Oxacillin	Penicillin	Penicillin Meningitis	Penicillin Nonmeningitis	Streptomycin High Level	Tetracycline	Trimethoprim/ Sulfamethoxazole	Vancomycin	Nitrofurantoin Urine Isolates Only	
ORGANISMS	#	% SUSCEPTIBILITY																			
Alpha Streptococcus Not Streptococcus Pneumoniae	101	35	67										40							100	
Coagulase Negative Staphylococcus	168					45			100			37						85	100		
Enterococcus Faecalis	128	98					79	81	98				98			84	13		100		88
Enterococcus Species	259	92					77	90					92			88	28		97		90
Staphylococcus Aureus	1753					81			100			62						95	96	100	97
Staphylococcus Aureus,Methicillin Resistant	673					78						0						97	97		
Staphylococcus Aureus,Methicillin Sensitive	1064					84						100						93	96		
Streptococcus Agalactiae [Group B Streptococcus]	124					36							TOC*								
Streptococcus Anginosus Group	191	71	98										86							100	
Streptococcus Pneumoniae	238			82	96	81		100	100	78				44	93			75	50	100	
Streptococcus Pyogenes [Group A Streptococcus]													TOC*								
Cystic Fibrosis Isolates																					
Staphylococcus Aureus (CF)	384					72			100			74						95	96	100	
Staphylococcus Aureus,Methicillin Resistant (CF)	98					51			100			0						92	92	100	
Staphylococcus Aureus,Methicillin Sensitive (CF)	279					80			100			100						96	98	100	

The cumulative susceptibility data report is based on the inclusion of only the first isolate of a given species from an individual patient.

This data is presented with the aim of guiding the clinician in the selection of initial empirical antimicrobial therapy for infection.

- ** URINE ISOLATES ONLY: Cefazolin can be used to predict susceptibility to certain oral Cephalosporins.
 - ^ Not recommended for pyelonephritis, even if susceptible
 - o Organisms that are susceptible to tetracycline are also susceptible to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycycline, minocycline, or both.
 - † Susceptibility data for coagulase negative Staphylococcus is not for treatment purposes, Vancomycin is the therapy of choice.
- GRAY shading indicates drug/bug combination generally not recommended for therapy.
- Red shading indicates intrinsic resistance.
- *TOC = Therapy of Choice; no resistance has been reported.

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Clinical Pathology Division
Microbiology Section

Inpatients

GRAM NEGATIVE		# Isolates	Ampicillin	Augmentin	Cefazolin Nonurine	Cefoxitin	Ceftazidime	Ceftriaxone	Cefepime	Piperacillin/Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Minocycline	Trimethoprim/Sulfamethoxazole	Nitrofurantoin Urine Isolates Only [^]	Cefazolin Urine Isolates Only ^{**}
ORGANISMS	#	% SUSCEPTIBILITY																		
Achromobacter Xylooxidans	32					88					94	13	42				68	94		
Enterobacter Cloacae	71					68	65	89	62	100	94	97	100	90	87			83		
Serratia Species	42					100	90	100	95	100	100	100	93	93	88			100		
Escherichia Coli	284			2	75	83	79	88	82	100	75	74	98	82	82			55	91	74
Klebsiella Pneumoniae	94		74	14	76	82	82	87	79	97	89	93	100	87	82			80	31	76
Klebsiella Species Not Pneumoniae	38		76		79	83	78	97	71	100	86	93	97	89	83			86		
Proteus Mirabilis	45	66	92		98	100	100	100	100	100	95	95	100	100	100			84		
Pseudomonas Aeruginosa	234					86		91	85	98	91	91	96	90	97					
Stenotrophomonas Maltophilia	44					37							88				100	98		
Cystic Fibrosis Isolates																				
Pseudomonas Aeruginosa (CF)	45					69		73	67	76	74	81	69	60	76					

GRAM POSITIVE		# Isolates	Ampicillin	Ceftriaxone	Ceftriaxone Meningitis	Ceftriaxone Nonmeningitis	Clindamycin	Gentamicin High Level	Levofloxacin* Urine Only	Linezolid	Meropenem	Oxacillin	Penicillin	Penicillin Meningitis	Penicillin Nonmeningitis	Streptomycin High Level	Tetracycline ^o	Trimethoprim/Sulfamethoxazole	Vancomycin	Nitrofurantoin Urine Isolates Only [^]	
ORGANISMS	#	% SUSCEPTIBILITY																			
Staphylococcus Aureus	735					79			100		62							95	96	100	
Staphylococcus Aureus, Methicillin Resistant	283					71			100		0							95	96	100	
Staphylococcus Aureus, Methicillin Sensitive	445					83			100		100							95	96	100	
Coagulase Negative Staphylococcus	85					43			100		31							85		100	
Enterococcus Faecalis	62	98					77	70	96			100				81		11	100		
Enterococcus Species	75	78					70	73				76				80	37		91	80	
Streptococcus Anginosus Group	146	71	98						100				87						100		
Alpha Streptococcus Not Streptococcus Pneumoniae	56	25	72						100				29						100		
Streptococcus Pneumoniae	153			79	96	76		100	100	73			38	90				72	46	100	
Streptococcus Pyogenes (Group A Streptococcus)									100			TOC*									
Cystic Fibrosis Isolates																					
Staphylococcus Aureus (CF)	39					68			100		62							92	95	100	

The cumulative susceptibility data report is based on the inclusion of only the first isolate of a given species from an individual patient.

This data is presented with the aim of guiding the clinician in the selection of initial empirical antimicrobial therapy for infection.

- ** URINE ISOLATES ONLY:** Cefazolin can be used to predict susceptibility to certain oral Cephalosporins.
 - ^** Not recommended for pyelonephritis, even if susceptible
 - o** Organisms that are susceptible to tetracycline are also susceptible to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycycline, minocycline, or both.
 - †** Susceptibility data for coagulase negative Staphylococcus is not for treatment purposes, Vancomycin is the therapy of choice.
- GRAY shading indicates drug/bug combination generally not recommended for therapy.
 Red shading indicates intrinsic resistance.
 *TOC = Therapy of Choice; no resistance has been reported.

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The inpatient antibiogram includes Main Campus, West Campus, and The Woodlands campus isolates, but does not include isolates from the Pavilion for Women.

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Clinical Pathology Division
Microbiology Section

Outpatients

GRAM NEGATIVE																
ORGANISMS	# Isolates	Ampicillin	Augmentin	Cefoxitin	Ceftazidime	Ceftriaxone	Cefepime	Piperacillin/ Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Minocycline	Trimethoprim/ Sulfamethoxazole
Escherichia Coli	232	32	64	83	91	86	93	88	100	81	80	99	89	87		57
Klebsiella Pneumoniae	51		77	81	83	83	94	91	100	85	87	100	83	83		64
Pseudomonas Aeruginosa	61				91		92	90	95	93	97	97	92	100		
Cystic Fibrosis Isolates																
Pseudomonas Aeruginosa (CF)	207				81		81	77	87	80	89	72	63	80		
Stenotrophomonas Maltophilia (CF)	41				29						68				100	90

Nitrofurantoin Urine Isolates Only	Cefazolin Urine Isolates Only
90	77
27	71

GRAM POSITIVE								
ORGANISMS	# Isolates	Clindamycin	Linezolid	Oxacillin	Tetracycline	Trimethoprim/ Sulfamethoxazole	Vancomycin	Penicillin
Staphylococcus Aureus	134	77	100	73	93	97	100	
Staphylococcus Aureus,Methicillin Resistant	36	64	100	0	92	97	100	
Staphylococcus Aureus,Methicillin Sensitive	96	83	100	100	93	97	100	
Streptococcus Pyogenes (Group A Streptococcus)								TOC*
Cystic Fibrosis Isolates								
Staphylococcus Aureus (CF)	329	74	99	75	95	97	100	
Staphylococcus Aureus,Methicillin Resistant (CF)	81	49	98	0	91	91	100	
Staphylococcus Aureus,Methicillin Sensitive (CF)	243	82	100	100	97	99	100	

The outpatient antibiogram includes all of the outpatient clinics.

The cumulative susceptibility data report is based on the inclusion of only the first isolate of a given species from an individual patient.

This data is presented with the aim of guiding the clinician in the selection of initial empirical antimicrobial therapy for infection.

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^ Not recommended for pyelonephritis, even if susceptible

o Organisms that are susceptible to tetracycline are also susceptible to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycycline, minocycline, or both.

† Susceptibility data for coagulase negative Staphylococcus is not for treatment purposes, Vancomycin is the therapy of choice.

GRAY shading indicates drug/bug combination generally not recommended for therapy.

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Clinical Pathology Division
Microbiology Section

EC

GRAM NEGATIVE																
ORGANISMS	# Isolates	Ampicillin	Augmentin	Cefazolin Nonurine	Cefoxitin	Ceftazidime	Ceftriaxone	Cefepime	Piperacillin/Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Trimethoprim/Sulfamethoxazole
Enterobacter Cloacae	48					85	81	92	81	100	100	100	100	98	96	90
Escherichia Coli	1403	40	75	3	90	95	92	97	92	100	90	90	100	89	89	61
Klebsiella Pneumoniae	148		86		86	90	89	94	86	100	91	94	99	93	90	77
Proteus Mirabilis	95	55	96		97	98	99	100	99	100	97	99	99	92	92	83
Pseudomonas Aeruginosa	105					96		97	93	98	98	96	98	94	98	
Salmonella Species Not Typhi	42	83				95	94				90	95				100

Nitrofurantoin Urine Isolates Only	Cefazolin Urine Isolates Only
18	
96	89
26	87
0	93

GRAM POSITIVE																		
ORGANISMS	# Isolates	Ampicillin	Ceftriaxone	Ceftriaxone Meningitis	Ceftriaxone Nonmeningitis	Clindamycin	Gentamicin High Level	Levofloxacin	Linezolid	Meropenem	Oxacillin	Penicillin	Penicillin Meningitis	Penicillin Nonmeningitis	Streptomycin High Level	Tetracycline	Trimethoprim/Sulfamethoxazole	Vancomycin
Staphylococcus Aureus	777					87		100		58						95	96	100
Staphylococcus Aureus, Methicillin Resistant	329					85		100		0						99	97	100
Staphylococcus Aureus, Methicillin Sensitive	443					88		100		100						91	95	100
Coagulase Negative Staphylococcus	40					48										86		100
Enterococcus Faecalis	35	100				94						97			91			100
Enterococcus Species	128	98				78	99					98			94	25		100
Streptococcus Anginosus Group	40	73	100									83						100
Streptococcus Pneumoniae	61			92	98	94		100	100	84			59	96		83	59	100
Streptococcus Pyogenes (Group A Streptococcus)												TOC*						

Nitrofurantoin Urine Isolates Only
93

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The EC antibiogram includes Main Campus, West Campus, and The Woodlands campus emergency centers.

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ANTIBIOTIC PROFILE

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ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Neonatology

GRAM NEGATIVE															
	# Isolates	Ampicillin	Augmentin	Cefoxitin	Ceftazidime	Ceftriaxone	Cefepime	Piperacillin / Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Trimethoprim / Sulfamethoxazole
ORGANISMS	#	% SUSCEPTIBILITY													
Escherichia Coli	30	23	63	89	93	90	97	83	100	74	74	100	87	90	70

GRAM POSITIVE									
	# Isolates	Clindamycin	Gentamicin	Linezolid	Oxacillin	Tetracycline	Trimethoprim / Sulfamethoxazole	Vancomycin	
ORGANISMS	#	% SUSCEPTIBILITY							
Coagulase Negative Staphylococcus	32	40	65	100	22	84		100	
Staphylococcus Aureus	78	60	100	100	76	97	94	100	

The NICU antibiogram is comprised of patient isolates from the level 2 and level 3 newborn centers as well as the newborn centers at the Pavilion for Women and The Woodlands.

The cumulative susceptibility data report is based on the inclusion of only the first isolate of a given species from an individual patient.


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Clinical Pathology Division
Microbiology Section

Pavilion ObGyn

GRAM NEGATIVE														
ORGANISMS	# Isolates	Ampicillin	Augmentin	Ceftazidime	Ceftriaxone	Cefepime	Piperacillin/ Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Trimethoprim/ Sulfamethoxazole
	#	% SUSCEPTIBILITY												
ESCHERICHIA COLI	85	47	74	96	94	99	99	100	82	82	100	95	95	69

Nitrofurantoin	92
Urine Isolates Only	92
Cefazolin	92
Urine Isolates Only	92

GRAM POSITIVE								
ORGANISMS	# Isolates	Clindamycin	Linezolid	Oxacillin	Tetracycline	Trimethoprim/ Sulfamethoxazole	Vancomycin	Penicillin
	#	% SUSCEPTIBILITY						
Streptococcus Agalactiae [Group B Streptococcus]	122	35						TOC*

The Pavilion antibiogram does NOT include the Pavilion NICU patient isolates.

The cumulative susceptibility data report is based on the inclusion of only the first isolate of a given species from an individual patient.

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ANTIBIOGRAM Q&A

Q: What is an antibiogram?

A: An antibiogram is a summary of *microbial* susceptibility data for a given patient population *summarized in a manner that can readily aid physicians in selecting initial empiric antimicrobial therapy.*

Q: Why is the Antibiogram only available for the prior year?

A: *Typically 12 months of accumulated data are required to achieve an appropriate level of statistical significance. Hence the presentation of the prior year is common practice.*

Q: Why are some organisms not represented in the data?

A: Not all drug/bug combinations are presented in an antibiogram because a minimum of thirty patient isolates are required to provide reliable indication of susceptibility.

Q: If a patient has multiple isolates throughout a year, are all of them included in the antibiogram data?

A: No, only the first isolate of a species from an individual patient is included to ensure that the antibiogram most closely represents the likelihood of an organism being susceptible to a given drug on first presentation.

For questions or additional information, please contact:

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