

ANTIBIOTIC PROFILE

January - December 2019

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Total Patients

GRAM NEGATIVE		Total Isolates	Ampicillin	Amoxicillin/ Clavulanate	Cefazolin Nourine	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	35					94		20	100	91	9	57	17	0	6	77	89			
Acinetobacter Baumanni Complex	41					78	28	89	73	97		95	95	95	97	97	89			
Citrobacter Freundii	25					87	83	100	83	100	83	84	100	83	91		80		94	
Citrobacter Species	41		66	10	63	88	83	95	88	100	98	95	100	95	100		97		83	
Enterobacter Cloacae	120					76	74	92	73	99	96	93	99	95	95		84		29	
Enterobacter Species	57					75	80	93	71	100	100	100	100	98	98		96		14	
Escherichia Coli	1752	38	72	8	88	93	89	96	90	100	80	76	100	87	88		61		96	85
Klebsiella Pneumoniae	304		81	15	79	87	85	93	87	100	82	79	100	90	89		78		27	82
Klebsiella Species Not Pneumoniae	94		77	4	83	80	79	92	81	100	85	91	99	83	84		75		75	
Morganella Morganii	36				50	86	89	100	100	100	83	83	100	92	94		75		0	
Proteus Mirabilis	143	77	99		97	99	98	99	100	97	97	100	92	94		83		0	95	
Pseudomonas Aeruginosa	398					87		90	86	95	93	81	98	93	98					
Salmonella Species Not Typhi	35	100				100	100					83	89				100			
Serratia Species	68					94	85	97	86	100	98	97	99	94	90		99			
Shigella Species	50	92					98					100	100				6			
Stenotrophomonas Maltophilia	50					43						89					96	100		
Cystic Fibrosis Isolates																				
Achromobacter Xylooxidans (CF)	37					46		8		62	14	22				46	57			
Pseudomonas Aeruginosa (CF)	271					83		83	81	88	86	79	76	66	82					
Stenotrophomonas Maltophilia (CF)	58					17						67					98	83		

GRAM POSITIVE		Total 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	Nitrofurantoin Urine Isolates Only	
ORGANISMS	#	% SUSCEPTIBILITY																			
Alpha Streptococcus Not Streptococcus Pneumoniae	81	47	82										42							100	
Coagulase Negative Staphylococcus	181					42			100		33						87		100		
Enterococcus Faecalis	192	100					79	99	94			100				95	25		99		100
Enterococcus Species	168	87					84	88				87				86	20		95		88
Staphylococcus Aureus	1504					81			100		61						95	97	100		100
Staphylococcus Aureus, Methicillin Resistant	584					74			100		0						95	96			
Staphylococcus Aureus, Methicillin Sensitive	910					86			100		100						94	97			
Streptococcus Agalactiae [Group B Streptococcus]	95					32						TOC*									
Streptococcus Anginosus Group	174	78	99									91								100	
Streptococcus Pneumoniae	217			87	97	85		99	100	76			50	95			80	50	100		
Streptococcus Pyogenes [Group A Streptococcus]												TOC*									
Cystic Fibrosis Isolates																					
Staphylococcus Aureus (CF)	355					72			99		74						94	97	100		
Staphylococcus Aureus, Methicillin Resistant (CF)	89					58			99		0						90	94	100		
Staphylococcus Aureus, Methicillin Sensitive (CF)	255					78			100		100						96	97	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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ANTIBIOTIC PROFILE

January - December 2019

ANTIBIOGRAM Q&A

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																		
Enterobacter Cloacae	47					67	65	87	65	100	93	87	100	91	91		83			
Escherichia Coli	274	36	65	9	79	86	81	91	87	100	66	64	100	84	85		59	94	77	
Klebsiella Pneumoniae	115		74	13	71	82	81	89	79	99	80	75	100	90	87		79	18	75	
Klebsiella Species Not Pneumoniae	42		72		78	76	71	90	78	100	87	100	100	85	83		78			
Proteus Mirabilis	28	86	96		96	96	96	96	96	100	93	93	100	96	100		89			
Pseudomonas Aeruginosa	228					85		86	81	94	93	80	98	94	99					
Serratia Species	37					92	78	97	86	100	100	97	100	95	89		100			
Stenotrophomonas Maltophilia	33					39						85					94	100		
Cystic Fibrosis Isolates																				
Pseudomonas Aeruginosa (CF)	44					80		80	77	84	82	71	77	64	84					

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	603					81			100		61						95	97	100	
Staphylococcus Aureus, Methicillin Resistant	234					70			100		0						95	96	100	
Staphylococcus Aureus, Methicillin Sensitive	365					88			100		100						94	98	100	
Coagulase Negative Staphylococcus	107					44			100		33						84		100	
Enterococcus Faecalis	69	100					70	100	90			100				94	30		100	100
Enterococcus Species	49	76					79	73	78			76				81	30		91	73
Streptococcus Anginosus Group	137	79	98						100			91							100	
Alpha Streptococcus Not Streptococcus Pneumoniae	43	49	74						100			37							100	
Streptococcus Pneumoniae	132			86	98	82		99	100	71			44	95			79	46	100	
Streptococcus Pyogenes (Group A Streptococcus)									100			TOC*								
Cystic Fibrosis Isolates																				
Staphylococcus Aureus (CF)	27					79			96		67						96	100	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.

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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.
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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.



ANTIBIOTIC PROFILE

January - December 2019

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Outpatients

GRAM NEGATIVE																		
	# Isolates	Ampicillin	Augmentin	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																
Escherichia Coli	174	41	72	87	94	88	96	91	100	77	76	99	89	89		60	92	84
Klebsiella Pneumoniae	39		78	78	91	89	100	92	100	73	71	100	86	89		65	35	76
Pseudomonas Aeruginosa	54				89		94	92	96	94	84	96	83	94				
Cystic Fibrosis Isolates																		
Pseudomonas Aeruginosa (CF)	220				84		85	82	90	86	81	75	66	81				
Stenotrophomonas Maltophilia (CF)	48				17						73				100	85		

GRAM POSITIVE							
	# Isolates	Clindamycin	Linezolid	Oxacillin	Tetracycline	Trimethoprim/ Sulfamethoxazole	Vancocmycin
ORGANISMS	#	% SUSCEPTIBILITY					
Staphylococcus Aureus	138	77	100	65	93	96	100
Staphylococcus Aureus, Methicillin Resistant	48	64	100	0	94	96	100
Staphylococcus Aureus, Methicillin Sensitive	89	83	100	100	93	96	100
Cystic Fibrosis Isolates							
Staphylococcus Aureus (CF)	319	74	99	75	94	96	100
Staphylococcus Aureus, Methicillin Resistant (CF)	79	49	99	0	88	94	100
Staphylococcus Aureus, Methicillin Sensitive (CF)	233	82	100	100	96	97	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.

RED shading indicates intrinsic resistance.

GREEN *TOC = Therapy of Choice; no resistance has been reported.

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[TOTAL PATIENTS](#)

[INPATIENTS](#)

[EC](#)

[NEONATOLOGY](#)

[PAVILION OBGYN](#)



Texas Children's
Hospital

ANTIBIOTIC PROFILE

January - December 2019

ANTIBIOGRAM Q&A

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	Nitrofurantoin Urine Isolates Only [▲]	Cefazolin ^{**} Urine Isolates Only
	#	% SUSCEPTIBILITY																
Enterobacter Cloacae	47					81	79	98	76	98	100	98	100	100	100	83	38	
Enterobacter Species	31					73	76	93	72	100	100	100	100	97	97	92	16	
Escherichia Coli	1178	39	74	7	90	95	91	96	90	100	83	78	100	88	88	62	97	86
Klebsiella Pneumoniae	128		88		85	89	89	94	92	100	87	87	100	91	91	79	32	86
Klebsiella Species Not Pneumoniae	35		88		92	85	88	91	84	100	85	80	97	88	88	72	85	
Proteus Mirabilis	88	75	100		98	100	100	100	100	100	98	98	100	92	92	83	0	
Pseudomonas Aeruginosa	98					92		94	91	97	91	82	97	95	97			
Salmonella Species Not Typhi	32	100				100	100				82	88				100		
Shigella Species	42	93					97				100	100				7		

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	Nitrofurantoin Urine Isolates Only [▲]
	#	% SUSCEPTIBILITY																	
Staphylococcus Aureus	647					82		100		59						95	96	100	
Staphylococcus Aureus, Methicillin Resistant	266					77		100		0						97	97	100	
Staphylococcus Aureus, Methicillin Sensitive	377					86		100		100						94	96	100	
Coagulase Negative Staphylococcus	38															97		100	
Enterococcus Faecalis	82	100					88	99				100			96	26		99	
Enterococcus Species	85	94					87	94				93			91	18		100	93
Alpha Streptococcus Not Streptococcus Pneumoniae	30	40	89									40						100	
Streptococcus Pneumoniae	59			89	98	94		98	100	79			62	98		89	56	100	
Streptococcus Pyogenes (Group A Streptococcus)												TOC*							

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

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

○ 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.

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[TOTAL PATIENTS](#)

[INPATIENTS](#)

[OUTPATIENTS](#)

[NEONATOLOGY](#)

[PAVILION OBGYN](#)

ANTIBIOTIC PROFILE

January - December 2019

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	32	34	71	83	94	84	97	97	100	93	83	94	72	75	50

GRAM POSITIVE								
	# Isolates	Clindamycin	Gentamicin	Linezolid	Oxacillin	Tetracycline	Trimethoprim / Sulfamethoxazole	Vancomycin
ORGANISMS	#	% SUSCEPTIBILITY						
Coagulase Negative Staphylococcus								100
Staphylococcus Aureus	53	78		100	68	88	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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BY SECTION:

[TOTAL PATIENTS](#)

[INPATIENTS](#)

[OUTPATIENTS](#)

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Texas Children's
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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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