

ANTIBIOTIC PROFILE

January - December 2017

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Total Patients

GRAM NEGATIVE		Total Isolates	Ampicillin	Amoxicillin/ Clavulanate	Cefoxitin	Ceftazidime	Cefotaxime	Ceftriaxone	Cefepime	Piperacillin/ Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Minocycline	Trimethoprim/ Sulfamethoxazole	Nitrofurantoin Urine Isolates Only [▲]	Cefazolin ^{**} Urine Isolates Only
ORGANISMS	#	% SUSCEPTIBILITY																		
Achromobacter xylosoxidans	40				68				0		85	10	49	8	5	8	74	85		
Acinetobacter baumannii complex	45				84			8					88		96	100	88	84		
Citrobacter freundii	29				89	93	93	100	100	100	100	100	100	100	90	90		84	89	
Citrobacter species	35				88	89	89	97	89	100	100	100	100	100	100	100		97	89	
Enterobacter cloacae	163				71	70	70	88	68	99	99	99	99	100	97	94		80	43	
Enterobacter species	49				91	81	81	98	60	100	98	98	98	100	98	98		94	39	
Escherichia coli	1,862	36	72	87	93	89	89	95	90	100	85	85	99	88	87		60	97	85	
Klebsiella pneumoniae	338	80	82	93	87	87	95	89	99	91	96	100	92	89		73	38	80		
Klebsiella species not pneumoniae	60	78	85	89	87	87	97	86	100	97	98	98	92	90		82	85			
Morganella morganii	36				92	94	94	100	100	97	94	94	100	94	94		83	0		
Proteus mirabilis	147	87	99	99	99	99	99	99	99	100	99	100	99	97	97		83	0	100	
Pseudomonas aeruginosa	421				90			93	88	97	91	91	99	93	98					
Salmonella species not typhi	38	92			93	95	95				94	97					97			
Serratia species	59				97	95	95	97	95	100	98	98	98	97	80		96			
Stenotrophomonas maltophilia	58				45							86				100	100			
Cystic Fibrosis Isolates																				
Achromobacter xylosoxidans (CF)	38				37			6		76	5	26	8	8	6	66	68			
Pseudomonas aeruginosa (CF)	279				78			81	78	85	75	90	71	59	77					
Stenotrophomonas maltophilia (CF)	67				22							74				100	94			

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
 - 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.

GRAM POSITIVE		Total Isolates	Ampicillin	Cefotaxime	Cefotaxime Meningitis	Cefotaxime Nonmeningitis	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	83	45	76												39							100	
Coagulase negative staphylococcus [†]	186								51		100		39						90		100		
Enterococcus faecalis	132	100								79	92	97			99			88	23		99		96
Enterococcus species	251	94								82	92				93			88	26		98		98
Staphylococcus aureus	1,765								81			100		60				95	97	100			
Streptococcus agalactiae [group B streptococcus]	117								46						TOC*								
Streptococcus anginosus group	176	80	99												90							100	
Streptococcus pneumoniae	205			83	93	86	92	81		100	100	81					52	88	78	54	100		
Streptococcus pyogenes [group A streptococcus]															TOC*								
Cystic fibrosis isolates																							
Staphylococcus aureus (CF)	353								66			99		74						94	97	100	
Staphylococcus aureus, methicillin resistant (CF)	93								49			99		0						96	95	100	
Staphylococcus aureus, methicillin sensitive (CF)	253								71			99		100						94	98	100	

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ANTIBIOTIC PROFILE

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Clinical Pathology Division
Microbiology Section

Inpatients

GRAM NEGATIVE		Isolates Tested	Ampicillin	Augmentin	Cefoxitin	Ceftazidime	Cefotaxime	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	72				64	65	65	85	60	100	99	99	100	99	96		88	50		
Escherichia coli	246	32	63	75	84	78	78	90	86	100	75	75	100	87	84		55	98	75	
Proteus mirabilis	27	93	100	96	95	96	96	96	96	100	100	100	96	100	100		81	0	100	
Klebsiella pneumoniae	114		78	79	93	82	82	91	86	99	89	97	100	92	87		71	34	68	
Pseudomonas aeruginosa	233				89			91	87	96	84	90	99	91	97					
Stenotrophomonas maltophilia	38				43							83				100	100			
Cystic fibrosis isolates																				
Pseudomonas aeruginosa (CF)	33				61			67	61	67	68	73	70	45	55					

GRAM POSITIVE		Total Isolates	Ampicillin	Cefotaxime	Cefotaxime Meningitis	Cefotaxime Nonmeningitis	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	55	47	73												44							100
Coagulase negative staphylococcus†	103							52			100		36						92		100	
Enterococcus faecalis	56	100							75	87				100				85	17		98	
Enterococcus species	70	89							79	85				87				86	17		94	92
Staphylococcus aureus	707							81			100		61						96	98	100	
Streptococcus anginosus group	139	76	99											88							100	
Streptococcus pneumoniae	127			78	92	83	90	77		100	100	76			42	84		72	48	100		
Streptococcus pyogenes (group a streptococcus)														TOC*								
Cystic fibrosis isolates																						
Staphylococcus aureus (CF)	30							50			97	70							90	90	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.

The inpatient antibiogram includes main campus, west campus, and woodlands campus isolates, but does not include isolates from the Pavilion for Women. The inpatient antibiogram accounts for 36% of the total antibiogram isolates.

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ANTIBIOTIC PROFILE

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Clinical Pathology Division
Microbiology Section

Outpatients

GRAM NEGATIVE																	
ORGANISMS	Total Isolates	Ampicillin	Augmentin	Cefoxitin	Ceftazidime	Cefotaxime	Ceftriaxone	Cefepime	Piperacillin/ Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Minocycline	Trimethoprim/ Sulfamethoxazole
Escherichia coli	208	38	68	79	88	84	84	94	85	100	71	71	100	86	87		56
Klebsiella pneumoniae	58		72	22	72	83	83	97	84	100	88	91	100	90	83		69
Pseudomonas aeruginosa	62				89			92	90	97	95	89	98	94	100		
Cystic fibrosis isolates																	
Pseudomonas aeruginosa (CF)	234				79			79	80	87	80	91	69	56	81		
Stenotrophomonas maltophilia (CF)	45				24							76				100	93

Nitrofurantoin Urine Isolates Only	Cefazolin Urine Isolates Only
93	77
40	73

GRAM POSITIVE												
ORGANISMS	Total Isolates	Ampicillin	Clindamycin	Gentamicin High Level	Levofloxacin	Linezolid	Oxacillin	Penicillin	Streptomycin High Level	Tetracycline	Trimethoprim/ Sulfamethoxazole	Vancomycin
Enterococcus species	39	95		87	92			95	89	39		97
Staphylococcus aureus	136		74			100	73			91	97	100
Cystic fibrosis isolates												
Staphylococcus aureus (CF)	312		68			99	74			95	98	100
Staphylococcus aureus, methicillin resistant (CF)	80		50			100				96	96	100
Staphylococcus aureus, methicillin sensitive (CF)	226		73			99	100			95	99	100

Nitrofurantoin Urine Isolates Only
97

The outpatient antibiogram includes all of the outpatient clinics, and accounts for 19% of the total 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.

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

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Clinical Pathology Division
Microbiology Section

EC

GRAM NEGATIVE																		
ORGANISMS	#	% SUSCEPTIBILITY														Nitrofurantoin Urine Isolates Only	Cefazolin Urine Isolates Only	
Enterobacter cloacae	55				79	80	80	91	76	100	98	100	100	93	91	76	33	
Escherichia coli	1,283	36	73	90	94	92	92	95	91	100	88	88	99	88	88	60	98	87
Klebsiella pneumoniae	129		82	86	93	90	90	96	91	99	94	95	100	92	92	73	34	85
Proteus mirabilis	92	87	98	100	100	100	100	100	100	100	99	100	100	97	97	84	0	100
Pseudomonas aeruginosa	112				95			96	91	97	93	93	98	95	99			
Salmonella species not typhi	24	96			95	100	96				91	96				96		

GRAM POSITIVE																					
ORGANISMS	#	% SUSCEPTIBILITY														Nitrofurantoin Urine Isolates Only					
Coagulase negative staphylococcus†	52							63			100		47			85	100				
Enterococcus faecalis	38	100						82	95					97		86	32	100			
Enterococcus species	119	95						82	93					94		87	21	100	97		
Staphylococcus aureus	820							82			100		55			95	96	100			
Streptococcus pneumoniae	60			91	98	91	98	91		100	100	93			72	98	89	67	100		
Streptococcus pyogenes (group A streptococcus)																					

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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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.

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

RED shading indicates intrinsic resistance.

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

The EC antibiogram includes main campus, west campus, and woodlands campus emergency centers. The EC antibiogram accounts for 42% of the total patient antibiogram isolates. The main campus emergency center accounts for 54% of total EC isolates.

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ANTIBIOTIC PROFILE

January - December 2017

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Neonatology

GRAM NEGATIVE																
ORGANISMS	#	% SUSCEPTIBILITY														
Escherichia coli	48	31	71	92	97	92	92	96	92	100	88	88	98	92	90	71

*34 isolates tested

GRAM POSITIVE							
ORGANISMS	#	% SUSCEPTIBILITY					
Staphylococcus aureus	83	79	100	78	94	99	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 woodlands. The NICU antibiogram accounts for 4% of the total patient isolates.

Nitrofurantoin Urine Isolates Only	94
Cefazolin Urine Isolates Only	88

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

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Texas Children's
Hospital

ANTIBIOTIC PROFILE

January - December 2017

ANTIBIOGRAM Q&A

Clinical Pathology Division
Microbiology Section

Pavilion ObGyn

GRAM NEGATIVE																
ORGANISMS	Total Isolates	Ampicillin	Augmentin	Cefoxitin	Ceftazidime*	Cefotaxime	Ceftriaxone	Cefepime	Piperacillin / Tazobactam	Meropenem	Ciprofloxacin	Levofloxacin	Amikacin	Gentamicin	Tobramycin	Trimethoprim / Sulfamethoxazole
#	% SUSCEPTIBILITY															
Escherichia coli	77	61	86	95	100	99	99	100	99	100	91	90	100	96	96	83

*Only 56 isolates tested

Nitrofurantoin Urine Isolates Only	96
Cefazolin Urine Isolates Only	95

GRAM POSITIVE								
ORGANISMS	Total Isolates	Clindamycin	Linezolid	Oxacillin	Tetracycline	Trimethoprim / Sulfamethoxazole	Vancomycin	Penicillin
#	% SUSCEPTIBILITY							
Streptococcus agalactiae [group B streptococcus]	115	47						TOC*

The Pavilion antibiogram does NOT include the Pavilion NICU patient isolates; Pavilion non-NICU patient isolates account for 4% of the total patient isolates.

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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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