

2022 Antibigrams



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General Notes:	
- Historical susceptibility data may not reflect current CLSI breakpoints - Isolate numbers may not always be accurate. Isolate totals were assumed to apply when testing was indicated from specific sites (i.e. urine) or data was provided for multiple years (i.e. data from 2022 and 2023 combined). Interpret with caution - Cefazolin may contain susceptibilities measured at different breakpoints. Interpret with caution - Each susceptibility contains data from ≥3 hospitals - Aggregated data with <30 isolates were excluded - Duplicate data excluded	
Symbols:	Abbreviations:
\$ In 2023, CLSI revised all aminoglycoside breakpoints for <i>Pseudomonas</i> . Of note, gentamicin is no longer a treatment option for <i>Pseudomonas</i>	NU: Non-Urine
! E. coli and K. pneumoniae ≠ Non-ESBL + ESBL data due to variation in reporting across hospitals	U: Urine
? Includes data from <i>Acinetobacter baumannii/nosocomialis</i> group	ESBL: Extended Spectrum Beta-Lactamase
# Includes data from <i>Acinetobacter baumannii/haemolyticus</i>	MRSA: Methicillin Resistant <i>Staphylococcus aureus</i>
& Includes data from <i>Klebsiella oxytoca/Raoultella ornitholytica</i>	MSSA: Methicillin Susceptible <i>Staphylococcus aureus</i>
~ <i>Staphylococcus aureus</i> ≠ MRSA + MSSA data due to variation in reporting across hospitals	GAS: Group A <i>Streptococcus</i>
	GBS: Group B <i>Streptococcus</i>
	2YD: 2022 + 2023 data combined
	3YD: 2021, 2022 + 2023 data combined
	SDD: Suscebitble-Dose Dependent

For more information, visit <https://firstline.org/nyc/>

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AII NYC 2022	Inhibitor Combinations				Quinolones				Aminoglycosides			
	Ampicillin-Sulbactam		Piperacillin-Tazobactam		Ciprofloxacin		Levofloxacin		Amikacin		Gentamicin	
	n	%	n	%	n	%	n	%	n	%	n	%
Gram Negative												
<i>Acinetobacter baumannii</i>	1256 2YD: 180	55 ?# 2YD: 77	304	40	671	42 ?#	1169 2YD: 206	39 ?# 2YD: 51	998 2YD: 70	55 ?# 2YD: 60	1256 2YD: 180	48 ?# 2YD: 70
<i>Bacteroides fragilis</i>	101	93										
<i>Citrobacter freundii</i>			384 2YD: 140 SDD: 248	86 2YD: 93 SDD: 92	427	85	633 2YD: 110	87 2YD: 95	607 2YD: 140	99 2YD: 98	633 2YD: 140	95 2YD: 94
<i>Citrobacter koseri</i>	486	95	304 SDD: 317	97 SDD: 99	601	95	621	97	601	99	621	99
<i>Enterobacter cloacae</i>			1630 SDD: 757	79 SDD: 78	1646	89	2387	91	2357	99	2387	96
<i>Escherichia coli</i> !	35511	56	18591 SDD: 16913	94 SDD: 94	22475	67	35511	69	34702	99	35510	87
Non-ESBL	7223	60	7223	97	7223	77	7223	81	7223	99	7223	90
ESBL	359	36	359	83	1477	16	1477	22	1477	95	1477	69
<i>Haemophilus influenzae</i>	86	90					86	100				
<i>Klebsiella aerogenes</i>			576 2YD: 144 SDD: 363	81 2YD: 89 SDD: 88	699	95	939 2YD: 144	96 2YD: 99	909 2YD: 144	100 2YD: 99	939 2YD: 144	98 2YD: 100
<i>Klebsiella oxytoca</i>	1140 2YD: 136	73 2YD: 68	769 2YD: 136 SDD: 371	89 2YD: 92 SDD: 93	775	92	1140 2YD: 136	95 2YD: 96	1114 2YD: 136	99 2YD: 100	1140 2YD: 136	95 2YD: 96
<i>Klebsiella pneumoniae</i> !	11067	67	6460 SDD: 4607	88 SDD: 84	6718	74	11067	82	11042	97	11067	90
Non-ESBL	2156	84	2156	96	2156	92	2156	96	2156	99	2156	99
ESBL					617	19	617	50	617	92	617	70
<i>Klebsiella variicola</i>	278	90	SDD: 278	SDD: 98	278	93	278	97	278	99	278	97
<i>Morganella morganii</i>	790	11	758 2YD: 157 SDD: 442	95 2YD: 96 SDD: 97	822	68	1200 2YD: 157	71 2YD: 73	1172 2YD: 157	99 2YD: 99	1200 2YD: 157	88 2YD: 85
<i>Proteus mirabilis</i>	7350	84	4581 SDD: 2769	97 SDD: 92	5143	69	7350	70	7069	99	7350	88
<i>Providencia stuartii</i>	205	22					205	12	183	97		
<i>Pseudomonas aeruginosa</i> \$			9301	86	6569	77	9375	74	9069	96	9001	85
<i>Serratia marcescens</i>			625 2YD: 114 SDD: 431	79 2YD: 73 SDD: 83	829	81	1379 2YD: 114	82 2YD: 93	1289 2YD: 114	98 2YD: 99	1379 2YD: 114	96 2YD: 94
<i>Stenotrophomonas maltophilia</i>							1243 2YD: 167	86 2YD: 92				



All NYC 2022	Aminoglycosides		Tetracyclines						Other			
	Tobramycin		Minocycline		Tetracycline		Tigecycline		Clindamycin		Metronidazole	
	n	%	n	%	n	%	n	%	n	%	n	%
Gram Negative												
<i>Acinetobacter baumannii</i>	990 2YD: 70	55 ?# 2YD: 63	200	60	199	71 #	392	35				
<i>Bacteroides fragilis</i>									101 2YD: 104	61 2YD: 57	2YD: 104	2YD: 98
<i>Citrobacter freundii</i>	564 2YD: 65	94 2YD: 93			163	80	341	100				
<i>Citrobacter koseri</i>	481	99			111	92	428	100				
<i>Enterobacter cloacae</i>	1886	95			764	84	1194	98				
<i>Escherichia coli</i> !	33498	87			10207	62	23293	100				
Non-ESBL												
ESBL												
<i>Haemophilus influenzae</i>												
<i>Klebsiella aerogenes</i>	772 2YD: 93	97 2YD: 100			253	86	528	100				
<i>Klebsiella oxytoca</i>	918 2YD: 86	93 2YD: 97			343	89	546	100				
<i>Klebsiella pneumoniae</i> !	10239	86			4119	75	6950	99				
Non-ESBL												
ESBL												
<i>Klebsiella variicola</i>	278	97					278	99				
<i>Morganella morganii</i>	909 2YD: 89	93 2YD: 90			306	12						
<i>Proteus mirabilis</i>	5642	88										
<i>Providencia stuartii</i>												
<i>Pseudomonas aeruginosa</i> \$	7541	95										
<i>Serratia marcescens</i>	1141 2YD: 114	87 2YD: 84			468	15	752	99				
<i>Stenotrophomonas maltophilia</i>			418	98								



All NYC 2022	Other						Urine Only			
	Polymyxin B		Rifampin		Trimethoprim-sulfamethoxazole		Fosfomycin		Nitrofurantoin	
	n	%	n	%	n	%	n	%	n	%
Gram Negative										
<i>Acinetobacter baumannii</i>	203	76	140	0	1256 2YD: 180	41 ?# 2YD: 67				
<i>Bacteroides fragilis</i>										
<i>Citrobacter freundii</i>					633 2YD: 140	84 2YD: 85			544 2YD: 65	93 2YD: 98
<i>Citrobacter koseri</i>					621	95			471	80
<i>Enterobacter cloacae</i>					2387	86			1942 2YD: 240	42 2YD: 24
<i>Escherichia coli</i> !					35509	67	4924	93	35214	97
Non-ESBL					7223	70			7223	97
ESBL					1477	41			1477	89
<i>Haemophilus influenzae</i>					86	60				
<i>Klebsiella aerogenes</i>					939 2YD: 144	94 2YD: 98			681	30
<i>Klebsiella oxytoca</i>					1140 2YD: 136	88 2YD: 89			994 2YD: 86	91 2YD: 92
<i>Klebsiella pneumoniae</i> !					11067	76			10528	44
Non-ESBL					2156	91			2156	46
ESBL					617	22			617	28
<i>Klebsiella variicola</i>					278	93			278	87
<i>Morganella morganii</i>					1199 2YD: 157	71 2YD: 65				
<i>Proteus mirabilis</i>					7350	73				
<i>Providencia stuartii</i>					205	56				
<i>Pseudomonas aeruginosa</i> \$										
<i>Serratia marcescens</i>					1379 2YD: 114	97 2YD: 97				
<i>Stenotrophomonas maltophilia</i>					1243 2YD: 167	95 2YD: 97				



All NYC 2022	Beta-lactams											
	Ampicillin		Cefazolin		Cefoxitin		Ceftriaxone		Meropenem		Oxacillin	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	13321	100										
<i>Enterococcus faecium</i>	2668 2YD: 158	13 2YD: 17										
<i>Propionibacterium acnes</i>					153	100			153	99		
Coagulase Negative <i>Staphylococci</i>			2313	48							2564	48
<i>Staphylococcus aureus</i> ~			7475	66							12305	60
MRSA	273	0									1995	0
MSSA											4784	100
<i>Staphylococcus epidermidis</i>			1511	62							3361	34
<i>Staphylococcus lugdunensis</i>			334	83							355	83
<i>Streptococcus pyogenes</i> (GAS)												
<i>Streptococcus agalactiae</i> (GBS)	899	100					879	100				
<i>Streptococcus anginosus</i> group							330	98				
<i>Streptococcus pneumoniae</i>												
Non-Meningitis							301 2YD: 70	98 2YD: 92				
Meningitis							326 2YD: 100	89 2YD: 87				
Viridans group <i>Streptococci</i>							281	95				



All NYC 2022	Beta-lactams				Inhibitor Combos		Quinolones				Aminoglycosides	
	Penicillin G		Penicillin VK		Ampicillin-Sulbactam		Ciprofloxacin		Levofloxacin		Gentamicin	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	2271	99			153	100	7308	78	9732	81		
<i>Enterococcus faecium</i>	445	15					1365	9	1806	10		
<i>Propionibacterium acnes</i>												
Coagulase Negative <i>Staphylococci</i>	251	0					1812	71			248	83
<i>Staphylococcus aureus</i> ~							7505	64	4537	71	2087	97
MRSA	525	0							1379	49	580	94
MSSA	915	1							1784	90	915	97
<i>Staphylococcus epidermidis</i>							1574	63	1940	58	805	85
<i>Staphylococcus lugdunensis</i>							231	95				
<i>Streptococcus pyogenes</i> (GAS)									145	91		
<i>Streptococcus agalactiae</i> (GBS)	417	100							1296	96		
<i>Streptococcus anginosus</i> group									330	93		
<i>Streptococcus pneumoniae</i>	94 2YD: 89	66 2YD: 89	87	61					319 2YD: 100	97 2YD: 99		
Non-Meningitis	165	98										
Meningitis	215 2YD:100	59 2YD: 57										
Viridans group <i>Streptococci</i>	281	83							281	76		



All NYC 2022	Tetracyclines				Other							
	Tetracycline		Tigecycline		Clindamycin		Daptomycin		Erythromycin		Linezolid	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	12195	21	2061	100			11714	98	2125	12	12734	99
<i>Enterococcus faecium</i>	2339	25	498	100			1439 2YD: 158 SDD: 1161	68 2YD: 97 SDD: 85	498	4	2665 2YD: 158	99 2YD: 98
<i>Propionibacterium acnes</i>					153	83						
Coagulase Negative <i>Staphylococci</i>	2564	79			2564	58	2313	100	1815	35	2415	100
<i>Staphylococcus aureus</i> ~	13019	86	1702	100	13019	71	12437	100	8087	44	13016	100
MRSA	3967	70			3967	71	3587	100			3622	100
MSSA	5221	93			5221	73	3877	100			3877	100
<i>Staphylococcus epidermidis</i>	3554	78			3554	51	2061	100	2155	25	2594	100
<i>Staphylococcus lugdunensis</i>	355	92			355	74	334	100	252	66	355	100
<i>Streptococcus pyogenes</i> (GAS)					145	58			145	56		
<i>Streptococcus agalactiae</i> (GBS)	899	19			1296	49					899	100
<i>Streptococcus anginosus</i> group					330	75			330	60		
<i>Streptococcus pneumoniae</i>	136	78			328	79			258	65	148	100
Non-Meningitis												
Meningitis												
Viridans group <i>Streptococci</i>					281	82			281	50		



All NYC 2022	Other						Synergy				Urine Only	
	Rifampin		Trimethoprim-sulfamethoxazole		Vancomycin		Gentamicin		Streptomycin		Nitrofurantoin	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	426	46			13321	93	11193	77	9493	85	12441	99
<i>Enterococcus faecium</i>					2668 2YD: 158	33 2YD: 39	2184 2YD: 158	79 2YD: 85	1768 2YD: 112	58 2YD: 60	2384 2YD: 194	43 2YD: 50
<i>Propionibacterium acnes</i>												
Coagulase Negative <i>Staphylococci</i>	248	97	2564	72	2564	100						
<i>Staphylococcus aureus</i> ~	1702	99	13019	96	13019	100					8927	99
MRSA	580	99	3967	93	3967	100	1331	93			351	99
MSSA	915	99	5221	98	5221	100	1982	97				
<i>Staphylococcus epidermidis</i>	735	97	2968	58	3554	100	288	77			1241	100
<i>Staphylococcus lugdunensis</i>			355	98	355	100						
<i>Streptococcus pyogenes</i> (GAS)					145	100						
<i>Streptococcus agalactiae</i> (GBS)					1276	100						
<i>Streptococcus anginosus</i> group					330	99						
<i>Streptococcus pneumoniae</i>			284 2YD: 100	78 2YD: 70	270 2YD: 100	100 2YD: 100						
Non-Meningitis												
Meningitis												
Viridans group <i>Streptococci</i>					281	98						

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Manhattan 2022	Quinolones				Aminoglycosides					
	Ciprofloxacin		Levofloxacin		Amikacin		Gentamicin		Tobramycin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>	171	73 ?#	257 2YD: 206	62 ?# 2YD: 51	212 2YD: 70	73 ?# 2YD: 60	344 2YD: 150	62 ?# 2YD: 67	212 2YD: 70	67 ?# 2YD: 63
<i>Bacteroides fragilis</i> 2YD										
<i>Citrobacter freundii</i>	157	89	303 2YD: 110	87 2YD: 95	303 2YD: 140	99 2YD: 98	303 2YD: 140	93 2YD: 94	268 2YD: 65	93 2YD: 93
<i>Citrobacter koseri</i>	225	95	225	96	225	99	225	98	110	99
<i>Enterobacter cloacae</i>	717	87	1197	90	1197	99	1197	95	883	94
<i>Escherichia coli</i> !	4202	70	12206	71	12206	99	12206	87	12161	88
Non-ESBL	3231	77	3231	81	3231	99	3231	90		
ESBL	873	17	873	23	873	94	873	71		
<i>Klebsiella aerogenes</i>	284	96	436 2YD: 144	96 2YD: 99	436 2YD: 144	100 2YD: 99	436 2YD: 144	99 2YD: 100	327 2YD: 93	99 2YD: 100
<i>Klebsiella oxytoca</i>	370	92	632 2YD: 136	94 2YD: 96	632 2YD: 136	99 2YD: 100	632 2YD: 136	94 2YD: 96	487 2YD: 86	93 2YD: 97
<i>Klebsiella pneumoniae</i> !	1548	81	4280	84	4280	99	4280	92	4242	89
Non-ESBL	1110	91	1110	95	1110	99	1110	99		
ESBL	489	19	489	50	489	93	489	70		
<i>Morganella morganii</i>	307	70	456 2YD: 157	72 2YD: 73	456 2YD: 157	98 2YD: 99	456 2YD: 157	87 2YD: 85	312 2YD: 89	92 2YD: 90
<i>Proteus mirabilis</i>	1506	76	2597	78	2597	98	2597	89	1886	91
<i>Pseudomonas aeruginosa</i> \$	2201	81	3806	77	3806	96	3432	85	2794	96
<i>Serratia marcescens</i>	354	93	603 2YD: 114	92 2YD: 93	603 2YD: 114	99 2YD: 99	603 2YD: 114	98 2YD: 94	473 2YD: 114	89 2YD: 84
<i>Stenotrophomonas maltophilia</i>			553 2YD: 167	87 2YD: 92						



Manhattan 2022	Tetracyclines						Other					
	Minocycline		Tetracycline		Tigecycline		Clindamycin		Metronidazole		Trimethoprim-sulfamethoxazole	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>	200	60	146	76 #							344 2YD: 150	53 ?# 2YD: 65
<i>Bacteroides fragilis</i> 2YD							104	57	104	98		
<i>Citrobacter freundii</i>			141	81							303 2YD: 140	81 2YD: 85
<i>Citrobacter koseri</i>											225	89
<i>Enterobacter cloacae</i>			548	83							1197	84
<i>Escherichia coli</i> !			7543	62	2969	100					12206	65
Non-ESBL											3231	71
ESBL											873	42
<i>Klebsiella aerogenes</i>			201	87							436 2YD: 144	95 2YD: 98
<i>Klebsiella oxytoca</i>			309	89							632 2YD: 136	88 2YD: 89
<i>Klebsiella pneumoniae</i> !			2674	74	1113	99					4280	77
Non-ESBL											1110	89
ESBL											489	22
<i>Morganella morganii</i>			179	21							456 2YD: 157	71 2YD: 65
<i>Proteus mirabilis</i>											2597	78
<i>Pseudomonas aeruginosa</i> \$												
<i>Serratia marcescens</i>			321	8							603 2YD: 114	98 2YD: 97
<i>Stenotrophomonas maltophilia</i>	228	99									553 2YD: 167	98 2YD: 97



Manhattan 2022	Urine Only			
	Fosfomycin		Nitrofurantoin	
Gram Negative	n	%	n	%
<i>Acinetobacter baumannii</i>				
<i>Bacteroides fragilis</i> 2YD				
<i>Citrobacter freundii</i>			215 2YD: 65	93 2YD: 98
<i>Citrobacter koseri</i>				
<i>Enterobacter cloacae</i>			892	33
<i>Escherichia coli</i> !	4924	93	12161	97
Non-ESBL			3231	97
ESBL			873	88
<i>Klebsiella aerogenes</i>			187	12
<i>Klebsiella oxytoca</i>			487 2YD: 86	92 2YD: 92
<i>Klebsiella pneumoniae</i> !			4242	40
Non-ESBL			1110	42
ESBL			489	28
<i>Morganella morganii</i>				
<i>Proteus mirabilis</i>				
<i>Pseudomonas aeruginosa</i> \$				
<i>Serratia marcescens</i>				
<i>Stenotrophomonas maltophilia</i>				



Manhattan 2022	Beta-lactams										Quinolones	
	Ampicillin		Cefazolin		Ceftriaxone		Oxacillin		Penicillin G		Ciprofloxacin	
	n	%	n	%	n	%	n	%	n	%	n	%
Gram Positive												
<i>Enterococcus faecalis</i>	4478	99							937	99	1034	84
<i>Enterococcus faecium</i>	1133 2YD: 112	11 2YD: 14										
<i>Staphylococcus aureus</i> ~			1809	84			4772	60			1357	68
MRSA							1225	0				
MSSA							3141	100				
<i>Staphylococcus epidermidis</i>							1480	35				
<i>Streptococcus agalactiae</i> (GBS)					96	97						
<i>Streptococcus pneumoniae</i>									2YD: 89	2YD: 89		
Non-Meningitis					151 2YD: 70	99 2YD: 92						
Meningitis					188 2YD: 100	88 2YD: 87			96 2YD: 100	51 2YD: 57		

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Brooklyn 2022	Quinolones		Aminoglycosides						Other		Urine Only	
	Levofloxacin		Amikacin		Gentamicin		Tobramycin		Trimethoprim-sulfamethoxazole		Nitrofurantoin	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>	386	33 ?#	386	44 ?#	386	40 ?#	252	44 ?#	386	32 ?#		
<i>Citrobacter freundii</i>	116	88	116	99					116	88	115	97
<i>Enterobacter cloacae</i>	402	91	402	99	402	95	291	93	402	87	381	48
<i>Escherichia coli</i> !	6027	67	6027	99	6027	85	4059	83	6027	68	5814	97
<i>Klebsiella aerogenes</i>	191	94	191	100	191	99	133	96	191	92	182	27
<i>Klebsiella oxytoca</i>	159	93	159	100	159	96			159	87	158	82
<i>Klebsiella pneumoniae</i> !	2247	80	2247	95	2247	88	1457	79	2247	75	2106	41
<i>Morganella morganii</i>	265	76	265	98	265	92			265	75		
<i>Proteus mirabilis</i>	1343	63	1343	98	1343	85	809	83	1343	69		
<i>Pseudomonas aeruginosa</i> \$	1808	72	1808	96	1808	83	1379	94				
<i>Serratia marcescens</i>	286	70	286	96	286	94			286	96		
<i>Stenotrophomonas maltophilia</i>	266	89							266	98		



Brooklyn 2022	Beta-lactams								Quinolones			
	Ampicillin		Ceftriaxone		Oxacillin		Penicillin G		Ciprofloxacin		Levofloxacin	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	2386	100					741	99	1453	76	1453	78
<i>Enterococcus faecium</i>	449	17							332	11	332	14
<i>Staphylococcus aureus</i> ~					2440	59						
MRSA												
MSSA					447	100						
<i>Staphylococcus epidermidis</i>					636	34						
<i>Streptococcus pneumoniae</i>											65	98
Non-Meningitis			76	96								
Meningitis			72	89			53	62				

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Brooklyn 2022	Other		Synergy				Urine Only	
	Vancomycin		Gentamicin		Streptomycin		Nitrofurantoin	
Gram Positive	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	2386	89	1885	72	1761	82	2114	99
<i>Enterococcus faecium</i>	449	32					431	40
<i>Staphylococcus aureus</i> ~	2440	100					2440	97
MRSA	527	100						
MSSA	447	100						
<i>Staphylococcus epidermidis</i>	636	100						
<i>Streptococcus pneumoniae</i>	57	100						
Non-Meningitis								
Meningitis								

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Queens 2022	Quinolones				Aminoglycosides					
	Ciprofloxacin		Levofloxacin		Amikacin		Gentamicin		Tobramycin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i> ?			292	41	292	62	292	56	292	66
<i>Citrobacter koseri</i>	211	95	211	98	211	100	211	100	186	99
<i>Enterobacter cloacae</i>	428	90	548	92	548	100	548	98	505	97
<i>Escherichia coli</i> !	9499	68	11754	69	11754	100	11754	87	11754	86
<i>Klebsiella pneumoniae</i> !	2406	77	3208	83	3208	97	3208	92	3208	87
<i>Morganella morganii</i>	280	64	364	66	364	100	364	86	334	91
<i>Proteus mirabilis</i>	1752	71	2141	70	2141	99	2141	89	1849	89
<i>Pseudomonas aeruginosa</i> \$	1991	76	2457	73	2457	97	2457	88	2246	95
<i>Serratia marcescens</i>			335	82	335	98	335	93	335	84
<i>Stenotrophomonas maltophilia</i>			259	83						



Queens 2022	Tetracyclines				Other		Urine Only	
	Minocycline		Tigecycline		Trimethoprim-sulfamethoxazole		Nitrofurantoin	
Gram Negative	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i> ?					292	49		
<i>Citrobacter koseri</i>			186	100	211	98	211	80
<i>Enterobacter cloacae</i>			503	99	548	90	429	49
<i>Escherichia coli</i> !			11754	100	11754	66	11715	98
<i>Klebsiella pneumoniae</i> !			3208	99	3208	78	2848	51
<i>Morganella morganii</i>					364	66		
<i>Proteus mirabilis</i>					2141	74		
<i>Pseudomonas aeruginosa</i> \$								
<i>Serratia marcescens</i>			335	99	335	97		
<i>Stenotrophomonas maltophilia</i>	103	97			259	91		



Queens 2022	Beta-lactams						Quinolones				Tetracyclines	
	Ampicillin		Cefazolin		Oxacillin		Ciprofloxacin		Levofloxacin		Tetracycline	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	3954	100					2938	80	3466	82	3954	21
<i>Enterococcus faecium</i>	603	13					423	9	569	11	603	25
Coagulase Negative <i>Staphylococci</i>			1084	50	1183	52	1084	75			1183	80
<i>Staphylococcus aureus</i> ~			3276	63	3276	63	3276	65			3276	88
MRSA											498	73
MSSA					786	100					844	92
<i>Staphylococcus epidermidis</i>			520	34	818	33	520	63			818	74
<i>Staphylococcus lugdunensis</i>			134	85	134	85	134	97			134	94



Queens 2022	Other											
	Clindamycin		Daptomycin		Erythromycin		Linezolid		Trimethoprim-sulfamethoxazole		Vancomycin	
Gram Positive	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>			3954	98			3954	100			3954	95
<i>Enterococcus faecium</i>			SDD: 423	SDD: 85			603	98			603	37
Coagulase Negative <i>Staphylococci</i>	1183	59	1084	100	1084	37	1183	100	1183	75	1183	100
<i>Staphylococcus aureus</i> ~	3276	74	3276	100	3276	44	3276	100	3276	97	3276	100
MRSA	498	74	498	99			498	100	498	91	498	100
MSSA	844	77	784	99			784	100	844	97	844	100
<i>Staphylococcus epidermidis</i>	818	52	520	100	818	25	818	100	520	66	818	99
<i>Staphylococcus lugdunensis</i>	134	79	134	100	134	73	134	100	134	99	134	100



Queens 2022	Synergy				Urine Only	
	Gentamicin		Streptomycin		Nitrofurantoin	
Gram Positive	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	3954	80	3466	84	3653	100
<i>Enterococcus faecium</i>	603	77	569	60	446	46
Coagulase Negative <i>Staphylococci</i>						
<i>Staphylococcus aureus</i> ~					3276	100
MRSA						
MSSA						
<i>Staphylococcus epidermidis</i>						
<i>Staphylococcus lugdunensis</i>						



Staten Island 2022	Beta-lactams											
	Ampicillin		Aztreonam		Cefazolin		Cefepime		Ceftazidime		Ceftriaxone	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>			207	78			207	90			207	70
<i>Escherichia coli</i> !	5524	46	5524	80	5524	76	5524	81			5524	80
<i>Klebsiella oxytoca</i>			150	89	150	34	150	93			150	87
<i>Klebsiella pneumoniae</i> !			1332	71	1332	67	1332	71			1332	71
<i>Proteus mirabilis</i>	1098	55	1098	69	1098	64	1098	69			1098	69
<i>Pseudomonas aeruginosa</i> \$							1122	86	1122	87		



Staten Island 2022	Beta-lactams				Inhibitor Combinations				Quinolones	
	Ertapenem		Meropenem		Ampicillin-Sulbactam		Piperacillin-Tazobactam		Levofloxacin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>	207	94	207	98	5524	60			207	92
<i>Escherichia coli</i> !	5519	100	5524	100					5524	67
<i>Klebsiella oxytoca</i>	150	100	150	100					150	100
<i>Klebsiella pneumoniae</i> !	1325	90	1332	91					1332	77
<i>Proteus mirabilis</i>	1085	100	1098	100	1098	85			1098	57
<i>Pseudomonas aeruginosa</i> \$			1122	81			1048	93	1122	68



Staten Island 2022	Aminoglycosides				Tetracyclines		Other		Urine Only	
	Gentamicin		Tobramycin		Tigecycline		Trimethoprim-sulfamethoxazole		Nitrofurantoin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>	207	97	207	96			207	85	207	50
<i>Escherichia coli</i> !	5523	88	5524	86	4724	100	5522	71	5524	97
<i>Klebsiella oxytoca</i>	150	93	150	91			150	89	150	98
<i>Klebsiella pneumoniae</i> !	1332	86	1332	81	1313	98	1332	70	1332	49
<i>Proteus mirabilis</i>	1098	87	1098	87			1098	59		
<i>Pseudomonas aeruginosa</i> \$	1122	84	1122	95						



Staten Island 2022	Beta-lactams				Quinolones		Tetracyclines		Other	
	Ampicillin		Oxacillin		Levofloxacin		Tetracycline		Clindamycin	
Gram Positive	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	2196	100			2196	76	2196	18		
<i>Enterococcus faecium</i>	456	13			456	9	456	32		
Coagulase Negative <i>Staphylococci</i>			331	45			331	75	331	58
<i>Staphylococcus aureus</i> ~			1817	57			1817	89	1817	68



Staten Island 2022	Other								Urine Only	
	Erythromycin		Linezolid		Trimethoprim-sulfamethoxazole		Vancomycin		Nitrofurantoin	
Gram Positive	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>			2187	100			2196	92	2196	100
<i>Enterococcus faecium</i>			453	100			456	33	456	40
Coagulase Negative <i>Staphylococci</i>	331	31	331	100	331	67	331	100		
<i>Staphylococcus aureus</i> ~	1817	43	1814	100	1817	95	1817	100	1817	100

Pediatrics 2022	Beta-lactams										
	Ampicillin		Aztreonam		Cefazolin		Cefepime		Cefoxitin		
	Gram Negative	n	%	n	%	n	%	n	%	n	%
	<i>Enterobacter cloacae</i>			65	88			135	95		
	<i>Escherichia coli</i> !	2238	42	2565	90	2238	69	2565	91	2353	97
	<i>Klebsiella oxytoca</i>			47	80	47	15	47	94	47	97
	<i>Klebsiella pneumoniae</i> !			513	89	486	68	513	91	430	97
	<i>Proteus mirabilis</i>	199	74	199	90	199	74	199	98	199	99
	<i>Pseudomonas aeruginosa</i> \$			384	83			502	91		
<i>Serratia marcescens</i>			81	77			129	95			
<i>Stenotrophomonas maltophilia</i>											



Pediatrics 2022	Beta-lactams								Inhibitor Combinations			
	Ceftazidime		Ceftriaxone		Ertapenem		Meropenem		Ampicillin-Sulbactam		Piperacillin-Tazobactam	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>			65	79	98	92	135	99	2565	55	107	85
<i>Escherichia coli</i> !	1465	91	2565	89	2319	100	2565	100			1465	95
<i>Klebsiella oxytoca</i>	47	87	47	83			47	100			47	85
<i>Klebsiella pneumoniae</i> !	355	90	513	89	434	99	513	99			355	94
<i>Proteus mirabilis</i>	113	98	199	97	170	100	199	99			113	98
<i>Pseudomonas aeruginosa</i> \$	502	92					502	90			502	93
<i>Serratia marcescens</i>			81	70			129	97			78	71
<i>Stenotrophomonas maltophilia</i>												



Pediatrics 2022	Quinolones				Aminoglycosides					
	Ciprofloxacin		Levofloxacin		Amikacin		Gentamicin		Tobramycin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>	65	100	135	97	135	100	135	98	135	98
<i>Escherichia coli</i> !	1391	80	2565	81	2565	99	2565	88	2520	90
<i>Klebsiella oxytoca</i>			47	97	47	100	47	97	47	96
<i>Klebsiella pneumoniae</i> !	275	81	513	90	513	98	513	92	475	91
<i>Proteus mirabilis</i>	115	89	199	92	199	99	199	90	199	92
<i>Pseudomonas aeruginosa</i> \$	336	81	502	82	502	94	502	81	458	90
<i>Serratia marcescens</i>	81	74	129	89	129	97	129	86	129	78
<i>Stenotrophomonas maltophilia</i>			80	89						



Pediatrics 2022	Tetracyclines				Sulfonamide		Urines Only	
	Tigecycline		Tetracycline		Trimethoprim-sulfamethoxazole		Nitrofurantoin	
Gram Negative	n	%	n	%	n	%	n	%
<i>Enterobacter cloacae</i>	65	100	107	94	135	91	135	50
<i>Escherichia coli</i> !	1673	100	1253	65	2565	65	2520	99
<i>Klebsiella oxytoca</i>			47	97	47	91		
<i>Klebsiella pneumoniae</i> !	264	100	272	77	513	82	469	51
<i>Proteus mirabilis</i>					199	83		
<i>Pseudomonas aeruginosa</i> \$								
<i>Serratia marcescens</i>	81	100	78	9	129	96		
<i>Stenotrophomonas maltophilia</i>					80	100		



Pediatrics 2022	Beta-lactams						Quinolones			
	Ampicillin		Ceftriaxone		Oxacillin		Ciprofloxacin		Levofloxacin	
Gram Positive	n	%	n	%	n	%	n	%	n	%
<i>Enterococcus faecalis</i>	524	99					277	97	524	98
<i>Staphylococcus aureus</i> ~					1669	65	863	74	892	78
MRSA									296	60
MSSA					616	100			479	92
<i>Staphylococcus epidermidis</i>					335	38	169	82	192	76
<i>Streptococcus pneumoniae</i>									84	97
Non-Meningitis			84	99						
Meningitis			84	90						

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ED 2022	Beta-lactams											
	Ampicillin		Aztreonam		Cefazolin		Cefepime		Cefoxitin		Ceftazidime	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>							70	57 ?#			115	79
<i>Citrobacter freundii</i>			88	77			88	97				
<i>Citrobacter koseri</i>			206	95	153	66	206	99	153	98	101	97
<i>Eneterobacter cloacae</i>			308	77			318	91			190	74
<i>Escherichia coli</i> !	10999	45	11626	87	10999	58	11626	87	10389	96	6105	91
Non-ESBL	3261	49	3261	98	2853	86	3261	100	1855	97	2640	99
ESBL	235	0	438	7	235	2	235	2				
<i>Klebsiella aerogenes</i>			199	88			199	97			99	84
<i>Klebsiella oxytoca</i>			203	89	151	16	203	96	151	98	112	97
<i>Klebsiella pneumoniae</i> !			2815	83	2690	55	2815	84	2534	93	1464	89
Non-ESBL	394	1	777	99	690	92	777	100	394	97	572	100
ESBL												
<i>Klebsiella variicola</i>			98	94	98	89	98	95	98	94		
<i>Morganella morganii</i>			224	86			224	95	193	80	97	74
<i>Proteus mirabilis</i>	1950	69	2014	87	1887	62	2014	88	1635	97	1054	94
<i>Pseudomonas aeruginosa</i> \$			1130	79			1394	90			1394	91
<i>Serratia marcescens</i>			86	92			86	100			52	98



ED 2022	Beta-lactams								Inhibitor Combinations			
	Ceftriaxone		Ertapenem		Imipenem		Meropenem		Ampicillin-Sulbactam		Piperacillin-Tazobactam	
Gram Negative	n	%	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>					62	58 ?	113	65	115	76 ?#		
<i>Citrobacter freundii</i>	88	74			86	95	88	100				
<i>Citrobacter koseri</i>	206	96	133	100	127	100	206	100	153	97	126	99
<i>Eneterobacter cloacae</i>	308	72	215	96	208	97	318	99			200 SDD: 118	78 SDD: 89
<i>Escherichia coli</i> !	11089	85	8868	100	8038	100	11626	100	11626	58	6105 SDD: 5521	96 SDD: 96
Non-ESBL	3261	99	2397	100			3261	100	3261	58	3261	97
ESBL	235	0	411	98			514	99	235	36	235	86
<i>Klebsiella aerogenes</i>	199	81	132	99	163	96	199	100			99 SDD: 100	84 SDD: 91
<i>Klebsiella oxytoca</i>	203	89	143	98	149	99	203	99	203	78	112 SDD 91	95 SDD: 92
<i>Klebsiella pneumoniae</i> !	2686	83	2025	97	2090	97	2815	97	2815	73	1464 SDD: 1351	93 SDD: 89
Non-ESBL	777	100	588	100			777	100	777	85	777	97
ESBL							173	92				
<i>Klebsiella variicola</i>	98	93	98	98	98	98	98	99	98	90	SDD: 98	SDD: 97
<i>Morganella morganii</i>	224	83	141	98			224	99	193	11	127 SDD: 97	96 SDD: 97
<i>Proteus mirabilis</i>	1956	87	1535	100			2014	100	2014	87	1185 SDD: 829	99 SDD: 97
<i>Pseudomonas aeruginosa</i> \$					912	79	1394	88			1394	90
<i>Serratia marcescens</i>	86	88					86	100			85	77



ED 2022	Quinolones				Aminoglycosides					
	Ciprofloxacin		Levofloxacin		Amikacin		Gentamicin		Tobramycin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>	113	60 ?#	115	63	70	70 ?#	115	69 ?#	70	67 ?#
<i>Citrobacter freundii</i>	88	83	88	84	88	100	88	95	88	94
<i>Citrobacter koseri</i>	206	95	206	97	206	100	206	99	128	100
<i>Eneterobacter cloacae</i>	289	90	318	88	318	99	318	95	250	96
<i>Escherichia coli</i> !	8279	68	11626	70	11626	99	11626	88	11089	87
Non-ESBL	3261	78	3261	83	3261	99	3261	90		
ESBL	514	15	514	23	514	96	514	69		
<i>Klebsiella aerogenes</i>	199	96	199	96	199	100	199	99	167	98
<i>Klebsiella oxytoca</i>	203	92	203	96	203	99	203	95	151	93
<i>Klebsiella pneumoniae</i> !	2141	78	2815	85	2815	97	2815	92	2686	89
Non-ESBL	777	91	777	96	777	99	777	99		
ESBL	173	14	173	43	173	95	173	71		
<i>Klebsiella variicola</i>	98	91	98	96	98	99	98	97	98	97
<i>Morganella morganii</i>	211	63	224	63	224	100	224	87	163	91
<i>Proteus mirabilis</i>	1698	73	2014	75	2014	99	2014	91	1503	91
<i>Pseudomonas aeruginosa</i> \$	1235	77	1394	76	1394	97	1394	87	1145	96
<i>Serratia marcescens</i>	80	90	86	93	86	100	86	99	86	85



ED 2022	Tetracyclines				Other		Urine Only			
	Tetracycline		Tigecycline		Trimethoprim-sulfamethoxazole		Fosfomycin		Nitrofurantoin	
Gram Negative	n	%	n	%	n	%	n	%	n	%
<i>Acinetobacter baumannii</i>					115	57 ?#				
<i>Citrobacter freundii</i>			88	100	88	89			88	87
<i>Citrobacter koseri</i>			128	100	206	97			153	80
<i>Eneterobacter cloacae</i>	132	84	238	98	318	84			314	45
<i>Escherichia coli</i> !	4868	64	8906	100	11626	68	1483	92	11587	97
Non-ESBL					3261	68			3261	98
ESBL					514	41			514	91
<i>Klebsiella aerogenes</i>			167	100	199	96			167	31
<i>Klebsiella oxytoca</i>			151	100	203	87			151	92
<i>Klebsiella pneumoniae</i> !	1183	80	2254	99	2815	80			2796	42
Non-ESBL					777	89			777	50
ESBL					173	22			173	30
<i>Klebsiella variicola</i>			98	99	98	91			98	85
<i>Morganella morganii</i>	66	0			224	64				
<i>Proteus mirabilis</i>					2014	76				
<i>Pseudomonas aeruginosa</i> \$										
<i>Serratia marcescens</i>	52	10	86	99	86	98				



ED 2022	Beta-lactams									
	Ampicillin		Cefazolin		Ceftriaxone		Oxacillin		Penicillin G	
	n	%	n	%	n	%	n	%	n	%
Gram Positive										
<i>Enterococcus faecalis</i>	3389	99							367	100
<i>Enterococcus faecium</i>	371	16								
Coagulase Negative <i>Staphylococci</i>			372	52			577	52	205	0
<i>Staphylococcus aureus</i> ~			1171	61			2610	59		
MRSA							664	0	290	0
MSSA							1024	100	395	0
<i>Staphylococcus epidermidis</i>			555	81			746	43		
<i>Streptococcus pneumoniae</i>										
Non-Meningitis					45	100				
Meningitis					37	96				

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ED 2022	Synergy				Urine Only	
	Gentamicin		Streptomycin		Nitrofurantoin	
	n	%	n	%	n	%
Gram Positive						
<i>Enterococcus faecalis</i>	2612	81	2139	85	3019	99
<i>Enterococcus faecium</i>	301	79	238	62	371	40
Coagulase Negative <i>Staphylococci</i>						
<i>Staphylococcus aureus</i> ~					1969	99
MRSA					53	92
MSSA						
<i>Staphylococcus epidermidis</i>					449	100
<i>Streptococcus pneumoniae</i>						
Non-Meningitis						
Meningitis						