

2017 Alabama Hospital Quality Initiative

Data Collection:
01-01-2017 to 12-31-2017

STATEWIDE ANTIBIOGRAM

Alabama hospitals, MedMined™ services from BD,
and Blue Cross® and Blue Shield® of Alabama:

A partnership to improve the quality of healthcare.

Each year, the Alabama Hospital Quality Initiative (AHQI) publishes a statewide antibiogram using aggregate microbiology data provided by Alabama hospitals. The antibiogram provides Alabama clinicians with the most up-to-date and accurate data for choosing empiric antimicrobial therapy.

By utilizing antibiogram technology developed by BD, duplicate isolates are eliminated, thus removing the bias of repeated cultures performed on severely ill patients. Each patient has been allowed one isolate per organism per 365-day period. Susceptibility data is taken into account in the duplicate elimination process; therefore, isolates with significantly different susceptibility results are considered unique (non-duplicate) isolates.

The Alabama Hospital Association and BD MedMined services are independent entities and do not provide services or products of Blue Cross and Blue Shield of Alabama.



BlueCross BlueShield
of Alabama



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All Sources Except Urine GRAM POSITIVE Community-Associated Percent Susceptible	AMPICILLIN	PENICILLIN G	CEFZOLIN	OXACILLIN	CLINDAMYCIN	ERYTHROMYCIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)	CIPROFLOXACIN	LEVOFLOXACIN	VANCOMYCIN	LINEZOLID	DAPTOMYCIN	QUINUPRISTIN/ DALFOPRISTIN	CEFTRIAXONE
COST PER DAY	\$	\$	\$	\$\$	\$	\$\$	\$\$	\$\$	\$	\$	\$	\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$
Enterococcus faecalis	98	99				11	22		67	74	96	99	100		
Enterococcus faecium	26	38				3	20				34	95	99		
Enterococcus species - VRE	27	35					7					94	99		
Enterococcus species (all - faecalis, faecium)	91	92				12	24		65	71	87	98	100	6	
Staphylococcus aureus	1	3	52	47	73	34	93	97	59	60	100	100	100	100	49
Staphylococcus aureus - MRSA					70	13	94	96	36	39	100	100	100	100	
Staphylococcus aureus - MSSA		6	100	100	77	56	93	99	81	85	100	100	100	100	99
Staphylococcus coagulase negative - ALL		7	43	43	57	34	79	65	61	60	100	100	100	99	44
Staphylococcus epidermidis (coag negative)			33	31	54	25	80	50	54	54	100	100	100	99	32
Streptococcus agalactiae (Group B)	100	100			43	34	18	100		98	100	100	100	92	99
Streptococcus pneumoniae		64			76	39	73	70		99	100	100			96

Key to Susceptibility (from previous year)

- 10% or greater increase in susceptibility
- 5% to 9% increase in susceptibility
- 5% to 9% decrease in susceptibility
- 10% or greater decrease in susceptibility

All Sources Except Urine GRAM NEGATIVE Community-Associated Percent Susceptible	CEFZOLIN	CEFUROXIME	CEFTRIAXONE	CEFTAZIDIME	CEFEPIME	AZTREONAM	IMPENEM	MEROPENEM	AMPICILLIN	AMP/SULBACTAM	PIPERACILLIN/ TAZOBACTAM	CIPROFLOXACIN	LEVOFLOXACIN	GENTAMICIN	TOBRAMYCIN	AMIKACIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)
COST PER DAY	\$	\$	\$	\$	\$	\$\$\$\$	\$\$\$\$	\$	\$	\$	\$\$	\$	\$	\$	\$	\$	\$	\$
Acinetobacter baumannii			18	74	73		76	75		87	67	70	75	88	96		0	81
Citrobacter freundii	1	41	85	84	98	87	93	99	11	43	94	93	94	96	96	100	88	87
Enterobacter aerogenes	1	35	86	90	98	86	73	99	2	28	86	95	97	98	97	100	83	97
Enterobacter cloacae	1	17	87	89	96	83	91	98	2	17	91	94	96	97	97	99	86	90
Escherichia coli	81	82	88	87	88	88	99	99	42	48	95	65	67	87	87	99	69	67
Klebsiella oxytoca	56	89	95	95	96	91	98	99	2	68	97	96	98	96	96	100	88	94
Klebsiella pneumoniae	88	87	92	91	91	92	97	98	1	82	93	93	95	95	94	100	84	88
Morganella morganii	2	2	86	82	97	87	51	99	1	6	96	69	75	88	95	100	23	75
Proteus mirabilis	89	93	95	94	94	92	60	98	82	91	98	75	77	91	91	100	1	77
Pseudomonas aeruginosa		2	8	88	89	72	85	90	1	1	92	83	79	86	95	93		7
Serratia marcescens		1	94	92	99	90	82	99	3	5	83	97	98	98	84	99	9	98
Stenotrophomonas (Xanthomonas) maltophilia				38									84					90

Urine Isolates Only GRAM POSITIVE Community-Associated Percent Susceptible	AMPICILLIN	PENICILLIN G	CEFZOLIN	OXACILLIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)	CIPROFLOXACIN	LEVOFLOXACIN	VANCOMYCIN	LINEZOLID	DAPTOMYCIN	QUINUPRISTIN/ DALFOPRISTIN	NITROFURANTOIN	CEFTRIAXONE
COST PER DAY	\$	\$	\$	\$\$	\$\$	\$\$	\$	\$	\$	\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$	\$
Enterococcus faecalis	99	99			20		65	70	98	97	100	1	99	
Enterococcus faecium	15	16			13		10	12	30	96	99		41	
Enterococcus species - VRE	19	19			7		7	4		94	98		50	
Enterococcus species (all - faecalis, faecium, other)	90	91			20		60	65	91	97	100	17	93	
Staphylococcus aureus	2	4	51	47	92	97	50	49	100	100	100	100	99	56
Staphylococcus aureus - MRSA			0		91	95	22	26	100	100	100	100	98	0
Staphylococcus aureus - MSSA	4	9	100	100	94	98	76	78	100	100	100	100	100	99
Staphylococcus coagulase negative - ALL	2	6	37	42	84	70	65	63	99	100	100	99	98	37
Staphylococcus epidermidis (coagulase negative)	1	3	42	41	84	53	51	50	100	100	100	100	99	39
Streptococcus agalactiae (Group B)	100	100	100		15	96		98	100	100	100	00	100	

Cost Per Day¹

- \$\$\$\$\$\$ = > \$200
- \$\$\$\$\$ = > \$100
- \$\$\$\$ = \$75 - \$99
- \$\$\$ = \$50 - \$74
- \$\$ = \$25 - \$49
- \$ = < \$25

Urine Isolates Only GRAM NEGATIVE Community-Associated Percent Susceptible	CEFZOLIN	CEFUROXIME	CEFTRIAXONE	CEFTAZIDIME	CEFEPIME	AZTREONAM	IMPENEM	MEROPENEM	AMPICILLIN	AMP/SULBACTAM	PIPERACILLIN/ TAZOBACTAM	CIPROFLOXACIN	LEVOFLOXACIN	GENTAMICIN	TOBRAMYCIN	AMIKACIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)	NITROFURANTOIN
COST PER DAY	\$	\$	\$	\$	\$	\$\$\$\$	\$\$\$\$	\$	\$	\$	\$\$	\$	\$	\$	\$	\$	\$	\$\$	\$
Acinetobacter baumannii			16	69	67		66	77		86	68	63	76	83	94			71	
Citrobacter freundii	2	33	77	74	99	72	98	100	10	34	88	90	90	93	94	100	80	82	92
Enterobacter aerogenes	4	42	84	83	98	85	82	99	7	43	85	96	97	97	98	100	84	95	19
Enterobacter cloacae	1	18	68	71	91	67	90	98	4	15	74	90	91	94	94	100	87	85	36
Escherichia coli	84	86	91	90	91	89	100	100	46	50	97	72	72	89	90	100	73	70	96
Klebsiella oxytoca	51	80	89	91	92	86	98	99	1	62	91	91	94	94	93	99	86	89	85
Klebsiella pneumoniae	92	90	93	93	93	93	99	99	1	84	96	93	96	96	95	100	83	89	46
Morganella morganii	3	4	85	76	94	81	55	98	2	10	92	61	66	86	92	99	29	73	1
Proteus mirabilis	90	92	94	93	93	86	59	98	84	91	99	74	75	89	91	99	2	77	
Pseudomonas aeruginosa	1	3	5	89	90	68	87	92	1	1	93	76	73	86	95	96		5	2
Serratia marcescens		0	91	88	97	83	90	98	2	4	82	90	92	97	84	99	5	96	

HOSPITAL versus COMMUNITY DIVISIONS

To ensure therapy is chosen based on the organism's likely origin, the antibiogram has been divided into **Hospital** and **Community** sections. A **community-associated** isolate is one collected from an outpatient, or an inpatient within the first three days of admission, who has had no inpatient admissions within the previous 14 days. A **Hospital** isolate is collected from a patient on or after the third day of hospitalization, with no previous culture of this type in the first three days of hospitalization. **Hospital** isolates also include isolates collected from patients within 14 days of an inpatient discharge.

The **Hospital** antibiogram should be used for suspected healthcare-associated pathogens. The **Community** antibiogram is appropriate for community-associated infections.

URINE ONLY versus URINE EXCLUDED SECTIONS

In both the **Hospital** and **Community** sections, urine isolates have been eliminated from one section, so all specimen sources except urine are utilized. In the other section, only urine isolates are used.

For urinary tract infections, the **urine isolates only** section should be used to determine appropriate therapy for either healthcare or community-associated infections.

The Alabama Hospital Quality Initiative (AHQI) is a partnership among Blue Cross and Blue Shield of Alabama, Alabama hospitals, and BD to reduce healthcare-associated infections and promote efficacious antibiotic therapy. By working together, Alabama clinicians are armed with real-time, hospital-wide, objective, measurable, and reproducible information that pinpoints actionable opportunities for proactive interventions.

Alabama hospitals, BD, and Blue Cross® and Blue Shield® of Alabama:
A partnership to improve the quality of healthcare.

HOSPITAL

All Sources Except Urine GRAM POSITIVE Healthcare-Associated Percent Susceptible	AMPICILLIN	PENICILLIN G	CEFAZOLIN	OXACILLIN	CLINDAMYCIN	ERYTHROMYCIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)	CIPROFLOXACIN	LEVOFLOXACIN	VANCOMYCIN	LINEZOLID	DAPTOMYCIN	QUINUPRISTIN/ DALFOPRISTIN	CEFTRIAOXONE
COST PER DAY	\$	\$	\$	\$\$	\$	\$\$	\$\$	\$\$	\$	\$	\$	\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$
Enterococcus faecalis	98	99				17	24				95	99	100		
Enterococcus faecium	14	18					17				20	94	99		
Enterococcus species - VRE	9	17				2	8					94	99		
Enterococcus species (all - faecalis, faecium)	75	80				12	21		65	62	70	96	100		
Enterococcus species, NOS	85	82				12					77				
Staphylococcus aureus		2	45	42	65	30	94	96	52	52	100	100	100	100	42
Staphylococcus aureus - MRSA					60	13	93	95	24	31	100	100	100	99	
Staphylococcus aureus - MSSA		6	100	100	73	54	95	99	80	85	100	100	100	100	100
Staphylococcus coagulase negative - ALL	4	4	26	27	49	26	83	54	47	43	100	100	100	100	32
Staphylococcus epidermidis (coag negative)	5	2	15	17	43	21	84	44	45	44	100	100	100	100	19
Streptococcus pneumoniae		62			72	35	66	51		94	99				92

Key to Susceptibility
(from previous year)

- 10% or greater increase in susceptibility
- 5% to 9% increase in susceptibility
- 5% to 9% decrease in susceptibility
- 10% or greater decrease in susceptibility

All Sources Except Urine GRAM NEGATIVE Healthcare-Associated Percent Susceptible	CEFAZOLIN	CEFTRIAOXONE	CEFTAZIDIME	CEFEPIME	AZTREONAM	IMPENEM	MEROPENEM	AMPICILLIN	AMP/SULBACTAM	PIPERACILLIN/ TAZOBACTAM	CIPROFLOXACIN	LEVOFLOXACIN	GENTAMICIN	TOBRAMYCIN	AMIKACIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)
COST PER DAY	\$	\$	\$	\$	\$\$\$\$	\$\$\$\$	\$	\$	\$	\$\$	\$	\$	\$	\$	\$	\$	\$\$
Acinetobacter baumannii		6	59	66		50	53		84	49	59	51	82	96			74
Citrobacter freundii		60	51	90	57	89	90	5	12	79	88	91	89	87	100	87	89
Enterobacter aerogenes		72	74	97	86	84	99		16	67	96	97	98	99	99	81	98
Enterobacter cloacae		72	77	90	73	86	96		5	75	93	92	95	95	100	89	91
Escherichia coli	67	79	76	80	85	98	99	32	38	89	57	57	83	83	99	69	63
Klebsiella oxytoca	60	87	92	91	91	95	96		62	86	95	97	93	92	100	96	92
Klebsiella pneumoniae	85	89	86	87	92	95	95		78	90	90	94	92	91	99	84	87
Morganella morganii		84	78	100	100		97			96	65	73	89	93	100		77
Proteus mirabilis	87	97	97	97	93	63	99	85	93	99	77	77	91	91	100		79
Pseudomonas aeruginosa		1	76	82	60	71	76			85	74	70	81	91	89		7
Serratia marcescens		91	88	97	91	75	98			78	95	96	97	87	97	8	99
Stenotrophomonas (Xanthomonas) maltophilia			33									83					90

Urine Isolates Only GRAM POSITIVE Healthcare-Associated Percent Susceptible	AMPICILLIN	PENICILLIN G	CEFAZOLIN	OXACILLIN	TETRACYCLINE	TRIMETHOPRIM/ SULFA (SXT)	CIPROFLOXACIN	LEVOFLOXACIN	VANCOMYCIN	LINEZOLID	DAPTOMYCIN	QUINUPRISTIN/ DALFOPRISTIN	NITROFURANTOIN
COST PER DAY	\$	\$	\$	\$\$	\$\$	\$\$	\$	\$	\$	\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$	\$
Enterococcus faecalis	97	96			19		58	61	95	97	100		99
Enterococcus faecium	4	8			7		4	6	22	97	99		41
Enterococcus species - VRE	12	14			5					96	99		48
Enterococcus species (all - faecalis, faecium, other)	76	79			17		47	51	78	97	100		85
Staphylococcus aureus			49	36	93	94	29	30	100	100	100		99
Staphylococcus aureus - MRSA					94	93	8	10	100	100	100		99
Staphylococcus aureus - MSSA				100	92	96		76	100				100
Staphylococcus coagulase negative - ALL			24	25	84	46	30	31	100	100	100		98
Staphylococcus epidermidis (coagulase negative)			19	21	84	37	19	28	100	100	100		100

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COST PER DAY	\$	\$	\$	\$	\$	\$\$\$\$	\$\$\$\$	\$	\$	\$	\$\$	\$	\$	\$	\$	\$	\$	\$\$	\$
Citrobacter freundii			60	51	98		93	100	2	18	79	87	87	88	89	100	82	87	92
Enterobacter aerogenes			69	65	98		75	98			65	96	94	98	98			96	28
Enterobacter cloacae			55	54	83	57	77	90		7	60	88	85	91	91	100	78	80	28
Escherichia coli	72	75	81	79	81	82	99	99	36	40	93	56	55	85	86	99	66	64	95
Klebsiella oxytoca	42		73	86	81	76	93	94		44	79	85	90	86	85	96	76	86	86
Klebsiella pneumoniae	81	81	83	80	81	84	95	95		73	88	89	92	91	90	98	76	84	41
Morganella morganii			84	69	95			97		8	96	53	62	88	93	100		73	
Proteus mirabilis	85	90	94	93	92	91	38	98	83	90	99	74	73	89	89	99		78	
Pseudomonas aeruginosa				84	86	71	77	85			90	76	72	86	92	95			
Serratia marcescens			89									89	95	93	81				96

For more information, visit www.ahqi.org

1. The Medical Letter, Treatment Guidelines from The Medical Letter, Volume 11 (Issue 131) July 2013.