

South Dakota Antibigram of Selected Pathogens, 2012:

Tracking the use and success of antibiotics

The State of South Dakota has made a concerted effort to track the use and success of antibiotics with special consideration of infections caused by antimicrobial resistant bacteria. Of particular public health concern is the emergence of the difficult-to-treat carbapenem-resistance Enterobacteriaceae (CRE) in South Dakota and across the nation in recent years.¹

Forty-two CLIA certified microbiology laboratories were contacted and asked voluntarily to provide individual or aggregate bacterial sensitivity data from January 1, 2012 through December 31, 2012. Twenty-nine (69%) of the laboratories contacted provided sensitivity data on one or more of the following requested organisms:

- *Staphylococcus aureus*
- *Kelbsiella pneumoniae*
- *Streptococcus pneumoniae*
- *Salmonella spp.*
- *Streptococcus pyogenes* (Group A strep)
- *Streptococcus agalactiae* (Group B strep)

Mycobacterium tuberculosis sensitivity data was obtained from the South Dakota Department of Health, State TB Program Coordinator. These data were compiled to create a statewide antibiogram using the methodology described by the Clinical and Laboratory Standards Institute (CLSI), in document M39-A3, *Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data Approved Guideline*.² Sensitivities were collected from laboratories collectively serving over 2500 beds across South Dakota, representing 88% of all beds from surveyed facilities.

Results for intermediate susceptibilities were excluded due to lack of consistency in reporting. A small number of laboratories reported separate categories for methicillin susceptible (MSSA) and methicillin-resistant *Staphylococcus aureus* (MRSA). MRSA specific isolates were reported separately in the antibiogram, but future antimicrobial surveillance projects may wish to request separate MSSA and MRSA data from all laboratories for a more complete picture of MSSA and MRSA sensitivities.

The cumulative state antibiogram is presented to give South Dakota clinicians, pharmacists and public health officials data to track antimicrobial susceptibility patterns, raise awareness of antimicrobial resistance, and educate on appropriate antimicrobial usage. These data are for surveillance purposes only and should not be used as the primary basis for determining antimicrobial therapy for individual patients.

¹ Vital Signs: Carbapenem-Resistant Enterobacteriaceae. (2013, March 8) *MMWR: Morbidity and Mortality Weekly Report*, 62(09), 165-170. Retrieved from <http://www.cdc.gov/mmwr/>

² Clinical and Laboratory Standards Institute. *Analysis and presentation of Cumulative Antimicrobial Susceptibility Test Data; Approved Guideline—Third Edition*. CLSI document M39-A3. Wayne, PA: Clinical and Laboratory Standards Institute 2009.



2012 Antibiogram

Antibiotic		% Susceptible (n) number of isolates						
β-Lactam Antibiotics	Ertapenem		14% (467)	99% (337)				
	Imipenem			99% (1881)				
	Meropenem			98% (274)				
	Amoxicillin-Clavulanic Acid	68% (707)						
	Ampicillin/Sulbactam	54% (875)						
	Cefazolin			95% (2688)				
	Cefdinir	82% (363)						
	Cefepime	43% (131)		97% (2094)				
	Cefotaxime	70% (498)		95% (232)	80% (253)			
	Ceftazidime			97% (1927)				
	Ceftriaxone	63% (592)		94% (2167)	94% (1186)	85% (47)		
	Ampicillin	7% (845)				90% (108)	100% (31)	99% (166)
	Oxacillin	60% (8033)						
	Penicillin	10% (3021)			64% (859)		100% (31)	99% (145)
Other Antibiotics	Ciprofloxacin	65% (4057)	20% (92)	96% (2941)		98% (53)		
	Levofloxacin	69% (3060)	21% (92)	94% (2580)	98% (900)	100% (90)		
	Ofloxacin				95% (62)			
	Chloramphenicol	94% (455)			95% (146)			
	Clindamycin	74% (3788)	48% (467)				96% (25)	41% (137)
	Erythromycin	45% (8315)			50% (853)		66% (21)	46% (79)
	Gentamicin	98% (4318)	99% (92)	98% (3050)				
	Linezolid		100% (467)					
	Nitrofurantoin*	98% (6629)	100% (92)	37% (2473)				
	Rifampin	100% (2438)	100% (92)					100% (14)
	Trimethoprim/Sulfamethoxazole	99% (8739)	99% (467)	92% (2760)	71% (394)	98% (115)		
	Tetracycline	94% (8288)	95% (92)	87% (658)	81% (260)	87% (31)		
	Vancomycin	100% (8847)	100% (467)		100% (343)		100% (26)	98% (225)
TB	Isoniazid							100% (14)
	Pyrazinamide							100% (14)
	Ethambutol							100% (14)
	Streptomycin							100% (14)

Comments:

This antibiogram reflects data submitted by 29 microbiology laboratories in South Dakota.

These data should not be used for the determination of therapy for individual patients.

Salmonella spp. Antimicrobial treatment for enteric salmonellosis generally is not recommended.

Mycobacterium tuberculosis No cases of multi-drug resistant MTB were reported

*Urine Isolates only