



TECHNICAL NOTICE

SOUTH BEND MEDICAL FOUNDATION

March 2011

Microbiology Annual Antibiogram Summary

The data for the annual antibiogram summary report is derived from the 2010 antimicrobial susceptibility test results of isolates from outpatients, inpatients, and nursing homes in St. Joseph County and Elkhart County. The most commonly isolated organisms are included in order to provide information to help guide empiric therapy choices for **initial** infections.

- Only the first isolate of a given species is counted per patient for the year, irrespective of body site.
- For statistical purposes, the unique medical record number or patient identification number defines a “patient”.
- Results are expressed as the percent susceptible for the number of patient isolates tested.

A. Most Commonly Isolated Organisms in 2010

Non-Urine		Urine	
<i>Staphylococcus aureus</i> , not MRSA	26.7%	<i>E. coli</i>	62.7%
MRSA (methicillin resistant <i>S. aureus</i>)	25.4%	<i>Enterococcus</i>	9.8%
<i>Pseudomonas aeruginosa</i>	10.0%	<i>Klebsiella pneumoniae</i>	9.4%
<i>Escherichia coli</i>	9.9%	<i>Proteus mirabilis</i>	7.4%
<i>Enterococcus</i> sp.	9.4%	<i>Pseudomonas aeruginosa</i>	3.6%
<i>Staphylococcus</i> coagulase negative	6.3%	<i>Enterobacter cloacae</i>	1.8%
<i>Proteus mirabilis</i>	3.5%	<i>Citrobacter freundii</i>	1.6%
<i>Klebsiella pneumoniae</i>	3.2%	<i>Klebsiella oxytoca</i>	1.4%
<i>Enterobacter cloacae</i>	2.8%	MRSA (methicillin resistant <i>S. aureus</i>)	1.1%
<i>Serratia marcescens</i>	1.4%	<i>Staphylococcus aureus</i> , not MRSA	1.1%
<i>Streptococcus pneumoniae</i>	1.3%		

B. Surveillance

The summary of susceptibility information for the following significant pathogens tested for annual surveillance is included, since routine susceptibility testing of patient isolates is usually not indicated:

- Random isolates of *Bacteroides fragilis* group
- *Salmonella* and *Shigella* isolates primarily of fecal origin over the past five years
- Random isolates of Group B streptococcus species from vaginal/rectal sources

C. *Streptococcus pneumoniae*

The susceptibility data is based on sterile body sites only, primarily blood cultures. The interpretations of the minimum inhibitory concentration (MIC) for ceftriaxone and cefotaxime reflect the breakpoint for non-meningeal isolates, which are considered more susceptible to lower concentrations of ceftriaxone and cefotaxime. Extended susceptibility testing is performed on isolates from other sources, when isolates are intermediate or resistant to penicillin by screening methods. The percentage of intermediate and resistant results for both oral and IV penicillin are included for *S. pneumoniae* isolated from non-sterile sites

SOUTH BEND MEDICAL FOUNDATION

530 N. Lafayette Boulevard • South Bend, IN 46601 • (574) 234-4176

Elkhart (574) 293-8441 • (800) 544-0925

Robert J. Tomec, M.D. • *Medical Director*

D. Mechanisms of resistance

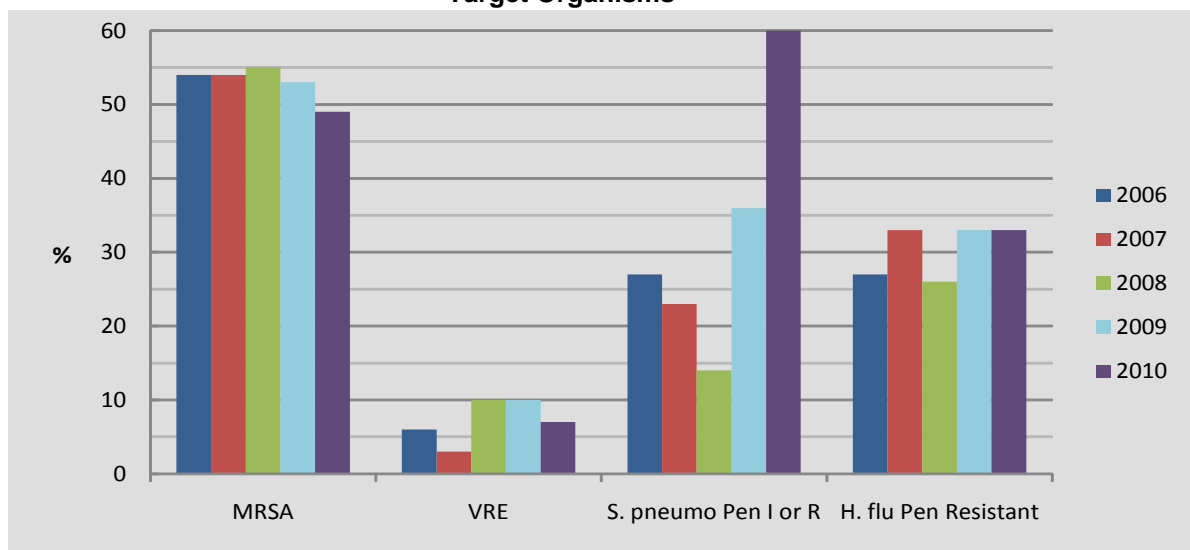
Gram-positive and Gram-negative organisms are routinely screened for known resistance mechanisms. Confirmation of screening results is performed, if indicated by the organism's phenotype and/or the published guidelines from the Clinical and Laboratory Standards Institute (CLSI). To ensure a true susceptible result, results may be delayed until the recommended incubation time for confirmation testing. Resistant results do not require extended incubation.

GRAM-POSITIVE ORGANISM	RESISTANCE MECHANISM	FREQUENCY
<i>S. aureus</i>	Oxacillin resistant	49%
	Penicillin resistant (beta-lactamase positive)	21%
	Inducible clindamycin resistant	15%
	Vancomycin intermediate/resistant	0%
MRSA	Oxacillin resistant	100%
	Penicillin resistant (beta-lactamase positive)	100%
	Inducible clindamycin resistant	18%
	Vancomycin intermediate/resistant	0%
<i>Enterococcus</i>	Vancomycin intermediate/resistant	7%
<i>Streptococcus pneumoniae</i> (non-sterile sites)	Oral penicillin intermediate	39%
	Oral penicillin resistant	21%
	Parenteral penicillin intermediate	11%
	Parenteral penicillin resistant	1%
GRAM-NEGATIVE ORGANISM	RESISTANCE MECHANISM	FREQUENCY
<i>E. coli</i>	Extended spectrum beta-lactamase (ESBL)	3%
	Carbapenamase resistant	0%
<i>Klebsiella pneumoniae</i>	Extended spectrum beta-lactamase (ESBL)	3%
	Carbapenamase resistant	0%

E. Trends

Cumulative results of the target organisms below do not take into account specific locations or patient groups:

Target Organisms



Additional copies of the pocket reference are available by contacting South Bend Medical Foundation Client Services. For additional information contact C. Kurtis Kim, M.D., Mary G. Stepney, or Nan Boston at South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.