

ANTIBIOGRAM 2009, WASHOE COUNTY

Organism	# Isolates Identified	Antibiotic Susceptibility (%)																											
		Am (Am)	Ak (Ak)	Amox (Amox)	AmS (AmS)	Cz (Cz)	Ch (Ch)	Ch-M (Ch-M)	Cax (Cax)	Cd (Cd)	Cp (Cp)	E (E)	Gat (Gat)	Gm (Gm)	Gm 500 (Gm 500)	Imp (Imp)	Lvx (Lvx)	Lzd (Lzd)	Fd (Fd)	NOR (NOR)	Ox (Ox)	P (P)	R (R)	ST2000 (ST2000)	T (T)	T/S (T/S)	V (V)		
<i>Enterococcus faecalis</i>	748	99%									56%	15%			67%	58%	100%	100%				99%	73%	72%	18%		99%		
<i>Enterococcus faecium</i>	162	52%									9%				29			73				10%	4%	69%	34%		33%		
<i>Enterococcus species*</i>	966																										88%		
<i>Staphylococcus aureus</i>	2033										55%		76%	52%	42%	59%	98%				4%	100%	95%	53%	32%	100%	94%	99%	100%
<i>Staphylococcus spp. Coag neg</i>	31																									74%	77%	100%	
<i>Staphylococcus Epidermidis</i>	411										25%		43%	36%	29%	50%	69%				26%	98%	100%	59%	44%	100%	83%	93%	100%
<i>Streptococcus pneumoniae**</i>	224										89%	79%				69%	97%				75%	95%			91%***		70%	100%	

* *Enterococcus faecalis* and *Enterococcus faecium* ** Data from Washoe County Health District's surveillance project *** Non-meningitis breakpoint

* 2007-2009 data was not available. This row represents 2006 data.

SUMMARY OF MAJOR FINDINGS

MRSA

The rate of Methicillin-resistant *Staphylococcus aureus* (MRSA) significantly increased from 35% in 2002 to 48% in 2007, a 37% increase from 2002 to 2007, which showed a statistical significance ($\chi^2 = 145, P < 0.001$). The MRSA rate was 47% in 2009, no statistical difference compared to 48% in 2007 ($\chi^2 = 0.8545, P = 0.36$).

VISA / VRSA

Vancomycin-intermediate resistant *Staphylococcus aureus* (VISA) or Vancomycin-resistant *Staphylococcus aureus* (VRSA) has not been found yet in Washoe County. Please report VISA or VRSA to the Washoe County Health District at 775-328-2447. Please also have your laboratory save the VISA/VRSA isolate for further confirmation at Nevada State Public Health Laboratory.

VRE

The rate of vancomycin-resistant *enterococci* (VRE) increased from 9.8% in 2002 to 11.6% in 2007, which showed a statistical significance ($\chi^2 = 65, P < 0.001$). The VRE rate was 11.9% in 2009, no statistical difference compared to 11.6% in 2007 ($\chi^2 = 0.0255, P = 0.87$).

DRSP

The rate of drug-resistant *Streptococcus pneumoniae* (DRSP) decreased in the past several years in Washoe County. The rate for penicillin non-susceptible *Streptococcus pneumoniae* (PNSSP) decreased from 29% in 2002 to 23% in 2007, a 21% decrease, which did not show a statistical significance ($\chi^2 = 5.562, P = 0.234$). The decrease might be associated with the introduction of pneumococcal conjugate vaccine in 2000. The resistance to erythromycin and gatifloxacin was 31% and 3%, respectively, in 2009. The rate for PNSSP was significantly decreased to 9% in 2009 from 23% in 2007, this was associated with CLSI standard change in 2008 to separate breakpoints for meningitis and non-meningitis.

ESBLs & CRE

Strains of *Klebsiella spp.*, *E. coli*, *Proteus mirabilis* that produce extended-spectrum beta-lactamase (ESBLs) may be clinically resistant to therapy with penicillins, cephalosporins, or aztreonam, despite apparent *in vitro* susceptibility to some of these agents. ESBL screening data reported from one laboratory showed 2.3% of *E. coli/Klebsiella spp./Proteus mirabilis* produced ESBLs. The rate of carbapenem-resistant enterobacteriaceae (CRE) was 0.7% (26/3879) in 2009. An enhanced surveillance for CRE began in June 2010 and is ongoing in Washoe County.

Washoe County
Health District

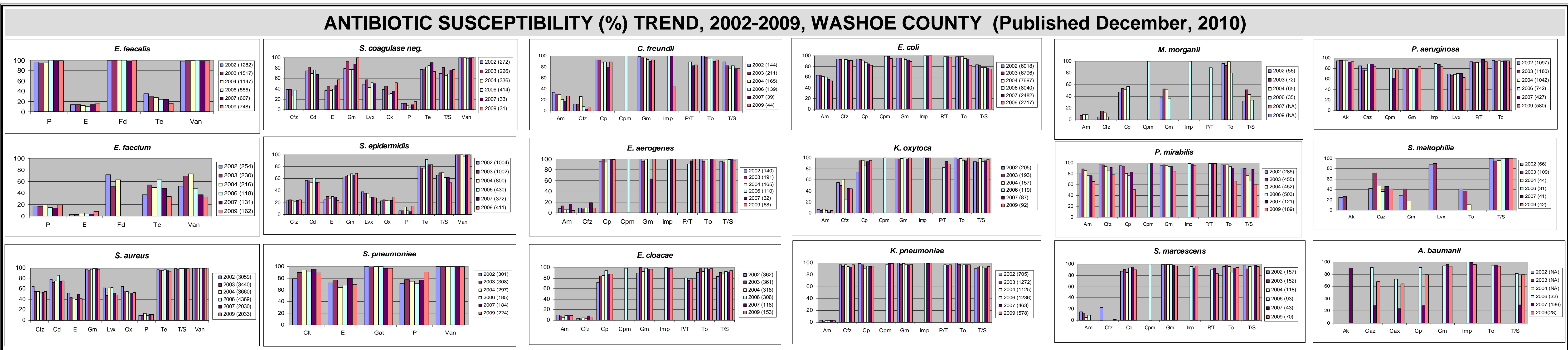
TO READERS

This antibiogram was compiled by the Division of Epidemiology & Public Health Preparedness (DEPHP), Washoe County Health District in collaboration with all four hospital laboratories in the community. Data covered all inpatients in local hospitals and outpatients seen at hospital emergency rooms. This antibiogram can be used as a reference for clinicians but shouldn't serve as a basis for therapy. The antibiotic susceptibility test for individual patients is still encouraged, if needed. This antibiogram only represents antibiotic susceptibility *in vitro*. Please address your questions, comments, and/or suggestions to DEPHP at 775-328-2447 or e-mail to EpiCenter@WashoeCounty.us. The online version and pocket size version can be downloaded from the Health Department's website at www.washoecounty.us/health/cdpp/warr.html

ACKNOWLEDGEMENTS

Northern Nevada Medical Center Laboratory, Renown Regional Medical Center Laboratory, Saint Mary's Regional Medical Center Laboratory, Veteran's Affairs Medical Center Laboratory (Reno).

To read this antibiogram: 1) Each organism is presented in two rows. The top row represents susceptibility in percent to that antibiotic. The 2nd row represents number of isolates tested for that specific antibiotic. 2) Susceptibility greater than or equal to 90% is highlighted in light GREEN, 60%-89% in YELLOW, and less than 60% in RED. 3) Nitrofurantoin is tested for urine specimens only. 4) The susceptibility result for *Streptococcus pneumoniae* is a combination of screening test and E-test results. 5) CLSI performance standards for antimicrobial susceptibility testing were applied. CLSI stands for Clinical and Laboratory Standards Institute (Formerly NCCLS, The National Committee for Clinical Laboratory Standards). 6) Black empty shaded cells indicate that susceptibility testing for that specific organism is not recommended or complete testing data was not available or number is too small for valid reporting.



To read these graphs: Each graph represents an organism; X-axis represents the abbreviation of an antibiotic (see tables above graphs for full name of antibiotics); Y-axis represents susceptibility in percent; legends indicate each year and number of isolates identified for that year in parentheses. **Attention!** Readers should be aware that resistance rate calculation for 2004 from some hospitals was different compared to prior years due to removing duplicates in 2004. Susceptibility result for *Acinetobacter Baumannii* was available in 2006, 2007, and 2009 therefore only three year trend data was available. Antibiogram 2005 and 2008 were not available.