

IN THIS ISSUE: 2022 WASHOE COUNTY COMMUNITY-WIDE ANTIBIOGRAM**2022 Washoe County Community-wide Antibioqram Now Available Online****What is an Antibioqram**

Antibiograms are reports that provide information on clinically important bacteria and their susceptibility trends.¹ As part of antimicrobial stewardship, the Centers for Disease Control and Prevention (CDC) and the Clinical and Laboratory Standards Institute (CLSI) endorse antibiograms be produced locally.^{1,2}

Antibiogram Data

In the "Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data", CLSI provides recommendations on antibiogram preparation. Basic features include reports be produced annually, include organisms with at least 30 isolates tested, and only count the first isolate of a species per patient within the reporting period.¹

Local hospitals and some private laboratories produce annual antibiograms for their own institutions. Between 2002 and 2006, data were provided by both clinical and private laboratories in Washoe County, which the Northern Nevada Public Health's (NNPH) Epidemiology Program aggregated to generate the community-wide antibiogram. Since 2007, antibiogram data for private laboratories have not been available; therefore, the antibiogram data since then has only covered outpatients and inpatients seen at local hospitals and their emergency departments.

Utility of the Antibioqram

Antibiograms can be used by a variety of professions involved with testing organisms and their antimicrobial stewardship. The Washoe County community-wide antibiogram can be used as a reference for clinicians, pharmacists, infection control practitioners, microbiologists, public health professionals, and other interested parties. Antibigrams may serve as a guideline for clinicians when selecting antimicrobial therapy empirically in situations where clear susceptibility results are

unavailable.¹ Clinicians in a hospital setting should use the hospital-specific antibiogram prepared by the hospital infection control committee, microbiologists, or pharmacists, as antimicrobial resistance varies greatly between different locales. For other health care professionals, a community-wide antibiogram may be preferred.

Although community-wide antibiograms are a beneficial resource for local antimicrobial susceptibility, data limitations should be considered.^{3,4} Antibiograms are aggregate data and do not show cross resistance trends, cannot be generalized to a specific patient population, and do not consider a patient's antimicrobial treatment history.^{3,4} Furthermore, MIC values are not presented and may miss upcoming antimicrobial resistance.⁴

Accessing the 2022 Antibioqram

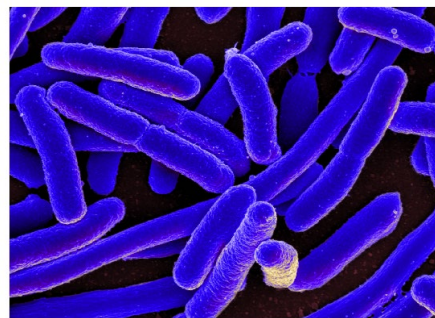
The 2022 Antibiogram was uploaded to NNPH's website on May 13, 2024. Different versions of the antibiogram can be found here:

<https://www.nnph.org/programs-and-services/ephp/communicable-diseases-and-epidemiology/healthcare-professionals/County-wide%20Antibiogram.php>. The three formats for the antibiogram are:

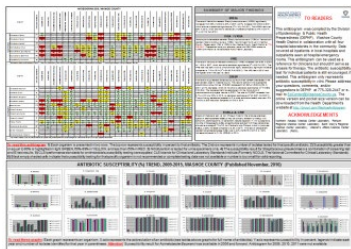
- ✓ **Online** format can be easily browsed on a device (e.g., computer, laptop, iPhone, Smart Phone, etc.) with internet access.

Washoe County Antibioqram

2022



- ✓ **Pocket size** format is a colored copy on legal sized paper, which can be folded into a pocket size (easy to carry).
- ✓ **Wall chart** format is a colored copy in a poster size (36"W x 26"H) and easy to read, but hard to carry. It's good for health care providers to use in the office.



2022 Community-wide Antibiogram

- ◆ Antibiotic susceptibility (%) data for 18 commonly seen organisms.
- ◆ Graphic presentation of 2018-2022 antibiotic susceptibility (%) trend data in Washoe County.
- ◆ Summary of major findings on Methicillin-resistant *Staphylococcus aureus* (MRSA), Drug Resistant *Streptococcus Pneumoniae* (DRSP), Vancomycin-resistant *Enterococci* (VRE), Extended-spectrum beta-lactamase (ESBLs), and Carbapenem-resistant *Enterobacteriaceae* (CRE).

Major Findings

Good News

- ◆ MRSA rate decreased between 2021 (33.5%) to 2022 (32.0%). The decrease was not statistically significant.
- ◆ The CRE rate decreased from 0.12% (2021) to 0.06% (2022), but was not a significant decrease.
- ◆ Tetracycline susceptibility increased from 79% to 94% in *E. cloacae*. This increase was statistically significant (X^2 6.8713, p -value 0.008759).
- ◆ Though decreases in antibiotic susceptibility were observed in multiple organisms, none were determined to be statistically significant.

Bad News

- ◆ *E. aerogenes* susceptibility to Imipenem decreased from 71% in 2021 to 59% in 2022, though it was not statistically significant.
- ◆ The rate for penicillin non-susceptible streptococcus pneumonia (PNSSP, non-meningitis breakpoint) increased from 2.4% in

2021 to 2.5% in 2022, which showed no statistically significant difference.

- ◆ In 2022, the VRE rate was 6.4%, which was not a significant increase from 5.0% reported in 2021.
- ◆ The total number of isolates tested increased.
- ◆ The 2022 data are outdated, as this was published in 2024. Staff are working diligently to update the local antibiogram for more recent years (2023).

ATTENTION!

If you are a Washoe County healthcare provider, you are eligible to receive the *Antibiogram 2022 Pocket Size and Wall Chart* format at NO COST. Please email your request to EpiCenter@nnph.org and clearly indicate your name, medical group, and local mailing address. *Please note there may be a delay in printing requested documents.*

Acknowledgement

In alphabetic order: Incline Village Community Hospital, Northern Nevada Medical Center, Renown Regional Medical Center, Saint Mary's Regional Medical Center, Tahoe Forest Hospital, Veterans Affairs Medical Center

References

1. Clinical and Laboratory Standards Institute. Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data. 5th ed. CLSI guideline M39. Clinical and Laboratory Standards Institute; 2022.
2. Centers for Disease Control and Prevention. Core Elements of Antibiotic Stewardship. Accessed May 2024 <https://www.cdc.gov/antibiotic-use/hcp/core-elements/index.html>
3. Simner PJ, Hindler JA, Bhowmick T, Das S, Johnson JK, Lubers BV, Redell MA, Stelling J, Erdman SM. What's New in Antibiograms? Updating CLSI M39 Guidance with Current Trends. *J Clin Microbiol*. 2022 Oct 19;60(10):e0221021. doi: 10.1128/jcm.02210-21. Epub 2022 Aug 2. PMID: 35916520; PMCID: PMC9580356.
4. Minnesota Department of Health. About Antibiograms. 2015. Accessed May 2024 <https://www.health.state.mn.us/diseases/antibioticresistance/abx/antibiograms.pdf>