

## Oregon Antimicrobial Resistance Laboratory Update

December 4, 2024

Dear Oregon Microbiology Community,

The Oregon Public Health Division would like to extend our gratitude for your dedication and support of antimicrobial resistance (AR) surveillance in Oregon. As part of a national effort led by the Centers for Disease Control and Prevention (CDC) [Antimicrobial Resistance Lab Network \(ARLN\)](#), your contributions help us contain the spread of antimicrobial-resistant pathogens, advancing patient safety across the state.

### AR Surveillance Summary

Currently, **19 laboratories are submitting carbapenem-resistant *Pseudomonas aeruginosa* (CRPA)**, and **3 are submitting *Candida* spp.** isolates voluntarily for additional testing through the Oregon State Public Health Laboratory (OSPHL). All isolates receive advanced laboratory testing, including identification, carbapenemase production, and expanded susceptibility testing. In the most recent year, we received **316 isolates**. Your voluntary submissions have helped identify numerous cases of carbapenemase-producing organisms (CPOs) that would otherwise have gone undetected. This has led to the implementation of appropriate patient infection prevention measures and improved patient safety.

Figure 1. Voluntary surveillance isolates submitted by Oregon labs, May 2023 – Apr 2024

Organism	Isolates Submitted
<i>Candida</i>	134
CRPA	182
<b>Grand Total</b>	<b>316</b>
For the 12 months ending April 2024. Isolates tested are convenience samples submitted voluntarily by labs with available time and resources.	

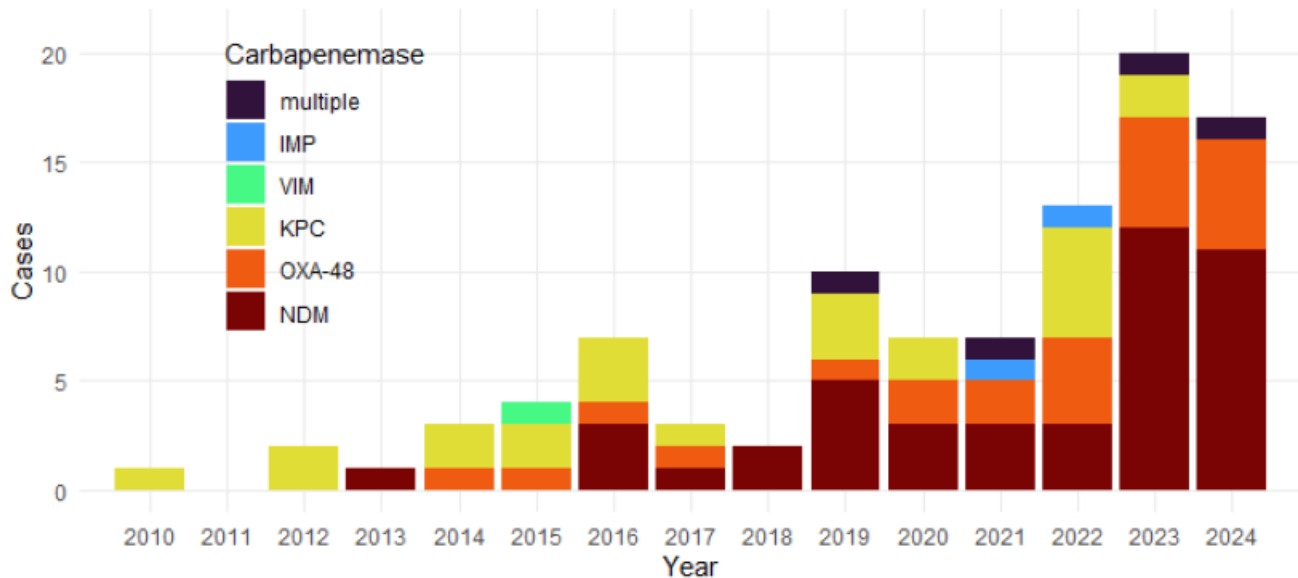
We continue to monitor the prevalence of major carbapenem resistance gene mechanisms, including the “big five” carbapenemase gene families IMP, KPC, NDM, OXA-48, and VIM. The

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prevalence of each of these varies based on which antibiotics are commonly used, the selective pressure exerted by those antibiotics, and the genetic adaptability of the bacterial populations. In the last two years, NDM has been the most prevalent carbapenemase gene in Oregon. [Nationally](#) and in the West region, KPC makes up 65% of carbapenemase genes detected.

Figure 2. Carbapenemase-producing carbapenem-resistant *Enterobacteriales* (CP-CRE) identified by Oregon laboratories, Nov 2010 – Oct 2024



Voluntary submission of isolates provides many benefits, including:

- Confirmation of *Candida* [species that are hard to ID](#) and rule-out of *C. auris* (i.e., suspected *C. haemulonii*, *C. duobushaemulonii*, *C. famata*, *C. guilliermondii*, *C. lusitanae*, or *C. parapsilosis*)
- Identification of the mechanism of echinocandin resistance
- [Expanded antimicrobial susceptibility testing](#) for hard-to-treat infections
- Tracking of emerging resistance patterns, including monitoring of clades and strains, detection of rare and critical AR genes, and detection of unusual organism/carbapenemase gene combinations
- Whole genome sequencing for CPO and *C. auris* isolates
- Contributing to the national understanding of resistance patterns

### Calling for more *Candida* spp. isolates

We'd love to see submission of more *Candida* spp. isolates, especially from labs in the Portland Tri-County and eastern Oregon areas. If your lab already sends CRPA isolates, consider also submitting *Candida* spp. isolates. Here's what we're looking for:

1. *Candida* spp. isolates (excluding *C. albicans*) from any site.
2. Unspecified *Candida* isolates.
3. Any number of isolates per month is welcome—you don't need to send all your isolates to participate.

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4. Free shipping can be provided through prepaid FedEx labels.
5. [Learn more](#) and [contact us](#) to get started.

## Mandatory Isolate Submissions

We also want to remind you of mandatory isolate submissions:

1. **Required:** According to Oregon Administrative Rule 333-018-0018, labs must submit to OSPHL isolates of carbapenem-resistant *Enterobacteriales* (CRE), carbapenem-resistant *Acinetobacter* (CRA), *Candida auris*, and carbapenemase-producing organisms (CPOs).
  - a. **New as of October 2023:** Submission of CRA, CPO, and *C. auris* is required.
  - b. **Resources:** Please print and share the Multidrug-Resistant Organism [Reporting poster](#) with your staff. To receive a printed 11"x17" poster, email us at [HAI@odhsoha.state.or.us](mailto:HAI@odhsoha.state.or.us).
2. **Exclusions:** You do not need to submit isolates that are the same organism collected from the same patient, at the same facility, from the same source, **and** within 30 days of a previously submitted isolate. If any of these criteria differ, please submit both isolates.
3. **Intermediate and Discordant Resistance:** You may send isolates with intermediate resistance or showing discordant results on different testing methods for further evaluation at the state lab; however, these submissions are not required.
4. **Results:** For all submissions, you will receive complete results.

## Questions?

If you have any questions or want more information about submitting isolates, please contact the Healthcare-Associated Infection (HAI) program at [HAI@odhsoha.state.or.us](mailto:HAI@odhsoha.state.or.us).

## Thank You!

Once again, thank you for your invaluable contributions and active participation in the Antimicrobial Resistance Laboratory Network. Your specimen submissions are essential to fulfilling our mission. Together, we continue to expand testing efforts and national awareness, protecting our communities from the evolving threat of antimicrobial resistance.



Paul Cieslak, MD  
Acute and Communicable Disease Prevention Medical Director  
Oregon Health Authority



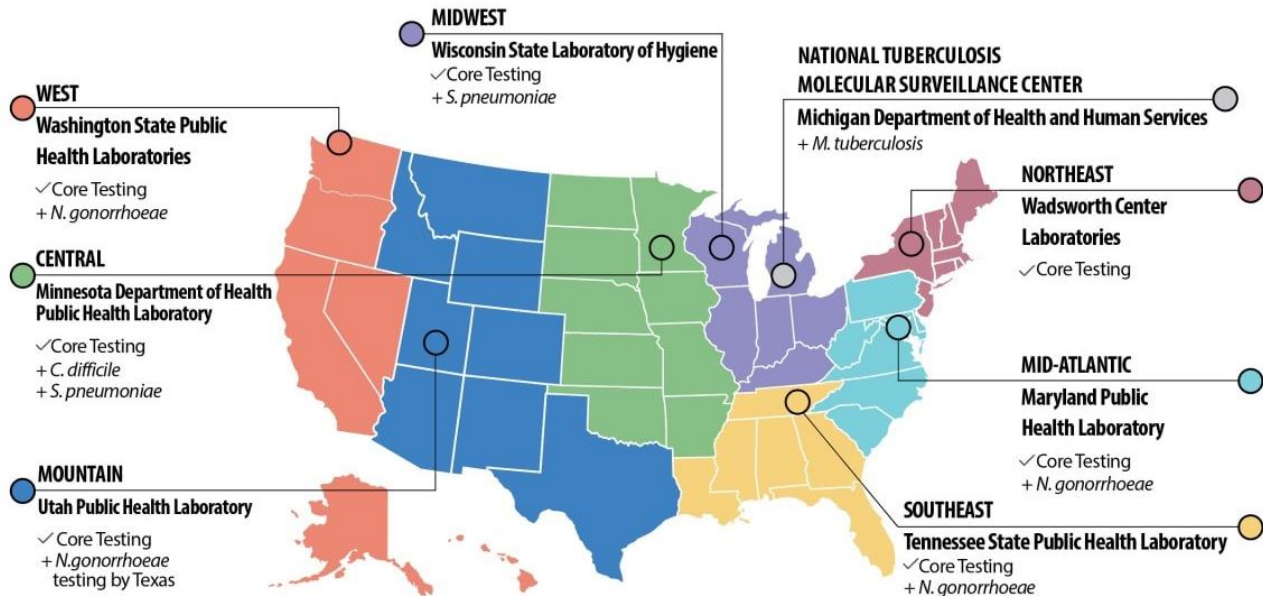
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## Information about the Antimicrobial Resistance Laboratory Network (ARLN)

The Centers for Disease Control and Prevention (CDC) established the Antimicrobial Resistance Laboratory Network (ARLN) in 2016 as part of an action plan to combat antibiotic-resistant bacteria. The mission of the ARLN is to track the prevalence of antimicrobial-resistant organisms, identify outbreaks, and prevent the spread of these organisms.



The Washington State Public Health Laboratory (WSPHL) in Shoreline, Washington serves as the West region reference laboratory. Initial laboratory testing is conducted at the Oregon State Public Health Laboratory (OSPHL), with additional testing performed at WSPHL. WSPHL plays a crucial role in our surveillance efforts, providing additional support and expertise in the testing process.

### What ARLN does:

Provides additional support for state public health labs  
Does additional testing for resistance mechanisms

- Carbapenemase testing on carbapenem-resistant Enterobacterales (CRE), carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) and carbapenem-resistant *Acinetobacter baumannii* (CRAB)
  - Resolves questionable or discordant results
  - Cultures for colonization screening
- *Candida* spp. surveillance:
  - Confirms *Candida auris* ID and tests for susceptibility
  - Monitors resistance among *Candida non-albicans* species
  - Tests screening specimens for *C. auris* colonization

<https://www.cdc.gov/drugresistance/ar-lab-networks/domestic.html>

<https://www.cdc.gov/antimicrobial-resistance-laboratory-networks/php/about/domestic.html>

<https://arpsp.cdc.gov/profile/arln/cpo>

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