Targeted Surveillance

Thank you for your interest in being a part of the California Department of Public Health (CDPH) and the West Region Antibiotic Resistance Laboratory Network (AR Lab Network) targeted antimicrobial-resistant organism surveillance. The West Region AR Lab Network is located in Washington State and is part of the Centers for Disease Control and Prevention (CDC) nationwide strategy to rapidly detect antibiotic resistance and inform local responses to prevent spread and protect patients.

The goal of targeted surveillance is to:

1) Assist facilities to rapidly identify epidemiologically important antimicrobial pathogens and implement appropriate infection control measures.
2) Enable healthcare providers and public health departments to determine the epidemiology of antimicrobial pathogens in their facilities and jurisdictions.
3) Monitor the regional and national prevalence of multidrug-resistant organisms (MDRO)

There are several benefits provided to facilities participating in targeted surveillance:

- Access to advanced laboratory testing and further specimen work-up
- Free shipping (shipping labels and packaging)
- Contribution to state, regional, and national resistance data
- Certificate of participation
- Acknowledgment by CDC of sentinel laboratory status
- Receipt of statewide MDRO data reports and visualization

AR Lab Network offers enhanced testing for:

1) Carbapenemase-producing *Acinetobacter* species (spp.)
2) Carbapenemase-producing *Pseudomonas* spp.
3) Antifungal resistance and confirmatory identification among non-*albicans Candida* spp.

Facilities may submit all categories or a subset, depending on resources and volume.

Participation

The names of clinical laboratories and associated healthcare facilities participating in targeted surveillance will not be made public by either AR Lab Network or CDPH. All patient data from specimen submissions and test results will be kept confidential by public health agencies and will only be shared via secure communication systems.

Targeted surveillance initiatives are for public health purposes; if a project outside of AR Lab Network surveillance were to be proposed for these data, express permission by the sentinel

laboratory will be required. Participation in this surveillance is entirely voluntary and laboratories may stop participating at any time.

Shipping Details

If there are a large number of organisms, the submitting laboratory can submit a subset of specimens. AR Lab Network and the CDPH HAI Program will work with laboratories to determine a sampling strategy to reduce the burden on lab personnel, e.g., all targeted isolates identified on one specified day each week.

CDPH and the West Region AR Lab Network laboratory located at Washington State Public Health Laboratory, will provide a universal requisition form. Information that needs to accompany each isolate submission includes:

- Patient identifiers (e.g., first and last name, date of birth)
- Healthcare Facility of Origin (if clinical lab serves multiple hospitals)
- Collection Date
- Specimen Source
- Organism identification (ID)
- Antibiotic susceptibility testing (AST) results (if applicable)

For submission of *Acinetobacter* and *Pseudomonas* spp. isolates:

- Include *Acinetobacter* spp. specimens that are resistant to any carbapenem (excluding ertapenem). Include *Pseudomonas* spp. specimens that are resistant to any carbapenem (excluding ertapenem) and nonsusceptible to cefepime or ceftazidime.
- Weekly batching of specimens is appropriate, but we discourage longer batching intervals for infection control purposes.
- Submit isolates on Chocolate Agar, Heart Infusion Agar, or Brain Heart Infusion Agar slants or plates. Plates may only be submitted if transported by courier.
- The AR Lab Network can provide slants for submission.
- Ship isolates as category B.

For submission of *Candida* isolates:

- Include specimens obtained from any patient site, sterile and non-sterile.
- Weekly batching of specimens is appropriate, but we discourage longer batching intervals for infection control purposes.
- If your lab decides to, high-volume isolates like *C. glabrata* can be submitted using a sampling strategy (e.g., all *C. glabrata* identified on a Monday).
- Use CHROMagar Candida media when plating out yeast isolates, as *Candida* infections are commonly polymicrobial.

- Submit isolates on sealed fungal slants. The AR Lab Network can provide slants for submission.
- Ship isolates as category B.

Receiving Results

AR Lab Network anticipates reporting positive results (e.g., carbapenemase-producing *Acinetobacter*) within 1 day of results becoming available.

There are several ways laboratories can receive results. All results will be reported to the clinical laboratory and public health partners immediately via fax. Aggregated results (both positive and negative) will be shared with the facility on an ongoing basis (e.g., quarterly).

Antimicrobial Resistance Targeted Surveillance

Testing	Organism	Antimicrobial Resistance Criteria	Testing Performed at Washington State PHL
Carbapenem-resistant *Acinetobacter* spp.	*Acinetobacter* spp.	• Resistant to ≥1 carbapenem (imipenem, meropenem, doripenem): – MIC ≥8 µg/mL for any carbapenem **except ertapenem** – Kirby-Bauer zone of inhibition diameter ≤14 mm for doripenem and meropenem – Kirby-Bauer zone of inhibition diameter ≤18 mm for imipenem	• ID (MALDI-TOF) and AST • PCR for resistance mechanisms, including KPC, NDM, IMP, VIM, OXA-48, OXA-23, OXA-24/40, and OXA-58
Carbapenem-resistant *Pseudomonas* spp.	*Pseudomonas* spp.	• Resistant to ≥1 carbapenem (imipenem, meropenem, doripenem): – MIC ≥8 µg/mL – Kirby-Bauer zone of inhibition diameter ≤15 mm **-AND-**	• ID (MALDI-TOF) and AST • PCR for resistance mechanisms, including KPC, NDM, IMP, VIM, OXA-48

		• Intermediate or resistant to cefepime or ceftazidime: – MIC ≥16 µg/mL – Kirby-Bauer zone of inhibition diameter <18 mm	
Candida identification and antifungal susceptibility testing (AFST)	All *Candida* spp. EXCEPT *albicans*	None	• ID (MALDI-TOF) • AFST for: – Caspofungin – Fluconazole – Itraconazole – Micafungin – Posaconazole – Voriconazole – Anidulafungin – Isavuconazole – amphotericin B

Resources

- AR Lab Network Test Menu (more details on testing and submission criteria). (www.doh.wa.gov/ForPublicHealthandHealthcareProviders/PublicHealthLaboratories/ARLNLabTestMenu)
- CDC webpage about the AR Lab Network Background (www.cdc.gov/drugresistance/solutions-initiative/ar-lab-network.html)
- CDC webpage about the AR Lab Network Regional Labs (www.cdc.gov/drugresistance/laboratories.html)
- CDC webpage for AR Lab Network Testing Details (www.cdc.gov/drugresistance/laboratories/ar-lab-network-testing-details.html)

Contact the CDPH HAI Program at HAIProgram@cdph.ca.gov for more information.