

# ELABORATIONS

News and Issues for Washington's Clinical Laboratories

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## CDC Antibiotic Resistance Lab Network established to aid WA and Western U.S. in combating multidrug-resistant bacteria

by Ryan Ruiz, MS, MLS (ASCP)<sup>cm</sup>

The Antibiotic Resistance Lab Network (ARLN) is a nationwide laboratory effort to connect various state, territory, county, and other local health departments. ARLN is designed to detect and prevent the spread of multidrug-resistant organisms (MDROs) found within hospital settings and the community. Founded in 2016 by the Centers for Disease Control and Prevention (CDC), ARLN includes 50 states, five cities, and U.S. territories such as Guam and Puerto Rico. Out of these locations nationwide, seven regional labs were selected to oversee various regions of the U.S. Those seven state health labs are: Maryland, Minnesota, New York, Tennessee, Texas, Washington, and Wisconsin. These state health labs act as the primary points of contact to the CDC. They coordinate efforts amongst the various respective regions, which are the West, Central, Mountain, Midwest, Northeast, Mid-Atlantic, and Southeast (1).

Specific bacterial pathogens of interest may differ slightly from one region to another but, overall, each regional lab is responsible for core testing defined as detection of Carbapenem Resistance Enterobacteriaceae (CRE), *Pseudomonas aeruginosa* (CR-PA), and *Acinetobacter baumannii* (CR-AB). The West Region laboratory, located just north of Seattle in Shoreline's Public Health Laboratories, a division of the Washington State Department of Health,

is also focused on antibacterial resistant *Neisseria gonorrhoeae* and an emerging antifungal resistant yeast named *Candida auris*. Additional information is on the Washington State Public Health Labs (WA PHL) [microbiology lab test menu](#).

ARLN is funded through the Epidemiology and Laboratory Capacity (ELC) for Infectious Diseases Cooperative Agreement. This agreement began in 1995 and is now within its fourth year of the current five-year funding cycle. Total awards under the ELC grant neared \$300 million nationwide in fiscal year 2017 (2). Although this value reflects projects outside and including ARLN, the overall

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### Practice Guidelines

The following practice guidelines have been developed by the Clinical Laboratory Advisory Council. They can be accessed at the [LQA website](#).

|                           |                       |
|---------------------------|-----------------------|
| Acute Diarrhea            | Lipid Screening       |
| Anemia                    | PAP Smear Referral    |
| ANA                       | Point-of-Care Testing |
| Bioterrorism Event Mgmt   | PSA                   |
| Bleeding Disorders        | Rash Illness          |
| Chlamydia                 | Red Cell Transfusion  |
| Diabetes                  | Renal Disease         |
| Group A Strep Pharyngitis | STD                   |
| Group B Streptococcus     | Thyroid               |
| Hepatitis                 | Tuberculosis          |
| HIV                       | Urinalysis            |
| Infectious Diarrhea       | Wellness              |
| Intestinal Parasites      |                       |

# X-linked Adrenoleukodystrophy Screening Goes Live!

The advocacy efforts of Brad and Nancy Zakes, parents to the late Ethan Zakes, came to fruition in March of this year when universal newborn screening (NBS) for X-linked adrenoleukodystrophy (X-ALD) started in Washington State. They proposed X-ALD as a candidate a few years ago and worked carefully with the State Board of Health (SBOH) and the Department of Health (DOH) to move it through the public policy process. In 2016 the SBOH added X-ALD to the mandatory screening panel. The 2017 state legislature gave the DOH authority to increase the NBS fee accordingly. The NBS laboratory was undergoing a planned construction project at the same time, so the start of screening was planned for immediately following occupancy of the new NBS tandem mass spectrometry laboratory.

X-ALD is an inherited disorder that can manifest in early childhood, adolescence, or adulthood. This disorder is caused by a buildup of fatty acids in tissues and organs of the body. These fatty acids can affect the nervous system

and adrenal glands, leading to poor performance in school, other behavioral problems, muscle weakness, hearing loss, blindness, and death. Early identification through screening and treatment with stem cell transplant can stop disease progression.

X-ALD occurs in about one in every 42,000 boys. Screening programs identify some girls as carriers of an X-ALD mutation who may develop mild symptoms as adults.

For more information about X-ALD, see the [X-ALD](#) section of the NBS website or the [Ethan Zakes Foundation](#) website. We are grateful to the dedication and expertise of the NBS staff to bring this new test on board, and to provide follow-up and related educational services.

Contact: John Thompson, 206-418-5531

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Secretary, DOH: John Weisman, DrPH, MPH  
Health Officer: Kathy Lofy, MD  
Director, PHL: Romesh Gautam, PhD  
Program Manager, LQA: Susan Walker  
Editor: Chuck Talburt  
Circulation: Chuck Talburt

Comments, letters to the editor, information for publication, and requests for subscription can be directed to:

*ELABORATIONS*  
1610 NE 150th St  
Shoreline, WA 98155

e-mail address: [leonard.kargacin@doh.wa.gov](mailto:leonard.kargacin@doh.wa.gov)

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## 25th Annual Clinical Lab Conference

### What?

The 25th Annual Clinical Laboratory Conference

### When?

Tuesday, November 13, 2018

### Where?

Foster Links Golf Course  
Tukwila, WA

**Plan to attend.**  
Mark your calendars now!!!

# CDC Antibiotic Resistance Lab Network, cont'd from page 1

premise of the grant speaks to the spirit of ARLN by:

- Building and maintaining effective public health workforces for rapid response to infectious disease outbreaks.
- Strengthening cross-cutting national health surveillance systems.
- Boosting laboratory infrastructure with the latest diagnostic technologies.
- Improving health information systems to efficiently transmit, receive, and analyze infectious disease-related data electronically (3).

Through ongoing outreach and educational efforts, hospital or reference microbiology laboratories performing initial testing on patient isolates may identify a bacterial isolate that meets additional testing requirements. Those requirements can include resistance to one or more class of carbapenem antibiotic, overall elevated antibiotic resistance patterns, or suspected identification of *C. auris*. Those isolates will be forwarded to the local or state public health lab, where confirmatory testing will take place. Testing may also include molecular detection of genetic markers, allowing these pathogens not only to resist therapeutic drugs but also to transfer that resistance to other species or strains of bacteria. When these target bacteria are found, the state health lab will notify the CDC with any relevant findings and forward the isolate to the regional lab if additional specialized testing is required (4). Submitting requirements for Washington State can be found in Volume XXII Issue 5 October/December 2017 Elaborations (5).

This laboratory data is then provided to state or local health department epidemiologists who review the data and make determinations of community health effects. An increase in isolate submissions from a particular facility, or the detection of new or novel resistant bacteria or yeast, may prompt a public health response. This response may be as simple as recommendations to the health care facility to prevent any potential spread from patient to patient, or as involved as a state health care-directed point prevalence study. A point prevalence study may involve taking patient samples from all people housed at a health care facility that could have been exposed directly or transiently to a patient harboring one of these resistant pathogens detected by the state health laboratory. All effort involved is centered on protecting patients by preventing any health care-associated infections and stopping the spread of these resistant bacteria.

The most recent statistical data put more than 2 million people at risk of developing antibiotic-resistant infections with at least 23,000 deaths attributed to these infections annually. Associated health care costs may approach \$20 billion, but the main concern is the quickly diminishing efficacy of drugs considered last lines of defense. ARLN may aid in detecting these organisms quickly, responding to outbreaks, containing or preventing future outbreaks, and providing actionable data, which may innovate laboratory diagnostics and outbreak prevention (6).

## References

1. **Centers for Disease Control and Prevention.** Antibiotic/ Antimicrobial Resistance. CDC.gov. [Online] [April 2, 2018](#). [Cited: June 4, 2018.]
2. **Centers for Disease Control and Prevention.** Division of Preparedness and Emerging Infections (DPEI). CDC.gov. [Online] [August 2, 2017](#). [Cited: June 4, 2018.]
3. **Centers for Disease Control and Prevention.** Epidemiology and Laboratory Capacity for Infectious Diseases (ELC) Cooperative Agreement. [Online] August 2, 2017. [Cited: [June 4, 2018](#).]
4. **Centers for Disease Control and Prevention.** About AR Laboratory Testing and Resources. CDC.gov. [Online] [May 11, 2018](#). [Cited: June 4, 2018.]
5. **Washington State Department of Health.** Elaborations. DOH.WA.GOV. [Online] [December 2017](#). [Cited: June 4, 2018.]
6. **American Public Health Laboratories.** APHL.org. [ARLABnetwork](#). [Online] [Cited: June 4, 2018.]

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## Calendar of Events

### Training Classes:

#### [2018 Northwest Medical Laboratory Symposium](#)

October 24-27      Portland, OR

#### [25th Annual Clinical Laboratory Conference](#)

November 13      Tukwila

#### [2019 ASCLS-WA Spring Meeting](#)

April 25-26, 2019      Olympia

Contact information for the events listed above can be found on page 2. The Calendar of Events is a list of upcoming conferences, deadlines, and other dates of interest to the clinical laboratory community. If you have events that you would like to have included, please mail them to ELABORATIONS at the address on page 2. Information must be received at least one month before the scheduled event. The editor reserves the right to make final decisions on inclusion.



## ELABORATIONS

Washington State Department of Health  
1610 NE 150th St  
Shoreline, WA 98155