

ARLABnetwork

Mountain Regional Newsletter

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More information on our current test directory can be found on our website at: <https://uphl.utah.gov/arln-utah/>. Please email ARLNUtah@utah.gov with inquiries on testing or if you are interested in submitting an article for the next newsletter.



General AR Lab Network Updates

New Pilot Programs

Clinical laboratories within the AR Lab Network nationwide are invited to send isolates for two new pilot projects outlined below. Please spread the word to clinical laboratories in your jurisdiction by sharing the accompanying factsheets about the programs:

CDC AR Lab Network requests isolates of *Aspergillus fumigatus* for surveillance of azole resistance

Testing for azole resistance in *Aspergillus fumigatus* is now offered by the AR Lab Network Regional Labs located at the Maryland and Tennessee Public Health Laboratories (PHLs). These laboratories perform screening for azole resistance with supplemental testing and identification of azole resistance using whole genome sequencing (WGS) as well as jurisdictional public health departments within two weeks of receipt of the isolate. Testing is available to all states at no cost, including shipping.

Clinical, reference, public health laboratories submitting isolates:

- Submit **clinical isolates** (isolated from a single entry) that have already been identified as *Aspergillus fumigatus* by any CLIA-compliant method.
- Ship on **Reinforced Dry Ice** per CDC.
- Provide isolates from **resistant infections**, as well as isolates that **failed** other treatments to **azole**.

Why submit *Aspergillus* isolates?

The most common cause of fungal aspergillosis, *Aspergillus fumigatus*, can develop resistance to azoles, leading to drug resistance in clinical patients or in environments where azoles have been used in agriculture. Fungal resistance strains have been identified in the United States, increasing the need for awareness and action by clinical and public health professionals.

Please contact the designated AR Lab Network Regional Laboratory for your area (see coded map below) to discuss submission guidance and shipping instructions.

Send to Maryland Public Health Laboratory - Baltimore
Contact: MDPH.ALAB@maryland.gov

Send to Tennessee Public Health Laboratory - Nashville
Contact: ALAB@health.tn.gov

Note: Contact your state health department for questions about whether isolates should be submitted directly to the AR Lab Network, Aspergillus Laboratory or first to your state public health laboratory for processing, as states vary in requirements.

Information and references about resistance in *Aspergillus*:
<https://www.cdc.gov/fungal/diseases/aspergillosis/azole-resistance.html>

If further information is needed, please contact: aspergillus@cdc.gov or ALAB@cdc.gov

For more information on CDC's AR Lab Network, visit: <https://www.cdc.gov/azoleresistance/alarb-network.html>

(i) **Surveillance testing of *Aspergillus fumigatus* for azole resistance**

Azole resistance is becoming more common in *Aspergillus fumigatus*, the most common cause of aspergillosis, due to prolonged treatment and over-use of azole in agricultural settings. Testing for this resistance in the mountain region states is performed through the Southeastern Regional AR Lab in Tennessee. More information about submitting isolates for this test can be found [here](#).

(ii) ***N. gonorrhoeae* gradient strip AST testing service**

The AR Lab Network Mid-Atlantic Regional Laboratory at the Maryland Department of Health (MDPH) is partnering with Centers for Disease Control and Prevention (CDC) in a pilot project to increase access to gradient strip antimicrobial susceptibility testing (AST) for rapid detection and management of antibiotic resistant *Neisseria gonorrhoeae*. The Maryland lab provides CLIA-compliant susceptibility testing for azithromycin, cefixime, and ceftriaxone, with results expected within 10 days of receipt. More information about this service can be found [here](#). If patients persistently test positive for *N. gonorrhoeae* (gonococcus or GC) after treatment (with or without symptoms) and reinfection has been ruled out, please consider sending their specimen or isolate for susceptibility testing.

***Neisseria gonorrhoeae* gradient strip AST service now available**

For STI providers and affiliated laboratories when gonococcal treatment failure is suspected

Through CDC's AR Lab Network, the Maryland Public Health Laboratory offers nationwide gradient strip method antimicrobial susceptibility testing (AST) – at no cost – to assist in care of patients with potentially drug-resistant gonorrhea infections. The Maryland lab provides CLIA-compliant susceptibility testing for azithromycin, cefixime, and ceftriaxone, with results expected within 10 days of receipt.

PROVIDERS with patients who may have antibiotic-resistant *N. gonorrhoeae*:

If patients persistently test positive for *N. gonorrhoeae* (gonococcus or GC) after treatment (with or without symptoms) and reinfection has been ruled out, **please consider sending their specimen or isolate for susceptibility testing**. Data from this testing helps CDC monitor for new types of resistance and can provide information for treatment decisions.

Consult your public health department and CDC, as needed, and do one of the following:

- Submit a **fresh clinical specimen** to your local laboratory that performs GC culture, and ask them to **send an isolate** for shipment to Maryland Public Health Laboratory (MDPH).
- Ask the laboratory that has already isolated GC from your patient to **ship the isolate to MDPH** for further testing.
- If a local laboratory is **not available** to perform GC culture, **please email** MDPH.ALAB@mda.maryland.gov to plan specimen collection and shipment for GC culture.

LABORATORIES that may isolate antibiotic-resistant *N. gonorrhoeae* in culture:

Please also be prepared to send isolates of gonorrhea to MDPH, for rapid AST by gradient strip method and to receive CLIA-compliant results for sharing with your providers. Pure frozen or lyophilized isolates, as well as culture growth on media may be sent for testing.

MDPH MARYLAND PUBLIC HEALTH LAB provides instructions, specimen collection materials, and free shipping

Further information is available at: <https://health.maryland.gov/healthservices/STIs/STI-Info.aspx>

Please follow your local/state requirements for notification of health department or state public health laboratory when processing specimens to Maryland.

For more information on CDC's AR Lab Network, visit: <https://www.cdc.gov/azoleresistance/alarb-network.html>

Mountain Region Lab Updates

During the past year, laboratory, public health, and healthcare systems' capacity have been stretched to their limits due to the COVID-19 response. Although isolate submission and colonization screening activities were heavily impacted by the COVID-19 response in 2020, the Utah AR Lab received significantly more carbapenem-resistant bacterial and yeast isolates and swabs for colonization screening during budget period 2 (Aug 1 2020-July 31 2021) than during budget period 1 of the current ELC Grant cycle. In order to report numbers and keep track of trends for our region, a ***Mountain Regional Report*** will be forthcoming before the end of the year.

Mountain Regional Epidemiology Subcommittee

A Mountain Regional Epidemiology Subcommittee was created in June 2021 to address the need for public health epidemiologists to collaborate across state borders. This committee is headed by Josh Mongillo, an epidemiologist with the Utah Department of Health, Healthcare-Associated Infections Program. This forum is for epidemiologists in our region to share information on current outbreaks and discuss topics such as colonization screening and whole genome sequencing. For more information or to be added to monthly calls, please contact Josh at: jmongillo@utah.gov.

SHARP Funding

Guidance for the [American Rescue Plan Act of 2021 funded ELC supplement for Strengthening HAI/AR Program Capacity](#) (SHARP) is now available. The Utah AR Lab is happy to provide technical support and validation samples as you expand the testing menu in your jurisdiction. Please reach out by emailing arlnutah@utah.gov to schedule a meeting with the Utah lab team.





Extended antimicrobial susceptibility testing (ExAST)

Although extended antimicrobial susceptibility testing (ExAST) has been available for almost two years, it has been under-utilized in our region. ExAST testing includes the new-to-market aztreonam/avibactam drug combination for difficult-to-treat infections caused by carbapenem-resistant Enterobacteriales organisms with identified IMP, VIM, or NDM carbapenemases. For more information including a pre-authorization form please visit the Utah AR Lab website at: uphl.utah.gov/arln-utah/.

A one-page flyer outlining ExAST for hard-to-treat infections for distribution to clinical providers in your jurisdiction can be found [here](#).

Whole-genome sequencing updates

By the end of 2021, the Utah Public Health Laboratory will be sequencing all *C. auris* positive specimens submitted.

Relatedness analyses including trees and SNP matrices can be powerful tools to identify and support outbreak response. These can be developed for bacterial isolates submitted to the Utah Mountain Region Laboratory for testing. All requests for sequencing projects are prepared upon request by Dr. Erin Young (Bioinformatics Regional Resource) with prior approval of Dr. Kelly Oakeson (Chief Scientist, Next Generation Sequencing and Bioinformatics). Please email arlnutah@utah.gov outlining specific requests.



Shipment Reminders

- Shipments of hazardous materials, including infectious and biological materials, are regulated under federal law (49 CFR, parts 100-185).
- It is the shipper's responsibility to meet all regulations related to the transport of the hazardous materials.
- The majority of isolates submitted to the Regional AR Lab will fall within Category B. The Department of Transportation does not require shipping and packaging certification for Category B, but they do require that those shipping Category B, be aware and follow the regulations in 49 CFR.
- A CDC training course on packaging and shipping can be accessed [here](#).
- One of the most common errors we have seen is the failure to attach a Category B label to the outside of the shipping container where it is clearly visible. Civil penalties may be assessed for violations.

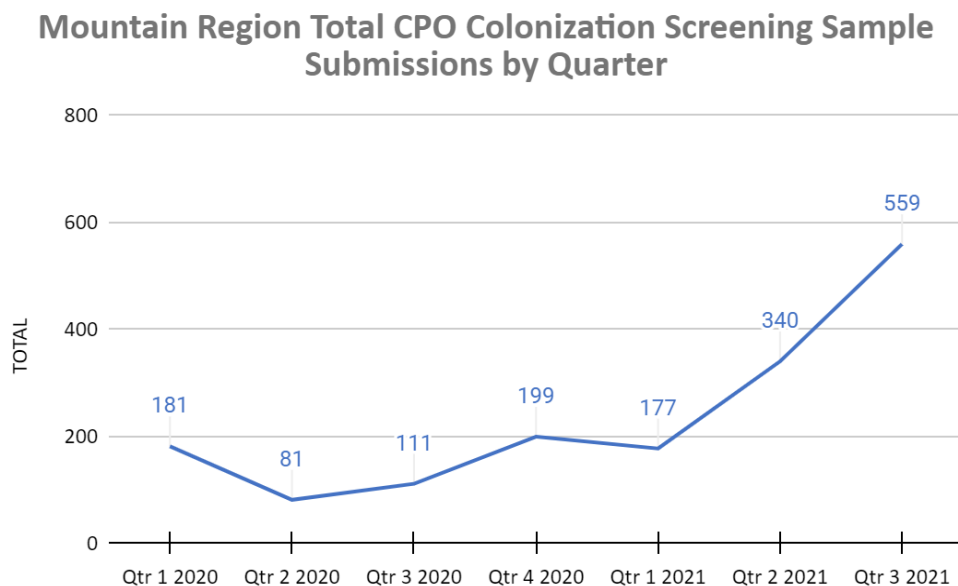


Mountain Region Report

The purpose of this report is to track submissions and trends within our region. Data for this report has been largely compiled and analyzed by Tasmia Mostafiz. Tasmia joined the Utah AR Lab team as an intern in August 2021 and has a medical background with a bachelor's degree in medicine and surgery and a master's degree in public health. She previously worked for the Texas Department of State Health Services (DSHS), San Antonio for the Zika virus awareness program and in the Community Health Worker training program in Eagle Pass, Texas.

Report Highlight

The following line graph shows the total CPO colonization screening submissions which includes CP-CRE and CP-CRPA and culture-based CRAB screening submissions by quarter. Note the marked decrease in colonization screening sample submissions during the second and third quarters of 2020 likely due to increased focus on COVID-19 activities. Note also the large recent increases in colonization screening submissions in the second and third quarters of 2021 as jurisdictions resume AR Lab activities. In the first month of the current quarter, there were 376 submissions for CP-CRE screening and 172 CRAB screening submissions making a total of 548 for the month of October 2021 alone.



For information on colonization screening at the Mountain Regional AR lab, please visit our website at: <https://uphl.utah.gov/arIn-utah/> and email arlnutah@utah.gov to request supplies and to schedule a point prevalence in your jurisdiction.

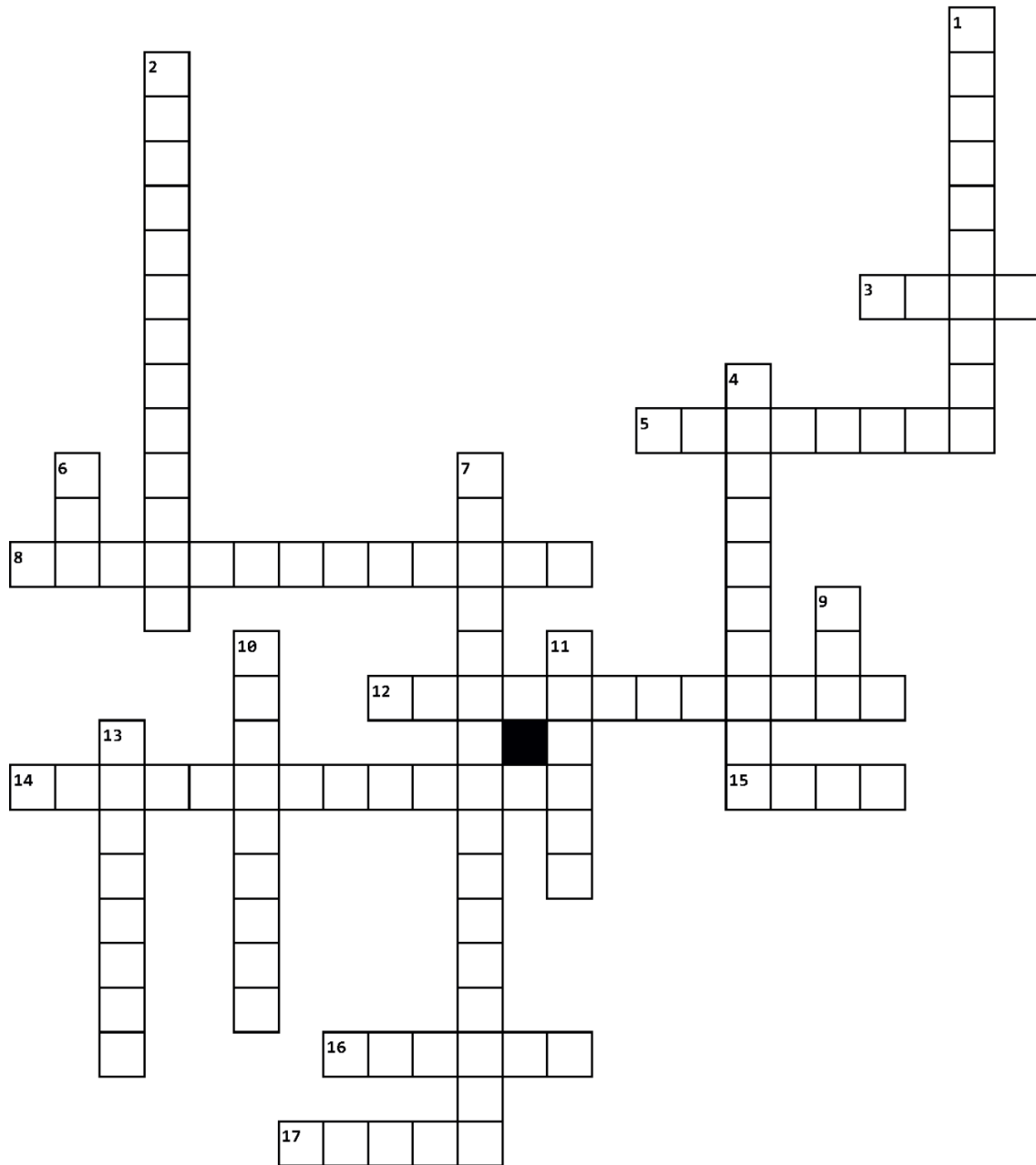
Meet the Utah Mountain Region AR Laboratory Team



Back row (from left to right): Tasmia Mostafiz (ARLN Intern), Maureen Vowles (Mountain Region AR Lab Coordinator), Lindsay Neff (Microbiologist), Jorge Chavez (APHL Fellow), Jacob Bullough (Microbiologist), Lori Smith (Microbiology Technical Supervisor)

Front row (from left to right): Erin Young (Bioinformatics Regional Resource), Alyssa Warner (Microbiologist), Alessandro Rossi (Chief Scientist and CLIA Director), Steven Thomas (Lab Technician).

Crossword Puzzle



Hints on page 9.

Answer Key on page 10.

Across

3. For colonization screening, this type of surveillance starts by screening those with the highest perceived risk and then moving outward to those with a lesser risk
5. A yeast species of the genus *Candida* in which echinocandin-resistance is sometimes observed
8. OXA-23 is the most common carbapenemase identified in this genus of bacteria
12. This type of sequencing is a useful epidemiological tool for determining relatedness between clinical isolates
14. When found to be resistant to all tested antibiotics, a bacterial isolate is said to be _____ - _____
15. Phenotypic test CRE and CRPA
16. A composite swab of the groin and _____ is suitable for *Candida auris* colonization screening
17. This yeast is an emerging fungus that presents a serious global health threat

Down

1. The A in CRPA
2. This class of drugs are considered last line antifungals
4. Examples of this class of antibiotic include ertapenem, doripenem, and meropenem
6. Which of the 'Big 5' carbapenemases is missing from the list: OXA-48, VIM, NDM, IMP
7. This order includes the following genera-Morganella, Escherichia, Proteus, and Klebsiella
9. Short name for Verona Integron-mediated metallo-beta lactamase
10. The majority of AR Lab isolate submissions fall into this shipping category
11. Suitable source for sampling KPC detection by colonization screening
13. _____ barrier precautions comprise a newer list of containment recommendations for nursing homes that aim to contain the organism without isolating the patient

Answer Key

