



Antimicrobial Resistance Surveillance Updates for XXX State Clinical Labs

Webinar Details



- Please mute yourself during the presentation
- Please save your questions until the end, there will be time after the presentation for discussion and questions
 - You may send questions in the chat or unmute yourself
- Slides and the recording will be available after the meeting
- If you have questions after the presentation, please email (general inbox)

Agenda



- The Antibiotic Resistance Laboratory Network (AR Lab Network)
- Surveillance for AR pathogens in XX State
- (Previous year) Testing Summary
- Testing Updates
- Questions/Comments/Discussion

Speakers and Subject Matter Experts



SPEAKERS			
Picture	Name, credentials Title Email	Name, credentials Title Email	Picture
	AR Lab Network Staff	HAI/AR Staff	
Picture	Name, credentials Title Email	Name, credentials Title Email	Picture
Picture	Name, credentials Title Email	Name, credentials Title Email	Picture

The Antibiotic Resistance Laboratory Network



HAI/AR Surveillance Remains Important through the COVID-19 Pandemic



COVID-19 Cited in Significant Increase in Healthcare-Associated Infections in 2020

Details

Thursday, 02 September 2021

Morbidity and Mortality Weekly Report (MMWR)

CDC



Increase in Hospital-Acquired Carbapenem-Resistant *Acinetobacter baumannii* Infection and Colonization in an Acute Care Hospital During a Surge in COVID-19 Admissions — New Jersey, February–July 2020

Weekly / December 4, 2020 / 69(48):1827–1831

Morbidity and Mortality Weekly Report (MMWR)

CDC

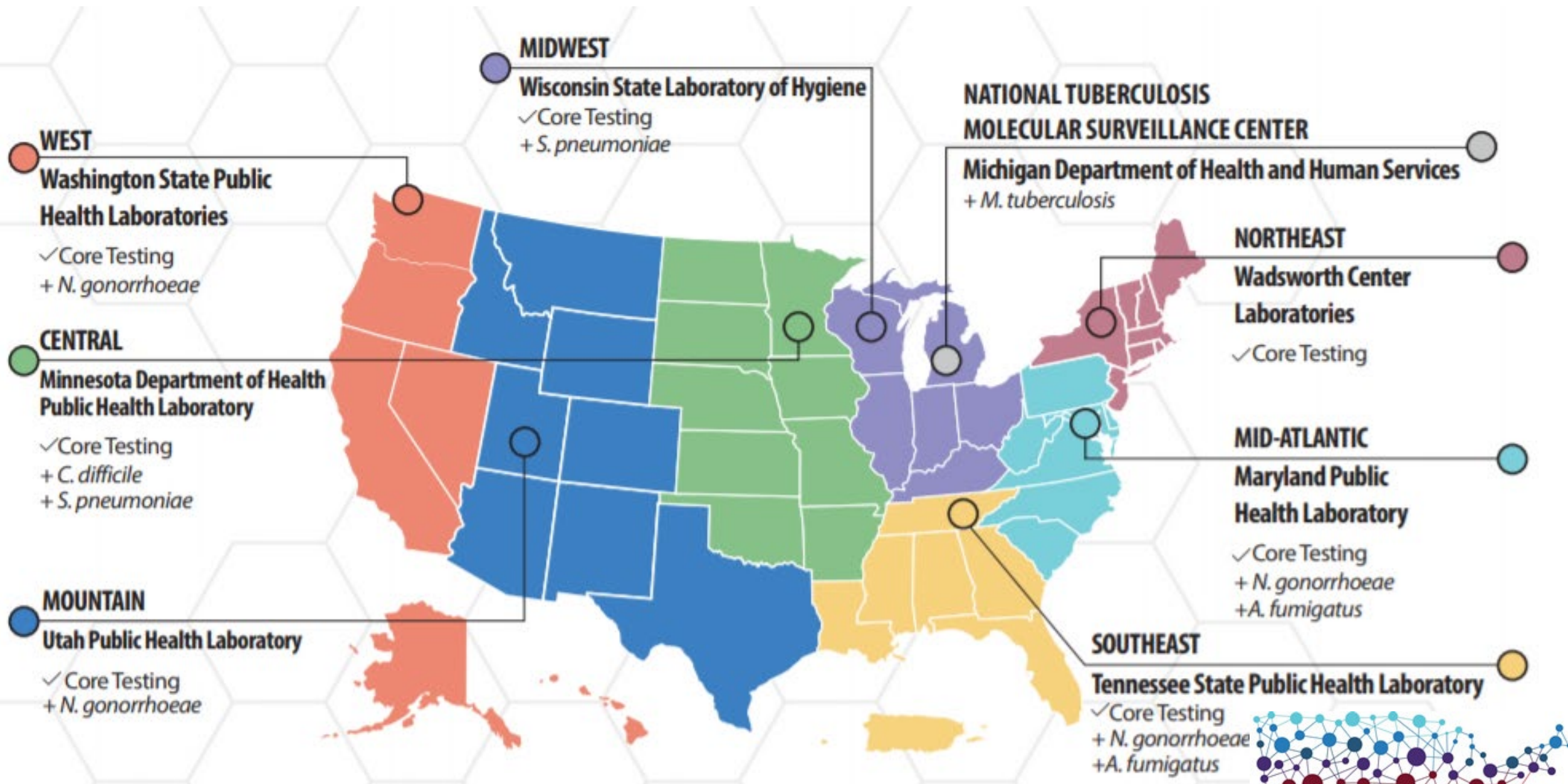


Candida auris Outbreak in a COVID-19 Specialty Care Unit — Florida, July–August 2020

Weekly / January 15, 2021 / 70(2):56–57

Picture of state public health lab

XXState Public Health Laboratory City State



Our Work is Informed by the AR Threats Report



<https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf>

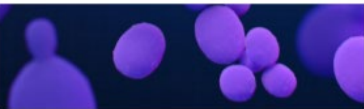
AR Threats Reports

Urgent Threats

These germs are public health threats that require urgent and aggressive action:



CARBAPENEM-RESISTANT
ACINETOBACTER ★



CANDIDA AURIS ★



CLOSTRIDIoidES DIFFICILE ★



CARBAPENEM-RESISTANT
ENTEROBACTERIACEAE ★



DRUG-RESISTANT
NEISSERIA GONORRHOEAE ★

Serious Threats

These germs are public health threats that require prompt and sustained action:



DRUG-RESISTANT
CAMPYLOBACTER



DRUG-RESISTANT
CANDIDA ★



ESBL-PRODUCING
ENTEROBACTERIACEAE



VANCOMYCIN-RESISTANT
ENTEROCOCCI



MULTIDRUG-RESISTANT
PSEUDOMONAS AERUGINOSA ★



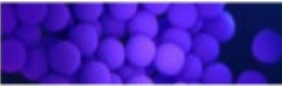
DRUG-RESISTANT
NONTYPHOIDAL SALMONELLA



DRUG-RESISTANT
SALMONELLA SEROTYPE TYPHI



DRUG-RESISTANT
SHIGELLA



METHICILLIN-RESISTANT
STAPHYLOCOCCUS AUREUS



DRUG-RESISTANT
STREPTOCOCCUS PNEUMONIAE ★



DRUG-RESISTANT
TUBERCULOSIS ★

Concerning Threats

These germs are public health threats that require careful monitoring and prevention action:



ERYTHROMYCIN-RESISTANT
GROUP A STREPTOCOCCUS ★



CLINDAMYCIN-RESISTANT
GROUP B STREPTOCOCCUS ★

Watch List



DRUG-RESISTANT
BORDETELLA PERTUSSIS



AZOLE-RESISTANT
ASPERGILLUS FUMIGATUS ★



DRUG-RESISTANT
MYCOPLASMA GENITALIUM

★ =AR Lab Network pathogen

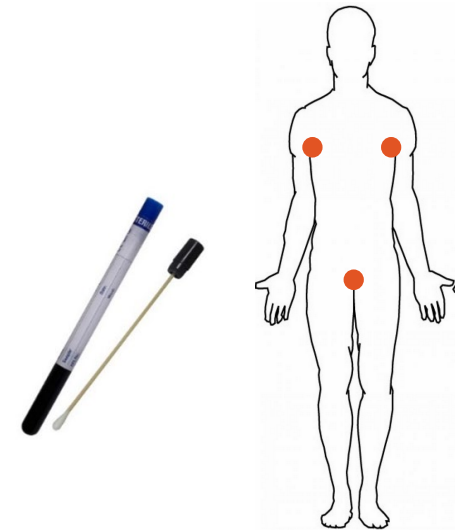
AR Lab Network Test Menu

Isolate Testing

- **Gram-negative bacteria**
 - Highlight available testing
- **Candida species**
 - Highlight available testing

Colonization Screening

- Highlight available testing



[Link public facing lab test menu](#)

Surveillance for AR Pathogens in XXX State



MDRO Surveillance in XXX

- History of CRO/CPO Surveillance
- History of sentinel lab program and current number of sentinel labs
- Public facing MDRO data

Public facing data summary



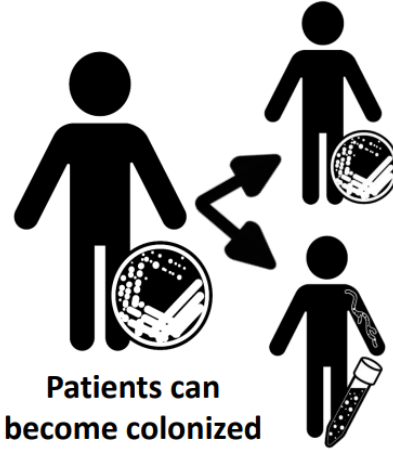
All XX Labs Should Submit:

- List testing criteria for organisms and highlight reportable organisms

Why are We So Concerned About *C.auris*?



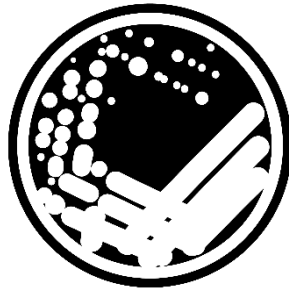
Highly
drug-resistant



Patients can
become colonized
and develop
invasive infections



Spreads in healthcare
settings



Difficult to
identify in the lab



Severe disease
and high mortality



Persist in the
environment

Candida auris has Rapidly Spread Across the U.S.



Reported clinical cases of *Candida auris*, 2013-2016



Data Table



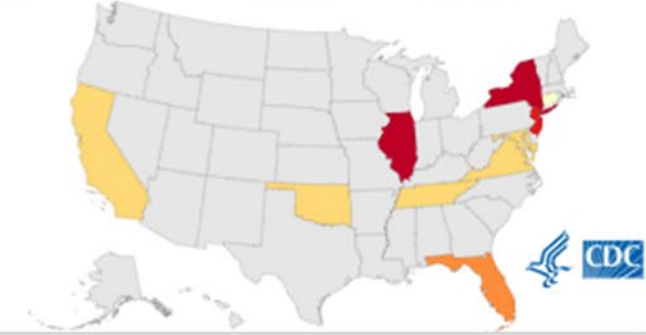
Reported clinical cases of *Candida auris*, 2017



Data Table



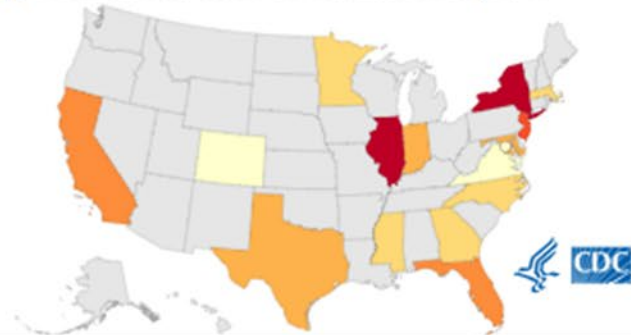
Reported clinical cases of *Candida auris*, 2018



Data Table



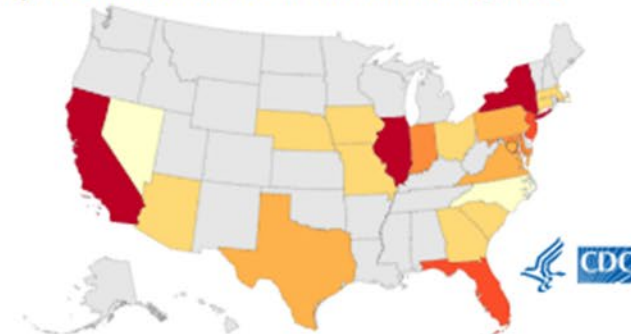
Reported clinical cases of *Candida auris*, 2019



Data Table



Reported clinical cases of *Candida auris*, 2020



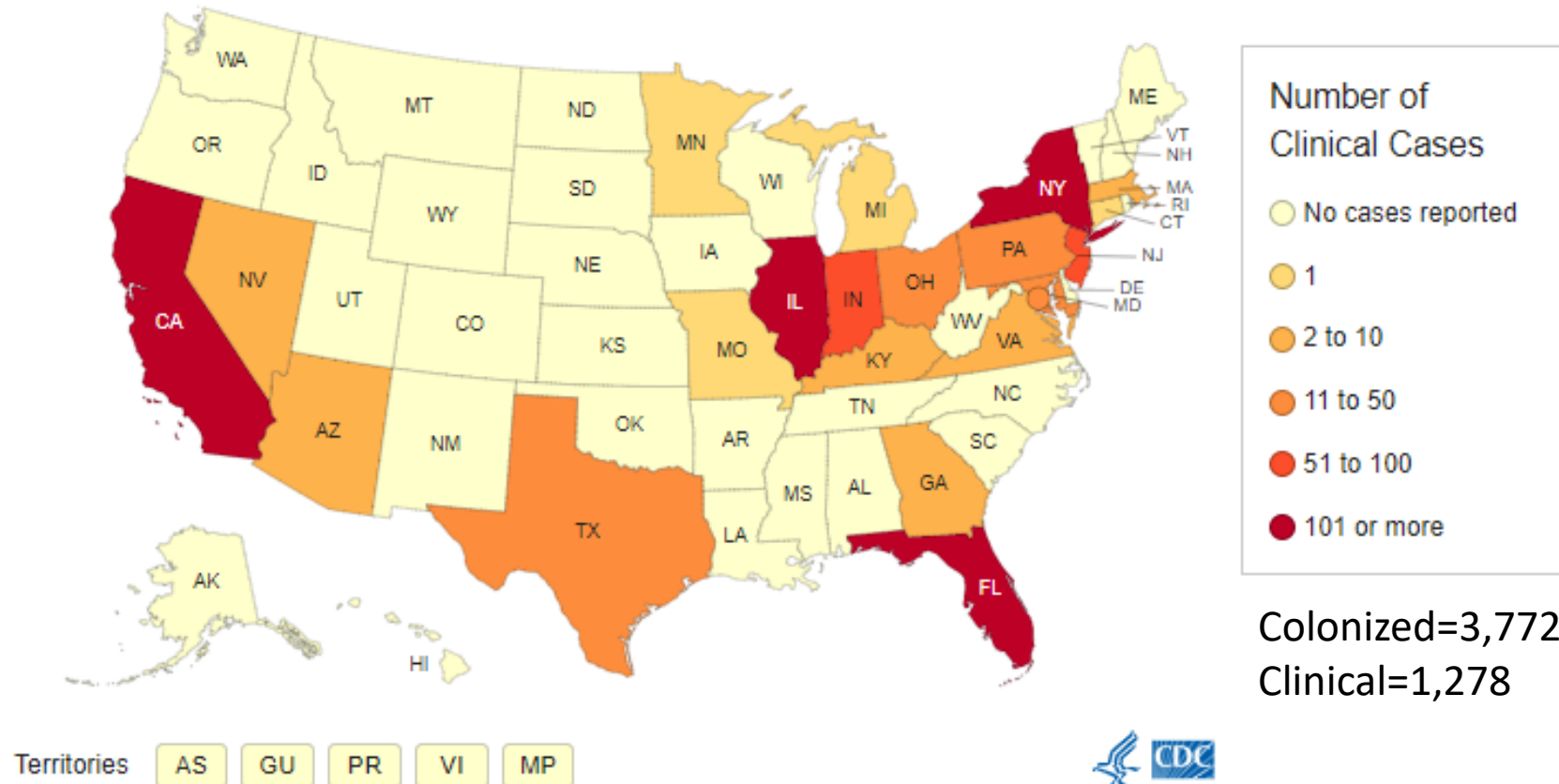
Data Table



Candida auris has Rapidly Spread Across the U.S.



Reported clinical cases of *Candida auris*, January 01, 2021-December 31, 2021



<https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html>

Candida auris is Difficult to Identify



Identification Method	Organism <i>C. auris</i> can be misidentified as
Vitek 2 YST*	<i>Candida haemulonii</i> <i>Candida duobushaemulonii</i>
API 20C	<i>Rhodotorula glutinis</i> (characteristic red color not present) <i>Candida sake</i>
API ID 32C	<i>Candida intermedia</i> <i>Candida sake</i> <i>Saccharomyces kluyveri</i>
BD Phoenix yeast identification system	<i>Candida haemulonii</i> <i>Candida catenulata</i>
MicroScan	<i>Candida famata</i> <i>Candida guilliermondii</i> ** <i>Candida lusitanae</i> ** <i>Candida parapsilosis</i> **
RapID Yeast Plus	<i>Candida parapsilosis</i> **

1. Take note of which identification method your lab uses
2. Recognize the commonly misidentified organisms
3. Send isolates to WA PHL for confirmatory testing

https://www.cdc.gov/fungal/candida-auris/identification.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Ffungal%2Fcandida-auris%2Frecommendations.html

Candida auris: A drug-resistant yeast that spreads in healthcare facilities

A CDC message to laboratory staff

Candida auris is a yeast that causes serious infections. Laboratory staff, healthcare workers, and infection preventionists can all help stop it from spreading.

Why is *Candida auris* a problem?

- **It causes serious infections.** *C. auris* can cause bloodstream and other types of invasive infections, particularly in patients in hospitals and nursing homes who have multiple medical problems. More than 1 in 3 patients die within a month of *C. auris* infection.
- **It is often multidrug-resistant.** Antifungal medications commonly used to treat *Candida* infections often don't work for *C. auris*. Some *C. auris* isolates are resistant to all three major classes of antifungal medications.
- **It's becoming more common.** Although *C. auris* was just recognized in 2009, it has emerged quickly. Since then, it has been reported from over 20 countries, including the United States.

- **It's difficult to identify.** *C. auris* can be misidentified as other types of yeast unless specialized laboratory methods are used. Unrecognized *C. auris* can spread to other patients in a facility, causing an outbreak. Identifying *C. auris* is critical to knowing what steps to take to control it in a healthcare setting.
- **It can spread in healthcare facilities.** Just like other multidrug-resistant organisms such as CRE and MRSA, *C. auris* can be transmitted in healthcare settings and cause outbreaks. It can colonize patients for many months, persist in the environment, and withstand many routinely used disinfectants in healthcare facilities.

Early detection can help limit spread of *C. auris*

Prepare for *C. auris* identification

- Some phenotypic methods for yeast identification can misidentify *C. auris* as a number of different organisms.
 - » *C. auris* is most often misidentified as *Candida haemulonii*, another rare yeast, but misidentifications are specific to each yeast identification method.
 - » Know whether the yeast identification method used in your laboratory misidentifies *C. auris* and, if so, what the possible misidentifications are. See www.cdc.gov/fungal/candida-auris for common misidentifications by yeast identification method.
 - » Misidentification can lead to inappropriate patient treatment and delay implementation of appropriate infection control precautions.
- There are no phenotypic characteristics that can easily distinguish *C. auris* from other *Candida* species.
- The most reliable way to identify *C. auris* is matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS).
 - » If you have a MALDI-TOF MS, ensure *C. auris* is included in the database.
- Molecular methods based on DNA sequencing can also identify *C. auris*. Sequencing of the D1-D2 region of the 28S ribosomal DNA (rDNA) or internal transcribed spacer (ITS) region of rDNA are accepted methods.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

- Validate your instrument to confirm it can identify *C. auris*. If needed, use isolates from www.cdc.gov/ARIsolateBank/.
- Work with your facility's infection preventionist to set up a plan for informing their department about possible or confirmed *C. auris* and subsequent notification of public health authorities.

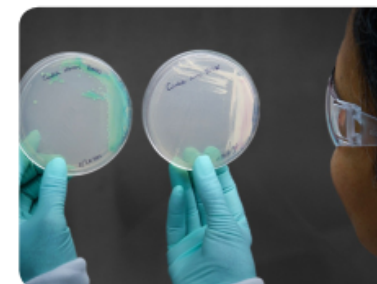
- Work with your state and local public health department for further characterization of these isolates. The health department will determine whether additional outreach to the Antibiotic Resistance Laboratory Network or CDC is needed.

What should I do if *C. auris* is confirmed?

- Report possible or confirmed *C. auris* cases immediately to your facility's infection prevention and control department and follow your facility's process for reporting to public health.
- Conduct antifungal susceptibility testing.
- Look for other cases of *C. auris* in your facility:
 - » Review microbiology records back to 2015 if possible to find potentially missed cases.
 - » Begin surveillance for *C. auris* from clinical specimens to identify new cases.

◊ *C. auris* is found in many body sites and fluids, including blood, urine, respiratory, and abdominal specimens.

◊ Consider identifying the species of *Candida* isolates from both sterile and non-sterile sites, even if this is not routine practice at your facility. Continue this surveillance for at least one month or until there is no evidence of transmission.



More guidance on when to suspect *C. auris*, how to correctly identify *C. auris*, and suggested antifungal drug minimum inhibitory concentration (MIC) cutoff values are available on CDC's webpage, Recommendations for Identification of *C. auris*: <https://www.cdc.gov/fungal/candida-auris>.

For more information, please contact the Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases, Division of Foodborne, Waterborne, and Environmental Diseases.

1600 Clifton Road, NE, Mail Stop C-09, Atlanta, GA 30329-4018

Telephone: 800-CDC-INFO (232-4636)

E-mail: candidaauris@cdc.gov

Web: <https://www.cdc.gov/fungal>

CS293657-B Jun 04, 2018



CS293657-B Jun 04, 2018

Early Detection through Routine Identification of *Candida* from Non-Sterile Body Sites



- *Candida* from urine and other non-sterile sites is typically not identified to the species level
- Routine identification can contribute to early detection of *C.auris* within a facility

Early Detection through Routine Identification of *Candida* from Non-Sterile Body Sites



- September 2018: Clinical laboratory affiliated with 9 Long-term acute care hospitals (LTACH) began identifying *Candida* isolated from urine specimens
- February 2019: first *Candida auris* case identified
 - Patient at on of the LTACH served by the clinical laboratory
 - No international travel or healthcare in the past 12 months
 - Rapid response at LTACH and proactive infection control assessment and screening at high-risk facilities
- Rapid Assessment and Containment of *Candida auris* Transmission in Postacute Care Settings-Orange County, California, 2019
 - <https://pubmed.ncbi.nlm.nih.gov/34487450/>

Voluntary AR Surveillance

- Highlight voluntary surveillance in your state (sentinel labs, state and/or regional lab)

Summary of XX State Surveillance

All Labs Should Submit:

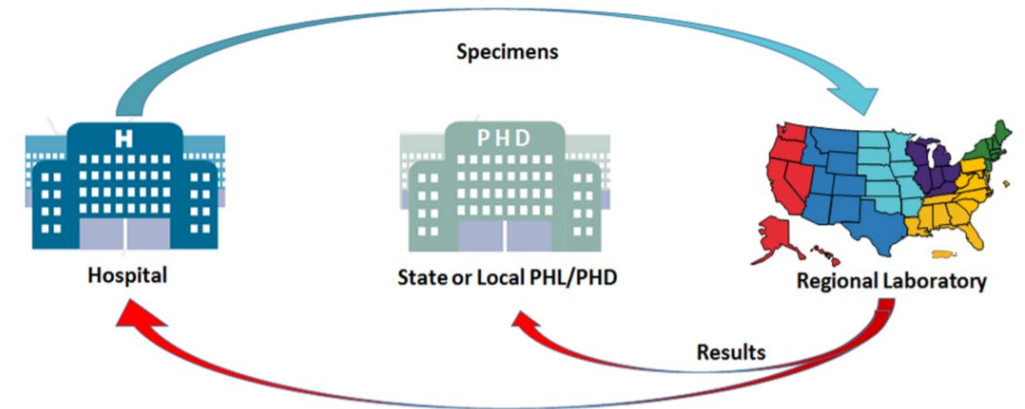
Labs Should Voluntarily Submit:

XX Sentinel Labs

Map or summary of current
sentinel labs

Sentinel Labs

- Submit one or more of the following:
 - Submissions that qualify for sentinel surveillance



Benefits for Sentinel Labs

- Access to advanced testing
- Early detection of targeted organisms
- Contributing to a better understanding of MDROs
- Facility-level data
- Certificates and web badges
- Submission materials (slants, Category B shipping materials, FedEx labels) provided



How to Enroll



CDC Screening Recommendations

- Close healthcare contacts of patients with newly identified infection or colonization (*C. auris* or CPO)
- Patients who have had an overnight stay in a healthcare facility outside the United States in the previous one year.
 - Strongly consider screening for *C. auris* when patients have inpatient healthcare exposures outside the US and have infection/colonization with a CPO.



Implementation of Admission Screening



- Admission screening will likely be coordinated between the local health jurisdiction (LHJ) and your facility's infection prevention (IP) program
- Labs will likely be involved in packaging and shipping samples
- **Discuss implementation with your facility's IP program**

(previous year) Testing Summary*

*Based on isolates, patients may be represented in data more than once



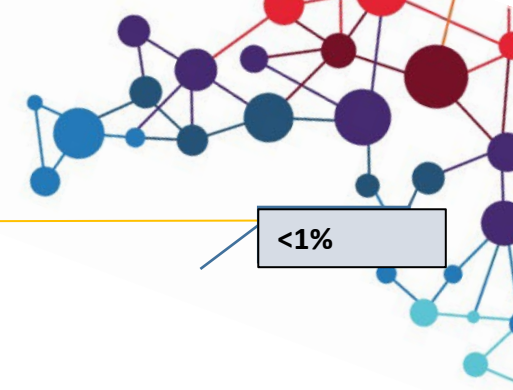
AR Lab Network Isolate Testing, 2017-2021



AR Lab Network Colonization Screening, 2017-2021



Submissions from XX State Clinical Labs, 2021*



For a regional lab, highlight amount of your total testing that came from just your state

Isolates and Screening Samples Submitted by XX State Clinical Labs Positive for Carbapenemases Tested, 2021*



Carbapenemases Detected in Isolates and Colonization Screening Samples Submitted by Washington Clinical Labs, 2021

Breakdown specific carbapenemases

Candida Isolates Submitted by XX Clinical Labs, 2021 (n=X)

Species	Count	% of Total
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida krusei</i>	x	x%
<i>Candida albicans</i> * * Do not submit	x	x%
<i>Candida xx</i>	x	x%

Candida Isolates Submitted by XX Clinical Labs, 2021 (n=x)



Species	Count	% of Total
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida xx</i>	x	x%
<i>Candida krusei</i>	x	x%
<i>Candida albicans</i> *		
* Do not submit	x	x%
<i>Candida xx</i>	x	x%

Highlight
species you
tested and are
on the
misidentified
list

Identification Method	Organism <i>C. auris</i> can be misidentified as
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RapID Yeast Plus	<i>Candida parapsilosis</i> **

PHL Updates

New tests

New submission criteria

New guidance

Etc.



Thank you for your continued
submissions to the XX Public
Health Lab!!



Questions or Comments?

