

June 2023

# *Candida auris* (*C. auris*)

## Surveillance Protocol



### **Background** <sup>(1,2)</sup>

*C. auris* is an emerging multidrug-resistant yeast that can colonize the skin and can cause invasive infections, particularly in hospital and nursing home patients with serious medical problems. It has been associated with 30% - 72% crude in-hospital mortality. *C. auris* was discovered in 2009 and has quickly spread causing infections in more than a dozen countries.

*C. auris* has caused outbreaks in healthcare facilities and can spread through contact with affected patients and contaminated surfaces or equipment. Containment of *C. auris* spread largely depends on the timely detection and implementation of appropriate infection prevention and control measures.

Antifungal medicines commonly used to treat *Candida* infections often do not work for *C. auris*, and some infections have been resistant to all three types of antifungal medicines. *C. auris* can be misidentified as other types of fungi unless specialized laboratory technology is used. This misidentification might lead to a patient getting the incorrect treatment.

### **Public Health Significance** <sup>(1)</sup>

Healthcare facilities in several countries have reported that a type of yeast called *Candida auris* has been causing severe illness in hospitalized patients. This yeast often does not respond to commonly used antifungal drugs, making infections difficult to treat. Patients who have been hospitalized in a healthcare facility for a long time, have a central venous catheter or have other lines or tubes entering their body, or have previously received antibiotics or antifungal medications appear to be at the highest risk of infection with this yeast.

In 2022, there were 2,377 clinical cases and 5,754 screening cases across 29 states. *C. auris* can spread rapidly within healthcare facilities, especially in high-acuity long-term care settings, colonizing a large proportion of patients. The Centers for Disease Control and Prevention (CDC) and the West Virginia Department of Health and Human Resources (DHHR), Bureau for Public Health (BPH) are concerned about *C. auris* for three reasons:

- This yeast often does not respond to commonly used antifungal drugs, making infections difficult to treat.
- It is difficult to identify with standard laboratory methods, which can result in misidentification without specific laboratory technology. This can lead to inappropriate management of the illness.
- It has been identified as the cause of healthcare-setting outbreaks in the U.S. Outbreaks of *C. auris* have proven very difficult to control, requiring intensive public health and facility-level intervention. For this reason, it is important to quickly identify *C. auris* in a hospitalized patient so healthcare facilities can take special precautions to stop its spread.

### **Division Director-Healthcare Quality Promotion, Prevention & Response**

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[www.oeps.wv.gov/c\\_auris/Pages/default.aspx](http://www.oeps.wv.gov/c_auris/Pages/default.aspx)

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It is important to note that as of June 2023, two cases of *C. auris* infection have been reported in the state of West Virginia.

### **Provider Responsibilities**

1. Ensure that your laboratory is immediately reporting *C. auris* test results to you and that your office staff notifies you of *C. auris* results immediately.
2. When you are notified by your laboratory that your patient has *C. auris*:
  - a. Follow CDC recommendations:  
[www.cdc.gov/candida-auris/hcp/infection-control](http://www.cdc.gov/candida-auris/hcp/infection-control).
  - b. Notify the Infection Preventionist at the facility where the patient is hospitalized or a resident of a nursing home; and/or
  - c. Ensure that the Infection Preventionist and other providers are notified before a patient is admitted or transferred so that they can also follow CDC guidelines.
3. Immediately notify the local health department (LHD) of *C. auris* outbreaks, which is defined as one case, in your facility.

### **Laboratory Responsibilities**

1. Report *C. auris* immediately to healthcare facilities. Clearly highlight *C. auris* so it is readily apparent to healthcare providers.
2. Report all positive *C. auris* results to the LHD immediately. Report the result by electronic messaging when feasible.
3. Follow current guidelines from the CDC/Clinical and Laboratory Standards Institute (CLSI) for testing for *C. auris*.
4. Immediately report *C. auris* outbreaks to your LHD.
5. Do not dispose of the isolate(s) and follow the guidance provided by the local, regional, and/or state health department staff for sending *C. auris* specimens to OLS and/or CDC for further characterization.

### **LHD Responsibilities**

1. Complete the *C. auris* Disease Reporting Form by contacting the provider and/or facility listed on the lab report, as well as the patient and/or their family, as needed.
2. Enter lab results and complete information from the *C. auris* Disease Reporting Form into the West Virginia Electronic Disease Surveillance System (WVEDSS) in a timely manner.
3. Encourage labs to report electronically when feasible.

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4. When a case of *C. auris* is identified in your county, assess the facility's knowledge using the "Initial Assessment for Healthcare Facility with Reported Case of *Candida auris* (*C. auris*).  
[www.oeps.wv.gov/c\\_auris/Documents/lhd/C-auris-Initial-Assessment-for-Healthcare-Facility-FINAL-7.25.23.pdf](http://www.oeps.wv.gov/c_auris/Documents/lhd/C-auris-Initial-Assessment-for-Healthcare-Facility-FINAL-7.25.23.pdf).
5. Provide additional education and resources to the facility based on the assessment results, including DHHR's Division of Infectious Disease Epidemiology (DIDE) "*C. auris* Infection Prevention and Control Guidance."  
[www.oeps.wv.gov/c\\_auris/documents/hcp/Candida\\_auris\\_Infection\\_Prevention\\_and\\_Control\\_Guidance.pdf](http://www.oeps.wv.gov/c_auris/documents/hcp/Candida_auris_Infection_Prevention_and_Control_Guidance.pdf).
6. When a case of *C. auris* is identified in an outpatient setting or the case's LTCF residential status is "No" or "Unknown":
  - a. Contact the patient and/or their family, as appropriate, to verify LTCF residential status and provide education and resources to the patient and/or their family, including the link to or provide copies of information from the CDC patient information page [www.cdc.gov/candida-auris/about/index.html](http://www.cdc.gov/candida-auris/about/index.html).
  - b. If you notice an increase above your county endemic level, or baseline, or you notice multiple cases with a healthcare provider(s), contact the provider(s) to supply education and resources, including the link to the CDC clinician FAQ information page. [www.cdc.gov/candida-auris/hcp/clinical-overview](http://www.cdc.gov/candida-auris/hcp/clinical-overview).
  - c. For providers/facilities with multiple *C. auris* cases, consult BPH for assistance.

### **Bureau for Public Health (BPH) Responsibilities**

1. Maintain updated facility, patient, and healthcare worker education materials on the OEPS website.
2. Maintain awareness of new developments in medical literature and through ongoing surveillance.
3. Provide technical expertise and consultation regarding reporting, investigation, or control of cases or outbreaks of *C. auris*.
4. Summarize surveillance data for new cases of *C. auris* on at least an annual basis.
5. Serve as liaison between clinical laboratories, local health departments, and OLS for shipping *C. auris* isolates to OLS and/or CDC for further characterization.

### **Disease Control Objectives**

Prevent additional cases of *C. auris* through:

- Investigation and delivering recommendations related to outbreak control/resolution.
- Education of patients and healthcare personnel about *C. auris* prevention and control.

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### Disease Prevention Objectives

Reduce the incidence of *C. auris* by:

- Providing education and resources related to preventing the transmission of *C. auris*.

### Surveillance Objectives

- Determine the incidence and regional distribution of *C. auris* in West Virginia.
- Detect outbreaks of *C. auris*.
- Describe the demographic characteristics of persons with *C. auris* in West Virginia.

### Clinical Description <sup>(1)</sup>

*C. auris* is still rare in the United States. People who get invasive *Candida* infections are often already sick from other medical conditions, so it can be difficult to know if you have a *C. auris* infection. The most common symptoms of invasive *Candida* infection are fever and chills that do not improve after antibiotic treatment for a suspected bacterial infection. Only a laboratory test can diagnose *C. auris* infection. Persons who have recently spent time in hospitals and nursing homes and have invasive devices (e.g., mechanical ventilation or tracheostomy, feeding tubes, and central venous catheters) appear to be at the highest risk for infection. Other risk factors include recent surgery, diabetes, broad-spectrum antibiotic use, and antifungal use. Infections have been found in patients of all ages.

### Etiologic Agent <sup>(1)</sup>

*C. auris* is a budding yeast, which rarely forms short pseudohyphae and does not form germ tubes.

### Reservoir <sup>(1)</sup>

The reservoir for *C. auris* infections in the United States is colonized and infected individuals, especially patients with frequent contact with the healthcare system. *C. auris* has been isolated from many specimen sources including blood, urine, respiratory tract, biliary fluid, wounds, and external ear canal.

*C. auris* can survive on inanimate objects such as bed rails, countertops, and on medical equipment such as catheter tubing and flexible endoscopes. Testing suggests that *C. auris* can survive on surfaces for weeks.

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### **Mode of Transmission** <sup>(1)</sup>

*C. auris* is transmitted person-to-person through direct contact with the person or their environment. *C. auris* can spread in healthcare settings through contact with contaminated environmental surfaces or equipment from person to person. *C. auris* can persist on surfaces in healthcare environments such as high-touch surfaces including bedside tables and bed rails. *C. auris* has also been identified on mobile and reusable equipment shared between patients such as glucometers, temperature probes, blood pressure cuffs, nursing carts, etc. Transmission is not thought to occur via persistent colonization of healthcare workers.

### **Incubation Period**

The incubation period of *C. auris* is unknown.

### **Infectious Period**

The infectious period for *C. auris* is unknown.

### **Outbreak Recognition**

Outbreak recognition involves ongoing and systematic multidrug-resistant organisms (MDRO) surveillance using a standardized case definition in each facility. MDRO surveillance allows facilities to determine when an increase in cases above their baseline occurs and should trigger an investigation into the reason for the increase.

### **Case Definition** <sup>(3)</sup>

Confirmatory lab evidence:

- Detection of *C. auris* in a specimen from a swab obtained for the purpose of colonization screening using either culture or validated culture-independent diagnostic test (CIDT) (e.g., nucleic acid amplification test [NAAT]), OR
- Detection of *C. auris* in a clinical specimen obtained during the normal course of care for diagnostic or treatment purposes using either culture or a validated culture-independent test (e.g., NAAT).

### **Preventive Interventions** <sup>(1)</sup>

Even after treatment for invasive infections, patients generally remain colonized with *C. auris* for long periods, and perhaps indefinitely. Therefore, all recommended infection control measures should be followed during and after treatment for *C. auris* infection.

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Prevention of *C. auris* transmission requires a coordinated effort involving a variety of stakeholders including acute and long-term care facilities, providers, BPH, and LHDs. It requires an understanding of the local and regional prevalence of this organism, rapid identification of colonized and infected patients in healthcare settings, and implementation of facility-specific and regional interventions to prevent transmission.

Facility-specific prevention measures include:

- Educate all healthcare personnel (HCP) about *C. auris*.
- Reinforce and follow hand hygiene practices.
- Use Transmission-Based Precautions.
  - Contact precautions including gown and gloves.
  - Enhanced Barrier Precautions for nursing home residents.
- Monitor adherence to infection control practices and provide feedback.
- Ensure adequate supplies are available.
- Ensure appropriate signage is on the patient's door to alert HCP and visitors of recommended precautions.
- Cohorting of staff and patients.
- Collaboration with laboratories regarding testing and notification.
- Antimicrobial stewardship.
- Screening for *C. auris* when indicated.

Additional *C. auris* infection and prevention control information can be found at:

[www.cdc.gov/candida-auris/hcp/infection-control](http://www.cdc.gov/candida-auris/hcp/infection-control).

### **Treatment**<sup>(1)</sup>

CDC does not recommend treatment of *C. auris* identified from non-invasive sites (such as respiratory tract, urine, and skin colonization). Treatment is generally only indicated if clinical disease is present. To date, an echinocandin drug is the recommended initial therapy for the treatment of *C. auris* infections. For detailed information on dosing, see the CDC recommendations for the treatment of *C. auris* infections:

[www.cdc.gov/candida-auris](http://www.cdc.gov/candida-auris).

Infection control measures should be used for all patients with *C. auris*, whether infected or colonized, regardless of the source of the specimen. Transmission-based precautions should not be discontinued when treatment for an infection ends but should be continued for the duration of the patient's stay in a healthcare facility and implemented for any future healthcare stays.

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Consultation with an infectious disease specialist is highly recommended when caring for patients with *C. auris* infection.

### **Surveillance Indicators**

- Proportion of investigations with complete demographic information.
- Proportion of investigations with complete species identification.
- Proportion of investigations with complete information on LTCF residence.
- Proportion of LTCFs that were provided education on *C. auris*.

### **References**

1. *Candida auris*. Centers for Disease Control and Prevention. December 27, 2022. Accessed June 23, 2023. <https://www.cdc.gov/fungal/candida-auris/index.html>.
2. Al-Rashdi A, Al-Maani A, Al-Wahaibi A, Alqayoudhi A, Al-Jardani A, Al-Abri S. Characteristics, risk factors, and survival analysis of *Candida Auris* cases: Results of one-year National Surveillance data from Oman. *Journal of Fungi*. 2021;7(1):31. doi:10.3390/jof7010031
3. 22-ID-05 Update to the Standardized Case Definition and National Notification for *Candida auris*. Council of State and Territorial Epidemiologist (CSTE). 2022. Accessed June 23, 2023. [https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/ps2022/22-ID-05\\_C\\_auris.pdf](https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/ps2022/22-ID-05_C_auris.pdf).

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