July 2021

Candida auris

Recommendations for Healthcare Outbreak Response

A. Background

Candida auris (C. auris) is an emerging multidrug-resistant yeast that can cause invasive infections associated with high mortality. *C. auris* can persist on surfaces and medical equipment, spread between patients, and lead to outbreaks in healthcare settings. In addition, *C. auris* can be misidentified as other yeasts (most often as *Candida haemulonii)* when one relies on commonly available identification methods.

Nearly all cases of *C. auris* identified in the United States have occurred since mid-2015 and have been found primarily in New York City, New Jersey, and Chicago. Approximately half of the U.S. clinical cases have been bloodstream infections; the other half involved non-sterile sites such as urine, respiratory tract, and wounds. *C. auris* can also colonize the skin, nares, and other body sites. Patients can be colonized with *C. auris* for long periods of time, even after successful treatment of infection. Although patients colonized with *C. auris* in non-sterile sites may not need medical treatment, they can be a source of transmission to other individuals.

Risk of infection or colonization with *C. auris* is greatest among the following persons: a) individuals with extensive exposure to healthcare facilities, especially long-term care facilities with ventilator units; b) those infected or colonized with another multidrug-resistant organism, especially carbapenemase-producing organisms (CPOs); c) persons with central venous catheters; and d) those with tracheostomy or gastrostomy tubes. U.S. healthcare personnel and public health authorities should also remain vigilant for *C. auris* in persons who previously were hospitalized in other countries where extensive *C. auris* transmission has been reported (see the CDC *C. auris* website for details).[1]

B. Outbreak Detection and Reporting

1. Proposed Investigation/Reporting Thresholds and Outbreak Definition for *Candida auris*

The thresholds and definitions listed below are intended to serve as a guideline and are based on expert opinion, except as noted otherwise. State and local public health authorities may have their own outbreak definitions and requirements for reporting. Since *C. auris* is a new and emerging pathogen, healthcare facilities should have a low threshold for investigation to identify any potential cases and to report these to public health officials.

	ALL HEALTHCARE SETTINGS
Threshold for facility to start investigation	1 *Candida auris* isolate from any specimen source* OR 1 suspected *C. auris* isolate,† including *Candida haemulonii*, from any specimen source,* based on a yeast identification method not equipped to detect *C. auris*‡
Threshold for reporting to public health	1 *Candida auris isolate* from any specimen source* OR 1 suspected *C. auris* isolate,† including *Candida haemulonii*, from any specimen source* or any organism commonly misidentified based on a yeast identification system‡
Outbreak definition	≥ 2 cases of confirmed or suspected *Candida auris* from clinical or screening cultures with an epidemiologic link*, †, §

* Any specimen, including those obtained for clinical care, screening purposes, or point prevalence surveys.

† While confirmatory test results are pending, implement appropriate infection prevention and control measures for *C. auris* (see section C for detailed guidance).[2] If isolates are not confirmed as *C. auris*, no additional investigation is warranted, unless another type of outbreak is suspected.

‡ *C. auris* can be misidentified as different yeasts when using phenotypic methods for yeast identification (see section 2.4 for more details).

§ An epidemiologic link includes but is not limited to the following examples: patients reside on the same unit (or within the same facility, if the facility is small; patients were transferred from the same outside facility; there are facility staff in common; and/or patients were exposed to common medical equipment.

2. Points for Consideration

2.1. All *Candida* isolates from sterile sites should be worked up to the species level to guide treatment.

2.2. Many clinical labs do not routinely speciate *Candida* from non-sterile sites.

2.2.1. Facilities should be aware of practices in their laboratory with regards to what methodology is used for *Candida* species identification and its ability to accurately detect *C. auris* as well as what types of specimens are routinely identified to species level.

2.3. Consider determining the species of *Candida* isolates from non-sterile/non-invasive sites in the following situations[3]:

2.3.1. It is clinically indicated in the care of the patient (e.g., suspected infection or treatment failure). The patient is colonized or infected with another multi-drug resistant organism (MDRO), especially carbapenemase-producing organisms (CPOs).

2.3.2. There is an epidemiological link to a patient known to have *C. auris.*

2.3.3. The patient has had an overnight healthcare stay in the prior year in a country with known *C. auris* transmission.[1]

2.3.4. There is an increase in unspeciated *Candida* isolates (from any specimen source) within a unit.

2.4. Communicate directly with the laboratory when there is a high level of suspicion for *C. auris*

2.4.1. *C. auris* should be suspected when certain *Candida* spp. are identified by specific yeast identification methods or if the species of *Candida* cannot be determined after species identification is attempted.

2.4.2. The Centers for Disease Control and Prevention (CDC) provides details about *C. auris* identification and when to suspect *C. auris*.[4] Healthcare facilities should contact their local or state public health department to facilitate confirmatory laboratory testing. Health departments should contact their regional Antibiotic Resistance Laboratory Network (ARLN) and the CDC for confirmatory laboratory testing.

C. Investigation and Control

The following sections outline important actions and considerations in conducting a *C. auris* investigation in an acute or long-term care facility (please see the primary references for additional details). Components of an investigation and response to *C. auris* generally include those listed in CDC's Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms (MDROs)[5] and additional information outlined on the CDC's *C. auris* infection prevention and control website.[2] Typically, these investigations will be guided by state or local public health departments, with active consultation with the CDC. This is especially true for long-term care facilities. Some of these actions can be conducted by the facility, while others may require assistance from the health department. Collaboration between the facility and public health helps ensure a successful investigation. The public health department should support the facility by providing guidance and resources. The health department may be able to provide assistance with infection control assessment, medical record review, laboratory testing, data analysis, and other activities as appropriate for the investigation. This will depend on the circumstances of the potential outbreak as well as on the resources of the facility and the health department. The need for an on-site visit to the facility should be determined based on the number of the cases, patient population, severity of illness, and level of assistance required.

1. Initial Investigation/Case Review

1.1. When conducting healthcare facility investigations of *C. auris*, engage both infection prevention/healthcare epidemiology and clinical microbiology laboratory staff.

1.2. Identify recent healthcare encounters, including stays at other healthcare facilities during the 3 months preceding *C. auris* identification. A review encompassing a longer period should be considered if information is available regarding the likely time of *C. auris* acquisition, e.g., healthcare exposure outside the United States in a country with known *C. auris* transmission longer than 3 months prior to identification.[5]

1.2.1. Notify and coordinate with state and local public health departments to alert and conduct investigations at other facilities, as necessary.

1.3. Confirm *C. auris* identification, if necessary; conduct enhanced microbiologic surveillance for *C. auris.*

1.4. If ≥ 1 case of *C. auris* is identified at a facility, the facility should perform species identification on all *Candida* isolates identified from any body site on affected unit(s) *for a limited time* (e.g., 90 days) until there is no evidence of ongoing transmission.[6] Include non-sterile sites such as urine and respiratory tract where species of *Candida* may not be routinely determined.

2. Contact Screening

2.1. Because of the high level of transmissibility of *C. auris*, in any healthcare setting, consider conducting a point prevalence survey (PPS) of all patients on the unit with the *C. auris* patient.
  2.1.1. In a long-term care facility, consider conducting a PPS, even if the index patient was discharged as long as 3 months ago.
  2.1.2. If multiple previous healthcare facility stays are identified, consider prioritizing, in consultation with the public health department, long-term acute care hospitals and high-acuity long-term care facilities (LTCFs) that provide ventilator/tracheostomy care.
2.2. At a minimum, current and past roommates dating back at least 1 month from the date of *C. auris* identification should be screened.[6]
2.3. Coordinate with the CDC and your regional public health laboratory to perform *C. auris* screening of patients. Screening is typically performed by obtaining a composite swab of the bilateral axillae and groin.[6] Patients can also be colonized in the nares and other sites; in consultation with the public health department, consider screening additional sites in high-risk settings or when transmission is suspected.

3. Patient Placement and Cohorting

3.1. Cohort patients with *C. auris* colonization or infection in the same area of the facility.
  3.1.1. Minimize the number of staff who care for these patients.
3.2. Place patients with *C. auris* colonization or infection in a single room.
3.3. If necessary, multiple patients with *C. auris* may be placed together in multi-occupancy rooms. Roommate considerations include the following:
  3.3.1. Patients co-colonized with *C. auris* and carbapenemase-producing organisms (CPOs) may be placed together based on the CPO resistance mechanism. Avoid placing co-colonized patients with different mechanisms of CPO resistance (e.g., patients with *Klebsiella pneumoniae* carbapenemase [KPC] with those with Verona integron-encoded metallo-β-lactamase [VIM]).
  3.3.2. Patients without evidence of *C. auris* colonization (even if they have not been screened or screening results are pending) may be placed together with *C. auris* screen–negative patients.

4. Infection Control Measures

4.1. Implement contact precautions for patients colonized or infected with *C. auris*.
  4.1.1. In multi-occupancy rooms, ensure healthcare workers change gloves and gowns and perform hand hygiene between patients.
4.2. Emphasize rigorous adherence to hand hygiene; alcohol-based hand rub is acceptable unless hands are visibly soiled, in which case soap and water are indicated.
4.3. Dedicate patient care equipment such as blood pressure cuffs, thermometers, blood glucose meters, and stethoscopes; use single-use disposable items when possible.
4.4. Audit infection control practices on affected unit(s), including hand hygiene, contact precautions (e.g., donning and doffing of gowns and gloves), and environmental cleaning.[7-9] Provide feedback, education, and additional audits to raise compliance, as needed.[5]
4.5. Public health may modify this guidance as additional information and recommendations become available (e.g., Enhanced Barrier Precautions[10]).

5. Environmental Cleaning and Disinfection

5.1. Ensure daily environmental cleaning and disinfection is performed using an Environmental Protection Agency (EPA)–registered hospital-grade disinfectant effective against *Clostridioides difficile* (List K); for additional details and alternatives, refer to the CDC's C. auris infection prevention and control website.[2]
5.2. High-touch surfaces require more frequent cleaning and disinfecting.
5.3. Although dedicated patient equipment should be used whenever possible (see section 4.3), equipment and devices that are shared must be cleaned and disinfected between uses (e.g., thermometers, blood glucose meters, vital signs machines, and equipment such as imaging devices that might be shared between multiple facilities).[2]
5.4. Delegate cleaning and disinfection of all environmental surfaces and equipment to designated personnel and consider using standardized checklists to ensure all surfaces and equipment are cleaned.
5.5. Audit cleaning procedures on affected units. Consider the use of marking and/or direct observations to ensure cleaning effectiveness. Provide feedback to environmental services (EVS) staff.
5.6. In facilities with multi-occupancy rooms, ensure that each bed space is cleaned and disinfected as a different room.
5.7. Ensure manufacturer's instructions for use pertaining to cleaning and reprocessing of medical equipment are followed.
5.8. Ensure disinfectant product is used according to instructions for use and for the recommended contact time.
5.9. Include EVS personnel as an integral part of the infection control team, for example, include EVS personnel in the environment of care rounds.

6. Communication

6.1. Healthcare facilities should consider engaging their public affairs/communications staff, especially when conducting ward/unit or facility-wide point prevalence surveys (PPSs).
6.2. Healthcare facilities and public health agencies should be prepared to address questions from patients, family members, and healthcare workers regarding the risk of *C. auris* colonization and infection and whether healthcare workers and household contacts should be screened. Information for patients and family members is available from the CDC.[11]
6.3. Develop or adapt patient and staff communication tools to explain *C. auris* screening, especially if conducting ward/unit or facility-wide PPSs. The CDC has developed a list of frequently asked questions about screening for *Candida auris*[12] that can guide communication.
6.4. Decisions to transfer the patient from one level of care to another should be based on clinical criteria and the ability of the accepting facility to provide care, and not on the presence or absence of *C. auris* infection or colonization.
6.5. When patients are transferred to other healthcare facilities, ensure that the receiving facilities receive notification of the patient's *C. auris* infection or colonization, and understand the necessary infection control precautions.

7. Monitoring and Follow-up

If multiple cases of *C. auris* infection or colonization are identified at a healthcare facility, additional considerations include the following:

7.1. Serial point prevalence surveys (PPSs) among patients residing on wards or units where *C. auris* transmission is suspected.[6] Conduct surveys every 2–4 weeks until at least two sequential PPSs do not identify new cases.

7.2. Repeated onsite infection control assessment(s) to reinforce adherence to infection control measures.

7.3. Additional case finding around newly identified cases.

7.4. Regional notification and surveillance in coordination with local/state public health department(s).

D. References

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