Candida auris

Signs and Symptoms	*Candida auris* has no definitive clinical symptoms. Common infections caused by *C. auris* include wound, urine and blood stream, however, it can colonize and cause no symptoms at all.	
Incubation	*C. auris* can colonize the skin and other body sites without causing infection, therefore the incubation period is not well defined.	
Case classification	**Clinical criteria**: None	
	Confirmed clinical case: Person with confirmatory laboratory evidence from a clinical specimen collected for diagnosing or treating disease.	**Confirmed colonization/screening case:** Person with confirmatory laboratory evidence from a swab collected for screening for *C. auris* colonization.
	Submitted *Candida* species that complete testing at PHL and are not confirmed as *C. auris* should be classified as "ruled out."	
Differential diagnosis	*C. auris* can be mistakenly identified as other *Candida* species by some traditional phenotypic methods, see section 4.	
Treatment	Consultation with an infectious disease specialist is highly recommended when caring for patients with *C. auris* infection. CDC does not recommend treatment of *C. auris* identified from noninvasive sites (such as respiratory tract, urine, and skin) when there is no evidence of infection. See Treatment and Management of Infections and Colonization.	
Duration	*C. auris* can colonize human skin and persist for long periods. Mortality associated with *C. auris* infections is 30-60%, but many fatal cases had other serious illnesses contributing to death.	
Exposure	• High acuity healthcare settings • Survives on inanimate surfaces for long periods • Withstands some disinfectants such as quaternary ammonium compounds. • Unusual ability to spread in healthcare facilities via healthcare workers' hands, shared/mobile medical equipment, and contaminated surfaces	
Laboratory testing	• Species identification and fungal susceptibility for *C. auris* and other non-albicans *Candida* isolates. Pre-approval not required. Use Antibiotic Resistance Lab Network (ARLN) Requisition Form • *C. auris* screening. Pre-approval required. Must use Electronic Test Order and Reporting (ETOR) *Specimen shipping (Section 4):* • Submit isolates on Sabouraud's Dextrose slant (or plate only if submitted via courier), ambient, category B. • Colonization screening swab from bilateral groin and axillae using BD ESwab collection and transport system, 4°C or on with a chemical ice pack, Category B, overnight. Swabs must be received at the PHL within 9 days of collection.	
Public health actions	Local health jurisdictions: notifiable to Washington State Department of Health (DOH) Office of Communicable Disease Epidemiology (CDE) within 3 days of receipt of case or lab report. Plan for media attention for first case in Washington. *Infection Control:* • Cases should be placed on Contact Precautions in a private room. • Reinforce hand hygiene, proper PPE use, environmental cleaning with effective disinfectant (see EPA list P). • See What to do if you identify a targeted multidrug resistant organism in your facility, a guide for local health and facility staff in investigation and response.	

Candida auris

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To increase awareness of *Candida auris* by public health and healthcare professionals.
2. To promote appropriate infection control interventions to prevent transmission of *Candida auris* between patients in healthcare facilities and between healthcare facilities.
3. To rapidly identify *Candida auris* and prevent or eliminate sources or sites of ongoing transmission within Washington.
4. To better characterize the epidemiology of *Candida auris* infections in Washington to guide response.

B. Required Reporting

1. Health care providers and Health care facilities: notifiable to the **local health jurisdiction** within 24 hours.
2. Laboratories: notifiable to **local health jurisdiction** within 24 hours; submission required – isolate or if no isolate specimen associated with positive result, within 2 business days.
    - Positive result by any method including, but not limited to, culture, nucleic acid detection (NAT or NAAT), or whole genome sequencing;
    - Isolates should be accompanied by a Public Health Laboratories (PHL) Antibiotic Resistance Lab Network (ARLN) Requisition Form. See ARLN Test Menu for specimen collection and submission instructions.
3. Local health jurisdictions: notifiable to Washington State Department of Health (DOH) Office of Communicable Disease Epidemiology (CDE) within 7 days of case investigation completion or summary of information required within 21 days.

    Reporting and submission of certain other *Candida* species is *strongly encouraged* but not mandated by law. Some yeast identification assays, including VITEK 2 YST, API 20C, BD Phoenix yeast identification system, and MicroScan, can misidentify *Candida auris* as other *Candida* species such as *Candida haemulonii, Candida duobushaemulonii, Rhodotorula glutinis, Candida intermedia, Candida sake, Saccharomyces kluyveri, Candida catenulate, Candida famata, Candida guilliermondii, Candida lusitaniae*, and *Candida parapsilosis.* Laboratories should know the limitations of their yeast identification system by reviewing Identification of Candida auris to avoid mistakenly identifying *C. auris* as another fungal species, and report these cases and submit these isolates to PHL for confirmatory testing. Other labs may serve as *Candida* sentinel labs and submit to PHL all *Candida* species except *albicans*. For information about sentinel labs, please contact the Washington Antibiotic Resistance Lab Network at ARLN@doh.wa.gov. Any *C. auris* identified at PHL will be reported immediately to the LHJ and a public health investigation started.

C. Local Health Jurisdiction (LHJ) Investigation Responsibilities

1. LHJs should investigate and report all *C. auris* cases in order to identify the source and whether transmission to additional patients has occurred. Enter the case into the Washington Disease Reporting System (WDRS) under Highly Antibiotic Resistant Organism (HARO).

   LHJs should be notified by laboratories, healthcare providers, or infection preventionists of suspected or confirmed *C. auris* cases and any isolates submitted to PHL. Until confirmatory testing rules out *C. auris*, LHJs should ensure proper infection prevention precautions are in place in the healthcare facility where the case receives care.

2. Any outbreak or suspected outbreak of *Candida* species in a healthcare facility is mandated to be reported immediately to LHJs and should be investigated.

3. Because of the potential for transmission of *C. auris* to vulnerable patients in healthcare settings, providers, infection preventionists, and facilities should institute appropriate infection control precautions when suspected or confirmed *C. auris* cases are identified. These actions are described in national expert guidance; see Section 5B for detailed recommendations about infection prevention in healthcare settings.

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Candida auris is an emerging, often multidrug resistant, yeast first identified in Japan in 2009. It can cause invasive healthcare associated infections with high mortality. Whole genome sequencing suggests that several different clades of *C. auris* emerged simultaneously in different parts of the world.

C. auris infections have been reported from over 35 countries, including the United States. Infections likely have occurred in other countries but have not been identified or reported. CDC no longer tracks global cases of *C. auris* given how widespread it has become.

C. Description of Illness

Common infections associated with *C. auris* include blood stream, urine, and wound. Mortality associated with *C. auris* infections is estimated to be 30-60% however, many of these cases had other serious illnesses which may have caused or contributed to their deaths. *C. auris* may also colonize the skin and other body sites. Both infected and colonized patients can transmit the organism to others via healthcare workers hands or contaminated fomites and healthcare environment. Colonized patients are at risk for invasive infection from their own endogenous colonization and this risk increases when indwelling devices are present. *C. auris* is often multidrug resistant, is difficult to eradicate in healthcare settings, and has caused large, difficult to contain, healthcare outbreaks.

In the United States, *C. auris* has been predominantly identified among patients with extensive exposure to ventilator units at skilled nursing facilities and long-term acute care hospitals, and those who have received healthcare in countries with extensive *C. auris* transmission.

D. *Candida auris* in Washington State

As of December 2022, no *C. auris* cases have been reported in Washington. Neighboring states, Oregon, and British Columbia, in addition to other more distant states such as California, Nevada, Illinois, New Jersey, have experienced healthcare outbreaks.

E. Reservoirs

C. auris has been detected in the natural environment. Related species have been detected in plants, insects, and aquatic environments, as well as from human body sites. It can tolerate hypersaline environments and higher temperatures than most *Candida* species. It can colonize human skin and persist for long periods, survive on inanimate surfaces for weeks, and withstand certain commonly used healthcare disinfectants such as quaternary ammonium compounds.

F. Modes of Transmission

Compared to other pathogenic fungi, *C. auris* has an unusual ability to spread between patients in healthcare facilities. Transmission of *C. auris* may occur through direct contact with bodily fluids, by skin contact, and by contamination from shed skin cells. In healthcare settings, *C. auris* can be spread via the hands of healthcare workers and by inanimate objects including shared/mobile medical equipment, such as thermometers, and frequently touched surfaces such as bed rails and computer keyboards. Transmission has occurred in healthcare settings even when contact precautions were in place.

F. Incubation Period

Because *C. auris* can colonize the skin and other body sites without causing infection, the incubation period is not well defined.

G. Period of Communicability

Persons can potentially transmit *C. auris* to others as long as the organisms are present in bodily fluids or on skin. Patients can be intermittently positive on serial surveillance cultures and may be colonized for long periods of time. Persons at highest risk for transmitting and contracting *C. auris* are those who require intensive care or assistance with activities of daily living or have wounds or indwelling devices. Epidemiologically linked patients within the healthcare environment (roommates, and those who shared healthcare staff or equipment), particularly those with indwelling devices, are thought to be at highest risk for contracting the organism.

H. Treatment

Consultation with an infectious disease specialist is highly recommended when caring for patients with *C. auris* infection. CDC does not recommend treatment of *C. auris* identified from noninvasive sites (such as respiratory tract, urine, and skin) when there is no evidence of infection. See Treatment and Management of Infections and Colonization.

3. CASE AND CONTACT DEFINITIONS

A. Clinical Criteria for Diagnosis of Cases

Invasive *C. auris* may cause blood stream and surgical site infections as well as

infections of other body sites however, patients may be colonized and display no clinical symptoms associated with the organism. There are no specific clinical criteria for diagnosis.

B. Laboratory Criteria for Diagnosis of Cases

C. auris: Detection of *C. auris* from any body site using either culture or a culture independent diagnostic test (CIDT) (e.g., Polymerase Chain Reaction [PCR])

C. Case Classification

Confirmed clinical case: Person with confirmatory laboratory evidence from a clinical specimen collected for the purpose of diagnosing or treating disease in the normal course of care. This includes specimens from sites reflecting invasive infection (e.g., blood, cerebrospinal fluid) and specimens from non-invasive sites such as wounds, urine, and the respiratory tract.

Confirmed colonization/screening case: Person with confirmatory laboratory evidence from a swab collected for the purpose of screening for *C. auris* colonization regardless of site swabbed. Typical colonization/screening specimen sites are skin (e.g., axilla, groin), nares, rectum, or other external body sites. Swabs from wounds or draining ear are considered clinical.

Submitted *Candida* species that complete testing and are not confirmed should be classified as "ruled out."

D. Criteria to distinguish a new case

A patient who is colonized or infected with *C. auris* is considered colonized indefinitely. The following criteria should be used for tracking surveillance of C. auris.

- A person with a clinical case should not be counted as a colonization/screening case thereafter (e.g., patient with known infection who later has colonization of skin is not counted as more than one case).
- A person with a colonization/screening case can be later categorized as a clinical case (e.g., patient with positive screening swab who later develops bloodstream infection would be counted in both categories).

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

C. auris is diagnosed by species identification from an isolate or by PCR from a specimen.

C. auris can be misidentified as a number of different fungal when using traditional phenotypic methods for yeast identification such as VITEK 2 YST, API 20C, BD Phoenix yeast identification system, and MicroScan. Laboratories performing *Candida* species identification should be aware of the method used and *Candida* species identified by that method that may represent *C. auris.* These species include: *Candida haemulonii, duobushaemulonii, sake, catenulata, famata, intermedia, guilliermondii, lusitaniae,*

parapsilosis; Rhodotorula glutinis; and *Saccharomyces kluyveri.* See Identification of *Candida auris* for detailed information.

B. Services Available at the Washington State Public Health Laboratories (PHL)

At PHL, *C. auris* and non-*albicans Candida* isolates submitted for species identification and fungal susceptibility testing are confirmed using MALDI-TOF, and antifungal susceptibility by broth microdilution following the most current CLSI interpretations. Pre-approval for submission is not required.

Specimens submitted from patients for *C. auris* screening undergo qPCR performed to confirm *C. auris.* Culture-based testing is performed on qPCR positive specimens and those with discordant results. PHL provides appropriate screening supplies and instructions for collection. **Pre-approval is required for *C. auris* screening.**

When submitting isolates to PHL, include the Antibiotic Resistance Lab Network (ARLN) Requisition Form and check the appropriate test requested or submit using Electronic Test. Note that PHL requires all clinical specimens have two patient identifiers, a name **and** a second identifier (e.g., date of birth), on both the specimen label and the submission form. **The patient identifiers on the form and specimens must exactly match**. Due to laboratory accreditation standards, specimens will be rejected for testing if not properly identified. Also include specimen source and collection date.

When submitting specimens for colonization screening, submitters must use Electronic Test Order and Reporting (ETOR).

5. CASE INVESTIGATION

Any person suspected or known to have *C. auris* should have confirmatory testing performed at the PHL and be placed on contact precautions if in a healthcare facility while waiting for results. Any confirmed cases, whether clinical or screening, should be investigated.

As determined by the LHJ of the case's residence, the investigation of *C. auris* cases may be performed by LHJ staff, facility infection preventionist, or DOH HAI/AR Program staff. Review medical records and interview the case, parent/guardian, close family members, or others who may be able to provide pertinent information, if necessary. The guidance, What to do if you identify a targeted multidrug resistant organism in your facility, provides response actions for LHJs and healthcare facility infection preventionists in order to quickly collect data for the investigation and to prevent transmission to others. HAI/AR Program staff are available to assist and can be reached at 206-418-5500.

A. Case Follow Up

Conduct a public health investigation for all confirmed *C. auris* cases. Review the clinical history and laboratory results. Enter case's name; demographics; address, dates of notification, investigation start, birth and onset; organism identified; and investigator's name into the electronic surveillance system WDRS under "Highly antibiotic resistant organism" (HARO) and complete the HARO case report.

B. Ensure Infection Control

Because of the potential for transmission of *C. auris* to vulnerable patients in healthcare settings, immediate action is required by providers, infection preventionists, and facilities to institute appropriate infection control precautions when cases are identified.

In healthcare settings, *C. auris* patients should be cared for in private rooms with contact precautions for all patient care. Cohorting of patients with *C. auris* may be used as long as patients are not known to have other multidrug-resistant organisms. Refer to CDC infection prevention guidance:

- Infection Prevention and Control for *Candida auris*
  and Candida auris Fact Sheet for Infection Preventionists

Providers should communicate infection or colonization status to patients and family members and educate about how to prevent transmission in the home using the *Candida auris* Fact Sheet for Patients and Families (CDC), and to receiving facilities and providers when patients transfer care using an inter-facility infection control transfer form.

C. Identify Potential Sources of Infection and Potentially Exposed Persons

Public health should investigate all *C. auris* cases to identify the source and evaluate for lapses in infection control in healthcare settings and transmission to other patients. Public health should ensure that adequate infection prevention practices are in place, that the patient is educated, and that appropriate information regarding *C. auris* and other MDROs is communicated to healthcare providers and facilities where the patient receives care. Identify current and past healthcare and underlying conditions, including any hospital or long-term care admissions, surgeries, dialysis, indwelling catheters, or international healthcare or travel, focusing particularly on the 12 months prior to diagnosis. If the index case has had many healthcare encounters and public health resources are limited, focus the investigation on the 1 month prior to diagnosis. The guidance What to do if you identify a targeted multidrug resistant organism in your facility will help LHJs and facilities quickly perform the investigation. See Section 6C for management of potentially exposed contacts.

D. Environmental Evaluation

In healthcare settings, ensure that environmental cleaning procedures adhere to CDC environmental disinfection guidance for C. auris using EPA-approved disinfectants for *C. auris*.

Since environmental cleaning is such a vital component of infection prevention, the identification of *C. auris* in a facility should prompt auditing environmental services practices and ensuring use of EPA-approved disinfectants for *C. auris*, adherence to proper contact time, and completeness of cleaning. Consideration should be given to encouraging bedside staff to clean and disinfect high touch surfaces such as—bedside table, remote control, call button, bedside rails, doorknobs, faucet and toilet handles, and light switches—at least once a shift. Ensure that reusable medical equipment is properly cleaned and disinfected between use, and there is a clear procedure for identifying whether equipment is clean and ready for use.

6. CONTROLLING FURTHER SPREAD

A. Infection Control Recommendations

In general, patients with *C. auris* infection or colonization should be cared for using contact precautions for direct patient care while in healthcare settings. It is essential that all receiving facilities are aware of the diagnosis of *C. auris* at the time of admission so appropriate infection control can be implemented. Use of the inter-facility infection control transfer form will ensure that complete information is communicated.

B. Case Management

See section 2.H. for treatment guidance. Patients with *C. auris* who return to a home setting should be instructed in good hand hygiene, especially after touching the infected area, contaminated dressings, and after using the bathroom. People providing care at home for patients with *C. auris* should be careful about washing their hands, especially after contact with wounds, dressings and other contaminated objects or surfaces; and helping the patient to use the bathroom. Caregivers should also make sure to wash their hands before and after handling the patient's medical device (e.g., intravenous catheter, urinary catheter). In addition, gloves should be used when anticipating contact with body fluids or blood. This is particularly important if the caregiver is caring for more than one ill person. Healthy people usually don't become ill from *C. auris* but potentially can become colonized. Communicate *C. auris* status to healthcare providers in outpatient settings and upon return to healthcare facility to avoid spread.

C. Contact Management

Epidemiologically linked patients who are contacts of a *C. auris* case should be placed in contact precautions and screened for *C. auris.* Since *C. auris* is so easily spread in healthcare settings, particularly in long term care, screening of the entire facility patient population may be recommended.

Screening specimens from healthcare personnel and healthy household contacts is not recommended unless implicated in transmission.

Surveillance screening testing can be performed free of charge at PHL. Consult with HAI Program staff available at 206-418-5500 for screening instructions and proper collection materials. See section 4.B for specimen collection and submission instructions.

7. ROUTINE PREVENTION

A. Routine Prevention

Prevention of *C. auris* transmission requires collaboration and coordination between public health agencies and healthcare facilities. Controlling transmission requires surveillance, rapid identification of colonized and infected patients in healthcare settings, and implementing facility-specific and regional interventions to prevent transmission.

Core measures that facilities should follow include hand hygiene, contact precautions, education of healthcare personnel, minimizing device use, cohorting staff and patients, laboratory notification, antimicrobial stewardship, and screening for *C. auris* when indicated.

B. Prevention Recommendations

All persons can adhere to good health hygiene to stop the spread of pathogens by washing hands frequently, especially

- Before preparing or eating food
- After using the bathroom or helping another person with toileting or diapers
- After blowing the nose, coughing or sneezing
- After touching used tissues or handkerchiefs
- Before and after changing wound dressings or bandages

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UPDATES

December 2022:

For 2023 WAC revision combined provider and facility reporting requirement, updated laboratory submission (Section 1B)
Updated to include EPA List P of disinfectants effective against C. auris, and use of Electronic Test Order and Reporting (ETOR) for submission of screening specimens.

To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.