

Michigan Department of Health and Human Services
Healthcare-Associated Infections (HAI) Section
***Candida auris* Case Reporting and Investigation Guidance**

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Purpose

Candida auris is a yeast that may colonize the skin and other body sites, particularly in hospitalized patients or long-term care facility residents. Patients colonized with *C. auris* may not have any signs or symptoms and harbor it unknowingly. However, colonized patients can develop serious illness or invasive infections, including bloodstream infections. Treatment for invasive infections may be challenging because the yeast is commonly [resistant to multiple classes of antifungal drugs](#).

Consequently, *C. auris* is an emerging fungal infection of international concern and was made [nationally notifiable in 2018](#). The first case of *C. auris* in Michigan was detected in May 2021. Most cases have been detected from screening colonized individuals via skin swab of the axilla-groin. Other significant specimens include blood, urine, wound, respiratory, or other body sites. Most *C. auris* cases have had multiple healthcare exposures across the continuum of care.

C. auris can spread from colonized or infected patients/residents to other patients/residents through contaminated health care environmental surfaces, medical equipment, and hands and clothing of health care personnel in health care facilities. Therefore, case reporting, investigation, and containment to prevent the spread of *C. auris* is a public health priority.

Candida auris is included in the list of conditions in the [Health Care Professional's Guide to Disease Reporting in Michigan](#) that must be **reported** to the Michigan Disease Surveillance System ([MDSS](#)) or local health department **within 24 hours** if the organism is identified by clinical or laboratory diagnosis.

Laboratory Reporting

1. **Report any laboratory result** that meets either of the following criteria:
 - a. Detection of *C. auris* in a specimen using either **culture OR** a validated **culture-independent diagnostic test (CIDT)** (e.g., Polymerase Chain Reaction [PCR])
2. **Submit specimens:** Submit suspect or confirmed *C. auris* isolates, subcultures, to the MDHHS Bureau of Laboratory (BOL) in Lansing.
3. **Confirmatory laboratory evidence:**
 - a. Detection of *C. auris* in a specimen from a swab obtained for the purpose of **colonization screening** using either culture or validated culture-independent test (e.g., nucleic acid amplification test [NAAT]),

OR

 - b. 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)
 - c. For confirmed *C. auris* isolates that have had antifungal susceptibility testing (AFST), submit AFST results to monitor resistance trends.

Note: Species-level identification for all yeast isolates from sterile site clinical specimens is recommended, but speciation for sterile-sites alone will be insufficient for detecting and preventing spread of *C. auris*. Laboratories who have been speciating yeasts from non-sterile sites of high-risk patients have been instrumental in finding some of these early *C. auris* cases in Michigan. Laboratories should conduct species-level identification for yeast isolates when:

- Clinically indicated in the care of a patient

- *C. auris* has been identified in the healthcare facility or unit, in order to detect additional colonized patients
- A patient has a history of healthcare stay outside the US in the past 12 months

Species-level identification should also be considered for high-risk patient populations such as patients presenting from long-term acute care hospitals (LTACH), ventilator-capable skilled nursing facilities (vSNFs), intensive care units (ICUs), or rehabilitation facilities, particularly if they have risk factors for *C. auris* such as presence of mechanical ventilation or tracheostomy, chronic wounds, or a history of MDROs, depending on local epidemiology and laboratory resources.

See CDC resources for laboratories on [identification of *C. auris* isolates](#), and [colonization screening](#).

Infection Prevention and Control

1. Healthcare facilities, across the continuum of care, should:
 - a. Take steps to identify patients with *C. auris* infection or colonization (see [CDC guidance on surveillance for *C. auris*](#))
 - b. Be prepared to implement [setting-appropriate infection prevention practices](#), including the use of disinfectant products effective against *C. auris* (see the [EPA List P](#)) for all patients with suspected or confirmed *C. auris* infection or colonization.
 - c. Collaborate with public health officials on recommended infection prevention and control practices and screening procedures to facilitate timely and accurate detection of individuals with *C. auris* to reduce the risk of further spread.
 - d. Ensure effective communication of a patient’s *C. auris* status upon transfer or discharge to another healthcare facility or setting
 - i. As with any MDRO, decisions to transfer a patient from one level of care to another should be based on clinical criteria and the ability of the accepting facility to provide the appropriate level of care — **not** on the presence or absence of *C. auris* infection or colonization or potential exposure to *C. auris*. Generally, facilities that care for patients with other MDROs or *Clostridioides difficile* are also capable of caring for patients with *C. auris*.
 - ii. Communication between facilities should include notification of any lab results finalized after the patient has been transferred.

- iii. Facilities that would like to discuss how to safely care for patients with *C. auris* may contact their [local health department jurisdiction](#) and/or the HAI Section at Michigan Department of Health and Human Services (MDHHS) at (517) 335-8165 or MDHHS-HAI@michigan.gov.
2. Report any patient or laboratory finding that meets the Laboratory Reporting criteria above.
 - a. Confirmed cases must be reported to the local health department jurisdiction in which the patient resides (county of residence).
 - b. Report both clinical and screening cases (e.g., axilla/groin swab) as public health and facility responses generally do not differ by case type.
3. Enter case information into MDSS within the required **24-hour** reporting period
 - a. Healthcare providers reporting cases (e.g., hospital infection prevention) should consider completing the case detail form when reporting the case into MDSS.
 - b. Sections to complete include the Patient Demographics, Laboratory, and Clinical Information to determine patient epidemiological information.
 - c. Documentation of healthcare exposures and international travel is significantly important if available.

Local Health Departments

1. Electronic reports in MDSS
 - a. Review laboratory information and available case information for evidence of Laboratory Reporting criteria.
2. Manual reporting in MDSS
 - a. Create cases from reports with healthcare records containing a diagnosis of *C. auris* infection and Laboratory Reporting criteria.
3. Determine case status/classification, case type, case count, and proceed with case investigation for confirmed cases.

Case Status/Classification

1. Confirmed *Candida auris*:
 - ✓ Detection of *C. auris* from any body site using either culture or a culture independent diagnostic test (CIDT) (e.g., PCR)
2. Probable or Suspect: Not Applicable

Case Type: Clinical vs. Screening

1. ***Candida auris* case, clinical:** Person with detection of *C. auris* using either culture or a culture-independent diagnostic test (CIDT) from a clinical specimen obtained during the normal course of care for diagnostic or treatment purposes.

- a. This includes specimens from **sites reflecting invasive infection** (e.g., blood, cerebrospinal fluid) and
 - b. This also includes **specimens from non-invasive sites** such as wounds, urine, and the respiratory tract.
 - c. Swabs collected from wound(s) or draining ear(s) as **part of clinical care** are considered clinical specimens.
 - d. However, this does not include swabs collected for screening purposes (see below).
2. ***Candida auris* case, screening:** Person with detection of *C. auris* using either culture or a culture-independent diagnostic test (CIDT) from a **swab collected for the purpose of screening** for *C. auris* colonization regardless of site swabbed.
- a. Typical screening specimen sites are skin (e.g., axilla, groin), nares, rectum, or other external body sites.
 - b. Because it can be difficult to differentiate screening specimens from clinical specimens based on microbiology records, any swabs except wound swabs or draining ear swabs can be assumed to be for screening unless specifically noted otherwise.

Case Counting and De-duplication

1. A person who is colonized or infected with *C. auris* is considered colonized indefinitely.
2. For screening cases, count a person only once as a screening case.
 - a. Do not count again if person has been previously identified as a clinical or screening case.
 - b. A person with a screening case can be later counted as a clinical case (e.g., patient with a positive screening swab who later develops bloodstream infection would be counted in both categories). **This is the only scenario that the same person can be counted twice for *C. auris* reporting.**
3. For clinical cases, count patient only once as a clinical case, even if the patient has already been counted previously as a screening case.
 - a. **A person with a clinical case should not be counted as a screening case thereafter** because all clinical cases are considered to also be colonized with *C. auris* (e.g., person with a clinical *C. auris* specimen who later has a positive screening swab is not counted as a screening case)
4. Duplicate reports can be merged to the previous related case or closed out as “Superseded.”
5. For additional details and example scenarios, refer to **Appendix A: Case Reporting and De-duplication of Investigation Status**

Electronic Death Record Reports in MDSS

1. Death records with any cause of death that may be associated with Candidemia are automatically reported as a *Candida auris* case report in MDSS.
2. Investigate to confirm if there is laboratory evidence of *Candida auris*.
3. Note the result and close the case as Not a Case if applicable or proceed with complete case investigation if it is a confirmed case of *Candida auris* detected.

Outbreak Definition

1. Start a full investigation on all cases that fully meet the [Candida auris](#) case definition regardless of outbreak status.
2. [Outbreak definition](#) is a general guide for surveillance and data reporting.
 - a. Refers to **≥ 2 cases of *Candida auris* including an epidemiologic link.**
 - b. 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 had facility staff in common; and/or patients were exposed to common medical equipment.

Case Investigation

1. Investigate all cases that fully meet the [Candida auris](#) case definition. Use the Case Detail Form in MDSS for documenting epidemiological information for *C. auris* cases:
 - a. Complete the entire **case detail** form.
2. LHDs should first consider contacting the healthcare provider/hospital infection preventionist of the reporting facility to complete the CLINICAL INFORMATION section of MDSS.
 - a. **Admission and discharge dates** from 30-90 days** prior to date of specimen collection to present
 - i. Please include the original admission date as well if it was prior to 90 days
 - b. Facilities where the patient was **admitted from** and **discharged to** (if applicable)
 - c. **Room numbers and units** where the patient stayed for each admission from 90 days to present
 - d. If any **roommates**, their names, DOB, and overlapping date range with the index patient for each admission from 90 days to present
 - e. Any **indwelling devices/lines/tubes/drains** in place – within 2 days of collection
 - f. **Services Received:** wound care, RT, PT, imaging, phlebotomy
 - g. Recent **surgical procedures** for each admission from 90 days to present
 - h. Did the patient receive **dialysis** at an inpatient facility or at an outside center?

- i. If yes, where with contact information added
- i. Were any **isolation precautions** in place throughout the patient's stay? If so, which type, and the date range precautions were in effect.
- j. Does this patient have a **recent travel history** (State or World) listed in the EMR?

Note: Clinical information from 90 days prior to specimen collection is best practice to fully evaluate response efforts, and minimum of 30 days prior to specimen collection is necessary.

- 3. Upload supporting medical records to the Notes tab if available.
 - a. Sometimes, requesting the following medical documents can assist in completing case investigations:
 - i. History and Physical
 - ii. Face-sheet/Demographics to verify jurisdiction
 - iii. Discharge Summary
 - iv. Bed History/Trace
 - v. Roommates (name, DOB, date range)
 - b. When medical records do not include all case information, following up with a call to the infection Preventionist will provide results.
- 4. MDHHS HAI Section may reach out to LHDs when there is a cluster or epi-linkages between cases at a facility in their jurisdiction to coordinate further [detection](#), [containment](#), and [prevention activities](#).
- 5. For additional information on documenting details of the case investigation, see **Appendix B: MDSS Case Report Documentation**

Infection Prevention and Control (IPC) Recommendations

- 1. LHDs may reach out to associated healthcare facilities identified during case investigation to provide IPC recommendations described in the Supplemental Case Investigation Form specific to ACH/LTACH, SNF/LTC, and Outpatient settings. **Appendix C: MDRO IPC Recommendations**
- 2. The MDHHS HAI Section is available for consultation.
- 3. The HAI Section will be monitoring cases to provide follow-up and **facility-specific screening recommendations**, as well as coordinate with the laboratory on a case-by-case basis.
 - a. When involved, MDHHS HAI Section will document case progression through the **NOTES** tab of MDSS.

Questions regarding case investigation can be directed to MDHHS-HAI@michigan.gov

Candida auris Case Reporting and Investigation Guidance

Appendix A: Case Reporting and De-duplication of Investigation Status

A person who is colonized or infected with *Candida auris* is considered colonized indefinitely. A person is counted as a case when *C. auris* is identified for the first time in a specimen, whether that be a screening or clinical specimen. The following scenarios provide guidance on distinguishing a new case for persons who test positive for *C. auris* in either a screening swab (i.e., screening case) or in a clinical specimen (i.e., clinical case). Color legend: **Blue is screening specimen**, **Peach is clinical specimen**, **Green is reporting**, **Pink is duplicate case information**.

Scenario #1 - If a person is first classified as a clinical case, and later a screening swab is positive, they would not be counted as a screening case.

Example: Patient A has an ear fungus culture that is positive *C. auris*. Later, Patient A is included in a *C. auris* screening Point Prevalence Survey (PPS) and their axilla/groin swab is positive. Patient A would be counted only once, as a clinical case for the initial culture.

<i>Laboratory Results</i>	<i>Interpretation</i>	<i>Action</i>
Ear culture 1/12/2023 <i>C. auris</i> positive isolate	New <i>C. auris</i> case for Patient A, case #1	Report as a <i>C. auris</i> clinical case, case #1
Axilla/Groin swab 5/13/2023 <i>C. auris</i> positive DNA detected	Positive <i>C. auris</i> screening case. Not a new case for Patient A.	Enter new lab info in the Lab Reports tab and Merge with case #1 or close out as Superseded

Scenario #2 - A person first classified as a screening case can be later counted again as a clinical case. ***This is the only scenario that C. auris can be counted twice for the same person.***

Example: An axilla/groin swab from Patient A has a result of *C. auris* positive DNA detected. Patient A is later at a hospital where a blood specimen tests positive for *C. auris*. Patient A would be reported as a *C. auris* screening and clinical case.

<i>Laboratory Results</i>	<i>Interpretation</i>	<i>Action</i>
Axilla/Groin swab 1/10/2023 <i>C. auris</i> positive DNA detected	New <i>C. auris</i> case for Patient A, case #1	Report as a <i>C. auris</i> screening case, Case #1
Blood culture 5/12/2023 <i>C. auris</i> positive	Positive clinical case New <i>C. auris</i> case #2	Report as a <i>C. auris</i> clinical case, Case #2

Candida auris Case Reporting and Investigation Guidance

Appendix B: MDSS Case Report Documentation

Data fields in MDSS are important to generating quality data reports for describing the epidemiology of the condition and for guiding appropriate infection prevention and control responses to a newly detected case or outbreak. Some highlighted sections below from the case report form explain details of documenting information in MDSS for completeness.

MDSS All Sections

Complete the entire case detail form as best as possible.

<input type="button" value="Save"/> <input type="button" value="Exit"/> <input type="button" value="Print"/>
--

Candida auris Case Report

Michigan Department of Health and Human Services

Communicable Disease Division

Investigation ID: 19895642560	Investigation Status: New	Case Status: Confirmed	Case Disposition: InPatient
Patient ID: 19895642557	First: LAB	Last: STATION	Patient Status: Alive

[Expand all](#)

[Collapse all](#)

+	Investigation Information
+	Patient Information
+	Demographics
+	Referral Information
+	Laboratory Testing and Microbiology Information
+	Clinical Information
+	Other Information
+	Case Notes
+	Lab Results

Laboratory Testing and Microbiology Information section

- Please complete all fields in this section with available information

Laboratory Testing and Microbiology Information		
Type of facility where specimen was collected:		
<input type="radio"/> Acute Care Hospital <input checked="" type="radio"/> Long-Term Acute Care Hospital <input type="radio"/> Long-Term Care Facility <input type="radio"/> Outpatient <input type="radio"/> Other <input type="radio"/> Autopsy <input type="radio"/> Unknown		
Date Specimen Collected (mm/dd/yyyy)	County of the facility where specimen collected:	Facility where specimen collected:
01/25/2023		
For Clinical Case:	Specimen Source:	Other source, specify:
	Urine specimen	
For Colonization/Screening Case:	Screening swab anatomical site:	Other site:
Clinical Lab Specimen ID (unique isolate No.):	Bureau of Labs Specimen ID:	WGS Accession ID:
0222-RA101	22MP003333	
Test Type:	Test Method (manufacturer/brand, type of PCR, etc.):	Result:
PCR	CDC PCR Method	<input checked="" type="radio"/> Detected <input type="radio"/> Not Detected <input type="radio"/> Indeterminate
Other test, specify:		
Test Type:	Test Method (manufacturer/brand, type of PCR, etc.):	Result:
		<input type="radio"/> Detected <input type="radio"/> Not Detected <input type="radio"/> Indeterminate
Other test, specify:		

- BOL specimen IDs should be included in the "Bureau of Labs Specimen ID" field
- The MDSS **Lab Reports** tab has information for the Specimen ID from the lab that performed the test: Clinical Lab or BOL

Laboratory Information	
Lab Name* :	MDHHS REGIONAL LAB - LANSING
Street :	3350 N. Martin Luther King Jr. Blvd.
City :	Lansing
County :	Ingham
State :	Michigan
Zip :	48909
Phone number :	517-335-8063
Geocode Source :	
Specimen Information	
Specimen Collection Date (mm/dd/yyyy) :	07/01/2022
Specimen Source :	Rectal swab
Specimen Site :	
Specimen Site Text :	
Specimen ID :	CL22-201455

- BOL specimen ID can also be found on the top right area of the BOL report form

BUREAU OF LABORATORIES
 MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES
 PO BOX 30035
 3350 N. MARTIN LUTHER KING, JR. BLVD
 LANSING, MI 48906
 Phone: (517)335-8059
 Fax: (517)335-9871

FINAL REPORT

COPY TO: SMART HOSPITAL
 Starlims Agency # 1000
 1000 BRIGHTWAY LANE
 ASTUTE, MI 48999

Specimen Number: CL22-201455
 CLIA#: 23D0650909
 Date Reported: 07/13/2022 at 12:17:14PM

Appendix C: MDRO IPC Recommendations

<p><u>Transmission-based Precautions</u></p> <p>ACH/LTACH: Place the patient in a single-patient room on Contact Precautions for the duration of their admission.</p> <p>LTC/SNF: Place the resident on Enhanced Barrier Precautions for the duration of their admission, unless contact precautions are otherwise indicated.</p> <p>Enhanced Barrier Precautions (michigan.gov)</p>	<p><u>Communications</u></p> <p>Communicate the patient/resident’s MDRO status and required infection prevention precautions to the accepting healthcare facility if the patient/resident is transferred to another level of care (either higher or lower level of care).</p> <p>Communicate the patient/resident’s status to the health department upon transfer to another inpatient healthcare facility.</p> <p>Candida-auris-Interfacility-Transfer.pdf (michigan.gov) Healthcare facility Transfer Form Comprehensive Inter-Facility Infection Control Transfer Form for States Establishing HAI Prevention Collaboratives (cdc.gov)</p>
<p><u>Medical Record Flag</u></p> <p>ACH/LTACH: Flag the patient’s chart for Contact Precautions for any future admissions.</p> <p>LTC/SNF: Flag the resident’s chart for Enhanced Barrier Precautions or Contact Precautions, when otherwise indicated, for any future admissions.</p> <p>For high-risk contacts that have been discharged, healthcare facilities should consider flagging charts to facilitate admission screening if these individuals are readmitted to the facility in the next six months.</p>	<p><u>Laboratory Surveillance</u></p> <p>Conduct prospective surveillance of your microbiology laboratory results over the next 3 months to identify any organisms with similar resistance patterns.</p> <p>For a new detection in a facility (i.e., first <i>C. auris</i> or first NDM) Conduct retrospective surveillance of your microbiology laboratory results over the past 6 months to identify any organisms with similar resistance patterns, if possible.</p>
<p><u>Disinfectant, Education, and Monitoring</u></p> <p>Provide education to frontline HCP and conduct ongoing adherence monitoring of infection control practices, including:</p> <ul style="list-style-type: none"> ▪ Hand hygiene ▪ Glove and gown use ▪ Indwelling device care ▪ Environmental cleaning and disinfection <ul style="list-style-type: none"> ✓ Ensure availability of alcohol-based hand rub inside and outside the patient’s room ✓ Ensure availability of PPE inside and outside the patient’s room ✓ Consider enhanced cleaning of high-touch surfaces and equipment in the patient/resident’s room and the unit at least daily <p>EPA Registered Disinfectant Use an Environmental Protection Agency (EPA) registered hospital-grade disinfectant</p> <ul style="list-style-type: none"> ▪ Effective against <i>C. auris</i>. [EPA List P] 	<p><u>Colonization Screening</u></p> <p>Consult with the MDHHS HAI section to assess the need for facility-specific colonization screening or point prevalence survey of the unit(s) the patient/resident was admitted to.</p> <p>If indicated, the MDHHS HAI section will coordinate the screening process with the LHD, healthcare facility, and public health laboratory.</p> <p>Epi-linked patient/resident contacts who are at high-risk for acquiring an MDRO are generally recommended for screening, which may include: roommates, those who share a bathroom, are bedbound or require high levels of assistance with ADLs, those with open wounds or indwelling devices, or on antibiotics, and who overlapped with the index patient/resident on the same unit.</p> <p>MDHHS Screening Guidance: Candida-auris-Screening-Guidance_81123.pdf (michigan.gov)</p>