Public Health
IOWA HHS

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## BACKGROUND

*Candida auris* is an emerging fungus that presents a serious global health threat. The CDC recommends that all *Candida* isolates obtained from normal sterile sites (e.g., bloodstream, cerebrospinal fluid) be identified to the species level as initial treatment can be administered based on the typical, species-specific susceptibility patterns. *C. auris* in a non-sterile body site is also very important to identify because the identification can represent wider colonization, which poses a risk for transmission and infection control precautions. If a laboratory identifies any *Candida* species from any site, submission of the isolate is warranted.

## SURVEILLANCE

All laboratories are to submit isolates from any site that include the following species:

1. *Candida auris*
2. *Candida famata*
3. *Candida haemulonii*
4. *Candida sake*
5. *Rhodotorula glutinis*
6. *Saccharomyces cerevisiae*
7. *Candida spp.* (isolates where the species is attempted and results are inconclusive).

**Algorithm to identify *C. auris*:**

**The Centers for Disease Control and Prevention (CDC) provides an algorithm to identify *C. auris* based on phenotypic laboratory and initial species identification. The algorithm can be accessed at the following hyperlink:** https://www.cdc.gov/fungal/diseases/candidiasis/pdf/Testing-algorithm-by-Method-temp.pdf.

**Specimen Submission:**

*C. auris* can be misidentified as a number of different organisms when using traditional phenotypic methods for yeast identification such as VITEK 2 YST, API 20C, BD Phoenix yeast identification system, and MicroScan.

The table on the next page summarizes common misidentifications based on the identification method used. If any of the species listed below are identified, or if species identity cannot be determined, further characterization using appropriate methodology (see "**How to identify Candida auris**") should be sought.

| **Identification Method** | **Organism *C. auris* can be misidentified as** |
|---|---|
| API 20C | *Rhodotorula glutinis (characteristic red color not present)*; *C. sake* |
| API ID 32C | *C. intermedia; C. sake; Saccharomyces kluyveri* |
| BD Phoenix | *C. haemulonii; C. catenulate* |
| Bruker or Biomeriuex MALDI-TOF[a] | *C. auris; C. haemulonii* |
| MicroScan | *C. famata; C. guilliermondii[b]; C. lusitaniae[b]; C. parpsilosis[b]* |
| RapID Yeast Plus | *C. parapsilosis[b]* |
| VITEK 2 YST[d] | *C. auris; C. duobushaemulonii; C. haemulonii* |

[a] Accurate identification of *C. auris* can be performed using the Bruker Biotyper brand MALDI-TOF using the updated Bruker FDA-approved MALDI Biotyper CA System library (Version Claim 4) or their "research use only" libraries (Versions 2014 [5627] and more recent) and using the bioMérieux VITEK (MALDI-TOF) MS using the FDA-approved IVD v3.2 or their "research use only" libraries (with Saramis Ver 4.14 database and Saccharomycetaceae update).

[b] *C. guilliermondii*, *C. lusitaniae*, and *C. parapsilosis* generally make pseudohyphae on cornmeal agar. If hyphae or pseudohyphae are not present on cornmeal agar, this should raise suspicion for *C. auris* as *C. auris* typically does not make hyphae or pseudohyphae. However, some *C. auris* isolates have formed hyphae or pseudohyphae. Therefore, it would be prudent to consider any *C. guilliermondii*, *C. lusitaniae*, and *C. parapsilosis* isolates identified on MicroScan or any *C. parapsilosis* isolates identified on RapID Yeast Plus as possible *C. auris* isolates and forward them for further identification.

[d] There have been reports of *C. auris* being misidentified as *Candida lusitaniae* and *Candida famata* on VITEK 2. A confirmatory test such as cornmeal agar may be warranted for these species.

**What to Report:**

Providers will report using a designated case report form that must be submitted either by direct electronic transmission, phone, or fax. The report must include, at a minimum, the following information:

*a.* The patient's name.

*b.* The patient's address.

*c.* The patient's date of birth.

*d.* The sex of the patient.

*e.* The race and ethnicity of the patient.

*f.* The patient's marital status.

*g.* The patient's telephone number.

*h.* The name and address of the laboratory.

*i.* The date the test was found to be positive and the collection date.

*j.* The name and address of the health care provider who performed the test

*k.* If the patient is female, whether the patient is pregnant.

*l.* The name of the reportable disease.

**How to report:**

The preferred method of reporting is through the Iowa Disease Surveillance System (IDSS). Reports can also be submitted via telephone (800-362-2736), facsimile (515-281-5698), or mail (Iowa Department of Health and Human Services, Lucas State Office building, 321 East 12th St, Des Moines, IA 50319-0075).

Pursuant to **641-1.7 (135, 139A) Investigation of reportable disease**, upon receipt of the report, Iowa HHS epidemiologists or the local public health department may request additional information needed for the investigation.