# Algorithm to identify *Candida auris* based on phenotypic laboratory method and initial species identification

## Purpose

*Candida auris* is a multidrug-resistant yeast that has been found in multiple countries, including the United States. *C. auris* can cause invasive infections, be passed from person to person, and persist in the environment. Its severity, communicability, and drug resistance makes correctly identifying *C. auris* crucial to treating patients and preventing infections. However, this is challenging because traditional phenotypic methods frequently misidentify *C. auris*. This algorithm details the steps needed to determine the correct *Candida* spp. based on the tests and equipment available in your lab.

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*Please note that these algorithms are based on our current knowledge about misidentification of C.auris and may change as we learn new information.*

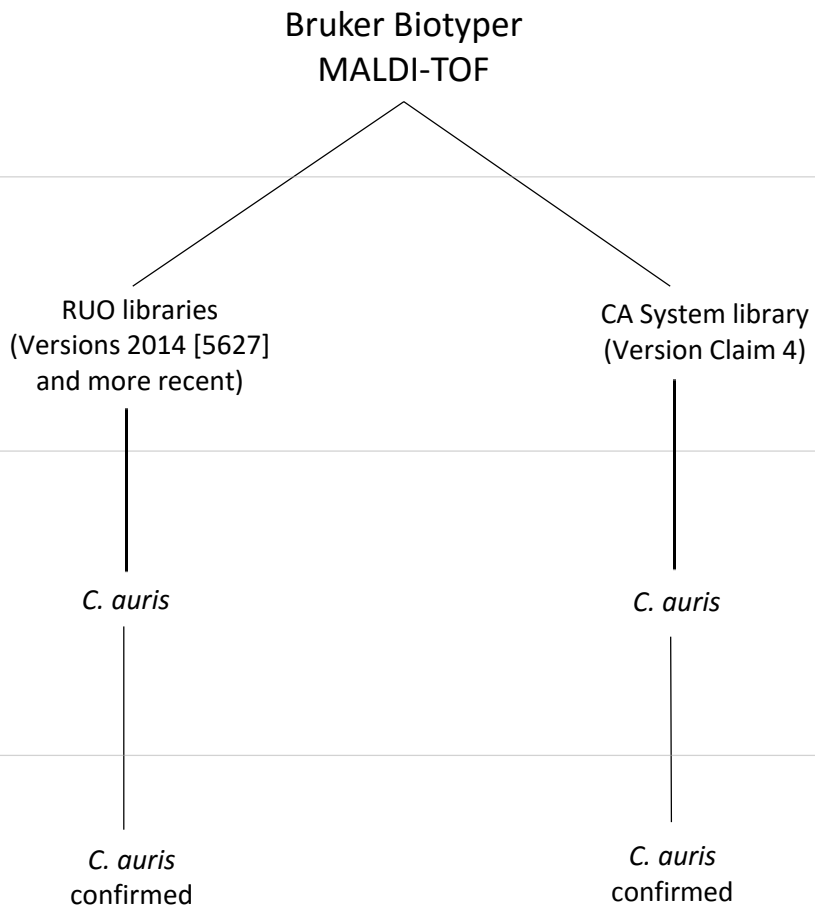
Identification Method

Database/ Software

Initial finding

Determination

Next steps




***C. auris* confirmed:**
Place patient in transmission-based precautions, report to CDC (candidaauris@cdc.gov), and notify state and local health departments.

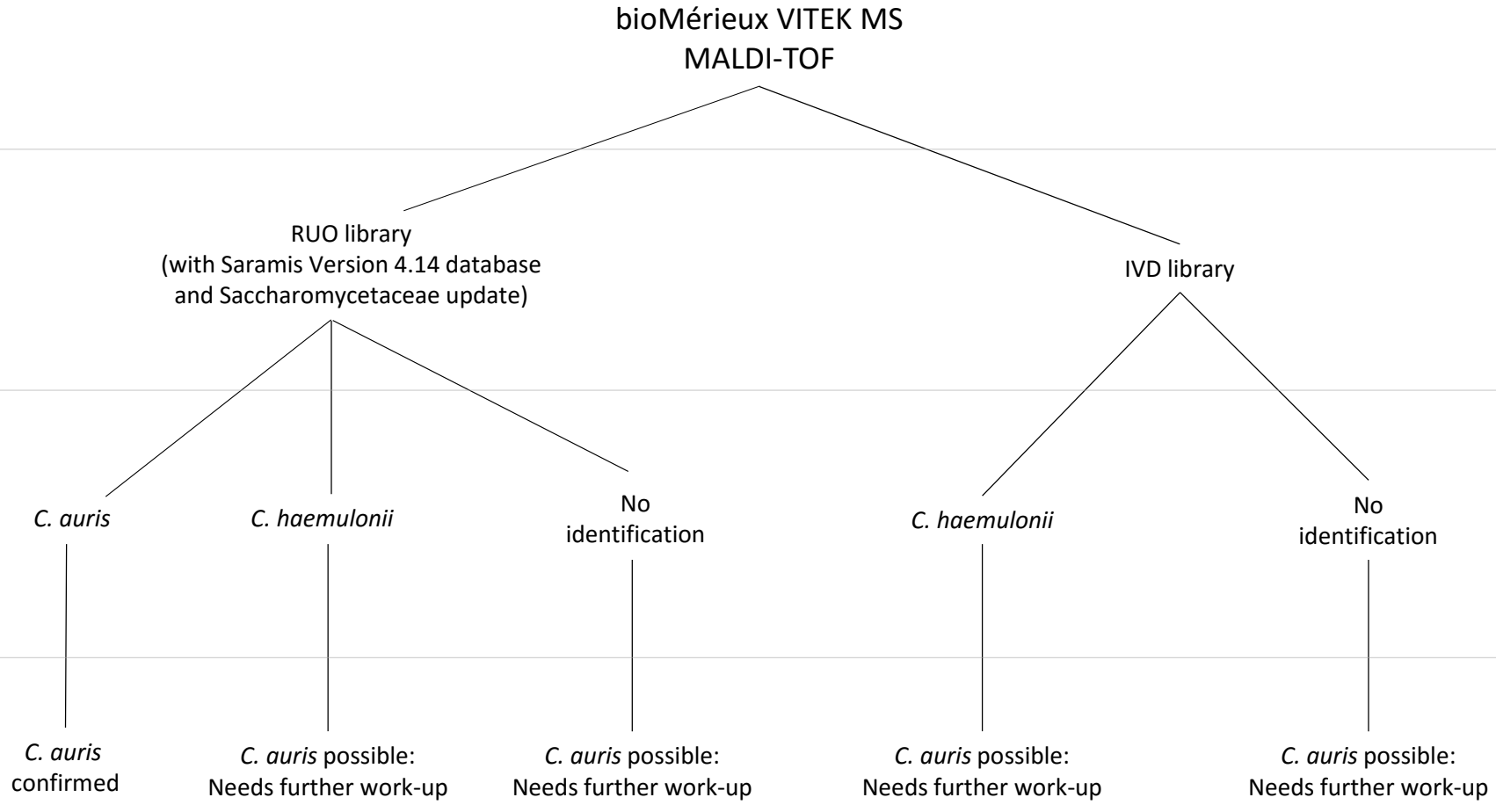
**Identification Method**

**Database/ Software**

**Initial finding**

**Determination**

**Next steps**




***C. auris* confirmed:**
Place patient in transmission-based precautions, report to CDC (candidaauris@cdc.gov), and notify state and local health departments.

***C. auris* possible:**
Further work-up needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).

Identification Method

Database/ Software

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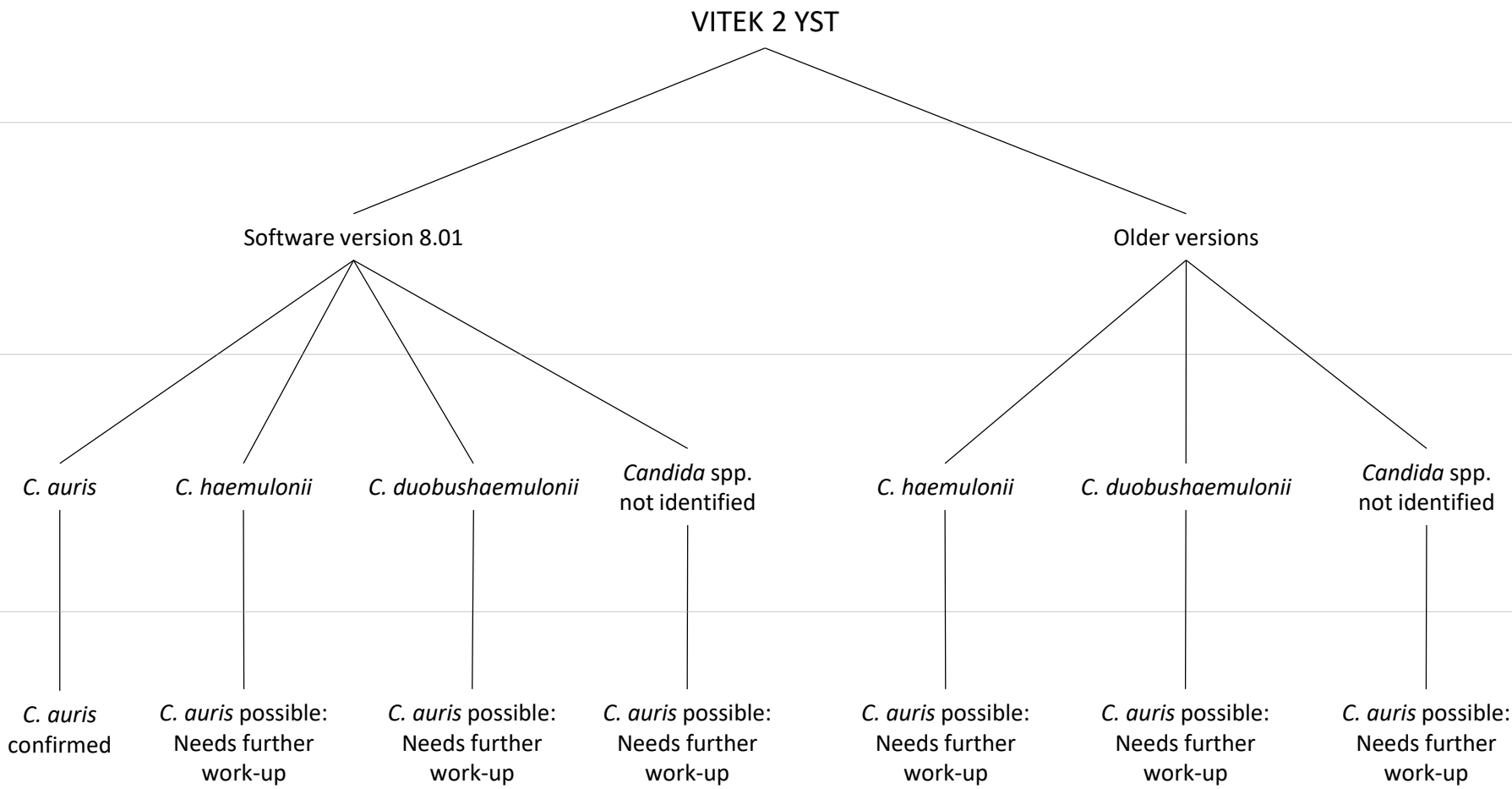



***C. auris* confirmed:**
Place patient in transmission-based precautions, report to CDC (candidaauris@cdc.gov), and notify state and local health departments.

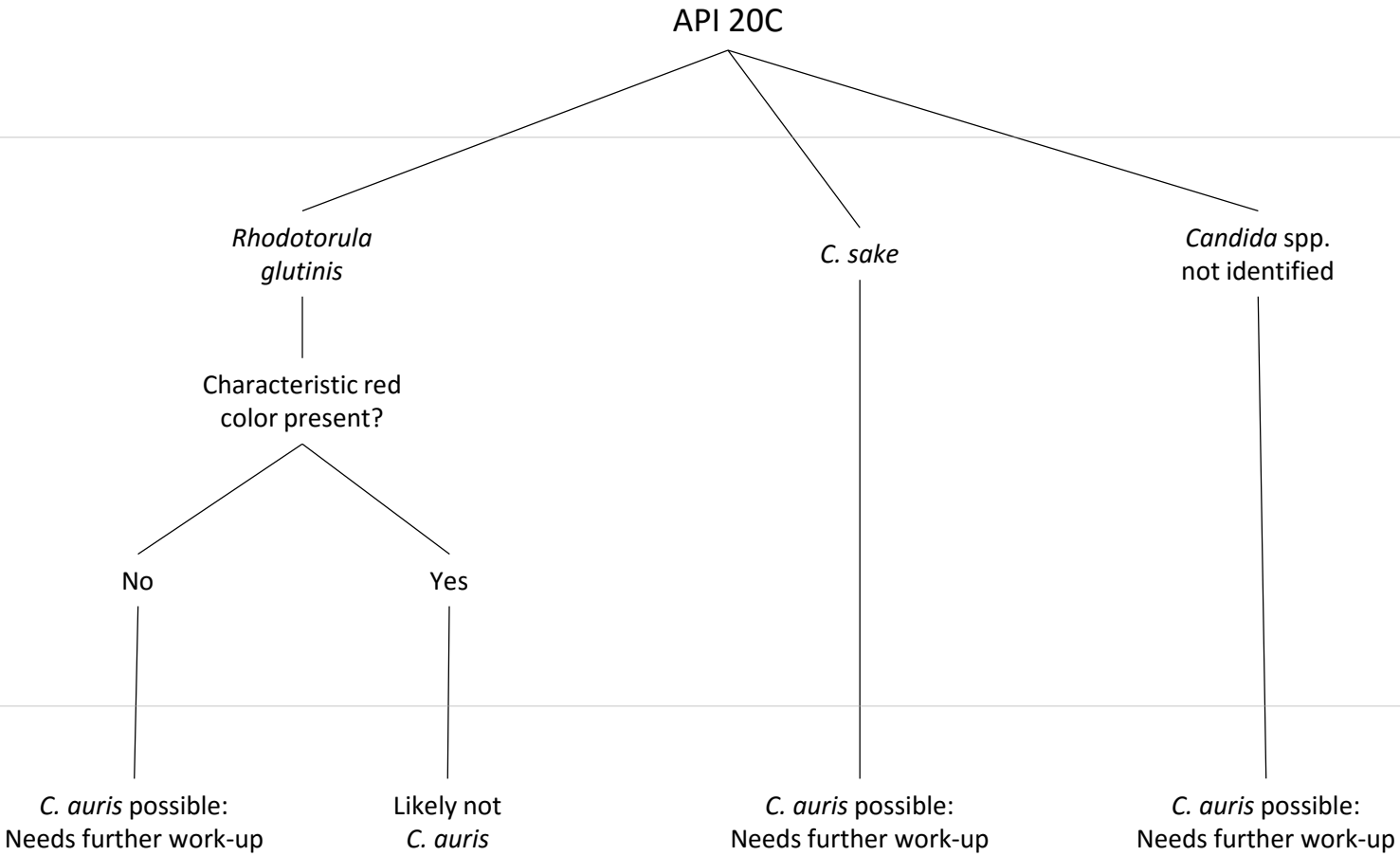
***C. auris* possible:**
Further work-up needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).

**Identification Method**

**Initial finding**

**Determination**

**Next steps**




***C. auris* suspected:**
Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov). Send any isolates suspected to be *C. auris* to a reference lab, a state public health lab, a regional lab, or CDC for further identification.

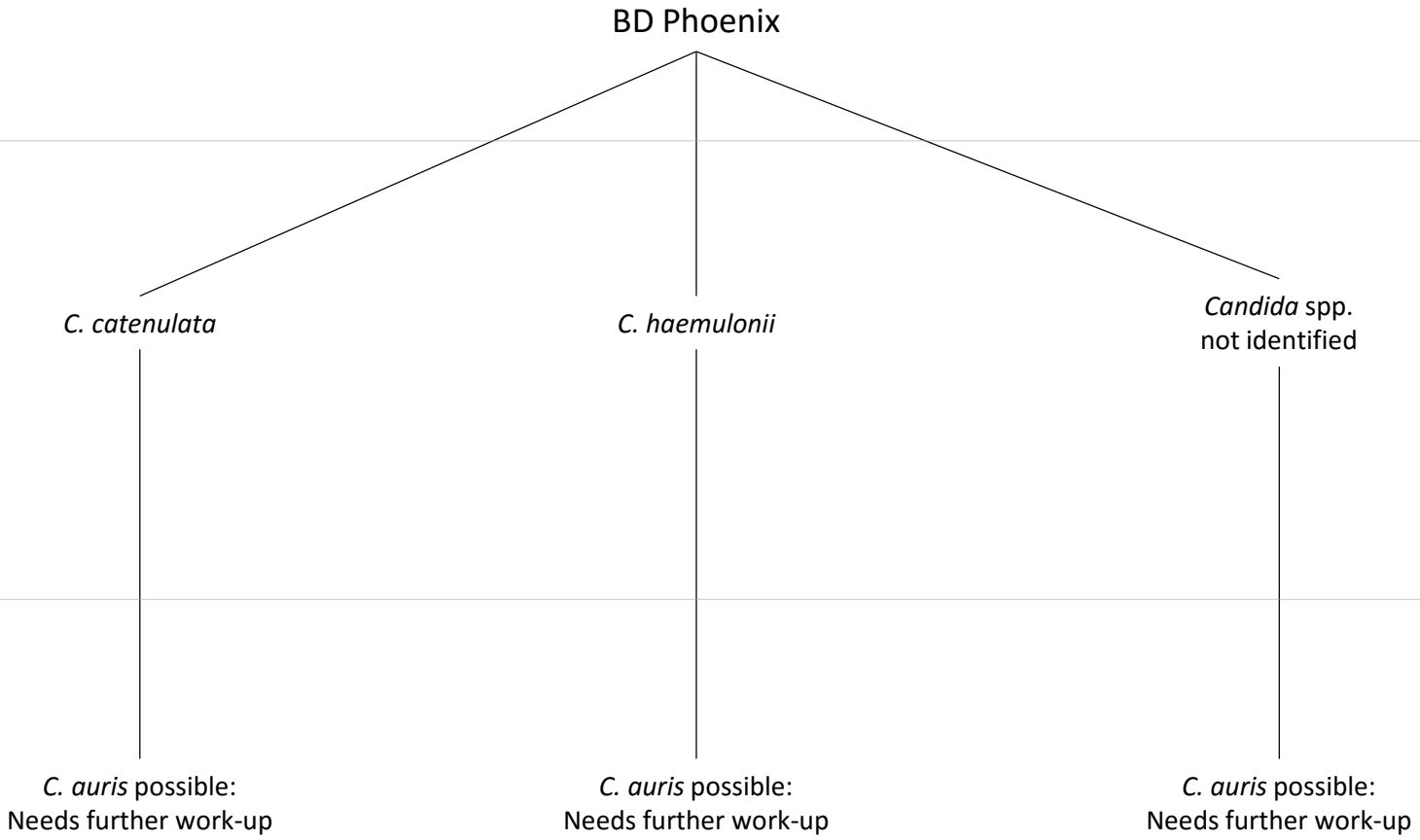
**Likely not *C. auris*:**
No further *C. auris*-related action required.

Identification Method

Initial finding

Determination

Next steps




***C. auris* possible:**
Further work-up needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).

Identification Method

Initial finding

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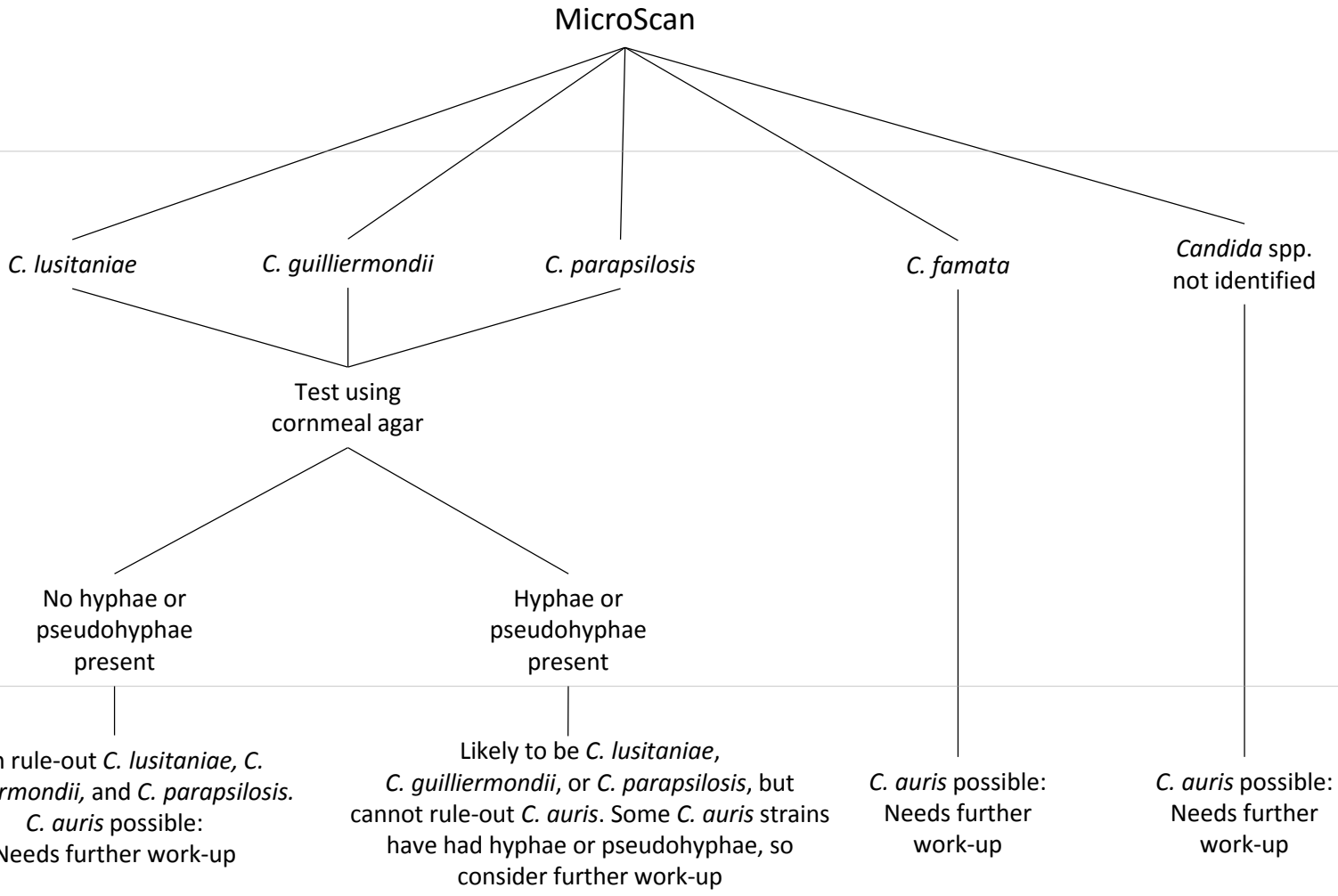
Next steps




***C. auris* possible:**
Further work-up needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).

**Identification Method**

RapID Yeast Plus

**Initial finding**

*C. parapsilosis*

Test using cornmeal agar

No hyphae or pseudohyphae present

Hyphae or pseudohyphae present

*Candida* spp. not identified

**Determination**

Can rule-out *C. parapsilosis.* *C. auris* possible: Needs further work-up

Likely to be *C. parapsilosis,* but cannot rule-out *C. auris.* Some *C. auris* strains have had hyphae or pseudohyphae, so consider further work-up

*C. auris* possible: Needs further work-up

**Next steps**

***C. auris* possible:**
Further work-up needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).

| Identification Method | Database/Software, if applicable | *C. auris* is confirmed if initial identification is *C. auris*. | *C. auris* is possible if the following initial identifications are given. Further work-up is needed to determine if the isolate is *C. auris*. |
|---|---|---|---|
| **Bruker Biotyper MALDI-TOF** | RUO libraries (Versions 2014 [5627] and more recent) | *C. auris* | n/a |
| | CA System library (Version Claim 4) | *C. auris* | n/a |
| **bioMérieux VITEK MS MALDI-TOF** | RUO library (with Saramis Version 4.14 database and Saccharomycetaceae update) | *C. auris* | *C. haemulonii*<br>No identification |
| | IVD library | n/a | *C. haemulonii*<br>No identification |
| **VITEK 2 YST** | Software version 8.01 | *C. auris* | *C. haemulonii*<br>*C. duobushaemulonii*<br>*Candida* spp. not identified |
| | Older versions | n/a | *C. haemulonii*<br>*C. duobushaemulonii*<br>*Candida* spp. not identified |
| **API 20C** | | n/a | *Rhodotorula glutinis* (with characteristic red color present)<br>*C. sake*<br>*Candida* spp. not identified |
| **BD Phoenix** | | n/a | *C. catenulata*<br>*C. haemulonii*<br>*Candida* spp. not identified |
| **MicroScan** | | n/a | *C. lusitaniae**<br>*C. guilliermondii**<br>*C. parapsilosis**<br>*C. famata*<br>*Candida* spp. not identified |
| **RapID Yeast Plus** | | n/a | *C. parapsilosis**<br>*Candida* spp. not identified |

* *C. guilliermondii, C. lusitaniae,* and *C. parapsilosis* generally make hyphae or pseudohyphae on cornmeal agar. If hyphae or pseudohyphae are not present on cornmeal agar, the isolate should raise suspicions of being *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 and any *C. parapsilosis* isolates identified on RapID Yeast Plus as possible *C. auris* isolates and further work-up should be considered.

**If *C. auris* is confirmed:** Place patient in transmission-based precautions, report to CDC (candidaauris@cdc.gov), and notify state and local health departments.

**If *C. auris* is possible:** Further work-up is needed to determine if actually *C. auris*. Send isolates to a reference lab, a state public health lab, a regional lab, or CDC for further identification. Place patient in transmission-based precautions and notify state and local health departments and CDC (candidaauris@cdc.gov).