Candida auris: Best Practices in Dialysis Centers

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Agenda

• **Background**: Dr. Zachary Rubin

• **Current LAC DPH Recommendations**: Sandeep Bhauurla and Marita Santos

• **Inter-facility Communication**: Ju Lee

• Moderated by Alisa Ritea
Background
Candida species cause a spectrum of disease

- **Mild**
  - Diaper rash
  - “jock itch”
  - Vaginal yeast infection

- **Severe**
  - Bloodstream infections
  - Endocarditis (infection of heart valve)
  - Meningitis (due to device infections)
**Candida auris** is an emerging pathogen

- First described in 1994 in Japan from a patient’s ear (auris)
- **C. auris** has now become a significant cause of illness across the globe

[World map of C. auris cases and transmission](https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html)
Dozens of *Candida* species—a group of fungi—cause infections, ranging from mild oral and vaginal yeast infections to severe invasive infections. Many are resistant to the antifungals used to treat them.

**WHAT YOU NEED TO KNOW**

- Only three classes of antifungal drugs are available to treat severe *Candida* infections: azoles, echinocandins, and amphotericin B.
- *Candida* species commonly cause bloodstream infections in hospitalized patients. About one in four of these patients die.
- *Candida* species also cause common yeast infections, which can affect the mouth, skin, and vagina, resulting in more than 3.6 million U.S. healthcare visits each year, and $3 billion estimated direct medical costs.
- Antibiotics used to treat bacterial infections increase the risk of *Candida* infections.

All data represented excludes *C. auris*.

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**CASES OVER TIME**

Resistant *Candida* are commonly detected in hospitalized patients. About 7% of bloodstream infections are resistant to antifungals.

![Bar chart showing estimated cases of drug-resistant *Candida* in hospitalizations from 2012 to 2017.](https://www.cdc.gov/drugresistance/pdf/threats-report/candida-508.pdf)
**C. auris clinical cases reported by state — United States, 2013–December 2016**

CDC issued a clinical alert on *C. auris*
C. auris clinical cases reported by state — United States, 2013–February 2019
Spreads after introductions from abroad

- Cases are a result of introductions from abroad followed by local transmission
- Majority of cases don’t have direct links to healthcare abroad

Why is *Candida auris* important?

- **NASTY IN THE RIGHT SETTING**--it is a pathogen that causes significant morbidity & mortality in high-risk pts.
  - Up to 45% mortality in some series.
  - 5-10% of pts colonized will become infected

- **HARDY**--it can survive in the environment and can spread quickly and establish residency in healthcare facilities.
  - Can survive quaternary ammonium cleaners.

- **DIFFICULT TO TREAT**--it is resistant to most of the commonly used antifungal treatments available.
  - Echinocandin,azole resistance and amphotericin resistance has been seen.
LA County *C. auris* Cases (May 2020- June 2021)

**Clinical:** Patient positive for *C. auris* from a specimen collected for clinical purposes.

**Surveillance:** Patient positive for *C. auris* from a swab collected for the purpose of screening for *C. auris* colonization.

**Surveillance-to-clinical:** cases who were first identified via surveillance swab, and later had one or more positive clinical specimen(s).
Affected facilities

Collection Facility Type (n=690)

- LTACH: Number of C. auris cases
- GACH
- vSNF
- SNF
- IRF

Number of C. auris cases
Types of *C. auris* specimens in LA County

**Specimen type**

- Clinical isolate: 85%
- Swab: 15%

**Specimen source for clinical specimens**

- Blood: 50%
- Urine: 22%
- Respiratory: 12%
- Wound: 9%
- Other: 7%
Antifungal susceptibility

**AST profile of LAC C. auris isolates in 2020 (n=38)**

<table>
<thead>
<tr>
<th>Antifungal</th>
<th>% Susceptible*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphotericin B</td>
<td>100%</td>
</tr>
<tr>
<td>Anidulafungin</td>
<td>100%</td>
</tr>
<tr>
<td>Caspofungin</td>
<td>100%</td>
</tr>
<tr>
<td>Fluconazole</td>
<td>0%</td>
</tr>
<tr>
<td>Micafungin</td>
<td>100%</td>
</tr>
<tr>
<td>Voriconazole (and other second gen triazoles)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Per CDC-provided breakpoints: [https://www.cdc.gov/fungal/candida-auris/c-auris-antifungal.html](https://www.cdc.gov/fungal/candida-auris/c-auris-antifungal.html)*
Colonization vs. contamination vs. infection

- **Colonization** is when microorganisms live on us without causing disease.
  - Coagulase negative staph, *Staph aureus*, *Candida*, etc.
  - May or may not be eradicable.
  - Ex. Skin swab grows Coag neg staph.

- **Contamination** is when colonizing bacteria show-up in cultures, but are not causing disease.
  - Does not require treatment.
  - Can be confused for infection & causes over-treatment.
  - Ex. *Candida* in urine culture.

- **Infection** is when microbes invade otherwise sterile sites and cause inflammation.
  - Central line infection
  - UTI
Colonization screening of asymptomatic patients

Axilla-Groin Swab (recommended)
- Composite swab
- R/L axilla and R/L groin
- Polymerase chain reaction (PCR)

Nares Swab
- 1-2 cm in each nostril
- Turn for 3 seconds each nostril
- Culture
Healthcare transfer networks drive regional MDRO spread

- Transfer of individuals colonized or infected with MDROs contributes to transmission across healthcare facilities
- Initial entry of *C. auris* and other MDROs into post-acute facilities can be unrecognized
- Factors leading to amplification of MDROs in post-acute care facilities
  - Longer length of stay
  - Increased complexity of care
  - Decreased staff: patient ratios
  - Gaps in IPC programs and practices

Current LACDPH Recommendations
3 Key Prevention Strategies

1. Hand Hygiene
2. Proper use of PPE
3. Environmental cleaning

These are basic HAI prevention practices.

_in general, if a facility can care for a C. diff patient, they can care for a C. auris patient._

Mandated Reporting

• All new single cases (regardless of specimen source) and outbreaks of *C. auris* must be reported to LAC DPH within 1 working day
  – Laboratory & Provider Reportable by LAC DPH Health Officer Order on 12/03/19
    • Suspect *C. auris* also reportable by providers: [http://publichealth.lacounty.gov/acd/docs/When_to_suspect_Cauris.pdf](http://publichealth.lacounty.gov/acd/docs/When_to_suspect_Cauris.pdf)

• In addition, report to CDPH as unusual disease occurrence
Individual Screening Recommendations

• Not currently mandated by LAC DPH nor CDPH

• CDPH recommends
  – Persons discharged from long-term acute care hospitals (LTACHs)
  – Persons discharged from sites with ongoing transmission

• LACDPH recommends
  – Epidemiologically-linked contacts (i.e., exposed roommates)
  – Persons discharged from subacute units of SNFs (vSNFs)
  – Persons with recent international healthcare exposure
  – Persons with rare/emerging MDROs

• Screening of HCW generally not recommended

2.LACDPH under “who is at highest risk”: http://publichealth.lacounty.gov/acd/Diseases/CandidaAuris.htm
Screening Locations

• Most hospital labs have capacity to identify *C. auris* from clinical cultures; working on colonization screening
• Most major reference labs offer colonization screening services
  – See list of labs here: [http://publichealth.lacounty.gov/acd/docs/List_C.aurisLabs.pdf](http://publichealth.lacounty.gov/acd/docs/List_C.aurisLabs.pdf)
• Turnaround time varies by method:
  – PCR ~1-2 days
  – Culture ~2-21 days
Pre-emptive, educational *C. auris* site visits

- LAC DPH, CDPH, and CDC staff did joint site visits to 23 subacute skilled nursing facilities and LTACHs in Fall 2020
- Focused on key *C. auris* detection and prevention practices
- Participants received report, Certificate of Collaboration, and listed on LACDPH *C. auris* website
Major IC gaps identified

• HH
  – Preference of soap & water over alcohol-based hand rub (ABHR)
  – Missed opportunities upon entry/exit and inside room

• Disinfectant use/EVS
  – Unreliable self-preparation of bleach
  – Missed high-touch surfaces
  – Infrequent/unclear cleaning of shared equipment

• PPE
  – Double gloving/gowning
  – Not changing PPE between patients in same room

• Cohorting
  – Too complicated = unnecessary patient movement and less available bedspace
How to be prepared for *C. auris*

- Basic HAI prevention practices: HH, PPE, EVS
- Appropriate, simple cohorting practices
- Use of an effective disinfectant
- Clear inter-facility communication strategies (internal and external)
- *C. auris* policy in place – *LACDPH can provide samples if needed*
Hand Hygiene

Alcohol-based hand rub (ABHR) is preferred over soap and water except when hands are visibly soiled.
- Effective against *C. auris* and other MDROs
- Immediate killing effect
- Less dependent on technique
- Placement of dispensers increases availability to HH supplies and improves adherence

PPE use

- Patient should be placed on Contact Precautions
- Ensure visible signage for contact precautions while considering patient privacy
- Designate an area for C. *auris* patients (colonized or infected) whenever possible

1. [Infection Prevention and Control for Candida auris | Candida auris | Fungal Diseases | CDC](#)
PPE use

• Place PPE (gown and gloves) in an area that is visible and accessible for staff
• Wear gown and gloves when caring for patients or when touching items or equipment at the station
• Audit HH and PPE practices regularly
• Visitors should wear gowns and gloves upon entry to the unit

1. Infection Prevention and Control for Candida auris | Candida auris | Fungal Diseases | CDC
Cohorting

• Dialyze patient, if possible, at the end or corner of the unit, and last shift of the day
• Dedicate staff and equipment wherever possible
• Can cohort “like with like”
  – Positives with positives, suspect with suspect, etc.
  – Consider other MDROs, COVID-19
• Length of isolation precautions: duration of admission
  – No clear CDC guidance for discontinuation of isolation
  – HCFs can work with ACDC directly for assessment/guidance
Disinfectants effective against *C. auris*

1. EPA- registered for claims against *C. auris* (List P):
   https://www.epa.gov/pesticide-registration/list-p-antimicrobial-products-registered-epa-claims-against-candida-auris

   *If not available, then*

2. EPA- registered for claims against *C. difficile* (List K):
   https://www.epa.gov/pesticide-registration/list-k-epas-registered-antimicrobial-products-effective-against-clostridium

   Follow label instructions for *C. difficile*, if using for *C. auris*. 
General Principles of Environmental Cleaning

- Establish a standard process that ensures consistency and prevents cross-contamination
  - Working around the room/chair in same direction every time
  - Starting from highest surfaces and work down
  - Always moving from clean areas to dirty
Environmental Cleaning and Disinfection

• Disinfect the environment thoroughly (e.g., dialysis machines, dialysis chairs, side tables, all surfaces, and remote control) between patients.

• Designate an area of the treatment floor so that staff will know to disinfect the area using the proper disinfectant.

• Provide routine education with staff regarding cleaning and disinfection of items and equipment in the dialysis station, including nursing station.

1. Infection Prevention and Control for Candida auris | Candida auris | Fungal Diseases | CDC
Resources

• CDC website: https://www.cdc.gov/fungal/candida-auris/index.html

• LACDPPH website: http://publichealth.lacounty.gov/acd/Diseases/CandidaAuris.htm

• Questions? Email us at hai@ph.lacounty.gov
Inter-facility Communication
Interfacility Transfer Communication

Communicating necessary infection control measures during each patient transfer can help prevent the spread of organisms between healthcare facilities.
Benefits

- Protects patients
- Contains healthcare costs
- Prevents the spread of *C. auris*
Legal requirements for interfacility communication

• 22 CCR § 70753: The transfer summary shall include essential information relative to the patient's diagnosis, hospital course, medications, treatments, dietary requirement, rehabilitation potential, known allergies and treatment plan and shall be signed by the licensed healthcare practitioner acting within the scope of his or her professional licensure.

• CMS 42 CFR part 483, subpart B: When the facility transfers or discharges a resident under any of the circumstances specified in paragraphs (c)(1)(i)(A) through (F) of this section, the facility must ensure that the transfer or discharge is documented in the resident's medical record and appropriate information is communicated to the receiving health care institution or provider.
<table>
<thead>
<tr>
<th>Information to Exchange</th>
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<tbody>
<tr>
<td></td>
<td>Isolation Precautions</td>
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<td></td>
<td>Recent Diagnoses</td>
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<td>Patient symptoms</td>
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<td>Electronic health records</td>
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<td></td>
<td>Microbiology lab report</td>
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<td></td>
<td>Antibiotic start and stop dates</td>
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<td>Immunization status</td>
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<tr>
<td>Recommendations</td>
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<tr>
<td>Develop a standardized interfacility transfer communication (IFTC) protocol.</td>
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<td>Develop a required handover checklist tool to be faxed from the facility to dialysis center.</td>
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<td>Designate one staff to oversee all IFTC for both referring and receiving facilities.</td>
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<td>Set expectations or an agreement for sending and receiving info related to MDRO status.</td>
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<td>Identify barriers i.e., lack of protocol for communicating pending lab results</td>
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Los Angeles County Department of Public Health

Infectious Organism Transfer Form

Use this form for all patient transfers between facilities. This form is not intended to be used as criteria for admission. On transfer, please include all positive lab results that pertain to this form.

Patient Name: 

DOB:   MRN:   Transfer Date:   

Receiving Facility [RF]:   

RF Contact Name:   RF Contact Phone:   

Sending Facility [SF]:   

SF Contact Name:   SF Contact Phone:   

Precautions  

Check all appropriate isolation Precautions:   

☐ Airborne   ☐ Contact   ☐ Droplet   ☐ Standard   

Personal protective equipment (PPE) recommended:

☐ Gown   ☐ Mask   ☐ N-95/PAPR   ☐ Eye Protection   ☐ Gloves   

Organisms  ☐ NONE IDENTIFIED   

<table>
<thead>
<tr>
<th>Organism(s) Identified</th>
<th>Specimen Source</th>
<th>Collection Date</th>
<th>Status: Colonization, History, Infection, Rule-Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. auris [Candida auris]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. difficile [Clostridioides difficile]</td>
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<tr>
<td>CRE [Carbapenem-resistant Enterobacteriaceae]</td>
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Q&A

Additional questions can go to
hai@ph.lacounty.gov