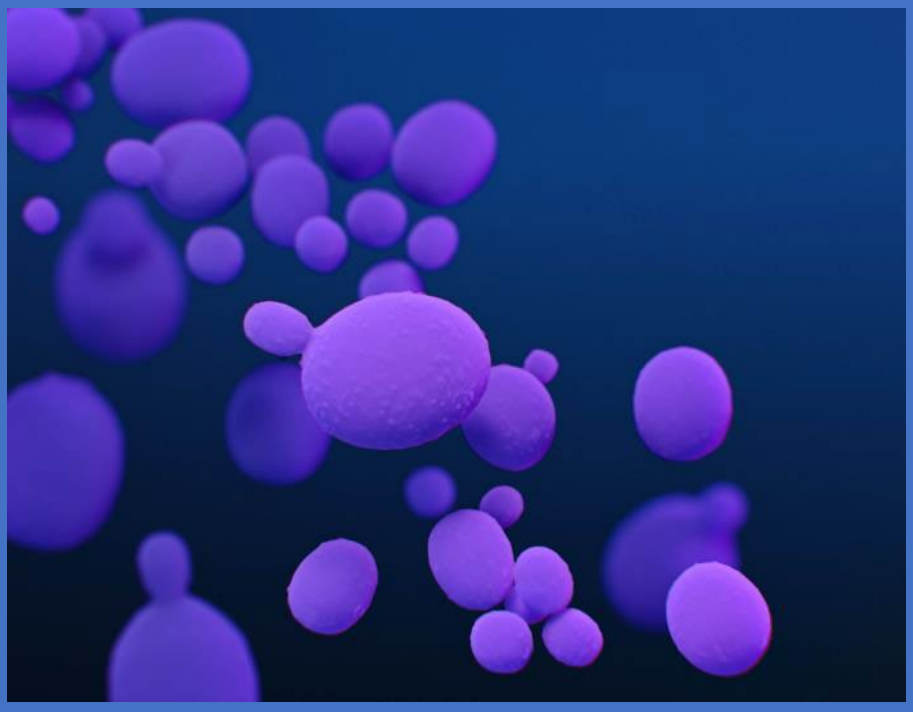
Mitigating the Spread of *Candida auris* in Los Angeles County



Healthcare Outreach Unit

Acute Communicable Disease Control Program

Contents

Updated 02/07/2022

Background and Purpose

Candida auris (*C. auris*) is a multi-drug resistant organism (MDRO) that can potentially cause infections in susceptible patients and can spread readily and persist in the environment for extended periods of time. It causes clinical infections in 5–15% of all cases, most often bloodstream infections in patients requiring high levels of supportive care, like having central venous catheters. There is no known reliable way to decolonize patients with *C. auris* at this time, which could possibly lead to life-long colonization.

C. auris can spread within healthcare facilities widely and rapidly, so early identification and intervention are needed to prevent transmission. As of December 2021, most cases of *C. auris* have been identified amongst chronically ill patients in high-acuity long-term healthcare facilities, such as long-term acute care hospitals (LTACHs).

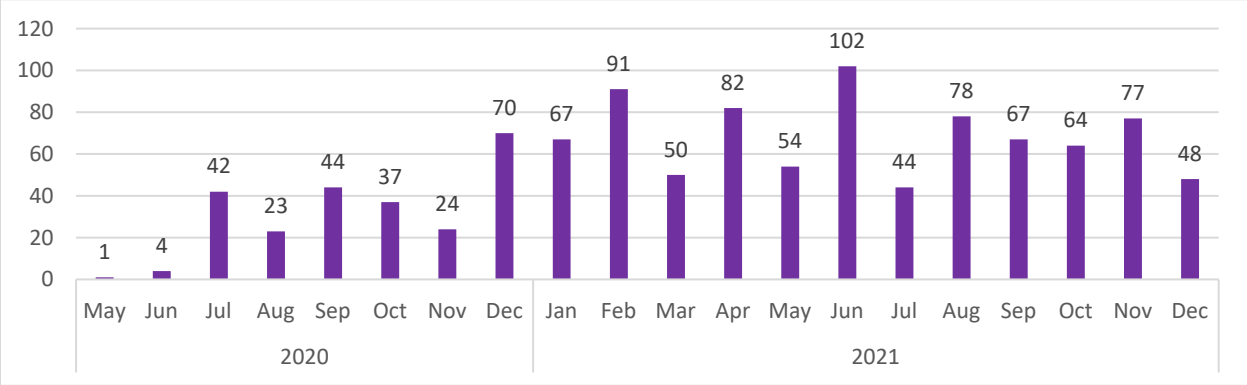
The Los Angeles County Department of Public Health (LAC DPH) developed four goals to mitigate the spread of *C. auris*. This document summarizes strategies to achieve those goals at both the County and healthcare facility (HCF) level.

Goals of LAC *C. auris* control program

Slow the spread of *C. auris* within LA County by:

1. Enhancing facility identification of *C. auris* and improve inter-facility communication of patient status.
2. Identify and contain outbreaks of *C. auris* in healthcare facilities in LAC.
3. Monitor the *C. auris* antifungal susceptibility testing (AST) profile in LAC.
4. Educate healthcare facilities on the best ways to prevent transmission of all MDROs.

Figure 1. C. auris *cases in LAC, by specimen collection date,* n*=1,071, May 2020–December 2021*



Definitions

Admission screening: active *C. auris* screening of patients on admission.
AST: Antimicrobial susceptibility testing
***C. auris* case**: A person who is positive for *C. auris* from any body site, using either culture or a culture-independent diagnostic test (CIDT) (i.e., polymerase chain reaction (PCR)).
***C. auris* colonization**: a patient who has asymptomatic colonization, but no evidence of infection, with *C. auris*, typically identified by screening swab of skin (i.e., axilla, groin) or incidentally through a non-sterile clinical specimen (i.e., urine or sputum).
***C. auris* infection**: invasive infection with *C. auris*, most commonly fungemia.
HCFs: healthcare facilities, including general acute care hospitals (GACH), long-term acute care hospitals (LTACH), skilled nursing facilities (SNFs), and skilled nursing facilities with subacute units (SAUs)
High risk HCF: LTACHs
High risk unit: SAU of SNF or GACH; burn unit; hematology or oncology unit; any critical care or intensive care unit; organ-transplant unit; or unit that cares for a significant number of immunocompromised/ immunosuppressed patients.
Low risk HCFs: GACH, SNFs, other HCF types
ICAR: infection control assessment and response program
Outbreak HCF: new cluster of *C. auris* cases in a non-endemic HCF
Point prevalence survey (PPS): skin screening of all non-positive *C. auris* patients on a given day.

Patients Considered at High Risk for *C. auris* Colonization

We recommend HCFs use the following criteria to determine when to screen *C. auris* cases for colonization, either immediately upon admission or upon identification of potential exposures:

- Extended stay (>1 week) after January 2020 in any long-term acute care hospital (LTACH) or SAU (ventilator unit) of a SNF in California. See here for a list.
- Stay of 24 or more hours in any HCF that is experiencing *C. auris* transmission.
- Epidemiologically linked (epi-linked) contacts in a healthcare or non-medical long-term care facility, such as:
    - Roommates of a confirmed case for at least 24 hours.
    - Residents/patients who shared a bathroom with a confirmed case for at least 24 hours.
    - Residents/patients who were admitted to the same room/bed after a confirmed case for at least 24 hours.
    - Resident/patient who overlapped in same unit as confirmed *C. auris* case for at 24-36 hours, within a facility that was:
        - Not adhering to the appropriate level of precautions and/or
        - Not using an environmental disinfectant effective against *C. auris* for the confirmed *C. auris* case.
    - Patient(s) with common high-risk procedure (e.g., involving duodenoscopes) or shared medical equipment/services (e.g., respiratory therapy) with confirmed *C. auris* cases
- Need for chronic ventilator support or the presence of a tracheostomy.
- Recent history (within 1 year) of an inpatient stay in an international healthcare facility.
- Known colonization with other MDRO such as Carbapenem-resistant Enterobacterales (CRE), multidrug-resistant (MDR) *Acinetobacter*, MDR *P. aeruginosa*, etc.

Status of *C. auris* in Los Angeles County, December 2021

Cases

Since the first outbreak of *C. auris* was identified in LAC in July 2020, the number of cases has increased to over 1,000 cumulative cases, with the organism now endemic in most LTACHs in the County. Table 1 summarizes case counts by case and HCF type. Approximately 9% of all LAC cases had a bloodstream infection (BSI) with *C. auris;* the rest were noted to be colonized on the skin and/or in non-sterile sites. We cannot be certain that specimens collected from non-sterile sites represent infection or colonization, but assume they are colonization. Among all clinical specimens, 37% were positive in a blood and 22% in urine (Figure 2). AST conducted on isolates at the Antibiotic Resistance Laboratory Network (ARLN) found *C. auris* isolates collected in LAC HCFs were mostly susceptible to all common antifungal agents except for fluconazole (Table 2).

Table 1. C. auris *cases by case and HCF type,* n*=1,071, May 2020–December 2021*

	Case Type				
HCF Type	**Screening** *	**Clinical** ^	**Screening-to-clinical** †	**BSI**	**Total**
GACH	58 (6.7%)	47 (57.3%)	12 (10.3%)	28 (30.4%)	**117** (10.9%)
LTACH	760 (87.2%)	35 (42.7%)	99 (84.6%)	63 (68.5%)	**894** (83.5%)
SNF	52 (6.0%)	0 (%)	6 (5.1%)	0 (0%)	**58** (5.4%)
Other	2 (0.2%)	0 (%)	0 (%)	1 (1.1%)	**2** (0.1%)
Total	**872** (81.4%)	**82** (7.7%)	**117** (10.9%)	**92** (8.6%)	**1,071**

Note that cases are counted by facility type at time of first positive specimen collection. The BSI column is excluded from the total.

* *Swab collected from the skin (i.e., axilla, groin) for the purpose of screening for C. auris colonization.*

^ *Specimen collected for the purpose of diagnosing or treating disease in the normal course of care, from any non-skin body site.*

† *Cases who were first identified via screening swab and later had one or more positive clinical specimen(s).*

Figure 2. C. auris *clinical specimen source (*n*=252, May 2020–December 2021)*

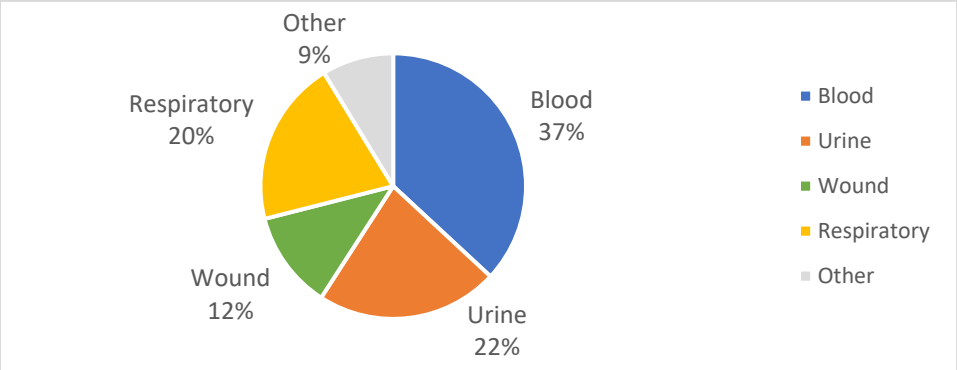


Table 2. C. auris *antifungal resistance patterns amongst clinical isolates in LA County (*n*=38)*

Antifungal Drug	*% Susceptible* *
Amphotercin B	100%
Anidulafungin	100%
Caspofungin	100%
Fluconazole	0%
Micafungin	100%
Voriconazole (and other 2nd-generation triazoles)	N/A

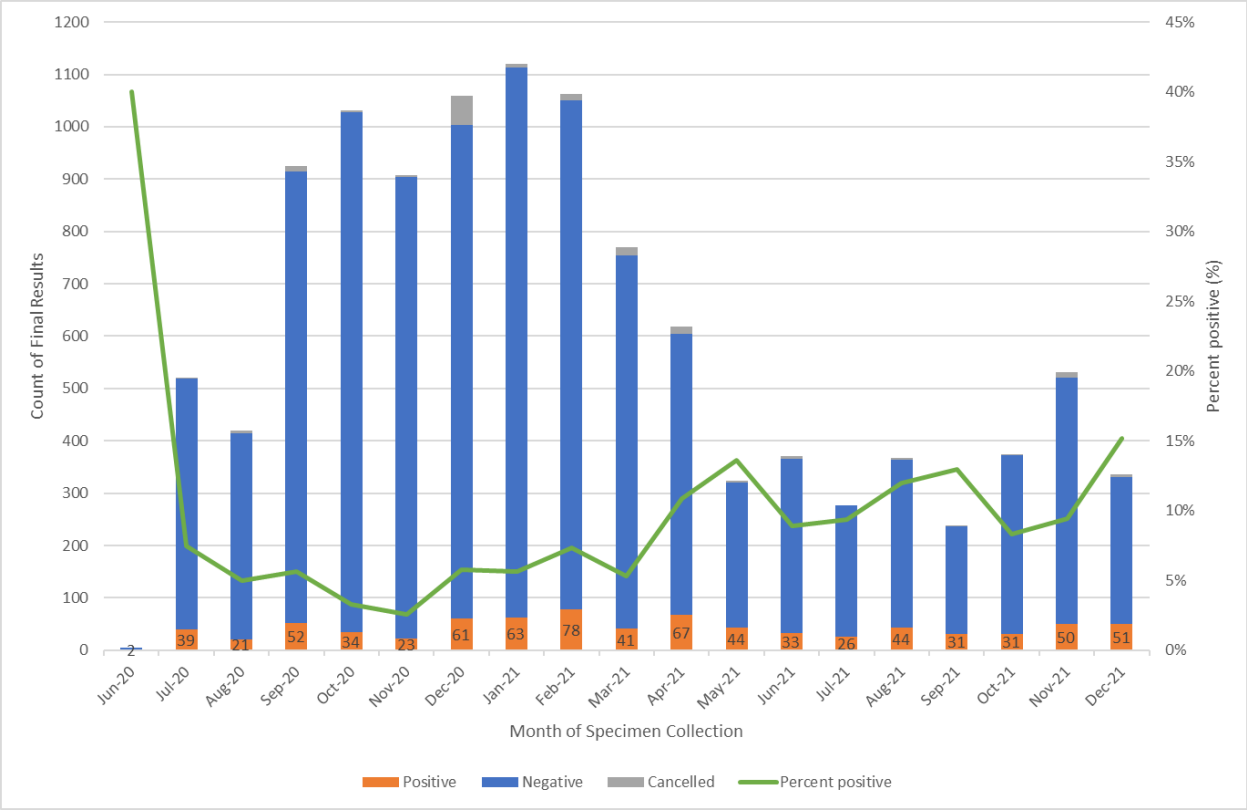
**Per CDC-provided breakpoints: https://www.cdc.gov/fungal/candida-auris/c-auris-antifungal.html*

Screening

Between June 2020 and December 2021, LACDPH collected over 11,000 *C. auris* colonization screening swabs from 107 different HCFs, of which 6.9% of which were positive. The number of positive *C. auris* cases identified through screening coordinated by LACDPH ranged from 2 in June 2020 to a peak of 78 in February 2021 (Figure 3), with a median of 39 cases. Most cases (83%) were identified via point prevalence surveys (PPS) conducted at HCFs experiencing *C. auris* outbreaks. Many (8.7%) were identified upon admission, as more HCFs in LAC worked to establish in-house C. auris admission screening over time.

The number of screening swabs sent to public health laboratories over time (Figure 3) was not systematic, and reflects laboratory capacity, outbreak response activities, and transition of testing to non-public health laboratories over time. At the height of the *C. auris* response, LACDPH coordinated over 1,000 screening tests in a single month.

Figure 3. C. auris screening results conducted by LACDPH, n=11,006, June 2020-December 2021



Outbreaks

LACDPH opened 20 *C. auris* outbreak investigations between June 2020 and December 2021 (6 GACH, 7 LTACH, 7 SNF (including 2 SAUs)). In response, LACDPH conducted 38 on-site ICAR visits and 186 PPS. Almost 76% of LAC cases were identified in outbreak sites. More details regarding results from on-site assessments can be found in the *C. auris* Prevention Project section below.

Goal 1: Surveillance & Communication

Surveillance activities are critical to assessing the extent of spread of *C. auris* throughout the County as well as a central strategy in preventing outbreaks in individual HCFs. Like all types of surveillance in the healthcare setting, this activity is a partnership between the LACDPH and each individual HCF.

County-wide Surveillance Plan

Table 3, below, explains the recommended and required surveillance strategies in Los Angeles County, which should be implemented by all healthcare facilities.

Table 3. C. auris *surveillance plan for Los Angeles County*

Surveillance Type	Responsibilities of HCFs	Responsibilities of LACDPH
Passive surveillance	• **Required** to report all laboratory tests positive for confirmed *C. auris* and presumptive *C. auris* from all specimen sources within 1 working day. Attach the final lab report(s), including AST if performed. • **Recommended** to identify *Candida* to the species level (speciate) from non-sterile sites, particularly among high-risk individuals who may not have been screened on admission.	• Follow-up on individual case and suspect outbreak reports as needed. • Assess for concerning trends in resistance and/or BSIs. • Provide screening and infection control (IC) recommendations. • Offer confirmatory or AST testing on isolates as needed.
Active surveillance	• **Required** to screen all patients/residents who are epidemiologically linked to newly identified *C. auris* cases ("epi-linked contacts") and/or on the same unit during outbreak PPS. Report all positives to LACDPH. • **Recommended** to screen all admissions and transfers in from HCFs with a *C. auris* outbreak and all high-risk patient populations.[1]	• Provide infection preventionists (IPs) with a weekly list of non-high risk HCFs experiencing transmission of *C. auris* or other novel MDROs (outbreak HCFs). • Assist with PPS testing for HCFs that have or suspect an outbreak of *C. auris*, as needed. • LACDPH is unable to assist with screening individuals upon admission or upon the identification of epi-linked contacts. Many labs, however, offer both culture-based and RT-PCR testing options.

1. CDPH Health Advisory: Further Emergence of Candida auris in Healthcare Facilities Outside of Orange and Los Angeles Counties, February 2022: http://publichealth.lacounty.gov/acd/docs/CAHAN_Cauris_Surveillance020122.pdf

Rationale for identifying *Candida* spp. from non-sterile sites to the species level: Due to the increased prevalence of *C. auris* in the region, LACDPH recommends that clinical laboratories consider implementing a passive surveillance protocol to optimize detection of patients harboring *C. auris.* This type of surveillance is helpful in identifying *C. auris* among non-high-risk patient populations who are not subject to active surveillance. As of December 2021 in LAC, more than half of the patients found to

be positive for *C. auris* had clinical specimens obtained from non-sterile sites. Among the first 69 clinical specimens, 21% were novel (first-time detected) cases identified from non-sterile sites that would have been missed if the facility had not been performing passive surveillance (see Table 4). Implementation of a passive surveillance program where *Candida* spp. is identified to the species level in both sterile and non-sterile sites allows HCFs and LACDPH to work together optimally to detect and contain any spread beyond high-risk populations.

Table 4. Specimen source of clinical cases not previously known to be colonized (n=69)

Specimen Source	Total Specimens	Novel Cases * (n [%])
Blood	32	9 (28%)
Urine	15	6 (40%)
Respiratory	10	3 (30%)
Wound	7	5 (71%)
Other	6	1 (17%)
Total	69	28 (41%)

**Case first identified from a clinical specimen (no prior positive screening swab)*

C. auris Reporting Plan for HCFs

Providers and laboratories serving LAC HCFs are required to report *C. auris* positive lab results per the 2019 Health Officer Order (see Table 5). Details on how to report *C. auris* and other MDROs can be found in the LACDPH MDRO Compliance Instructions. Both presumptive and confirmed *C. auris* (final results only) must be reported to LAC DPH within 1 working day. Outbreaks (suspect or confirmed) should be reported immediately via telephone. All laboratories and providers may report using the secure LACDPH MDRO Reporting Portal. Otherwise, HCFs may complete the LACDPH *Candida auris* Report Form, attach the final lab result (including any AST), and fax it to 888-397-3788. Write "suspect/confirmed *C. auris* case report" on the fax cover sheet.

Table 5. Required reporting of C. auris *for all healthcare facilities*

Organism	Criteria	Who Reports
***C. auris* positive or indeterminate**	*C. auris* identified from any body site (final results only). Include AST, if done.	Laboratory & Provider
Presumptive *C. auris*	Test results where *C. auris* is misidentified as another *Candida* species (see When to Suspect *C. auris*) from any site. Isolates may be submitted for confirmatory testing (rule-out *C. auris*) via LACDPH PHL.	Laboratory
Outbreak of *C. auris*, suspect or confirmed	Per CDPH AFL-19-18, the occurrence of cases above the expected or baseline level. This includes the identification of new positives upon screening of epi-linked contacts.	Provider

Weekly Communication Plan for LACDPH

In August 2020, LACDPH began distributing a weekly update to IPs in LAC HCFs. The update listed all HCFs in Southern California known to be experiencing active *C. auris* transmission. In September 2021, the weekly update divided HCFs into two categories (high versus low risk) based on the risk level of patients'/residents' being colonized with *C. auris* (see Table 6). These categories *do not* suggest that all

HCFs in the high-risk category have patients with *C. auris* in their facilities, that they are experiencing healthcare-associated transmission, nor that they are not working actively to control *C. auris*. Rather, this designated "high-risk" category reflects the current and broader *C. auris* situation in Southern California and allows other HCFs receiving patients from the high-risk group to plan accordingly. All sending HCFs—those transferring out known-positive patients—must continue to clearly communicate the *C. auris* status of patients to receiving HCFs.

Table 6. HCF categories for MDRO risk status

Population	Type of Sending HCF	Recommended Action by Receiving HCF
High-risk population	LTACHs and vSNFs (subacute SNF units)	Admission screening and empiric transmission-based precautions
Low-risk population	All other HCF types (general acute care hospitals, SNFs, etc.)	Admission screening and empiric transmission-based precautions if listed on weekly *C. auris* updates as having outbreak.

Inter-facility Communication

To date, LACDPH has identified four outbreaks that started due to failures of communication of positive *C. auris* status upon transfer. To avoid further inter-facility spread of *C. auris*, HCF staff must ensure that there be clear internal and external protocols in place to appropriately communicate a patient's *C. auris* status across the continuum of care and during transport. This will allow the receiving facility to implement infection control measures, such as proper use of personal protective equipment (PPE) and use of an effective disinfectant, immediately upon admission.

Per 22 CCR § 70753 and CMS 42 CFR part 483, subpart B, **all HCFs are required to communicate a patient's infectious-organism status upon transfer to a new healthcare facility**—this includes all positive microbiology reports. If HCFs do not already have their own version, HCFs should utilize the LACDPH Infectious Disease Transfer Form for inter-facility transfers. In addition, LACDPH suggests calling the IP of the accepting facility to directly convey the patient's *C. auris* status. It is important to share each patient's most updated *C. auris* and other MDRO status with case managers, discharge planners, and other staff involved in the patient-transfer process – see here for educational materials.
Failure to effectively communicate *C. auris* or other MDRO status may result in regulatory investigations and citations from the CDPH Licensing & Certification Program.

Additional guidance and recommendations on inter-facility communication is available on the LACDPH Inter-Facility Transfers webpage.

In addition, HCFs that perform admission screening for *C. auris* should notify the prior HCF when a positive result is obtained. The prior HCF should follow the investigation steps on the next page to identify and prevent any potential transmission.

Goal 2: Outbreak Identification and Response

HCFs must take certain actions to detect and control spread of *C. auris* within their facilities. While our IC recommendations for *C. auris* can be found in the Education section, this section outlines what steps HCFs take to identify and report any outbreaks.

C. auris Investigation Steps for HCFs

Upon the identification of a new *C. auris* case, HCFs should perform all of the following steps to identify, contain, and prevent any transmission:

1. Identify any epi-linked contacts (using list on page 3 and the CDPH Screening Decision Tree)
    a.
2. Swab all epi-linked contacts for *C. auris* colonization. It is recommended that these persons be placed on empiric *C. auris* isolation precautions until a negative test result is obtained. This includes using a disinfectant effective against *C. auris*. (If a positive result is obtained, the patient will remain on *C. auris* isolation precautions.)
    a. Use a line list to track all patients who are to be swabbed, dates, locations, and test results. See here for a template.
    b. If the newly identified *C. auris* case(s) at any point stayed in a high-risk unit (i.e., burn unit), was not on transmission-based precautions, and/or a disinfectant effective against *C. auris* was not used, then the HCF must conduct a PPS of *all* patients below (*i* and *ii*). In this scenario, all patients do not need to be empiric *C. auris* contact isolation precautions until a negative test result is obtained. However, LAC DPH recommends using a disinfectant effective against C. auris for the patient care environment as well as any shared equipment and medical devices.
        i. Patients who are currently in the high-risk unit; and
        ii. at any point had an overlapping stay of 3 or more days in that high-risk unit with the newly identified case-patient — even if these patients may have transferred out of the high-risk unit by the time the new *C. auris* case was identified. If they had an overlapping stay in the high-risk unit, the patients should be tested.
    c. If your laboratory cannot conduct *C. auris* colonization screening, see the List of Labs with *C. auris* Testing Capacity. LACDPH will assist with PPS only.
3. If the patient tested positive upon admission, notify the prior HCF of the positive result so that they may conduct an internal investigation as needed.
4. Report any newly identified, additional or secondary cases as a possible *C. auris* outbreak, both to LAC DPH and your local CDPH L&C office within 1 working day.

Failure to correctly report *C. auris* or other MDRO suspect or confirmed outbreak in a timely fashion may result in regulatory investigations and citations from the CDPH Licensing & Certification Program.

LACDPH *C. auris* Outbreak Response Plan

LACDPH generally defines an outbreak (or cluster) as any occurrence of disease above the facility's baseline. Following the HCF's identification of a new, possible, or suspect *C. auris* outbreak, LACDPH will determine whether further investigation is required. Please note that a HCF should report a possible or suspect outbreak to LACDPH as soon as it is identified—do not wait for final laboratory results to

confirm an outbreak or the HCF may be at risk of not reporting the suspect outbreak in a timely fashion. See LADCPH Reportable Diseases and Conditions for more information on reporting. Suspect and confirmed outbreaks are immediately reportable to LACDPH by telephone.

If LACDPH opens an outbreak investigation, the HCF should continue all appropriate infection-control measures until all active transmission has been halted (see Table 7). Facilities will then undergo a three-month monitoring period to ensure that no new cases are identified. If no new cases are identified, LACDPH will close the outbreak investigation. After six months, HCFs that are unable to halt *C. auris* or other MDRO transmission will be considered to have endemic *C. auris* in their facility and will added to LACDPH's list of high-risk HCFs; this list is shared with licensed HCFs in our health jurisdiction and the CDPH Licensing & Certification Program.

Table 7. LACDPH C. auris *outbreak criteria*

Outbreak Phase	Definition	Actions
New outbreak phase (active-outbreak phase)	Newly identified transmission of *C. auris* within a HCF (i.e. from one confirmed case to one or more newly-detected, previously-unknown cases).	Follow all steps as laid out in the 'Active' column of Table 8.
End-of-active-outbreak phase	Transmission has been halted, as identified by: • Low-risk HCFs: after one all-negative PPS. • High-risk HCFs: two consecutive all-negative PPS, at least 2 weeks apart.	Begin the 'Monitoring' phase and follow steps as laid out in the 'Monitoring' column of Table 8.
End-of-monitoring phase*	No new epi-linked cases identified via passive surveillance nor upon discharge to a new HCF for 1-3 months.	If goals are achieved, DPH shall close the outbreak investigation. Follow steps as laid out in the 'Closed' column of Table 8.
Endemic phase*	Transmission was not successfully halted within 6 months after initially opening the outbreak.	DPH shall close outbreak investigation and shall consider the HCF as endemic for *C. auris*. Follow steps as laid out in the 'endemic' column of Table 8.

** Following an outbreak, HCFs shall achieve either the End-of-monitoring phase or the Endemic phase, not both.*

The mitigation measures recommended in response to a new *C. auris* outbreak are determined by multiple factors, which include but are not limited to: HCF type; IC gaps identified during LACDPH ICAR visits; and existing infection-prevention infrastructure. The actions laid out in Table 8 are general and may be modified in discussion with each HCF. If an outbreak is successfully closed with no further nosocomial transmission identified, HCFs should consider the ongoing implementation and standardization of outbreak-control measures as best practice IC measures to prevent any future nosocomial transmission.

Table 8. Outbreak control measures by outbreak phase.

HCFs are required (Req.) or recommended (Rec.) to implement each control measure. Absence of an **x** *means that said activity is neither required nor recommended.*

	Active		Monitoring		Closed		Endemic	
	Req.	**Rec.**	**Req.**	**Rec.**	**Req.**	**Rec.**	**Req.**	**Rec.**
HCF Actions								
Post outbreak notification letter at the entrance or in highly visible public area.	x							
Implement the appropriate transmission-based precautions.	x		x		x		x	
Cohort patients into dedicated area.	x			x		x		x
Use disinfectant active against *C. auris* throughout the entire affected unit(s).	x			x		x	x	
Dedicate staff for *C. auris* patients.	x			x		x	x	
Dedicate equipment for *C auris* patients.	x			x		x	x	
Increase hand hygiene, PPE, and EVS audits, focusing on the affected unit(s).	x			x		x	x	
Conduct PPS regularly per LACDPH guidance, focusing on affected unit(s).	x			x			x	
Develop a *C. auris* action plan. Report updates to LACDPH at minimum on a monthly basis.	x			x		x	x	
Send DPH a list of discharges upon request.	x							
Consider all non-positives as 'suspect' *C. auris* upon discharge (i.e. the next receiving HCF must conduct an admission screening).	x						x	
Use LACDPH inter-facility transfer form, or similar document developed internally.	x			x		x	x	
Perform *C. auris* admission screening.		x		x		x		x
Identify all yeast from non-sterile sites to the species level, focusing on patients in affected unit(s).	x		x			x	x	
Identify and screen all new epi-linked contacts. Place in empiric *C. auris* precautions while awaiting results.	x		x		x		x	
DPH Actions								
Perform ICAR for all new outbreaks.	x			x				
Send email of IC recommendations.	x						x	
Name all HCFs with outbreaks on weekly MDRO update (if not a high-risk site).	x							
Perform a subsequent ICAR when all DPH criteria are met.	x						x	

Goal 3: Monitoring for Increasing Resistance

The Centers for Disease Control and Prevention (CDC) conducted whole genome sequencing (WGS) of *C. auris* specimens around the globe and found that more than four unique strains (clades) have emerged independently in multiple regions. The current strain of *C. auris* in Southern California (including LAC) is Clade III and is typically resistant to fluconazole but susceptible to most other antifungals in other drug classes (see Table 9). Some strains in other regions of the world are resistant to more than one class of antifungal agents, such as amphotericin, triazoles, and echinocandins. Per the Centers for Disease Control and Prevention (CDC), approximately 90% of *C. auris* isolates from the United States were resistant to fluconazole, 30% to amphotericin B, and 5% to echinocandins.

Since the antifungal susceptibility testing (AST) profile of *C. auris* may change to become more resistant, routine AST should be performed on all isolates of *C. auris* confirmed or suspected of causing a clinical infection in a patient. In addition, *C. auris* isolates can develop resistance during drug therapy, and thus subsequent isolates from a given infected patient may warrant additional AST. CDC has provided guidance here for interpretation of drug-therapy minimum inhibitory concentrations (MICs) for *C. auris* based on breakpoints available for other, closely related *Candida* species. See our MDRO Lab Newsletter Issues #2 and #7 for more AST guidance.

All *C. auris* reports must include AST results, if performed. LACDPH will utilize these data to monitor for increasing resistance among *C. auris*. If significant changes in resistance are identified, LACDPH will conduct response activities to control spread of the organism, likely to be similar to the approach taken in 2020 when *C. auris* was initially identified in LAC.

See Table 9 on the following page.

Table 9. Minimum Inhibitory Concentrations (MICs) and resistance (R) of clinical C. auris isolates to antifungal agents, Los Angeles County isolates, June 2020-Sept 2021 (N=36)

Antifungals		% R	Minimum Inhibitory Concentration (µg / mL) MIC at or above tentative breakpoint values in red*														
Class	**Drug**		**0.03**	**0.06**	**0.12**	**0.25**	**0.5**	**1**	**2**	**4**	**8**	**16**	**32**	**64**	**128**	**256**	**>256**
Polyenes	**Amphotericin B (n = 35)**	2.8%				3 (8.6%)	25 (71.4%)	6 (17.1%)	1 (2.9%)								
Echniocandins	**Anidulafungin (n = 35)**	0.0%	1 (2.9%)	6 (17.1%)	8 (22.9%)	9 (25.7%)	9 (25.7%)	1 (2.9%)	1 (2.9%)								
	Caspofungin (n = 35)	0.0%	4 (11.4%)	10 (28.6%)	13 (37.1%)	7 (20.0%)	1 (2.9%)										
	Micafungin (n = 31)	0.0%	1 (3.2%)	9 (29.0%)	13 (41.9%)	6 (19.4%)	2 (6.5%)										
Azoles	**Fluconazole (n = 35)**	100%												1 (2.9%)	3 (8.6%)	25 (71.4%)	6 (17.1%)
	Itraconazole† (n = 35)	N/A			4 (11.4%)	11 (31.4%)	19 (54.3%)	1 (2.9%)									
	Posaconazole† (n = 35)	N/A		8 (22.9%)	14 (40.0%)	11 (31.4%)	2 (5.7%)										
	Voriconazole† (n = 35)	N/A						5 (14.3%)	28 (80.0%)	2 (5.7%)							
	Isavuconazole† (n = 35)	N/A		2 (5.7%)	17 (48.6%)	14 (40.0%)	2 (5.7%)										

**Tentative breakpoint values in red; if none, breakpoint is N/A. For more information, see https://www.cdc.gov/fungal/candida-auris/c-auris-antifungal.html*

†No breakpoints available. Consider using fluconazole susceptibility as a surrogate for second generation triazole susceptibility assessment. However, isolates that are resistant to fluconazole may respond to other triazoles occasionally.

Goal 4: Education

All HCF staffs should be aware of their responsibilities in the management of *C. auris* within their facilities and be prepared for the need to care for *C. auris*-positive individuals in-house. Review local and national infection control guidance and develop a *C. auris* policy:

- https://www.cdc.gov/fungal/candida-auris/c-auris-infection-control.html
- https://www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/Candida-auris.aspx
- http://publichealth.lacounty.gov/acd/Diseases/CandidaAuris.htm

Infection Control Guidance

HCFs should employ the following basic infection control (IC) practices whenever *C. auris* positive patients are in-house:

IC Practices	Additional Information

Place the patient on the appropriate level of transmission-based precautions, ensuring that staff perform hand hygiene (HH) and don/doff personal protective equipment (PPE) appropriately and upon entering/exiting the patient's room or dedicated area	• Acute care hospitals (ACHs) and LTACHs: Use Contact Precautions (CP).
	• SNFs or other long-term care facilities:
	  ○ Use Contact Precautions (CP) if:
	  ▪ There is suspected/confirmed transmission of *C. auris*
	  ▪ Resident has acute diarrhea, draining wounds or other sites of secretions or excretions that are unable to be covered or contained
	  ○ Use Enhanced Standard Precautions (ESP) if the resident has one or more of the following high risk characteristics AND criteria for CP do not apply:
	  ▪ Functional Disability
	  ▪ Incontinence
	  ▪ Presence of indwelling devices
	  ▪ Ventilator-dependence
	  ▪ Wounds, unhealed pressure ulcers
	  ○ Use Standard Precautions only if resident does not meet requirements for ESP nor CP, or resides in a community care facility or other non-healthcare facilities.

Use a disinfectant that is effective against *C. auris*	• See EPA List P for a list of approved products. • If List P agents are not available, use EPA List K and follow manufacturer instructions for *C. difficile.* • Per a 2022 CAHAN, all LTACHs, SNF ventilator units, and ACH high-acuity units (i.e. ICU) should use a List P product for routine disinfection of environmental surfaces and shared equipment.
When the patient is discharged, notify the receiving HCF of the patient's *C. auris* status.	• Use an inter-facility transfer form and provide all required documents (including laboratory reports and medication records). • Ensure the patient (or the responsible party) is aware of the patient's *C. auris* status and provide educational materials as needed.

C. auris Prevention Project (CAPP)

The identification of inter-facility spread of *C. auris* in 2020 in LA County prompted the initiation of the *C. auris* Prevention Project. The goal was to detect *C. auris* and strengthen infection control practices (ICP) so as to prevent future spread by offering free PPS and ICAR visits to high-risk facilities. A total of 29 sites participated in the project and are listed on the CAPP section of the LACDPH *C. auris* website.

Throughout the course of the CAPP and multiple outbreak investigations, LACDPH discovered that many facilities had similar infection control challenges— there were no significant differences between outbreak and non-outbreak sites (Table 10). This means all HCFs are susceptible to *C. auris* spread without early identification and intervention. All HCFs should work to avoid these common pitfalls to avoid transmission of *C. auris* or other MDROs among the patients they work to protect.

Table 10. Commonly identified infection-control gaps (n=29, August 2020–February 2021)

Gap area	Examples of commonly identified gaps
Hand Hygiene (HH)	○ Healthcare workers' general preference for soap & water over alcohol-based hand rub (ABHR). ○ Use of ABHR on gloves. ○ Missed critical HH events on entry & exit and between tasks inside the room.
Disinfectant use	○ Use of a disinfectant that is not effective against *C. auris.* ○ Unreliable self- and/or manual-preparation of bleach. ○ Failure to clean and disinfect high-touch surfaces. ○ Failure to achieve contact time for disinfection. ○ Infrequent/unclear cleaning of shared equipment. ○ Failure to track disinfection of shared medical equipment.
PPE use	○ Double gloving/gowning. ○ Failure to change PPE between patients in the same room. ○ Failure to don PPE properly prior to entering patient rooms. ○ Confusing signage, including complicated isolation precaution signage.
Cohorting	○ Overly complicated cohorting schemes (i.e., based on specimen source instead of organism). ○ Unnecessary patient movement.
IP staff	○ Not having infection prevention (IP) staff with adequate training in ICP. ○ IP staff conducting multiple roles (occupation/employee heath, COVID testing etc.) with little time dedicated to ICP activities.
Communication	○ Failure to provide MDRO status upon discharge to a new HCF. ○ Failure to flag prior known positives in the medial record.

Educating Patients and Family Members

LACDPH strongly recommends that HCFs educate patients/residents, their caregivers, and/or medically-responsible parties about *C. auris* whenever they are suspected or confirmed to be positive. It is important that patients and family members be empowered with the knowledge of their infectious organism status so they can inform future HCFs upon admission. LACDPH has several resources are available to with educating patients in the "Patients & their Families" Resources section on our LACDPH *C. auris* website. As always, be sure to document all appropriate patient/family education in the patient's medical record.

Questions for LACDPH and Additional Resources

For questions about *C. auris* and other MDROs, please email our team at HAI@ph.lacounty.gov, or call us at 213-240-7941 and ask to speak to the Healthcare Outreach Unit (HOU).

Generally, the CDC C. auris website is very comprehensive and can provide guidance on most topics that are not covered in this document: https://www.cdc.gov/fungal/candida-auris/index.html

For additional information resources on *C. auris*, novel MDROs, healthcare-associated infection (HAI) prevention, laboratory information, general and specific disease-incident reporting, health education materials, and links to CDPH and CDC resources, please visit our HOU website at http://publichealth.lacounty.gov/acd/HOU.htm.