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Health Advisory

Update: Outbreak and Containment of *Candida auris* in PA Healthcare Facilities
March 31, 2023

This advisory provides an update to PA-HAN-654 by describing the current epidemiology of the *C. auris* in Pennsylvania.

Previously unaffected counties where *C. auris* has now been identified within healthcare facilities include Cumberland, Erie, and Monroe County. Since *C. auris* first appeared in the Commonwealth in March 2020, **199 cases of *C. auris*** have been identified in Pennsylvania, inclusive of Philadelphia. Of these, **59 were cases of *C. auris* clinical infection and 140 were cases of colonization with *C. auris*.** Cases have been detected in ventilator-capable skilled nursing facilities (vSNFs), long-term acute care hospitals (LTACHs), and acute care hospitals, and include both colonized and clinically ill persons.

Although cases are still concentrated in the southeast region, *C. auris* detection in healthcare facilities in northeastern, southcentral, northwestern, and southwestern PA indicate that healthcare facilities across the state should be on alert for *C. auris*.

Suspected or confirmed cases of *C. auris* identified in Pennsylvania should be reported promptly to DOH by calling 1-877-PA-HEALTH, or your local health department. Philadelphia cases should be reported to PDPH at 215-685-6748.

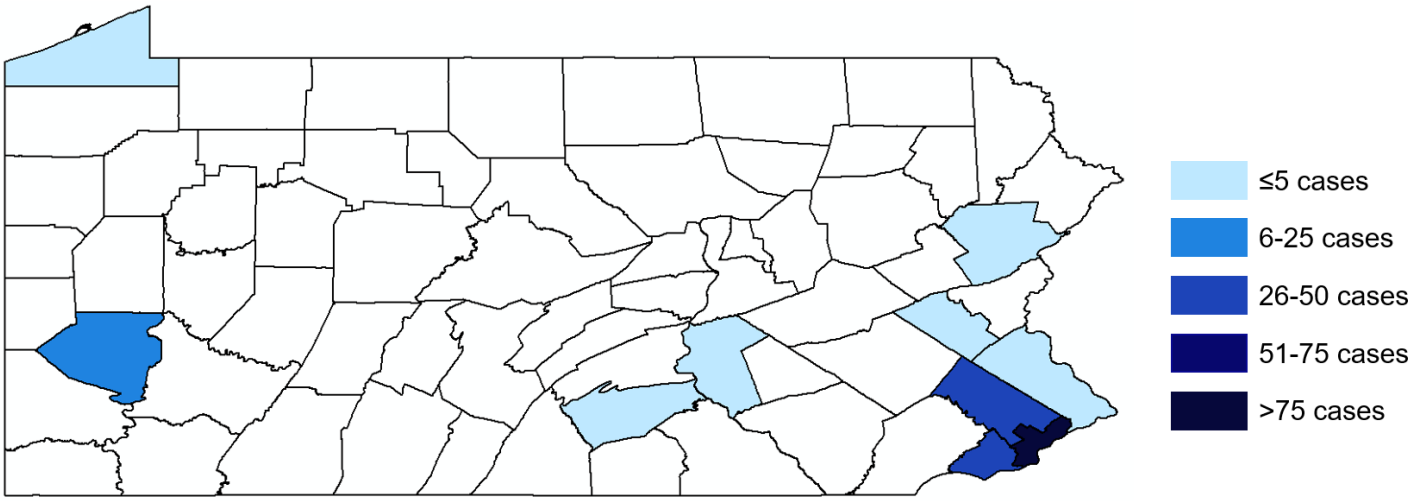
EPIDEMIOLOGY OF *C. AURIS* IN PENNSYLVANIA

The Pennsylvania Department of Health (DOH) and Philadelphia Department of Public Health (PDPH) are reminding healthcare facilities, providers, and laboratories to have heightened awareness for *C. auris* in patients and to take action to contain the spread.

In March 2020, the first confirmed case of *C. auris* was detected in Pennsylvania in a patient admitted to a Philadelphia short-term acute care hospital. Since then, cases of *C. auris* have continued to increase within PA. Previously unaffected counties where *C. auris* has now been identified include Cumberland, Erie, and Monroe County.

Since *C. auris* first appeared in the Commonwealth in March 2020, **199 cases of *C. auris*** have been identified in Pennsylvania, inclusive of Philadelphia. Of these, **59 were cases of *C. auris* clinical infection and 140 were cases of colonization with *C. auris*. Twelve of the 59 clinical infections are in persons who are also counted as a colonization case** (see section below about case counting). **Cases of *C. auris* have been identified within 31 healthcare facilities** across Allegheny, Bucks, Cumberland, Dauphin, Delaware, Erie, Lehigh, Monroe, Montgomery, and Philadelphia Counties. During 2023 alone, 5 cases of *C. auris* clinical infection and 9 cases of colonization with *C. auris* have occurred in Pennsylvania.

Figure: *Candida auris* Cases in Pennsylvania by County of Healthcare Facility where Identified, March 2020—March 29, 2023, N=199



Data for Philadelphia County courtesy of the Philadelphia Department of Public Health

To date, there has been one case in northwestern PA, seven cases detected in southwestern PA, five cases detected in southcentral PA, six cases detected in northeastern PA, and 180 cases in southeastern PA. Data suggest transmission has occurred in the majority of regions in PA and case counts continue to rise.

Cases have been detected at ventilator-capable skilled nursing facilities (vSNFs), long-term acute care hospitals (LTACHs), and acute care hospitals, and include both colonized and clinically ill persons. Containment and response activities are ongoing. In the southeast region, *C. auris* has been detected in over 50% of the vSNFs and LTACHs serving high-risk patients, and many of these facilities have experienced further transmission.

This HAN provides recommendations for PA healthcare facilities, providers, and laboratories for prevention and planning purposes in facilities where *C. auris* has not yet been identified, and containment of *C. auris* when cases are detected.

C. AURIS CASE COUNTS: WHAT IS A CASE?

There are two types of cases of *C. auris*: clinical and colonization. A clinical case occurs when there is a positive *C. auris* specimen that was collected for the purpose of diagnosing or treating disease in the normal course of care. A colonization case occurs when there is a positive *C. auris* specimen that was collected for the purpose of screening or surveillance; colonization cases are identified in people without symptoms. Note that colonization and infection can both lead to transmission of *C. auris.*

A *case is not necessarily equal to a person,* although most of the time one person with *C. auris* infection or colonization counts as one case. The CDC provides public health departments with standards for case counting, and also uses the same method to report cases on their own website.

According to CDC guidance, a person who is colonized with *C. auris* counts as a colonization case only once. Likewise, a person with a *C. auris* clinical infection counts as a clinical case only once. However, if a person is first identified as a colonization case, and then later develops *C. auris* clinical infection, these should be counted as two independent events: a colonization case and a clinical case. The reverse is not true: if a person is first identified as a clinical case of *C. auris* and later is found to be colonized, the colonization does not count as a new case.

Some examples to help illustrate case counting:

Case Scenario	Case Count
A patient tests positive for *C. auris* on a colonization screening test in October 2022. Another colonization screening is collected in December 2022, also positive. To date, the person has not had any clinical infection with *C. auris*.	1 colonization case
A patient tests positive for a clinical infection with *C. auris* in June 2022. In July 2022, the facility accidentally conducts a colonization screening on this patient, which is also positive.	1 clinical case
A patient tests positive for *C. auris* on a colonization screening in September 2021, and in January 2022, develops a bloodstream infection with *C. auris*.	1 colonization case and 1 clinical case

In our previous HAN case counts, the Department reported cases based on the person. A person who tested positive for *C. auris* was not counted again under any circumstance. However, to maintain consistency with CDC counting, the Department will now use CDC case definitions moving forward.

C. AURIS BACKGROUND

C. auris is an emerging fungus that presents a serious global health threat. **CDC, DOH and PDPH are concerned about *C. auris* for three reasons:**

- It is often multidrug-resistant, meaning that it is resistant to multiple antifungal drugs commonly used to treat *Candida* infections, resulting in significant morbidity and mortality in affected patients. Some strains are resistant to all three available classes of antifungals.
- It is difficult to identify with standard laboratory methods, and it can be misidentified in laboratories without specific technology. Misidentification may lead to inappropriate management.
- It has caused outbreaks in healthcare settings, particularly in vSNFs and LTACHs. For this reason, it is important to quickly identify *C. auris* so that healthcare facilities can take special precautions to stop its spread.

C. auris infection has been identified in many body sites including bloodstream, urine, respiratory tract, wounds, and external ear canal. Based on information from a limited number of patients, **CDC reports that 30–60% of people with *C. auris* infections have died**. Many of these people had other serious illnesses that also increased their risk of death.

A person's level of colonization may vary over time, leading to intermittent positive and negative results if testing is repeated. For this reason, there is no established criteria for resolution of colonization, and testing for clearance is not recommended. *C. auris* is also persistent in the environment and will survive many disinfectants routinely used in healthcare facilities.

Risk Factors
Persons who have recently spent time in hospitals and nursing homes, particularly vSNFs and LTACHs, and have invasive devices (e.g., mechanical ventilation or tracheostomy, feeding tubes and central venous catheters) seem to be at highest risk for *C. auris* infection. Like other types of *Candida* infections, risk factors include recent surgery, diabetes, and broad-spectrum antibiotic or antifungal use. Infections have been found in patients of all ages.

Although risk of transmission within a healthcare facility increases with length of stay, documented transmission has occurred during exposure periods as short as four hours.[1-2]

Routine travel to countries with documented *C. auris* infections is not likely to increase the chance of someone getting sick from *C. auris*. Persons who travel to these countries to seek medical care or who are hospitalized there for a long time may have an increased risk for *C. auris* infection or colonization; however, most new cases of *C. auris* in the U.S. are not linked to international exposure and are thought to be domestically acquired.

Drug resistance
Reports of echinocandin- or pan-resistant *C. auris* cases in the United States are increasing. Nationally, multiple outbreaks of highly resistant *C. auris* have involved people with overlapping healthcare exposures and *without previous exposure to antifungal treatment*, suggesting transmission of these strains is occurring.

Transmission
C. auris can spread in healthcare settings through contact with contaminated environmental surfaces or equipment or from person to person. Transmission is not thought to occur via persistent colonization of healthcare workers. Both persons who are colonized with, and those infected with *C. auris* can transmit the fungus, potentially leading to transmission.

Diagnosis
A *C. auris* diagnosis can often be missed if the laboratory does not further speciate *Candida* detected in clinical specimens. *C. auris* can also be misidentified as several different organisms, particularly *Candida haemulonii*, when using traditional phenotypic methods for yeast identification. The CDC algorithm to identify *C. auris* based on phenotypic laboratory method and initial species identification is available here: https://www.cdc.gov/fungal/candida-auris/recommendations.html

For more information, please see the Recommendations for Laboratorians and Health Professionals.

Treatment
CDC does not recommend treatment of *C. auris* identified from noninvasive sites (such as respiratory tract, urine, and skin colonization) when there is no evidence of infection. Similar to

recommendations for other *Candida* species, treatment is generally only indicated if clinical disease is present. Patients who become colonized with *C. auris* are at risk of developing invasive infections from this organism. More information about how to prevent colonization from developing into infection is available from the CDC.

INFECTION PREVENTION AND CONTROL FOR *C. AURIS*

Infection control measures should be used for all patients with *C. auris*, whether infected or colonized, and regardless of the source of specimen. Transmission-based precautions should not be discontinued when treatment for an infection ends but should be continued for the duration of the patient's stay in a healthcare facility and implemented for any future healthcare stays.

The primary infection control measures for prevention of *C. auris* transmission in healthcare settings are:

- Adherence to hand hygiene. Alcohol-based hand rub (ABHR) is effective against *C. auris* and is the preferred method for routine hand hygiene.
- Appropriate use of transmission-based precautions. Patients colonized or infected with *C. auris* in hospitals and nursing homes should be managed using contact precautions. For long-term nursing home residents, discuss options for implementing modified contact precautions or enhanced barrier precautions with your public health point of contact.
- Cleaning and disinfecting the patient care environment (thorough daily and terminal cleaning) and reusable equipment with an EPA-registered disinfectant with a claim against *C. auris* (List P) or a product with documented effectiveness against *C. auris* by CDC, is critical as *C. auris* can persist on surfaces in healthcare settings. If none of these products are available, an EPA-registered hospital-grade disinfectant effective against *Clostridioides difficile* spores (List K) can be used. Note that many products with label claims against COVID-19 are not effective against *C. auris*.
- Inter-facility communication about patient's *C. auris* status when a patient is transferred to another healthcare facility. A DOH transfer letter is available to print and send with a patient on transfer, for patients who are positive for *C. auris* and those with a pending colonization specimen. Patients with a pending colonization specimen should be placed on preemptive contact precautions upon transfer to the receiving facility. PDPH also has a transfer letter that should accompany a patient positive for *C. auris* upon transfer.
- Screening contacts of newly identified case patients to identify *C. auris* colonization.
- Laboratory surveillance of clinical specimens to detect additional cases.

Additional information can be obtained on the CDC Infection Prevention and Control for *Candida auris* page.

Colonization Screening

All healthcare facilities and providers in Pennsylvania should consider screening patients at high risk for *C. auris and placing them on preemptive contact precautions while awaiting test results.*

- Healthcare contacts of those with newly identified *C. auris* infection or colonization;
- Patients with the following risk factors for *C. auris*, especially those with more than one risk factor:

- Patients who are on a mechanical ventilator or have a tracheostomy and reside in or are transferred from an LTACH or a SNF with the capability to care for residents on ventilators;
- Patients who had an overnight stay in a healthcare facility outside the United States within the last year;
- Patients infected or colonized with carbapenemase-producing carbapenem-resistant Enterobacterales (CP-CRE); co-colonization of *C. auris* with these organisms has been observed.

Healthcare facilities and providers should contact their local health department or DOH to discuss public health resources for *C. auris* screening. Limited public health laboratory resources are available to perform colonization screening using a validated method of detection for composite axillary/groin swabs. Facilities should also consider ways to increase capacity for *C. auris* screening including developing their own laboratory capacity or working with reference laboratories that offer this testing.

CONTAINMENT RESPONSE FOR *C. AURIS*

C. auris resources and toolkits are available through PA DOH (Healthcare Facility Toolkit for Response to *Candida auris*) and PDPH (Philadelphia Department of Public Health - *Candida auris* Toolkit).

A single case of *C. auris* (infection or colonization) requires a robust containment response. Be aware that as part of the current response, local and state public health departments may be conducting outreach to healthcare facilities and clinical laboratories with cases, epidemiologic links to case patients, or with patients at high risk of *C. auris*.

Healthcare Facilities and Providers

For healthcare facilities and providers in all regions of PA, DOH and PDPH jointly request that facilities implement the following containment measures:

- Develop and maintain *C. auris* action plans to assure measures are in place should a patient with *C. auris* be detected in, or transferred to, the facility.
- Maintain vigilance for clinical illness that could be consistent with *C. auris*, particularly in patients at higher risk.
- Evaluate surveillance protocols with the laboratory to ensure prompt notification to the infection prevention and control program when *C. auris* is suspected.
- Deliver education to staff and providers about *C. auris* and the infection prevention and control measures necessary to contain it. Resources are available on CDC's *C. auris* infection prevention and control page.
    - Educational in-services must include an emphasis on hand hygiene. Alcohol-based hand sanitizer is effective against *C. auris* and is the preferred method for cleaning hands when they are not visibly soiled. If hands are visibly soiled, wash with soap and water.
- Facilities that have not previously had *C. auris* cases should contact their local public health jurisdiction prior to admitting a patient known or suspected to be colonized or infected with *C. auris*.

- Report to the local public health jurisdiction when a patient colonized or infected with *C. auris* will be transferred from your facility to another facility; this allows public health to work with the receiving facility to provide education and ensure they are prepared to implement appropriate infection prevention and control measures.
- Review environmental cleaning practices for effectiveness against *C. auris*. Use of an EPA-registered hospital-grade disinfectant with a claim against *C. auris* (List P) or a product with documented effectiveness against *C. auris* by CDC, is critical as *C. auris* can persist on surfaces in healthcare settings. If none of these products are available, an EPA-registered hospital-grade disinfectant effective against *Clostridioides difficile* spores (List K) can be used. Note that many products with label claims against COVID-19 are not effective against *C. auris*.
- Increase audits for hand hygiene, personal protective equipment (PPE) and environmental cleaning on units where patients with *C. auris* are located. Consider re-educating healthcare personnel through an in-service or retraining, especially if audits demonstrate low adherence to recommended infection prevention and control practices.

Clinical Laboratories

Clinical laboratories should implement methods to detect *C. auris* as outlined below:

- Use the CDC *Candida auris* laboratory resource and algorithm to identify *C. auris* based on the available phenotypic laboratory method and initial species identification.
- If your laboratory does not have methodologies required to speciate *C. auris*, talk with your health department to evaluate the utility of forwarding isolates suspicious for *C. auris* for further testing at commercial or public health laboratories that can perform *C. auris* identification. Please do not forward isolates to the public health laboratories without health department approval.
- If possible, perform speciation for all yeast isolates from an inpatient in a healthcare facility (acute care hospital, LTACH, or SNF), including from both normally sterile and nonsterile body sites. This activity may be particularly useful in healthcare facilities that have already identified *C. auris* within their patient population.

Reporting

Healthcare facilities, providers, and laboratories **with suspected or confirmed cases of *C. auris* (infection or colonization), should report them to PDPH at 215-685-6748 or DOH by calling 1-877-PA-HEALTH, or your local health department.** *C. auris* became nationally notifiable in 2018.

References

1. Public Health England. Guidance for the laboratory investigation, management and infection prevention and control for cases of Candida auris - August 2017 v2.0. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/637685/Updated_Candida_auris_Guidance_v2.pdf

2. Schelenz S, Hagen F, Rhodes JL, Abdolrasouli A, Chowdhary A, Hall A, et al. First hospital outbreak of the globally emerging *Candida auris* in a European hospital. *Antimicrob Resist Infect Control. 2016*;5:35. Available from: https://aricjournal.biomedcentral.com/articles/10.1186/s13756-016-0132-5