

Change to the List of Reportable Diseases, Emergency Illnesses and Health Conditions

From January 1 – September 27, 2019, the Department of Public Health (DPH) has received reports of 18 Connecticut residents with lung injury potentially related to vaping. This appears to be a growing epidemic both nationally and in our state. To better understand the magnitude of this disease, DPH is participating in an investigation of the disease in collaboration with the Centers for Disease Control and Prevention (CDC) and the U.S. Food and Drug Administration (FDA).

In an effort to further the objectives of this investigation, pursuant to the requirements of Connecticut General Statute 19a-2a and Section 19a-36-A7 of the Public Health Code, Renée D. Coleman-Mitchell, Commissioner of DPH, has considered and hereby amends the List of Reportable Diseases, Emergency Illnesses and Health Conditions to include “unexplained vaping-related lung injuries”, effective September 27, 2019.

Cases of unexplained vaping-related lung injury shall be a Category one disease and reportable immediately by phone to DPH and the local department of health in the town of residence of the case-patient on the day of recognition or strong suspicion of the disease. A report form provided by DPH, and available at <https://portal.ct.gov/DPH/Communications/Forms/Forms>, shall be used to collect information on hospitalized and fatal case-patients. The 2019 Lung Injury Surveillance Case Definition can be found on the CDC website at: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/assets/2019-Lung-Injury-Surveillance-Case-Definition-508.pdf.

Healthcare providers can refer questions about the reporting of “unexplained vaping-related lung injuries,” to the DPH Injury and Violence Surveillance Unit at 860-509-8251.

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A Focus on Fungus: Candidemia and *Candida auris* Surveillance

Candida is a genus of yeast in the fungi kingdom well known to cause human disease. *Candida albicans*, a common colonizer of human skin and mucosal surfaces, may cause infections on skin surfaces, in the mouth, or on genital mucosa under certain conditions. In addition to *C. albicans*, many other *Candida* species can cause invasive disease, including *Candida* blood stream infections, also known as candidemia. Once in the blood, *Candida* species can infect other organ systems. Candidemia is associated with high morbidity and has a mortality rate as high as 25% (1).

Candidemia

In 2019, the Connecticut Department of Public Health (DPH) began statewide candidemia surveillance as part of the Emerging Infection Program (EIP) Cooperative Agreement with the Centers for Disease Control and Prevention (CDC). The Connecticut EIP is a joint project between DPH and the Yale School of Public Health.

The objective of candidemia surveillance is to describe the epidemiology of *Candida* bloodstream infections, with emphasis on speciation and antifungal susceptibility. Epidemiologic data are collected via medical record review. Data gathered through EIP surveillance can elucidate trends in

candidemia disease burden, risk factors, and resistance to common antifungal treatments. At this time, speciation and antifungal susceptibility testing is conducted at the Connecticut State Public Health Laboratory (SPHL). During January–June 2019, SPHL received 189 *Candida* bloodstream isolates, 119 (63%) of which have been speciated. The most prevalent *Candida* species causing blood stream infections are *C. albicans* (35%), *C. glabrata* (29%), and *C. parapsilosis* (24%) (Table).

Candida auris

Candida auris is a species of particular public health interest, due to its increased resistance to available antifungal treatment options, propensity for spread in healthcare facilities, and high mortality rate. Connecticut has only had one case of *C. auris* infection, in a patient with recent healthcare abroad. Patients at most risk for *C. auris* colonization or infection are those with tracheostomies, ventilator dependency, other multidrug-resistant organisms, recent treatment with antimicrobials, or recent hospitalization abroad.

C. auris identified from any body site is reportable, as timely public health actions can help contain spread. People colonized with *C. auris* can shed the pathogen without having symptoms, and many standard healthcare environmental cleaning products may not be effective against *C. auris*. In addition to being difficult to control, *C. auris* is difficult to detect. Many laboratory methods for

identifying *Candida* species can mistake *C. auris* for less concerning *Candida* species. SPHL has laboratory technology that can identify *C. auris* for isolates that may misidentify as other *Candida* species. Clinical laboratories should submit isolates for *C. auris* rule-out when potential misidentifications occur, as outlined here: <https://www.cdc.gov/fungal/candida-auris/recommendations.html>.

The DPH Healthcare-Associated Infections & Antimicrobial Resistance (HAI-AR) Program is working with CT acute care facilities to implement *C. auris* screening for admitted patients with an overnight healthcare stay during the past year in New York, New Jersey, Chicago, or abroad, as these areas have increased *C. auris* prevalence. Screening is particularly important for individuals infected or colonized with a carbapenemase-producing Gram-negative organism. The DPH HAI-AR Program coordinates with SPHL and CDC's Antibiotic Resistance Laboratory Network to facilitate *C. auris* screening using a combination of polymerase chain reaction and fungal culture testing methods. Screening may include swabs of skin (axillae/groin), respiratory secretions, and wounds. Since the beginning of 2019, 20 Connecticut patients have been screened, none of whom have tested positive for *C. auris* colonization. In addition to screening, *C. auris* control activities include increasing knowledge of *C. auris* among healthcare providers, focusing on infection control measures such as contact precautions, hand hygiene, and use of appropriate disinfectants.

Reported by

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References

- Centers for Disease Control and Prevention. Fungal disease: Invasive Candidiasis Statistics. <https://www.cdc.gov/fungal/diseases/candidiasis/invasive/statistics.html>. Accessed 7/29/19.

Table. *Candida* species causing blood stream infections in CT, January-June 2019.

<i>Candida</i> species (N=119)	N (%)
<i>C. albicans</i>	42 (35%)
<i>C. glabrata</i>	34 (29%)
<i>C. parapsilosis</i>	29 (24%)
<i>C. tropicalis</i>	5 (4%)
Miscellaneous*	9 (8%)

* 2 *C. guilliermondii*, 2 *C. pelliculosa*, 1 *C. dubliensis*, 1 *C. kefyr*, 1 *C. krusei*, 1 *C. lusitaniae*, 1 unknown

Investigation of a Confirmed Travel-associated Outbreak of Legionnaires' disease — Connecticut, 2018

During September – November, 2018, the Center for Disease Control and Prevention (CDC) notified the Connecticut Department of Public Health (DPH) of three travel-associated Legionnaires' disease (LD) cases among out-of-state residents who stayed overnight at a Connecticut hotel (Hotel A) during August – October. The DPH and the Local Health Department (LHD) initiated an investigation to prevent additional cases and implement control measures. Results of the investigation identified the source of legionella. This report summarizes the epidemiologic and environmental investigations, laboratory findings, and control measures that were implemented.

Epidemiologic Investigation

An outbreak-associated case was defined as laboratory-confirmed LD in a person who had stayed overnight or worked at Hotel A during the 10 days before illness onset. The DPH Epidemiology and Emerging Infections Program (EEIP) staff used three methods to identify additional outbreak-associated cases. First, Connecticut LD case reports from 2016–2018 were reviewed to determine if any reported an exposure to Hotel A. Second, on December 6, 2018 and February 22, 2019, calls for cases were posted on the CDC [Epidemic Information Exchange](#). Third, DPH mailed a health advisory letter to 163 guests who stayed at Hotel A during January 30 — February 13, 2019. Of the 163 guests, 57 were Connecticut residents. No additional outbreak-associated LD cases were identified.

Environmental Investigation

In early November, 2018, after receiving a CDC travel notification of the second LD case who stayed overnight at Hotel A, DPH and LHD initiated an investigation to identify the source of Legionella. At that time, DPH and LHD recommended Hotel A hire an environmental consultant, and LHD conducted an onsite inspection. At the end of November 2018,

DPH was notified of a third case who stayed overnight at Hotel A the LHD conducted a second visit to the hotel and initiated an environmental assessment. During December 2018, the environmental assessment was completed and DPH and LHD recommended Hotel A hire an environmental consultant.

The consultant hired by Hotel A developed an environmental sampling plan and collected potable water samples on January 28, 2019. A private laboratory certified as a CDC [Environmental Legionella Isolation Techniques Evaluation \(ELITE\) Program](#) laboratory and [DPH-Environment Lab Certification Program](#) tested the samples for the presence of *Legionella* bacteria. On February 11, 2019, *Legionella pneumophila* serogroup 1 was isolated by culture from specimens collected on all four hotel floors, including 8/8 (100%) bulk hot-water samples and 4/7 (57%) swabs of shower heads and sink faucets. No clinical isolates were available for comparison with environmental isolates.

During February 2019, the DPH's EEIP, Environmental Health Section, Drinking Water Section, and LHD assessed potential exposure mechanisms. Technical assistance regarding water system remediation and control measures was provided to Hotel A in consultation with subject matter experts from DPH and CDC.

Control Measures

Hotel A closed voluntarily on February 13, 2019, at the recommendation of the LHD, and remained closed for 23 days. During that time, remediation and plumbing modifications were implemented to limit potential exposure to *Legionella* via the hotel water system. On March 6, 2019, follow-up water samples were tested and were culture-negative for *Legionella*.

Hotel A developed a water management program and staff was trained to implement the components of the program. To validate the water management program, DPH recommended monitoring water temperature, pH, and disinfectant

level during February — August, 2019. Routine Legionella testing of bulk water samples and swabs from showers and sinks was also recommended.

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Editorial

Legionnaires' disease (LD) is a severe bacterial pneumonia, and approximately 10-15% of LD cases reported to CDC are travel-associated (1). Travel-associated cases are LD identified in a person who spent at least one night away from home in the 10 days before symptom onset, not including nights spent in a healthcare facility (2). Cases of Legionellosis, which include LD and other illnesses caused by *Legionella* bacteria (Pontiac fever), are reportable by healthcare providers and laboratories to DPH and the patient's LHD. To identify potential common sources of exposure, DPH staff follow-up on all confirmed Legionellosis cases by contacting the healthcare provider of record and conducting patient interviews. All Legionellosis cases are reported to the CDC.

This was the first LD outbreak outside of a healthcare setting investigated in Connecticut. Closure of Hotel A allowed for implementation of aggressive control measures to address underlying issues in the hotel water system, and may have limited the outbreak. Hotel A will continue to conduct water monitoring to validate effectiveness of their new water management program.

Direct reporting of travel-associated LD cases by state health departments to CDC was critical for

detecting this outbreak. Because Legionnaires' disease is a nationally reportable disease to CDC, they can detect potential outbreaks among residents of different jurisdictions. Epidemiologists at DPH would not have been able to identify this outbreak because they only have access to data from Connecticut residents, and none of the outbreak-associated cases were among Connecticut residents.

The DPH, in collaboration with the LHD, coordinated a rapid and efficient response to the first hotel-associated LD outbreak in Connecticut. This response was possible because of strong partnerships among the DPH multidisciplinary LD investigation team, which includes staff from EEIP, Environmental Health and Drinking Water Sections, and the LHD responsible for licensing Hotel A.

Key Messages for Providers:

- Consider legionellosis as a potential diagnosis when evaluating patients with community-acquired pneumonia.
- Obtain urine antigen tests AND sputum samples for culture for suspected cases.
- Encourage your laboratory to send any *Legionella* spp. isolates to the State Public Health laboratory.
- Report laboratory-confirmed cases to DPH and to the patient's LHD. Providers can report to DPH by phone at 860-509-7994 or fax completed reports to 860-509-7910.

References

1. CDC. Legionella. How to Report Cases. Surveillance Systems. <https://www.cdc.gov/legionella/health-depts/surv-reporting/report-cases.html>. Accessed August 20, 2019.
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