



HEALTH ADVISORY LEGIONELLA AMIDST REOPENING OF BUSINESSES & SCHOOL FACILITIES

Background:

Legionella bacteria are aerobic, gram negative, intracellular pathogens found in water and soil, generally in small numbers insufficient to cause disease. However, in human-made water systems like the plumbing of large buildings, cooling towers, decorative fountains, or hot tubs, they can amplify and be transmitted to susceptible hosts via inhalation aerosols from contaminated water and soil, and less commonly by aspiration of drinking water.

Legionellosis refers to any clinical syndrome associated with Legionella infection, and can present as Pontiac fever, which is an acute, self-limited febrile illness as well as the more severe Legionnaire's disease which refers to pneumonia. Even during outbreaks, only a minority of people develop disease, and associated risk factors include age > 50, smoking history, and underlying medical conditions such as chronic lung disease, cardiovascular disease, kidney or liver failure, diabetes, malignancy, and immune system disorders. More recently, there have also been increasing cases of Legionella co-infections in patients diagnosed with COVID-19.

Situation:

Many facilities (office buildings, childcare centers, etc.) were temporarily closed or reduced operation for a prolonged period (weeks to months) during the COVID-19 pandemic. When water is stagnant, hot water temperatures can decrease to the *Legionella* growth range (77°–113°F, 25°–42°C). Stagnant water can also lead to low or undetectable levels of disinfectant, such as chlorine. Therefore, when reopening buildings, water systems that were not properly cleaned, maintained, and disinfected are at risk of *Legionella* amplifications and subsequent Legionellosis outbreaks, among other hazards. (Examples include Legionella outbreaks at the [Quality Inn in Bethany, MO - July 2021](#) and at the [Duke University K Academy - August 2021](#)).

ACTIONS REQUESTED OF CLINICIANS:

1. **CONSIDER LEGIONELLA** in patients with signs and symptoms of pneumonia:
Fever and symptoms such as cough, shortness of breath, rales or signs of consolidation on physical exam, and patchy infiltrates/consolidation on radiographic imaging with the addition of gastrointestinal symptoms (nausea, vomiting, diarrhea), hyponatremia, elevated liver function tests, elevated C-reactive protein > 100 mg/L, or failure to respond to treatment for pneumonia with beta-lactam monotherapy.
2. **TEST** suspected cases.
Early diagnosis and administration of appropriate antibiotics is associated with improved outcomes in patients with Legionnaire's disease. However, because symptoms are nonspecific, laboratory testing is essential for diagnosis and as a result, all patients with moderate to severe community-acquired pneumonia, patients with community-acquired pneumonia who require hospitalization, patients with a known or possible exposure to Legionella, patients with hospital-associated pneumonia, and all immunocompromised patients should be tested as early as possible in the course of illness.
The preferred testing modality is a lower respiratory tract sample PCR (and culture), but if PCR is not available and sputum cannot be obtained, a urine antigen test is an acceptable alternative.
3. **REPORT** suspect and confirmed cases to Alameda County Public Health Department (ACPHD)
Complete a [CMR](#) and fax to 510-273-3744

Additional Resources

[CDPH Legionellosis fact sheet](#)

[CDC Legionella website](#)

[CDC Legionnaires' disease](#)