

June 11, 2021

The Indiana Department of Health (IDOH) is alerting healthcare providers to an anticipated seasonal increase in *Legionella* infections combined with the associated potential increase of cases resulting from building reopenings. IDOH is sending this notification to remind all healthcare providers to test for *Legionella* when evaluating adults with symptoms of pneumonia, even during the COVID-19 pandemic.

Testing should include both urine antigen testing (UAT) **and** *Legionella* respiratory culture following these guidelines:

- Test for *Legionella* in adults with pneumonia, particularly patients who are ≥ 50 years of age or who have lung disease, immune-suppression, or a history of smoking.
- Testing for *Legionella* includes both UAT and culture of bronchoalveolar lavage specimens or other lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site.
- Report cases within 72 hours to your local health department or IDOH via NBS or by faxing results to 317-234-2812 and submit all *Legionella* isolates to the IDOH Public Health Laboratories for additional testing.

The number of reported cases of legionellosis has been increasing since 2000 in Indiana and throughout the United States. The IDOH expects that the number of cases will continue to increase significantly due to a combination of the following:

- Seasonality: Legionellosis cases follow a seasonal pattern in Indiana. *Legionella* bacteria grow best in warm, humid, and wet weather, and the majority of *Legionella* infections occur between June and October each year.
- Building reopenings: Water systems in buildings with low or no occupancy during the COVID-19 shut down are at risk of being contaminated with *Legionella*, which grows well in stagnant water. Buildings that reopened without thoroughly flushing and disinfecting their water systems or cleaning and maintaining other devices that use water (such as decorative fountains or cooling towers) may expose individuals to the bacteria.

Legionellosis is caused by *Legionella* bacteria. It is characterized by pneumonia occurring 2-14 days after exposure to an often-unidentified environmental source. *Legionella* is a ubiquitous aquatic organism that grows in warm environments (77° - 108° F). Exposure occurs through inhalation of contaminated aerosols from devices such as cooling towers, whirlpool spas, ornamental fountains, showers and faucets, and through aspiration of contaminated water. Individuals at higher risk of infection include persons ≥ 50 years old, cigarette smokers, and persons with chronic lung disease or immunocompromising conditions. The case-fatality rate is estimated to be 10% for community-acquired Legionnaires' disease. Recommended treatment options include macrolide or quinolone antibiotics.

Legionellosis is associated with three clinically and epidemiologically distinct illnesses: Legionnaires' disease, Pontiac fever, or extrapulmonary legionellosis.

- Legionnaires' disease is a severe illness with pneumonia. Symptoms are similar to those of COVID-19 and include cough, shortness of breath, fever, muscle aches, and headaches. Some patients also experience diarrhea, nausea, and confusion. Most patients are hospitalized, and treatment is required. The case-fatality rate is about 10% for community-acquired Legionnaires' disease and about 25% for healthcare-acquired disease.
- Pontiac fever is a milder illness, frequently characterized by fever and muscle aches. Patients with Pontiac fever do not develop pneumonia, do not require treatment, and typically recover within a week.
- Extrapulmonary legionellosis is caused by *Legionella* bacteria at sites outside the lungs, such as endocarditis, wound infection, etc. A diagnosis of extrapulmonary legionellosis is made when there is clinical evidence of disease at an extrapulmonary site and diagnostic testing indicates evidence of *Legionella* at that site.

Recommendations for Providers

The following guidelines are recommended for providers to help identify outbreaks of legionellosis:

- Maintain a high index of suspicion for legionellosis among all adults with pneumonia, whether community-acquired or nosocomial.
- Specifically request both culture and UAT for *Legionella* diagnosis and collect appropriate specimens for testing.
- Report all legionellosis cases to the local health department or IDOH online via NBS or faxed to 317-234-2812.
- Send all *Legionella* isolates to the IDOHL for serotyping and molecular testing. Send isolates and a laboratory request form to:
Indiana Department of Health Laboratories
Attn: Reference Microbiology
550 W. 16th St., Suite B
Indianapolis, IN 46202
- Please call the IDOH Laboratories Clinical Microbiology Division at 317-921-5858 with any laboratory-related questions.

For questions about Legionellosis cases, testing, or water management plans, please contact Madi Asbell, Infectious Disease Flex Epidemiologist, at 317-234-9741 or MAbell@isdh.IN.gov.

