

DPHHS HAN

Information Sheet



DATE

September 7, 2022

SUBJECT

Recent Flooding in Montana May Lead to Increase in Legionnaires' Disease Cases

BACKGROUND

Legionella bacteria are found naturally in the environment but become a human health concern when they are present in building water systems. Flooding events like those experienced in Montana in recent months can lead to the disruption of building water systems, and have historically been linked to an increase in diagnosed Legionnaires' Disease cases¹. Legionnaires' disease may present like other pneumonias, but testing should be performed to identify cases of Legionnaires' disease to help public health identify and respond to cases of this disease and prevent illness in others.

INFORMATION

Legionnaires' disease is similar to other types of pneumonia, and most infected individuals present with symptoms that include cough, shortness of breath, fever, muscle aches, and headaches. Symptoms normally begin 2 to 14 days after exposure to *Legionella* bacteria. Cases with Legionnaires' disease require treatment with antibiotics. Outcomes for this infection can be serious; most cases are hospitalized and about one in 10 people who get sick will die due to complications from their illness. People who are most likely to get sick after exposure to *Legionella* include those who are 50 years or older, current or former smokers, and people who are immune compromised (e.g., people with a chronic lung disease, cancer, or underlying conditions such as diabetes).

People get Legionnaires' disease by breathing in small droplets of water that contain *Legionella* bacteria. *Legionella* grows best in large, complex water systems that are not adequately maintained. Environmental events like flooding can disrupt water systems in large buildings, which may lead to more favorable conditions for *Legionella* growth. A few hospitals in Montana that have recently been affected by flooding have detected high levels of *Legionella* in their water systems, which may pose a risk to patients. Remediation steps are being taken to reduce the levels of bacteria in these systems, but **providers should be aware of the elevated risk of Legionnaires' disease in susceptible populations and should consider testing for *Legionella* bacteria if pneumonia is suspected.**

The *Legionella* urine antigen test (UAT) is commonly used for legionellosis diagnosis in Montana. However, this test only detects illness caused by *Legionella pneumophila* serogroup 1 (Lp1). At least one hospital in Montana has recently detected high levels of *Legionella pneumophila* serogroup 6 (Lp6) in their water system. Lp6 is known to cause clinical illness in humans, especially in the Western US, and over-reliance on the UAT may contribute to the underdiagnosis of Legionnaires' disease in Montana. **The preferred testing methods for clinical cases are PCR testing and culture for *Legionella*, of lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary sites.**

¹ Lynch, V.D., Shaman, J. The effect of seasonal and extreme floods on hospitalizations for Legionnaires' disease in the United States, 2000–2011. *BMC Infect Dis* 22, 550 (2022). <https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-022-07489-x>

RECOMMENDATIONS

Recommendations for Healthcare Providers

1. Be aware that recent flooding in Montana has potentially increased the risk of Legionnaires' disease in the population.
2. The clinical presentation of Legionnaires' disease is a pneumonia-like illness that includes symptoms of cough, shortness of breath, fever, muscle aches, and headaches.
3. If a patient meets these clinical criteria, consider testing for Legionnaires' disease.
4. PCR and culture diagnostic tests are the preferred testing methods for Legionnaires' disease; the urine antigen test only detects *Legionella pneumophila* serogroup 1 and may lead to the underdiagnosis of Legionnaires' disease in Montana.

Recommendations for Local Health Departments

1. Local health departments should perform thorough case investigations for any diagnosed Legionnaires' disease cases in their jurisdiction.
 - a. Case investigators should use the Legionellosis case report form for investigations, and send to CDEpi once the investigation is complete: <https://www.cdc.gov/legionella/downloads/case-report-form.pdf>
 - b. Case investigations should focus on determining whether the case spent any nights away from home prior to symptom onset (including at a healthcare facility, hotel, or other temporary lodging) and whether any time was spent in or near a whirlpool spa (i.e., hot tub).
2. Reach out to CDEpi at 406-444-0273 for any assistance with Legionnaires' Disease investigations.