Legionellosis (Legionnaires' disease)

Legionnaires' Disease

Legionnaires' disease is caused by a type of bacteria called *Legionella*.
The *Legionella* bacteria are found naturally in the environment, usually in water. The bacteria grow best in warm water, like the kind found in hot tubs, cooling towers, hot water tanks, large plumbing systems, and decorative fountains that are not properly maintained. They do not seem to grow in car or window air-conditioners.

People get Legionnaires' disease when they breathe in a mist or vapor (small droplets of water in the air) containing the bacteria. **The bacteria are not spread from one person to another person. A person diagnosed with Legionnaires' disease is not a threat to others who share office space or other areas with him or her.**

Signs & Symptoms

Most healthy individuals do not become infected with *Legionella* bacteria after exposure. People at higher risk of getting sick are those 50 years of age or older, current or former smokers, those with a chronic lung disease (like COPD or emphysema), those with a weak immune system from diseases like cancer, diabetes, or kidney failure, and people who take drugs that suppress (weaken) the immune system (like after a transplant operation or chemotherapy).

Legionnaires' disease can have symptoms similar to pneumonia (lung infection), therefore it can be hard to diagnose at first. Signs of Legionnaires' disease can include cough, shortness of breath, high fever, muscle aches, and headaches. These symptoms usually begin 2 to 10 days after being exposed to the bacteria.

Laboratory Tests

Most people with Legionnaires' disease will have pneumonia since the *Legionella* bacteria grow and thrive in the lungs. Several laboratory tests can be used to detect the *Legionella* bacteria within the body. The most commonly used laboratory test for diagnosis is the urinary antigen test, which detects a part of the *Legionella* bacteria in urine. If the patient has pneumonia and the test is positive, then the patient is considered to have Legionnaires' disease. If the *Legionella* bacteria are cultured (isolated and grown on special media) from sputum (phlegm), a lung biopsy specimen, or various other sites, the diagnosis of Legionnaires' disease is also considered confirmed. Blood specimens drawn shortly after illness and several weeks following recovery, can also be used to confirm the diagnosis.

Treatment

Legionnaires' disease requires treatment with antibiotics and most cases of Legionnaires' disease can be treated successfully with antibiotics. Each year, between 8,000 and 18,000 people are hospitalized with Legionnaires' disease in the U.S. In New York State (including New York City), between 200 and 800 cases are diagnosed each year. However, many infections are not diagnosed or reported, so this number may be higher. More illness is usually found in the summer and early fall, but it can happen any time of year.

Prevention

The key to preventing legionellosis is maintenance of the water systems in which *Legionella* grow (e.g. in hot tubs, cooling towers, hot water tanks, large building water distribution systems, and decorative fountains). Guidelines for appropriate water temperatures and chemical treatment of water for legionellosis prevention should be rigorously followed.

Remediation

There are many options available for remediation of water systems contaminated with *Legionella*. Remediation should be seriously considered whenever *Legionella* is identified, regardless of whether it is associated with a cluster or outbreak of cases. Considerations include the level of contamination, type of water system, water chemistry, demonstrated treatment effectiveness, cost, and ease/safety of application. Consultation with an experienced water treatment specialist familiar with *Legionella* issues is recommended, as general guidelines are often difficult to apply to complex water systems.

In New York State (including NYC), physicians, laboratories, nursing homes, hospitals and other facilities providing health services are also required to report suspected and confirmed cases of legionellosis to the local health department (LHD) where the patient resides. LHD and NYSDOH disease detectives investigate each report with standardized tools and analyze the data with regard to person (Who is being infected?), place (Where were infected persons potentially exposed) and time (When have people been infected). Patterns among these three variables may indicate a cluster or an outbreak and can lead to focused environmental testing of water systems and the possible implementation control measures (e.g. disinfection).

To obtain a free sample kit, please contact the New York State Department of Health by email: Legionella@health.ny.gov or by telephone toll-free: 888-769-7243