



BOSTON PUBLIC HEALTH COMMISSION
Communicable Disease Control Division
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PUBLIC HEALTH UPDATE: Legionellosis in Boston

SUMMARY: Since January 1, 2015, there have been six confirmed cases of legionellosis in Boston residents. No clusters have been identified. The Boston Public Health Commission's Infectious Disease Bureau (IDB) and the Division of Environmental and Occupational Health (DEOH) investigate all reported legionellosis cases in Boston residents. Investigations include case interviews for risk factors, clinical findings, and case confirmation for surveillance purposes as well as environmental assessments of cooling towers, air conditioning units and plumbing systems as needed. **Cases of legionellosis and suspect clusters of illness are reportable to the Boston Public Health Commission (BPHC) at 617-534-5611.**

CLINICAL INFORMATION

Legionellosis, an infection caused by the bacterium *Legionella pneumophila*, can cause two different types of illness. Legionnaires' disease is characterized by pneumonia with fever, chills, cough, and myalgias with occasional GI symptoms. Illness can range from mild to severe. Risk factors for Legionnaires' disease include male gender, cigarette smoking, chronic heart or lung disease, diabetes, end-stage renal failure, organ transplantation, immunosuppression, some types of cancer, and age over 50 years. Most cases of Legionnaires' disease are sporadic and not associated with an outbreak. Legionellosis can also result in Pontiac fever, a milder influenza-like febrile illness without pneumonia. The incubation for Legionnaires' disease is 2-10 days after exposure to an environmental source, and for Pontiac fever 1-2 days.

SOURCE AND TRANSMISSION

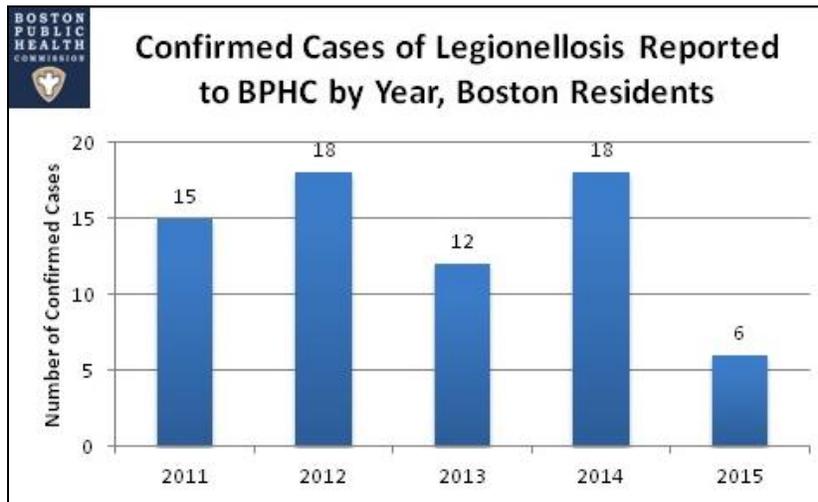
Legionella bacteria are found naturally in the environment and grow best in warm water. Exposure occurs through inhalation of contaminated aerosols from devices such as cooling towers, hot water tanks, whirlpool spas, and large plumbing systems. People may be exposed in homes, workplaces, hospitals, or public places. Legionellosis is not spread from person to person.

DIAGNOSIS

Laboratory tests to support a diagnosis of legionellosis all have limitations. Culture requires special media and lacks sensitivity. Detection of antigenuria is widely used, but the test is most sensitive for illness caused for *L. pneumophila* serogroup 1. Antibody detection requires paired sera for optimal sensitivity, and is not usually helpful in the acute setting.

LEGIONELLOSIS IN BOSTON

Since 2011, there have been 69 confirmed cases of legionellosis in Boston residents, averaging about 16 cases per year. There have been 6 confirmed cases of legionellosis reported in Boston residents since January 1, 2015. All were hospitalized, and one died. Ages ranged from 31 to 86 years, with a mean age of 57 years. Of the 6 cases, 5 (83%) were male. BPHC investigated all cases, and no clustering was identified.



PREVENTION

Building owners should appropriately maintain water systems in which *Legionella* may grow, including cooling towers, drinking water systems, hot tubs, and decorative fountains. Cooling towers should be kept away from building air intakes, occupied areas that could be impacted by mist, and have effective spray drift preventers. Guidelines for appropriate water temperatures and chemical treatment of water for legionellosis prevention can be found at

<http://www.cdc.gov/legionella/about/prevention.html> and at <https://www.osha.gov/dts/osta/otm/legionnaires/pdf/sectionii.pdf>

Tips for building owners to prevent legionellosis:

- Cooling towers should undergo regular maintenance and be drained when not in use. Approved biocides should be used to limit the growth of the slime forming organisms.
- Maintain appropriate chemical treatment and temperatures in all the water sources in a building. These include ice machines, whirlpools, water fountains and HVAC systems.

The BPHC Division of Environmental and Occupational Health (DEOH) is available to investigate Boston buildings and homes of people with legionellosis.

REPORTING

Healthcare providers, institutions, and laboratories are all required to report legionellosis cases diagnosed in Boston to the BPHC IDB at 617-534-5611.