

LEGIONNAIRES' DISEASE

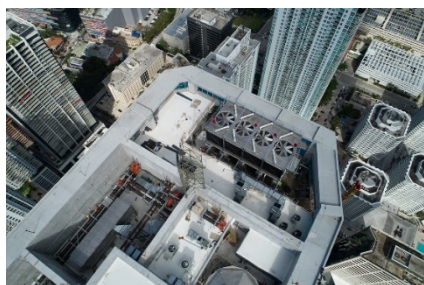
With the advent of COVID-19, many facilities have reduced occupancy and employees have started working remotely from home. Now, several facilities are returning employees to the office. You may not be aware of a potential increased risk of exposure to biological contaminants due to reduction or stoppage of maintenance of the water supply system during the COVID-19 pandemic. In returning workers to the office environment, it is imperative that the water supply system be properly maintained and returned to operations to prevent the occurrence of Legionnaires' disease.

Legionnaires' disease Bacteria (LDB) include a group of over 50 currently identified species of the bacterium *Legionella*. *Legionella* bacteria are naturally occurring and live in fresh water rivers, lakes, and streams all over the world. Water in natural or man-made sources can serve as bases for *Legionella* growth under suitable conditions. The bacteria tend to thrive in areas of stagnant water, between temperatures of 68–122°F (25–50°C).

Legionnaires' disease was first diagnosed as the result of a large outbreak of the disease at the Bellevue-Stratford Hotel in Philadelphia, Pennsylvania, in 1976. Over 200 individuals became ill and 34 died of complications from pneumonia. The disease was named after a convention held by the American Legion in the hotel at the time of the outbreak.

According to the U.S. Centers for Disease Control and Prevention (CDC), LDB-related illnesses in the U.S. rose over 300% between 2000 and 2009. The cause of this rapid rise not yet been determined, but is believed to be a combination of items including changes to water system design, purpose, maintenance and usage, and increased diagnosis of associated disease(s).

The primary route of human exposure is through inhalation of aerosolized water droplets. This commonly occurs in places such as bathroom showers or hot tubs, but can also happen on a massive scale in situations where building design and distribution come into play. Roof-mounted cooling towers in high-rise buildings can often generate water droplet aerosols that can be entrained within a building HVAC system if located too closely to fresh air intakes.

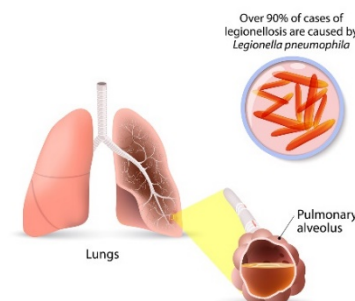


Due to the prolonged reduced occupancy due to COVID-19 surveillance and monitoring, inspection and testing of facility water sources should be conducted prior to preoccupancy. Concerns are focused around water usage, temperature, and chlorination issues where water may be cool and chlorination is reduced due to lack of use. The surveillance should include a thorough inspection of all accessible areas of the facility, seeking to identify areas of stagnant water, especially as it pertains to the potential for water aerosolization resulting in potential exposure to employees or contractors. Sediment, when found, should be noted and cleaned/removed as quickly as possible.

NV5 has conducted multiple assessments of facility water supply and distribution systems and can assist you in establishing a *Legionella* Water Management Plan and the evaluation, maintenance, and management of your water distribution system to control or eliminate potential *Legionella* exposures in compliance with CDC, Environmental Protection Agency (EPA), and American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) guidelines.

To learn more, contact David Newman at david.newman@nv5.com or 206-605-9333

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