

Learn How to Keep *Legionella* out of Your Workplace's Water Systems



The machinery, equipment and hazardous substances aren't the only things in a workplace that can endanger workers' health and safety. The very air that they breathe can pose a hazard and expose workers to a variety of diseases.

For example, the bacteria *Legionella* can cause Legionnaires' disease, a severe form of pneumonia named after the delegates infected during an outbreak at an American Legion of Pennsylvania convention in 1976. People become infected with *Legionella* by inhaling the mist from water sources where the bacteria thrive. The Public Health Agency of Canada says only about one in 20 people exposed to the bacteria contracts the disease, which can be fatal.

In June 2015, an individual working in the Citizenship and Immigration Canada building in downtown Ottawa was infected with Legionnaires' disease. The worker has since made a complete recovery.

But that infection came after the discovery of *Legionella* at Place du Centre at 200 Promenade du Portage, the second Gatineau building in two months where *Legionella* was found. *Legionella* bacteria was also found in the cooling tower at 30 Victoria St.

And in New York City, an outbreak of Legionnaires' disease in the South Bronx infected 121 people, killing 12. The outbreak has been tied to the presence of *Legionella* bacteria in the cooling towers of 11 large buildings, including a hotel, hospitals and schools.

Because *Legionella* grows in warm water, water systems and cooling towers are perfect breeding grounds for the bacteria. For example, tests showed bacteria levels at 2,000 colony-forming units, per millilitre in the cooling system of the Place du Portage building'20 times the federal government's reporting standard.

So how can you prevent *Legionella* from infecting your workplace and getting your workers' sick? Public Health Ontario recommends that you take steps to prevent the growth of the *Legionella* bacteria in water systems and to reduce exposure to water aerosols, including:

- Avoiding water temperatures between 20°C and 50°C, which favour the bacteria's growth;
- Avoiding water stagnation and low flow'stagnation can encourage the growth of biofilm, which can protect *Legionella* and provide conditions that encourages its proliferation;
- Avoiding the use of materials such as rubber washers and hoses that harbour the bacteria or provide nutrients for microbial growth;
- Controlling the release of water spray;
- Maintaining the cleanliness of the system to avoid the accumulation of sediments, which can harbour *Legionella* and provide a nutritional source;
- Using water treatment techniques to control the *Legionella* population; and
- Ensuring that the system operates correctly and is well maintained.

In addition, the American Industrial Hygiene Association' (AIHA) released a new guideline on *Legionella. Recognition, Evaluation, and Control of Legionella in Building Water Systems* takes a preventive approach, based on proven industrial hygiene principles to controlling the spread of *Legionella*. It offers guidance for industrial hygienists and other occupational and environmental health and safety professionals on assessing building water systems before disease occurs.