

Legionnaires' Disease

What were the major events of 1976?

Everyone knows of the bicentennial, the Montreal Olympics and the election of Jimmy Carter as President. Few remember that it was the year of the first major outbreak of Legionnaires disease, but we all remember that there was an event that brought the term to the English language.

“*Legionella* was discovered after an outbreak in 1976 among people who went to a Philadelphia convention of the American Legion. Those who were affected suffered from a type of pneumonia that eventually became known as Legionnaires’ disease.”

Since the year 2000, the **number of cases** has been rising. They peaked in 2018 with about 10,000 people infected and around 250 lost lives. The States with the greatest number of cases were Ohio, New York, Pennsylvania and Michigan.

What is Legionnaires’ disease?

It is a serious type of pneumonia caused by a type of bacteria now known as **Legionella**. It can spread to lungs, heart and wounds. After exposure, symptoms can begin as early as two days but might take up to 14 days. They include fever, cough, headaches and muscle aches.

What are the sources of Legionella?

Legionella is found naturally in soil and fresh water. In the natural environment it is usually at concentrations that are harmless. It can be **potentially deadly** human health hazard in places such as poorly maintained domestic and industrial water systems, cooling towers, or heating, ventilation, humidifiers and air condition (HVAC) systems. High levels can be found on shower heads and hot tubs.

How does it spread?

The **most common source** of infection are water droplets that are breathed into the lungs. For example, a poorly maintained water fountain in the lobby of a building can produce aerosols containing sufficient levels of Legionella to cause sickness. Less common is untreated drinking water if the droplets find a way into your lungs. The average person is not likely to be infected unless there is an underlying issue such as swallowing difficulties.

It is not found to be transmitted from person to person. People that are the most at risk include smokers, seniors and those with underlying health issues or immunity deficiencies.

How to prevent exposure to Legionella?

The first line of defense is the establishment of a water management program. It starts with design and includes maintenance and testing. The program should be written and documentation must be maintained.

The following are some **best practices** that should be followed:

- Water system maintenance including visual inspection and cleaning
- Disinfection including biocides and chlorination
- Non-chemical water treatment such as ultraviolet light or ultrasonic waves
- Personal protection equipment such as N95 respirator for workers
- Design systems to reduce dissolved solids, minimize water vapor release, provide ease for cleaning and regulate temperature (Legionella grows best between 77°F – 113°F (25°C – 45°C))
- Eliminate stagnant water
- Repair leaking pipes
- At least quarterly testing specifically for Legionella

Are there laws and regulations regarding Legionella?

There are no federal laws or regulations that apply broadly regarding Legionella in water systems. However, there **are state and local regulations** that apply to control the presence of Legionella in water systems, and there are several federal agencies that have provisions that apply to areas under their control.

For example, **in 2015**, New York city adopted regulations following outbreaks of Legionella's disease caused by cooling towers in the city. They include, but are not limited to: registering existing and new cooling towers with the city and state, taking water samples for testing every 90 days with certain notification requirements based on results, performing daily chemical treatment of system water, monitoring temperature, pH, conductivity and biocides at least three times per week, inspection quarterly and annual certification and establishing and following an ASHRAE 188 inspection program. These regulations apply to the approximately 6,100 cooling towers in New York city.

It is important to understand the laws and regulations that apply to your specific operations. As such, you should consult with your attorney or another appropriate professional advisor to ensure that you have a full and complete understanding of all laws and regulations that apply.

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