

Legionella pneumophila

Background

Legionella is a bacteria found naturally in freshwater environments at generally low levels, but can become a health problem when amplified in building water systems, especially large, complex water systems such as hotels, hospitals, and office buildings. When *Legionella* grows in the biofilm of premise plumbing and is aerosolized through devices such as showers, cooling towers, hot tubs, or fountains, people can breathe in small, contaminated water droplets. Inhalation of *Legionella* may result in a severe form of pneumonia known as Legionnaires' disease, or in milder Pontiac fever.



Legionella Outbreaks

Legionella is the leading cause of [waterborne disease outbreaks](#) in the United States. Outbreaks can be severe, especially in susceptible populations, causing hospitalization and death. Multiple outbreaks have been associated with health care facilities, and because of the sensitive populations that reside there, health care agencies have some of the most robust policies on *Legionella* control.

Reducing exposure and controlling Legionella

In buildings where *Legionella* has grown in the premise plumbing, the water provided by the public water system is a likely initial source. There are currently efforts to conduct a study monitoring for *Legionella* in the water in the distribution systems of public water systems that will provide a better understanding of the occurrence of *Legionella* in a distribution system. Regardless of whether the public water system is the original source of the *Legionella* found in premise plumbing, water systems can support control of *Legionella* and other opportunistic pathogens by providing water with optimal disinfectant residuals to all customers.

Building water management plans can also reduce and control *Legionella* growth in building water systems. These plans include a description of the building water system, a team to develop and manage the plan, control measures, and monitoring to verify that the plan is working. The most recognized industry standard for these plans is [ASHRAE 188](#). NSF International is also working on Standard NSF [444](#) for Prevention of Injury and Disease Associated with Building Water Systems. These agency guidelines and industry standards will drive how *Legionella* is controlled in buildings.

There are also treatment options that many buildings have installed as a control strategy to reduce the growth of *Legionella* as well as other opportunistic pathogens. The [EPA document](#) discusses various treatment options including several forms of chlorine, copper-silver ionization, UV, ozone, and other remediation methods.

Regulation of *Legionella*

Section 300g-1 (a) of the Safe Drinking Water Act specifies buildings served by a public water system that meet criteria that might otherwise make them a consecutive water system, are not regulated if they meet four criteria, the first of which is that they do not treat the water. Treatment is not defined in this exception which leaves it open to state interpretation. At present, there is no comprehensive national guidance from EPA specifically addressing what constitutes “treatment” or how to apply other drinking water regulations when the building is determined to be a public water system.

States have taken various approaches to address building water systems. The most aggressive reach out to critical categories of facilities (like health care facilities) to request documentation of any treatment that might be installed. When treatment is discovered, or voluntarily reported, the state may make these facilities public water systems and apply other rules as appropriate. Many other states will regulate these as public water systems, but they do not actively pursue new systems and address them only as they receive specific requests. A few states still let state or local building codes govern these facilities and do not actively regulate them. As healthcare facilities begin implementing control policies and general awareness of *Legionella* grows, states are becoming more active in regulating these facilities and thousands of new public water systems could result from aggressively identifying and regulating buildings with treatment.

Tools and Resources

A good general description of *Legionella* biology and control is provided in a [webinar](#) for states that was hosted by ASDWA.

CDC is attempting to bring these standards down to a more practical level with a [Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings](#). The CDC *Legionella* web page has a wealth of other information about *Legionella*, health concerns, and control and remediation.

Centers for Medicare and Medicaid Services requires certified healthcare facilities to have [water management policies and procedures](#) to reduce the risk of growth and spread of *Legionella* and other opportunistic pathogens in building water systems, including a facility risk assessment and a water management program.

ASDWA Actions

ASDWA’s primary role has been to help states share what they are doing with other states and sharing state actions with other organizations. There have been many presentations and discussions at ASDWA meetings about *Legionella*. In [2015 ASDWA surveyed states](#) on how they were addressing buildings that installed treatment. In addition, state representatives serve on the joint CDC/EPA committee that supported the development of the EPA treatment technologies document and continues to work on *Legionella* issues.

States will continue to serve on the EPA-CDC workgroup. ASDWA staff is currently evaluating projects and actions suggested by states to address some of the state needs around addressing *Legionella*.

Learn more at www.asdwa.org/legionella