



# LEGIONELLA COMMUNICATIONS FACTSHEET: A GUIDE FOR HEALTH AGENCY STAFF

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## GOALS OF THIS DOCUMENT

- ◆ Provide information that state health agency staff can use when talking to building and facility personnel about *Legionella* and other opportunistic biofilm pathogens.
- ◆ Provide information to increase building owner awareness of the potential for pathogens to grow in building water systems, including resources that can help them reduce or minimize pathogen growth in their plumbing.
- ◆ Outline proactive *Legionella*-related communications methods for state agencies to consider.

## WHAT IS *LEGIONELLA* AND WHY SHOULD BUILDING OWNERS BE CONCERNED?

*Legionella* is a type of bacteria found naturally in freshwater environments at generally low levels. It can become a health problem when its presence is amplified in building water systems, especially large, complex water systems such as those found in 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 water droplets containing the bacteria. Inhalation of *Legionella* may result in a severe form of pneumonia known as Legionnaires' disease, or in milder Pontiac fever. *Legionella* is the leading cause of [waterborne disease outbreaks](#) associated with drinking water in the United States.<sup>1</sup>

*Legionella* is not the only plumbing pathogen of concern; *Mycobacterium avium*, other nontuberculous mycobacteria (NTM), and *Pseudomonas aeruginosa* are other potentially harmful pathogens that could be present in building plumbing. Additional information on opportunistic pathogens in plumbing is available on CDC's [Opportunistic Pathogens of Premise Plumbing](#) web page.

Control of *Legionella* and other plumbing pathogens is complicated and is a shared responsibility between water utilities, high-risk individuals, and commercial, industrial, institutional, and residential customers. Each of these partners has a role in reducing occurrence of and exposure to *Legionella*.

## COMMUNICATING WITH BUILDING OWNERS, FACILITY MANAGERS, AND FACILITY WORKERS

### WHAT CONSTITUTES A BUILDING OR FACILITY?

"Buildings" and "facilities" refer to commercial buildings such as hotels, resorts, and office buildings; industrial facilities, including industrial campuses or parks; and institutional buildings, such as schools, universities, and government facilities. Buildings and facilities also refer to multifamily residential buildings and hospital and other healthcare facilities. Different building types carry different risk levels for *Legionella* and other pathogens. Typically, hospitals and other healthcare facilities represent the largest risk because they have complex plumbing systems and a population more vulnerable to premise plumbing pathogen infections. Commercial and industrial facilities are also vulnerable, as they often have large, intricate plumbing networks with conditions favorable for *Legionella* growth. These buildings also often include cooling towers, which can increase the transmission of *Legionella*. Multifamily residences are associated with lower risks of *Legionella*, but water features, such as hot tubs and fountains, are both potential exposure points for these locations. Single-family homes have the lowest risk of pathogen exposure because they tend to have simple plumbing systems and fewer routes of exposures.

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<sup>1</sup> Note that, while drinking water is the water source, the exposure route of concern is inhalation, not consumption.

## BUILDING AND FACILITY MANAGERS' KNOWLEDGE OF *LEGIONELLA* WILL VARY

According to research funded by the Water Research Foundation that surveyed facility managers across the United States:

“There is a high awareness level (87% of respondents) for the potential of *Legionella* growth in the plumbing or cooling towers of buildings. Half of facility managers working in the education and hospitality sectors were aware of ASHRAE 188 guidance for prevention and mitigation of *Legionella* risk in building water systems. A higher percentage of facility managers (71%) working in healthcare settings were aware of the CDC *Legionella* Water Management Program Toolkit. About one-third of facility managers communicated with their local water utility monthly while 41% of them communicated quarterly. While over 70% of residential managers of multifamily dwellings were familiar with *Legionella*, less than 30% were aware of conditions favoring the growth of *Legionella* in building plumbing or had heard of building water management plans.”<sup>1</sup>

## WHAT DO FACILITY MANAGERS NEED TO KNOW?

Facility managers first need to become aware of *Legionella* before they can properly manage it. Facility managers need to know the conditions for pathogen growth in plumbing, how exposure occurs, and the effects of exposure. Below are *Legionella* facts that facility managers need to know.

- ◆ *Legionella* grows well between 77°F (25°C) and 113°F (45°C), with optimum growth between 85°F (30°C) and 108°F (42°C). However, *Legionella* can survive and grow outside of this temperature range. To reduce bacteria growth, store hot water above 140°F (60°C) and keep circulating hot water above 120°F (49°C) at all fixtures. Store and circulate cold water below 77°F (25°C). Be aware of and follow plumbing and safety standards to prevent scalding at the point of use.<sup>2</sup>
- ◆ Loss of a chlorine or disinfectant residual in building plumbing (because of stagnant or very low water use, dissipating disinfectant residual, or poor water management) is a significant factor that allows *Legionella* to grow.
- ◆ Periods of stagnation in building plumbing can create favorable conditions for plumbing pathogens. [CDC](#), EPA (via a [factsheet](#) and a [checklist](#)), the [American Water Works Association](#), and the [Washington State Department of Health](#) all have guidance for flushing and reopening buildings after closure or periods of low to no water use.
- ◆ CDC's [Legionnaires' Disease](#) factsheet and other CDC communications resources linked to in this document messaging on exposure to *Legionella* and symptoms of Legionnaires' disease.

## USING A WATER MANAGEMENT PROGRAM TO MINIMIZE RISK

Once a building or facility is aware of *Legionella* and its potential health risks, the next step is to reduce the risk of *Legionella*. Building owners and managers can do this by managing their building water systems and implementing controls for *Legionella*. For many facilities, this is best done through a water management program (WMP), which can identify hazards within a building water system and establish a strategy for minimizing growth and transmission of *Legionella* and other pathogens in building plumbing. A facility manager can use CDC's [worksheet](#) to determine if their facility or devices need a WMP. Developing, implementing, and maintaining a WMP is a multi-step process that requires continuous review. There are several resources available for facility managers to use when developing a WMP:

- ◆ CDC's [Developing a Water Management Program to Reduce \*Legionella\* Growth and Spread in Buildings](#) toolkit provides an easy-to-understand interpretation of the American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRAE) Standard 188 to help building owners and managers evaluate their water systems and any devices in their buildings and then develop an effective water management program if one is needed.

<sup>1</sup> WRF ISBN: 978-1-60573-390-6 WRF Project Number: 4664

<sup>2</sup> ASHRAE Guideline 12-2020, [Minimizing the Risk of Legionellosis Associated with Building Water Systems](#)

- ◆ The American National Standards Institute-ASHRAE publication Standard 188, [Legionellosis: Risk Management for Building Water Systems](#) establishes minimum legionellosis risk management requirements for building water systems. Standard 188 can be used by owners and managers of buildings and by those involved in the design, construction, installation, commissioning, operation, maintenance, and service of centralized building water systems and components.
- ◆ Many buildings may have a cooling tower, or a part of a recirculated water system incorporated into a building's cooling, industrial, refrigeration, or energy production system. Cooling towers use the evaporation of water to remove heat and cool chillers, heat pumps, compressors, condensers, heat exchangers, and other process devices. Because they generate aerosols, they can disperse *Legionella* into the air if *Legionella* controls are not properly maintained. The U.S. Occupational Safety and Health Administration has information on [cleaning cooling towers and systems to prevent pathogen growth](#) and CDC has guidance on [controlling \*Legionella\* in cooling towers](#).
- ◆ The Association of State Drinking Water Administrators and ASTHO's factsheet, [Using Water Quality Monitoring Data for Your Building Water Management Program](#), discusses important basic water quality monitoring parameters, including temperature, pH, turbidity, and disinfectant residual, and how to use data collected by the water system and baseline monitoring of the building water system to help build a WMP.

Some facility managers may decide to work with a consultant to develop a WMP, implement water treatment, or pursue other water pathogen prevention or remediation services, so CDC has [developed](#) considerations for facility managers who are interested in working with a consultant. Facility managers also need to be aware of the potential regulatory implications of installing treatment in their building to prevent or control *Legionella* growth. In some instances, installing water treatment at the building may trigger federal or state regulations under the Safe Drinking Water Act and the facility could be considered a public water system. The Association of State Drinking Water Administrators' [State Approaches to Building Water System Regulation](#) document provides a review of federal rules and agency guidance on *Legionella* control and discusses important defining topics like what constitutes treatment and when a building becomes a public water system. Refer to the applicable state policy and materials, if available.

## TALKING POINTS ON WATER MANAGEMENT PROGRAMS

Below are some talking points that state health agency staff can use when discussing water management programs with building managers.

### ◆ Why should a building have a WMP?

A robust WMP is one of the best ways to identify and mitigate *Legionella* and other plumbing pathogen risks in a building. Each building's WMP should be uniquely tailored to the plumbing system and devices in that building.

### ◆ What are the components of a WMP?

A successful WMP should include a WMP team and responsible parties, a description of the building water system, a diagram of the building water system, identification of areas where *Legionella* and other pathogens could grow and spread, control measures and corrective actions, a monitoring plan, verification and validation procedures, and a documentation and communication plan.

### ◆ Who should be involved?

For large buildings or complexes, it may be necessary to create a multi-stakeholder WMP team with representatives from departments that share responsibility for water use planning, usage, and management. In smaller buildings, a facility manager and staff may be adequate for designing and implementing the WMP. Consider looking outside the building for expertise and assistance by contacting the water supplier and the state and local departments of health.



### 💡 When should a building develop a WMP?

If a building does not already have a WMP, the building manager(s) should consider developing one as soon as feasible. If a building manager is not sure if the building needs a WMP, they can take CDC's [quiz](#).

### 💡 How do you develop a WMP?

Developing a useful and successful WMP takes time, resources, and commitment. CDC's [Developing a Water Management Program to Reduce \*Legionella\* Growth and Spread in Buildings](#) toolkit is a good place to start. Don't forget: a WMP is not useful if it is not implemented. A facility must commit to implementing and revising the WMP to truly reduce the risks presented by *Legionella* and other pathogens.

## WHAT DO HOMEOWNERS NEED TO KNOW?

There may be cases where concerned homeowners reach out to the state public health or environmental agency looking for guidance on how to protect themselves from *Legionella*. Though not high risk, homes can have *Legionella* growth, and may have residents who are vulnerable to Legionnaires' disease. Homeowners need to know their risk and understand their responsibility for managing their water.

- 💡 **Exposure:** *Legionella* is a bacterium found naturally in freshwater environments, like lakes and streams. Exposure to *Legionella* can cause Legionnaires' disease. People can get sick when they breathe in small droplets of water or accidentally inhale water containing *Legionella* into the lungs. Common routes of exposure include breathing in the air near the spray from water faucets, showerheads, fountains, and spas/hot tubs. Using non-sterile water in devices such as CPAP and respiratory therapy equipment can also lead to exposure.
- 💡 **Risk:** Most healthy adults and children who are exposed to *Legionella* do not get sick. The risk increases with age, but some people are at higher risk of getting sick, including people 50 years or older, current or former smokers, people with chronic lung disease, people with weak immune systems, people with cancer, and people with underlying illnesses such as diabetes, kidney failure, or liver failure.
- 💡 **Action for homeowners:** *Legionella* is higher concern for large buildings with complex plumbing systems where *Legionella* likes to grow. If you are concerned about *Legionella* in your home, the best way to protect yourself is regularly cleaning shower heads, humidifiers, and faucet aerators. Use sterile water for respiratory equipment. Flush and maintain your home's hot water tank after long periods of time or lack of use and according to manufacturer recommendations. If you own a spa or hot tub, review CDC's factsheet [Legionella and Hot Tubs/Spas](#). See CDC's *Legionella* Control Toolkit for [control measures for other devices](#).

## COMMUNICATION METHODS

### PROACTIVE VERSUS REACTIVE COMMUNICATIONS

Proactive communications work is used to inform the audience before issues occur and, in some cases, to prevent a problem from happening. Reactive communication is used when responding to events after they have happened. The difference between these two types of communication is the situation and the messaging. When communicating proactively about *Legionella*, you can focus on potential health effects, potential sources of infection, and prevention. After a *Legionella* event or outbreak has occurred, the messaging will shift to focusing on response information, health effects, and actions the audience can or should take.

CDC has [resources available](#) for reactive *Legionella* communications, including notification templates and sample press releases. The Water Research Foundation's Project 4664, [Customer Messaging on Opportunistic Pathogens in Plumbing Systems](#), also includes templates and examples of letters, presentations, and messaging for different audiences. State agencies may have specific crisis communication protocols and approaches to use during and after *Legionella* outbreaks. The rest of this document focuses on considerations and methods for proactive communication around *Legionella*.

## USING A WEBSITE

A web page on your agency website is a great option to help distill complex, proactive information about *Legionella* to different audiences, including water systems, building owners, homeowners, and the media. Example state health agency web pages include:

- 💧 [Minnesota Department of Health \*Legionella\* Webpage](#)
- 💧 [Tennessee Department of Health \*Legionella\* Webpage](#)
- 💧 [Washington Department of Health \*Legionella\* Webpage](#)
- 💧 [American Water \*Legionella\* Webpage](#)

Your web page should consider who the target audience is for communications (e.g., facility managers at large buildings, homeowners, hospital and other healthcare facility personnel, water systems, or local community groups). A web page can serve as the main hub for information that you can reference in other communications.

## SOCIAL MEDIA

Social media can be a powerful tool to move information quickly (in the case of outbreaks) or to let people know what resources are available. Social media posts about *Legionella* are most effective when they are targeted to the right audience and when you can connect them to relevant conversation (for example, when *Legionella* is in the local, state, or national news). Below are some examples of state health agency social media posts about *Legionella*.

- 💧 Pennsylvania Department of Health [Facebook post](#) on flushing building water systems before reopening after COVID-19 related closures.
- 💧 North Carolina Department of Health and Human Services [Facebook post](#) on findings in a Legionnaires' disease outbreak investigation.
- 💧 Washington State Department of Health [tweet on safely reopening buildings](#) after COVID-19 related closures

## LETTERS AND DIRECT COMMUNICATION WITH FACILITY MANAGERS

Directly communicating with large building and facility managers can be an effective way to encourage them to adopt WMPs. Sending a letter from the state to facility managers, or asking water systems to send a letter to their large water customers about the risks of *Legionella*, the benefits of a WMP, and any available resources is a proactive way to encourage WMPs and ultimately reduce Legionnaires' disease. Other routes of direct communication with building facility managers may already exist in other parts of the state program. For example, environmental assessments or routine permit inspections involve direct communication between the state and facilities and offer a good opportunity to discuss water system risks.

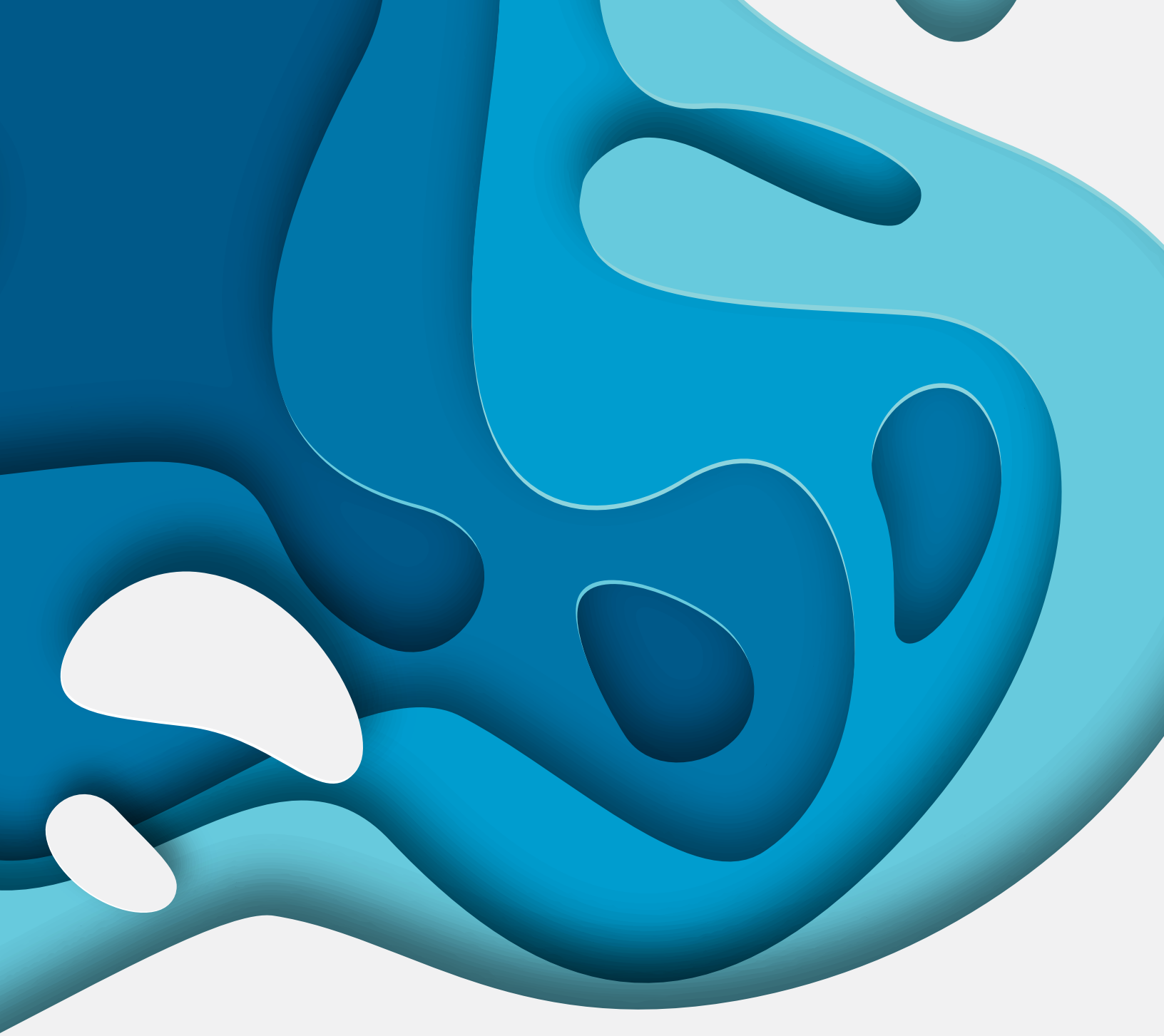
## PUBLIC MEETINGS OR PRESENTATIONS

If there is an opportunity, presentations are a great way to walk through complex issues like *Legionella* with the audience. For proactive presentations, reaching out to local or state chapters of building or facility manager associations could be a good place to start if your state is interested in encouraging the use of WMPs in large buildings. Presentations or conversations with water systems on distribution system best practices, working with large customers to support WMPs, and proactive actions to reduce *Legionella* growth and exposure may also be helpful. After an outbreak, a public meeting offers the opportunity to cover what happened during the outbreak and also discuss how high-risk individuals can protect themselves, how homeowners can manage their plumbing responsibly, and how building and facility managers can use WMPs to reduce the risk of *Legionella*. See Tennessee Department of Health and Tennessee Hospital Association's [Legionella webinar series](#) for an example of how to do this kind of outreach.

## REACTIVE COMMUNICATIONS

During a Legionnaires' disease outbreak or after a confirmed case of Legionnaires' disease public health officials may communicate quickly through multiple channels to different stakeholders via press releases, notification letters to impacted facilities, and health alerts. The key for quick reactive communications is to be prepared and have a plan in place for how you will respond when a *Legionella* issue occurs in your state. If you do not already have a communications plan, establish one as soon as feasible. Be sure to include a strategy for when and how you will provide updates to the public and media. Consider including letter templates, draft press releases, identified points of contact within the state, and potential key messages for use at every level of government. CDC's [Legionella Communications Resources](#) web page has notification letter templates, factsheets, sample press releases, sample health advisories, and communications considerations for public health officials to use when reacting to *Legionella* outbreaks.

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