

# WATER MANAGEMENT PLANS FOR HEALTHCARE



COVID-19 may be top of mind these days, but facility managers should remember another type of infective pathogen: Legionella, a bacteria commonly found in restrooms, showers, water fountains, and ice machines. Failure to follow regular maintenance routines will expose owners to litigation should an occupant contract Legionnaires' Disease, a super pneumonia that—like COVID—can be deadly.

**“The business owner should have confidence that the facility director, facility manager, and maintenance team understand what they’re doing and why..”**

Litigation is a risk to any facility, but healthcare and senior living facilities are at special risk, as the requirements for Legionella controls just got a lot stricter.

## Know The New Water Management Standard

Effective January 1, 2022, the Joint Commission has a new standard called Environment of Care 02.05.02. The Centers for Medicare and Medicaid Services (CMS) 2017-/2018 memorandum required healthcare facilities to have a Water Management Plan (WMP) to address Legionella and other waterborne pathogens. In the latest release, the Joint Commission strengthened their stance and implemented new requirements. In addition, the Joint Commission is the enforcing arm of CMS; going forward audits for all healthcare facilities are expected to be more extensive. The new guidance requires facilities to provide extensive documentation of maintenance activities and control measures.

The CMS memorandum applies to any facility that accepts Medicare/Medicaid dollars. The new standard and memorandum continue to tie funding to facilities that are properly implementing their plans. Consequently, managers should become familiar with this standard, but also the related standards and guidelines from ASHRAE, the Center for Disease Control, and the American Water Works Association. These apply to all facilities whether or not they are healthcare related, and guide litigators as they challenge facilities.

There are four elements of performance (EPs) in the new Joint Commission standard. EP 1 states that the healthcare facility must have a water management program that has an individual or team responsible for its oversight and implementation. EP 2 defines the plan, repeating the requirements of ASHRAE 188, which is the industry standard for building owners and facility managers.

The highest risk for Legionnaires' disease comes from inhalation of the Legionella bacteria, which drives the design of all WMPs. All plans begin with a basic diagram of all water supply sources in a facility, highlighting any points that could aerosolize bacteria-infected water. This also includes problem areas such as decommissioned areas where water has been stagnant and a risk assessment risk based on residents' demographics.

Immunocompromised people are at much higher risk of contracting Legionnaires' disease: transplant recipients, people with diabetes, cancer, lung disease, etc. The standard also considers those over 50 to be at risk. Finally, the plan must give an overview of monitoring protocols and control measures.

**EP 3 covers how to follow a WMP.** ASHRAE 188 contains general language about documenting the plan implementation. In EP 3, the new Joint Commission standard goes beyond that to specify that the results of all monitoring activities must be documented. Examples of monitoring activities include:

- Recording the temperature of a hot water system.
- Recording chlorine levels or pH levels.
- Visually inspecting a decorative fountain or cooling tower for algae.
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EP 3 also includes the requirement to define and document the corrective actions that should be taken if a test for Legionella falls outside the acceptable limits or if control limits are not maintained.

**EP 4 requires that the program is reviewed annually** and after any renovation, with documentation showing these reviews.

### How To Test For Legionella

The WMP helps facilities meet the Centers for Disease Control (CDC) guidance on environmental testing that was updated in 2021. For the first time, it advises routine testing for Legionella. Routine testing establishes a baseline, enabling managers to know if their WMP is working.

Managers need enough data to understand what's going on in the system. My company, ChemREADY, a provider of water treatment chemicals and consulting for Legionella prevention and overall water treatment, usually recommends testing 10% of the hot water points-of-use (POU) (i.e., faucets, showers) on a rotating basis at least quarterly. However, testing 10% of fixtures may be difficult in a large building. A bare-minimum testing regimen would be two locations per floor at points nearest and farthest from hot water entry.

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### Legionella Treatment

Remediations depend on the extent of Legionella colonization. The CDC has published a table that explains how to interpret test results: Legionella is either well controlled, poorly controlled, or not controlled. Figure 1 (below) shows information taken from this table. A WMP can describe the actions required for each category.

	Uncontrolled	Poorly Controlled	Well Controlled
<b>Concentration of Legionella</b>	≥10 CFU/mL	1.0–9.9 CFU/mL	Detectable to 0.9 CFU/mL
<b>Change in concentration over time</b>	100-fold or greater increase	10-fold or greater increase	No increase for two sampling rounds
<b>Extent</b>	Detection in multiple locations and a common source location	Detection in a common source location that serves multiple areas	Detection in a few of many tested locations

**There are three escalating levels of remediation. First is point-of-use filters.** These have a 0.2-micron filter that acts as a physical barrier to bacteria. They can be installed immediately on faucets and showers without a need to shut off water. However, they are costly and must be replaced over time, so they are usually used to buy time until full system remediation can be implemented.

**Second is shock disinfection.** This can be accomplished through a thermal heat and flush or hyperchlorination. Thermal heat and flush kills bacteria with temperatures above 160 degrees. This can be accomplished quickly but may have scalding concerns for workers and residents. Hyperchlorination is effective but requires water use restrictions facility-wide.

**Third is secondary disinfection.** While there is a minimal capital investment, the use of these systems provides consistent augmented doses of disinfectants like monochloroamine, and other EPA-approved disinfectants for drinking water.

### Summary

Understanding the requirements of Legionella Water Management Plans is essential to maintaining a safe facility and protecting it from litigation should an outbreak of Legionella occur. Follow the tips in this article and get advice from an experienced Legionella consultant to [ensure your facility meets these standards](#).

Visit the [ChemREADY website](#) for related links to CDC, ASHRAE, and AWWA.