TIPS FOR MEETING LEGIONELLA REQUIREMENTS IN SKILLED NURSING FACILITIES

The bacterium Legionella can cause a serious type of pneumonia called Legionnaires' Disease in individuals at risk, such as those who are at least 50 years old, smokers, or with underlying medical conditions such as chronic lung disease or immunosuppression. Legionella can grow in parts of building water systems that are continually wet, and certain devices can spread contaminated water droplets via aerosolization. To reduce the risk of the spread of Legionella in LTC, facilities need to have a water management plan and a process to make sure the plan is being followed. This is why the Centers for Medicare and Medicaid Services (CMS) have regulations¹ that require facilities to have a water management program (WMP), and CMS Surveyors will review the facilities' WMP and see if it is being followed. Therefore, the facility must monitor to ensure that the WMP practices are implemented, any deviations from practices should be identified, and corrective actions are put in place.

We have listed some tips to meet the components of the regulatory requirements based on a review of common reasons facilities are cited for non-compliance with water management regulations.

Have a Water Management Program with Key Elements Consistent with National Standards

Water management must be based on nationally accepted standards (e.g., ASHRAE (formerly the American Society of Heating, Refrigerating, and Air Conditioning Engineers), CDC, U.S. Environmental Protection Agency, or EPA).¹

TIP: Make sure the WMP contains the seven key elements as recommended by the CDC: 1) establish a WMP team; 2) describe the building water systems using text and flow diagrams; 3) an assessment to identify areas where Legionella and other opportunistic waterborne pathogens could grow and spread; 4) decide where control measures should be applied and how to monitor them; 5) establish ways to intervene when control limits are not met; 6) make sure the program is running as designed (verification) and is effective (validation); and 7) document and communicate all the activities.²

TIP: Establish a WMP team comprised of current facility staff and others designated to assess and review the facility's water system for potential risks associated with waterborne pathogens.

TIP: Examples of an assessment include a description of the building water systems using text and flow diagrams that depict how water is received, processed, and distributed in the facility and include the potable and non-potable (utility) water systems.

TIP: Look for areas where Legionella and other opportunistic waterborne pathogens can spread such as:

- Laundry
- Irrigation of grounds
- Bathing / spa pools
- Food preparation (including ice making)
- Toilet flushing
- Drinking (including feeds into ice machines and water dispensers)

- Decorative fountains
- Clinical uses (e.g., dialysis, irrigation of wounds, etc.)
- Cooling towers
- Firefighting and fire suppression (including sprinklers)
- Hot water storage





TIPS FOR MEETING LEGIONELLA REQUIREMENTS IN SKILLED NURSING FACILITIES

Have a Water Management Program with Key Elements Consistent with National Standards (cont.)

TIP: Ensure the facility's ice machine is maintained per manufacturer's guidelines. Not following guidelines can cause potential spread of waterborne diseases such as Legionella (microbe that causes Legionnaires' disease, is a severe form of pneumonia — lung inflammation) if the ice machine is not sanitized per manufacturer's guidelines.

TIP: Include control measures such as visible inspections, use of disinfectant, temperature (that may require mixing valves to prevent scalding), monitor water temperature and chlorine levels, flushing low-flow pipe runs and dead legs (piping subject to low or no flow because of design or decreased water use) at least weekly, and flush infrequently used fixtures regularly.³

TIP: The WMP requires regular monitoring of key areas for potentially hazardous conditions and should also include established ways to intervene when control limits are not met.² For example, if there is a water main break near the facility, it may be recommended to flush water at multiple sinks and fixtures at predetermined flushing locations per the water management program, and increase frequency of measuring chlorine levels to ensure that the water is effectively treated and free from pathogens that could pose a risk to residents, staff, and visitors.

TIP: Hot and cold water temperatures should be checked monthly at various points throughout the water system.

TIP: Maintain hot water temperature at the return at the highest temperature allowable by state regulations or codes, preferably $\geq 124^{\circ}F$ ($\geq 51^{\circ}C$), and maintain cold water temperature at <68°F (<20°C).⁴

TIP: Make sure to record these temperatures so they can be monitored over time to help improve the management of legionella risks and the control processes in place. Note that the prime temperature for the bacteria to proliferate at is between 68–113°F (20–45°C).

Verification and Validation of the WMP (as defined in ASHRAE Standard 188 – 2018.⁵)

TIP: Verification is a Quality Assurance (QA) function and is confirmation that the WMP has been implemented as designed.

TIP: Prove with evidence in documentation that program controls are being implemented as designed. This effort increases the defensibility for your WMP.

TIP: Validation is a Quality Control (QC) function and is confirmation that the WMP is effective when implemented as designed and controls the hazardous conditions throughout the building water systems.

TIP: Make sure your facility's policy and procedure match current practice. Provide education and training to ensure compliance with the WMP. Make sure to document and communicate all activities.





TIPS FOR MEETING LEGIONELLA REQUIREMENTS IN SKILLED NURSING FACILITIES

Testing for Legionella

At this time, CMS does not require routine water cultures for Legionella or other opportunistic waterborne pathogens as part of routine program validation.¹

TIP: There may be instances when water cultures are needed (e.g., as part of an investigation following a case of healthcare-associated legionellosis or a potential outbreak of legionellosis in the facility).

TIP: If while hospitalized a resident is discovered to have a legionella infection, testing of the water supply may be necessary to investigate the possible source.

TIP: If testing is conducted, make sure to document the results.

What to Do in Case of an Outbreak

Legionellosis outbreaks are generally linked to locations where water is held or accumulates and pathogens can reproduce, including those found in long-term care facilities. Transmission from these water systems to humans occurs when the water is aerosolized (e.g., converted into a spray/mist in the air).

TIP: The facility should contact the local/state public health authority if there is a single case or more of healthcare-associated legionellosis or an outbreak of an opportunistic waterborne pathogen causing disease. The facility must follow public health authority recommendations including remediating the pathogen reservoir and adjusting control measures as needed.^{1,6}

TIP: The facility should work with local/state public health authorities, if possible, to determine if the WMP requires modifications to prevent the growth of Legionella or other opportunistic waterborne pathogens in the future or if some steps in the WMP were not correctly or consistently implemented once the issue was identified.^{1.6}

Additional Resources

- CDC Controlling Legionella in Potable Water Systems
- CDC Worksheet to Identify Buildings at Increased Risk for Legionella Growth and Spread
- CDC Healthcare Water Management Program Frequently Asked Questions

Legionella Control – How to Check Water Temperatures to Minimize the Risk of Legionella Bacteria

Interested in joining the National Infection Prevention Forum? LEARN MORE

- CMS State Operations Manual Appendix PP from 2-3-23, page 771
- ² CDC Overview of Water Management Programs
- ³ CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings
- ⁴ CDC Guidance for Monitoring Building Water
- ⁵ ASHRAE ANSI/ASHRAE Standard 188-2018, Legionellosis: Risk Management for Building Water Systems
- ⁶ CDC Things to Consider: Outbreak Investigations General Considerations



