

Transforming Nursing Home Care Together (TNT) Program

Los Angeles County Department of Public Health

Preventing Legionellosis in Healthcare Facilities Through a Water Management Program

Webinar 02/08/2023

Questions and Answers

Question:	How do you correct a water pH that is out of range? Isn't this the responsibility of the municipal water agency?
Answer:	<p>Please see the CDC's Legionella guidance for monitoring building water: https://www.cdc.gov/legionella/wmp/monitor-water-guidance.html</p> <p>"Measure the pH of your water to determine whether the disinfectant used in your building will be effective. Disinfectants work best within a narrow pH range. Environmental Protection Agency. Technologies for Legionella Control in Premise Plumbing. 2016.</p> <p>2.3.1.4 Operational Conditions</p> <p><i>Parameter Conditions Indicating Operational Effectiveness</i></p> <p>The efficacy of chlorination is affected by many factors, including chlorine concentration, contact time, pH, temperature, turbidity, buffering capacity of the water, concentration of organic matter, iron and the number and types of microorganisms in the water system (in biofilms and free-living)... The bactericidal action of the chlorine is enhanced at higher temperatures and at lower pH levels. The anti-microbial efficacy of chlorine declines as pH increases >7, with significant loss of efficacy at pH >8. However, free chlorine is degraded rapidly at elevated water temperatures, which is a concern for hot water chlorination (Health Protection Surveillance Centre, 2009)...</p> <p>2.3.2.4 Operational Conditions</p> <p><i>Parameter Conditions Indicating Operational Effectiveness</i></p> <p>...The rate of reaction for the conversion of chlorine to monochloramine is sensitive to pH and can also be affected by contact time and temperature. The optimum pH range for formation of monochloramine is 7.5 to 9 (WHO, 2004)..."</p>

Question:	Does the water management plan (WMP) require filters on entry point? What is the recommendation on filters? What is the procedure for Legionella filters?
Answer:	<p>Recognize that point-of-use (POU) microbial filters with an effective pore size of 0.2-microns or less that comply with the requirements of ASTM F838 can provide immediate control at individual fixtures in a water system if integrated into a WMP.</p> <p>POU filters protect only the connected fixture. Correct location selection is critical to Legionella exposure prevention across the water system.</p> <p>Follow the manufacturer recommendations regarding frequency of replacement and appropriate operating conditions.</p>

	POU filters may need to be removed before performing an acute remediation procedure. Consider testing for Legionella in accordance with the routine testing module of this toolkit. https://www.cdc.gov/legionella/wmp/control-toolkit/potable-water-systems.html
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Question:	Does the water quality report posted by the city help at all for WMP?
Answer:	Even though there is a water quality report posted by the city, you should test your own water system to know what is going on in your specific system. To test your own water system for legionella please contact your facility's management or consult with a third-party service if appropriate. https://www.cdc.gov/legionella/wmp/consultant-considerations.html

Question:	If we have unused fixtures, how often do we need to flush the system and should we have a log for that as part of our WMP? How often should we flush unused tubs, toilets and sinks, drinking fountains?
Answer:	Flush low-flow piping runs and dead legs at least weekly and flush infrequently used fixtures (e.g., eye wash stations, emergency showers) regularly as-needed to maintain water quality parameters within control limits. Always document your activities and findings. https://www.cdc.gov/legionella/wmp/control-toolkit/potable-water-systems.html

Question:	It there a blank copy of the water system diagram to easily edit and use?
Answer:	CSTE has great resources for water management programs: https://www.cste.org/page/Legionnaires When you go to this webpage, scroll down and download the "Water Management Program Template." This document will take you step by step through the process of determining how to draw out your water system diagram and what to put in it. There is no blank copy because each facility's water system is different.

Legionella testing

Question:	Can we test the water for Legionella?
Answer:	Please refer to CDC's routine testing for legionella: https://www.cdc.gov/legionella/wmp/control-toolkit/routine-testing.html

Question:	Is it mandated to test the water for Legionella? Is routine sampling for Legionella recommended to validate a water management program at a healthcare facility?
Answer:	Sometimes. The water management program team should regularly monitor water quality parameters, such as disinfectant and temperature levels. By monitoring these parameters, the team can ensure that building water systems are operating in a way to minimize hazardous conditions that could encourage Legionella and other waterborne pathogens to grow. However, it is up to the team to determine how to validate the efficacy of the program, based on the environmental assessment* and data supporting the overall performance of the water management program. According to the CDC/Healthcare Infection Control Practices Advisory Committee (HICPAC) Guidelines for Environmental Infection Control in Health-Care Facilities [241 pages, 2.31 MB] and Guidelines for Preventing Health-care-associated Pneumonia [179

	<p>pages], as well as to ANSI/ASHRAE Standard 188–2018, one option for validating the efficacy of the program is to perform environmental sampling for the hazard, in this case Legionella. Sampling for <i>Legionella</i> may be an appropriate way to confirm that a water management program, when implemented as designed, effectively controls the hazardous conditions throughout the building water systems that lead to Legionella growth. Additional guidance for Legionella prevention for facilities with protective environments (i.e., transplant units) is included in the HICPAC guidelines. If the team decides to perform validation using environmental sampling for <i>Legionella</i> or other waterborne pathogens, it should not be performed in isolation but rather as part of a comprehensive water management program. Specific decisions about sampling frequency, location, and methodology are made by the team. Sampling plans are unique to each facility and are based on factors such as</p> <ol style="list-style-type: none"> 1. Findings from the environmental assessment and any baseline <i>Legionella</i> test results. 2. Overall performance of the water management program, trend analysis of <i>Legionella</i> test results, and water quality parameters (e.g., disinfectant, temperature). 3. In healthcare facilities, correlation of environmental test results with clinical surveillance data. 4. Building characteristics (e.g., size, age, complexity, populations served). 5. Sites of possible exposure to aerosolized water. 6. Available resources and supplies to support testing. <p>*The environmental assessment enables the water management program team to gain a thorough understanding of a facility’s water systems and assists facility management with minimizing the risk of legionellosis. Guidance is available via CDC’s Legionella Environmental Assessment Form [15 pages]. https://www.cdc.gov/legionella/wmp/healthcare-facilities/healthcare-wmp-faq.html</p>
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Question:	Not specifically pertaining to LTCF, but how safe is public water fountains? Do you often get outbreaks from public water fountains?
Answer:	<p>The most common route of transmission is by inhalation of aerosolized water containing the bacteria, although transmission can sometimes occur through aspiration of water containing the bacteria. A single episode of possible person-to-person transmission of Legionnaires’ disease has been reported.</p> <p>Legionella is ubiquitous in freshwater sources worldwide, but quantities of Legionella in these environments are insufficient to cause disease. In the built environment, Legionella can amplify in water systems, depending on the conditions. Factors associated with amplification include warm water temperatures (77°F–113°F [25°C–42°C]); water stagnation; presence of scale, sediment, and biofilm in the pipes and fixtures; and absence of disinfectant. To cause disease, Legionella spp. must then be aerosolized and inhaled by a susceptible host. The most common sources of transmission include potable water (via showerheads and faucets), cooling towers, hot tubs, and decorative fountains.</p> <p>https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/legionellosis-legionnaires-disease-and-pontiac-fever</p>

Question:	Are facilities responsible for testing the water at their facility?
Answer:	Per CMS each facility must develop and adhere to policies and procedures that inhibit microbial growth in building water systems that reduce the risk of growth and spread of <i>legionella</i> and other opportunistic pathogens in water.

	https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-17-30.pdf
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Question:	How many sources do we need to test?
Answer:	Please refer to CDC's Sampling procedure and potential sampling sites below: https://www.cdc.gov/legionella/downloads/cdc-sampling-procedure.pdf

Question:	Where can we get a test kit?
Answer:	<p>Some test methods may be performed onsite by the user or a qualified technician, while other methods may require contracting with a commercial laboratory. Regardless of the test method, be sure that you understand the performance characteristics of the test such as sensitivity, specificity, and limitations. For best results, follow instructions from the manufacturer or testing laboratory closely.</p> <p>Consider testing for all <i>Legionella</i> species as all are supported by similar environmental conditions.</p> <p>Considerations when working with laboratories testing for <i>Legionella</i>:</p> <ol style="list-style-type: none"> 1. Accreditation by a regional, national, or international accrediting body to a recognized standard for routine <i>Legionella</i> test methods, such as ISO/IEC 17025. 2. Capability of retaining <i>Legionella</i> isolates from samples for additional characterization. 3. Capacity to perform additional <i>Legionella</i> characterization as needed by the submitter. <p>https://www.cdc.gov/legionella/wmp/control-toolkit/routine-testing.html#test-methods</p>

Presentation Slides:

Question:	Can we use the Legionella webinar slides to educate our staff about Legionella?
Answer:	Yes, you may use the presentation slides to educate staff about Legionella.