Update on Legionnaires' Disease in Wisconsin

October 28, 2021 | Wisconsin Long-Term Care Education Series

Anna Kocharian, MS Epidemiologist | Communicable Diseases Epidemiology Section Bureau of Communicable Diseases | Division of Public Health

Presentation Topics: Legionella



Background and ecology

Growth and transmission



Public health investigations

Burden and surveillance



Fastidious aerobic Gram-negative bacilli

60+ species and 70+ serotypes are recognized.

Legionella pneumophila serogroup 1 is most commonly associated with disease.

Legionnaires' Disease

American Legion Convention, Philadelphia 1976

Large outbreak of pneumonia among attendees caused by newly identified bacteria

New disease named for the outbreak — Legionnaires' disease

Bacteria named Legionella pneumophila





Legionellosis



Pontiac fever Mild febrile illness

Extrapulmonary legionellosis Infection at sites outside the lungs

Clinical Features

	Legionnaires' disease	Pontiac fever				
Signs and symptoms	Pneumonia	No pneumonia				
	Cough, fever, muscle aches, shortness of breath, chest pain, headache, confusion, diarrhea	Mild, self-limiting illness with fever and muscle aches				
Incubation period	2–10 days (up to 2 weeks)	24–72 hours				
Attack rate	< 5%	> 90%				
Treatment	Antibiotics	Supportive care				
Hospitalization	Common	Uncommon				
Case-fatality rate	10% (>25% for healthcare- associated infections)	Extremely low 6				

Indications for Diagnostic Testing

Patients with pneumonia who:

- Are hospitalized with atypical pneumonia
- Are immunocompromised
- Fail to respond to antibiotic treatment
- May have healthcare-associated pneumonia
- Have a travel history (14 days before onset of symptoms)





Diagnostic Tests

Confirmatory Tests

Legionella culture

Acceptable specimens: lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site

Grown on special media, buffered charcoal yeast extract (BCYE) agar

Validated nucleic acid amplification test (NAAT)

Acceptable specimens: lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site

Urinary antigen test

Only detects *Legionella pneumophila* serogroup 1

Non-paired serology/antibody tests and NAAT/PCR of oral, nasal, or nasopharyngeal swabs are not useful for diagnosis and do not meet the case definition.



Found naturally in fresh water but in insufficient quantities to cause disease

Grow in free-living protozoa in water Provide nutrients Protect from harsh environmental conditions

Can become a public health problem in human-made water systems



Natural water supply

Exposure to *Legionella* in freshwater environments is not associated with disease.



Complex plumbing system

Legionella grows best in warm water in building water systems that are not adequately maintained.



Amplification

Warm water





Amplification

Warm water (temperatures 77-108°F)

Stagnation (dead legs in pipes)

Sediment, scale, organic matter

Absence of residual disinfectants in water supply

Biofilm



Legionella can live and grow in **biofilm**.





Aerosolization

Devices that can aerosolize water droplets include:

- Showers and faucets.
- Jetted hot tubs.
- Decorative fountains.
- Evaporative cooling towers (used in large buildings).



Transmission

Inhalation of aerosolized droplets, mists containing Legionella

Aspiration (less common)

Not transmitted from person to person

Host Risk Factors

People at increased risk for Legionnaires' disease:

Are aged 50 years and older.

Are current or former smokers.

Have chronic lung disease.

Have a weakened immune system.







Environmental Risk Factors

Common sources of infection during outbreaks involve complex water systems found in buildings such as:





Long-term care facilities.

Hotels.



Cruise ships.



Sources of Infection



Hot tubs

Decorative fountains

National Trend

Legionnaires' disease is on the rise in the United States 2000-2018



Source: Nationally Notifiable Diseases Surveillance System

https://www.cdc.gov/legionella/about/history.html

Wisconsin Trend

Laboratory-confirmed cases, Wisconsin Electronic Disease Surveillance System



Possible Reasons for Rising Trends



Increased susceptibility

Legionella in environment





Improved surveillance

Case Demographics, Wisconsin

Laboratory-confirmed cases by age group (years) and gender, 2009-2018 average



Seasonality, Wisconsin

Laboratory-confirmed cases by month of illness onset, 2009-2018 average



Increased Reports During Summer Months

STATE OF WISCONSIN Department of Health Services Division of Public Health



1 West Wilson Street PO Box 2659 Madison WI 53701-2659

Telephone: 608-267-9003 Fax: 608-261-4976 TTY: 888-701-1253

Date: July 23, 2021

BCD 2021-05

- To: Wisconsin Clinicians, Infection Preventionists, Laboratorians, Local Health Departments, and Tribal Health Agencies
- From: Ryan Westergaard, MD, PhD, MPH Chief Medical Officer and State Epidemiologist for Communicable Diseases, Wisconsin Department of Health Services

Increased reports of laboratory-confirmed cases of legionellosis (Legionnaires' disease)



Enhanced Statewide Surveillance

Improve diagnosis and reporting

Approval of fee-exempt testing at the Wisconsin State Laboratory of Hygiene

Culture and PCR of lower-respiratory secretions

Use expanded hypothesis-generating questionnaire during public health follow-up



Importance of Clinical Isolates

Characterization of clinical isolates at WSLH and the CDC

Pulsed-field gel electrophoresis (PFGE)

Whole genome multilocus sequence typing (wgMLST)

Essential to linking clinical cases and environmental sources



Importance of Clinical Isolates

https://www.dhs.wisconsin.gov/disease/legionellosis.htm

Provider Information

Q Reporting and Surveillance Guidance

Provider Resources

Water Management Program Resources

Diagnosing Legionnaires' Disease: Best Practices, P-02433: https://www.dhs.wisconsin.gov/publications/p02433.pdf

Division of Public Health Memo BCD-2021-05: Increased Reports of Laboratory-Confirmed Cases of Legionellosis (Legionnaires' Disease): <u>https://www.dhs.wisconsin.gov/dph/memos/communicable-</u> <u>diseases/2021-05.pdf</u>

DIAGNOSING LEGIONNAIRES' DISEASE: BEST PRACTICES



Public health needs your assistance with diagnosing and reporting cases of <u>Legionnaires' disease</u> to help determine possible sources of exposure to <u>Legionella</u>.

Diagnostic testing

The only way to determine if a patient with pneumonia has Legionnaires' disease is by collecting appropriate specimens and ordering specific <u>diagnostic tests</u>. As a best practice, **order both of the following:**

1. *Legionella* urinary antigen test



2. *Legionella* culture of sputum or other lower-respiratory specimen

Legionella will not grow on standard media used for routine sputum cultures.

A Legionella culture must be specifically ordered.

Why is Legionella culture important?

Culture can identify all species and serogroups of *Legionella* that can cause disease, unlike the urinary antigen test, which only detects *Legionella pneumophila* serogroup 1.

Having clinical isolates of *Legionella* is essential to determine links among clinical cases and with environmental sources.

Who should be tested for Legionnaires' disease?

Patients with pneumonia who:

- Have failed outpatient antibiotic therapy for community-acquired pneumonia.
- Have severe illness, such as those requiring admission to the intensive care unit.
- Are immunocompromised.
- Have traveled away from their home within 14 days before illness onset.
- Have a known or possible exposure to Legionella (for example, during an outbreak).
- May have healthcare-associated pneumonia (onset 48 hours or more after admission).

Consider testing patients with pneumonia who:

Are age 50 years or older.

- Are current or former smokers.
- Have chronic lung disease, such as emphysema or COPD.
- Have cancer or other underlying illness, such as diabetes, renal failure, or hepatic failure.

Legionella Environmental Investigations

If cases appear to be epidemiologically linked to a common source:

Conduct environmental assessment.

Completion of <u>CDC assessment form</u> helps identify potential problem spots in water system with conditions that contribute to *Legionella* growth, and where samples should be collected.

Collect and test water samples.

In collaboration with DPH and other state or local agencies

Determine course of action based on results.

Legionella Environmental Investigations



Agencies Involved in Legionella Public Health Investigations

F	5
	9

Local or tribal health department (LHD)



Wisconsin DHS, DPH/BCD – may involve DPH/Bureau of Environmental and Occupational Health (BEOH) or Division of Quality Assurance (DQA)



Centers for Disease Control and Prevention (CDC)



Wisconsin State Laboratory of Hygiene (WSLH)



Wisconsin Department of Safety and Professional Services (DSPS)



Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP)



Wisconsin Department of Natural Resources (DNR)

Legionella Public Health Environmental Investigations



Legionella Public Health Investigation in a Long-Term Care Facility: Case Study

Centers for Disease Control and Prevention Legionella Environmental Assessment Form

HOW TO USE THIS FORM

This form enables public health officials to gain a thorough understanding of a facility's water systems and assist facility management with minimizing the risk of legionellosis. It can be used along with epidemiologic information to determine whether to conduct *Legionella* environmental sampling and to develop a sampling plan. The assessment should be performed on-site by an epidemiologist and an environmental health specialist with knowledge of the ecology of *Legionella*. Keep in mind that conditions promoting *Legionella* amplification include water stagnation, warm temperatures (77-108°F or 25-42°C), availability of organic matter, and lack of residual disinfectant such as chlorine. For training and information, please visit CDC's legionellosis resources webpage at: http://www.cdc.gov/legionella/outbreak-toolkit/.

Complete the form in as much detail as possible. Do not leave sections blank; if a question does not apply, write "N/A". If a question applies but cannot be answered, explain why. Where applicable, specify the units of measurement being used (e.g., ppm). Completion of the form may take several hours.

BEFORE ARRIVING ON SITE

Request the attendance of the lead facility manager as well as others who have a detailed knowledge of the facility's water systems, such as a facility engineer or industrial hygienist.

- Request that they have maintenance logs and blueprints available for the meeting.
- Bring a plastic bottle, thermometer, pH test kit, and a chlorine test kit that can detect a wide range of residual disinfectant (<1 ppm for potable water and up to 10 ppm for whirlpool spas).</p>
- If the epidemiologic information available suggests a particular source (e.g., whirlpool spa, cooling tower), request that they shut it down (but do not drain or disinfect) in order to stop transmission.

INSTRUCTIONS FOR MEASURING WATER PARAMETERS IN THE PREMISE PLUMBING (TABLE P. 8)

It is very important to measure and document the current physical and chemical characteristics of the potable water, as this can help determine whether conditions are likely to support *Legionella* amplification.

STEP 1: Plan a sampling strategy that incorporates all central hot water heaters/boilers and various points along each loop of the potable water system. For example, if the facility has one loop serving all occupant rooms, an occupant room near (proximal) the central hot water heater and another at the farthest point (distal) of the loop should be sampled.

STEP 2: For each sampling point (e.g., tap in an occupant room):

- a. Turn on the hot water tap. Collect the first 50 ml from the tap. Measure the free chlorine residual and pH. Document the findings in the table on p. 8. Note: If there is no residual chlorine in the hot water, measure it in the cold water. Note: Total chlorine should be measured instead of free chlorine if the method of disinfection is not chlorine (e.g., monochloramine).
- b. Allow the hot water tap to run until it is as hot as it will get. Collect 50 ml and measure the temperature. Document the temperature and the time it took to reach the maximum temperature.



National Center for Immunization and Respiratory Diseases Division of Bacterial Diseases



Case-patient A reported to public health on 1/15

91-year-old male

		•		··· , ,		,	
Onset of illness. 1/9	Su	Μ	Tu	W	Th	F	Sa
	31	1	2	3	4	5	6
Weakness	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
Confusion	21	22	23	24	25	26	27
Shortness of breath	28	29	30	31	1	2	3
	4	5	6	7	8	9	10

No appetite

Hospitalized 1/13 and diagnosed with pneumonia

Legionella urinary antigen positive on 1/13

Patient died 1/18, primary cause of death: cancer

January, 2018

Case-patient A exposures:

Admitted to facility A (assisted living) on 11/27/2017

Other exposures during incubation period:

Grocery shopping

Outpatient hospital and clinic visits

January, 2018									
Su	Μ	Tu	W	Th	F	Sa			
31	1	2	3	4	5	6			
7	8	9	10	11	12	13			
14	15	16	17	18	19	20			
21	22	23	24	25	26	27			
28	29	30	31	1	2	3			
4	5	6	7	8	9	10			

37

March, 2018

Case Study: Facility A, 2018

Case-patient B reported to public health on 3/14

82-year-old female

Onset of illness: 3/8		Μ	Tu	W	Th	F	Sa
Unset Ur miness. 5/0	25	26	27	28	1	2	3
Weakness	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
Runny nose	18	19	20	21	22	23	24
No annatito	25	26	27	28	29	30	31
	1	2	3	4	5	6	7

No fever or chills

Hospitalized 3/12 and diagnosed with pneumonia

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Legionella urinary antigen positive on 3/12
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Patient died 3/19, cause of death: bronchopneumonia

Case-patient B exposures:

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Admitted to facility A (nursing home) on 9/1/2017
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Other exposures during incubation period: Used a portable humidifier in her room

March, 2018 Tu W Th F Su M Sa 27 28 14 15 23 24 30 31

Environmental Investigation



Environmental Investigation



Environmental Sampling

Measurement of water quality parameters

Free or total chlorine levels

Temperature

рΗ

Collection of environmental samples

Bulk water

Biofilm swab



Environmental Sampling



Environmental Investigation



Environmental Testing Results

Sample ID	Date Collected	Specimen Type	Sample description	Temp (°F)	Free Cl ₂ (ppm)	рН	WSLH Result	Count	Concentration, bulk water (CFU/ml)	Concentration, swab (CFU/sample)
001	3/27/2018	Bulk water	Water heater tank 1, left*	100.0	0.01	5.0	No <i>Legionella</i> isolated		<0.053	-
002	3/27/2018	Bulk water	Water heater tank 2, right*	115.0	0.18	4.5	No <i>Legionella</i> isolated		<0.05	-
003	3/27/2018	Bulk water	Water heater tank 3, middle*	147.0	0.04	4.5	No <i>Legionella</i> isolated		<0.056	-
004	3/27/2018	Swab	Room B (patient B), sink	-	-	-	Legionella pneumophila	68	-	850
005	3/27/2018	Bulk water	Room B, sink	107.0	0.18	5.0	Legionella pneumophila	635	35	-
006	3/27/2018	Swab	Section B (patient B), tub, sprayer	-	-	-	Legionella pneumophila	7	-	120
007	3/27/2018	Bulk water	Section B, tub, sprayer	100.0			Legionella pneumophila	297	15	-
008	3/27/2018	Swab	Section B, tub, faucet	-	-	-	Legionella pneumophila	17	-	210
009	3/27/2018	Bulk water	Section B, tub, faucet	106.0	0.06	5.0	Legionella pneumophila	445	24	-
010	3/27/2018	Swab	Section B, shower	-	-	-	Legionella pneumophila	14	-	180
011	3/27/2018	Bulk water	Section B, shower	93.0	0.12	5.0	Legionella pneumophila	144	7.8	-
012	3/27/2018	Swab	Room A (patient A), sink	-	-	-	Legionella pneumophila	152	-	1,900
013	3/27/2018	Bulk water	Room A, sink	102.0	0.02	5.0	Legionella pneumophila	546	27	-
014	3/27/2018	Swab	Room A, shower	-	-	-	Legionella pneumophila	152	-	2,500
015	3/27/2018	Bulk water	Room A, shower	104.0	0.03	5.0	Legionella pneumophila	571	34	-
016	3/27/2018	Swab	Personal humidifier (patient B)	-	-	-	Legionella pneumophila	533	-	13,000

*Water recirculates between all three water heater tanks

Environmental Testing Results



Interpretation of Environmental Testing Results

Locations of positive samples

Systemwide versus localized to distal points

In conjunction with environmental assessment

Presence versus absence of *Legionella* within water system

Legionella pneumophila

Other Legionella species

Molecular subtyping and comparison with clinical samples

Example: Facility B, 2017

Linking Clinical and Environmental Isolates PFGE at WSLH

100				
		17MP00	Case-patient C	Sputum
	11 1	17MP00	002	water
		17MP00	004	water
		17MP00	006	water
		17MP00	007	water
		17MP00	009	water
	1111 1	17MP00	011	water
		17MP00	013	water
		17MP00	014	water
		17MP00	015	water
		17MP00	017	water
		17MP00	019	water
		17MP00	005	Swab
		17MP00	008	Swab
		17MP00	010	Swab
		17MP00	012	Swab
		17MP00	016	Swab
		17MP00	018	Swab

Example: Facility B, 2017

Linking Clinical and Environmental Isolates wgMLST at CDC

8888888.	_ ⁸ Year	Sample_ID	Serogroup	Source	ST	State	Comme	nts
	2018		3	Environmental	93*	WI		
	L 2018		3	Environmental	93*	WI		
	<mark>2018 ر</mark>		1	Environmental	40*	WI	Rm	water heater tank
	2018		1	Environmental	40*	WI	Rm	water heater tank
	^ا 2018		1	Environmental	40*	WI	Rm	shower

Response

Remediation with assistance from specialized consultants Revision of existing water management plan

Immediate action steps during remediation process: Notification of residents, staff, and families Water restriction measures (for example, showering) Installation of point-of-use filters on faucets, showers, sprayers Continued enhanced surveillance for legionellosis Restriction of new admissions

CDC Guidance on Remediation

"Remediation may be required immediately to minimize the risk of *Legionella* growth and transmission. Tailor the remediation to structural characteristics of the facility and circumstances of the outbreak.

Remediation options can include:

- □ Hyperchlorinating the potable water system
- □ Flushing unused plumbing outlets
- Draining and scrubbing devices
- □ Superheating and flushing a simple device. Note: <u>ASHRAE Guideline 12-2020</u> recommends against superheating as a remediation method for potable water systems.

You should base decisions on findings from the environmental assessment, sampling results, and epidemiologic findings of the investigation. See <u>General Guidelines</u> for additional remediation resources. It may sometimes be necessary to hire a <u>consultant</u> with *Legionella*-specific environmental expertise to help make decisions about or perform remediation."

CDC: Immediate Control Measures for Potable Water Outbreaks

Implementing water restrictions and/or installing point-of-use filters, either globally or in areas of greatest risk

Options tailored to the structural characteristics of the building and circumstances of the outbreak

Examples of immediate control measures include:

□ Restricting showers (using sponge baths instead)

Avoiding exposure to hot tubs

Installing 0.2 micron biological point-of-use filters on any showerheads or sink/tub faucets intended for use

- Understand manufacturer's recommendations regarding the temperature, pressure, and chemical levels that filters can withstand and suggested frequency for replacement
- □ Confirm if filters need to be removed during acute remediation procedures
- □ Halting new admissions or temporarily closing the building, affected area, or device
- Ensuring that contingency responses and corrective actions are implemented if the building already has a water management program
- Distributing notification letters to the appropriate audience(s); see <u>Communications Resources</u> for more information

https://www.cdc.gov/legionella/health-depts/epi-resources/outbreak-investigations.html#potable-water

Review: Conditions for Transmission



Amplification

Warm water (temperatures 77-108°F) Stagnation (dead legs in pipes)

Stagnation (dead legs in pipes)

Sediment, scale, organic matter

Absence of residual disinfectants in water supply

Biofilm

Commonly Observed Risk Factors for *Legionella* Amplification and Colonization

Temperatures in optimal range for *Legionella* growth (77-108°F) throughout the facility or localized

Stagnation: unoccupied rooms, unused water fixtures (e.g., faucets, therapy/spa tubs, bed pan washers), dead ends in pipes

Improperly maintained ice machines

Recent construction/plumbing work

Improper use of personal humidifiers (e.g., warm water from the sink)

Absence of residual disinfectant in the water supply throughout the facility or localized to distal sites within the facility

Preventing Legionella Growth and Colonization

Centers for Medicare and Medicaid Services Requirement

DEPARTMENT OF HEALTH & HUMAN SERVICES Centers for Medicare & Medicaid Services 7500 Security Boulevard, Mail Stop C2-21-16 Baltimore, Maryland 21244-1850



Center for Clinical Standards and Quality/Quality, Safety and Oversight Group

Ref: QSO-17-30- Hospitals/CAHs/NHs REVISED 07.06.2018

- DATE: June 02, 2017
- TO: State Survey Agency Directors
- FROM: Director Quality, Safety and Oversight Group (formerly Survey & Certification Group)
- **SUBJECT:** Requirement to Reduce *Legionella* Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD)

Revised to Clarify Expectations for Providers, Accrediting Organizations, and Surveyors

Memorandum Summary

Legionella Infections: The bacterium Legionella can cause a serious type of pneumonia called LD in persons at risk. Those at risk include persons who are at least 50 years old, smokers, or those with underlying medical conditions such as chronic lung disease or immunosuppression. Outbreaks have been linked to poorly maintained water systems in buildings with large or complex water systems including hospitals and long-term care facilities. Transmission can occur via aerosols from devices such as showerheads, cooling towers, hot tubs, and decorative fountains.

Preventing Legionella Growth and Colonization

Developing a Water Management Program: <u>CDC Toolkit</u>



Basic elements of a water management program

Common scenarios, responses, and special considerations

Developing a Water Management Program to Reduce *Legionella* Growth & Spread in Buildings

A PRACTICAL GUIDE TO IMPLEMENTING INDUSTRY STANDARDS





Preventing Legionnaires' Disease Webinar



Enroll: PreventLD Training

Home 🛿 Western Region Public Health Training Center 🔊 PreventLD Training

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AVIGATION

- 🖀 Home
- 🖹 Dashboard
- Site pages
- Current course
- 🖕 PreventLD Training
 - Participants
 - Module A: Getting Started
 - Module B: Hazard Analysis
 - Module C: Hazard Control
 - Module D: Confirmation
 - Case Studies
 - Create an Action Plan for Developing a Water Manag...
 - Feedback Evaluation and Certificate
 - Additional Information
- My courses

🗱 ADMINISTRATION 🛛 🖃 🛛

- Course administration
 - le Competencies

Preventing Legionnaires' Disease (PreventLD Training)

Your progress 🕐

Course Introduction

Preventing Legionnaires' Disease: A Training on Legionella Water Management Programs (PreventLD Training)

What Are the Benefits of This Training?

The training

- Outlines how to reduce risk for *Legionella* in facilities through water management programs.
- Helps water management programs align with ASHRAE 188 on reducing risk for *Legionella* in building water systems (e.g., potable water, cooling towers, hot tubs, decorative water features).
- Is free and available online, and continuing education units are available from the National Environmental Health Association (NEHA).
- Helps build common language across the range of professionals involved in water management programs.
- Includes case studies, templates, and other practical resources to reduce the risk for *Legionella* and protect those at increased risk of Legionnaires' disease: adults aged 50 years or older, current or former smokers, and those with a weakened immune system or chronic disease.

EDUCATION

Individuals completing courses within the curriculum are eligible to receive continuing education units (CEUs) through the National Environmental Health Association (NEHA). For questions regarding NEHA continuing education, please visit NEHA's CE information page or contact credentaling@neha.org.

HEALTHCARE FACILITIES!

The Centers for Medicare & Medicaid Services (CMS) now requires healthcare facilities to have water management policies and procedures to reduce the risk of *Legionella* and other pathogens in building water systems. Learn more from CMS

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Water Management Program Resources

https://www.dhs.wisconsin.gov/disease/legionellosis.htm

Provider Information

🜢 Water Management Program Resources	\sim
Provider Resources	^
Q Reporting and Surveillance Guidance	^

In June 2017, the Centers for Medicare & Medicaid Services (CMS) released a survey and <u>certification memo</u> stating that healthcare facilities (hospitals and skilled nursing facilities) should develop and adhere to ASHRAE-compliant water management programs to reduce the risk for *Legionella* and other pathogens in their water systems.

The following resources may be useful when trying to understand what the requirement covers and for developing a comprehensive water management program.

Toolkits, Trainings, and Templates:

- Legionella Control Toolkit (CDC) P
- Preventing Legionnaires' Disease: A Training on Legionella Water Management Programs (PreventLD Training) (CDC)
- □ CDC Toolkit: Prevention of Legionnaires' disease with Water Management Programs (CDC) @
- Water Management Programs for Healthcare Facilities (CDC) @
- CMS Surveyor Training Webinar: Legionella and Other Water Pathogens (CMS)
- Water Management Program Template (CSTE) Program Template (CSTE)

Fact Sheets and FAQ's:

Highlights: Water Management Program Resources

Healthcare Facility Water Management Program Checklist (CDC): https://www.cdc.gov/HAI/pdfs/Water-Management-Checklist-P.pdf



Healthcare Facility Water Management Program Checklist Available from: www.cdc.gov/hai/prevent/water-management.html

For nursing homes, the group may consist

of three or more individuals representing

management, nursing (someone filling the

role of infection control), and the facilities

engineer; ad hoc members with subject

matter expertise (to provide advice) may

include a designee from the C-suite, risk

Larger facilities representation may

management, infection prevention,

facilities engineers, central services,

laboratory, and ad hoc members from

clinical departments or water consultants.

be water consultants.

This checklist is intended to assist in the development of an all-hazards approach to water management in a healthcare facility, and may be used to:

- Evaluate a comprehensive water management program.
- Identify individuals to participate in the water management program.
- Assist in conducting assessments, including hazard analyses, environmental risk assessments, and infection control risk assessments.
- Inform water monitoring practices guided by the management program.

Depending on complexity of the building plumbing systems, a comprehensive program may include several water management plans. These plans should include areas within the system where control points are identified as well as monitoring methods and procedures.

Establish a Water Management Program Team

For all facility types, establish clear lines of communication to facilitate dialogue with representatives from the water utility/drinking water provider, as well as the local health department, on an as needed basis.

- Define membership (at a minimum, the following 'roles' should be represented; may include others depending on facility size, type
 - facility administration/ownership or C-Suite
 - facilities management
 - facilities engineer
 - infection prevention
- Develop a charter that defines roles and responsibilities of members, chair, meeting schedule, etc.
- Have you identified team members who should:
 - Y N Be familiar with the facility water system(s)
 - Y N Identify control locations and control limits
 - Y N Identify and take corrective actions
 - Y N Monitor and document program performance

Water Management Program Template (CSTE): https://www.cste.org/page/Legionnaires

WATER MANAGEMENT PROGRAM TEMPLATE

Published: June 2019 Last Updated: June 2019

INTRODUCTION

What is a Water Management Program?

Purpose and Use

Legionnaires' disease is a serious illness that often results in hospitalization, and sometimes death, of many people throughout the United States every year. In the <u>June 2016 Vital Signs</u> <u>article</u>, CDC stated that 9 out of 10 Legionnaires' disease outbreaks could have been prevented with better water management programs. Over the last few years water management programs have become a prevailing industry standard, with resources like ASHRAE 188 and VA DIR 1061 making headway as reference material. Many types of facilities could benefit from the implementation of a water management program that identifies areas or devices in the building where *Legionella* might grow or spread to people. This template will help you develop and implement a water management program to reduce your facility's risk for growing and spreading *Legionella*.

How to Use This Template

Whether you are starting from scratch or looking to improve your existing water management program, this template is designed to be a tool for you to use as it fits best to your facility. Creating a water management program is never a one-size-fits-all situation, so not all sections of the template will be relevant to your facility. The first thing to know is that if you feel like this is something you may not be able to tackle on your own, review the "Selecting a Water Management Consultant" document in Appendix E so you can know how to hire the best consultant to fit your needs. You can also go through CDC's online <u>PreventLD</u> training and CDC's <u>Water Management Program Toolkit</u> before you get started on your own template so you have a better idea of how it works.



Thank you!

Questions?

anna.kocharian@dhs.wisconsin.gov

608.267.9004

