

LEGIONNAIRES' DISEASE

A Guide for Employers and Building Owners



What is Legionnaires' Disease?

Legionnaires' disease is a potentially fatal pneumonia caused by the inhalation of small water droplets contaminated with Legionella bacteria. The bacteria can also cause a less-severe flu-like respiratory illness called Pontiac Fever. These diseases cannot be transmitted through human contact and although everyone is potentially susceptible to the infection, some people are at higher risk than others.

High Risk Individuals

- Smokers
- Heavy Drinkers
- People 45 years of age and older
- Anyone suffering from chronic respiratory or kidney disease
- Those with compromised immune systems

Where is Legionella found?

Legionella bacteria are common in natural water systems and soils and they can drift in air-borne water droplets to other locations, such as cooling towers and domestic hot and cold water systems. They are resilient, they spread easily, and they grow rapidly.

High temperatures effectively kill Legionella bacteria, but they thrive between 20°C and 50°C (68°F-121°F), especially if a supply of nutrients such as rust, sludge, scale, algae, or other bacteria is available.

Who is this information intended for?

This guide is intended for all employers who own or manage premises with hot/cold water services and/or evaporative cooling systems (e.g. cooling towers and evaporative condensers). Workplace health and safety committees will also be interested in this information.

Why is this information important to me?

The obligation of preventing Legionnaires' disease is the responsibility of the employer and the building owner. This guide was written to help you, as an employer, understand the health risks associated with Legionella bacteria, encourage you to take all necessary risk reduction measures, and help to determine whether a professional risk assessment is justified at your facility.



What are my regulatory obligations?

Occupational Health and Safety regulations require employers to take every reasonable precaution to protect their workers and the public. If you own or manage premises with water-related services, or your facility uses evaporative cooling systems such as cooling towers and evaporative condensers, you need to proactively manage the risk those services present.

This includes:

1. Following all regional regulations
2. Being aware of the risks associated with Legionella bacteria, and
3. Implementing the necessary precautions to minimize those risks

The law places the responsibility for compliance on the employer and the building owner. As a supplier of cooling water treatment systems, we are highly motivated to do whatever we can to help prevent illness and death. We encourage our customers to follow the laws and the precautionary advice of the experts in this area. We are committed to helping you minimize your organization's liability, should a case of Legionnaires' disease develop at your facility.

Regional Regulations

Please see the attached Addendum for information on any regulations that are specific to your area or industry. Specialized regulations currently exist for:

- The Province of Quebec
- The City of Hamilton, Ontario
- The City of Vancouver, British Columbia
- Canadian federal Public Works and Government Services (PWGS)
- U.S Veterans Affairs Hospitals (VA Hospitals)
- New York City and New York State
- Centers for Medicare and Medicaid Services



The Cost of Negligence

The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) has included its best recommendations for effective Legionella risk management in Standard 188 – Legionellosis: Risk Management for Building Water Systems and Guideline 12. The term Standard has legal significance. The neglect of established best practices can be used to prove negligence in a court of law. For example:

- Over 20 deaths and more than 100 confirmed cases were attributed to Legionella in 2005 at Toronto's Seven Oaks Home for the Aged. A class action lawsuit resulted in penalties of \$1.2 million.
- The New York City outbreak in 2015 resulted in the illness of 120 people and the death of 12. These events sparked lawsuits and the rapid implementation of local regulations regarding evaporative cooling systems. Many other municipalities are considering similar actions in an effort to mitigate risk.

Which Systems Present the Greatest Risk?

Cooling towers, fluid coolers, evaporative condensers and domestic hot and cold water systems have been associated with outbreaks of Legionnaires' disease, as well as humidifiers, decorative fountains, and spa baths.

Assessing the Risk

Assessing the risk is the first step in establishing a reasonable risk management plan.

Ask yourself:

- If conditions in your system are likely to encourage bacteria to multiply. Is the water temperature in your water system between 20°C and 50°C? Do stagnant areas exist?
- If it's possible that small water droplets are being produced and, if so, could they be dispersed over a large area through, for example, showers and aerosol spray from cooling towers?
- If it's likely that any high risk individuals will come into contact with contaminated droplets?

You may be able to carry out a risk assessment yourself within your own organization but, if not, or you are uncertain how to do this, you should consult a specialist in this area. **Ask your Technical Representative for advice.**



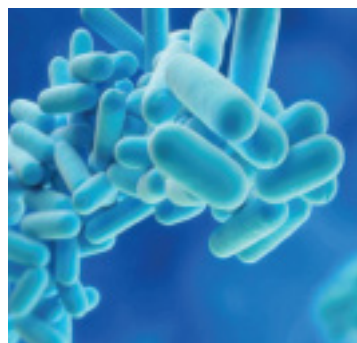
Preventing and Controlling Risk

If an unavoidable risk is identified, you must introduce proper controls as part of a management plan in order to ensure that all reasonable precautions have been taken. The person within your organization who is responsible for the management plan should know enough about your system to be able to manage the risk control plan effectively. This person should also have the authority and budget to be able to hire contractors to carry out any mechanical work required, including any work required in order to implement an effective water treatment program.

For facilities with known risk factors, a Water Safety Plan is recommended or may be required to effectively categorize and mitigate the risks associated with Legionella.

Should I Take Samples to Test for Legionella?

Sampling and testing for Legionella is a way to validate that your system is under control. In Quebec, monthly testing of cooling towers is a requirement. Testing of water is typically recommended as part of an ASHRAE 188 Water Safety Plan. This is not a simple test - sampling and detecting Legionella requires the services of a specialized microbiological laboratory. We can provide the sampling and testing services needed to meet your requirements. Please consult your Technical Representative for more information.





Where Can I Find Additional Information on This Topic

The Association of Water Technologies, the Cooling Technologies Institute, the American Society of Heating, Refrigerating and Air-Conditioning Engineers, the US Occupational Safety and Health Administration and the Centres for Disease Control have all published excellent technical position papers:

<http://www.awt.org>

<http://www.cti.org>

<http://www.ashrae.org>

http://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_7.html

<http://www.cdc.gov/legionella/about/index.html>

What Should I Do Next?

As a supplier of water treatment services, we take an active role in Legionella-related education. This is a topic of concern and we encourage you to take all steps necessary to minimize the risks associated with the water services at your facility. We can also work with you to carry out a Risk Assessment and Water Safety Plan specific to your facility.

Please acknowledge that we have communicated this information to you:

I have read this guide and I understand the intent.

I would like to be contacted for a proposal to perform a Risk Assessment and prepare a Water Safety Plan. (It is recommended that all healthcare facilities and high risk sites have a Water Safety Plan in place).

Our facility has a current Water Safety Plan in place.

Print Name & Title: _____

Signed: _____ **Date:** _____