

# Legionnaires' Disease Prevention

Hotels continue to offer hospitable environments for the spread of Legionnaires' Disease

**2015:** 12 dead and at least 100 infected from cooling towers on top of a hotel building

**2014:** 3 individuals who had traveled to a softball tournament fell ill and tested positive for Legionella and were hospitalized. A hotel in the county was the common link and was confirmed to be the source of the bacteria.

**2012:** 3 hotel guests die as a result of contracting Legionnaires' Disease from a decorative fountain in the lobby of the hotel.

**2012:** 2 hotel guests die after contracting Legionnaires' Disease. The hotel pool, hot tub and fountains were found to be the sources of infection.

**2012:** 2 cases of Legionnaires' Disease are linked to a hotel that experienced 6 cases the year prior. Legionella Bacterium was confirmed in the hotel's water system.

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## There's Something in the Air (and Water)

According to the Center for Disease Control (CDC), the incidents of legionellosis cases increased from the years 2000 to 2009 by 197%. Most experts predict that cases will continue to increase worldwide due to climate change, deteriorating infrastructure and increased public awareness.

Legionnaire's Disease is a type of pneumonia caused by the Legionnaires' Disease Bacteria. More than 43 species of Legionella have been identified and linked with 20 human diseases. The CDC first identified Legionella pneumophila in 1976 as the cause of an outbreak of pneumonia that resulted in 34 deaths at a Legionnaires' convention at the Bellvue-Stratford Hotel in Philadelphia.

It originates from almost any warm water system or

device that circulates water, particularly as an aerosol, spray or mist. Plumbing systems, cooling towers and warm, stagnant water can provide ideal conditions for growth of the bacteria that causes the disease. The bacteria generally attack individuals who have an underlying illness or weakened immune system.

The Hospitality industry has been identified as one of the environments with the greatest risk factors for contamination. Decorative fountains, hot tubs and spas, cooling towers as well as other water systems are all susceptible to the growth of the bacteria and most of these are present on the grounds of a hotel or resort. There has even been a specific term coined to identify the disease contracted at a hospitality risk – "travel-associated Legionnaires' Disease."

**SPAS / HOT TUBS:** Spas and hot tubs generally have low water volumes combined with high temperatures and significant bather loads. This often results in low disinfectant levels that allow the growth and spread of germs and bacteria that can cause respiratory illnesses.

**DECORATIVE FOUNTAINS:** The bacteria thrive in water temperature between 25°C (75°F) and 50° C (122° F) which is typical for a fountain. Fountains also create a water spray which is one of the most common ways the bacteria is spread.

**COOLING TOWERS:** Use evaporation to reject heat. Bacteria can be present in the mist that travels through the air.

The consequences of a hotel or resort identified as the source of the legionella bacteria can be severe and financially damaging. Remediation costs can be significant, particularly if new, updated equipment is required. In most cases, the operations are forced to shut down for a significant period of time while remediation is completed which can result in a substantial loss of income. Often, legal costs are incurred if the location is fined or forced to defend themselves against lawsuits. The negative publicity

received can contribute to reduced income from lack of bookings along with requiring capital expenditure to repair the reputation of the hotel/resort after an incident has occurred. In the most severe cases, hotels have had to close their doors permanently because of the severe financial loss as a result of court awards and/or the loss of clientele due to the negative publicity surrounding an incident.

An insurance policy may offer some coverage for an event of this magnitude, however, be aware that it can be very limited and may not provide indemnification for all aspects of a loss. It is highly beneficial for hoteliers to have a well-thought out and implemented prevention program that allows for continuous monitoring of all susceptible water systems in your hotels.

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## Be Systematic with Water System Safety

What can you do to protect your operations? Guidelines for appropriate water temperatures and chemical treatment of water for legionellosis prevention can be found in ASHRAE Guidelines 188-2015. (American Society of Heating, Refrigerating and Air Conditioning Engineers)

Work within your organization to develop a water safety plan. The World Health Organization suggests that a plan should include the following steps:

**SYSTEM ASSESSMENT:** determination of whether the water quality meets the health-based target

**MONITORING:** identification and monitoring of control measures used to ensure water safety

**MANAGEMENT AND COMMUNICATION:** document the system assessment and monitoring and describe actions to be taken during normal operations and after incidents, including documentation and communication.

The plan should be reviewed on a regular basis to reflect changes and ongoing improvements in the system and should be amended if control is not maintained.

### SYSTEM ASSESSMENT

- Assemble the team
- Document and describe the system
- Assess hazards and prioritize risks
- Assess the system

### MONITORING

- Identify control measures
- Monitor control measures
- Validate effectiveness of Water Safety Plan

### MANAGEMENT AND COMMUNICATION

- Develop supporting programs
- Prepare management procedures
- Establish documentation and communication procedures

The World Health Organization (WHO), ASHRAE and CDC websites all include excellent information regarding the detection and prevention of the legionellosis bacteria in the water systems of public buildings. These websites can serve as helpful resources in developing a safety plan to reduce exposure to this ever growing hazard.

## Hospitality Starts With...

**SAFETY.** One of the best ways to protect your hotel or resort operations from this ever growing threat is to take a proactive, preventative approach – shut the door on Legionnaires' disease.

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### Sources:

[www.osha.gov/dts/osta/otm/legionnaires/disease\\_rec.html](http://www.osha.gov/dts/osta/otm/legionnaires/disease_rec.html)  
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