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Legionnaires' Disease

Q4 | 24

Introduction

It has been nearly 50 years since the discovery of Legionnaires’ disease following the death of 29 people connected with an American Legion Convention at a Philadelphia hotel in 1976.¹ Within six months, the U.S. Center for Disease Control (CDC) isolated the Legionella bacteria and found it had flourished and spread in the hotel’s air conditioning system.

Legionnaires’ disease is a severe type of lung infection caused by Legionella bacteria and often causes Pneumonia type symptoms.² The bacteria are found in freshwater environments as well as in man-made containment systems.

When contaminated water is in liquid form, the bacteria is generally benign, even if consumed. However, when contaminated water is aerated and the bacteria is inhaled into the lungs, Legionnaires’ disease can cause serious health problems. There are no vaccines to prevent Legionnaires’ disease, but it can be treated with antibiotics.

Legionnaires’ disease spreads in aerated water and is of particular concern for the hotel industry, as many hotel conveniences provide ideal circumstances for the bacteria to grow. As noted above, the first known occurrence of the disease was spread through a hotel’s air conditioning system. That is only one of many systems that can spread the bacteria.

TABLE OF CONTENTS

01	Outbreaks of Legionnaires’ Disease
03	Causes of Legionella Growth
04	Inhibiting Legionella Growth
05	Final Word



Outbreaks of Legionnaires' Disease

Since the 1976 convention that gave this Legionnaires' disease its name was the first known outbreak, such events have been regularly documented around the world.³

- + **Late 1970s** – long-term exposure has also caused severe outbreaks when a reported 250 patients, visitors, and staff fell ill at the Los Angeles Wadsworth Veterans Administration Hospital from exposure over a three-year period.
- + **April 1985** – 175 people were hospitalized and 28 died in Stafford, England from an outbreak of Legionnaires' disease which was sourced back to an air conditioning cooling tower.
- + **October 10–November 13, 1989** – 33 patients were hospitalized with Legionnaires' disease in Bogalusa, Louisiana.
- + Exposures have been linked to specific events, like the **March 1990** outbreak – 318 became ill and 32 people died at a flower exhibition in the Netherlands.
- + **1996** – there were 23 confirmed cases across several southwest Virginia towns.

Outbreaks of Legionnaires' disease continue to arise every year. **Between 2000 and 2018**, health departments in the United States reported around over 84,000 cases of Legionnaires' disease with 10,000 cases alone reported in 2018.⁴ With hotels and casinos reopening following the Covid shutdown, cases again have spiked. **From 2023 to October 2024**, 13,087 cases of Legionnaires' disease were reported in the U.S.¹⁰

While yearly cases of Legionnaires' disease total but a fraction of the 1.4 million yearly reported pneumonia cases,⁵ Legionnaires' death rate of 1 in 10 people⁶ is significantly more than that for pneumonia, which is 41 deaths per 100,000 cases.



There is increased risk to hotels, motels, and casinos, in the regions of the United States where the disease is most prevalent: Midwest, Northeast, mid-Atlantic, and Southeast. Understanding that the bacteria grow over time in stagnant water means that seasonal businesses must be keenly aware and prepared to mitigate the bacteria's growth before the crowds come.

Maintaining a clean environment is also critical for employees too, as long-term exposure has caused many Legionnaires' disease outbreaks. For these reasons alone, it is vital to understand where *Legionella* bacteria can grow, how it can spread, and how to mitigate the bacteria's growth and spread so guests and employees can be assured of the property's cleanliness.



Causes of Legionella Growth

Legionella bacteria can grow in building water systems that are continually wet, such as hot and cold-water storage tanks, pipes, valves and fittings, and hoses and aerators. Since the bacteria is contracted by inhaling bacteria-laden water mist, sources are not only air conditioners, misters, and humidifiers, but also shower heads, hot tubs, ice machines, and fountains — and even eyewash stations. It is more likely to be spread when water systems are interrupted due to construction, have a lower flow in the event of extended vacancies in a room or floor, or are not properly maintained.

Factors that can create an environment where the bacteria can flourish include:⁷

- + Biofilm, scale and sediment buildup due to water pressure changes and vibration from construction activities.
- + Materials introduced into central water systems through main breaks or service additions.
- + Use of disinfectants outside of the recommended pH range of 6.5-8.5.
- + Water temperature fluctuations, especially temperature drops below 110 F; Legionella grows best between 77-108 F.
- + Pool, spa and other special water filtrations systems improperly maintained.



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Inhibiting Legionella Growth

CDC investigations into Legionella outbreaks show that 9 in 10 were caused by problems that were preventable with more effective water management programs. Water system management programs and maintenance are the keys to preventing Legionella bacteria growth and spread, in both active buildings and those after planned or unplanned prolonged shutdown. The CDC recommends businesses develop a comprehensive Water Management Program (WMP) for your water system and all devices that use water and identifies the following steps in developing a water management plan:⁸

- + Establish a WMP team
- + Describe the building water systems
- + Identify areas where Legionella could grow and spread
- + Decide where to apply and how to monitor control measures
- + Establish interventions when control limits aren't met
- + Ensure the program runs as designed and is effective
- + Document and communicate all these activities

Further, the CDC suggests organizations adhere to the following principles and practices when developing and carrying out their WMP:⁹

- + Ensuring adequate disinfection
- + Maintaining devices to prevent sediment, scale, corrosion, and biofilm
- + Maintaining appropriate water temperatures
- + Preventing water stagnation
- + Sediment, scale, corrosion, and biofilm provide a habitat and nutrients for Legionella
- + Once established, WMPs require regular monitoring of key areas for potentially hazardous conditions
- + Using predetermined responses when control measures aren't met

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Legionnaires' disease is a serious health concern that can cause grave issues for hotel guests and employees and put business operators at severe financial risk. Creating, implementing, and managing a mitigation strategy is one way to protect assets and lives.

Oftentimes, insurance coverage for Legionnaires' disease exposure is excluded in general liability and umbrella policies. Insurance-based risk transfer strategies are possible, however, and just one set of tools to avoid these risks and their consequences.

Talk to your insurance broker about the risk prevention strategies introduced above. It is in all parties' best interests to prevent or mitigate these risks to first avoid the occurrence but then to reduce costs and minimize punitive and compensatory damages within the legal settings.



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RISK IN **FOCUS** | CONTRIBUTORS

TIM SMITH

SVP, National Hospitality Practice Director

STEVE GARVY

The Garvy Group

ANGELA THOMPSON

Senior Marketing Specialist, Market Intelligence & Insights

BRIAN SPINNER

Senior Marketing Coordinator, Market Intelligence & Insights

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