Infection Prevention Expertise Lacking on Water Management Teams

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Water management plans to control *Legionella* and other waterborne pathogens in healthcare settings have become a priority since a CMS memo[1] in 2017 ordered such measures to protect patients.

Infection preventionists (IPs) should be a key member of these water management teams, but almost half the facilities consulted by *Legionella* experts did not have an IP on the committee, said **Laura Morris**, MT (ASCP), CIC, education coordinator at the Special Pathogens Laboratory (SPL) in Pittsburgh.

"IPs have that knowledge of microbiology, so I am really stressing that the importance of you being on that team," Morris said recently in Philadelphia at the annual conference of the Association for Professionals in Infection Control and Epidemiology (APIC).

Morris and colleagues analyzed data from healthcare facilities with which the SPL has consulted since June 2017 — after the initial CMS memo — to assess water safety programs, perform risk assessments, and test for *Legionella*. They found that of 83 healthcare facilities, IPs were involved in water safety plans at only 43.[2] In 71 of the water safety teams, the facilities management (i.e., engineering) was represented. Overall, 73% of the consultations were performed in acute care facilities. Overall, 87% of facilities had a "proactive," ongoing water management plan, Morris said. However, 13% of the facilities established a water management plan only after identifying patient infections.

"They were developed due to an outbreak or a case," Morris said. "The alarming part is that of 42% of these 'reactive' teams did not have an IP on their team."

Increasing Pathogen

Data from the CDC show that there has be a 5.5-fold increase in *Legionella* since 2000.[3] About 10% of all people who acquire *Legionella* die, but the mortality rate increases to 25% for those hospitalized or in long-term care. Numerous outbreaks have been traced to the waterborne pathogen becoming aerosolized and inhaled in shower mist, spas, medical equipment, and decorative fountains. For example, a reservoir of standing water in the plumbing of a hospital under renovation led to a *Legionella* outbreak that infected 10 patients, including two who died.[4]

That likely is an underestimate of the true burden of disease because clinical testing is inconsistent, Morris said. Possible reasons for the increase include: more testing, more susceptible patients, and *Legionella* becoming more predominant in the environment.

"The answer is not clear, but most experts agree that it is probably a combination of all three," she said.

A key point of clarity is that an effective water management plan could prevent an estimated 90% of outbreaks related to any of the aforementioned factors, she said. The CDC created a toolkit to guide the implementation of water management programs.[5]

IPs can play key roles on water management teams with insights into medical devices, procedures, and

construction and renovation that could contribute to waterborne infections, Morris said.

"When you are looking through your daily surveillance, you may identify *Legionella* and other waterborne pathogens through clinical tests," she said. "Are you noticing trends, or do you have a cluster? When your hospital is considering new procedures, think 'Will this contain water or use water?'"

The value of IP input has shown time and again in hospital construction and renovations, as patients could be vulnerable to dustborne fungal infections and other threats. This relationship with facility management and prior collaborations could be leveraged to be involved in the water management team, she noted.

"We are really emphasizing the need to build that relationship," Morris said. "Visit their world, learn their language, and ask questions."

Likewise, IPs should be aware of water treatments and any *Legionella* testing. "If they are testing for *Legionella*, what tests are they using?" she asked. "Are they using a quick test or the gold standard of culture? This is an area where you as an IP need to have input."

Routine testing for *Legionella* has been somewhat controversial. CMS amended its original memo last year to clarify testing decisions should be made at the local level.

"Facilities 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 *Legionella* and other opportunistic pathogens in water," according to the memo.[5] "CMS does not require water cultures for *Legionella* or other opportunistic waterborne pathogens. Testing protocols are at the discretion of the provider."

Testing Issues

The testing conundrum goes back, in part, to the enduring belief that *Legionella* species are ubiquitous in water systems. The theory is that it will be found in testing, regardless of the infection threat.

"We want to test to assess the risk," Morris recommended. "It is a myth that all buildings have *Legionella*. Only about 50% in studies have been shown to have *Legionella*. You want to assess that risk to find out if you are in that 50%."

For facilities that are in the 50% portion that test positive, water treatment and engineering controls should be implemented before patient infections appear, she said.

"Really, we want to test to protect our patients," Morris said. "Factors that make it more important to do testing is if you are having difficulty controlling your [water] system, and if you have cases of *Legionella* disease."

Repeat testing can be used to verify the efficacy of water treatment and safety plans. The CDC recommends using a testing method that can detect all types of *Legionella*, not just *L. pneumophila* typically implicated in outbreaks. "Testing the environment for *Legionella* is really the only way to validate if your program is working," Morris said.

If it is determined additional water disinfection is needed, weigh factors like effect on water quality and the ability to maintain an effective residual treatment.

"No one should die from a preventable disease caused by a bacterium in water," Morris said. "It can

and should be prevented. This might require you to go your C-suite to make the business case, as with our many of our infection prevention initiatives. The most important point is that this is a patient safety initiative."

Discuss the cost of a water safety management program with proactive testing compared to an outbreak, she recommended.

"Once the health department gets involved, there is a lot of testing and a lot of measures that they will have you do. That can exceed $100,000," she said. "There is also loss of business, public relations, and possible litigation."

REFERENCES

1. Centers for Medicare & Medicaid Services. Requirement to reduce *Legionella* risk in healthcare facility water systems to prevent cases and outbreaks of Legionnaires' disease (LD). Survey and certification letter, July 6, 2018. Available at: https://go.cms.gov/2H0k4i2. Accessed Aug. 12, 2019.
2. Morris L, Baron J, Pierre D, et al. Water safety and management plans: A patient safety initiative that needs infection preventionists. Session 3003. APIC Conference, June 14, 2019, Philadelphia.
3. Centers for Disease Control and Prevention. Legionnaires' Disease. Vital Signs. Available at: http://bit.ly/2r5Xg5K. Accessed Aug. 12, 2019.
4. Watkins FL, Harris AM, Toews, K, et al. Healthcare-associated outbreak of Legionnaires' disease on an inpatient hematology-oncology Unit — Alabama, 2014. CDC 64th Annual EIS Conference, April 20-23, 2015, Atlanta.
5. Centers for Disease Control and Prevention. Developing a water management program to reduce Legionella growth and spread in buildings: A practical guide to implementing industry standards. Version 1.1, June 5, 2017. Available at: http://bit.ly/2sdSW9a. Accessed Aug. 12, 2019.
6. Centers for Medicare & Medicaid Services. Requirement to reduce *Legionella* risk in healthcare facility water systems to prevent cases and outbreaks of Legionnaires' disease (LD). June 2, 2017. Available at: http://go.cms.gov/2r3ue6B. Accessed Aug. 12, 2019.

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