Legionnaires' Disease Kills Patient at Pittsburgh VAMC

By Stephen Spotswood

PITTSBURGH - An outbreak of Legionnaires' disease at a VA hospital in Pittsburgh has led to at least one death and sent hospital administration searching for the source of the contamination.

News of the outbreak broke in November when it was discovered that at least four patients at the University Drive VA Medical Center in the Oakland area of Pittsburgh had been diagnosed with Legionnaires' (Legionellosis), a potentially fatal disease caused by a bacteria belonging to the genus Legionella. The bacteria usually is transmitted through a contaminated water source and then resides in a victim's respiratory tract. Those infected develop a fever, chills, a cough and other pneumonia-like symptoms. The disease can be difficult to distinguish from other types of pneumonia without specialized tests.

VA officials had been aware of the outbreak as early as late October when they contacted CDC officials to help pinpoint the source of the problem. On Nov. 16, VA issued a news release stating that an elevated source of the Legionella bacteria had been found in the hospital's water supply.

In 1993, VA had installed a copper-silver ionization disinfection system meant to prevent cases of hospital-acquired Legionnaires' by killing the bacteria present in the hot water system. The system was found to be improperly functioning, and VA responded by using a hyperchlorination method.

Following that process, a two-week interval was needed before resampling could occur. In the meantime, patients and staff used bottled water for drinking and hand-washing.

During those two weeks, while the state of the hospital's water supply was unclear, a fifth patient was diagnosed with Legionnaires' and died soon after.

William Nickolas, 87, had been a patient at the University Drive VAMC for two days in October. After returning home, he began to experience symptoms of Legionnaires'. He wasn't diagnosed with the disease until Nov. 21 and died two days later.

One week later, the University Drive hospital's water supply was reopened after being declared clean of bacteria.

During November, VA also found Legionella in the water supply at its H.J. Heinz campus, located in O'Hara Township, a few miles northeast of Pittsburgh. The water supply was shut down there for two weeks of chlorination and was reopened Dec. 7.

Full Scope Unknown

The exact scope of the outbreak and its consequences remain unknown. While only five Legionnaires' cases originating from one of Pittsburgh VA's water systems have been confirmed, as many as 16 possible cases have been reported during the past two years.

Exactly what hospital officials knew and when they knew it will likely be the focus of future investigations and is one of the many questions legislators have raised regarding the incident.

Sen. Bob Casey (D-PA) contacted VA Secretary Eric Shinseki directly, demanding a swift response. He also sent a letter containing a long list of questions and asked for a detailed account of the outbreak's timeline as understood by VA.

"The fact that there has been at least one confirmed death connected to this recent outbreak and the continued investigation of further illness is both tragic and deeply disturbing," Casey said in his letter. "The VA has an obligation to address ongoing concerns and to ensure that proper steps have been taken to prevent this from ever happening again."

Another question being asked by Casey, and likely to be echoed by patients and by an ongoing national Centers for Disease Control and Prevention investigation, is whether this could have been prevented and, if so, how easily.
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Legionella Research Center

Interestingly, the Pittsburgh VA Health Care System was once a world-renowned center of Legionella research. Following the outbreak at a convention of the American Legion at a hotel in Philadelphia in July 1976 — which gave the disease its name — VA began intense investigations into the disease. In fact, a VA researcher, Janet Stout, PhD, is credited with discovering that the bacteria is transmitted through an infected water supply.

In 1981, VA opened the Pittsburgh VA Special Pathogens Laboratory (SPL), headquartered at the University Drive facility, for continued Legionella studies and testing for both VA and non-VA healthcare facilities. Headed by Stout and Victor Yu, MD, for the next 25 years, the SPL was considered one of the most comprehensive sources of Legionella research. It acted as a hub for collaboration among researchers nationwide and was responsible for a better understanding of Legionnaires' prevention and therapies. It also tested water samples from hospitals worldwide.

In 2007, however, VA closed the SPL down for funding reasons that were never clearly defined. Yu was fired and, soon after, Stout resigned.

Yu testified before a congressional committee in 2008 about his termination from the SPL and that, before researchers could arrange to have samples transferred to another facility, VA officials destroyed them. It was estimated that as many as 5,000 Legionella samples, as well as thousands more microbes and specimens related to other investigations, were lost.

Today, the SPL has been reborn as a private enterprise, still headed by Stout and Yu, both of whom are associated with the University of Pittsburgh.

In a press release following news of the outbreak at the Pittsburgh VA, their group suggested that the incident most likely could have been prevented.

"In our experience, if a hospital experiences an outbreak of Legionnaires' disease despite the presence of a disinfection system, the failure is often traced to mismanagement of the system," the release states. "As we discovered in our research, the necessity for maintenance and monitoring after installation is often underestimated. In the case of copper-silver ionization, ion levels need to be monitored for the life of the system."

CDC does not officially endorse any one particular system. However, hyperchlorination has been commonly recommended during outbreaks.

The investigation into what officials knew and how the outbreak could have been prevented will likely have legal ramifications, as well. On Dec. 10, the family of William Nicklas filed a civil claim against VA, contending that his death was preventable and the fault of failures at VA to maintain its water systems.

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