

Health Officials Share Early Findings in Legionnaires' Disease Outbreak Investigation in WNC

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The North Carolina Department of Health and Human Services is sharing early findings from an ongoing investigation to determine how people were exposed to [Legionella bacteria](#) at the NC Mountain State Fair, which took place Sept. 6–15, 2019 at the Western North Carolina Agricultural Center in Fletcher, NC. As of Oct. 2, 2019, 124 cases of Legionnaires' disease and Pontiac fever (a milder form of infection) had been reported in people who attended or worked at the fair.

Preliminary findings indicate that people who were diagnosed with Legionnaires' disease were much more likely to have visited the Davis Event Center while at the fair and much more likely to report having walked by the hot tub displays compared to people who did not get sick. The Davis Event Center is a large building that housed many vendor displays during the fair, including hot tubs. People who were diagnosed with Legionnaires' disease were also much more likely to have visited during the latter half of the fair compared to people who did not get sick. These early findings are from an ongoing study comparing information gathered through surveys of people who were diagnosed with Legionnaires' disease with similar information gathered from people who attended the fair but did not get sick.

Health officials are also reporting early results from laboratory testing of environmental samples. To date, testing has identified Legionella bacteria in one water sample taken from the Davis Event Center; results are still pending from other samples taken as part of this investigation.

“Finding Legionella in one water sample is an important piece of the puzzle, but it does not tell us how so many people were exposed at this event,” said Dr. Zack Moore, State Epidemiologist. “To get Legionnaires' disease or Pontiac fever, you have to breathe in Legionella in aerosolized water, meaning small droplets like mists or vapors.”

Taken together, these early findings suggest that low levels of Legionella present were able to grow in hot tubs or possibly some other source in the Davis Event Center leading to exposure through breathing in aerosolized water that contained the bacteria; however, this is an ongoing investigation.

Health officials visited the Western North Carolina Agricultural Center on Sept. 25 and Sept. 27 — after the fair had ended — and did not identify any significant sources of aerosolized water on the site. Very little aerosolized water is created from hand washing sinks, toilets and other currently operating water sources at the Agricultural Center, meaning the risk of exposure to Legionella is low.

The [North Carolina Department of Agriculture and Consumer Services](#) shared the following information:

"The decision has been made to suspend the rental of the Davis Event Center at this time while we review and implement mitigation plans for the facility. This is being done out of an abundance of caution and to reassure event attendees, fairgoers and Ag Center employees that the center is safe for occupancy. Additionally, in collaboration with public health, we have taken steps to minimize water aerosolization opportunities on the grounds, as this is considered the means by which the Legionella bacteria is contracted. While we all feel confident that the facility is safe, we want to take these proactive mitigation measures to reassure the public and our employees."

"Although Legionnaires' disease is a rare infection, this is a reminder that the bacteria that cause it are common in nature and can be found in man-made water systems," said Dr. Moore. "This means it's very important for owners and managers of water systems that can create aerosols to [take steps to prevent Legionella](#) from growing and spreading in water systems."

Water systems that have been linked to past Legionnaires' disease outbreaks include:

- Hot tubs
- Hot water tanks and heaters
- Large plumbing systems
- Cooling towers (structures that contain water and a fan as part of centralized air cooling systems for building or industrial processes)
- Decorative fountains

Public health officials are actively monitoring for new cases of Legionnaires' disease. As of Oct. 3, there is no indication of an ongoing exposure since the end of the NC Mountain State Fair.

Updated case counts and information about the outbreak are available at <https://epi.dph.ncdhhs.gov/cd/legionellosis/outbreak.html>.

More information about Legionella bacteria and Legionnaires' disease can also be found on the CDC website at <https://www.cdc.gov/legionella/index.html> and on the DPH website at <https://epi.dph.ncdhhs.gov/cd/diseases/legionellosis.html>.