Legionella bacteria found in small percentage of homes tested by university researchers

DETROIT — After completing residential water tests in one-third of the 284 Flint homes in its study, the Flint Area Community Health and Environment Partnership (FACHEP) reports that it is detecting Legionnella bacteria in a small percentage of some of the homes. Residents in the affected homes have been informed, as has the Michigan Department of Health and Human Services.

"To be clear, these results are not necessarily outside what would be expected in other residential water systems, so this is not necessarily a surprising finding," said Shawn McElmurry, Ph.D., associate professor of civil and environmental engineering at Wayne State University. "Nonetheless, we commited to sharing our findings with the public, and we feel that this is noteworthy."

McElmurry also noted, "So far we've also found chlorine levels in about 20 percent of the homes to be less than current recommendations. The American Water Works Association recommends maintaining a residual chlorine level between 0.2 mg/L and 2.0 mg/L at all times. We've identified some homes that are below 0.2 mg/L. "

All water contains bacteria, much of which is nonpathogenic. Chlorine is the primary chemical used to disinfect drinking water. The damage to the Flint water system has made it more difficult to maintain proper chlorination levels. It is not clear if the presence of Legionella bacteria is more common in some parts of the Flint water system than with others.

"We are looking at that possibility," said McElmurry.

Led by professors from Wayne State University and Kettering University, and funded by the Michigan Department of Health and Human Services, FACHEP is expected to have complete results of its intitial testing in December. The team is working to understand the prevalence of Legionnella bacteria within Flint's drinking water systems and identify conditions that increase the growth of this bacterium.

Paul Kilgore, M.D., associate professor in WSU's Eugene Applebaum College of Pharmacy and Health Sciences, noted there are many strains of Legionella bacteria. Some strains, like Legionella pneumophila serotype 1, are more commonly associated with human disease. The FACHEP team will be studying the strains found in Flint homes to better understand how these strains relate to the risk of Legionellosis.

In coordination with the Michigan Department of Health and Human Services and the Genesee County Health Department, FACHEP is investigating, but has yet to draw connections between homes with Legionella bacteria to cases of Legionnaires disease. FACHEP has not assisted in the environmental sampling of the homes of Flint residents who have contracted Legionnaires' disease.

Researchers are also assessing residents' needs and connecting them to resources and services in the Flint area. Preliminary results show that many residents are accessing services, but they continue to be under substantial strain that has increased the need for social, nutritional and healthcare services.

FACHEP includes researchers specializing in environmental engineering, public health, and social and community support systems and includes participants from Michigan State University, the University of Michigan, Colorado State University, Henry Ford Health System, The MADE Institute and Genesee Health Systems.

"FACHEP researchers wish to express their ongoing thanks to Flint residents for their assistance with this investigation," said Laura Sullivan, professor of mechanical engineering at Kettering University.

Information about mitigating the risks to Legionnella bacteria is available from the Frequently Asked Questions document on the Genese County Health Department website.