Dramatic spike in Legionnaires' disease deaths possibly linked to Flint River water

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The Michigan Department of Health and Human Services (MDHHS) revealed in a press conference on Wednesday that from June 2014 to November 2015—the period when the water source for the city of Flint was switched to the Flint River—there have been 87 cases of Legionnaires' disease in Genesee County, 10 of which were fatal. This figure represents a remarkable increase over the previous several years when a total of only six to 13 cases were recorded.

When asked by reporters, Governor Rick Snyder said he had just learned of these statistics "a few days ago," adding that this news "just adds to the disaster we are already facing."

Synder declared a state of emergency earlier this week, mobilizing the National Guard to distribute bottled water and water filters, in a criminally belated response to a lead poisoning crisis in the city which is also the result of the decision to switch water sources in April 2014, made by then Emergency Manager Darnell Earley.

Legionnaires' disease was first recognized in 1976 when 221 attendees of a Philadelphia convention of Legionnaires contracted the lung infection. The disease resulted in the deaths of 34 Legionnaires. The bacteria that caused the disease was named Legionella.

Legionella grows best in warm water and enters the body through inhaling it. People with weakened immune systems are the most vulnerable to the bacteria.

Dr. Marc Edwards, who led the team from Virginia Tech University last summer in the sampling and testing that uncovered the serious extent of the lead-in-water problem in Flint, recognized the high probability that the Legionnaires' disease spike was related to the corrosive water coming from the Flint River.

On Edwards' Flint Water Study website, he noted: "A key hypothesis of our National Science Foundation RAPID grant is that the rapid corrosion of iron water mains in Flint would dramatically increase growth of Legionella in buildings. Mechanistically, higher rates of iron corrosion will produce: 1) higher iron in water, and 2) lower levels of free chlorine. Both of these factors were confirmed to be present in Flint during our field sampling, and have been shown to dramatically increase Legionella regrowth in our recently published laboratory research utilizing simulated distribution systems."

MDHHS officials said that it was in the fall of 2014 that they first noticed the increase in cases of the disease, and months later, in April of 2015, began interviewing those who were infected. Edwards and his VT team noticed in their research last summer that high levels of the Legionella bacterium were found in large buildings, many with old plumbing.

Edwards said on Wednesday, "Something about the Flint River and lack of corrosion control, plus big buildings, is creating these problems."

He added, "What's clear is that there's an association, which means that the increase of the Legionnaires increased pretty dramatically. And there's a strong likelihood that it's related to the water supply.

"We'll never know for sure, but we did find very high levels in the time period when they were on the Flint River water."

Edwards asserted the possibility that this may be the first time that Legionnaires' disease was associated to lack of corrosion control in the water.

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