

CDC corrects journal article on Pittsburgh VA Legionnaires' outbreak

In a rare move, the federal Centers for Disease Control and Prevention has [corrected a journal article](#) it authored about its investigation of the 2011 and 2012 Legionnaires' outbreak at the Veterans Affairs Pittsburgh Healthcare System.

The editor of the Clinical Infectious Diseases journal said the correction last month in the 2015 article was the result of the Pittsburgh [Post-Gazette's series in December](#) that revealed that CDC officials involved in the investigation held biases against two Legionnaires' experts who used to work at the VA, as well as the disinfectant system that the VA had been using to control Legionella.

That bias, the series disclosed, appears to have affected the way the VA not only investigated the outbreak — which sickened 22 veterans leading to the death of six of them — but [how it ultimately reported its findings](#). It blamed the copper-silver ionization disinfectant system for the outbreak instead of the people who managed and maintained it for the VA.

Those findings contradicted a [VA Inspector General report in 2013](#) that found that the outbreak was due to [poor management generally and poor maintenance of the copper-silver system](#) specifically — not that the copper-silver system itself had failed. The system is considered the gold-standard in the industry.

“It seems here [the CDC employees] had an agenda with the way they did the article from the beginning,” said Robert Schooley, the journal's editor and the head of the division of infectious diseases at the University of California at San Diego.

The biases were expressed by CDC officials in emails they sent to each other,

which were obtained by the Post-Gazette through a Freedom of Information Act request.

The Post-Gazette series outlined three distinct problems with the VA's investigation and how it reported its findings. But Dr. Schooley said he agreed with the CDC that it would correct only one of those issues: Whether a CDC laboratory test showed that copper-silver worked or did not work in killing Legionella, the water-borne bacteria that causes Legionnaires'.

“The way it was written was very misleading,” said Dr. Schooley, who was not the journal's editor when the CDC article was published in 2015.

As part of its investigation of the Pittsburgh VA outbreak in 2012 and 2013, the CDC wanted to test whether the Legionella in the hospital had developed resistance to copper-silver over the decades the system was used to control the bacteria.

To do that, the CDC put two different strains of Legionella — one recovered in 2012 and one recovered in 1982 — in water and added copper and silver at three different levels of concentration: the manufacturer's minimum recommended concentration, the optimal and the maximum. It then measured how much of the Legionella was, or was not, killed at four different time points: five minutes, 30 minutes, three hours and 24 hours.

In an email the Post-Gazette obtained, the researcher, Claressa Lucas, who conducted the test, wrote to her colleagues and told them that “at” 24 hours the optimal level of 400 parts per billion of copper and 40 ppb of silver showed a “significant decrease in viability” of the Legionella, but not at the prior time point of three hours.

But [in the journal article, the CDC reported](#) that its test found that the 400/40 ppb “copper-silver solution, although above the manufacturer's recommended target concentration for Legionella eradication, failed to reduce viability of any strain *within* 24 hours.”

After the Post-Gazette discovered the change in the data in the journal from what Ms. Lucas told her colleagues in her email, Ms. Lucas and the CDC initially defended the change. Ms. Lucas at one point maintained that both her email and the journal article were technically correct.

But in the “Errata” section of the June issue of the journal, the CDC admitted that the line in the journal article was “incorrect.”

The correction changed the sentence about the copper-silver testing to read: “In addition, testing at the CDC’s Legionella laboratory revealed that a [200/20 ppb] copper-silver solution at the manufacturer’s recommended target concentration for Legionella eradication failed to reduce viability of any strain within 24 hours, although higher concentrations of [400/40 ppb] or [800/80 ppb] copper-silver were able to significantly reduce Legionella viability at 24 hours.”

Dr. Schooley said he had to contact the CDC to inquire about the discrepancies the Post-Gazette found in its December series. He said having to make such a correction amounts to a retraction of information, and “any retraction is a big deal.”

But CDC spokeswoman Kirsten Nordlund said the CDC found the problem itself and it was only a “small data error.”

Asked how its own investigation — [first requested by U.S. Sen. Bob Casey](#), D-Pa., following the Post-Gazette’s series — was going, Ms. Nordlund replied in an email: “After we received the request from Senator Casey, we reviewed our scientific processes and conclusions from the Pittsburgh VA outbreak. During the review, we did find a small data error in the CID article and the Journal published an errata. This does not change the findings or conclusions and the investigation is closed.”

Asked whether the CDC disciplined anyone for their role in the investigation or how the journal article was reported, Ms. Nordlund said the CDC “does not

discuss personnel actions.”

In the emails, CDC officials openly discussed their biases against copper-silver systems, as well as two researchers who used to work at the Pittsburgh VA and had long battled the CDC over a variety of issues related to Legionnaires’ disease, including copper-silver systems, which the researchers believe are effective.

In one email, Cynthia Whitney, the head of the CDC’s respiratory disease branch, said that because the outbreak was at the Pittsburgh VA where two Legionnaires’ researchers disliked by some CDC officials had worked, and because there was a copper-silver system in use there, investigating the outbreak would be “poetic justice.”

The two Legionnaires’ experts maligned by CDC officials in their emails, and representatives from the two copper-silver ionization manufacturers that worked with the Pittsburgh VA, all took issue with the journal article and the CDC’s attempt to minimize what it did.

“This is not an honest error,” said Janet Stout, the Legionnaires’ expert who now runs a private laboratory in Pittsburgh’s Uptown neighborhood with her colleague, Victor Yu. “The CDC’s 2015 article had an agenda to discredit copper-silver ionization. Now we can see the CDC deliberately misrepresented their lab data only to support their view. They took their whole experiment and cherry-picked data.”

“That really is misconduct,” she said.

Dr. Yu agreed: “When I see an error like that, I believe it was deliberate. They had an experiment that showed it worked, then they said it didn’t.”

Aaron Marshall, director of operations for Enrich, the copper-silver manufacturer that had advised the Pittsburgh VA on its systems in 2012, said what is more troubling is that the correction is misleading as well.

“The reason they didn’t get a good kill [of Legionella by copper-silver] at 200/20 ppb is because of where they got the copper and silver,” he said.

The CDC laboratory test was a “bench test” where Legionella bacteria were simply placed in water with set amounts of copper and silver. The problem was, the CDC got the copper and silver from acetate and silver acetate salts, not from charged ions from a copper-silver system, he said.

“We’ve had significant reduction at 200/20 at Janet [Stout’s] lab, and in tests at a lab in Virginia that we did for the” Environmental Protection Agency, Mr. Marshal said. “But we used charged ions, which are more effective.”

Tory Schira, chief operating officer of Liquitech, the company that made the copper-silver systems in use at the Pittsburgh VA, had the same complaint about the CDC’s test and focus, now, on the minimal level of 200/20.

The wording the CDC used in the original article and the correction “does not do justice to the technology or to their own science.”

Dr. Schooley said there still could be further debate or clarification about the CDC’s journal article, but it would have to come through editorial letters from the outside, something he invited anyone to do.

But even without it, he said: “To me, [the journal article] does not support [the CDC’s] contention” that copper-silver systems do not work.

“It looked to me like they were taking issue with the [copper-silver] system and they wanted to use this to take down the system,” he said. “I don’t think investigators should go in [to an investigation] with animus; they should go in with a desire to get the truth out.”

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