

Infection Outbreak of 72 Children Shines Light on Water Risks at Dentists Offices

September 30, 2016 12:03 PM ET by Erin Ross National Public Radio



Mimi Morales recovers in Children's Hospital of Orange County in late September after surgery for a dental infection she contracted at Children's Dental Group in Anaheim, Calif. She had three permanent teeth, one baby tooth and part of her jawbone removed.

When people go to the dentist, they generally expect to leave in better health than when they walked in. But the water that dentists use to rinse teeth sometimes carries infectious bacteria.

The Orange County Health Care Agency in California says that **72 children** who received pulpotomies, have been hospitalized with dangerous bacterial infections. The infections were caused by *Mycobacterium abscessus*, which the health department traced back to the water at Children's Dental Clinic of Anaheim.

"The reason we're so concerned is this infection is very hard to treat with antibiotics," says Dr. Eric Handler, health officer with the Orange County Health Authority. Instead, the tissue is surgically removed. "Treatment can be very traumatic and deforming."

As of December, 2017, there are 72 confirmed and probable infections linked to the clinic. In each case, the children had to be hospitalized. The Orange County Health Care Agency had found abnormal levels of microbes in the water.

Deepa Bharath and Courtney Perks at The Orange County Register report that several children have had surgery to treat infections, including a 7-year-old girl who had "three permanent teeth, a baby tooth, and a part of her jaw bone" removed.

Although infections like these are rare, this isn't the first time *Mycobacterium abscessus* has been traced to a dental office. In Georgia in 2015, more than 20 children who had pulpotomies were later hospitalized with confirmed or suspected mycobacterium infections. Dr. Melissa Tobin-D'Angelo, with the Georgia Department of Public Health who investigated the 2015 outbreak, said "We don't want to discourage parents from having their children see their dentists two times a year as recommended." Investigators traced the infection to the dental unit waterlines—the flexible plastic tubes that carry water to the hoses that rinse your mouth.

Keeping waterlines clean can be a challenge for dentists.

A Bacterial Incubator

Dental unit waterlines are very good at growing bacteria, says Dr. Nuala Porteous, an associate professor of dentistry at University of Texas Health Science Center Dental School in San Antonio. In her research, she looks at how to control infection risks in dental offices, including the microbes that live in waterlines.

"If you think about the last time you went to the dentist, they only use the water sometimes," Porteous says. "There's a lot of stagnant water." And bacteria love to grow in stagnant water. How prevalent they are is hard to say. A study of dental waterlines in the U.S. found harmful bacteria 68 percent of the time. *Mycobacterium* isn't the only kind of germ that can thrive in waterlines. *Pseudomonas* and *legionella* can, too. Both types of bacteria can cause pneumonia-like illnesses.

"These are organisms that are typically found in water and groundwater," says John Molinari, a microbiologist and professor emeritus at the University of Detroit Mercy School of Dentistry. "With *legionella*, you're more likely to get sick when there's a lot of bacteria, like when you get biofilms," says Molinari.



Mimi Morales says she's "flabbergasted" that her granddaughter, Mimi, 7, ended up in the hospital with an infection following a pulpotomy in July.

Fighting Biofilms

A biofilm is a group of microorganisms—typically bacteria, fungi or a mixture of microbes—that live in a colony. These microbes communicate with each other and even feed and protect each other. And that can make them very hard to remove. The outer layers might die as cleaning chemicals rush through the pipes, but the inner layers can survive.

Generally, dental offices use a combination of chemicals. Some are added continuously to the water in low concentrations, while other, stronger disinfectants are used intermittently.

Dentists should be able to tell if the bacteria-killing maintenance for their equipment is working. **Dentists can send water samples to testing companies to make sure bacterial counts fall within CDC guidelines.**

"Without water testing, it's impossible to tell if your treatment works," says Mark Frampton, owner of ProEdge Dental Products, a manufacturer of disinfectants for dental lines. Frampton's company also analyzes water quality for dentists. "In our experience, about a third of the time people that have maintenance programs will still fail our tests because they don't always follow the treatment instructions. People don't always do everything perfectly."

University of Texas Health Science Center's Porteous recommends dentists check the water coming out of dental lines at least weekly. "I would hope that all dentists take note of these cases that have been occurring recently in Georgia and under investigation in LA," she says. "It's very sad, and I hope that it makes all dental institutions sit up and take note."

Back in California, the dental clinic linked to the mycobacterium infections isn't taking any chances. It will replace its entire water system.

Talk to the Dental Water Experts at www.proedgedental.com 888.843.3343

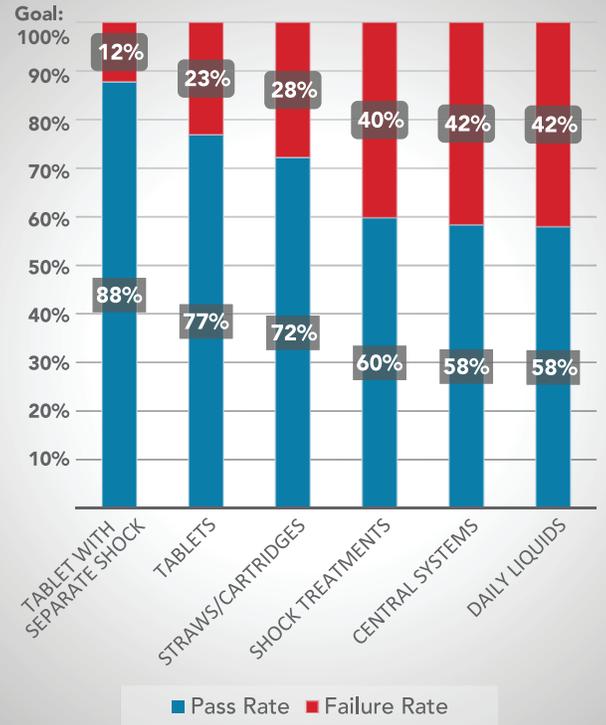


**NOW WITH FREE FEDEX SHIPPING!
SAVE \$40!**

Expert Consultation included with every test:

For more than a decade, ProEdge Dental Water Labs has helped dentists protect their patients, practice and reputations by providing expert advice and more than 100,000 water test results.

R2A Pass and Fail rate by DUWL Product Type



Order #	Description	Price
80101	Water test kit with 1 collection vial, FedEx shipping	\$72.50*
80401	Water test kit with 4 collection vials, FedEx shipping	\$139.50*
80601	Water test kit with 6 collection vials, FedEx shipping	\$169.95*
81601	Water test kit with 16 collection vials, FedEx shipping	\$369.00*
80100	Additional collection vial now sold separately — add these to your 1-, 4-, or 6-pack (80101, 80401, 80601)	\$22.00*
70101	NEW ECONOMY Water test kit with 1 collection vial (Shipping not included)	\$49.50*

We passed our water test!



Clean Water Fast!

Control microbial contamination growth IN ONLY 3 SECONDS!

BluTab®

Waterline Maintenance Tablets

Order #	Qty.	Description	Retail
BT50	50	Tablets designed to treat 700-750ml of water	\$37.50
BT20	50	Tablets designed to treat 2 liters of water	\$57.00



www.ProEdgeDental.com

888-843-3343