

# The Flint Water Crisis: An Opportunity for Dentists to Help

By Traci Dantzler, DDS  
Past-President, Genesee District Dental Society

The Flint water crisis proved to be an unprecedented tragedy for the Flint community on so many levels. As a result, the dental profession was catapulted to the spotlight due to the need to address the oral health ramifications of the lack of fluoride in the drinking water, as well as the presence of excess lead in the water supply.

This was an opportunity for organized dentistry to show what we are made of. I am proud of how quickly the Genesee District Dental Society came together with the MDA, ADA, and various community-based organizations to address the dental needs of the residents of Flint.

I would like to begin by giving a brief overview of the events that led up to the Flint water crisis. Initially, the city of Flint purchased its water supply from the Detroit Water and Sewerage Department. According to some reports, in the spring of 2013, State Treasurer Andy Dillon and Gov. Rick Snyder's chief of staff, Dennis Muchmore, proposed to the Flint City Council that it terminate its contract with Detroit Water and Sewerage Department and purchase water instead from Karegnondi Water Authority (KWA). Both entities distribute water from Lake Huron. This was suggested as a means by which the city could allegedly save money. The Flint City Council passed a resolution to switch Flint's water supply from Detroit Water and Sewerage Department to KWA by a vote of 7 to 1.

It was estimated that it would take KWA a few years, at a cost of \$270 million, to construct pipelines and

pumping stations, as well as get on-line, in order to supply water to Flint. Therefore, Flint would need an interim water supply until the project was completed. Flint's water plant was put into operation, and in April 2014 the Detroit Water and Sewerage Department reluctantly terminated its contract with Flint. It was at this time that Flint began to receive its water, on an interim basis, from the Flint River. The Flint River had served as a backup water source for the city of Flint.

Almost immediately, the residents of Flint began to complain about the color of the water, the development of rashes, and concerns about bacteria. They also complained about the odor and taste of the water. As the community began to protest, a resident contacted the U.S. Environmental Protection Agency, and this began a series of investigations by governmental agencies.

Boil-water advisories were called due to the presence of e-coli and coliform in the water. A lead advisory was ultimately called because studies showed that there was excess lead in the water as well. The excess lead was present in the water because the water from the Flint River is highly corrosive, and it was never properly treated with anti-corrosive agents. Therefore, lead was leaching into the water from the pipes. The University of Michigan-Flint tested its water and found high levels of lead in certain areas. Dr. Mona Hanna-Attisha began researching her patients, and found high blood levels of lead in children.

There was also a significant rise in cases of Legionnaires' disease in Gene-

see County, particularly in Flint. Seventy percent of the Legionnaires' cases involved patients who were exposed to Flint water approximately two weeks prior to the onset of symptoms. Ten people were reported to have died from this disease. Several states of emergency were finally called, which ultimately reached the office of the president of the United States. Although President Barack Obama called for a state of emergency for Flint, he refused to call it a national disaster.

As a result of the Flint water crisis, residents were told to either place lead filters on their faucets, or use bottled water for drinking, cooking, bathing, brushing their teeth, etc. Although Flint was reconnected with Detroit Water and Sewerage Department in October of 2015, the damage was already done. The lead pipes still needed to be replaced, and those who used lead filters had to be very careful to follow manufacturer's instructions with regard to maintenance of those filters. The filters remove most of the chemicals in the water, including chlorine. However, the presence of unknown bacteria was still a concern. In addition, Flint residents no longer trusted their local, state, or federal government. As a result, the vast majority of the residents still use only bottled water to this day.

From a dental perspective, the Flint water crisis presents many concerns. First, the excess lead in the water could have adverse effects on oral health. There are some studies that show a link between lead exposure and an increased incidence of dental caries. Secondly, we know that populations in areas where the water supply is not fluoridated demonstrate a substantial increase in the development of dental caries. Third, since plastic water bottles contain bisphenol-A, or BPA, a known carcinogen, there are concerns that this toxin is being leached from the bottled water. Finally, the Flint community was exposed to high

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levels of bacteria, as well as dangerous chemicals called trihalomethanes (THMs), a disinfectant byproduct that can cause liver and kidney damage. Long-term exposure to this chlorine byproduct has also been linked to cancer. This excessive amount of chlorine was added to the contaminated water to control the bacteria. We know that there is an interdependency between oral health and overall health, and more studies will be needed to fully understand this relationship.

### GDDS responds

Within the past year, the Genesee District Dental Society has been involved in initiatives to assist and inform the residents of Flint. Dr. Martin Werschky and I attended a meeting organized by the Genesee County Medical Society, which featured Dr. Vivek H. Murthy, surgeon general of the United States, as the guest speaker. Representatives from various areas of the health care profession were present. We were able to ask Dr. Murthy questions about the government's role in providing relief to the Flint community as it struggles to deal with the aftermath of consuming contaminated water. I told Dr. Murthy that it was imperative that society begins to understand the impact that oral health has on overall health, and vice versa. I asked him to better educate the federal government on oral health issues as they contemplate funding for the water crisis.

As the medical society and community-based organizations began working together to assist Flint residents, I urged them to keep dentistry at the forefront as well. Dr. Murthy stated that although not much is known about the impact of lead on oral health, he knows that lead is absorbed into the bone. This underscores the need for all individuals to have a dental home

so that they are treated (even if they only require preventive care) and monitored throughout their lifetime.

I was able to speak with Dr. Murthy again when he came back to Flint months later. The purpose of his visit was primarily a follow-up, but at least we are maintaining relationships on the federal level.

On March 23, 2016, the Genesee District Dental Society hosted a roundtable meeting at the Flint Golf Club to discuss the Flint water crisis. In addition to me, in attendance were Drs. Jay Werschky, Raymond Gist, Scott Mortimer, Steven Taft, and Steven Sulfaro, all of the Genesee District Dental Society; Karen Burgess, CEO/executive

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director of the Michigan Dental Association; Dr. Mark Johnston, then-MDA president; April Stopczynski from the MDA; Dr. Gary Johnson from the Genesee County Health Department; Carol Lutey, director of Mott Children's Health Clinic (MCHC); Chris Farrell, director of Oral Health at the Michigan Department of Health and Human Services; Lori Kunkel from the Greater Flint Area Health Coalition; Dr. Lawrence Reynolds from MCHC; Evilia Jankowski from the Genesee Intermediate School District; Jill Phillips from the Junior League of Flint; Karlene Ketola from the Michigan Oral Health Coalition; Jane McGinley from

the American Dental Association; and Dr. Brian Jacobson from Delta Dental.

We discussed what each of our organizations was doing, and planning to do, to assist the Flint community. As we went around the table, it was amazing to find that each individual or organization, had already begun to help address the dental needs of the community. Bottled water was being provided in abundance, and fluoride was being administered to school children by dentists and dental hygienists. Most of the focus was on children, particularly the younger ones, because their teeth were still developing.

Delta Dental Fund donated \$204,000 to fund two programs that would provide a fluoride mouth rinse to school children in grades K-6, and fluoride varnish to children in the Head Start Program. These programs would be administered through the Michigan Department of Health and Human Services and Mott Children's Health Center.

The MDA contacted the GDDS to offer funds and other resources in the response to the Flint water crisis. Public Service Announcements were developed that would manifest in various media such as television, radio, and social media platforms. This is a great way to educate society, as well direct individuals to their local, state, and national dental organizations for further information. This is just the beginning, as our collaboration with the MDA is ongoing.

### Joint initiative

On July 12, 2016, Drs. Jay Werschky, Scott Mortimer, Steven Taft, and I met with John Girwood, a researcher from the University of Michigan School of Dentistry. We discussed the possibility of collaborating on a joint initiative to assist the residents of Flint affected by the water crisis. Mr. Girwood had already begun working with Dr. Mona Hanna-Attisha before the Flint water crisis occurred. Their research focused

on training physicians to apply fluoride varnish to children's teeth between the ages of 0-3 years old, followed by a referral to a local dentist. Some of the barriers included acceptance by physicians and patients, time, and reimbursement, to name a few. Although their efforts should be commended, I personally believe that only dental professionals should provide fluoride. This is one example of the need for greater communication between the dental profession and society.

I was contacted last year for an interview by a writer named Eric Martin from the Academy of General Dentistry. The article appeared in the September 2016 issue of *AGD Impact*. It was entitled, "What You Can Learn from Flint and Other Water Crises." I discussed the safety precautions that all dentists should use in their offices, including installing a closed water system. Other dentists were interviewed for the article as well. It was very informative.

Finally, Dr. Ray Gist and I appeared on television a few times over the past year to discuss the adverse effects that a lack of fluoride can have on oral health. We also used these opportunities to educate the community on the connection between oral health and overall health, and the importance of having a dental home. The last television segment that we did was sponsored by the Genesee Health Plan. They did a fantastic job putting it together.

Although we have begun to make

progress in our efforts to help the Flint community, we must have short-term and long-term plans in place, whereby consistent multidisciplinary involvement is maintained over the course of many years. As I mentioned earlier, this crisis is unprecedented. We have to anticipate that the presence of lead in the water supply, the consumption of water almost solely from plastic bottles, and the lack of fluoride from the water supply will more than likely have unforetold health consequences that will manifest over a period of many years.

The Flint water crisis is one of many challenges we are facing in dentistry today. There are legislative issues that threaten the profession of dentistry, the challenge of access to care is ongoing, and there are concerns about declining membership nationally, to name a few. Now, more than ever, we must stand strong and work together for the future of dentistry. The local dental societies, state dental associations, and the American Dental Association must be the recognized authorities on oral health. We must be at the forefront of all initiatives concerning oral health, and be the ones that every segment of society looks to for information pertaining to oral health issues.

I am confident that we will not just persevere through these challenges, but we will affect change that will impact dentistry for generations to come. ■

### About the Author

Dr. Traci Dantzler is the immediate past-president of the Genesee District Dental Society. She has served on the Board of Directors for Genesee District for the past six years. She is a native of Flint. She completed her undergraduate studies at the University of Michigan-Ann Arbor and obtained her Doctor of Dental Surgery degree from Northwestern University Dental School in 1988.

Dr. Dantzler also received a certificate in counselor training from the Mt. Zion Church Beecher Institute in 2012.



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