

How the Flint water crisis set students back

June 27 2019, by Marilynne R Wood

When the [Flint water crisis](#) took place in 2014 and 2015, one of my graduate nursing students decided to get involved.

Having already worked with me in the Greater Toledo area to screen children at risk for [lead poisoning](#), my student helped conduct blood lead level screenings of the children exposed to the water. Test results later showed that the number of lead poisoned children in Flint had [doubled](#) after the crisis.

Since that time, some have worried that children in Flint are suffering [academic setbacks](#) as a result of being exposed to high levels of lead in Flint's water supply.

State officials advised that [as many as 9,000 children](#) under the age of 6 in Flint be treated as having been exposed to high levels of lead after the city's drinking water supply was switched in 2014 from water from Lake Huron to water from the Flint River.

Others, however, have pushed back, arguing that Flint's water crisis is [not the culprit](#) behind any academic losses. Certainly lead was a problem for children in Flint [long before the water problems](#).

But as a nursing professor and [parent educator](#) who [specializes](#) in treating children with elevated lead levels, I believe that just like in Detroit—where lead poisoned children have [suffered academic setbacks](#) after being exposed to lead, [mostly from lead paint in their homes](#) – similar academic setbacks are likely taking place in Flint.

However, my experience shows that lead levels in children can be lessened by educating parents on simple things they can do to decrease exposure to lead in their homes.

Ill effects

Lead [affects children's brain development](#) and results in reduced "intelligence quotient," or IQ. It also leads to [behavioral changes](#), such as shortening of attention span, restlessness, conduct disorders, aggression and reduced educational attainment, as shown in "[What the Eyes Don't See](#)," a book by Mona Hanna-Attisha, a physician who helped [expose the Flint water crisis](#).

Lead exposure can harm children even [before they are born](#). The Centers for Disease Control estimate that approximately [half-a-million](#) children in the United States between the ages of 1 and 5 have an elevated blood lead level.

Although lead poisoning is [preventable](#), the neurological and behavioral effects of lead are believed to be [irreversible](#). No [level of lead](#) is [safe for children](#).

Screening children

Most of my work with lead poisoned children has taken place in the Greater Toledo area. My graduate nursing students and I have collectively screened more than a thousand students at Toledo Public Schools. Of those children tested, 577—38.9% – had blood lead levels above 4 micrograms per deciliter. The CDC says [intervention is warranted](#) at 5 micrograms per deciliter, but I prefer to intervene at 4 micrograms to focus in on problems before it reaches a higher level.

In individual schools in Toledo, the share of students at or above 4 micrograms per deciliter ranged from 21% to 73%. Many of the children we screened were already in special education classrooms because of their lead exposure.

What actions are needed

Whenever my graduate students and I detect lead in children, we educate their parents or caregivers about where lead comes from. We discuss what lead does to children's brains and bodies once it enters their bloodstream. We also offer practical tips about how they can decrease lead exposure in their homes.

For instance, we recommend that caregivers wet mop and clean. Why? Because over 80% of the children that I've screened for lead in the Toledo area live in rental properties. That's significant because many of these homes and apartments were built before 1978, the year the United States [banned lead-based paint in housing](#), and are the most likely to have [lead paint](#). As different families move in and out of these properties, many different children get exposed to lead in the same rental home over the years.

It is critical that these rental properties and family-owned homes be certified by local health departments and other governmental agencies as "lead safe." But just as there are lead threats inside the home, there are also threats outside the home. Those outside threats come from children playing in lead-tainted soil around the home and tracking it inside.

Fighting back

When 18 of my graduate nursing students and I followed up with Toledo families with lead poisoned children between 2016 and 2018, we found

11 of the 577 children had significant decreases in their blood lead levels and improved academic performance.

One 8-year-old girl, for instance, had her blood [lead levels](#) drop from 22.6 micrograms per deciliter two years ago to 6.1 micrograms per deciliter.

The girl's mother was diligent in following the recommendations we made to decrease lead absorption in her daughter, such as increased nutritional intake of vitamin C, iron and calcium. In addition, the girl began to take daily multivitamins and ate snacks during the day to avoid an empty stomach, since food decreases the gastric absorption of lead. Shoes were left at the door of their home to avoid tracking in lead-contaminated soil from outside. The mother also damp mopped and dusted to decrease exposure to lead from the air. The girl was also encouraged to wash her hands frequently. Referrals were made to the local health department for further assessment of the living environment and possible financial support to secure a "lead safe" home for the family.

Future of Flint

Five years after the Flint water crisis, people are still [distrustful of the local water](#). Efforts to hold officials accountable seem to go back and forth. Residents are trying to sue [city officials](#) and the [federal government](#) for lead contamination in the [water](#). [Criminal charges were dropped](#) on June 13 against several officials who had been charged in the crisis, but may be re-issued.

The circumstances by which children were exposed to high levels of lead in Flint and Toledo may be different. But as one who has worked directly with lead-poisoned children, I know it is likely the impacts will be similar. Lead-poisoned children in Toledo schools have struggled to

stay on task, stay out of trouble, learn reading and math skills, and keep up with their peers academically and socially. There's no reason to think that lead-poisoned [children](#) in Flint aren't going through the same thing.

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