

Opt-Out, Lead-Out: Flint, Michigan

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Abstract:

This research paper discusses the need for the federal government to promptly support and explore ways to fix the infrastructure of the water systems in America. The crisis in Flint, Michigan, is a direct result of this failed system. The water pipes there are old and were vulnerable to contamination. Flint is not the only city with old pipes that need to be replaced. Research proves that other pipe systems around the country need to be replaced also to avoid this type of situation from reoccurring. Congress has realized that lead contamination is a threat that needs to be addressed, but funding to solve the problem lingers.

Remember the childhood game “Who Did It”? Both the former EPA director and the governor of Michigan decided to play the game of “Who Did It,” rather than quickly respond to a problematic condition that was spiraling out of control. Governor Rick Snyder disregarded the ineffective water treatment and blatant indications of contamination. The people of Flint, Michigan, were in a state of emergency, but the Environmental Protection Agency (EPA) failed them by arriving tardy to the rescue. Now that the crisis has made national news, most agencies and officials are stepping up to the plate to deliver relief. Purified by the gallon and bottled water sales increased as people around the country bought them to donate to the people of Flint. Even though the government officials failed to swiftly notify the citizens of Flint about the condition of the water system, they are not entirely to blame. Corroded water pipes filled with lead are to blame for the massive catastrophe (“In Getting Lead Out of Drinking Water, Where Was the EPA?,” 2016). A thorough review of water systems and their structures around the world is needed to accurately solve the systemic issue at hand. Every living person needs water to survive. Adults often are overcome by sickness but usually handle it better than children. Innocent children should not have to endure a long-term defect because official agencies do not care enough to fix a problem. The federal government must promptly support and explore ways to fix the infrastructure of the water systems throughout the United States, rid them of all established lead-based materials, and prevent contaminated-water-related issues, such as the one in Flint, Michigan, from reoccurring and endangering innocent lives.

The Environmental Protection Agency was created to help combat issues such as environmental contamination by ground, air, and water. It was created in 1970 by the government of the United States of America to be an independent agency to launch and implement environmental safety standards and to conduct studies on increasing pollution. Another task of the agency is to deliver funds and other assistance to cities and states to further decrease the amount of pollution transferred to the environment. The EPA plays a key role in working with the President of the United States to develop

eco-friendly policies and regulations that serve to safeguard the environment. In conjunction with this role, they also work to find and administer penalties to violators of these policies and regulations (“Environmental Protection Agency,” 1990, p. 340).

Lead poisoning has been a major problem over the years. The Environmental Protection Agency passed several acts to battle the problem in the United States with the environmental hazard that lead poisoning causes. Regulations enacted by the EPA to fight ongoing complaints with lead include the following: Toxic Substances Control Act, Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X), Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, Safe Drinking Water Act, Clean Water Act, and many several others. Each act provides a different area of relief in efforts to help solve lead matters in the land, air, and water (“Lead Laws and Regulations,” 2017).

Water contamination questions arose to the forefront of the news recently because of the disastrous conditions in Flint, Michigan. In 2013, to save money, city officials decided to switch the residents of Flint from the Lake Huron water line supplied by Detroit. The Flint River became the temporary water source while waiting for the new pipeline that was to be built through Lake Huron and supply Flint’s new water line. Even though the new pipe system was not due to be finished until 2016, this was supposed to be the best overall decision because the contract with the Detroit water system was due to end in the spring of 2014. As water was pumped from the Flint River, it was supposed to be treated by the city’s water plant before going out to the residents (Mendoza, 2016). Immediately after the shift, residents noticed a change in odor, taste, and color with the water (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016). They were also complaining of headaches, hair loss, and skin rash (Mendoza, 2016). These events lead to serious violations of laws put in place to protect citizens (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016).

The Safe Drinking Water Act was originally passed by Congress in 1974. The act was amended once in 1986, then again in 1996. In its amended phase, the law added provisions for funding to make system improvements, training for workers, and information on how to keep water safe for people (“Overview of the Safe Drinking Water Act,” 2016). The EPA regulates this act by defining the number of microorganisms that can be in drinking water without their having a negative health result. Judgement is based off the best science, and it says there is no safe level of lead that can be exposed to drinking water. Because tainted water usually is a direct consequence of tarnished pipes, the EPA could not set a maximum contaminant level. They did, however, set up a treatment method to control contaminants (“Basic Information About Lead in Drinking Water,” 2017). The Safe Drinking Water Act was directly violated by the situation in Flint. Not only was lead found, but *Escherichia coli* was also found in the water supply. The Safe Water Act rule was violated when the city attempted to use trihalomethane to disinfect the water. The water that spilled in from the Flint River had a high chloride- to-sulfate mass ratio, and no corrosion inhibitor. The water distribution system easily became tainted because the pipes were old and contained lead- based material (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016).

The Lead and Copper Rule is the treatment method proposed to regulate lead in water. According to the Lead and Copper Rule, which is under the Safe Drinking Water Act, something must be done if levels of lead reach 15 parts per billion (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016). As a duty, if over ten percent of tests from high-risk homes are above the 15-ppb limit, water agencies are supposed to notify the customers. Next, they are supposed act towards resolving the issue by taking steps, such as adding chemicals. Third, they are to replace the contaminated line (“Basic Information About Lead in Drinking Water,” 2017). Some critics are still not happy because they feel as though the current rule is not doing an adequate job to protect the health of the public or inform each homeowner about the risks (Foley, & Hoyer, 2016). This complaint was exhibited in Sebring, Ohio, when some officials found problems in the water, but the local representatives did not inform the residents until

approximately six months later (“In Getting Lead Out of Drinking Water, Where Was the EPA?,” 2016). A study found that ten percent of the homes in Flint held 25-ppb or more of lead in their water supply. Some homes tested reached anywhere from 100-ppb to 1000-ppb. These numbers surpass the number regulated by the EPA (Mendoza, 2016). Data proves there have been many other areas to recently experience high lead levels, but the information was not made known nationally like the crisis in Flint (Foley, & Hoyer, 2016).

With the events in Flint, Michigan, in mind, the *USA Today Network* launched an investigation into the water systems throughout the United States. The investigation revealed that over 1000 different systems contained massive amounts of lead at some point. High levels of lead were found in the pipelines that supply drinking water to many different locations, homes, and child- related facilities. They revealed this information in an article on April 8, 2016 (“In Getting Lead Out of Drinking Water, Where Was the EPA?,” 2016). Following in the footsteps of *USA Today*, on April 9, 2016, the *Associated Press* released an article about this same issue and revealed that the EPA had been tracking the data since January 1, 2013, up until September 30, 2015 (Foley, & Hoyer, 2016). Residents with the Passaic Valley Water Commission in New Jersey are victims of lead contamination. The agency recently announced plans to replace hundreds of water lines. The Massachusetts Water Resources Authority also publicized plans to replace its lead-filled water lines (Foley, & Hoyer, 2016). Gina McCarthy, former EPA Chief, wrote that an EPA Drinking Water Infrastructure Needs Survey estimated that over \$300 billion will be needed to improve the entire nation’s water drinking system. She goes on to say this investment is needed to continue providing lead-free water to citizens in America. Thousands of water pipes, miles long, need to be replaced; many other storage tanks, distribution systems, and treatment plants also need to be upgraded (McCarthy, 2016).

The crisis in Flint placed all residents of the city at risk for different types of complications. Children exposed to lead-contaminated water can develop problems such as IQ and behavior problems,

increased amounts of lead in the bloodstream, rates of slow growth, and many other permanent disorders (“In Getting Lead Out of Drinking Water, Where Was the EPA?,” 2016). Research shows that for every 1-ppb intake of lead- tainted water in children from 1 to 5 years of age, the level in their blood intensifies by 35 percent (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016). An article in *Rockford Registered Star* reported that 1 in 20 kids under the age of 6 exceeded the state standard in Knox County of Galesburg, Illinois, for high levels of lead in their blood (Foley, & Hoyer, 2016). In the United States, the Centers for Disease Control and Prevention is responsible for watching lead levels in blood. Pregnant women and fetuses should stay away from contact with lead- contaminated water. The lead can be released into the body and used to help form the bones of the developing fetus. The lead can act as a calcium supplement. It can also invade the placenta and cause premature birth or cause the growth to be reduced (“Basic Information About Lead in Drinking Water,” 2017). Infants who receive lead through milk or formula are at greater risk for increased lead in blood levels (Hanna- Attisha, LaChance, Sadler, & Schnepf, 2016). These reasons draw support for the necessity to fix the water infrastructure system.

There is no specific technique to use to fix the water infrastructure system. Some critics may feel that the water infrastructure is not an immediate matter because the underlying problems cannot be seen. The relentless disregard can eventually become an overwhelming problem. The Water Utility Council supervised several studies by the American Water Works Association. The association found that the biggest drawback to delayed efforts is that the longer it takes to fix the water systems, the worse the problem will become. If the problem continues to develop with no action, when officials do decide the fix it, the expense will be much higher. As time passes, lead will continue to become an increasing problem and disrupt water service in many areas (“Buried No Longer: Controlling America’s Water Infrastructure Challenge,” 2017).

Many cities have discontinued the use of lead pipes, but other places like Flint, Michigan, may continue to use them. It is highly likely that over 75% of the water lines are filled with lead because of the continued use of these old lead-based pipes. In 1986, lead was banned from being used in plumbing-related materials. Homes built prior to that year may still have those lead-based products in use. Homes with these materials in use are highly susceptible to contaminated water systems (Hanna-Attisha, LaChance, Sadler, & Schnepp, 2016). Lead-free materials is the Congress' preferred choice. The EPA recently proposed a directive in conjunction with Section 1417 of the Safe Drinking Water Act. The proposal is for a new Use of Lead Free Pipes, Fittings, Fixtures, Solder and Flux for Drinking Water rule. Section 1417 defines lead-free, and it weighs lead at an average of 0.25 %. It also weighs the lead for solder and flux at 0.2 % ("Use of Lead Free Pipes, Fittings, Fixtures, Solder and Flux for Drinking Water," 2017).

On the positive side, changes in society have caused lead to be removed from paint items and gasoline, so incidences involving lead poisoning in children should have declined. On the contrary, child-related lead poison is at a high rate because of issues with lead being in water structures. For this reason, lead materials for water-related items should be completely removed from the market, and the ones still in place need to be replaced. There are several alternative products that can be used, such as plastic pipes or brass connectors. In an interview with *Kaiser Health News*, Gina McCarthy exclaims, "I never want to see a system like Flint, again—never want to see anyone that afraid to drink the water and us having to say, 'Don't drink it.' But I think it's unrealistic to think that won't happen again—if we don't continue investment in our infrastructure" (qtd. in Appleby, 2016). Public officials must not wait for another event like Flint, Michigan, to act. Action must be taken now.

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