**PAESTA Podcast Series – You Asked, We Answered!**

**Episode 7 – The Flint Water Crisis – What is happening to the drinking water in Flint, Michigan, and what are the consequences?**

James Clark, undergraduate student, Penn State Brandywine

Hello my name is James Clark and I am an undergraduate student at Penn State Brandywine. In this podcast, I will be answering the following questions that pertain to the Flint water crisis. Who is to blame? What caused the Flint water crisis? Was the Flint water crisis preventable? What are the lasting consequences? What are the political ramifications? Along with these questions, I will also answer some common questions that people are asking about the Flint water crisis.

First, it is important to know about the history of Flint, Michigan. In 1819, Flint was a trading post that was opened by Jacob Smith. The Native Americans called the area “Pawanunking”, which means “River of Flint.” In the late 1800’s Flint became a prosperous fur-trading, lumber and agricultural settlement. In the 1900’s Flint moved from producing horse-drawn carriages to automobiles. Flint evolved into a prosperous automotive city. In the 1950’s, Flint had the largest General Motors manufacturing complex in the country, and was second to Detroit in the nation for the production of automobiles, auto-parts, and supplies. In the 1980’s and 1990’s, Flints economy and population declined as General Motors plants relocated or closed. Flint is a prime example of the term “rust belt” The term “rust belt” is used to describe northeastern and mid-western cities in the US that have declining industry, falling populations, and aging factories and infrastructures. Aging pipe infrastructure is the main component of the Flint water crisis. The water chemistry caused lead in the pipes to enter into the water.  Lead was a commonly used substance in many industrial and commercial products in the 1900’s.  At the time it was used, no one knew about the health consequences.  Today, many years later, the effects of using lead are still being felt. [4]

So, who is to blame for the Flint water crisis? The Environmental Protection Agency also known as the EPA, blames Michigan's Department of Environmental Quality, the city of Flint, and Michigan for the Flint water crisis. The EPA calls their responses to the crisis as " Inadequate to protect public health." The EPA administrator says " There are serious, ongoing concerns with delays, lack of adequate transparency, and capacity to safely manage the drinking water system." [1] State agencies like the Michigan Department of Health and Human Services did not release vital information. [2] Flint's public officials have been criticized, since they responded to the crisis 20 months later. Flint officials have violated the Safe Drinking Water Act. [5] Employees of the public water systems failed to calculate the lead levels in the water.

Now you may wonder what caused the Flint Water crisis and want to find out if it was preventable. Flint’s water is extremely corrosive. In 2014, General Motors chose not to use the water due its corrosive nature. [2] So yes, the Flint water crisis was preventable. In 2014, Flint switched from Lake Huron's water to the Flint river. They switched in an effort to save money. The water supply was not treated with the right corrosion control chemicals. This caused lead and pathogens to go into the city’s water supply. Lead levels in the water were so high that they could be considered as toxic waste. After Flint withdrew from Detroit's water system in April 2014, high levels of Total Trihalomethanes also known as TTHM, have been found in the drinking water extracted from the Flint river. The high levels of TTHM violate the Safe Drinking Water Act, which ensures that all US citizens are provided with clean an adequate water to use. TTHM is a byproduct of chlorine disinfection. The EPA stated that exposure or consumption to TTHM can cause significant health risks. Many Flint residents are still struggling to get clean water and have been exposed to high levels of TTHM. [7]

What are the health effects of the Flint water crisis? Almost immediately after the switch in water supply, citizens complained that the water tasted weird. The Obama administration called for a state of emergency because over 100,000 people cannot drink their tap water. Flint's children have high lead levels in their blood and may suffer from stunned growth and brain damage. Drinking the tap water can have severe consequences.  For example, lead in the drinking water can damage a person's IQ and cognitive functions permanently Other health effects include kidney damage, hearing difficulties, seizures, memory loss, and miscarriages. [4]

Now I will answer some of the most common questions people are asking. when was the water contaminated and who has been exposed to the lead? The answer is sometime in April, 2014 the water was contaminated, and anyone who has used the city tap water has been exposed. Another common question asked is, are there safe levels of lead that you can have in your body? The answer is that there is no safe level of lead in your body. Many people also want to know when the state and federal government intervened? The answer is January 5th, 2016 the state intervened, and on January 12th, 2016 the government intervened. Now I will explain what a federal state of emergency means? It means that Flint will get some form of federal financial aid. The last question people are wondering “What's next for Governor Snyder?” Governor Snyder does not plan to resign. [3]

What are the political and social ramifications of the Flint water crisis? Hillary Clinton spoke about the crisis at the House of Prayer Memorial Baptist Church. She stated that the crisis is not just an environmental issue, but also a racial issue. Clinton stated that it is a right to have clean water and not a luxury. She also stated that if this crisis was to happen in a rich community, then it would have been solved by now. Clinton is trying to get $600 million from the Senate to help Flint. [6]

Newly released emails from Governor Snyder show that government officials knew about the contaminated water long before they said they did. The emails were about hazardous material in Flint’s water pipes. The emails were sent a year before the crisis. One of the emails was sent to Valerie Baker, who is the governor's deputy legal counsel and senior political adviser. She stated that this was an urgent matter to fix. This article has proof that Governor Snyder knew about the crisis a year before and did nothing. [8]

I hope I presented you with valuable information about the Flint water crisis, and water contamination in general. I hope you learned about the severity of lead contaminates in water, and the consequences that come with it. Hopefully, this matter will be resolved in the upcoming months, and hopefully precautions will be taken in the future to ensure that this never happens again. Thank you for listening, this is James Clark signing off.

*(This audio file was recorded by James Clark on April 11, 2016)*

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