

EDITOR'S PICK

PUBLIC HEALTH

Public Health: Everybody POOPS

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Everybody poops (also the title of a children's book, highly recommended). There are 8 billion people on the planet, and 71,000 of those people live right here in Lewis and Clark County. That's a lot of poop. So, where does it all go? Does it magically disappear once you flush the toilet? No? Then let's follow the feces

I am not a scientist, I am a writer. So, this is how I would describe the tour I recently took of the City of Helena's Wastewater Treatment Facility using sixth grade language skills. Magic. Like really, really stinky magic. And by magic, I mean science and engineering. And science is so cool.

I will spare you the details of the entire lifecycle of your post-coffee morning poop, and instead, take you with me to the final leg of your toilet water's journey back to the earth. After months of treatment in the facility, our wastewater passes through a series of UVC lights where the now clean and clear blue water travels beyond the



Amber Johnson

Photo provided

fence and into a drain field that will carry it into Prickly Pear Creek, Lake Helena, and onto the Mighty Missouri River. Which eventually will return to you as drinking water.

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I was awestruck. As I gazed upon the bubbling brown pool of bacteria below me (what water scientists call a bio reactor), I was tempted to hoist my co-worker into the air and start singing, "It's the circle of life, and it moves us all"

The good ol' days

Things were not always this way. Remember the good ol' days when people used to throw the contents of their crappy bed pans out the window and into the streets, collecting into what became known as cesspools? Neither do I. Praise the Lord.

Enter stage right – John Snow. No, I am not referring to our "Game of Thrones" hero. I'm talking about a real-life hero, the father of epidemiology. A shy English gentleman. The OG epidemiologist – The Sherlock Holmes of disease. Standard nerd. Really liked things called books.

In 1849, using a fringe theory called "germs," John wrote a pamphlet "On the Mode of Communication of Cholera" in which he hypothesized that cholera was as specific disease which spread person to person via water contaminated with human feces.

Everyone ignored it. (Cholera is a bacterial infection of the small intestine, and if left untreated, can cause you to vomit and crap yourself until you die. #bummer)
Another outbreak of cholera in 1854 confirmed his theory. He mapped the outbreak in London and discovered that all affected persons had a single source in common – they were all drinking water from the same well.

Again, he sounded the alarm. I'll paraphrase. "We're drinking poop from sewers leaking into our wells. This is bad. Causes cholera. Cholera is a water-borne disease. We should stop drinking poop."

No one believed him. Again, I'll paraphrase.

"Fake news!" cried the money makers, the politicians and the jealous contemporaries. The residents were none too happy either. "What do you mean I can't throw my \$%^& in the streets?!?!?! Are you saying I can't drink water from my own neighborhood well? You can't tell me what to do! You're not my mom!"

Eventually, he convinced enough people to test his theory and remove the handle from the offending water pump. The pump was closed and the plague of cholera was stopped. Huzzah. Nerds for the win!

While no one took the theory of germs seriously until many decades later, human societies did start to revolutionize sanitation and a public health movement was born. To this day, the public health professionals that inspect and license our retail food establishments, trace and map food and water-borne disease outbreaks like norovirus and e-coli, and advise homeowners and builders on septic system construction and maintenance, are called sanitarians.

It takes a village

As social animals, our individual health is directly linked to the health of our clan and our community. Individual health IS public health. And it takes a village to keep our food and water supply clean. Sanitarians. Epidemiologists. Truck Drivers. Janitors. Engineers. Electricians. Biologists. Operators. City Managers. Homeowners.

Plumbers. Taxpayers. Not to mention everyday people who wash their hands after using the bathroom. Public health isn't Big Brother in the sky telling you what you can and cannot do. Public health is all of us working together so we don't have to drink water or eat food with poop in it. Because, gross.

As Americans, we are so privileged with rich infrastructure that we often take for granted the magic of modern technology and sanitation. But it is not magic. It is work. And money. A lot of work by a lot of people that goes unnoticed. And money from taxes that we love to complain about paying. And it takes buy-in from residents, the lucky recipients of the social contract we call free society in the United States. We should no longer take our clean water for granted.

So, as a concerned citizen and decent human being who pays taxes and cares about your neighbor, what can you do? How can you protect our collective water supply? Don't flush your tampons. Don't dump used cooking oils and grease down the drain; put it in the garbage. Don't flush your prescription medication; dispose of them at a local medical center. When hiking and camping in the backcountry, dig a 6-inch hole to do your business or pack out your waste products. If you live outside the city limits, test your water well on a regular basis and perform regular maintenance on your septic system.

And remember that water is life. Stop, take a moment, take a drink, take a nice poop, flush it down, and be grateful.

According to the World Health Organization, 2 billion people use a drinking water source that is contaminated with feces. More than half a million children die from diarrheal diseases each year. It is a leading cause of child mortality and morbidity in the world, caused mostly from contaminated food and water sources - a direct result of poverty and poor infrastructure. Though inflation is high and money is tight, consider donating to a charity that supports access to clean water around the world.
