Well water vulnerable to rain-related disease

Waterborne disease risks expected for non-disinfected drinking water systems serving Wisconsin’s northwest

Key Message
Approximately 4,000 young children, mostly in the northwest part of the state, live with an increased risk for contracting waterborne disease because 39 communities in this region do not disinfect their water supply and 2011 Wisconsin Act 19 no longer requires disinfection.

More than 65,000 Wisconsinites are served municipal water that is not disinfected for pathogens that cause acute diarrhea. This water comes from 60 small public water systems throughout the state, about two-thirds of which cluster northwest of Eau Claire, whose motto is “Here is clear water!”

2011 Wisconsin Act 19 removed the state’s authority to require continuous disinfection of municipal water unless required by federal law or unless “Water quality data, well construction, or water system construction indicate a potential health hazard.”

In its fiscal estimate, the Department of Administration stated it was “uncertain of the cost to communities should waterborne illnesses occur.”

We have data that shed light on those societal costs.

Viruses in Well Water & Non-Disinfected Tap Water
Viruses that cause diarrhea have been found in well water around the state.

In 2012, researchers found viruses in the tap water of all 14 of 14 Wisconsin communities they considered that did not disinfect their well water. They also found an association between the concentration of viruses in tap water and acute diarrhea. Leaky sewer pipes were implicated as the source of the viruses.

The evidence is clear. No disinfection means more viruses in water. More viruses mean more acute diarrhea. This places our children at risk.

Of those 1% of the population who are routinely served non-disinfected municipal drinking water, roughly 4,000 are children under age 5, the group most vulnerable to acute gastrointestinal illness complications like fever, vomiting, and severe dehydration. The population served by untreated non-municipal public systems and private wells is roughly 1.65 million, or 29% of the population.

Our current policy leads to a greater risk of disease for those who drink from non-disinfected water. This constitutes a potential health hazard.

Current Policy Shifts Costs from Prevention to Cure
The fiscal note for 2011 Wisconsin Act 19 estimated an annual cost savings to local governments of $130,200, with a one-time savings of $634,800.

Approximately 5% of Wisconsin children in the counties most affected do not have health insurance.

Groundwater is not intrinsically safer than surface water—stormwater runoff contaminates both. We expect the stormwater threat to be exacerbated by climate change, with increasingly intense precipitation transporting more fecal pathogens to groundwater and public water systems via runoff and infiltration.

There are several methods to disinfect water systems. Disinfection with chlorine is one well-proven ounce of prevention that bolsters public health. Chlorine provides residual disinfection, which means it not only kills pathogens from source water but helps protect against pathogens that infiltrate pipe systems.

Policy Recommendation
Public municipal well water should be disinfected to reduce disease risk.

14 of 14
Researchers tested the tap water of 14 Wisconsin communities that do not disinfect their well water. They found viruses in the tap water of all 14.
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Supporting literature
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