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INSIGHT

COVID-19 and Regulation of Public Drinking Water

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During infectious disease outbreaks, questions regarding public water supplies may emerge, as a safe and adequate water supply is a key component to protecting public health. As the United States and other countries respond to the outbreak of coronavirus disease 2019 (COVID-19), questions may arise regarding the potential for the COVID-19 virus to be present in public water supplies.

The Centers of Disease Control and Prevention (CDC) reports that the COVID-19 virus has not been detected in drinking water. The U.S. Environmental Protection Agency (EPA) has announced that "Americans can continue to use and drink water from their tap as usual." To support water providers and others in addressing COVID-19, the World Health Organization (WHO) on March 19, 2020, issued interim guidance on water, sanitation, hygiene, and waste management for the COVID-19 virus. The guidance states that the COVID-19 virus has not been detected in water supplies and that the risk to water supplies is low based on current evidence.

In its guidance, WHO characterizes the COVID-19 virus as "an enveloped virus, with a fragile outer membrane" and states that "the COVID-19 virus is likely to be more sensitive to chlorine and other oxidant disinfection processes" than other types of viruses. Given the virus's fragile outer membrane, WHO reports that conventional centralized water treatment methods that use filtration or disinfection methods should inactivate the COVID-19 virus. Similarly, the CDC states that conventional drinking water treatments, such as those in most municipal drinking water systems, should remove or inactivate the COVID-19 virus. In the United States, privately and publicly owned water systems are required to comply with federal drinking water regulations, which include requirements for such conventional drinking water treatments.

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National Drinking Water Regulations

The Safe Drinking Water Act (SDWA; 42 U.S.C. §§300f -300j-27) authorizes EPA to regulate contaminants that may occur in water provided by public water systems. In addition to the act's broad rulemaking provisions, Congress amended SDWA in 1986 and 1996 to specifically direct EPA to promulgate regulations to increase protections against microbial contaminants (42 U.S.C. §300g-1(b)(7)-(8)). Using SDWA authorities, EPA has issued national primary drinking water regulations for more than 90 contaminants, including microbial contaminants such as viruses, bacteria, and parasites.

SDWA authorizes EPA to delegate to states primary responsibility for oversight of public water systems and enforcement of regulatory requirements when EPA determines that statutory criteria are met. EPA has approved most states, the Navajo Nation, and the U.S. territories to exercise primary responsibility in their jurisdictions. EPA implements regulatory requirements in Wyoming and the District of Columbia.

Among the federal drinking water regulations, several require treatment processes that should remove or inactivate COVID-19 virus. EPA has promulgated a suite of drinking water regulations for public water systems to address a range of waterborne microbial pathogens. Regulatory requirements are tailored to address different factors that can influence contamination risks, such as a system's source of water. Taken together, these regulations and associated treatment requirements (e.g., chemical disinfection and/or filtration) are intended to remove or inactivate a variety of microbial pathogens.

Since 1986, EPA has developed and issued multiple regulations to reduce illnesses caused by viral, bacterial, and other pathogens in drinking water sourced from surface water. The "Surface Water Treatment Rules" apply to public water systems that use surface water or groundwater under direct influence of surface water and broadly require these systems to disinfect and filter their water. Among other requirements, the rules require water systems to treat water to achieve 99.99% removal and/or deactivation of viruses. To avoid filtration, water systems are required to meet water quality and watershed protection criteria to control pathogens at specified levels, including 99.99% removal and/or deactivation of viruses.

For water systems that rely solely on groundwater, EPA issued the Groundwater Rule in 2006 to provide increased protection against viral and bacterial pathogens. In the *Federal Register* notice for the Groundwater Rule, EPA reports that public water systems that rely on groundwater for their source water may be susceptible to norovirus, rotovirus, and Hepatitis A, among other viral and bacterial pathogens. The Groundwater Rule established a risk-based approach for identifying systems susceptible to contamination through source water monitoring. The rule requires water systems to take corrective actions, such as treatment (e.g., filtration or disinfection) or change in water source, to address groundwater contamination or to address deficiencies in the water system that make it susceptible to contamination.

To address a range of waterborne pathogens, EPA promulgated these and other drinking water regulations that apply to public water systems. Although EPA drinking water regulations do not apply to residences served by private wells, EPA maintains the *Private Drinking Water Wells* website, which provides information for private well owners regarding water testing and water treatment. Included on EPA's website are descriptions of common groundwater contaminants, publications that support private well safety, and links to the Rural Community Assistance Partnership's private well training course.