
2018

# Tennessee's Roadmap to Securing the Future of Our Water Resources

Tennessee Department of Health: TN H2O Overview

## Tennessee Department of Health: TN $H_2O$ Overview

Implementation of water treatment and disinfection is one of the most important public health achievements of the 20th century, and led to many improvements in the health and lifespan of the United States population. The U.S. has one of the most reliable drinking supplies in the world, with general widespread availability of clean, safe drinking water.[1] However, every year, there are thousands of cases of illness and numerous disease outbreaks associated with exposure to drinking water, recreational water or environmental water in the United States.[2,3,4,5] The Tennessee Department of Health (TDH) plays an active role in monitoring waterborne disease and implementing appropriate disease control and prevention programs.

TDH's Waterborne Disease Program performs surveillance for waterborne disease and responds to possible waterborne disease outbreaks. Disease surveillance is pathogen-specific, and healthcare providers and laboratories report individual cases of disease to the health department. TDH conducts routine surveillance for several potential waterborne pathogens, including: Shiga toxin-producing *Escherichia coli*, *Shigella*, *Salmonella*, *Campylobacter*, *Cryptosporidium*, *Legionella* and Hepatitis A. If a waterborne disease outbreak is suspected, public health initiates a full investigation, with the goal of rapidly implementing disease control and prevention measures.

In addition to surveillance for bacterial and viral pathogens, TDH works collaboratively with the Tennessee Department of Environment and Conservation (TDEC), the Tennessee Department of Agriculture, and the Tennessee Wildlife Resources Agency to standardize surveillance for harmful algal blooms (HABs) across Tennessee. HABs can occur in fresh, salt or brackish water, and are caused by organisms called phytoplankton, some of which produce toxins. These toxins can cause illness in people, domestic animals (dogs, cats), livestock (sheep, cattle), and wildlife (including birds and mammals) through direct contact with contaminated water.[6]

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[1] Centers for Disease Control and Prevention. Drinking Water Week. Available at: https://www.cdc.gov/features/drinkingwater/index.html. Last updated 4 May 2018. Accessed 6 July 2018.

[2] Centers for Disease Control and Prevention. Current Waterborne Disease Burden Data & Gaps. Available at: https://www.cdc.gov/healthywater/burden/current-data.html. Last updated 9 August 2017. Accessed 23 July 2018.

[3] Benedict KM, Reses H, Vigar M, et al. Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water — United States, 2013–2014. MMWR Morb Mortal Wkly Rep 2017;66:1216–1221. DOI: http://dx.doi.org/10.15585/mmwr.mm6644a3

[4] Hlavsa MC, Cikesh BL, Roberts VA, et al. Outbreaks Associated with Treated Recreational Water — United States, 2000–2014. MMWR Morb Mortal Wkly Rep 2018;67:547–551. DOI: http://dx.doi.org/10.15585/mmwr.mm6719a3

[5] McClung RP, Roth DM, Vigar M, et al. Waterborne Disease Outbreaks Associated With Environmental and Undetermined Exposures to Water — United States, 2013–2014. MMWR Morb Mortal Wkly Rep 2017;66:1222–1225. DOI: http://dx.doi.org/10.15585/mmwr.mm6644a4

[6] Centers for Disease Control and Prevention. Harmful Algal Bloom (HAB)-Associated Illness. Available at: https://www.cdc.gov/habs/index.html. Last updated: 19 June 2018. Accessed: 10 July 2018.

Through grant funding from the Centers for Disease Control and Prevention, TDH participates in the Safe Water for Community Health Program (SafeWATCH). SafeWATCH helps health departments reduce harmful exposures to the public from wells and other private drinking water systems.[7] Through this initiative, TDH provides education, outreach, and water quality testing services (via partnership with Communities Unlimited, Inc. and TDEC) to private well and spring owners across the state. To date, over 225 water samples have been collected, and results have been provided to homeowners so that follow-up actions can be taken if waterborne contaminants are identified. Through this funding, TDH also partnered with TDEC and the Peabody College of Vanderbilt University to create a geographic database of water distribution statewide. This system helps identify areas of the state without public drinking water and inform county level community health assessments (including identifying disparities in access to fluoridated drinking water and other public health resources), and respond to water related outbreaks.

Lastly, the Dental–Oral Health Services Division at TDH active advocates for community water fluoridation.[8] TDH and the American Dental Association recommend that community water systems with low levels of naturally-occurring fluoride raise the fluoride level to meet the recommended 0.7 mg/L for the prevention of tooth decay. Over 70 years of intensive scientific research and experience with water fluoridation in the United States have demonstrated that community water fluoridation is safe and effective. Currently, 275 of Tennessee's community water systems adjust fluoride to levels proven to be safe and optimal for health.

Water is a precious natural resource, vital for human health and a thriving society. The Tennessee Department of Health looks forward to continued participation in the TN $H_2O$ initiative to ensure that Tennessee has an abundance of high quality water resources to support future population and economic growth statewide.

[7] Centers for Disease Control and Prevention. Safe Water for Community Health (SafeWATCH). Available at: https://www.cdc.gov/nceh/ehs/safe-watch/index.html. Last updated: 18 May 2018. Accessed 8 July 2018.
[8] Tennessee Department of Health. Community Water Fluoridation. Available at: https://www.tn.gov/health/health-program-areas/oralhealth/professionals/oralhealth-cwf.html. Accessed 18 July 2018.