

15-06

## STATEMENT OF POLICY

### Water Quality

#### Policy

The National Association of County and City Health Officials (NACCHO) urges state and local health departments and related agencies to engage policymakers, government agencies, non-governmental organizations, businesses, and communities to develop and support policies, legislation, regulations, programs, research, and resources to promote water quality and safety.

NACCHO supports activities to maintain and increase water quality, including the following:

- Acknowledging the need for a proactive approach to securing water quality by encouraging robust monitoring of water resources.
- Safeguarding municipal water through source water protection while engaging in evidence-based treatment methods, including filtration and disinfection.
- Educating community members about the proper disposal methods for pharmaceuticals.
- Supporting policies to limit pollution capabilities of municipalities, businesses, and individuals.
- Encouraging local monitoring of industrial and agricultural practices.
- Increasing funding for research into the environmental and health effects of industrial and mining activity, specifically as they relate to water quality (e.g., wells, springs, or private individual water supply).
- Improving the quality of unregulated drinking water by educating community members about proper testing methods and encouraging adherence to Environmental Protection Agency (EPA) standards.
- Improving and enhancing the performance and practices of safe water programs and practitioners based on 10 Essential Services of Environmental Public Health.
- Promoting research to determine the incidence of waterborne diseases in the United States each year.

#### Justification

Local health departments have been impacted by budget cuts in recent years, with water services being one of the most impacted environmental health program areas. Local health departments reported reducing or eliminating water programs in three major areas: Ground Water (14.9% of local health departments sampled), Surface Water (13.5%), and Drinking Water (15.6%). This decrease in water services has led to reduced sampling of water, delayed response times, and a shift from proactive to reactive groundwater protection.<sup>1</sup> This evidence highlights the need for



maintenance of funding and support for local health department water services to protect public and environmental health.

One major public health concern is water pollution. Water pollution can have significant impacts on the quality of water and its use in communities. Water pollutants include “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.”<sup>2</sup> A few main causes of pollutants are discussed below.

Pharmaceuticals and personal care products are an emerging pollutant of concern, which may persist in the environment and, consequently, impact human health directly through potable water and indirectly through uptake in aquatic ecosystems.<sup>3</sup> These pollutants are introduced into the environment in a variety of ways, including through the improper disposal of medications. Many of these medications and personal care products can later be detected in the environment, possibly in sources of drinking water.<sup>4</sup> It is of great importance to increase public awareness of proper disposal methods for personal care products. Additionally, local health departments should provide means for proper disposal of pharmaceuticals to ensure they do not contaminate local drinking water. Robust monitoring of drinking water can also decrease the likelihood of ingestion of trace pharmaceuticals and other contaminants.

Another significant source of water pollution comes from industrial and commercial facilities. Wastewater discharge from industrial practices, such as mining, may contain higher than acceptable levels of pollutants that can contaminate nearby surface and ground water. The EPA regulates industrial activities that result in point source pollution through the Clean Water Act (CWA). Specifically, the CWA prohibits point source pollution from any facility unless they have obtained a proper permit.<sup>5</sup> Industrial wastewater is also monitored at the state and local level through the National Pollutant Discharge Elimination System, but the extent of monitoring and distribution of responsibility varies across states and municipalities.<sup>6</sup> Continued and improved monitoring of industrial and commercial sites will help decrease wastewater pollution, but it may be beneficial for local governments to offer incentives for facilities that further minimize their environmental impact through innovative technology and treatment.

There are also indirect threats to water quality, which can be classified as nonpoint source pollution, or polluted runoff. Nonpoint source pollution contaminates water resources after rainwater and other types of runoff pass over the ground where they gather pollutants. This is especially problematic in urban areas, where much of the ground is unable to absorb water, resulting in high levels of runoff. Increased use of porous pavements, along with water conservation to reduce overall runoff, can substantially lower the amount of nonpoint source pollution.<sup>7</sup>

One of the leading contributors of nonpoint source pollution is the agricultural industry. According to the 2002 National Water Quality Inventory, agricultural nonpoint source pollution was the leading cause of contamination in rivers and streams, and the second leading cause of contamination in lakes, ponds, and reservoirs. Agricultural pollution can be the result of poor location and improper farming techniques, including overgrazing, plowing practices, and

untimely irrigation and pesticide usage. The CWA provides funds for creating sustainable farming operations by limiting the amount of nonpoint source pollution.<sup>8</sup>

Climate change is also a potential threat to water quality as waterborne disease outbreaks often occur after severe precipitation events. Climate change increases the frequency and severity of some of these events, thereby, elevating the risk of waterborne disease in communities. Additionally, rising sea temperatures may impact the growth and spread of bacteria and increase the threat of waterborne diseases such as cholera and other intestinal disease.<sup>9</sup>

Although the EPA has developed standards and regulations for safe drinking water, regulation of private water wells is highly variable. Such private water systems include private ground wells, cisterns, and rainwater collection. Estimates by the Centers for Disease Control and Prevention (CDC) show approximately 15% of people in the United States rely on these private, largely unregulated wells for their drinking water. Due to the lack of standard monitoring, it is difficult to know the true impact of waterborne pathogens in private wells, but CDC data show hepatitis A, *giardia*, and *campylobacter* to be the top three causes of reported outbreaks.<sup>9</sup> Although some states and municipalities have requirements for well testing during construction, equipment replacement, or real estate transactions, individuals are largely responsible for continually monitoring their wells. In regions with high concentrations of wells, such as rural areas, it is critical for local health departments to educate community members on the importance of monitoring.

Despite having one of the most developed drinking water systems in the world, waterborne illness due to drinking water is still a problem in the United States. Unfortunately, it is difficult to determine the actual burden of waterborne disease. From 2009–2010, the most recent years for which data has been analyzed, there were 1,040 reported cases of illness due to public drinking water disease outbreaks in the United States. The majority of these cases were due to *Legionella* and *Campylobacter*.<sup>10</sup> The creation of the National Outbreak Reporting System (NORS) has improved the reporting of water and foodborne disease outbreaks by local health departments. Additionally, NORS collects data on environmental contamination outbreaks. This has greatly improved the ease of reporting waterborne illness outbreaks for local health departments and provided a national database for examining the public health burden of waterborne illness.<sup>11</sup>

In an effort to protect water in communities with limited resources, CDC and the World Health Organization have created a Water Safety Plan to address shortcomings in water management. The three main components of the plan are system assessment, monitoring, and management and communications.<sup>12</sup> The Water Safety Plan aims to prevent contamination and re-contamination of water during treatment and storage, as well as treat previously contaminated water.

Through robust monitoring and surveillance, local health departments can ensure the safety of those in their community by limiting waterborne disease outbreaks and illness associated with contaminated drinking water.

## **References**

1. National Association of County & City Health Officials. (2014). Impact of Budget Cuts on Environmental Health Services at Local Health Departments [report]. Retrieved August 5, 2014, from <http://eweb.naccho.org/prd/?na602pdf>

2. Federal Water Pollution Control Act §502(6), 33 U.S.C. §1362.
3. Boxall, A., Rudd, M. A., Brooks, B. W., Caldwell, D. J., Choi, K., Hickmann, S., et al. (2012). Pharmaceutical and personal care products in the environment: What are the big questions? *Environmental Health Perspectives*, 120(9), 1221–1229. Retrieved July 17, 2014, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440110/>
4. Environmental Protection Agency. (2012). Pharmaceuticals and Personal Care Products webpage. Retrieved June 9, 2015, from <http://www.epa.gov/ppcp/>
5. Environmental Protection Agency. (2014). Industrial and Commercial Facilities webpage. Retrieved June 9, 2015, from <http://water.epa.gov/polwaste/npdes/Industrial-and-Commercial-Facilities.cfm>
6. Environmental Protection Agency. (2015). Clean Water Act (CWA) Compliance Monitoring webpage. Retrieved June 9, 2015, from <http://www2.epa.gov/compliance/clean-water-act-cwa-compliance-monitoring>
7. Environmental Protection Agency. (2015). Polluted Runoff: Nonpoint Source Pollution webpage. Retrieved June 9, 2015, from <http://water.epa.gov/polwaste/nps/index.cfm>
8. Environmental Protection Agency. (2005). *Agricultural Nonpoint Source Fact Sheet*. Retrieved from June 9, 2015, from [http://water.epa.gov/polwaste/nps/agriculture\\_facts.cfm](http://water.epa.gov/polwaste/nps/agriculture_facts.cfm)
9. National Institute of Environmental Health Sciences. (2013). Waterborne Diseases & Climate Change webpage. Retrieved June 25, 2015, from [http://www.niehs.nih.gov/research/programs/geh/climatechange/health\\_impacts/waterborne\\_diseases/](http://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/waterborne_diseases/)
10. Centers for Disease Control and Prevention. (2014). Private Water Systems webpage. Retrieved June 9, 2015, from <http://www.cdc.gov/healthywater/drinking/private/index.html>
11. Centers for Disease Control and Prevention. (2013). Surveillance for waterborne disease outbreaks associated with drinking water and other nonrecreational water — United States, 2009–2010. *Morbidity and Mortality Weekly Report*, 62(35), 714-720.
12. Centers for Disease Control and Prevention. (2013). The National Outbreak Reporting System (NORS) webpage. Retrieved June 9, 2015, from <http://www.cdc.gov/nors/about.html>
13. Centers for Disease Control and Prevention. Community Water Systems and Water Safety Plans webpage. Retrieved June 9, 2015, from <http://www.cdc.gov/healthywater/global/community.html>

### **Record of Action**

*Proposed by NACCHO Environmental Health Committee*

*Approved by NACCHO Board of Directors July 7, 2015*