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Improving State and Local Capacity to Assess and Manage Risks Associated With Private Wells and Other Drinking Water Systems Not Covered by the Safe Drinking Water Act

Editor's Note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In these columns, EHSB and guest authors share insights and information about environmental health programs, trends, issues, and resources. The conclusions in this article are those of the author(s) and do not necessarily represent the views of CDC.

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Even percent of U.S. households (~35 million people) use private drinking water systems that are not covered by the U.S. Environmental Protection Agency's Safe Drinking Water Act (SDWA) (U.S. Census Bureau, n.d.). These drinking water systems are primarily private wells but can also include springs, cisterns, and hauled water systems. Limited federal guidance and no established uniform standards or approach exist for monitoring the water quality from these water systems. Where state testing requirements do exist, testing is usually infrequent (e.g., wells must be tested as part of a real estate transaction, new construction, or equipment change). Most private well programs are voluntary and require strong outreach activities to encourage well owners to monitor the safety of their drinking water and accept water program ser-

vices offered by the local health department.

To address the need of state, tribal, local, and territorial (STLT) health departments, the Centers for Disease Control and Prevention (CDC) released a funding opportunity announcement in 2013 that built on previous CDC safe drinking water efforts to address drinking water contamination. The 2013–2015 funding initiative supported 11 grantees (nine state and two county health departments) to improve state and local capacity to assess and manage risks associated with drinking water systems not covered by SDWA.

Although CDC funding primarily directed grantees to identify and collect data to define drinking water exposures and then develop interventions, grantees engaged in many additional essential public health services (Table 1). Grantees developed community

partnerships to facilitate private well data collection and data sharing, sought external technical assistance to conduct data analysis, and worked on community outreach and education interventions.

STLT health departments vary considerably in capacity, partnerships, policy environment, programmatic focus, efficiency, and effectiveness. Program variability makes it important to provide support to all components of a drinking water program to make them successful and sustainable. The 10 essential environmental public health services (EPPHS) and accompanying toolkits offer a framework and activities that STLT public health agencies can use to improve the capacity of drinking water programs. The Environmental Public Health Performance Standards (EnvPHPS) assessment toolkit (www.cdc.gov/nceh/ehs/envphps/assessment_toolkit.htm) is an additional resource for assessing performance of public health programs. Figure 1 shows the 10 EPPHS as they align with the core functions of public health.

To understand the diversity of STLT programmatic efforts, CDC used the 10 EPPHS and EnvPHPS to align first-year outcomes from the 11 grantees by each of the 10 EPPHS (Table 2). Since data collection and characterization of exposures were goals of the cooperative agreement, most grantees addressed the first two essential services associated with the assessment function. Specifically, grantees collected private well drinking water quality data and created and organized inventories of private well databases. When conducting interventions, however, many grantees developed educational and outreach materials with drink-

TABLE 1

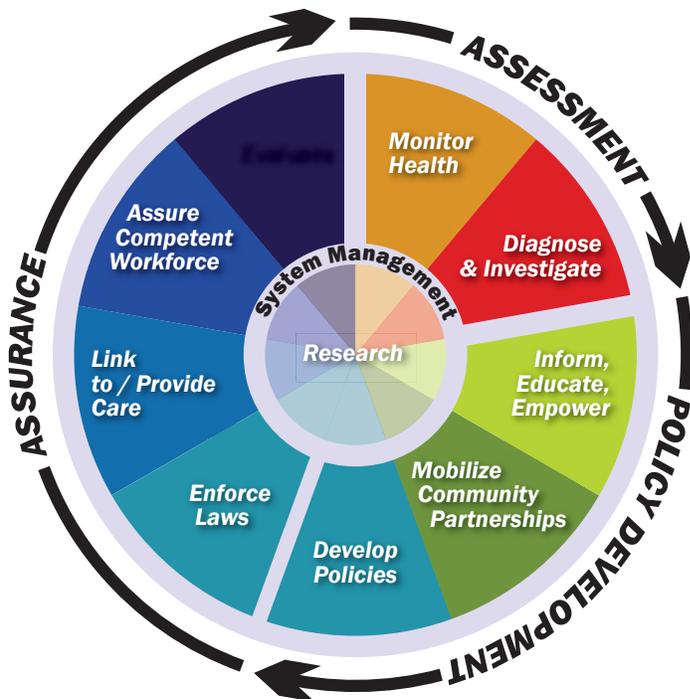
Ten Essential Environmental Public Health Services

ES1. Monitor environmental and health status to identify and solve community environmental public health problems	ES6. Enforce laws and regulations that protect environmental public health and ensure safety
ES2. Diagnose and investigate environmental public health problems and health hazards in the community	ES7. Link people to needed environmental public health services and assure the provision of environmental public health services when otherwise unavailable
ES3. Inform, educate, and empower people about environmental public health issues	ES8. Assure a competent environmental public health workforce
ES4. Mobilize community partnerships and actions to identify and solve environmental health problems	ES9. Evaluate effectiveness, accessibility, and quality of personal and population-based environmental public health services
ES5. Develop policies and plans that support individual and community environmental public health efforts	ES10. Research for new insights and innovative solutions to environmental public health problems

Source: www.cdc.gov/nceh/ehs/home/healthservice.htm.

FIGURE 1

Core Functions of Public Health



This figure shows how the ten essential environmental health services align with the three core functions of public health (assessment, policy development, and assurance). For more information about these core functions, visit www.cdc.gov/nceh/ehs/ephli/core_ess.htm.

ing water messaging to meet the specific needs of target populations (ES3). For example, the New Hampshire Department of Environmental Services created an online application that provides individualized water treatment guidance to private well users based on water testing results for 15 parameters. Other grantees developed messaging using both traditional and social media channels for dissemination. Grantees also developed new external partnerships to obtain private well data and to help them with data analysis (ES4), thereby strengthening the core function of policy development.

Under the core function of assurance, two grantees revised state and local regulations to reduce drinking water exposure risks (ES6). Duval County, Florida, developed and passed a local ordinance to secure funds to extend municipal water lines to communities that were permanently grouting and abandoning private wells. New Hampshire passed a revised bill requiring buyers to acknowledge arsenic well-testing results before a real estate transaction. Some grantees improved the capacity of their workforces by using GIS mapping and geo-referencing techniques to share risk map areas for private wells on their web portals (ES8). All grantees received CDC technical assistance to improve logic models and evaluation plans—required components of the cooperative agreement (ES9).

CDC is continuing to support and promote performance management and quality improvement activities using the 10 EEPHS under a new cooperative agreement, Environmental Health Services Support for Public Health Drinking Water Programs to Reduce Drinking Water Exposures, 2015–2020. The goals of this funding initiative are to increase safe drinking water program efficiency and effectiveness and improve programmatic response to all issues related to safe drinking water, especially those that focus on drinking water systems not covered by the SDWA.

Programs can benefit by using the 10 EEPHS and accompanying toolkits as resources to improve programmatic capacity. Conducting performance improvement activities will also help public health departments meet accreditation standards. The ultimate goals of CDC's new funding initiative are to reduce exposures to contaminated drinking water and improve performance of safe drinking water programs. 🌱

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TABLE 2

Ten Essential Environmental Public Health Services Addressed by Grantees, End of Year One

Grantee	Core Functions									
	Assessment		Policy Development			Assurance				
	ES1	ES2	ES3	ES4	ES5	ES6	ES7	ES8	ES9	ES10
Cerro Gordo County, IA	X	X		X				X	X	
Connecticut	X	X	X	X			X		X	
Duval County, FL	X	X		X		X			X	
Florida Department of Health	X	X	X	X			X		X	
Louisiana	X	X	X						X	
Maine	X	X	X	X			X	X	X	
New Hampshire	X	X	X	X		X	X		X	X
New Mexico	X	X	X					X	X	X
New York	X	X	X					X	X	
Ohio	X	X		X				X	X	
Oregon	X	X	X	X				X	X	

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Reference

U.S. Census Bureau. (No date). *American housing survey*. Retrieved from <http://sasweb.ssd.census.gov/ahs/ahstablecreator.html>



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