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What Actions Are Health Departments Taking to Improve Safe Drinking Water Programs?

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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In September 2015, the Centers for Disease Control and Prevention (CDC) awarded cooperative agreements to 14 state and five local health departments (Figure 1). The goal of the cooperative agreement program, Safe Water for Community Health (Safe WATCH), is to improve efficiency and effectiveness of public health programs that address drinking water systems and sources (i.e., private wells, springs, cisterns) not covered by the U.S. Environmental Protection Agency's Safe Drinking Water Act. The expected outcome of the program is to reduce exposures to waterborne contaminants for the one in nine American residents who get their drinking water from a private well.

To accomplish these goals and outcomes, CDC asked the funded public health departments to take the following approach:

- assess safe drinking water programs using the Environmental Public Health Performance Standards,
- review assessment results and prioritize performance improvement areas to align with the 10 Essential Environmental Public Health Services (Table 1),
- develop work plans with specific actions needed to address the identified improvement areas, and
- take action to close programmatic gaps.

In addition to providing funding and grant management assistance, CDC partnered with the Public Health Foundation (PHF) to pro-

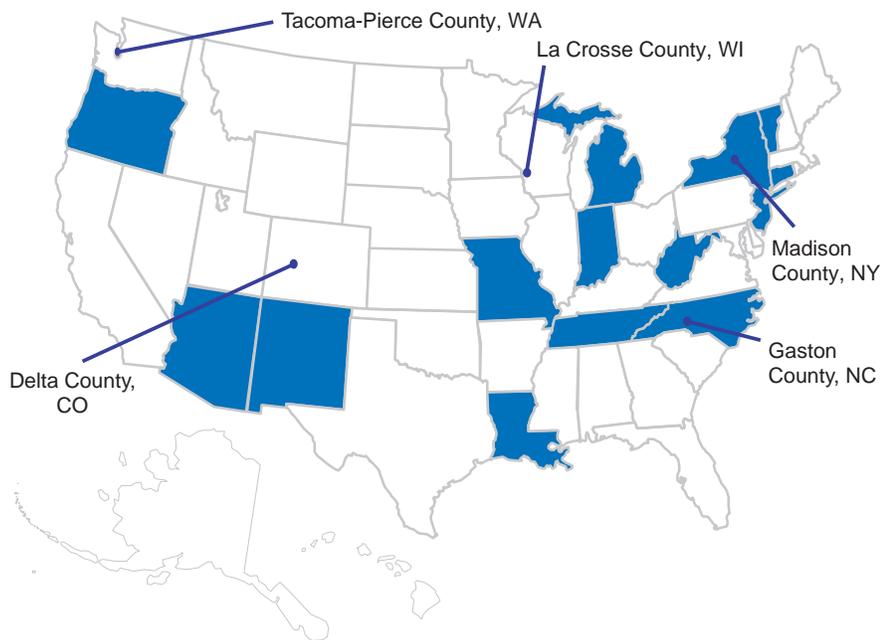
vide quality improvement (QI) training and technical assistance to state and local Safe WATCH partners as they began implementing their work plans and initiating improvement activities. PHF and CDC chose a QI approach for its emphasis on measurable, tangible targets and outcomes. QI in public health involves a continuous and ongoing effort to achieve improvements in the efficiency, effectiveness, and performance of services or processes, which improve the health of the community (Riley et al., 2010). QI has been used previously to address common drinking water challenges such as linking services (Cardenas, 2015), education (Souter, 2015), and patient satisfaction (Pierson, 2015).

Since November 2015, PHF's QI experts have assisted public health departments to plan and complete the prioritized performance improvement activities they identified as part of their cooperative agreements. This support builds upon an earlier collaborative performance improvement initiative between CDC and PHF to provide assistance to local health department vector control programs (Gerding et al., 2016). PHF has assisted more than 30 environmental health programs to move from reactive to proactive. Environmental health program managers with interest in performance improvement can learn more through PHF's performance improvement services.

PHF and CDC have helped Safe WATCH grantees to assess and establish metrics, create and improve drinking water evaluation plans, select community partners to build capacity, and develop and revise assessment tools for

FIGURE 1

Safe Water for Community Health Grantee Map



Note. Available online at www.cdc.gov/nceh/ehs/safe-watch/grantees.html.

TABLE 1

Ten Essential Environmental Public Health Services

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

Note. Available online at www.cdc.gov/nceh/ehs/10-essential-services/index.html.

customer satisfaction and service delivery. PHF also helped grantees refine their innovative and out-of-the-box ideas into clear, focused activities and objectives, as well as connect these ideas to health department strategic goals such as accreditation and health equity.

Drinking water grantees have been provided with tools such as PHF's *Public Health Quality Improvement Encyclopedia* (Moran & Duffy, 2012), along with training and facilitation to use these QI tools such as force field analysis (to evaluate a proposed change), aim statements (to create a measurable, time-bound goal), and Gantt charts (to plan project timelines).

Use of QI methods and tools has helped several health departments achieve early wins as part of this cooperative agreement:

- Indiana State Department of Health's Environmental Public Health Division created a Gantt chart that helped to decipher critical versus noncritical activities, track metrics, and conduct short-, medium-, and long-term planning.
- Tacoma-Pierce County (Washington) Health Department's Drinking Water Program is using a plan-do-check-act approach to document and assess their standard operating procedures. They have created over 40 flow charts and are soliciting feedback from staff and customers on these processes, including partnering with the health department's QI team to survey small water systems.
- Madison County (New York) Health Department recognized individual drinking water as a key priority and incorporated it into their community health improvement plan. They developed an aim statement and a plan to identify areas in the county where specific source contaminants may be present and secured resources to provide water quality sampling to more than 100 households per year.
- Tennessee Department of Health (TDH) is addressing spring water quality by offering spring water testing to residents in a county pilot program, along with statewide GIS mapping of drinking water sources. This program was strengthened by forging innovative partnerships with field-based organizations such as the TDH Family Health and Wellness Evidence Based Home Visiting Program, State Parks and Natural Area Program zoological staff, and Communities Unlimited, Inc., a part of the Rural Community Assistance Program.

Although the long-term outcome of the grantees' work is to reduce exposures to waterborne contaminants, they have prioritized other substantial outcomes including establishing water quality information systems, reviewing effectiveness of local regulations, and improving customer satisfaction. CDC and PHF will continue to celebrate grantee successes and stories and provide resources and tools for other drinking water programs that wish to improve their efficiency and effectiveness. 🐼

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More Information

From the Centers for Disease Control and Prevention

- Environmental Public Health Performance Standards: www.cdc.gov/nceh/ehs/enphps
- Performance improvement resources: www.cdc.gov/nceh/ehs/activities/performance.html
- Safe Water for Community Health (Safe WATCH): www.cdc.gov/nceh/ehs/safe-watch
- Safe WATCH grantee success stories: www.cdc.gov/nceh/ehs/safe-watch/success-stories.html
- Safe WATCH grantee tools and resources: www.cdc.gov/nceh/ehs/safe-watch/tools.html

From the Public Health Foundation (PHF)

- About PHF: www.phf.org/AboutUs
- Drinking water program improvement: www.phf.org/drinkingwater
- Performance improvement services: www.phf.org/piservices
- Vector Control Program Performance Assessment and Improvement Initiative: www.phf.org/vectorcontrol

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