

Prioritizing, Investigating, and Improving Indiana's Unregulated Drinking Water

In Indiana, an estimated 560,000 households, or 1.6 million residents, are outside of the public drinking water distribution systems and obtain water from small drinking water systems. A majority of the private systems in Indiana are private wells and are largely unregulated.



Indiana State
Department of Health

After identifying a gap in safety between the unregulated and regulated sources of drinking water, the Indiana State Department of Health (ISDH) [Environmental Public Health Division \(EPHD\)](#) secured funding from the Centers for Disease Control and Prevention [Safe Water for Community Watch](#) (Safe WATCH) to address unregulated water sources using the [10 Essential Environmental Public Health Services](#) (EPPHS) framework. The grant included customized on-site technical assistance from the Public Health Foundation (PHF) to assist with planning, prioritization, and evaluation, and provided training on using quality improvement tools to improve drinking water program efficiency and effectiveness, as well as copies of PHF's [Public Health Quality Improvement Encyclopedia](#).

Strategic Partnerships to Increase Capacity

At the onset of the project, EPHD recognized the value of partnering with other state agencies and departments to improve unregulated water sources, align messaging, and provide clarity on activities to customers and local health departments. Prior to the Safe WATCH funding, EPHD's unregulated drinking water responsibilities fell to the division director and epidemiology field staff, with no primary coordinator. With the new funding and ISDH's increased capacity, they can now support cross-collaboration from other agencies and support local health departments with combined technical expertise.

Indiana's regulations on private wells vary by county, with local boards or departments of health using minimum siting requirements, licensing, and record management through the Indiana Department of Natural Resources (IDNR). EPHD prioritized partnerships with IDNR and the Department of Environmental Management (IDEM) to align with this process. These partnerships have created a good dialogue and coordination on cases of contamination, quality investigations, and environmental public health capacity development. In 2016, EPHD began conducting case investigations using IDNR data and resources. They also became more involved with the epidemiology resource center, establishing a process for consulting on water issues during disease outbreak investigations. Through academic partnerships with the Schools of Public Health at Indiana and Purdue University, EPHD is improving the data collection and analysis on well water testing, contamination prevalence, and survey overall risk. with pooled resources for efficiency. EPHD is also working to support emergency response groups on the public health effects of storms and flooding (i.e., effects on aquifers, E. Coli testing, food spoilage, mold). The Indiana Safe WATCH network now includes data scientists, earth scientists, environmentalists, epidemiologists, and others, and provides a wider scope for problem solving, with pooled resources for efficiency.

Cross-Agency Support and Messaging

EPHD has achieved improved cross-agency coordinated messaging and educational outreach. When staffing was lean, routine requests for public outreach and speaking engagements were a challenge to fulfill, with mandated programs taking priority. Increased funding has also allowed EPHD to address EEPHS 2 (Diagnose and investigate) and EEPHS 3 (Inform, educate, and empower). They are now conducting proactive outreach and education initiatives such as presenting at public meetings, sitting on local committees, and attending trainings to better serve public health and private water users.

EPHD and PHF

EPHD completed a prioritization analysis and consensus building activity with PHF to decipher critical vs. non-critical activities and began tracking metrics to align with their five-year project planning. Their focus is the following performance improvement areas:

1. Diagnose and investigate environmental public health programs and health hazards in the community
2. Inform, educate, and empower people about environmental public health issues
3. Mobilize community partnerships and actions to identify and solve environmental health problems.

For ISDH, the primary goals are to improve the overall understanding of well water quality, contaminants, and risk, and for the population to understand their responsibility for their water. ISDH estimates that up to 30% of the population is at some risk for water contamination, primarily drinking water untested for arsenic and nitrates.

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Innovative Ideas for the Future

ISDH is envisioning the future of environmental health with a Public Health 3.0 perspective. While a traditional environmental health approach may focus on the clinical or the “response” mechanisms, ISDH is building program capacities that address the EEPHS and focuses on the population’s environment and how it affects health. This places environmental health in the forefront and addresses potential issues before the need for a response team.

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