

▶ DIRECT FROM CDC ENVIRONMENTAL HEALTH SERVICES

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Resources and Tools for Emergencies

Editor's Note: The National Environmental Health Association (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, NEHA features this column on environmental health services from the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In these columns, authors from CDC's Water, Food, and Environmental Health Services Branch, as well as guest authors, will share tools, resources, and guidance for environmental health practitioners. The conclusions in these columns are those of the author(s) and do not necessarily represent the official position of CDC.

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In 2021, 20 weather or climate disasters, each causing over \$1 billion in damage, affected the U.S. and its territories. These disasters included droughts, flooding events, severe storms, wildfires, and winter storms. Overall, they impacted human quality of life and had significant economic effects on the affected areas (Smith, 2020). State, territorial, local, and tribal health departments play an important role in responding to emergencies and disasters. Both during and after these events, it can be challenging for environmental health professionals to conduct the traditional functions of environmental health, such as safeguarding drinking water supplies, controlling disease-causing vectors, conducting food safety inspections, and ensuring safe and healthy building environments.

The Water, Food, and Environmental Health Services Branch within the Centers for Disease Control and Prevention (CDC) supports environmental health professionals with tools and resources to help build their capacity to respond to emergencies and disasters (CDC, 2022). The Response and Recovery Activities for Environmental Health (RRA) webpage highlights key resources for environmental health professionals that are useful in preparing for, responding to, and recovering from emergencies and disasters (Figure 1). The RRA webpage provides tools for conducting assessments, guidance on how to communicate with the public during and after a disaster, and links to partner resources that support recovery.

CDC assessment tools assist environmental health professionals by providing guidance after wildfires and flooding (CDC, 2021a). After a wildfire, environmental health professionals might be tasked with conducting assessments and evaluating drinking water wells. The rapid assessment form from CDC (2021a) can help environmental health professionals quickly conduct assessments to identify well damage and the risk associated with using damaged well infrastructure. In turn, environmental health professionals can provide guidance to well owners on well water testing and taking action to repair damaged wells.

With flooding events, it is important to understand when outdoor areas can be safe to use after flood waters subside. Wastewater treatment plants, sewer lift stations and collection systems, and individual or community septic systems can contaminate public spaces like ball fields, playgrounds, and residential yards (U.S. Environmental Protection Agency, 2001). Floodwater and standing water can be dangerous, making humans and animals more vulnerable to infectious diseases, chemical hazards, and injuries (CDC, 2020). CDC (2021b) guidance on reopening outdoor spaces after flooding outlines a risk assessment approach that environmental health professionals can use to determine when it is acceptable to use a public outdoor space again.

Clear and effective communication is a crucial life-saving component in public health emergency response. Because misinformation can spread quickly, it is especially important to speak, communicate, and engage with your audience during a response (Khan et al., 2021). The Crisis and Emergency Risk Communication (CERC) program describes

FIGURE 1

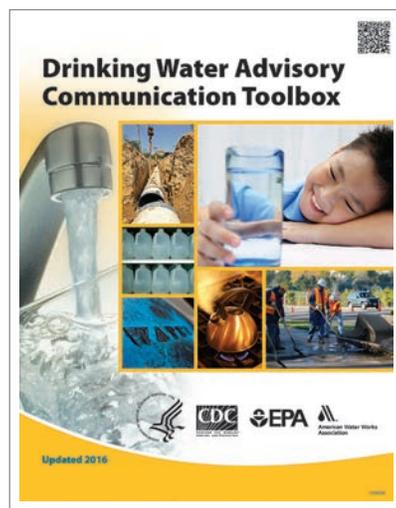
Response and Recovery Activities for Environmental Health



Find response activities by environmental health mission to help you fulfill important roles in all-hazards emergency preparedness, response, recovery, and mitigation at www.cdc.gov/nceh/ehs/rra/index.html.

FIGURE 2

Drinking Water Advisory Communication Toolbox



Use this toolbox at www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/index.html to plan, develop, implement, and evaluate drinking water advisories.

evidence-based principles to successfully communicate during emergencies (CDC, 2018). The CERC program was developed from past public health emergencies and research in the fields of public health, psychology, and emergency risk communication. The CERC program provides trainings, tools, and resources for health communicators, emergency responders, and leaders of organizations to help with effective communication during emergencies.

Environmental health disasters pose a risk for foodborne and waterborne disease

outbreaks. To assist with outbreak investigations, CDC developed the National Hypothesis Generating Questionnaire, which is a set of questions for public health officials to use to interview sick people in the early stages of a multistate foodborne or gastrointestinal disease outbreak investigation (CDC, 2021c). The CDC Drinking Water Advisory Communication Toolbox provides information on how to plan, develop, implement, and evaluate communication activities with the public and stakeholders during drinking water emergencies (Figure 2). A water main break, a drop in pressure in the water system, flooding, a hurricane, or intentional contamination can prompt the need for a drinking water notification or advisory.

For example, Houston, Texas, experienced in 2020 a catastrophic 96-in. water main break. As a result, 95% of the city was under a boil water notice, affecting 13,000 food service establishments. The Houston Health Department and Houston Health Authority used the CDC Drinking Water Advisory Communication Toolbox as a framework for their response. The approach in the toolbox recognizes the differences in scope, scale, and severity of situations that trigger advisories and notifications, and describes the best communication methods for those situations. Both tools provide a streamlined process for environmental health professionals to prevent and mitigate foodborne and waterborne diseases.

To learn more about how CDC helped to rebuild and increase the capacity of several jurisdictional environmental health programs after a natural disaster, see our stories about recovery at www.cdc.gov/nceh/ehs/rra/stories/index.html. The tools and resources are geared toward the needs and interests of

Explore Other Resources for Response Recovery

- Centers for Disease Control and Prevention Disaster Shelter Assessment: <https://emergency.cdc.gov/shelterassessment/>
- Community Assessment for Public Health Emergency Response (CASPER): www.cdc.gov/nceh/casper/default.htm
- Comprehensive Disaster Assessment and Readiness Tools (CDART): www.atsdr.cdc.gov/CDART.html
- Emergency Water Supply Planning Guide for Hospitals and Healthcare Facilities: www.cdc.gov/healthywater/emergency/ewsp.html
- Environmental Health Training in Emergency Response (EHTER): www.cdc.gov/nceh/ehs/elearn/ehter.htm
- Third Edition of the Council to Improve Foodborne Outbreak Response (CIFOR) *Guidelines for Foodborne Disease Outbreak Response*: <http://cifor.us/clearinghouse/cifor-guidelines-for-foodborne-disease-outbreak-response>
- Food and Drug Administration Food Defense Resources: www.fda.gov/food/food-defense
- Waterborne Disease Outbreak Investigation Toolkit: www.cdc.gov/healthywater/emergency/pdf/waterborne-disease-outbreak-toolkit-h.pdf
- Foodborne Disease Outbreak Investigation and Surveillance Tools: www.cdc.gov/foodsafety/outbreaks/surveillance-reporting/investigation-toolkit.html

environmental health professionals to help them build capacity, reduce exposures, and improve public health in their communities after an emergency or disaster. 🗣️

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