

# A Critical Connection: The Water and Healthcare/Public Health Sectors



During emergencies, water utilities, healthcare facilities, nursing homes, public health agencies, primacy agencies and local emergency managers should work together to minimize detrimental impacts to public health caused by disruptions in drinking water and wastewater services. Early planning and communications are vital. Facilities such as hospitals need safe drinking water to care for patients, perform surgeries and sterilize instruments, especially when an emergency strikes a community. Water utilities need to know how they can best assist and advise their critical healthcare customers. Learn more below.



## Relationship Building

In Virginia, the Martha Jefferson Hospital moved into the Albemarle County Service Authority's service area. During construction, the Authority worked with the hospital to:

- Install a potable water connection and booster pump so that the hospital could accept hauled water to meet daily demands during an outage
- Install dual meters to allow for continuous service in the event of vault replacement or other repairs

## 1. Build Relationships

**Meet each other.** Utilities should participate in healthcare preparedness coalitions, regional advisory councils, or other public health preparedness groups. Many times these organizations can help to disseminate information and ease communications between the water and healthcare/public health sectors during emergencies. These meetings are also a good time to share your day-to-day and emergency contact information with each other. Water utilities could invite healthcare and public health staff to tour their facilities.

**Attend events together.** Both sectors should contact their local emergency management agency (EMA) to see what EMA training and exercises could be jointly attended. EMAs also play a critical role in protecting human health. Accredited hospitals conduct annual drills or exercises that could be based on a water supply emergency. EPA's [Training & Exercise Plan](#) and [Tabletop Exercise](#) tool can help.

## 2. Coordinate Preparedness

**Plan with each other.** The [Centers for Medicare and Medicaid Services](#) mandates water management programs in all healthcare facilities and emergency preparedness plans that cover water service disruptions. Water utilities and healthcare facilities should work jointly on these programs and plans. It's also a good time to be sure that everyone's emergency response plans have the most up-to-date contact information and notification procedures.

**Assess together.** Joint Commission accredited hospitals must update their hazard vulnerability assessments once a year. This is a good opportunity to invite your water utility to help you better plan an [emergency water supply](#) and to better ascertain where your hospital's "water weaknesses" are.

**Check-in with emergency management.** Both agencies should know what local and state resources or contracts may be available to help supply emergency drinking water to both utility customers and healthcare facility patients.



### Tip

Healthcare facilities could:

- Install redundant feeds from the municipal water system
- Ensure their water system is looped
- Install exterior water hook-ups for hauled water
- Install a booster pump in a multi-storied facility
- Keep both potable and non-potable emergency water supplies on hand or under contract
- Pre-print water use advisory signs for posting at water fountains, ice machines, etc.
- Have containers to transport water to toilets and portable handwashing stations

Water utilities could:

- Notify healthcare facilities of planned flushing events - brown water can negatively impact facilities such as hospitals



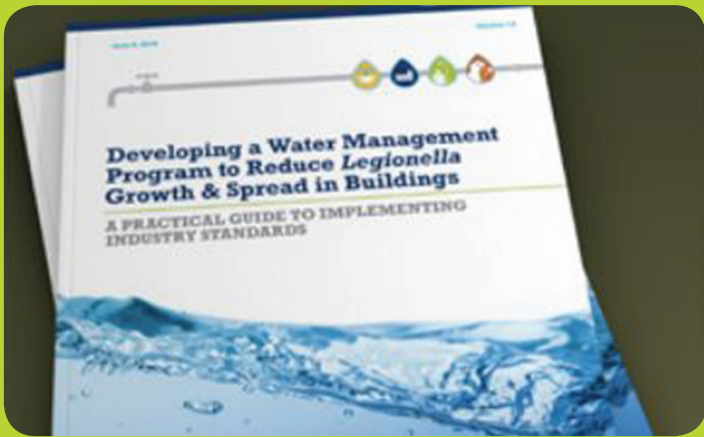
## Boil Water Advisory (BWA) Impacts

BWAs can present challenges in patient care. In Georgia, hospitals cancelled procedures and shut down hot meal services. In Massachusetts, hospitals bagged water fountains and used baby wipes for baths. Utilities can help mitigate healthcare impacts by being prepared to recover from BWAs as quickly as possible. For example, utilities can collect and analyze water samples using pre-stocked emergency sampling kits and rapid testing methods (e.g., Colilert-18 vs. Colilert-24).

## 3. Coordinate Water Use Advisories

**Keep messages straight.** Utilities can coordinate [advisories](#) with public health agencies ahead of time to help avoid confusion and to save time. Remember, a "Boil Water" advisory can be treated as a "Do Not Use" advisory by healthcare facilities. Facilities do not want to draw in contaminated water, so they need to know if a boil water advisory is precautionary (e.g., issued due to a loss of system pressure) or due to an actual contaminant identified in the water system.

**Prepare for advisories.** Healthcare facilities should determine ahead of time what operations water use advisories may or may not affect. For example, if the dishwashing system heats water sufficiently to kill *E.coli* the kitchen may not need to fully shutdown during a "Boil Water" advisory. And a "Do not Use" advisory may not impact HVAC operations depending on the contaminant involved.



## Tip

The Centers for Medicare and Medicaid Services requires facilities to reduce the risk of growth and spread of Legionella and other opportunistic pathogens in building water systems. CDC developed a [toolkit](#) with this goal in mind, and EPA published [guidance](#) regarding technologies to control Legionella in premise plumbing.

## 4. Work Together on Water Quality

**Stay informed.** Water utilities need to let health care facilities and dialysis centers know about planned (e.g., seasonal) and unplanned (e.g., main break) changes in water chemistry and storage. These changes affect medical equipment used to provide patient services.

**Be aware.** Water utilities need to know where home dialysis units are distributed (dialysis centers will know), and utilities need to be sure that these customers are contacted about water quality changes.

**Notify and advise.** Hospital administrators should let utilities and the state drinking water regulatory agency know if they have additional water treatment (e.g., point-of-entry) or filtration systems in their hospitals. Utilities can help advise hospitals on the maintenance of these systems.

**Enhance protection.** Hospitals and other facilities have devices (e.g., autoclave) that can cross-contaminate their plumbing if they have no backflow prevention program in place – a utility can help advise a hospital or other healthcare facility on an effective [backflow prevention program](#), which will also help to protect the municipal supply.

**Collaborate.** Chlorine residual is an important factor in fighting legionella outbreaks in healthcare facilities, but chlorine residual varies greatly in a distribution system. Utilities and facilities can work together to establish the water quality baseline entering the facility. In Connecticut, one water utility is working with the 40 healthcare facilities in its distribution system to discuss baseline water quality (including seasonal variations) at those facilities.

## 5. Ally with Poison Control Centers

**Keep each other in the loop.** Water utilities could share information with poison control centers (PCCs) during a water quality incident because the centers will get calls from the public. Likewise, PCCs should communicate with utilities about calls that they receive potentially related to water quality.

**Assist with outreach.** PCCs can be an asset for a utility to help advise the public about water use because they can be viewed as an impartial third party (neither “government” nor “utility”). Call 1-800-222-1222 to be connected with your state’s PCC.

## Elk River, West Virginia MCHM Spill

The West Virginia Poison Center (WVPC) helped West Virginia American Water (WVAW) and local healthcare facilities by:

- Answering questions from the public and health care providers about triage and treatment of suspected [MCHM](#) adverse effects
- Sending MCHM information sheets to hospitals, clinics, and physician offices
- Providing information related to determining the health screening value for MCHM and using the value to make health related decisions
- Monitoring social media to determine exposure concerns shared by the public and developing media releases to address these concerns
- Posting flushing instructions on the WVPC website
- Participating with WVAW in a Town Hall Q&A
- Explaining water quality results such as “non-detect” and “parts per million” in plain language
- Serving as a subject matter expert for the WV Bureau for Public Health and the Governor’s office

## 6. Respond Together

**Know the Incident Command System (ICS).** This system will allow water utilities, healthcare facilities and public health agencies to respond together during an emergency, especially if each organization begins their response to the incident at different times. More information about ICS can be found on both [EPA's](#) and [FEMA's](#) websites.

**Coordinate with emergency management.** Your EMA may know how to get alternate drinking water and wastewater services and may be able to help issue water use advisories through automated phone dialing systems and/or the Emergency Alert System.

**Share response resources.** In Kentucky, Regional Healthcare Coalitions (HCC) and collaborating agencies have portable emergency water treatment systems (EWTs) that can be used in communities if an approved public water supply is disrupted for longer than 24 to 36 hours. Although the Kentucky Division of Water only recommends using an EWTs as a last resort, these units can help to supply potable water during a water quality or outage incident.

## Other Resources

- [Flushing Guidance for Premise Plumbing and Service Lines to Avoid or Address a Drinking Water Advisory – 4572](#): This Water Research Foundation publication identifies situations when flushing is advisable and explores the best practices for flushing premise plumbing and service lines.
- [Exercise Development Toolbox](#): Helps utilities and response partners design, develop, conduct and evaluate both public health discussion and operations-based exercises.
- [National Disaster Medical System](#): Incidents may overwhelm state, local, tribal and territorial health resources. When that happens, the NDMS can supplement health and medical systems and response capabilities.
- [Water, Sanitation, & Hygiene \(WASH\)-related Emergencies & Outbreaks](#): Many diseases can be prevented by creating and storing an emergency water supply, knowing how to make water safe, learning about drinking water advisories, and following hygiene practices during an emergency.



### Boston's Big Break

On Saturday, May 1, 2010, a coupling on a 10-foot diameter pipeline broke on a Massachusetts Water Resources Authority (MWRA) water supply tunnel, which started to leak millions of gallons of water. A boil water order was issued for the Boston metropolitan area. Medical facilities were contacted directly by water suppliers to discuss safe water practices. Additionally, based on their water source within the MWRA system, some were informed they did not have to

boil water. Some facilities, like the Boston Medical Center, were directly impacted by the boil water order and quickly implemented plans for water conservation, alternate food and nutrition, clinical operations, and facilities management (e.g., ice machines). Media coverage was intense, requiring careful crafting and coordination of public health messages from both the water and healthcare/public health sectors.