Drinking Water Advisory Communication Toolbox

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

EPA

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All information found in this document can also be accessed online and printed from CDC's Healthy Water website at **http://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/index.html**

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About the Drinking Water Advisory Communication Toolbox

Our original goal in creating this document in 2011 was to provide a protocol and practical toolbox, based upon research and identified practices, for communicating with stakeholders and the public about water advisories.

The project was a collaborative effort among the U.S. Centers for Disease Control and Prevention (CDC), the U.S. Environmental Protection Agency (EPA), the American Water Works Association (AWWA), the Association of State and Territorial Health Officials (ASTHO), the Association of State Drinking Water Administrators (ASDWA) and the National Environmental Health Association (NEHA).

A technical workgroup of public health and drinking water agencies and drinking water system experts advised and guided the project. The project also engaged a broad cross-section of relevant stakeholders and technical experts including local government officials, emergency response professionals, and hazard communication experts.

This toolbox was reviewed by EPA and state primacy agencies. Every effort was made to ensure that it complied with the Public Notification Rule, when necessary.

More than 500 documents, protocols, regulations, and other resources related to the issuing of drinking water advisories were compiled. Nearly 100 interviews were conducted with staff of water systems, primacy agencies, and local public health departments in the United States and Canada.

These findings revealed:

- Advice to the public varies widely from state to state and community to community.
- Advisories are a common occurrence in some states and a rare event in others.
- Major incidents or disasters were the primary reasons for collaboration between the staff of drinking water systems and health departments.
- Terminology for advisories is inconsistent.
- Templates and advisory content are difficult to change or adapt to specific audiences or needs.
- The EPA Public Notification Handbook is the primary information source for drinking water advisories.
- Agency responsibilities for communicating with institutions, such as hospitals, schools, and restaurants, are highly variable.
- Good relationships between water systems and local public health departments are often dependent on established relationships between individuals.
- Local health departments may lack the resources or expertise to address drinking water issues.
- Local health departments are willing to be consulted by water systems when requested.

Introduction

- Overview
- Third Edition (2016) Updates
- List of New Pages in this Edition
- Last-minute Planning and Response for Water Advisories
- Why Are Drinking Water Advisories Issued?
- Small Water Systems

Overview

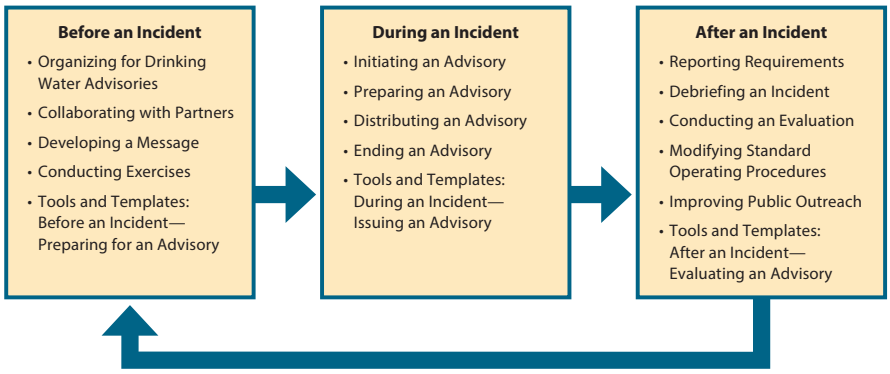
The Drinking Water Advisory Communication Toolbox provides information on how to plan for, develop, implement, and evaluate communication activities with the public and stakeholders during drinking water notifications and advisories. The approach presented in this document recognizes the differences in scope, scale, and severity of situations that trigger advisories and notifications—a main break, a hurricane, a drop in pressure, or intentional contamination. These differences affect the types of tools, planning, and communication used by drinking water systems and locality often affects the terminology (e.g., "incidents," "notices," "alerts," "orders," etc.) used to describe these situations.

This toolbox includes instructions on how to prepare for communication activities before an incident, how to communicate during an incident, templates and tools to use, and recommendations for follow-up actions and assessments after an incident. The purpose of the toolbox is to enable water systems to communicate effectively with partners and the public in order to protect public health.

Remember to use Federal Public Notification language when developing advisories when there are violations of National Primary Drinking Water Regulations under the Safe Drinking Water Act. This information can be found in 40 Code of Federal Regulations Part 141 (subpart Q, appendix B).

Figure 1 shows the process for preparing for, issuing, and following up after a drinking water advisory.

Figure 1: Toolbox Flow Chart



Each toolbox section includes a checklist of steps. Not every step applies in all circumstances. Each section has a set of tools that applies to its content. The tools can be adapted by water systems to fit their needs.

Icon Key

Tools and Templates

Resources

This toolbox complements the EPA's Revised Public Notification Handbook.

Different Names for Advisories

Individual states have different names for drinking water advisories depending on the situation. Advisories are frequently called "notices," "alerts," and "orders."

Third Edition (2016) Updates

While the original purpose of this toolbox was to focus on communications related to drinking water advisories resulting from microbiological contamination, recent events—including chemical spills and increases in the incidence of harmful algal blooms (HABs)—demonstrated the need to expand the breadth of this document to encompass other timely issues related to drinking water advisories.

To address these needs, this edition contains information regarding chemical contamination, toxin contamination, high rise buildings, and extreme weather events, as well as new fact sheets that provide specific guidance for various types of facilities (e.g., childcare facilities, healthcare facilities). Additional flushing recommendations have also been included and will continue to be updated as more robust guidelines around flushing are developed in the future.

It is our hope that this third edition of the Drinking Water Advisory Communication Toolbox will provide partners and stakeholders with content that addresses current and future needs as they work to effectively communicate with their audiences and protect public health in the event of a drinking water advisory.

Notes

List of New Pages in this Edition

This edition contains a number of updates within the text, as well as new pages to address gaps and enhance the usefulness of the toolbox. Below you will find a list of the new pages in this edition, as well as a brief description of each.

- **Third Edition (2016) Updates:** A description of the topics that have been expanded upon or added in this edition.
- **Last-minute Planning and Response for Water Advisories:** A quick guide to help water utilities, who haven't had a chance to pre-plan, address their most pressing communication priorities in the event of an unexpected water advisory.
- **Frequently Asked Questions About Do Not Drink Water Advisories:** A Q&A document with common questions likely to be asked by the public during a Do Not Drink Advisory.
- **Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/HABs and Drinking Water:** A Q&A document with common questions likely to be asked by the public when Cyanobacterial Blooms/Cyanotoxins/HABs are found in the water supply.
- **Frequently Asked Questions about Nitrates and Drinking Water:** A Q&A document with common questions likely to be asked by the public about nitrates in the water supply.
- **Guidelines for Schools and Childcare Facilities During a Boil Water Advisory:** Water use guidelines for decision makers and providers at childcare facilities during a boil water advisory to ensure the safety of the children under their care.
- **Guidelines for Hotels and Motels During a Boil Water Advisory:** Water use guidelines for hotel/motel owners and staff during a boil water advisory to ensure the safety of the customers.
- **Guidelines for Food Service Facilities During and After a Boil Water Advisory:** Water use guidelines for food service facility (restaurants, etc.) proprietors during and after a boil water advisory to ensure the safety of their customers.
- **Recommendations for High Rise Buildings Before and During a Water-related Emergency:** Advice for building managers, superintendents, and others in charge of high rise buildings to help residents prepare for emergency situations in which safe, running water for drinking, sanitation, hygiene, and other essential uses might not be available.

Notes

List of New Pages in this Edition, continued

- **Guidelines for Healthcare Facilities During and After a Boil Water Advisory:** Water use guidelines for decision makers at healthcare facilities during and after a boil water advisory to ensure the safety of their patients.
- **Considerations for Dialysis Centers Before and During a Water Advisory:** Advice and planning recommendations for dialysis centers regarding considerations that must be taken into account before determining the safety of dialysis during various water advisory situations.
- **Website Information Checklist:** A list of relevant information that should be included when developing a website to communicate with the public, media, and other stakeholders during a water advisory.
- **Website Example:** An example of what the typical front page of a water advisory website could look like, with descriptions and explanations.
- **Sample Agenda for an After Action Review:** This sample agenda provides an example of what to cover in an after action review session with your stakeholders.

Notes

Last-minute Planning and Response for Water Advisories

Help! We are issuing a water advisory and we need to alert the public now. We've done very little/no planning. Where do we start?

The goal: Communicate in a timely manner by maximizing all of the communication channels you have.

- Communicate the essential information to the critical individuals and organizations as soon as possible.
- Reach as much of the population as you can by as many communication channels as possible.
- Focus your resources on reaching the greatest number of people in a timely manner.
- Keep your messaging consistent across all channels.

Step 1: Determine a basic chain of command.

- Who will make the determination of when the water is safe to drink?
- Who will be the key spokesperson?
- How will updates be communicated?

Step 2: Identify critical partners who need to be informed immediately and who will, in turn, contact a number of other stakeholders and members of the public. ***Ensure that your message remains consistent across partners.*** *These critical partners may include:*

- Local Emergency Manager (enlist that person's immediate support to make the critical phone calls and connections that are listed below)
- Local Health Department
- Regional Hospital Coordination Unit
- Hospital facility managers
- Local elected officials
- Police chief(s)
- Fire chief(s)
- Medical examiner
- Animal control
- Environmental health
- Vulnerable Populations groups
  - Assisted living facilities
  - Nursing homes

Notes

  - » Dialysis centers
  - » Refugee centers
  - » Deaf advocacy groups
- Neighborhood pages (Nextdoor, Neighborhood Civic Associations, etc.)
- Dept of Transportation (they may agree to put announcements on highway message boards)
- IPAWS (phone alert system coordinated by FEMA)

Step 3: Identify core channels that will maximize communication efforts. Ensure consistent messaging across channels:

- County communications staff and possibly a Joint Information Center (JIC) under IMS structure
- Mass media/news
- Social media (cell phone/text/Facebook)
- Wireless Emergency Alert
- CodeRED alert
- Websites
- Reverse 911

Grab and go tools:

Many of the Section 1 ("Before an Incident") and Section 2 ("During an Incident") Tools & Templates found in Appendix B can be used as a "Go Kit" in situations where pre-planning activities may have been incomplete. A number of these tools and templates are listed below and can be helpful resources in the coming days. If you are online, you can access each document listed below by clicking on its name.

In addition, all of the tools and templates can be found in a zip file at: **http://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/tools-templates-main.html**

Tools and Templates "Go Kit"

- **Q&As and Fact Sheets—Advisory Advice**
- **Quick Reference Facts**
- **Frequently Asked Questions About Boil Water Advisories**
- **Frequently Asked Questions About Do Not Drink Water Advisories**
- **Fact Sheet About What to Do During a Boil Water Advisory**

Notes

- Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida
- Frequently Asked Questions About Coliforms and Drinking Water
- Frequently Asked Questions About Cyanobacterial Blooms/ Cyanotoxins/HABs and Drinking Water
- Frequently Asked Questions About Nitrates and Drinking Water
- Frequently Asked Questions About Groundwater Rule Advisories
- Frequently Asked Questions About What to Do After a Drinking Water Advisory
- Preguntas frecuentes sobre lo que debe hacerse después de una advertencia de uso del agua potable
- Point of Contact for Coordination During an Advisory
- Website Information Checklist
- Website Example
- Automated Messages
- Tier 1 Public Notification Rule Compliant Press Release Template
- Significant Pressure Loss Advisory Press Release Template
- Advisory Update Press Release Template

Notes

Why Are Drinking Water Advisories Issued?

Water systems and state or local agencies issue drinking water advisories when they believe water quality is or may be compromised. Advisories tell individuals, schools, hospitals, businesses, and others about the situation and how to take immediate action, if necessary.

Drinking water advisories and notifications:

- **Provide information—**A notification may be issued when consumers need to receive important information but do not need to take any action. For example, a water system may issue a notification to inform households about seasonal changes in water taste or when utility work may cause a loss of pressure.
- **Encourage preparedness—**Advisories may help customers prepare for planned disruption in service or anticipated water quality threats. Advisories may affect a small area, such as during distribution system construction or repair. Advisories also can urge customers to prepare for a large area incident, such as an approaching hurricane. This type of advisory alerts people to watch or listen for more information.
- **Recommend action—**Advisories may tell customers to take specific actions, such as to boil water or use bottled water. These advisories may be issued as a response to poor water testing results, reports of a waterborne disease outbreak, chemical contamination, or a loss of distribution system integrity.
- **Meet public notification requirements—**Advisories are required by the Safe Drinking Water Act (SDWA) when specific circumstances exist. The SDWA requires communication with customers when the water system does not comply with a regulation.

Notes

Precautionary and Mandatory Advisories

State and federal regulations specify when drinking water advisories are required. In other instances, water systems or the local public health department may issue advisories at their discretion.

Consult with state primacy agency when developing drinking water advisory protocols.

Main Types of Advisories

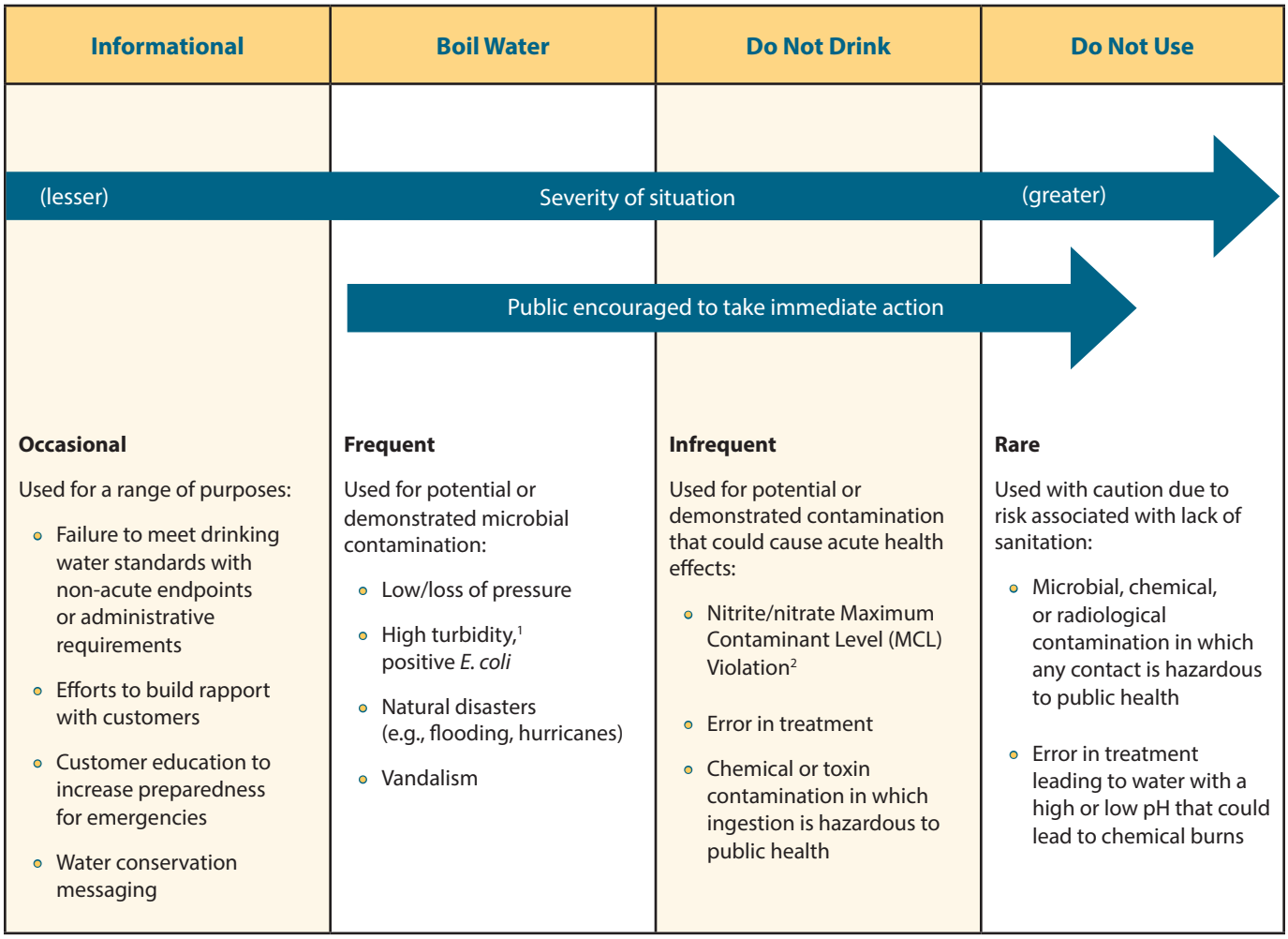
- **Informational**—Communicate planned or anticipated changes in water quality or unanticipated loss of service and provide advice on appropriate action.
- **Boil Water**—Tells customers to boil water before use. This is the most common type of advisory. They may be precautionary if there is a potential threat to the drinking water supply, or they may be mandatory as required by state and federal regulations. Boil water advisories typically are issued because of concern about microbial contamination.
- **Do Not Drink**—Tells customers to use an alternate source of water. Do Not Drink advisories are typically issued for chemical and toxin contamination when boiling water is not effective for making water safe.
- **Do Not Use**—Warns customers not to use tap water for any purpose, including bathing. Do Not Use advisories are typically used only in cases of known microbial, chemical, toxin, or radiological contamination when any contact, even with the skin, lungs, or eyes, can be dangerous. Such advisories are rare because of the risks associated with the lack of water for other purposes (e.g., sanitation).

Figure 2 shows the range of situations that might trigger a drinking water advisory and the type of advisory that would be issued in each situation.

Advisory Information

Advisories can include information about preparing food, beverages, or ice; dishwashing; and hygiene, such as brushing teeth, bathing, and flushing toilets.

Figure 2: Range of Situations for Drinking Water Advisories



Note: These are examples of potential reasons to issue an advisory; this is not intended to be a comprehensive list. Consult your primacy agency for more information.

[1] Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

[2] Do not drink advisory should be focused on infants below the age of six months consistent with the Public Notification Standard Health Language (40 Code of Federal Regulations Part 141 (Subpart Q, appendix B).

Small Water Systems

Because small water systems often have less capacity to implement advisory protocols than larger systems, this toolbox also was designed and tested with small water systems in mind.

Implementing the actions described in this toolbox generally should not require outside support from consultants or others. However, building an effective network by collaborating with other public sector partners, community organizations, and adjacent cities and counties, will help small systems succeed in their efforts.

Suggestions for Small Systems

- Identify and prioritize specific tools, templates, or sections from this toolbox to use.
- Incorporate water advisory protocol planning into regular activities, such as sanitary surveys and updating emergency response plans (ERPs).
- Build water advisory protocols into regular communications, such as customer updates.
- Partner with
  - local public health authorities and neighboring water systems.
  - your local emergency response coordinator(s).
  - someone who is FEMA Incident Command System (ICS) trained.
- Create an organizational hierarchy chart to lay out plans for a team.
- Develop a strategic communication plan as outlined in "**Organizing for Drinking Water Advisories**" in Section 1: Before an Incident—Preparing for an Advisory.
- Determine the best communication channels to use for message delivery.
- Develop an emergency response plan that would be activated during a contamination incident.
- Make adjustable measures to allow public health professionals to come in and take samples or conduct interviews during an incident.

Note: *Incident Command System (ICS) training videos and other ICS resources for water and wastewater utilities are available on EPA's website at:* **https://www.epa.gov/waterresiliencetraining**

Note: *EPA's Water/Wastewater Agency Response Networks (WARN) are mutual aid and assistance networks that provide water and wastewater utilities with the means to quickly obtain help in the form of personnel, equipment, materials, and associated services from other utilities to restore critical operations impacted during an emergency.*

More information is available at **https://www.epa.gov/waterutilityresponse/value-water-and-wastewater-agency-response-networks-membership-water-utilities**

Section 1: Before an Incident—Preparing for an Advisory

- Overview
- Checklist: Before an Incident
- Organizing for Drinking Water Advisories
- Collaborating with Partners
- Developing a Message
- Conducting Exercises

Overview

To issue a drinking water advisory, a water system must act quickly and in close coordination within its organization and among its partner agencies. Preparation is essential. Most of the work can be done in advance of a planned event or unplanned incident.

Pre-incident planning allows a water system to design advisories and issue them through a predetermined process. Advance preparation speeds delivery of accurate and useful information to affected customers. This information can be reused for future incidents.

Water advisories are complicated and may involve different partners depending on the type of incident taking place. Key partners as you plan for an incident are your local emergency planner and health department. It is also important to consider who might be your partners in the event of a biological incident versus a chemical or radiological incident. Some incidents might require the involvement of multiple agencies, such as those involving chemicals and toxins.

Although chemical contamination incidents may occur less frequently, these incidents may require significant efforts to address public health issues. Such incidents may require the involvement of government officials to help assess the extent of the problem, control the source of the contaminant, provide supplemental water sources, and restore the system. Significant communication challenges may exist in maintaining the trust of the community while trying to address concerns associated with chemical exposures and provide the most current information to those affected. This requires collaboration between toxicologists and chemical contamination event specialists.

For additional information on common water contaminants, see **EPA's Water Contaminant Information Tool (WCIT)**. The WCIT has communication-specific offerings, like the "Information Officer Report" and the "Utility Response Considerations" sections, which summarize contaminant information at a high level to help public information officers communicate with the public and draft advisories.

Icon Key

Tools and Templates

Resources

Notes

Checklist: Before an Incident

Organizing for Drinking Water Advisories

- ☐ Conduct an assessment of assets and resources needed to issue a drinking water advisory.
- ☐ Review state regulations and guidance for public notification and the EPA Revised Public Notification Handbook. (Remember to use Federal Public Notification language when developing advisories when there are violations of National Primary Drinking Water Regulations under the Safe Drinking Water Act. This information can be found in 40 Code of Federal Regulations Part 141 [subpart Q, appendix B].)
- ☐ Consult your organization's strategic communication plan.
- ☐ Plan for media activities.
- ☐ Integrate communications as part of your emergency response standard operating procedures (SOPs).

Collaborating with Partners

- ☐ Identify critical and wholesale customers.
- ☐ Identify technical resources and subject matter experts for chemicals, toxins, and microbial incidents.
- ☐ Record and regularly update contact information.
- ☐ Develop a communication network of public agencies and private entities for collaboration during an advisory.
- ☐ Meet and discuss protocols and resources for drinking water advisories with agency partners and community organizations.
- ☐ Plan and conduct regular communication among partner agencies and private organizations.

Notes

Checklist: Before an Incident, continued

Developing a Message

- ☐ Collaborate with your communication network to develop messages for various advisories and specific audiences.
- ☐ Certain types of advisories require the use of specific language developed by EPA. See **Public Notice Templates** in Appendix C.
- ☐ Determine the best channels to deliver the messages.
- ☐ Translate and format messages for special populations (e.g., non-English speakers, visually impaired).

Conducting Exercises

- ☐ Refer to the **National Incident Management System** (NIMS) and the **Homeland Security Exercise and Evaluation Program** (HSEEP).
- ☐ Plan exercises.
- ☐ Conduct exercises.
- ☐ Debrief after exercises and incorporate appropriate changes in protocols.

Notes

Organizing for Drinking Water Advisories

Conduct an Assessment

Understanding your system's operations, vulnerabilities, stakeholders, partners, and audiences is an important first step in your planning efforts. Begin by evaluating the following:

- Existing relationships among partners, including public health, public safety, schools, local businesses, and local government. See **Table 1** for examples.
- Internal and external audiences and stakeholders.
- Information needs of different audiences.
- Existing communication plans and resources (e.g., bill inserts, Consumer Confidence Reports, media contacts).
- Skills, technologies, staff, time, money, and mechanisms for rapidly accessing and using financial resources to obtain needed services (e.g., existing contracts, credit card use/limits) to support an exchange of information with target audiences and agencies. See **Table 1** for examples.
- Resources for public outreach, such as availability of social media channels, web development, Reverse 911, e-mail alerts, and existing contracts and spending/use limitations to support the mechanisms.
- Potential use of tools already developed by partners (e.g., use of weather alert systems or school notification system).
- Existing requirements set by state or local agencies or by the water system's governing body.
- EPA's National Primary Drinking Water Regulations (NPDWRs), including Maximum Contaminant Level (MCL) or Treatment Technique requirements. NPDWRs include Public Notification requirements that provide Standard Health language to be used in the event of an exceedance of a standard (40 Code of Federal Regulations Part 141 [subpart Q, appendix B]).
- In situations when unregulated contaminants are found in the drinking water, EPA Health Advisories (1-day, 10-day, lifetime) may be available. However, consult with the state or local health department about how to best interpret the significance of the level, about more relevant state criteria, or whether the Health Advisory is up to date.
- **Safety Data Sheet (SDS)** and **National Fire Protection Agency (NFPA)** information for certain chemicals.

Considerations

When planning for a drinking water advisory, consider:

- *A range of scenarios*
- *Normal and challenging operating conditions*
- *Time of day, day of the week, and season of the year*

Organizing for Drinking Water Advisories, continued

- Access to EPA's **Water Contaminant Information Tool (WCIT)** and **ATSDR's Toxic Substances Portal.**
- Threats and infrastructure vulnerabilities.
- Emergency response plans (ERPs).

Gap Analysis

Once you've conducted the assessment, it is important to identify the gaps and additional resources needed to meet responsibilities for issuing drinking water advisories.

Notes

Review Regulations and Guidance

Primacy Agency

Each state that has primacy has specific regulations for public notification and information sharing. Local public health and water systems personnel need information for a 24/7 point of contact at the primacy agency.

For information on state-specific contact information, regulatory requirements, guidance, and templates see the **Association of State Drinking Water Administrators (ASDWA)**. See **Appendix C: Online Resources, Primacy Agency** for more information.

Federal Guidance

There is federal guidance for developing public notices under the Safe Drinking Water Act (SDWA) and an EPA-developed **Public Notification Handbook** that provides guidance on regulatory requirements.

Remember to use Federal Public Notification language when developing advisories when there are violations of National Primary Drinking Water Regulations under the Safe Drinking Water Act. This information can be found in 40 Code of Federal Regulations Part 141 (subpart Q, appendix B).

Know Your Primacy Agency

Every state is unique. Know your state SDWA primacy agency's practices, communication channels, and responsibilities related to drinking water advisories.

Consult Strategic Communication Plan

A strategic communication plan is the foundation for decision-making and resource allocation, both ongoing and in times of crisis.

A strategic communication plan helps a water system prepare to issue a drinking water advisory by identifying ahead of time:

- Who will lead the communication efforts, taking into consideration the size of the affected area and type of contaminant (e.g., microbial, chemical, toxin). In some circumstances, federal agencies working with authorities of the Safe Drinking Water Act can play a supportive or leadership role.
- Notification procedures between agencies, utilities, and associations (including up-to-date rosters).
- Institutions (e.g., businesses, schools, hospitals) that need to be notified; maintain current contact information.
- Critical issues for the water system (e.g., risk, safety, quality, infrastructure).
- Points of integration for operations and communication SOPs.
- Communication objectives (e.g., information, preparedness).
- Modes of communication that are locally preferred and effective (e.g., most frequently viewed TV channels or radio stations, telephonic community notification system when possible, notification through schools).
- Actions required to carry out communication strategies.
- Plans for situations involving loss of power.

See **Information for Communication Planning** for more information.

Effective Risk Communication

Drinking water advisories are a form of risk communication. The protocols for issuing an advisory must effectively describe:

- When to distribute an advisory (and when not to).
- What information to provide.
- Who is(are) the specific audience(s) for that incident (including susceptible populations).
- How to recognize and communicate the conclusion of the incident.
- Where to distribute messages.
- What actions must be taken.
- Why these actions must be taken.
- For more information on effective risk communication, see **Appendix C: Online Resources, Risk Communication**.

Where to Find Help

If your water system does not have a strategic communication plan, *see* **Appendix C: Online Resources, Risk Communication** *for more information that may be helpful in developing one.*

Note: *The* **Government Emergency Telecommunications Service (GETS)** *and* **Wireless Priority Service (WPS)** *ensure phone and internet priority for utilities during an emergency when the network is congested.*

Plan for Media Activities

Successful advisories rely on multiple types of communication. A variety of communication methods, such as door hangers, media alerts, websites, social media, automated messages, and other methods of communication should be combined for an effective communication strategy. The media is a primary channel for public notification and is critical to issuing an advisory.

Planning for media activities can improve implementation of the advisory. Scope, scale, and severity determine the level of media involvement—the larger the incident, the larger the media effort. Factors to consider include the following:

- **Timing:** Consider the operations of your local media. Many media outlets are not able to respond on weekends or after hours. Contact local media outlets to understand their staffing, hours, news cycle and deadlines, or other limitations. Plan appropriately for media outlets and communication channels. For example, if an advisory is issued during business hours or commuting times, radio reaches homes, offices, and cars.
- **Audiences:** If an advisory covers a wide area, use a media release to multiple outlets. Smaller areas may call for use of specific media channels as well as other methods of communication. Audiences with special needs, such as a large population of people who speak little or no English, are part of the decisions about media, including ethnic media. See the **Communicating with Susceptible Populations Worksheet** and **Appendix C: Online Resources, Risk Communication**.
- **Channels**: Identify the media outlets that cover specific areas of the water system service area and the region. In rural areas, television news may come out of a large urban area far away. Partners and their communication networks will have additional information about communication channels. Identify criteria on which to prioritize media outlets based on the scope, scale, and severity of the situation. For example, if an advisory is issued during working hours, radio, e-mails, social media, mass texting, and news websites may be the most immediate and viable outlets to use to distribute the message to the working public.
- **Media Messages:** Use the **Message Mapping Template** and **Sample Message Map** or the **Single Overriding Communication Objectives (SOCO) Worksheet** to prepare press releases and statement templates specific to the water system and different scenarios. These materials can be generalized and put into electronic or paper formats (see other templates in the **Tools & Templates: Before an Incident—Preparing for an Advisory** section). Insert the prepared materials into emergency response plans (ERPs) and protocols.

Tip

Ask media outlets about their timing. How long will it take them to post and announce information on websites and announce on television? Knowing their news cycles and deadlines is critical to planning. Also ask how they would use maps and graphics to show the advisory area.

Small System Note

If a press list or wire service is not available, work with partners and local government to set up access for communicating advisories to the media. Ask other partners if they already have such a list.

- **Approval:** Note the procedures on how media materials will be reviewed and who will approve them. Work with partners in the communication network and understand their approval process.
- **Other Information:** Include external sources of additional information in media materials. Contact names and numbers for primacy agencies and local public health departments are good sources for reporters. Links to primacy agencies and health departments can be added to media websites to help answer customer questions. Work with partners to identify additional information sources. See **Appendix C: Online Resources, Risk Communication**.

Designate and Train Spokespersons

The spokesperson's role is to communicate directly with media through briefings and interviews and to interact with the public. Designate a primary and backup spokesperson during planning activities. The spokesperson may be the water system's Public Information Officer (PIO), a manager assigned to communication, or someone within the communication network, such as a local public health department representative. The spokesperson is someone in authority who is honest, credible, competent, accessible, and sensitive to public concerns. Use the **Spokesperson Assessment Tool** to assist with choosing spokespersons.

The spokesperson must be ready to interpret scientific and technical information into clear language and must understand the water system's operations. Professional training in media management, effective listening, and handling sensitive situations is helpful in preparing a spokesperson to be ready to meet the media and the public at any time.

Integrate Communication into Emergency Response and SOPs

SOPs must be clear and allow users to take actions based on the information they will have at the time. SOPs should establish clear chains of command and communication so that authorized personnel can make situation-specific decisions. SOPs may include the following:

- **Purpose:** Objective of the SOP (e.g., delineation of authority, roles, and procedures).
- **Scope:** People involved and the authority and responsibilities they have.
- **Communication Structure:** Organizational chart that demonstrates levels of command and communication linkages.
- **Protocols:** Procedures for action within the SOP's purpose.
- **Training:** Requirement(s) and schedule.

Notes

- **Exercises:** Procedures and schedule.
- **Oversight/Update:** Person(s) responsible for assuring compliance with and maintenance of SOPs.

Customer Call Center

Call centers and customer service (CS) staff are on the front lines during a large scale advisory. Call centers must have the resources to respond to customers above and beyond normal operations and hours. Information provided through the call center must be accurate, timely, and consistent.

The actions described below apply to local government call lines such as 411, community lines such as 211, or other agencies that may respond to an advisory.

- **Briefings:** Meet with call center and CS staff before issuing the advisory and provide essential information on the scope, scale, and severity of the advisory.
- **Scripts:** Provide scripts to call center and CS staff developed with essential information and frequently asked questions (FAQs).
- **Updates:** Meet with call center and CS staff to check for adequate staffing and history of customer concerns. Add and revise information in scripts as needed.
- **Resources:** Ensure enough phone lines and staff for the scope and scale of the advisory. Staff will need current information and referral contacts. Determine whether contracts are or should be in place to expand service that may be needed for a large advisory.
- **Debriefing:** Include call center and CS staff in the advisory debriefing to identify communication activities and resources.

Tip

Fill out toolbox templates before an advisory. Incorporate and regularly review and update the templates in your communication, ERP, and operations SOPs.

Considerations for Call Centers and Customer Service

Address potential call center issues in advisory protocols. Considerations include:

- *Are there enough phone lines?*
- *Are other phone lines available if needed?*
- *Are off-site phone lines or call centers available?*
- *Is there a backup plan if phone lines are not available or power is out during an emergency response?*
- *Are there enough people to staff the call center 24/7, if needed?*
- *Do you have a sample Q&A page to prepare staff for likely questions that would come in from the public?*

Collaborating with Partners

Identify Partners

Partners are organizations and agencies that can help you plan, develop, and distribute messages. Having a network of agencies and organizations can help advisories to be more effective and timely.

To identify partners, start with public agencies, especially those focused on local public health. Agencies and organizations to consider include the following:

- Drinking water primacy agency.
- Local and state public health departments.
- Consecutive, wholesale, and neighboring water systems.
- Critical and priority customers, including hospitals and businesses.
- Emergency management, public works, public safety, social services, and other government agencies.
- Local elected officials
- Community organizations.

See the **Critical Customer Checklist** for more information.

Table 1 provides examples of target audiences and partner organizations and agencies.

Key Questions for Collaboration with Partners

- *Who needs to know?*
- *Who is responsible for coordinating communication?*
- *Who makes decisions related to advisories?*
- *Who needs specific types of information, including technical information?*
- *What are the procedures to inform public officials?*
- *What are partners' capacities for outreach?*

Tip

Early involvement of stakeholders allows them to provide input in the messaging and enables consistent communication and message buy-in among partners throughout the incident.

Table 1: Examples of Target Audiences and Organizations for Drinking Water Advisory Communications and Potential Agencies for Assisting with this Communication

Communication Target	Examples	Potential Agency for Communicating with Target Group
Businesses	Business community, including hotels	**Local:** Economic development coordinator, chamber of commerce
Childcare	Licensed childcare providers	**Local:** Local public health department and childcare facilities
		State: Health and welfare (e.g., human services, social services)
Correctional facilities	Local or regional jail	**Local:** Sheriff 's office, chief of police, local emergency management
		State: Department of corrections
Food facilities	Restaurants, grocery stores, catering services, event venues (e.g., fairs, sports facilities), bakeries, canneries, dairies, food production facilities, ice manufacturers, meat processing facilities, etc.	**Local:** Local public health department
		State: Health department, agriculture and consumer services
Healthcare facilities	Hospitals, clinics, emergency care facilities, nursing homes, physician offices, pharmacies, dialysis centers	**Local:** Local public health department, local emergency management
		State: List of licensed healthcare facilities
Schools	Public schools, private schools, colleges, universities	**Local:** School superintendent, local public health department
Susceptible populations	Elderly, infants, young children, persons with limited literacy or English skills, disabled persons, immunocompromised persons, persons with limited resources, persons with limited access to transportation	**Local:** Public health department, social services, community organizations, faith-based organizations

See **Appendix C: Online Resources** for resources focused on communication with Target Audiences and Organizations

Public Health: A Key Partner

Developing a working relationship with local and state public health authorities can help water systems identify community organizations, develop specific messages and materials, and work through issues like translation. Working with the public health authority can put the risk of illness into perspective for public outreach.

Open and frequent communication between utilities and public health is particularly important when issuing advisory guidance (e.g., flushing protocols) and when ending advisories. Working with public health can help utilities reduce potential health effects for affected populations. Teaming up with public health can also expand jurisdictional reach. For example, if the health department declares an emergency, the water utility may have access to certain residential and building premises normally outside the regulatory structure.

Public health departments at the local, regional, and/or state levels work with susceptible populations and critical customers such as:

- Hospitals and medical facilities
- Healthcare providers (HCPs), physicians, pharmacists, home health nurses
- People who are elderly, low income, and homebound
- Schools and childcare providers
- Pregnant women and parents of young children
- Food establishments

Include public health departments in planning and discussions about advisories. Since, in many cases, they license local establishments, they can help with notifying these groups and developing specific messages. This allows water systems to focus on their core responsibilities. Local public health can assist with outreach through contact lists, websites, and newsletters.

See **Communicating with Susceptible Populations Worksheet**.

Planning before an advisory is crucial to understanding the capacity of local public health departments to participate in a communication network. Formalized agreements, such as a memorandum of understanding (MOU), will clearly define capacity and responsibilities for both the health department and the water system.

Public health codes may have different requirements for the various types of establishments that prepare or process food, such as restaurants, community kitchens, grocery stores, and cafeterias. Knowing these codes for each locality will help water systems work with critical customers.

Public Health Capacity

Capacity is the ability to respond to a situation with resources such as staff, materials, and expertise. Local, regional, and state public health departments vary greatly in their ability to support activities around drinking water advisories.

Public Health and Critical Customers

Local public health departments often license food establishments and childcare facilities. They are good resources for contact information.

For more information about public health and outreach, refer to the guidance for the Lead and Copper Rule (LCR). See **Appendix C: Online Resources, Safe Drinking Water Act**.

Local Emergency Management Groups

The Governor of each state has a designated **State Emergency Response Commission (SERC)** that is responsible for implementing Emergency Planning and Community Right-to-Know Act (EPCRA) provisions within its state and overseeing Local Emergency Planning Committees (LEPCs). For communities without LEPCs, find planning resources in **Appendix C: Online Resources, Exercise Planning and Preparedness**.

Notes

Record Contact Information

Collect and record the contact information of each partner in a list or database. Include name, phone numbers, postal and e-mail addresses, after-hours contact information, and social media information. (The **Information for Communication Planning** and **Point of Contact Template** will help with this activity.) Be sure to verify and update all contact information on a regularly scheduled basis.

Develop a Communication Network

Water systems generally are responsible for issuing advisories. However, timely, effective, and extensive outreach simply cannot be done by one entity; in some cases, it may be determined that other organizations (e.g., the local or state health department) are better equipped to lead communication efforts. Water systems must work collaboratively with public health, emergency response, and other partners to get the job done effectively. If another agency is determined to be a more appropriate lead for communication, this should be clearly mapped out prior to any emergencies occurring.

Some communities have an established communication network, usually coordinated around emergency management. If there is a communication network in your community, learn how to become a part of it, what resources are needed to join, and whether it has the capacity to meet emergency needs. If there is no such network, develop one.

Collaborations for Reaching Susceptible Populations

A key element of effective communication planning is to consider populations that can be defined as a group with common characteristics that make them a susceptible population. For a drinking water advisory, water systems and public health agencies need to communicate with three specific susceptible populations:

1. Persons with communication needs, including low literacy levels, limited English proficiency, cognitive disabilities, and hearing or vision impairments.
2. Persons with medical needs that make them sensitive to water quality issues, such as babies, young children, pregnant women, and people who are immunocompromised, elderly, or on dialysis.
3. Persons with low income; persons who may lack the resources to act on an advisory; or persons who may lack the awareness of a possible threat to their health and their family's well-being.

For more information, see the **Communicating with Susceptible Populations Worksheet**.

Did you know?

Having a health alert network in place is a way to quickly notify hospitals, doctor's offices, and other health facilities. Consult with your local health department about using this method during an advisory.

Tip

Check all email contacts to ensure the email addresses you have listed are able to receive messages from your account. Update your email contact list as necessary.

Tip

Copy and laminate the contact list or database. Keep one copy for work and one for the field and update them regularly.

Tip

Have options for special needs customers to self-identify within your alert system to receive priority alerts.

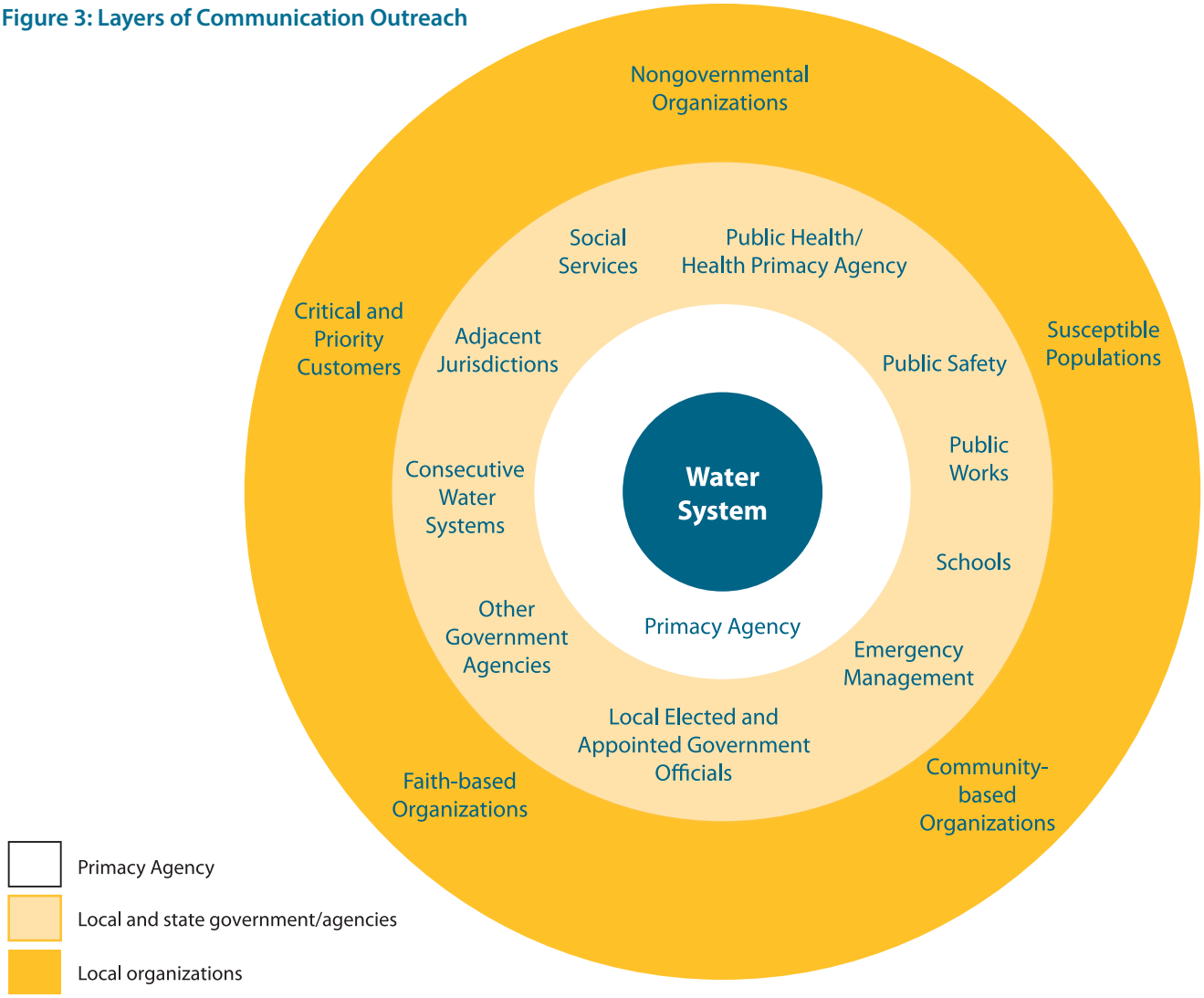
Communication Network

Advance collaboration, communication, and cooperation with other public agencies and private organizations before an actual incident provides the opportunity to:

- Determine existing resources.
- Distribute advisories quickly and effectively.
- Develop protocols to assure coordinated, consistent messaging during an advisory.
- Share the communication tasks amongst partners.

Figure 3 shows how creating a local network can extend an agency's outreach capacity.

Figure 3: Layers of Communication Outreach



Meet and Discuss Protocols and Resources

Schedule a meeting with partners to discuss how collaboration can improve drinking water advisory communication. Determine where and when you will meet and for how long.

Set a brief agenda that includes communication protocols within the network and resources (translation services, other contact information, websites) that are available for message distribution. Be sure to cover roles and responsibilities defining which partner groups will be responsible for contacting specific groups or susceptible populations.

Plan and Conduct Regular Communication

Keep partners engaged through regular communication within the network. Send copies of meeting notes. At least four times a year, send e-mails or make phone calls to ask partners about:

- Updating contact lists
- Additional information they may want to know
- Their suggestions for activities, such as participating in an exercise
- Other organizations that can be invited into the network

Plan meetings to meet new contacts and address other issues that network members may have in common.

Notes

Developing a Message

Collaborate with Your Communication Network

Drinking water advisories are issued in response to a specific incident or situation. Communication materials can be prepared in advance by collaborating with your partners.

Message Development

Tools and templates that can help guide pre-incident message development include:

- Worksheets:
  - Single Overriding Communication Objective (SOCO) Worksheet
  - Communicating with Susceptible Populations Worksheet
  - Message Mapping Template
  - Sample Message Map
- Q&As and fact sheets:
  - Q&As and Fact Sheets—Advisory Advice
  - Quick Reference Facts
  - Frequently Asked Questions About Boil Water Advisories
  - Frequently Asked Questions About Do Not Drink Water Advisories
  - Fact Sheet About What to Do During a Boil Water Advisory
  - Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida
  - Frequently Asked Questions About Coliforms and Drinking Water
  - Frequently Asked Questions about Cyanobacterial Blooms/ Cyanotoxins/HABs and Drinking Water
  - Frequently Asked Questions About Nitrates and Drinking Water
  - Frequently Asked Questions About Groundwater Rule Advisories
  - Frequently Asked Questions About What to do After a Drinking Water Advisory
  - Preguntas frecuentes sobre lo que debe hacerse después de una advertencia de uso del agua potable

Tip:

Basic background information about the water system can be captured in the **Water System Information Worksheet**.

What's a Message?

Information a specific audience MOST needs or wants to know.

Essential Information

- ☐ *Who you are*
- ☐ *What action customers should take*
- ☐ *What event occurred and a description of the problem*
- ☐ *Where it occurred*
- ☐ *When it occurred*
- ☐ *Expected duration*
- ☐ *Why it happened*
- ☐ *Who is affected*
- ☐ *Basic information on the water system*
- ☐ *Current actions being taken*
- ☐ *Requested agency responses*
- ☐ *What public notice is required when appropriate*
- ☐ *Where to get more information*

- » Point of Contact for Coordination During an Advisory
- » Guidelines for Schools and Childcare Facilities During a Boil Water Advisory
- » Guidelines for Hotels and Motels During a Boil Water Advisory
- » Guidelines for Food Service Facilities During and After a Boil Water Advisory
- » Recommendations for High Rise Buildings Before and During a Water-related Emergency
- » Guidelines for Healthcare Facilities During and After a Boil Water Advisory
- » Considerations for Dialysis Centers Before and During a Water Advisory

Basic background information about the water system can be captured in the Water System Information Worksheet.

Health Literacy

Health literacy is the ability to receive, understand, and act on basic health information needed to make good decisions. Nine out of ten people in the United States have limited health literacy—regardless of their education levels. Since advisories require customers to understand a message and take action, health literacy is an important factor for messages and materials.

A first step to ensuring that your advisory can be easily understood by most audiences is to check the readability and grade level of the advisory content. For a general audience, the grade level should be between 5th and 8th grades. Word-processing programs can provide information about a document's readability. If you are not sure how to check for readability, go to the "Help" section on your word-processing program and search for the term "readability."

For more information on health literacy guidelines, see Appendix C: Online Resources, Health Literacy.

Translate and Format Messages

Advisories need to be translated to reach many customers. Consult with local government to identify the main languages in the service area. Public health departments are a very good resource. Many states and local governments have programs and resources specifically for translation, including sign language and Braille.

Other strategies include partnering with community-based organizations or contracting with a translation service. The EPA **Revised Public Notification Handbook** and **Consumer Confidence Reports** have key phrases translated. The **Washington Department of Health** has advisory content translated into several languages.

Community organizations provide a direct, trusted link to diverse populations so make them key contacts in your message distribution plan. Incorporate their skills and outreach strategies into planning for advisory preparation and distribution. Many community organizations have language and sign language translation services. Use these or professional translation services. Avoid using online dictionaries or other computer software to translate messages.

Community organizations can also format messages in forms that are accessible to people who are blind or have low vision, who need pictures or images to understand the message, or who need text or Video Relay Services (video phone) messages.

Writing Messages

Provide the public with a clear concise advisory by:

- *Limiting messages*
- *Using simple, clear language*
- *Providing supporting information*
- *Maintaining consistent messages*

What is Readability?

general scale that measures comprehension, or how understandable the text is in a document. Some word processing programs have built in measures for determining the reading level of a document

Conducting Exercises

National Incident Management System (NIMS)

Current federal policy requires state and local governments, including water systems, to follow the National Incident Management System (NIMS). NIMS training includes information about Incident Command System (ICS) operations, including communication protocols and procedures. ICS provides an organizational structure for sharing information among involved agencies and distributing information to the public.

For more information about NIMS in the Water Sector and ICS, see Appendix C: Online Resources.

Plan Exercises

Preparation for a drinking water advisory entails the consideration of a range of situations relevant to the water system and its community so that:

- A chain of command for communication activities is clearly established, ensuring coordinated—rather than competing—efforts.
- Pertinent information is compiled and evaluated to support sound decisions.
- Credibility with customers is maintained through coordination with state and local agencies.
- Public outreach is effective.

The Homeland Security Exercise and Evaluation Program (HSEEP) provides a standardized methodology and terminology for exercise design implementation and evaluation. For more information, see Appendix C: Online Resources, Exercise Planning and Preparedness.

It is not possible to plan for every contingency. Water systems, public health, emergency management, and other public agencies can select a set of situations in which they can define roles and responsibilities, appropriate outreach strategies, and develop SOPs. For a list of some possible scenarios, see Appendix C: Online Resources, Exercise Planning and Preparedness.

Notes

Conduct Exercises

A communication network for issuing drinking water advisories must be tested in advance to determine if it works and where gaps in outreach remain. Testing the network can prevent illness and even save lives during a real drinking water advisory incident. Exercises are one way to test the network.

- Seminars, workshops, tabletop exercises, games, drills, functional exercises, and full-scale exercises are terms for various types of practice sessions based on a scenario. A scenario could include developing messages and testing the dissemination of an advisory.
- Larger incidents can include other agencies and can evaluate collaboration.
- Exercises can be scaled to the size of an advisory and to community needs.

Exercise Plan

Numerous resources and opportunities exist for exercises. While most of these resources are associated with preparedness and security, they can be used for the full range of advisories. All-hazards planning can incorporate advisory scenarios. After action reviews, comments, and observations are used to revise communication and operations protocols.

Exercise Basics

Exercises come in many sizes and creating them can seem complex. Water systems have multiple opportunities for exercises. Both small exercises that only involve an emergency water system incident or water sector and larger community-wide drills and exercises at the community and state level are important in community planning. These exercises help water systems connect with public health, emergency management, and other sectors to build relationships and networks in preparation for advisories.

Exercise resources in this toolbox give some basic tools for water systems to create and conduct their own drinking water advisory exercises. These exercises can be scaled for water system staff and other partners, such as public health. See **Appendix C: Online Resources, Exercise Planning and Preparedness**.

- **Design a scenario:** Scenarios can be based on an actual advisory or can test a new protocol. The scenario should unfold in stages; participants act on one decision point or action before moving to the next.

Did You Know?

Exercises can be for one water system or multiple systems and partners.

Tip

For small- scale exercises, see the **Exercise Planning Template** *and the* **Debriefing Discussion Guide**.

- **Organizing the exercise:** In-house exercises should be part of staff training or water quality meetings. Planning committees for water system or multiple agency exercises can assist in organizing exercises. See **Exercise Planning Template**.
- **Conducting the exercise:** The exercise should be facilitated. Collect the observations and comments of both the evaluators and the participants.

Debrief and Incorporate Changes into Protocols

Immediately after an exercise, debrief with participants to go over what went well and what needs to improve. Comments and results from the exercise and debriefing are analyzed. Some debriefings plan next steps and how to move forward. Exercise evaluation results are used to identify opportunities to improve advisory communication. Use the information to update both contacts and protocols.

When Planning an Exercise:

- ☐ *Consider a range of events and scenarios.*
- ☐ *Evaluate the network under both normal and challenging operating conditions.*
- ☐ *Plan for issuing drinking water advisories during*
  - » *a power outage,*
  - » *different seasons, times of the day, and days of the week.*
- ☐ *Evaluate the exercise.*
- ☐ *Incorporate improvements.*

Tip

The following "After an Incident" tools can be used for debriefings and exercises:

Corrective Action Tracking Form,

Standard Operating Procedure (SOP) Updates,

Follow-Up Memo, *and* **Debriefing Evaluation Form**.

Section 2: During an Incident—Issuing an Advisory

- Overview
- Checklist: During an Incident
- Initiating an Advisory
- Preparing an Advisory
- Distributing an Advisory
- Ending an Advisory

Overview

A drinking water advisory can occur at any time. Water systems must act quickly when an incident is suspected or identified. The first action must be to assess the situation and follow standard operating procedures (SOPs) for issuing a drinking water advisory.

Icon Key

Tools and Templates

Resources

Tip

Water systems as well as state, local, tribal, and territorial agencies can pull out the Tools and Templates that correspond to the "Before an Incident" and "During an Incident" sections to use as a "Go Kit" in situations where pre-planning activities may have been incomplete. They can be found individually or in a zip file at **http://www.cdc.gov/healthywater/emergency/dwa-comm-toolbox/tools-templates-main.html**

This section contains the essential strategies and activities necessary to create public awareness of a drinking water advisory incident or to issue a Boil Water, Do Not Drink, Do Not Use, or a precautionary advisory for the general public, including susceptible populations who may have communication barriers or medical needs.

Checklist: During an Incident

Initiating an Advisory

- ☐ Identify the situation and collect facts.
- ☐ Notify your drinking water primacy agency.
- ☐ Decide to issue an advisory.
- ☐ Identify the geographic boundaries.
- ☐ Notify your internal staff and external partners.

Preparing an Advisory

- ☐ Identify experts to answers key questions needed for specific messaging.
- ☐ Develop, format, and translate the message.
- ☐ Approve the advisory.
- ☐ Identify the spokespersons.
- ☐ Assign communication responsibilities.

Distributing an Advisory

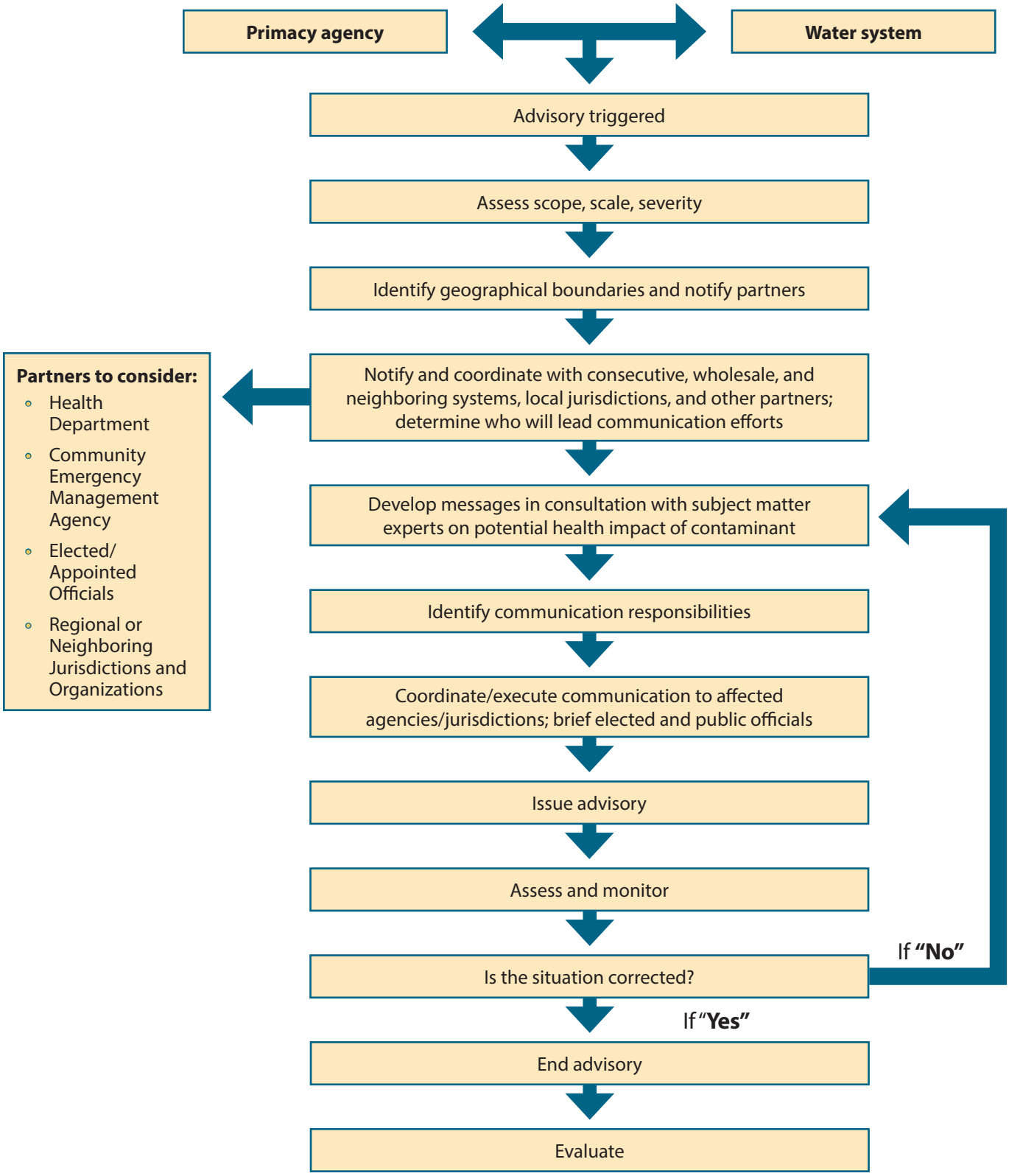
- ☐ Brief elected officials, public officials, and key partners.
- ☐ Implement your communication platforms.
- ☐ Use your communication network to expand distribution of the advisory.
- ☐ Work with the media.

Ending an Advisory

- ☐ Issue End of Advisory notice.
- ☐ Issue guidance for post-advisory activities (e.g., flushing guidance).

Notes

Figure 4: Issuing a Drinking Water Advisory Flow Chart



Initiating an Advisory

Identify the Situation and Collect Facts

Drinking water advisories are issued for reasons identified in federal or state regulations or by decisions made by the water system. The situation and characteristics of the contaminant(s) of concern determine what type of advisory to distribute:

- Informational
- Boil Water
- Do Not Drink
- Do Not Use

Use the *Essential Information* list to collect data and develop communication materials.

Notify Your Drinking Water Primacy Agency

Each state that has primacy specifies particular mechanisms for state notification. Be familiar with your water system's protocols for notifying your primacy agency. See **Appendix C: Online Resources, Primacy Agency**.

Decide to Issue an Advisory

Work with senior management and follow your communication SOP in making the decision to issue an advisory. Use your best professional judgment.

Essential Information

- ☐ *Who you are*
- ☐ *What action customers should take*
- ☐ *What event occurred and a description of the problem*
- ☐ *Where it occurred*
- ☐ *When it occurred*
- ☐ *Expected duration*
- ☐ *Why it happened*
- ☐ *Who is affected*
- ☐ *Basic information about the water system*
- ☐ *Current actions being taken*
- ☐ *Requested agency responses*
- ☐ *What public notice is required when appropriate*
- ☐ *Where to get more information*

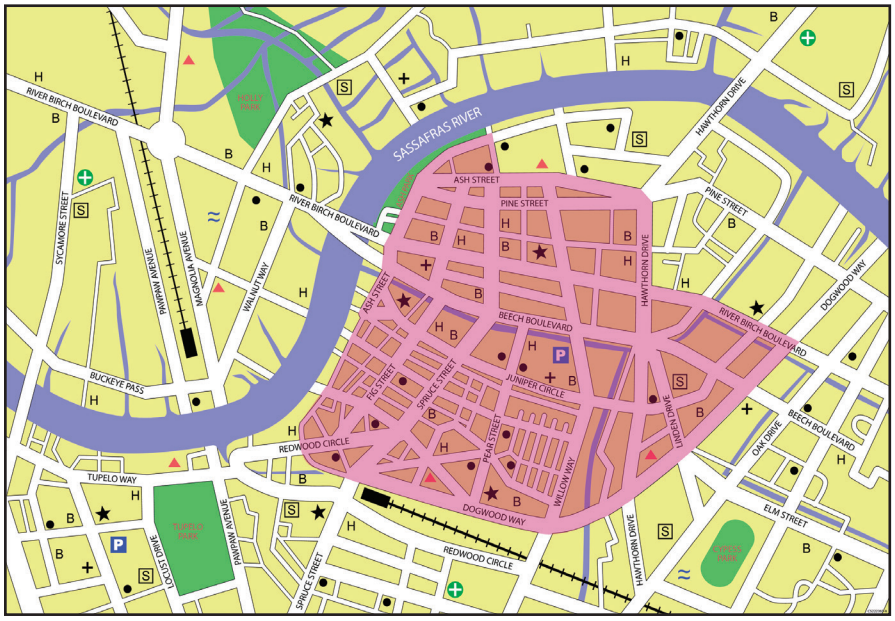
Identify the Geographic Boundaries

Boundaries

A key component of a drinking water advisory is to communicate clearly the area affected. Many customers do not know which water system provides their service and broadcast media usually reach a large audience beyond the affected area.

Clearly describe the boundaries of the affected area using street names, place names, building identification information (e.g., building numbers, unit numbers, wings, etc.) and well known reference points.

Figure 5: Example of a Simple Map to Designate an Area Affected by a Drinking Water Advisory



Maps

Maps help illustrate the affected area. Water systems can generate maps using internal or online mapping tools (e.g., geographic information system [GIS]). These maps can be posted on agency websites, or distributed electronically or as printed material. Update the map as the situation changes.

Maps Help Define The Area Affected

When possible, use maps and brief descriptions of the boundaries of the area affected. Maintain and update maps of the water service area. Maps can be sent out as printed or electronic versions. Make sure the maps:

- *Are presented at a legible scale with legible fonts*
- *Are uncluttered*
- *Reflect commonplace names and reference points*
- *Have crisp lines*
- *Are easy to read*

Descriptions

Clearly communicating the boundaries of affected areas also requires careful consideration of verbal descriptions so that spokespersons, radio, and other media can briefly but accurately depict the service area affected.

Notify Your Internal Staff and External Partners

Activate your internal communication SOP. Use information collected to brief staff. Depending on the situation, also brief your partners:

- Wholesale, consecutive, and neighboring water systems
- Public health department
- Critical customers (see **Critical Customer Checklist** to assist in identifying at-risk populations served by a water system)
- Public officials
- Emergency management
- Community organizations
- Businesses, childcare facilities, correctional facilities, food service, healthcare providers and facilities, and schools

Provide the **Call Center Data Checklist** to call center or customer service staff and partners.

Notes

Preparing an Advisory

Develop, Format, and Translate the Message

Use the information gathered in identifying the situation to develop the message. Particularly when dealing with chemical contaminants, consult with experts to understand the potential health impact and impact routes (e.g., ingestion, contact, aerosolization) so messages are customized to the contaminant; they may differ from more traditional microbial messages used in boil water advisories. Use tools, such as the **Message Mapping Template** and the **Sample Message Map** and the **Single Overriding Communication Objective (SOCO) Worksheet**.

Unless a state requires specific templates, revise the order and content of these templates based on the local circumstances. Remember to include the 10 required elements from the Public Notification Rule.

Understand the translation needs of your community. Use community partners or professional translation services to translate the message. Avoid using online dictionaries or other computer software.

Community partners are responsible for producing the message in formats that people they serve can read and understand, such as Braille, large font, or text messages. Today's communication channels are diverse. You will likely need to consider multiple channels in addition to traditional media.

Did You Know?

The Environmental Protection Agency (EPA) **Public Notification Rule (PNR) Quick Reference Guide** *is a good reference for the required elements of the Public Notification Rule*

Required Elements of a Public Notice

All public notices must include a clear and readily understandable explanation of each violation containing the following 10 elements from **EPA's Public Notification Rule (PNR) Quick Reference Guide**.

1. Description of the violation or situation, including contaminant(s) of concern and the contaminant level(s).
2. When the violation or situation occurred.
3. Any potential adverse health effects from drinking the water and standard language regarding the violation or situation.
4. Population at risk, including subpopulations that may be particularly vulnerable if exposed to the contaminant in their drinking water.
5. Whether alternate water supplies should be used.
6. Actions consumers should take, including when they should seek medical help, if known.
7. What the water system is doing to correct the violation or situation.
8. When the water system expects to return to compliance or resolve the situation.
9. Name, business address, and phone number of the water system owner, operator, or designee who can provide additional information concerning the notice.
10. A statement encouraging the notice recipients to share the notice with other persons, where applicable.

Abbreviated Messages

Some channels of communication only allow for brief messages because of time or space constraints, but can be disseminated widely and are heavily used by particular age groups that may be difficult to reach through other channels. Brief messages are appropriate for:

- On-screen scroll (e.g., local televised news, cable television, public service television channels, Emergency Broadcast System announcements)
- Text message systems (SMS)
- Social media (e.g., Facebook, Twitter, Reddit)
- Reverse 911 phone message systems
- Opt-in message systems (e.g., CodeRED alerts)
- Highway variable message signs and portable message boards

See the **Automated Messages** tool.

Abbreviated Message Template—Boil Water Advisory

The [water utility name] is asking customers to boil tap water or use bottled water. For more information, go to [www.watersystemwebsite.org] or call [###-###-####].

Message Development

The information on which to base the advisory can be captured in the **Information for Communication Planning** tool. The **Required Elements of a Public Notice** outlines the questions and information the drinking water advisory must address in its materials. **Key Questions for the Public Information Officer** may help in preparation for working with the media.

Approve the Advisory

Once the message has been developed and produced in appropriate formats, follow your communication SOP to have management approve the advisory.

Identify the Spokespersons

The person to serve as a spokesperson during a drinking water advisory can come from water system management or from an outside partner agency, such as a public health department. The spokesperson should be someone in authority who is honest, credible, competent, accessible, and sensitive to public concerns.

Tip

Abbreviated messages should include:

- *Basic message of action to take*
- *Location*
- *Contact information*
- *Where to get more information*

Follow the communication protocols discussed in Section 1 and use essential information to prepare spokespersons for interacting with the public and media. See **Basic Elements of a Spokesperson Statement**.

If there is not a designated spokesperson, assess staff options and identify an individual to fill this role. See **Spokesperson Assessment Tool**.

Assign Communication Responsibilities

Exchanging information and developing materials, such as news releases, among partners and water systems must be a coordinated effort. Liaisons should be designated staff who are the communications link for issuing an advisory and also for updating and lifting the advisory. Each organization or water system involved in an advisory should identify a liaison.

Work with your partners to assign specific communication roles and responsibilities. Develop a list that identifies who (which partner) will be contacting whom (a specific audience) and when that contact will occur. The water utility does not have to take on all the communication roles. Each partner has its own key contact lists that can help spread the workload and be most efficient and successful in message distribution.

Tip

When possible, the spokesperson should not be someone who is directly involved in operations.

Tip

Before meeting the press, a spokesperson should rehearse key messages and the responses to anticipated questions. See **SOCO Worksheet**, **Message Mapping Template**, *and* **Sample Message Map**.

Distributing an Advisory

Brief Elected and Public Officials

Brief the appropriate officials, partners, and stakeholders (e.g., large water users, large employers, hospitals, etc.) in existing and neighboring jurisdictions on the essential information before you notify the media. Media often will contact public officials rather than a water system for information and comments.

Implement Your Communication Platforms

Determining the most appropriate strategies and tools for a particular situation is a reflection of the severity of the public health concern and the ability to define clearly the affected area. Effective communication will require distribution through multiple methods:

- News media outlets are a primary means of distributing the advisory
- Automated message systems (help reach specific service areas quickly). See **Automated Messages** for more information.
- A website with easily found and regularly updated information (and associated social media buttons) is a key tool to efficiently disseminate information to various audiences (see **Website Information Checklist** and **Website Example**).
- Door-to-door contact or door hangers (this is a very effective method, but difficult to implement with large populations). See and download **Washington State's Boil Water Door Hanger—English and Spanish**.
- Hand-delivered fliers to households, businesses, and other organizations (e.g., schools, libraries, etc.)
- Social media (e.g., Facebook, Twitter, Reddit, etc.)
- Mobile apps (e.g., NextDoor, etc.)
- CodeRED Alert Systems

Automated Messages

Broadcast notification systems use a variety of commercially available systems that include:

- *Prerecorded or synthesized voices for brief messages,*
- *Text (SMS) for messages to cell phones, and*
- *E-mail for detailed messages to large groups.*

For more information, see ***Automated Messages***.

Use Your Communication Network to Expand Distribution of the Advisory

As noted in the **Collaborating with Partners** portion of Section 1: Before an Incident, network partners can assist with translating, formatting, and distributing messages to specific audiences.

- Coordinate with local public health departments to help alert hospitals, health care providers, childcare providers, and food service and preparation facilities (See **Appendix C: Online Resources, Additional Water and Health Resources** and **Appendix C: Online Resources, Disinfecting Water**).
- Coordinate with school districts and private schools, including colleges and universities.
- Use your communication network to reach diverse populations that may be outside mass media communication channels.

Communication Network

Local public health departments, government agencies, and community organizations are networks that can help communicate advisories. Access their expertise and communication resources when planning for and implementing advisories See **Communicating with Susceptible Populations Worksheet**.

Work with the Media

The Public Notification Rule requires wide distribution and encourages the use of mass media. General circulation newspapers, radio, television, websites, social media channels, and ethnic media are good channels for issuing advisories.

See **Basic Elements of a Spokesperson Statement**, **Working with the Media Template**, **Key Questions for the Public Information Officer**, **Media Alert Template**, **How to Use Press Release Templates**, **Tier 1 Public Notification Rule Compliant Press Release Template**, **Significant Pressure Loss Advisory Press Release Template**, and the **Advisory Update Press Release Template** for more information.

After issuing a press release, call media outlets to verify they received the release. Ask for the duty editor or news director. Take time to explain the importance of this information to the public. This is especially important for lifting an advisory.

Monitoring the media, customer calls, and the status of the advisory will guide decisions about the need for media activities. Press conferences, additional calls to reporters, or expanding media work with partners are necessary in large-scale advisories.

Media log

Use a log to track media contacts and reports. Logging media contacts gives a structure for follow up with updates or end-of-advisory notices. If the advisory includes multiple agencies or water systems, each organization should keep a log.

Tip

To meet the intent of the Public Notification Rule, health effects and other details must be included in the press release. Include phone numbers and websites in the full advisory. See **Required Elements of a Public Notice**.

Did You Know?

Ethnic media reaches 25 percent of the U.S. adult population. These adults are far more responsive to messages delivered by media from a similar culture or ethnic group. Forty-five percent of all African-American, American Indian, Hispanic, Asian-American, and Arab-American adults prefer ethnic television, radio, or newspapers to mainstream media channels See **Appendix C: Online Resources, Susceptible Populations**.

Working with the Media

- Get the facts straight. Who? What? When? Where? Why? How?
- Write the message to fit the circumstances.
- Keep all messages consistent.
- Edit, review, and get clearance for all media releases.
- **Use standard press release format.**
- Link to other information from relevant entities.
- Use e-mail, fax, and other methods to deliver the press release.
- Make follow-up calls to the media.
- Track contact with the media.
- Post the release and the advisory on the water system's website.
- Be honest with the media. If you do not know the answer to a question, say so, then offer to find the information.
- Discuss use of maps and visual aids with media outlets.
- Consider issuing a joint press release with the state and/or local health department.
- Send a release announcing the end of the advisory to media outlets and partners and post the announcement on your website.
- Make follow-up contact with media to encourage publicizing the end of the advisory.
- If the advisory is large or long-term, consider scheduling regular press conferences to keep the media up to date. These should be at a time that allows the media to meet press deadlines.

Media Evaluation

Look at media coverage during and after an advisory:

- *Does media coverage reflect the scope and scale of the incident?*
- *What is the tone of the coverage?*
- *What are the reactions in the community?*
- *Were updates covered by the media?*
- *How do the timing and placement of media stories link with the volume of customer service calls? (Look for the media's effect on customer questions.)*

Digital Media

Blogs and comments on websites DO NOT represent general public opinion. They DO give an idea of reactions and concerns.

Tier 1 PNR Compliant Press Releases

News editors will edit and reformat releases to fit their style and available space. Some of the required elements or language may be omitted. It is the water system's responsibility to post the official advisory in public places, apartments, schools, businesses, on websites, and other places as required by your state.

See the following tools and templates for guidance:

- How to Use Press Release Templates
- Tier 1 Public Notification Rule Compliant Press Release Template
- Significant Pressure Loss Advisory Press Release Template
- Advisory Update Press Release Template
- Ending an Advisory Press Release Template

Press Conferences and Briefings

News conferences or briefings become necessary during some advisories. Press conferences and briefings create additional work and demand extra resources, but they can eliminate the need to answer large numbers of media inquiries individually. Preparation helps ensure a successful press event. Speak with media outlets to ensure that briefings are held at a time that allows the media to meet press deadlines.

Planning a Press Conference

The first step is to refer to the messages and essential information developed for the advisory. These messages and information are the basis for media kits, advisories, and statements. Messages should be consistent in all communication.

Media kits are simply a collection of information to provide to the media. Media kits should have:

- A copy of the official advisory distributed to customers
- Copies of all the statements made by all participants
- Background information (See Water System Information Worksheet)

Notes

When planning a press conference, coordination with partners is absolutely required.

- Work with partners to plan the press conference, develop materials for media kits, and ensure appropriate clearance is obtained from each agency.
- Designate one person or group to organize the press conference and one person to act as the emcee. Emcee responsibilities include introducing speakers, managing the question and answer period, and closing the press conference.
- Identify a spokesperson for each organization participating in the press conference. See **Spokesperson Assessment Tool**.
- Use the essential information and messages to develop statements for each speaker. Brief the spokespersons prior to the incident and review messages and materials. Speakers need to know the order of their appearance and roles. See **Basic Elements of a Spokesperson Statement** and **Spokesperson Assessment Tool**.
- Rehearse before the session and practice statements and possible questions and answers. It is important to prepare for difficult questions. Plan a strategy in case the situation becomes contentious. Include all spokespersons if other agencies are involved. Phone calls can work if spokespersons cannot meet in person ahead of time.
- Plan logistics. This is central to a successful press conference. Study the location. The space should be accessible and have enough room, no echo, a central focus point, and a designated sign-in area. Media kits should be provided at the sign-in area. If possible, set aside a separate space for one-on-one interviews. On-site press conferences are more of a challenge. Use tape or cones to designate a specific safe area. Limit work noise and activity, if possible. Make it clear how long the press conference will last.
- Announce the press conference through media contacts. Develop a media alert and distribute it by e-mail, fax, or other methods. Follow up with calls to the media to make sure the right persons received the advisory. Select a time that will allow sound and video crews to set up equipment and all media to meet press deadlines. Use the **Media Alert Template**.

Tip

If the National Incident Management System (NIMS) is activated for the response, the release of information is through the Unified Command.

Tip

There could be instances of contamination (e.g., chemical contamination where flushing protocols are used) where the water system is brought back in stages. In this type of scenario, questions for clarification are likely to arise.

Conducting a Press Conference

With the right planning in place, the press conference should go smoothly. Make sure each media outlet signs in and has a media kit. Press conferences have a standard format:

- **Entrance:** Spokespeople enter the room or area in the order they are speaking.
- **Introductions:** The emcee gives a short summary of the reason for the press conference and introduces each spokesperson. One spokesperson may play this role if necessary.
- **Statement:** Spokespeople stand up, give their names and titles, and proceed with their statements.
- **Questions:** It is standard practice to have a question and answer session. The person doing the introductions should handle media questions and refer them to the best spokesperson for the topic.
- **Close:** Stick to the time allotted. The emcee thanks the media for their interest, states that the session is closed, and announces where to get more information and/or the time of the next update. Spokespersons leave the room.

After the Press Conference

If appropriate, the media can conduct one-on-one interviews directly after the press conference. Make sure to get back to any member of the media that asked for more information.

A debriefing, either in person or by phone, will identify concerns that are not addressed, determine changes needed in messages, and prepare participants for the next update. Information from a press debriefing should be incorporated into the advisory protocol during the evaluation process.

Notes

Ending an Advisory

Issue End of Advisory Notice

Federal regulations do not specify when to end an advisory. Water systems and drinking water primacy agencies consult with one another and with public health officials on the specific events around the advisory and use water quality criteria and protocols to make the decision to end or lift an advisory. State primacy agency criteria are typically based on laboratory testing (sampling) results.

When the water system and primacy agency end the advisory, communication moves to lifting the advisory. Develop and coordinate the end of the advisory messages with public health officials and partners. The same communication methods, media partners, and outlets used to distribute the advisory should also be used to lift the advisory.

Be clear about the information used to end the advisory and the timing. Specifically, include the information on which you are basing your decision to end the advisory (e.g., the lab tested the water and it was negative for indicators). Develop and include any information needed by customers to flush water lines, etc.

Be sure to send the end of advisory notice to all partners in the communication network and the media. Post this information on websites clearly showing date and time. See the **Ending an Advisory Press Release Template** as an example.

Steps to Issue an End to the Advisory

- *Update the media and partners.*
- *Update notifications in the affected area, including websites.*
- *Update affected customers electronically; for example, by automated messages or e-mail.*
- *Follow up earlier press releases with an end of advisory press release and phone calls.*

Section 3: After an Incident—Evaluating an Advisory

- Overview
- Checklist: After an Incident
- Reporting Requirements
- Debriefing an Incident
- Conducting an Evaluation
- Modifying Standard Operating Procedures (SOPs)
- Continued Public Outreach

Overview

Post-incident activities are essential to improve, learn, and prepare for future incidents. They should reflect the scope and scale of the incident.

The key is to understand what worked and what did not work during a drinking water advisory in order to improve the process for the future. Post-incident activities are meant to employ a lessons learned approach where improvements and enhancements are discussed and incorporated in procedures for the next time. Everyone who had a role in the incident should have a chance to contribute to the review process. The review should be conducted in a positive manner and should focus on ways to improve performance. Surveys of the public may be helpful in understanding what improvements are needed.

Icon Key

Tools and Templates

Resources

Assessing Expectations

Each advisory incident is an opportunity to compare planning to performance, and expectations to outcomes.

Checklist: After an Incident

Reporting Requirements

- ☐ Submit report to drinking water primacy agency.

Debriefing an Incident

- ☐ Debrief and conduct an after action review with staff and partners.

Conducting an Evaluation

- ☐ Perform an evaluation.
- ☐ Collect data and information related to the advisory.
- ☐ Analyze and synthesize the data.

Modifying Standard Operating Procedures (SOPs)

- ☐ Incorporate changes into SOPs.

Continued Public Outreach

- ☐ Identify additional communication steps.
- ☐ Follow up with the public.

Notes

Reporting Requirements

Submit Report to Drinking Water Primacy Agency

The Environmental Protection Agency (EPA) requires that a copy of any required public notice be submitted by the water system to their designated primacy agency. Consult with the designated primacy agency for additional reporting requirements.

See **Appendix C: Online Resources, Primacy Agency** to find examples of state primacy agency report forms.

Notes

Debriefing an Incident

Debrief and Conduct an After Action Review with Staff and Partners

Debriefing after an advisory helps organizations and communities understand what happened and why it happened during a drinking water advisory. A debriefing offers an opportunity to voice concerns and offer potential improvements. It often is informal and may be led by a neutral facilitator.

The format and size of the debriefing is based on the scope and scale of the drinking water advisory. In general, each division or organization that participated should be involved. Debriefings may benefit from having the perspective of an organization that was not involved but was affected by the drinking water advisory.

An After Action Review (AAR) is a structured form of debriefing that can compare planning with real activity. AARs can provide a clear understanding of what contributed to success and how to replicate it in the future. They also can provide a common understanding of where improvements can be made and who will be responsible for following through on agreed action steps. AARs describe outcomes and planned actions.

The debriefing and AAR process and tools can be adapted for individual exercises and debriefings. See the **Exercise Planning Template**.

See the **Debriefing Discussion Guide** and the **Sample Agenda for an After Action Review Meeting** as an example.

The following are steps for conducting a debriefing.

1. **Prepare:** The **Sample Agenda for an After Action Review Meeting** and the **Advisory Feedback Guide** can be used to plan a debriefing.
2. **Conduct:** Ground rules should be established. Consider using an outside neutral facilitator.
3. **Report:** Results of a debriefing can be incorporated into future planning efforts.

Debriefing Ground Rules

To facilitate a debriefing:

- *Respect colleagues. Refrain from personal remarks or assigning blame.*
- *Be honest and willing to share your knowledge and experience.*
- *Keep discussions about individual performance within the group.*
- *Read through the background information and consider the discussion questions.*
- *Accept the drinking water advisory as it happened.*
- *Avoid getting bogged down in small details.*
- *Think about the big picture.*
- *Provide paths forward and solutions where possible.*
- *Observe the time limits allotted for the debriefing.*

Conducting an Evaluation

Perform an Evaluation

Evaluation is an ongoing assessment of a drinking water advisory protocol. It is the comparison of SOP criteria to performance. The collection and analysis of subjective experiences along with the analysis of objective forms of data or information provide the foundation for evaluation. Even the most basic evaluation provides insight and can improve future advisories and overall communication.

The scope of an advisory and a water system's resources and capacities guide the evaluation process. The time, resources, and expertise needed for an evaluation vary with the scope. Evaluations can be conducted over time and in different stages. Evaluations draw on many sources of information, including, operational reports, debriefings, surveys, and public comment. See the **Debriefing Evaluation Form**.

Collect Data and Information Related to the Advisory

Different types of data are described below:

- **Quantitative data**, such as water quality data, Web analytics, and epidemiology statistics.
- **Qualitative data**, such as customer comments, media reports, staff memos, etc.

See **Appendix C: Online Resources, Data Management** for links to information on qualitative data collection.

See the **Advisory Feedback Guide** and **Call Center Data Collection Framework** for collecting information from partners.

Evaluation Tips

- *Make a list of evaluation questions.*
- *Identify the data sources.*
- *Link the sources.*
- *Proceed with the evaluation.*

Surveys

Water systems should consider surveying their customers about the advisory. Surveys can be used to determine the effectiveness of the advisory and to determine whether the advisory influenced personal actions

- Customer service surveys may include a section related to an advisory.
- Surveys can be designed to measure perceptions, actions, and communication effects and outcomes.
- The perceptions and recall of respondents will change with the amount of time that passes between an advisory and a survey.
- Surveys can be short and focused or longer to gather a full range of data.
- Online surveys offer a fast and efficient way to solicit and analyze feedback from a wide range of respondents.

Consult the **Post-Advisory Community Survey** or **CASPER** (Community Assessment for Public Health Emergency Response) for ideas about what to ask in a survey and for methods to use when conducting a survey.

Data Management

Manage data as it is collected. Data management activities may include:

- Storing data as hard and electronic copies in a central location for easy access.
- Requesting information from partners involved with the advisory.
- Asking partners about limitations or privacy policies that might limit the ability to report the data.
- Working with database experts to ensure that the database structure is optimal for doing the planned analysis.

Good Practice

Recognize that data sources and types vary by agency, capacity, and the scope and scale of the drinking water advisory.

Tip

Designate a central location to archive evaluation data.

Analyze and Synthesize the Data

Data sets are valuable when they are applied to improve future responses. The information collected should be analyzed, synthesized, and reported in a useful format. Use the data to develop questions for public outreach and for the basis of evaluation. Develop a plan for data analysis that will give the answers needed for improvement and decision making.

Appendix C: Online Resources, Data Management contains links to websites on data frameworks.

Table 2 presents examples of different types of resources and data that can be used to evaluate communication activities during a drinking water advisory.

Table 2: Examples of Types and Sources of Drinking Water Advisory Data

Water Systems	Public Health	Media
• Water Quality • Operations Reports • Customer Service • Reports/Interviews • Distribution • Sampling	• Surveillance • Laboratory Surveys	• Logs • Archive Review • Web Analytics

Notes

Modifying Standard Operating Procedures (SOPs)

Incorporate Changes into SOPs

Develop recommendations to improve communication and SOPs using information derived from the debriefing and evaluation processes. Incorporate changes in water system protocols and communication activities. Use a **Corrective Action Tracking Form** and the **Standard Operating Procedure (SOP) Updates**.

Participants of the advisory and debriefing need to know the results of the evaluation process. Reports should reflect the size and scope of the drinking water advisory and can range from a simple memo to a full-scale report. A report should summarize essential information for other post-incident steps. See the **Follow-Up Memo**.

Routine updating of contact lists is an essential task. Use the debriefing process as an opportunity to improve this resource. Ensure routine updating by including it in regular protocols. Build reminders, such as online calendar prompts, into plans to update contact lists.

Tip

Use the same approach for modifying SOPs after an exercise or an advisory.

Continued Public Outreach

Identify Additional Communication Steps

For the public, lifting an advisory may not be the end of the incident. An advisory may disrupt the community and undermine the public's confidence in the quality of the drinking water. Continued public outreach can help a water system maintain credibility and trust with customers and stakeholders following an advisory.

Follow up with the Public

Work with partners to identify, develop, and distribute additional outreach materials and activities to engage the public. These may include:

- Revised messages
- A letter to customers
- Updates to websites, newsletters, and bill inserts
- Meetings with reporters and editors

In addition, water systems should consider surveying their customers about the advisory. Surveys can be used to determine the effectiveness of the advisory and to determine whether the advisory influenced personal actions.

Water systems can use the annual Consumer Confidence Report (CCR) to further explain the advisory, give advice for future incidents, and provide other sources of information. Advisories due to contamination or a violation must be noted in the CCR tables and use specific EPA language.

Remember to use Federal Public Notification language when developing advisories when there are violations of National Primary Drinking Water Regulations under the Safe Drinking Water Act. This information can be found in 40 Code of Federal Regulations Part 141 (subpart Q, appendix B).

Media Tours

A media tour of water system facilities, labs, or distribution systems can give reporters a better understanding of advisories. Follow-up stories can explain the big picture, such as infrastructure needs and why water mains break. Water systems cannot control a media story, but can offer useful information.

Appendix A: Glossary of Terms and Abbreviations

Note: Terms in this glossary are defined by their use in this toolbox.

A

Abbreviated message: Brief communication with essential information that directs the reader to a separate location for additional information. It is typically delivered through electronic means, such as a phone message, a text message, a social media format, or a scroll on a television broadcast.

Advisory [Drinking Water Advisory]: Communication to water users (customers) about specific actions to take regarding water use.

After Action Review (AAR): A structured and facilitated discussion among participants in an event to compare what actually happened with what was intended to occur.

ASDWA: Association of State Drinking Water Administrators.

Automated message: Communication delivered through a mechanical system, such as a reverse 911 system.

AWWA: American Water Works Association.

B

Boil Water Advisory: Communication to customers of a water system about the need to boil water before using it.

C

Capacity: The ability of an organization to contribute resources, such as staff time, money, and expertise.

CCR: Consumer confidence report.

CDC: U.S. Centers for Disease Control and Prevention.

Coliform bacteria: Coliforms are a group of bacteria found in plant material, water, and soil. Coliforms are also present in the digestive tract and feces of humans and animals. Most of the time, these bacteria are not harmful. Total coliforms is another term for the full group of coliforms; they are indicators of possible water contamination.

Coliphage: A virus that infects bacteria is called a phage. Phages infect specific species of bacteria. Coliphages infect coliform bacteria. Coliphages do not infect humans or cause illness. A positive test for coliphages indicates the water may be contaminated with feces or *E. coli* or viruses.

Consecutive system: A water system that purchases its water supply from another water system.

Contaminant: An unwanted and/or undesirable chemical or microbe found in drinking water.

Corrective Action: The activities taken by a water system to fix an identified deficiency.

Crisis communication: A communication approach that relays the risks and benefits of different actions to agencies, consumers, and other stakeholders during an emergency or disaster.

Critical customer: Customers that receive priority notification during a drinking water advisory.

CS: Customer service.

D

Drinking Water Advisory: Water systems and state or local agencies issue drinking water advisories when they believe water quality is or may be compromised. Advisories tell individuals, schools, hospitals, businesses, and others about the situation and how to take immediate action.

Debriefing: An informal, semi-structured discussion with stakeholders, partners, and other participants after an advisory, exercise, or event, used to obtain useful information and improve or enhance operations.

Do Not Drink advisory: Communication to customers of a water system to avoid tap water and to use other sources of water for human consumption. A Do Not Drink advisory is used if boiling the water will not kill, inactivate, or remove the contaminant of concern, or if boiling would concentrate or release it into the air.

Do Not Use advisory: Communication to customers of a water system not to use tap water for any purpose, including sanitation and fire protection.

E

Escherichia coli (E. coli): A species of fecal coliform bacteria. *E. coli* almost always comes from animal feces. *E. coli* is considered the best indicator of fecal water contamination. If *E. coli* is present, harmful bacteria or other pathogens may also be present in the water. Some rare types of *E. coli*, such as O157:H7, can cause serious illness.

EPA: U.S. Environmental Protection Agency.

ERP: Emergency response plan.

Evaluation: A process that compares outcomes to expectations. Evaluation consists of systematically collecting information about the characteristics and outcomes of activities and comparing them to practices, protocols, and materials. Based on the comparison, recommended changes to practices, protocols, and materials can be made in order to reduce uncertainties and improve effectiveness in future actions and decisions.

Evaluator: An individual who observes and assesses the interactions and outcomes of an exercise. Evaluators do not participate in the exercise.

Exercise: A practice event based on a scenario to test the effectiveness of planning. Also called drill or tabletop exercise.

F

Facilitator: A designated individual to structure and run an exercise or debriefing.

Fecal coliform indicators: Groups of microbes, such as *E. coli*, enterococci, and coliphage, used under the Groundwater Rule to indicate possible water contamination.

G

Groundwater: Water from wells, springs, or aquifers used by water systems for drinking water.

H

Health literacy: The ability to receive, process, understand, and act on basic health information.

HSEEP: Homeland Security Exercise and Evaluation Program.

Homeland Security Presidential Directive 5 (HSPD-5): A presidential directive for management of domestic incidents that requires all federal departments and agencies to make adoption of the National Incident Management System (NIMS) by state, tribal, and local organizations a condition for federal preparedness assistance.

I

Incident Command System (ICS): A standardized, on-scene management approach used by all levels of government, many nongovernmental organizations, and the private sector to provide organizational structure for emergency response and recovery.

J

Jurisdiction: The sphere of authority related to legal responsibilities and that can be political/geographic (city, county, state) or functional (water service, public health).

M

Mandatory advisory: A notice or communication required by federal or state law and issued to protect public health.

MCL: Maximum Contaminant Level.

Message: The primary instructions, actions, and information expressed in a communication with an audience.

Message map: A risk communication tool to develop the most pertinent information about an incident or emergency. A message map is a set of organized statements that address likely questions about an incident.

MOU: Memorandum of understanding.

N

National Incident Management System (NIMS): A system to coordinate emergency preparedness and incident management among various federal, state, and local agencies. NIMS provides the template for the management of incidents.

Network: A group of partners that work together to achieve timely, effective, and extensive outreach. Some communities may have an existing collaboration, usually coordinated around emergency management.

Nitrate: Nitrate is a chemical found in most fertilizers, animal manure, and liquid waste discharged from septic tanks. Natural bacteria in soil can convert nitrogen into nitrate.

Notification: The process of communicating information to audiences per Environmental Protection Agency (EPA) requirements.

P

Partner: Any organization or agency that can help to plan, develop, and distribute messages.

pH: The measure of the acidity or alkalinity of a solution on a scale from 0–14.

Precautionary advisory: Communication to customers of a water system issued when contamination is suspected but not confirmed.

PIO: Public Information Officer.

PNR: Public Notification Rule.

Preparedness: Anticipating and planning response and recovery to unpredictable events.

Primacy agency: The agency that regulates and enforces community water systems under the Safe Drinking Water Act. Drinking water programs can be located in a state department of health, a state department of environment, or at the regional Environmental Protection Agency (EPA) level.

Public official: Any elected or appointed member of a jurisdictional or water system governing body.

R

Risk communication: An exchange of information and opinion among a water system, consumers, primacy agencies, public health authorities, and other stakeholders in both nonemergency situations and as part of crisis communication. This exchange assists customers as they evaluate information, put it into context, and make health-related decisions for themselves and those who depend on them.

S

Safe Drinking Water Act (SDWA): The main federal law that ensures the quality of Americans' drinking water. Under the SDWA, the Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

Scope, scale, and severity: Terms used in this project as criteria to help water systems define how much collaboration and outreach is needed for an advisory.

Scope:
The population, number of water systems, and/or jurisdictions involved with the advisory. The greater the number affected, the larger the scope.

Scale:
Size of the area affected, such as a neighborhood, entire city, or geographic region. The larger the area affected, the larger the scale of the response.

Severity:
Is this a routine situation or new? A disease outbreak or natural disaster or cross connection? The greater the threat to public health, the greater the severity.

Single Overriding Communication Objective (SOCO): A communication tool to identify the key point or objective to be conveyed in an interview with the media.

SOP: Standard Operating Procedures.

Spokesperson: An individual responsible for interfacing with the public, the media, and/or other agencies requiring information about an incident.

Strategic communication plan: A business management tool that community water systems can use for decision making and resource allocation in communicating with the public, customers, and other stakeholders.

Surface water: Water that collects on the ground and in an open body of water, such as a lake, stream, river, or pond.

Susceptible populations: Groups of people with conditions or medical needs that make them more vulnerable to the adverse effects of poor water quality. Susceptible populations include babies and young children, pregnant women, and people who are immunocompromised, elderly, or on dialysis.

T

Tier 1 Public Notice: The top level of public notice, which requires water systems to inform customers within 24 hours of a violation of the Safe Drinking Water Act (SDWA) standards because the situation poses an acute public health risk.

V

Variable Message Signs (VMS): VMS, also known as changeable message signs (CMS) or dynamic message signs (DMS), are electronic road signs that display messages.

W

Web analytics: The collection, measurement, analysis, and reporting of internet data for a specific website. Measures include number of visitors, page views, and time spent on a website.

Wholesale system: A public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

Appendix B: Tools & Templates

Before an Incident—Preparing for an Advisory

- Information for Communication Planning
- Point of Contact for Notification of an Advisory
- Communicating with Susceptible Populations Worksheet
- Message Mapping Template
- Sample Message Map
- Single Overriding Communication Objective (SOCO) Worksheet
- Spokesperson Assessment Tool
- Critical Customer Checklist
- Point of Contact Template
- Q&As and Fact Sheets—Advisory Advice
  - Quick Reference Facts
  - Frequently Asked Questions About Boil Water Advisories
  - Fact Sheet About What to Do During a Boil Water Advisory
  - Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida
  - Frequently Asked Questions About Do Not Drink Water Advisories
  - Frequently Asked Questions About Coliforms and Drinking Water
  - Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/HABs and Drinking Water
  - Frequently Asked Questions About Nitrates and Drinking Water
  - Frequently Asked Questions About Groundwater Rule Advisories
  - Frequently Asked Questions About What to Do After a Drinking Water Advisory
  - Preguntas frecuentes sobre lo que debe hacerse después de una advertencia de uso del agua potable
- Guidelines for Schools and Childcare Facilities During a Boil Water Advisory
- Guidelines for Hotels and Motels During a Boil Water Advisory
- Guidelines for Food Service Facilities During and After a Boil Water Advisory
- Recommendations for High Rise Buildings Before and During a Water-related Emergency
- Guidelines for Healthcare Facilities During and After a Boil Water Advisory
- Considerations for Dialysis Centers Before and During a Water Advisory
- Point of Contact for Coordination During an Advisory
- Water System Information Worksheet
- Exercise Planning Template

Information for Communication Planning

PURPOSE

This template helps guide the development of communication standard operating procedures (SOPs) for an advisory. Adapt this form for specific situations.

DIRECTIONS

Complete the information and include it in emergency response plans (ERPs) and standard operating procedures (SOPs). Give this form to partners and organizations in the advisory communication network and have a copy of the water system version. When each partner completes the form, compile them into one SOP and schedule regular updates.

PARTNER NAME _____

Point of Contact for Communication Planning

Name: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

E-mail: _____

Communication Plan Update Procedures
(including partners who will share responsibility for communicating with specific groups)

_____

_____

_____

_____

_____

Exercise Procedures and Schedule

_____

_____

_____

_____

_____

Point of Contact for Notification of an Advisory

Primary Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

1st Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

2nd Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

3rd Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

Standard Notification Procedures

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Point of Contact for Notification of an Advisory, continued

Special Notification Procedures (e.g., Do Not Use)

Actions After Notification

Partner and Network Information Distribution

Communicating with Susceptible Populations Worksheet

PURPOSE

Advisories and risk communication plans must consider the needs of specific populations who may be sensitive to water quality issues or who have communication barriers, such as limited English proficiency or limited vision.

The advisory network is critical for reaching these populations. Regulations and public expectations for outreach require collaboration with public health departments and other local agencies, including schools and community organizations.

DIRECTIONS

Use the contact list or database to identify, list, and note contacts for public health, local government agencies, and community organizations to help with outreach to susceptible populations.

- *Complete this form with public health, local agencies, and community partners.*
- *Include responsibilities and a time frame for developing materials and taking actions. Review the Lead and Copper Rule (LCR) Guidance (see* **Appendix C: Online Resources, Susceptible Populations**).
- *Include completed contact lists in emergency response plans (ERPs) and standard operating procedures (SOPs).*
- *Adapt them to reflect specific needs in a community. Some strategies may work for several populations. Include a schedule for updates. Add identified facilities to the water system's critical customer list.*

Low Literacy

- ☐ Encourage television news stations to announce advisory and contact phone numbers in addition to posting them on screen. Follow up with press releases.
- ☐ Use radio to distribute information. Radio is a key accessible source of information.
- ☐ Identify and coordinate with local organizations that serve low literacy populations and can help disseminate drinking water advisories in appropriate formats.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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Communicating with Susceptible Populations Worksheet, continued

Limited English Proficiency

- ☐ Identify languages widely spoken in the area. See **https://apps.mla.org/map_main** or **www.census.gov**.
- ☐ Determine local government and agency translation services and providers.
- ☐ Consider contracting for professional translation services.
- ☐ Work with public health, local government, and schools to identify, coordinate, and contract with skilled translators in the community.
- ☐ Use ethnic media outlets.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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Blind or Visually Impaired

- ☐ Work with social services and local government to identify organizations and communication options that serve people who are blind or visually impaired. Consider how a boil water advisory could be tailored for this audience.
- ☐ Use radio to distribute information. Radio is a key accessible source of information.
- ☐ Encourage television stations to announce advisories and contact numbers.
- ☐ Identify formats and tools to make written materials and web pages accessible for this audience.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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Communicating with Susceptible Populations Worksheet, continued

Deaf or Hard of Hearing

- ☐ Coordinate with local government, schools, and other agencies on policies for interpretation and resources.
- ☐ Encourage television news stations to broadcast all drinking water advisory information in open caption format and in their on-screen scrolls.
- ☐ Identify, coordinate, and contract with a sign language interpreter for news conferences in public forums and other events.
- ☐ Use automated messages in text and e-mail formats. They are a good method of distribution for this audience.
- ☐ Check with water system and local government on capacity to handle calls through Video Relay Service.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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Older Adults and Frail Elderly

- ☐ Work with public health, local government agencies, and community organizations to identify nursing homes, agencies, and organizations that assist older adults to help disseminate drinking water advisory information.
- ☐ Design messages with a clear alternative to boiling water. Boiling water may not be an option for this population.
- ☐ Identify resources, such as home healthcare, to help older adults and the elderly with support services during an emergency.
- ☐ Add meal delivery services, such as Meals on Wheels, to critical customer lists.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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Communicating with Susceptible Populations Worksheet, continued

Children

- ☐ Identify and coordinate with local health departments, school districts, pediatrician offices and clinics, and other agencies to disseminate drinking water advisory information.
- ☐ Target materials and messages to parents and teachers. Visual cues, such as posters or covering water fountains, will assist this group.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

_____

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Pregnant Women

- ☐ Identify and coordinate with local health departments, health clinics, hospitals, other healthcare facilities, obstetrician offices, and schools to disseminate drinking water advisory information relevant to pregnant women.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

_____

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_____

Physically and Mentally Impaired

- ☐ Work with public health and local government agencies to identify community organizations, such as independent living facilities and home healthcare, that assist people with physical and mental impairments to help disseminate drinking water advisories.
- ☐ Consider targeting messages both to care providers and to individuals.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

_____

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Communicating with Susceptible Populations Worksheet, continued

Homeless

- ☐ Identify locations where drinking water advisories can be posted (e.g., libraries, shelters, soup kitchens).
- ☐ Add homeless shelters and meal centers/food banks to critical customer lists.
- ☐ Design messages with a clear alternative to boiling water. Boiling water may not be an option for this population.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

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People with Compromised Immune Systems

- ☐ Work with the local public health department to identify and coordinate with medical facilities, healthcare providers, and organizations that serve people with compromised immune systems to disseminate drinking water advisories.
- ☐ List resources, specific messages, and materials needed to communicate with this population group.

_____

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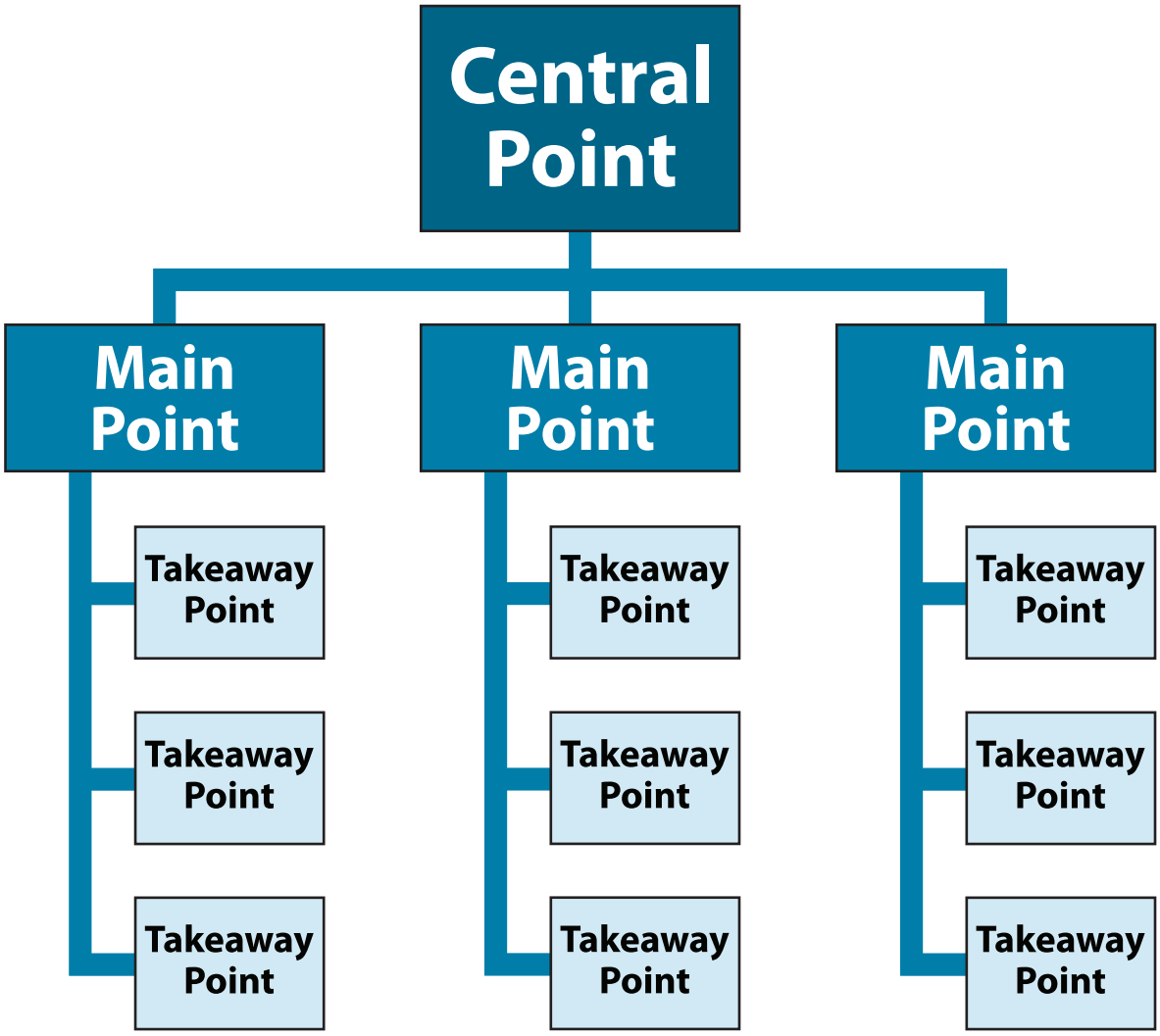
Message Mapping Template

PURPOSE

A message map is one tool to help identify messages and key information. Use this map for planning and complete with communication network partners. Adapt as necessary.

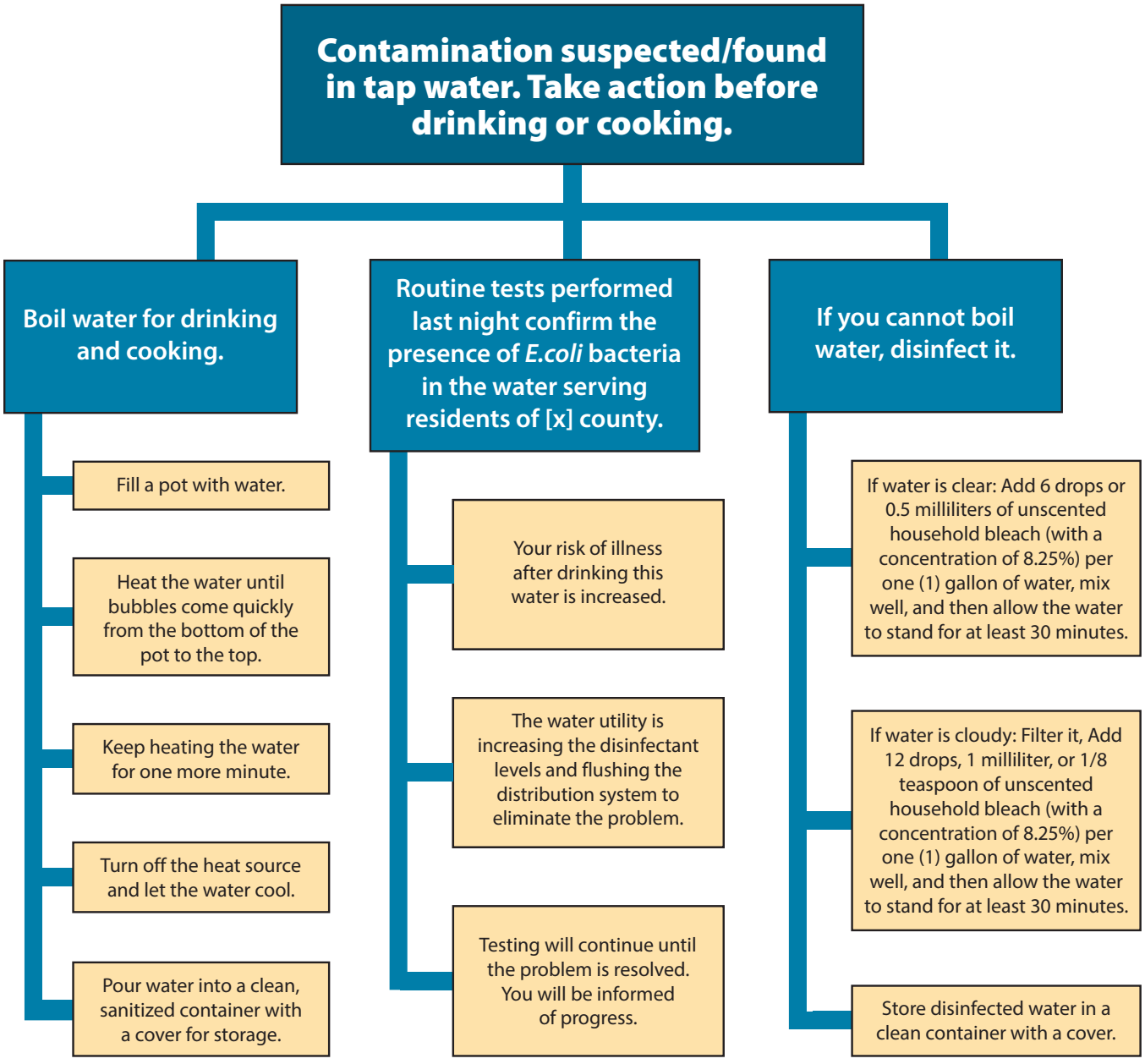
DIRECTIONS

Think about the specific actions people will need to take and information they will need to know during an advisory. Fill in each section of the map. Create maps for specific situations and audiences. Use the results to develop advisory materials and communication messages.



Sample Message Map

This is an example of a completed Boil Water Advisory message map.



Single Overriding Communication Objective (SOCO) Worksheet

PURPOSE

Advisories need a clear, consistent message. The SOCO (Single Overriding Communication Objective) Worksheet is a tool to create a specific message. Use the message developed in the SOCO Worksheet for all communication with the public and partners, including briefings and press releases. The point of contact information identifies the communication contact for the advisory. The SOCO approach applies to any water system communication.

DIRECTIONS

Work with water system staff and partners to complete the SOCO Worksheet. Use the best available information. First, think about the reason for the advisory and the actions needed. Next, answer each question. Use the results to develop all communication. As the situation changes, use this worksheet to update the message.

Key Message: Provides Meaning and Context

In one brief paragraph, state the key point or objective you want to communicate.

_____

_____

_____

_____

Key Facts

What are the three most important facts you need an individual to understand about the drinking water advisory?

_____

_____

_____

_____

Target Audience

Who is the main audience or population segment you would like this message to reach?
Who is the secondary audience?

Primary Audience: _____

Secondary Audience: _____

Tertiary Audience: _____

Single Overriding Communication Objective (SOCO) Worksheet, continued

Communication Objective:

What is the one message or action someone needs to understand?

_____

_____

_____

_____

Primary Contact

Who in your office/organization is the primary point of contact?

Name: _____

Phone: _____

Date and time available: _____

For more information on SOCO, See **Appendix C: Online Resources, Risk Communication**.

Spokesperson Assessment Tool

PURPOSE

This checklist is a guide to identifying a spokesperson for planning protocols or during advisories.

DIRECTIONS

Complete this form for each candidate.

Spokesperson Assessment	
Candidate:	
QUALIFICATIONS	**MEETS**
Level 1—BASIC	
Has authority to speak for the water system or other agency	
Is credible with the media and public	
Is adaptable and a quick study	
Is knowledgeable about the incident, effects, and actions	
Level 2—INTERMEDIATE	
Communicates technical information in terms the media can understand	
Is flexible while staying on message during media questions	
Handles pressure well	
Level 3—ADVANCED	
Has media or communication training/experience	
Is responsive to difficult or sensitive questions	
Accepts constructive advice	
Knows when to speak and when to defer to another	
Reflects the tone appropriate for audience and incident	
Other Factors to be Considered	
Has expertise related to incident	
Understands severity of the crisis	
Working with media would not conflict with management responsibilities	

Comments:

_____

_____

_____

Critical Customer Checklist

PURPOSE

This sample checklist reflects customers that should receive priority notification by phone, fax, e-mail, or Short Message Service (SMS) during a drinking water advisory, in addition to any other customer notification systems. This list can also serve as a basis for identifying partners to participate in the communication network.

DIRECTIONS

1. *Use this checklist to review current standard operating procedures (SOPs) and critical customer information in the customer service database.*
2. *Identify these facilities in the community and incorporate the information into SOPs.*
3. *Work with partners to prioritize lists in individual service areas. The health department may already have lists and contacts.*
4. *Work with partners and assign contact responsibilities.*

Tier 1 Critical Customers

- ☐ Food processing facilities
- ☐ Healthcare facilities such as hospitals, clinics, dialysis centers, and other medical facilities
- ☐ Jails
- ☐ Nursing homes
- ☐ Schools
- ☐ Special needs customers [some water systems have options for special needs customers to self-identify to receive priority alerts]

Tier 2 Critical Customers

- ☐ Airports
- ☐ Arenas, stadiums, and other large venues
- ☐ Colleges and universities
- ☐ High-volume customers
- ☐ Hotels
- ☐ Ice producers

This list balances customers in the community with critical needs and a water system's ability to maintain correct records and make timely notification when an advisory occurs. Key information fields for critical customers include the following:

1. Facility/business name
2. Primary point of contact (e.g., CEO, Environmental Health Officer, etc.)
3. Contact e-mail
4. Contact phone
5. Contact cell phone
6. Secondary point of contact
7. Secondary contact e-mail
8. Secondary contact phone
9. Secondary contact cell phone
10. Physical location of structures of concern

Point of Contact Template

PURPOSE

This is a template to organize partner and network contacts for an advisory.

DIRECTIONS

Complete the information for water system and network partners. Distribute completed information to all. Embed a schedule to update information regularly. Adapt this template to reflect each water system's partners and communication network.

Organization	Order	Name	Title	Office Phone (and Extension #)	Cell Phone	24/7 Phone	E-mail	Address
	Primary							
	1st Alternate							
	2nd Alternate							
	Primary							
	1st Alternate							
	2nd Alternate							
	Primary							
	1st Alternate							
	2nd Alternate							
	Primary							
	1st Alternate							
	2nd Alternate							
	Primary							
	1st Alternate							
	2nd Alternate							
	Primary							
	1st Alternate							
	2nd Alternate							

Q&As and Fact Sheets—Advisory Advice

PURPOSE

These fact sheets address common customer questions for drinking water advisories, including boil water advisories. The information on these pages was developed from Centers for Disease Control and Prevention (CDC), Environmental Protection Agency (EPA), water system, and primacy agency materials, such as fact sheets and guidance. The content was adapted to help water systems provide customers with clear and concise information and actions to take.

Water systems are encouraged to use this information to create their own communication materials. Recommendations may vary depending on the circumstances and severity of water contamination. Use the fact sheets in conjunction with the **Frequently Asked Questions About Boil Water Advisories** *and the* **Frequently Asked Questions About Do Not Drink Water Advisories**.

Select specific questions for each advisory situation. This information is for Tier 1 Public Notices. For a waterborne disease outbreak, consult with local and state public health authorities to adapt the information.

DIRECTIONS

- *Brackets [ ] indicate places to insert specific information, such as the water system name, health department information, or the contaminant.*
- *Limit fact sheets for customers to one page front and back.*
- *Spanish versions are available for selected Q&As.*
- *Refer to the fact sheets in this toolbox for additional topics, including:*
  - *Briefing materials for public health departments and other partners*
  - *Media kits and updates*
  - *Customer fact sheets*
  - *Websites and online tools*

Quick Reference Facts

PURPOSE:

This is an easy-to-use, quick reference tool for customers.

DIRECTIONS:

Use this information in fact sheets and on websites; adapt as necessary to suit the type of advisory (e.g., Boil Water, Do Not Drink, Do Not Use) and primacy agency guidance. Be sure to provide links to additional information or guidance.

Example of Quick Tips for a Boil Water Advisory

Use Tap Water for:	Use Boiled Water for:	Use Caution:
• *Washing clothes (unless the water is cloudy)* • *Washing hands* • *Taking showers (for adults and older children)* • *Flushing toilets*	• *Drinking* • *Brushing teeth* • *Washing fruits and vegetables* • *Preparing food* • *Mixing baby formula* • *Making ice* • *Giving water to pets*	• *Most kitchen and other household water filters do not remove bacteria or viruses* • *Coffee makers, vending machines, and soda dispensers with a line to the water supply* • *Bathing babies and young children (give sponge bath; use boiled water that has cooled)* • *Use clean, sanitized containers for storing boiled water*

Example of Quick Tips for a Do Not Drink Advisory

Use Tap Water for:	Use Bottled Water for:	Use Caution:
Approved actions will depend on the chemical or toxin present. A preliminary assessment of the contaminant must be completed before recommendations can be developed. In some instances, actions such as washing hands, flushing toilets, and showering with the contaminated tap water will be considered safe; in other instances, none or only a few of these actions will be permissible.	• *Drinking* • *Brushing teeth* • *Washing fruits and vegetables* • *Preparing food* • *Mixing baby formula* • *Making ice* • *Giving water to pets*	• *With appliances that use water. Many coffee makers, refrigerator water dispensers, vending machines, and soda dispensers have a line to the water supply* • *When bathing babies and young children as they might swallow water (give sponge bath and use bottled water)*

Frequently Asked Questions About Boil Water Advisories

PURPOSE

This list includes questions most often asked during boil water advisories. This information was developed from Centers for Disease Control and Prevention (CDC), Environmental Protection Agency (EPA), water system, and primacy agency materials. The content was adapted to help water systems provide customers with clear and concise information and actions to take.

Water systems are encouraged to use this information as a guide to help create their own fact sheets and other communication materials. Recommendations may vary depending on the circumstances and severity of water contamination. Select specific questions that are appropriate for each advisory situation.

This information is for Tier 1 Public Notices. For a waterborne disease outbreak, consult with local and state public health authorities to adapt the information.

While there are no federal regulations requiring boil water advisories, local authorities are responsible for issuing boil water advisories.

DIRECTIONS

- *Brackets [ ] indicate places to insert specific information, such as the water system name, health department information, or the contaminant.*
- *Limit fact sheets for customers to one page front and back.*
- *Refer to the fact sheets from the "Tools and Templates" in Section 1 and Section 2 of this toolbox for additional topics.*

Use the Q&As to develop scripts or fact sheets for water system staff, especially customer service and field crews. Uses include:

- *Briefing materials for public health departments and other partners*
- *Media kits and updates*
- *Customer fact sheets*
- *Websites and online tools*

Frequently Asked Questions About Boil Water Advisories, continued

Bottled Water

Should I drink bottled water during an advisory?

Yes. If bottled water is available, that is the best option until officials say otherwise. If you do not have bottled water available, the next best option is to boil your tap water to make it safe to drink.

Boiling Water

I do not have bottled water available for drinking. How do I boil my water to make it safe to drink?

- Fill a pot with water.
- Heat the water until bubbles come quickly from the bottom of the pot to the top.
- Keep heating the water for one more minute.
- Turn off the heat source and let the water cool.
- Pour water into a clean, sanitized container with a cover for storage.

I don't like the taste of boiled water. What can I do?

To improve the taste of boiled water you can:

- Pour cooled, boiled water back and forth from one clean glass or container into another to add air to the water, or
- Let the water stand for a few hours, or
- Add a pinch of salt to each quart of boiled water.

Why do I have to boil my water?

Your water [may be, is] contaminated by [bacteria, virus, protozoa, parasite]. Contamination [may be, is] due to [equipment failure, leaking/broken pipes in the system, insufficient disinfectant in the water supply]. The boil water advisory gives you information so you can take action to protect your health.

Disinfecting Water

I do not have bottled water for drinking and I cannot boil my water to make it safe to drink. How do I disinfect my water to make it safe to drink?

(Caution: Water contaminated with fuel or a toxic chemical will not be made safe by boiling or disinfection. Use another source of water if you know or suspect that your water might be contaminated with fuel or a toxic chemical.)

You will need a clean, sanitized container to store any water you disinfect. We recommend you clean and sanitize your container before you start to disinfect your water by following these steps:

1. Wash the storage container with dishwashing soap and water and rinse completely.
2. Sanitize the container with a solution made by mixing 1 teaspoon of unscented household bleach (bleach that does not have an added scent) in one quart (32 ounces, 4 cups, or about 1 liter) of water.

Frequently Asked Questions About Boil Water Advisories, continued

3. Cover the container and shake it well so that the sanitizing bleach solution touches all inside surfaces of the container.
4. Wait at least 30 seconds and then pour the sanitizing solution out of the container.
5. Let the empty sanitized container air-dry before use OR rinse the empty container with clean, safe water that is available already.

Note: When preparing safe water, it is best to use food grade water storage containers, such as those found at surplus or camping supply stores.

If you are not able to use a food grade water storage container, be sure the container you choose:

- Has a top that can be closed tightly
- Is made of durable, unbreakable materials (i.e. not glass)

DO NOT USE containers that previously have been used to hold liquid or solid toxic chemicals (bleach, pesticides, etc.)

To disinfect your tap water

If the tap water is clear:

- Use unscented household bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
- Add 6 drops (using a medicine dropper) or 0.5 milliliters of bleach to 1 gallon (16 cups) of water.
- Mix well and wait 30 minutes or more before drinking.
- Store disinfected water in a clean, sanitized container with a cover.

If the tap water is cloudy:

- Filter through a clean cloth
- Use unscented household bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
- Add 12 drops (using a medicine dropper), 1 milliliter, or 1/8 teaspoon of bleach to 1 gallon (16 cups) of water.
- Mix well and wait 30 minutes or more before drinking.
- Store disinfected water in a clean, sanitized container with a cover.

Frequently Asked Questions About Boil Water Advisories, continued

Food and Beverages

Can I use my coffee maker, ice machine, or water or soda dispenser?

Do not use water from any appliance connected to your water lines. This includes the water and ice dispensers in your refrigerator/freezer. Most kitchen and other household water filters typically do not remove or kill all bacteria or viruses.

- Use bottled, boiled, or disinfected water to make coffee and ice.
- When the boil water advisory is lifted, consult the owner's manual to find out how to sanitize appliances.

Can I use ice from my refrigerator/freezer ?

- Do not use ice from ice trays, ice dispensers, or ice makers.
- Throw out all ice made with tap water.
- Make new ice with bottled, boiled, or disinfected water.

What should I do about preparing food and beverages? How should I wash fruit, vegetables, and food preparation surfaces?

- Wash fruits and vegetables with bottled, boiled, or disinfected water.
- Use bottled or boiled water that has cooled to cook food.
- Use bottled, boiled, or disinfected water when preparing drinks, such as coffee, tea, and lemonade.
- Wash food preparation surfaces with bottled, boiled, or disinfected water.

What should I do about feeding my baby?

Breastfeeding is best. Continue to breastfeed. If breastfeeding is not an option:

- Use ready-to-use baby formula, if possible.
- Prepare powdered or concentrated baby formula with bottled water. Use boiled water if you do not have bottled water.
- Wash and sterilize bottles and nipples before use with bottled or boiled water.
- If you cannot sterilize bottles, try to use single-serve, ready-to-feed bottles.

How do I wash dishes during a boil water advisory?

Use disposable plates, cups, and utensils, if possible. If you do not have disposable dishes, follow the instructions below.

Household dishwashers generally are safe to use. If possible, set your dishwasher so it is using a hot water rinse or sanitizing cycle.

Frequently Asked Questions About Boil Water Advisories, continued

To wash dishes by hand:

- Wash and rinse the dishes as you normally would using hot water.
- In a separate basin, add 1 teaspoon of unscented household liquid bleach for each gallon of warm water.
- Soak the rinsed dishes in the water for at least 1 minute.
- Let the dishes air dry completely before using them again.

Health

I already drank the water. Will I get sick?

Most people who happen to drink this water will not get sick. If you do get sick, the symptoms are similar to food poisoning: nausea, diarrhea, cramps, and possibly a mild fever.

What should I do if I have symptoms?

The most important thing to do is avoid dehydration. Drink plenty of fluids and avoid drinks with caffeine, such as soda, coffee, and tea. If you are concerned about your health or the health of a family member, contact your healthcare provider or [local health department].

Household Information

Note: Some of the answers related to pet health may need to be customized once the nature of the contaminant or chemical is known and its effects on animal health is determined.

Should I give my pets boiled water?

Yes. Pets can get sick from the same contaminants as people. It is a good idea to give them bottled, boiled, or disinfected water. Boiled water should always be cooled before using.

Do I need to worry about my fish or aquatic pets (e.g., reptiles, frogs)?

Most germs that infect people do not infect reptiles or fish. If your water system is using more chlorine or changing disinfection, be cautious about changing the water in your fish tank or aquarium. Standard aquarium operations require removal of chlorine and chloramines, which can be toxic to fish and reptiles.

Contact your local pet store or veterinarian for more information.

Is it safe to water my garden and house plants?

Yes, you can use the tap water for household plants and gardens.

Is it safe to let my children play in a kiddie pool filled with tap water?

No. Due to the high chance that children will get water in their mouth while playing in a kiddie pool, we recommend that you avoid using your kiddie pool during the boil water advisory.

Frequently Asked Questions About Boil Water Advisories, continued

What [microbe, organisms, germs, bacteria] might be in the water?

Many types of microbes could be in the water. Water systems are concerned about bacteria such as shigella, viruses such as norovirus, and parasites such as *Cryptosporidium*.

Human illness from these microbes is usually caused by eating raw or undercooked food, ingesting contaminated recreational or other untreated water, or poor hand-washing. Diarrheal illness from these microbes is not usually life threatening, except in the elderly, the very young, or those with weak immune systems. If you are concerned, consult your healthcare provider or contact [local health department].

Hygiene

Can I use tap water to wash my hands?

In many situations, you can use tap water and soap to wash your hands. Follow the guidance of your local public health officials or emergency managers. Be sure to scrub your hands with soap and water (warm or cold) for 20 seconds and rinse them well under running water. It is important to dry hands completely with a towel or by letting them air dry.

Can I use tap water to brush my teeth?

No. Use bottled water or boiled water that has cooled to brush your teeth.

Is it safe to take a shower or bath?

Yes, it is safe to take a bath or shower, but be careful not to swallow any water. Use caution when bathing babies and young children. Consider giving them a sponge bath to reduce the chance of them swallowing water.

What about shaving?

Yes, you can shave as usual.

What about doing laundry?

Yes, it is safe to do laundry as usual.

Where can I get more information?

- Creating & Storing an Emergency Water Supply: CDC provides guidance on the amount of water needed for good health, as well as how to prepare and store safe water before and during an emergency.
- Hygiene, Handwashing, & Diapering: CDC provides guidance on recommended hygienic practices when water is not available or is contaminated.
- A Guide to Water Filters: CDC maintains a guide for choosing filters that remove pathogens, chemicals, or toxins.
- EPA Safe Drinking Water Hotline: 1-800-426-4791

Frequently Asked Questions About Boil Water Advisories, continued

- **Consumer Information**: EPA provides information and guidance about drinking water quality, emergencies, contaminants, public health issues, and treatment and storage.
- Water system: [name, title, phone, e-mail, website]
- State or local public health department: [name, title, phone, e-mail, website]
- Primacy Agency: [name, title, phone, e-mail, website]

Fact Sheet About What to Do During a Boil Water Advisory

During a boil water advisory, bottled water is the best option until officials say otherwise. If you do not have bottled water available, the next best option is to boil your tap water to make it safe to drink. If boiling your tap water is not possible, you can disinfect it to make it safe to drink.

Boiling water

To boil water

- Fill a pot with water.
- Heat the water until bubbles come quickly from the bottom of the pot to the top.
- Keep heating the water for one more minute.
- Turn off the heat source and let the water cool.
- Pour the water into a clean container with a cover for storage.

Disinfecting water

If you are unable to boil your water, you can disinfect it to make it safe to drink.

You will need a clean, sanitized container to store any water you disinfect. We recommend you clean and sanitize your container before you disinfect your water by following these steps:

1. Wash the storage container with dishwashing soap and water and rinse completely.
2. Sanitize the container with a solution made by mixing 1 teaspoon of unscented household bleach (bleach that does not have an added scent) in one quart (32 ounces, 4 cups, or about 1 liter) of water.
3. Cover the container and shake it well so that the sanitizing bleach solution touches all inside surfaces of the container.
4. Wait at least 30 seconds and then pour the sanitizing solution out of the container.
5. Let the empty sanitized container air-dry before use OR rinse the empty container with clean, safe water that is available already.

Note: When preparing safe water, it is best to use food grade water storage containers, such as those found at surplus or camping supply stores. If you are not able to use a food grade water storage container, be sure the container you choose:

- Has a top that can be closed tightly
- Is made of durable, unbreakable materials (i.e. not glass)

DO NOT USE containers that previously have been used to hold liquid or solid toxic chemicals (bleach, pesticides, etc.)

Fact Sheet About What to Do During a Boil Water Advisory, continued

To disinfect your tap water

If the tap water is clear:

- Use unscented bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
- Add 6 drops (using a medicine dropper) or 0.5 milliliters of bleach to 1 gallon (16 cups) of water.
- Mix well and wait 30 minutes or more before drinking.
- Store disinfected water in a clean, sanitized container with a cover.

If the tap water is cloudy:

- Filter water using clean cloth.
- Use unscented bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
- Add 12 drops, 1 milliliter, or 1/8 teaspoon of bleach to 1 gallon (16 cups) of water.
- Mix well and wait 30 minutes or more before drinking.
- Store disinfected water in a clean, sanitized container with a cover.

Water filters

You should boil your tap water even if it is filtered. Most kitchen and other household water filters do not remove bacteria or viruses.

Filters collect germs from water, so all water filters should be replaced after the advisory has been lifted. Anyone changing the cartridges should wear gloves and wash hands afterwards. Flush water through the filter for [X] minutes and then replace the removable part of the filter unit as needed.

Preparing and cooking food

Use bottled water or boiled water that has cooled to:

- Wash all fruits and vegetables
- Cook food
- Prepare drinks, such as coffee, tea, and lemonade
- Wash food preparation surfaces

Feeding babies and using formula

Breastfeeding is best. Continue to breastfeed. If breastfeeding is not an option:

- Use ready-to-use baby formula, if possible.
- Prepare powdered or concentrated baby formula with bottled water. Use boiled water if you do not have bottled water.

Fact Sheet About What to Do During a Boil Water Advisory, continued

- Wash and sterilize bottles and nipples before use using bottled or boiled water that has cooled.
- If you cannot sterilize bottles, try to use single-serve, ready-to-feed bottles.

Ice

- Do not use ice from ice trays, ice dispensers, or ice makers.
- Throw out all ice made with tap water.
- Make new ice with bottled or boiled water.

Handwashing

In many situations, you can use tap water and soap to wash your hands. Follow the guidance of your local public health officials or emergency managers. Be sure to scrub your hands with soap and water (warm or cold) for 20 seconds and rinse them well under running water. It is important to dry hands completely with a towel or by letting them air dry.

Bathing and showering

Be careful not to swallow any water when bathing or showering.

Use caution when bathing babies and young children. Consider giving them a sponge bath to reduce the chance of them swallowing water.

Brushing teeth

Brush teeth with bottled or boiled water that has cooled.

Washing dishes

Use disposable plates, cups, and utensils, if possible. If you do not have disposable dishes, follow the instructions below.

Household dishwashers generally are safe to use if the water reaches a final rinse temperature of at least 150 degrees or if the dishwasher has a sanitizing cycle.

To wash dishes by hand:

- Wash and rinse the dishes as you normally would using hot water.
- In a separate basin, add 1 teaspoon of unscented household liquid bleach for each gallon of warm water.
- Soak the rinsed dishes in the water for at least one minute.
- Let the dishes air dry completely before using again.

Laundry

It is safe to do laundry as usual.

Fact Sheet About What to Do During a Boil Water Advisory, continued

Pets

Pets can get sick from the same germs as people. It is a good idea to give them bottled water or boiled water that has been cooled for drinking.

For more information, see or contact:

- **Creating & Storing an Emergency Water Supply**: CDC provides guidance on the amount of water needed for good health, as well as how to prepare and store safe water before and during an emergency.
- **Hygiene, Handwashing, & Diapering**: CDC provides guidance on recommended hygienic practices when water is not available or is contaminated.
- **A Guide to Water Filters**: CDC maintains a guide for choosing filters that remove pathogens, chemicals, or toxins.
- EPA Safe Drinking Water Hotline: 1-800-426-4791
- **Consumer Information**: EPA provides information and guidance about drinking water quality, emergencies, contaminants, public health issues, and treatment and storage.
- Water system: [name, title, phone, e-mail, website]
- State or local public health department: [name, title, phone, e-mail, website]
- Primacy Agency: [name, title, phone, e-mail, website]

Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida

Durante una advertencia de uso de agua hervida, la mejor opción es usar agua embotellada hasta que las autoridades indiquen otra cosa. Si no tiene agua embotellada disponible, la segunda mejor opción es hervir el agua del grifo para que sea segura para beber. Si no es posible hervir el agua del grifo, puede desinfectarla para que sea segura para beber.

Cómo hervir el agua

Para hervir el agua

- Llene una olla con agua.
- Caliente el agua hasta que haya burbujas que suban rápidamente desde el fondo de la olla hasta la superficie.
- Continúe calentando el agua por un minuto más.
- Apague la fuente de calor y deje que se enfríe el agua.
- Vierta el agua en un envase limpio y tápelo para su almacenamiento.

Cómo desinfectar el agua

Si no puede hervir el agua, puede desinfectarla para que sea segura para beber.

Necesitará tener un recipiente limpio y desinfectado donde guardar el agua que desinfecte. Recomendamos lave y desinfecte su recipiente antes de desinfectar el agua, mediante los siguientes pasos:

1. Lave el recipiente con agua y jabón de lavar platos y enjuáguelo por completo.
2. Desinfecte el recipiente con una solución que se obtiene al disolver 1 cucharadita de cloro de uso doméstico no perfumado (cloro sin perfume agregado) en un cuarto de galón de agua (32 onzas, 4 tazas o aproximadamente 1 litro).
3. Cubra el recipiente y agítelo bien para que la solución desinfectante con cloro toque todas las superficies de dentro.
4. Espere al menos 30 segundos y vierta la solución desinfectante fuera del recipiente.
5. Deje que el recipiente vacío y desinfectado se seque al aire antes de usarlo O enjuáguelo con agua limpia y segura que tenga disponible de antemano.

Nota: Cuando prepare el agua segura, es mejor usar recipientes de agua de uso alimentario, como los que pueden encontrarse en las tiendas de artículos para camping o de excedentes militares. Si no puede usar un recipiente de agua de uso alimentario, asegúrese de que el recipiente que elija:

- Tenga una tapa que pueda cerrarse completamente.
- Esté hecho de materiales durables que no se puedan romper (es decir, no de vidrio).

NO USE recipientes que se hayan usado previamente para almacenar sustancias químicas tóxicas líquidas o sólidas (cloro, pesticidas, etc.).

Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida, continuación

Cómo desinfectar el agua del grifo

Si el agua del grifo es clara:

- Use cloro no perfumado (cloro sin perfume agregado). La etiqueta debe decir que contiene 8.25% de hipoclorito de sodio.
- Agregue 6 gotas (medidas con un gotero de medicamentos) o 0.5 mililitros de cloro en 1 galón (16 tazas) de agua.
- Mezcle bien y espere 30 minutos o más antes de beber.
- Guarde el agua desinfectada en un recipiente limpio, desinfectado y con tapa.

Si el agua del grifo está turbia:

- Filtre el agua con un paño limpio.
- Use cloro no perfumado (cloro sin perfume agregado). La etiqueta debe decir que contiene 8.25% de hipoclorito de sodio.
- Agregue 12 gotas, 1 mililitro o 1/8 de cucharadita de cloro en 1 galón (16 tazas) de agua.
- Mezcle bien y espere 30 minutos o más antes de beber.
- Guarde el agua desinfectada en un recipiente limpio, desinfectado y con tapa.

Filtros de agua

Debe hervir el agua del grifo aunque esté filtrada. La mayoría de los filtros de agua de cocina o de los otros filtros de uso doméstico ***no eliminan*** las bacterias ni los virus.

Los filtros recolectan los microbios del agua, por lo tanto, todos los filtros de agua deben ser reemplazados después de que la advertencia haya terminado. Las personas que cambien los cartuchos deben usar guantes y lavarse las manos después. Deje correr agua por el filtro durante [X] minutos y luego reemplace la parte removible del filtro según corresponda.

Cómo preparar y cocinar alimentos

- Use agua embotellada o agua hervida (que se haya enfriado) para lo siguiente:
  - Lavar todas las frutas y verduras.
  - Cocinar los alimentos.
  - Preparar bebidas, como café, té y limonada.
  - Lavar las superficies donde se preparan los alimentos.

Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida, continuación

Alimentación de bebés y uso de fórmula

La alimentación con leche materna es lo mejor. Continúe amamantando. Si amamantar no es una opción:

- Use fórmula para bebés lista para usar, si es posible.
- Use agua embotellada para preparar la fórmula para bebés en polvo o concentrada. Use agua hervida si no tiene agua embotellada disponible.
- Antes de usar los biberones y las tetinas lávelos y esterilícelos con agua embotellada o hervida (que se haya enfriado).
- Si no puede esterilizar los biberones, trate de usar biberones de un solo uso o listos para usar.

Hielo

- No use el hielo de las hieleras, los dispensadores de hielo ni las máquinas de hielo.
- Bote todo el hielo hecho con agua del grifo.
- Haga hielo nuevo con agua embotellada o hervida.

Lavado de manos

En muchas situaciones, puede usar el agua del grifo con jabón para lavarse las manos. Siga las pautas de las autoridades de salud pública locales o del personal de manejo de emergencias. Asegúrese de restregarse las manos con agua y jabón (fría o tibia) durante 20 segundos y de enjuagárselas bien bajo agua corriente. Es importante secarse las manos por completo con una toalla o al aire.

Baños y duchas

Tenga cuidado de no tragar agua cuando se bañe o se duche.

Sea precavido cuando bañe a bebés y niños pequeños. Considere darles baños de esponja para reducir la probabilidad de que traen agua.

Cepillarse los dientes

Cepíllese los dientes con agua embotellada o agua hervida (que se haya enfriado).

Lavado de platos

Use platos, tazas, vasos y utensilios desechables, si es posible. Si no tiene platos desechables, siga las instrucciones a continuación. En general es seguro usar los lavaplatos de uso doméstico si el agua alcanza una temperatura final de enjuague de al menos 150 grados o si el lavaplatos tiene un ciclo de desinfección.

Para lavar los platos a mano:

- Lave y enjuague los platos como lo haría normalmente usando agua caliente.
- En un recipiente por separado, disuelva una cucharadita de cloro líquido de uso doméstico no perfumado por cada galón de agua tibia.

Hoja informativa acerca de lo que debe hacerse durante una advertencia de uso de agua hervida, continuación

- Deje remojaren el agua los platos ya enjuagados por al menos un minuto.
- Deje que los platos se sequen por completo al aire antes de volverlos a usar.

Lavado de ropa

Es seguro lavar la ropa normalmente.

Mascotas

Las mascotas pueden enfermarse por los mismos microbios que las personas. Es una buena idea darles para beber agua embotellada o agua hervida (que se haya enfriado).

Para obtener más información:

- **Cómo crear y almacenar una reserva de agua de emergencia**: Los CDC proveen pautas sobre la cantidad de agua necesaria para la buena salud, así como también sobre la manera de preparar y almacenar agua que sea segura, antes y durante una emergencia.
- **Higiene, lavado de manos y cambio de pañales**: Los CDC proveen pautas sobre las prácticas de higiene recomendadas cuando no haya agua disponible o cuando el agua esté contaminada.
- **Guía sobre los filtros de agua**: Los CDC mantienen una guía para elegir filtros que eliminan agentes patógenos, sustancias químicas o toxinas.
- Línea directa de la EPA de información sobre agua potable segura: 1-800-426-4791.
- **Información para el consumidor**: La Agencia de Protección Ambiental (EPA) proporciona información y pautas sobre la calidad del agua potable, emergencias, agentes contaminantes, problemas de salud pública, y tratamiento y almacenamiento.
- Sistema de agua: [nombre, título, teléfono, correo electrónico, sitio web]
- Departamento de salud estatal o local: [nombre, título, teléfono, correo electrónico, sitio web]
- Agencia principal: [nombre, título, teléfono, correo electrónico, sitio web]

Frequently Asked Questions About Do Not Drink Water Advisories

Note: A number of questions likely to arise in this type of contamination incident, such as the ability to use the water for things like handwashing and showering, will depend on the specific nature of the contaminant in question. Once the water utility has identified the contaminant, it will be able to better tailor its responses to these types of questions.

PURPOSE

This list includes questions most often asked during a "Do Not Drink" water advisory. The content was adapted to help water systems provide customers with clear and concise information and actions to take.

Water systems are encouraged to use this information as a guide to help create their own fact sheets and other communication materials. Recommendations may vary depending on the circumstances and severity of water contamination. Select specific questions that are appropriate for each advisory situation.

This information is for Tier 1 Public Notices. For a waterborne disease outbreak, consult with local and state public health authorities to adapt the information.

DIRECTIONS

- *Brackets [ ] indicate places to insert specific information, such as the water system name, health department information, or the contaminant.*
- *Limit fact sheets for customers to one page front and back.*
- *Refer to the fact sheets from the "Tools and Templates" in Section 1 and Section 2 of this toolbox for additional topics.*

Use the Q&As to develop scripts or fact sheets for water system staff, especially customer service and field crews. Uses include:

- *Briefing materials for public health departments and other partners*
- *Media kits and updates*
- *Customer fact sheets*
- *Websites and online tools*

Frequently Asked Questions About Do Not Drink Water Advisories, continued

Can I boil my water to make it safe to drink?

No. Because of the nature of the water contamination, boiling your water will not make it safe to drink. Use only bottled water for drinking.

Can I disinfect my water to make it safe to drink?

No. Because of the nature of the water contamination, disinfecting your water will not make it safe to drink. Use only bottled water for drinking.

Should I use bottled water?

Yes. Bottled water is the only water that is safe to drink at this time until further notice. Bottled water is available at [insert locations here].

Food and Beverages

Can I use my coffee maker, ice machine, water dispenser, or soda dispenser?

No. Do not use water from any appliance connected to your water lines. This includes the water and ice dispensers in your refrigerator/freezer and dishwasher. If your appliance is not connected to your water line (e.g., a free standing coffee maker), you can use it, but use bottled water in place of tap water.

When the advisory is lifted, consult the owner's manual to find out how to flush and sanitize appliances.

Can I use ice from my refrigerator/freezer?

No.

- Do not use ice from ice trays, ice dispensers, or ice makers.
- Throw out all ice made with tap water.

Can I use tap water to cook food (such as pasta, rice, noodles, etc.)?

No. Until you receive updated instruction from local officials, bottled water should be used for food preparation.

What should I do about preparing food and beverages? How should I wash fruit, vegetables, and food preparation surfaces?

- Wash fruits and vegetables with bottled water.
- Prepare drinks, such as coffee, tea, and lemonade with bottled water.
- Wash food preparation surfaces with bottled water.

Frequently Asked Questions About Do Not Drink Water Advisories, continued

What should I do about feeding my baby?

Breastfeeding is best. Continue to breastfeed. If breastfeeding is not an option:

- Use ready-to-use baby formula, if possible.
- Prepare powdered or concentrated baby formula with bottled water.
- Wash and sterilize bottles and nipples with bottled water before use.
- If you cannot sterilize bottles, try to use single-serve, ready-to-feed bottles.

How do I wash dishes?

Use disposable plates, cups, and utensils, if possible. If you do not have disposable dishes, wash dishes by hand and use only bottled water and dish soap.

Health

What should I do if already drank the water?

If you are concerned about your health or the health of a family member, contact your healthcare provider or [local health department].

Household Information

Should I give my pets bottled water?

Pets can get some of the same diseases as people, so it is a good idea to give them bottled water, as well.

Do I need to worry about my fish or aquatic pets (e.g., reptiles, frogs)?

Contact your local pet store or veterinarian for more advice.

Is it safe to water my garden and house plants?

Follow the guidance of your local health authorities for advice on using tap water for household plants and gardens.

Is it safe to let my children play in a kiddie pool filled with tap water?

No. Due to the high chance that children will get water in their mouth while playing in a kiddie pool, we recommend that you avoid using your kiddie pool during the advisory.

Frequently Asked Questions About Do Not Drink Water Advisories, continued

Hygiene

Can I use tap water to wash my hands?

Follow the guidance of your local health authorities or water utility for advice on using tap water to wash hands.

Can I use tap water to brush my teeth?

No. Use bottled water to brush your teeth.

Is it safe to take a shower or bath?

Follow the guidance of your local health authorities or water utility for advice on using tap water for showering and bathing.

What about doing laundry?

Follow the guidance of your local health authorities or water utility for advice on doing laundry.

Where can I get more information?

- Water system: [name, title, phone, e-mail, website]
- State or local public health department: [name, title, phone, e-mail, website]
- Primacy Agency: [name, title, phone, e-mail, website]
- EPA Safe Drinking Water Hotline: 1-800-426-4791
- **Consumer Information**: EPA provides information and guidance about drinking water quality, emergencies, contaminants, public health issues, and treatment and storage.

Frequently Asked Questions About Coliforms and Drinking Water

What are coliforms?

Coliforms are a group of bacteria found in plant material, water, and soil. Coliforms are also present in the digestive tracts and feces of humans and animals. Most of the time, these bacteria are not harmful.

Why does a water system test for coliforms?

Water systems test for indicators such as total coliforms, fecal coliforms, or *E. coli* to monitor water quality. If the water system has a positive test for one of these indicators, it can mean recent contamination with soil or human feces.

What does a positive coliform test result mean?

A positive coliform test means possible contamination and a risk of waterborne disease. A positive test for total coliforms always requires more tests for fecal coliforms or *E. coli* to determine the risk of fecal contamination that could lead to health effects. A confirmed positive test for fecal coliforms or *E. coli* means you need to take action as advised by your water system.

Will coliform bacteria make me sick?

Most coliform bacteria are a normal part of the environment. They do not cause disease but do indicate the water might be contaminated by soil or feces. Some rare types of coliforms, such as *E. coli* O157:H7, (which is not the *E. coli* that water utilities test for), can cause serious illness. Although most *E. coli* O157:H7 outbreaks are from eating raw or undercooked food, cases from contaminated drinking water can occur, but are rare.

Why test for indicator organisms?

A biological pathogen is any organism—such as a bacteria, virus, protozoa, or parasite—that causes a disease. Biological pathogens are commonly called "germs." There are many different possible pathogens. It is not possible to test for every type of pathogen in every water sample, so water systems use indicators of fecal contamination instead.

Water systems test for indicator organisms, like coliforms, to check for possible contamination by pathogens. Most coliforms are not harmful, but they come from the same sources as other bacteria and organisms that could make you sick.

What are "indicator" organisms?

- Indicator organisms come from the same sources as organisms that make you sick. Indicator organisms are easier to identify, are present in larger numbers, and respond to water treatment the same way as harmful bacteria and many other pathogens. A biological pathogen is any organism—such as a bacteria, virus, or parasite—that causes a disease. Pathogens are commonly called "germs".
- **Total coliforms** is another term for the full group of coliforms. They are indicators of possible water contamination.
- **Fecal coliforms** are one type of coliform bacteria that is found found mainly in animal digestive tracts and feces. Fecal coliforms are a more specific indicator of fecal contamination of water than coliforms.

Frequently Asked Questions About Coliforms and Drinking Water, continued

- ***E. coli (Escherichia coli)*** is a species of fecal coliform bacteria. *E. coli* almost always comes from animal feces. *E. coli* is considered the best indicator of fecal water contamination. If *E. coli* is present, harmful bacteria or other pathogens may also be present.

For more information see or contact:

- **Creating & Storing an Emergency Water Supply**: CDC provides guidance on the amount of water needed for good health, as well as how to prepare and store safe water before and during an emergency.
- **Hygiene, Handwashing, & Diapering**: CDC provides guidance on recommended hygienic practices when water is not available or is contaminated.
- **A Guide to Water Filters**: CDC maintains a guide for choosing filters that remove pathogens, chemicals, or toxins.
- EPA Safe Drinking Water Hotline: 1-800-426-4791
- **Consumer Information**: EPA provides information and guidance about drinking water quality, emergencies, contaminants, public health issues, and treatment and storage.
- Water system: [name, title, phone, e-mail, website]
- State or local public health department: [name, title, phone, e-mail, website]
- Primacy Agency: [name, title, phone, e-mail, website]

Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/ HABs and Drinking Water

What are cyanobacteria?

Cyanobacteria, also called blue-green algae, are microscopic organisms found naturally in all types of water. They live in fresh, brackish (a combination of salt and fresh water), and salt water. These organisms use sunlight to make their own food. In warm, nutrient-rich (high in phosphorus and nitrogen) waters, cyanobacteria can multiply quickly, creating blooms that spread across the water's surface.

How are cyanobacterial blooms formed?

Cyanobacterial blooms form when cyanobacteria start to multiply very quickly. Blooms can form in warm, slow-moving waters that are rich in nutrients from sources such as fertilizer runoff or septic tank overflows. Cyanobacterial blooms generally need an abundance of nutrients to grow. The blooms can form at any time, but most often form in late summer or early fall.

What does a cyanobacterial bloom look like?

You may or may not be able to see cyanobacterial blooms. Cyanobacteria can be found below the water's surface and other times they can float to the surface. Some cyanobacterial blooms can look like foam, scum or mats, particularly when the wind blows them toward a shoreline. Cyanobacterial blooms in freshwater systems are mostly blue-green (or green) in color. Blooms can look like paint floating on the water's surface. As cyanobacteria in a bloom die, the water may smell bad, similar to rotting plants. A cyanobacterial bloom can be toxic, however, you cannot tell if a bloom is producing toxins by looking at it.

Why are some cyanobacterial blooms harmful?

Cyanobacterial blooms may affect people, animals, or the environment in the following ways:

- Cyanobacteria in the blooms may produce toxins called cyanotoxins. They can make people, their pets and other animals sick. Unfortunately, there are no remedies to counteract the effects.
- The blooms can block or reduce the sunlight that other organisms need to live.
- They use up nutrients that other organisms need to live.
- They use up the oxygen in the water as they die down.

How can people and animals come in contact with cyanobacteria and cyanotoxins in the environment?

People and animals can come in contact with cyanobacteria and cyanotoxins that are in the environment by:

- Ingestion of cyanotoxin-contaminated water and food.
- Swimming or performing other recreational activities in or on waters that have cyanobacterial blooms and/or cyanotoxins.
- Being on land in the vicinity of a bloom where the wind may blow toxin overland.

Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/ HABs and Drinking Water, continued

How do cyanotoxins affect drinking water quality?

Cyanobacterial blooms that create cyanotoxins can occur in source waters (e.g., lakes or rivers) that are used to supply drinking water. Winds and water currents can transport these blooms near drinking water intakes at water treatment plants. If cyanotoxins are not removed during drinking water treatment, people can be exposed to cyanotoxins through their tap water. Cyanobacteria may produce taste and odor compounds that could cause problems in drinking water.

What are the health effects in humans and animals from exposure to cyanotoxins?

If cyanotoxins occur in tap water over a 10-day time period at levels above the national drinking water Health Advisories, people are at risk of various adverse health effects including upset stomach, vomiting and diarrhea as well as liver and kidney damage.

Exposure to cyanobacterial blooms in recreational water (e.g., lakes) has reportedly lead to allergic reactions, including hay fever-like symptoms; skin rashes; and pulmonary and gastrointestinal distress (diarrhea, vomiting, and stomach pain). Animals that swim in contaminated recreational water can be at risk for serious health effects or even death.

Are sensitive populations or infants fed by nursing mothers at risk?

Populations such as nursing mothers and pregnant women, those with pre-existing liver conditions, those receiving dialysis treatment, the elderly and other sensitive populations may be at risk of experiencing adverse health effects of cyanotoxins at lower levels.

Are there filters I can use to remove cyanotoxins from my tap water?

Third-party organizations are currently developing certification standards for in-home devices and are evaluating how reliably they can remove cyanotoxins from drinking water. The NSF International has certified some filters in their ability to reduce microcystin to below the national Health Advisory levels. More information about these treatment units and the contaminants they can remove can be found at: **http://www.nsf.org/Certified/DWTU/**

How do I protect myself, my family, and animals from cyanotoxins?

To protect yourself, your family, and animals from cyanotoxins:

- If a drinking water advisory is issued for cyantoxins, follow the recommendations described in the advisory notification. If you are concerned about the potential occurrence of cyanotoxins in drinking water please contact your public water system.
- Report any "musty" smell or taste in your drinking water to your local water utility or your local health department.
- Do not let family members or animals swim in a water body with an ongoing bloom.
- Check to see if your state provides routine analysis of recreational waters.

Frequently Asked Questions About Cyanobacterial Blooms/Cyanotoxins/ HABs and Drinking Water, continued

How are people or animals that have been exposed to cyanobacterial blooms/cyanotoxins treated?

- If you, family members or your animal comes in contact with a cyanobacterial bloom, wash yourself and your pet thoroughly with fresh water.
- If you are concerned about your health, the health of a family member, or the health of your animal, contact your health care provider, a Poison Center, a veterinarian or [your local health department].
- Call a veterinarian if your animal shows any of the following symptoms of cyanobacteria poisoning: loss of appetite, loss of energy, vomiting, stumbling and falling, foaming at the mouth, diarrhea, convulsions, excessive drooling, tremors and seizures, or any other unexplained sickness after being in contact with water. Tell your veterinarian that your animal has been in water that may have a cyanobacterial bloom.

How can I help reduce cyanobacterial blooms from forming?

Reducing nutrient pollution, such as excess nitrogen and phosphorus, is essential to reducing the formation of cyanobacterial blooms. Excess nutrients may originate from agricultural, industrial, and urban sources as well as from atmospheric deposition. Things you can do to reduce nutrients in your local waterways include:

- Use only the recommended amounts of fertilizers on your yard and gardens to reduce the amount that runs off into the environment.
- Properly maintain your household septic system.
- Maintain a buffer of natural vegetation around ponds and lakes to filter incoming water.
  - » Stop fertilizing within 20 feet of the pond.
  - » Plant natural vegetation around ponds and lakes to filter incoming water.
- Do not add fertilizers when the ground is frozen.
- Do not apply fertilizer immediately before or during rain and snow.

Is there testing for cyanotoxins in water?

There is no national requirement for monitoring cyanotoxins, but some states may have monitoring requirements. There are currently several methods available to test for cyanotoxins. These range from products that can be used by a properly trained utility operator or water resource manager to highly complex methods that require sophisticated equipment and highly trained laboratory technicians.

For more information on cyanobacterial blooms and cyanotoxins, please visit **www.cdc.gov/habs**, **http://www.epa.gov/cyanohabs**, and **https://www.epa.gov/ground-water-and-drinking-water/cyanotoxins-drinking-water**.

Frequently Asked Questions About Nitrates and Drinking Water

What is nitrate?

Nitrate (NO3-) is a form of nitrogen. It is a natural part of soil and groundwater. In some areas of the country, human activities (such as fertilizer use and manure applications, failing or improperly discharging septic systems, food processing waste, etc.) have increased nitrate concentrations in drinking water to levels above EPA's drinking water standard. EPA's drinking water standard for nitrate is 10 milligrams per liter (mg/L) or 10 parts per million (ppm).

What does "parts per million" mean?

"Parts per million" (ppm) is a measure of the concentration of a substance (such as nitrate) in water. As an example, let's say a bucket of water has nitrate in it at a level of 14 parts per million (or mg/L). If the bucket of water had a million drops of water in it, 14 of those drops would be nitrate and the rest of the drops would be water.

Why is nitrate contamination a concern?

Nitrate is an acute contaminant, meaning that one exposure can affect a person's health. Too much nitrate in your body makes it harder for red blood cells to carry oxygen, causing an illness called acute methemoglobinemia. The primary source of exposure to nitrate is food, though water can sometime be a concern.

While most people recover quickly from exposure to high levels of nitrate, it can be very dangerous for infants below the age of six months and potentially dangerous for some adults, such as pregnant women and those taking certain medications. Infants exposed to high amounts of nitrate may develop shortness of breath and "blue baby syndrome." This illness is rare, but it can be fatal. Infants may be especially vulnerable if they are fed with formula mixed with well water that has a high nitrate concentration (exceeding 10 ppm).

Research on other health effects of nitrate in humans has been inconclusive.

How can nitrate get into my drinking water?

When products containing nitrogen, such as fertilizer or manure, are applied to land, natural bacteria living in the soil can change nitrogen into nitrate. Human waste from septic systems can also be a source of nitrate. Water from rain or irrigation can then carry the nitrates into groundwater or rivers that are used for a city's water supply. The primary source of human exposure to nitrate, however, is through food.

What should I do if my drinking water is contaminated with nitrate?

The maximum contaminant level, or EPA's drinking water standard, for nitrate is 10 milligrams per liter (mg/L), which is the same thing as 10 parts per million (ppm).

If a nitrate test shows levels higher than 10 ppm, you should find a safe, alternate drinking water supply. The quickest thing to do is to begin using bottled water for drinking.

Individuals who receive their water by on-site wells should get their water tested annually to assess nitrate levels.

Frequently Asked Questions About Nitrates and Drinking Water, continued

Is it safe to shower or bathe in my tap water if it is contaminated with nitrate?

Nitrate is only a concern for ingestion (eating and drinking). It is not absorbed through your skin.

Should I use bottled water if my tap water is contaminated with nitrate?

Yes. Unless you have a reverse osmosis or distillation system installed in your home to treat your tap water, bottled water is the only water that is safe to drink at this time until further notice. Bottled water is available at [insert locations here].

Will boiling my tap water help if it is contaminated with nitrate?

No. Boiling water will not reduce nitrate levels. In fact, it could make the level of nitrate slightly higher because some of the water will evaporate but the nitrate will not.

Can I disinfect my tap water to make it safe to drink if it is contaminated with nitrate?

No. Nitrates are chemicals, not germs that can be "killed", so disinfecting your water will not make it safe to drink.

Food and Beverages

Can I use my coffee maker, ice machine, water dispenser, or soda dispenser if my tap water is contaminated with nitrate?

No. Unless you have a reverse osmosis or distillation system installed in your home to treat your tap water, do not use water from any appliance connected to your water lines. This includes the water and ice dispensers in your refrigerator/freezer and dishwasher. If your appliance is not connected to your water line (e.g., a free standing coffee maker), you can use it, but use bottled water in place of tap water.

When the water advisory is lifted, consult the owner's manual to find out how to flush the old water out and sanitize appliances.

Can I use ice from my refrigerator/freezer if my tap water is contaminated with nitrate?

No. Unless you have a reverse osmosis or distillation system installed in your home to treat your tap water, do not use ice or water from your refrigerator or freezer and throw out all ice previously made with tap water.

Can I use tap water to cook food (such as pasta, rice, noodles, etc.) if it is contaminated with nitrate?

No. Unless you have a reverse osmosis or distillation system installed in your home to treat your tap water, bottled water should be used for food preparation until you receive updated instruction from local officials

Frequently Asked Questions About Nitrates and Drinking Water, continued

What should I do about preparing food and beverages? How should I wash fruit, vegetables, and food preparation surfaces?

Unless you have a reverse osmosis or distillation system installed in your home to treat your tap water, follow the instructions below:

- Wash fruits and vegetables with bottled water.
- Prepare drinks, such as coffee, tea, and lemonade with bottled water.
- Wash food preparation surfaces with bottled water.

What should I do about feeding my baby if my tap water is contaminated with nitrate?

Breastfeeding is best. Continue to breastfeed. If breastfeeding is not an option:

- Use ready-to-use baby formula, if possible.
- Prepare powdered or concentrated baby formula with bottled water.
- Wash and sterilize bottles and nipples with bottled water before use.
- If you cannot sterilize bottles, try to use single-serve, ready-to-feed bottles.

If you have a reverse osmosis or distillation system installed in your home to treat your tap water, you may use your tap water to feed your baby as you normally would.

How do I wash dishes if my tap water is contaminated with nitrate?

Use disposable plates, cups, and utensils, if possible. If you do not have disposable dishes, wash dishes by hand using bottled water and dish soap.

Health

What should I do if already drank the tap water and it is contaminated with nitrate?

If you are concerned about your health or the health of a family member, contact your healthcare provider or [local health department].

While most people recover quickly from exposure to high levels of nitrate, it can be especially dangerous for infants. Infants below the age of six months who drink water containing nitrate over levels of 10 ppm could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

I use a carbon filter. Will this help tap water that is contaminated with nitrate?

No. Activated carbon filters, such as those typically found in a water pitcher or on your refrigerator, do not remove nitrates.

Frequently Asked Questions About Nitrates and Drinking Water, continued

What about home filter systems?

Two types of systems that will remove nitrates from your water are:

- Reverse osmosis unit
- Distillation unit (not to be confused with boiling water)

These systems can either be installed on a single tap (called a Point of use [POU] filter system) or installed to treat all of the water entering the house (called a Point of entry [POE] filter system).

***IMPORTANT:** All filter systems or treatment units need maintenance to operate effectively. If they are not maintained properly, contaminants may accumulate in the units and make your water worse.*

In addition, some companies may make claims about the effectiveness of their water filter treatment units that are not based on science. Some organizations that test or certify water treatment units are:

- NSF International (**http://www.nsf.org**)
- Underwriters Laboratory (**http://www.ul.com**)
- Water Quality Association (**https://www.wqa.org/**)

Frequently Asked Questions About Groundwater Rule Advisories

We've never had a drinking water advisory before. Why are we having one now?

Your water system uses groundwater [wells, aquifer]. Groundwater has different standards than water from other sources like rivers or streams. One of the reasons you may have a drinking water advisory now is because your water system now has to comply with new requirements, known as the Environmental Protection Agency (EPA) Groundwater Rule.

What's different about the Groundwater Rule?

We used to think that groundwater was protected from fecal contamination. New information shows that some groundwater can have fecal contamination and people could get sick. This is why EPA developed the Groundwater Rule.

What indicator organisms does a groundwater system test for?

Groundwater systems test for one of three indicator organisms—*E. coli*, enterococci, or coliphages—to monitor water quality. If the water system has a positive test for any one of these three organisms, it can mean recent contamination with human feces.

Water systems test for indicator organisms to check for possible contamination. There are many different possible pathogens. It is not possible to test for every pathogen in every water sample, so they test for indicators instead.

What are "indicator" organisms?

Indicator organisms come from the same sources as organisms that might make you sick. Indicator organisms are easier to identify, are present in larger numbers, and respond to water treatment in the same way as harmful bacteria and many other pathogens. A pathogen is any organism—such as a bacteria, virus, or parasite—that causes disease. Pathogens are commonly called "germs."

What does a positive test result for an indicator organism mean?

A positive test for an indicator means possible water contamination and a risk of waterborne disease. A positive test in groundwater for *E. coli*, enterococci, or coliphages means you and your water system need to take action.

Will indicator organisms make me sick?

Coliphages do not infect humans or cause illness. Some enterococci can cause disease in humans. Most coliform bacteria are a normal part of the environment and do not cause disease. However, some rare types of *E. coli*, such as O157:H7, (which is not the *E. coli* measured by your water utility), can cause serious illness. Although most *E. coli* O157:H7 outbreaks are from eating raw or undercooked food, cases from contaminated drinking water can occur, but are rare.

What are coliphages?

A virus that infects bacteria is called a phage. Phages infect specific species of bacteria. Coliphages infect coliform bacteria. Coliphages do not infect humans or cause illness. A positive test for coliphages indicates the water may be contaminated with feces or *E. coli*.

Frequently Asked Questions About Groundwater Rule Advisories, continued

What are coliforms?

Coliforms are a group of bacteria found in plant material, water, and soil. Coliforms are also present in the digestive tracts and feces of humans and animals. Most of the time, these bacteria are not harmful.

Total coliforms is another term for the full group of coliforms. They are indicators of possible water contamination. Fecal coliforms is one type of coliform bacteria found mainly in animal digestive tracts and feces. Fecal coliform tests are a more specific indicator of water contamination. *E. coli* is a species of fecal coliform bacteria. *E. coli* almost always comes from animal feces and is considered the best indicator of fecal water contamination. If *E. coli* is present, harmful bacteria or other pathogens may also be present.

What is *E. coli*?

E. coli (Escherichia coli) is a species of fecal coliform bacteria. *E. coli* almost always comes from animal feces. *E. coli* is considered the best indicator of fecal water contamination. If *E. coli* is present, harmful bacteria or other pathogens may also be present. Not all *E. coli* make people sick. Some rare types of *E. coli*, such as O157:H7, can cause serious illness.

What are Enterococci?

Enterococci are a type of bacteria mainly found in the gut and feces of animals. They are used as an indicator organism for groundwater because they closely link water quality with contamination by human feces. Some enterococci can cause disease in humans. Enterococci are not coliform bacteria.

For more information see or contact:

- **Creating & Storing an Emergency Water Supply**: CDC provides guidance on the amount of water needed for good health, as well as how to prepare and store safe water before and during an emergency.
- **Hygiene, Handwashing, & Diapering**: CDC provides guidance on recommended hygienic practices when water is not available or is contaminated.
- **A Guide to Water Filters**: CDC maintains a guide for choosing filters that remove pathogens, chemicals, or toxins.
- EPA Safe Drinking Water Hotline: 1-800-426-4791
- **Consumer Information**: EPA provides information and guidance about drinking water quality, emergencies, contaminants, public health issues, and treatment and storage.
- Water system: [name, title, phone, e-mail, website]
- State or local public health department: [name, title, phone, e-mail, website]
- Primacy Agency: [name, title, phone, e-mail, website]

Frequently Asked Questions About What to Do After a Drinking Water Advisory

When I turn on the faucet, the water sputters. Why?

You have air in your lines. Turn on your tap slowly and run the water until the sputtering stops.

The water is discolored. What should I do?

Flush water pipes by running the water from all of your taps until it is clear. There is more information below on how to flush your pipes.

Do not wash clothes if the water is discolored. Wait until the water runs clear at the tap. Wash a load of dark clothes first.

Why does my water have a strong smell?

The smell is probably chlorine. Often, water systems will increase chlorine levels to disinfect the pipes.

What should I do if my water pressure is low?

Check the faucet screens for trapped particles. Remove the screens and clean out any particles. Put the screens back on the faucet.

Do I need to clean out my faucets?

Yes. You should flush your faucets after the drinking water advisory.

- Turn on the main water valve.
- Turn on the cold and hot water taps at all faucets and run the water for [X] minutes. Begin with the faucet that is highest up in your home or building and then open the other faucets one at a time moving from the highest floor to the lowest.
- Ensure that there is adequate ventilation/air flow when flushing the faucets.

Do I need to clean appliances?

Yes. Read the owner's manual for directions to clean appliances such as water softeners and filter units.

My refrigerator has a water dispenser/ice maker. Do I need to clean them?

Yes. To flush refrigerator water dispensers and ice makers connected to a filter, take the following steps:

1. Flush the refrigerator water by running it for [X] minutes.
2. Throw away all ice.
3. Let the ice maker container fill up completely one more time and throw away the new ice.
4. Clean the ice maker container.
5. Remove the filter and replace it with a new one.

Frequently Asked Questions About What to Do After a Drinking Water Advisory, continued

Do I need to do something for the water softener?

Yes. You may need to run through a regeneration cycle. Follow the directions in the owner's manual.

I have a water treatment unit for the house. Does it need special care?

Yes. Change the filter cartridges. Some units need disinfecting. Follow the directions in the unit's owner's manual.

Preguntas frecuentes sobre lo que debe hacerse después de una advertencia de uso del agua potable

Cuando abro el grifo, el agua sale en forma discontinua. ¿Por qué?

Hay aire en las cañerías. Abra la llave del grifo lentamente y deje correr el agua hasta que salga en forma continua.

El agua tiene un color distinto del normal. ¿Qué debo hacer?

Purgue las cañerías al dejar correr el agua de todos los grifos hasta que salga clara. A continuación encontrará más información sobre cómo purgar las cañerías.

No lave ropa si el agua no es del color normal. Espere hasta que el agua del grifo salga clara. Lave primero una tanda de ropa oscura.

¿Por qué el agua tiene un olor fuerte?

Probablemente, el olor sea del cloro. Generalmente, se aumentan los niveles de cloro en los sistemas de agua corriente para desinfectar las cañerías.

¿Qué debo hacer si la presión del agua es baja?

Revise las mallas de los grifos para ver si tienen partículas acumuladas. Quite las mallas y elimine las partículas. Vuelva a colocar las mallas en los grifos.

¿Debo purgar los grifos?

Sí. Debe purgar los grifos después de una advertencia de uso del agua potable.

- Abra la válvula central del agua.
- Abra las llaves del agua caliente y fría de todos los grifos y deje correr el agua por [X] minutos. Comience por el grifo que se encuentre en el lugar más alto de su casa o edificio, y luego abra los otros grifos uno por vez: vaya en orden desde el que está en el piso más alto hasta llegar a los que están en el más bajo.
- Asegúrese de que haya suficiente ventilación o un flujo de aire adecuado cuando purgue los grifos.

¿Debo limpiar los aparatos de uso doméstico?

Sí. Lea los manuales de operación para saber cómo limpiar los aparatos de uso doméstico tales como los suavizadores de agua y las unidades de filtrado.

Preguntas frecuentes sobre lo que debe hacerse después de una advertencia de uso del agua potable, continuación

Mi refrigerador tiene dispensador de agua y hielo. ¿Debo limpiarlos?

Sí. Para purgar los dispensadores de agua y hielo que estén conectados a un filtro, siga los pasos siguientes:

1. Purgue el agua del refrigerador dejándola correr por [X] minutos.
2. Bote todo el hielo.
3. Deje que el contenedor del hielo se vuelva a llene por completo y bote todo el hielo nuevo.
4. Limpie el contenedor de hielo.
5. Quite el filtro y reemplácelo con uno nuevo.

¿Debo hacer algo con el suavizador de agua?

Sí. Quizás deba realizar un ciclo de regeneración. Siga las instrucciones del manual de operaciones.

Tengo una unidad de tratamiento del agua para la casa. ¿Necesita algún cuidado especial?

Sí. Cambie los cartuchos del filtro. Algunas unidades necesitan ser desinfectadas. Siga las instrucciones del manual de operaciones de la unidad.

Guidelines for Schools and Childcare Facilities During a Boil Water Advisory

When a boil water advisory is issued, schools and childcare facilities should follow the instructions and guidelines of their state and local public health authorities. The following actions should be considered and implemented, if appropriate, until facilities are notified by authorities that the advisory has ended.

Management Issues

- Identify a "person in charge" to be responsible for ongoing management of water-related issues and activities during the boil water advisory and to ensure compliance with health and safety protocols for your facility.

Note: Make sure boiled water has cooled to room temperature before using it.

Immediately secure a supply of drinkable water

- Use bottled water. Bottled water is the best option for drinking if it is available.
- Boil water if bottled water is not available:
  - » Fill a pot with tap water.
  - » Heat the water until bubbles come quickly from the bottom of the pot to the top.
  - » Keep heating the water for one more minute.
  - » Turn off the heat source and let the water cool.
  - » Pour water into a clean, sanitized container with a cover for storage.
    - To sanitize containers:
      - Wash the storage container with dishwashing soap and water and rinse completely.
      - Sanitize the container with a solution made by mixing 1 teaspoon of unscented (bleach that does not have an added scent) household bleach in one quart (32 ounces, 4 cups, or about 1 liter) of water.
      - Cover the container and shake it well so that the sanitizing bleach solution touches all inside surfaces of the container.
      - Wait at least 30 seconds and then pour the sanitizing solution out of the container.
      - Let the empty sanitized container air-dry before use OR rinse the empty container with clean, safe water that is available already.

Note: When preparing safe water, it is best to use food grade water storage containers, such as those found at surplus or camping supply stores.

If you are not able to use a food grade water storage container, be sure the container you choose:

- Has a top that can be closed tightly
- Is made of durable, unbreakable materials (i.e. not glass)

Guidelines for Schools and Childcare Facilities During a Boil Water Advisory, continued

DO NOT USE containers that previously have been used to hold liquid or solid toxic chemicals (bleach, pesticides, etc.)

- If bottled water is not available and boiling is not an option, disinfect the water to make it safe.

  If the tap water is clear:

  - Use unscented bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
  - Add 6 drops (using a medicine dropper) or 0.5 milliliters of bleach to 1 gallon (16 cups) of water.
  - Mix well and wait 30 minutes or more before drinking.
  - Store disinfected water in a clean, sanitized container with a cover.

  If the tap water is cloudy:

  - Filter water using clean cloth.
  - Use unscented bleach (bleach that does not have an added scent). The label should say that it contains 8.25% of sodium hypochlorite.
  - Add 12 drops, 1 milliliter, or 1/8 teaspoon of bleach to 1 gallon (16 cups) of water.
  - Mix well and wait 30 minutes or more before drinking.
  - Store disinfected water in a clean, sanitized container with a cover.
- Shut off drinking water fountains.
- Post signs at drinking fountains, in the kitchen, and bathrooms to advise people not to drink the water.
- Use bottled, boiled, or disinfected water for brushing teeth.
- Use bottled, boiled, or disinfected water for washing wounds or other medical procedures.
- Discontinue using tap water for indoor and outdoor play and all recreational activities.

Food preparation:

- Discard all ice or drinks made with tap water.
- Discard ready-to-eat food that was prepared with potentially unsafe water prior to the issue of the advisory (e.g., coffee, juice, gelatins, popsicles). Consult with your local public health department if you are unsure of which foods to discard.
- Limit menu to items that require no or little water to prepare.
- Use bottled, boiled, or disinfected water for food and beverage preparation activities, washing of fruits and vegetables, and mixing beverages.
- Use disposable plates, cups, and utensils, if possible.

Guidelines for Schools and Childcare Facilities During a Boil Water Advisory, continued

Hygiene and Cleaning

Note: Washing hands with soap and water is the best way to reduce the number of germs on them in most situations. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol. Alcohol-based hand sanitizers can quickly reduce the number of germs on hands in some situations, but sanitizers do not eliminate all types of germs. Hand sanitizers are not as effective when hands are visibly dirty or greasy.

- Use bottled water, boiled water, or water that has been disinfected with bleach to clean washable toys and surfaces.
- Household dishwashers generally are safe to use if the water reaches a final rinse temperature of at least 150°F or if the dishwasher has a sanitizing cycle.
- If you do not have disposable plates, cups, and utensils, follow these instructions to wash dishes by hand:
  - » Wash and rinse the dishes as you normally would using hot water.
  - » In a separate basin, add 1 teaspoon of unscented household liquid bleach for each gallon of warm water. The bleach label should say that it contains 8.25% of sodium hypochlorite.
  - » Soak the rinsed dishes in the water for at least 1 minute.
  - » Let the dishes air dry completely before using again.
  - » Wear disposable gloves to change diapers and wash hands with soap and water immediately afterwards. When you are done washing and drying your hands, use an alcohol based hand-sanitizer and let hands air dry.
  - » Launder items in a washing machine using a hot water rinse cycle. Dry in a dryer for a minimum of 30 minutes.

Managing gastrointestinal illness (diarrhea or vomiting)

- Follow standard precautions and protocols for staff and children having a gastrointestinal illness that involves diarrhea or vomiting.
- Do not allow staff or children with diarrhea or vomiting to work or come to school until they have been symptom-free (i.e. having no diarrhea or vomiting) for at least 24 hours.
- Staff or children showing signs of gastrointestinal illness (diarrhea or vomiting) should be sent home immediately.

For more information, contact:

[Utility contact name] [Utility contact phone number] [Utility website]
[Local public health department phone number][Local public health department website]

Guidelines for Hotels and Motels During a Boil Water Advisory

Hotels and motels should follow the instructions and guidelines of their state and local public health authorities during a boil water advisory. The following actions should be considered and implemented, as appropriate, to ensure the safety of guests and staff until facilities are notified by authorities that the advisory has ended.

1. Post signs that instruct guests not to drink or use the water for drinking, making coffee or baby formula, brushing teeth, or bathing infants.
2. Use commercially bottled water for drinking, food and beverage preparation, brushing teeth, and bathing infants.
3. Dispose of ice made on-site and use only ice from a safe source. After the advisory has been lifted, be sure to clean and sanitize ice machines before making ice again.
4. Close the swimming pool and/or spa until the advisory has been lifted. People often ingest small amounts of water while swimming, especially children.
5. Flush affected potable water taps until the water meets control limits in accordance with water management plans compliant with **ASHRAE Standard 188**. Monitoring of residual disinfectant and other relevant water quality parameters (such as HPC in recreational water or pH in utility water) in all building water systems should be performed. Disinfection of water systems may be necessary if control limits are not met. Contact with potable, recreational, or utility water that is not within established control limits should be limited until the systems are restored to normal operating conditions.
6. Facilities that provide on-site food service and are not instructed to close by the local public health department should follow the precautions in the fact sheet, **Guidelines for Food Service Facilities During and After a Boil Water Advisory**.

For more information, contact:

[Utility contact name] [Utility contact phone number] [Utility website]
[Local public health department phone number][Local public health department website]

Guidelines for Food Service Facilities During and After a Boil Water Advisory

During a Boil Water Advisory

When a boil water advisory is issued that affects a food service establishment and the local health department does not indicate that food service establishments must close, the following precautions should be taken by food service facilities until they are notified by authorities that the advisory has ended.

General

- Post signs or copies of the water system's health advisory.
- Develop a plan to notify and educate employees about emergency procedures.

Food Preparation

- Shut off appliances that use tap water, such as ice machines, drinking fountains, produce misters, bottled water refill machines, soft drink fountains connected to the water supply, and water dipper wells.
- Discard ice and mixed beverages made with contaminated water.
- Use packaged ice from approved sources.
- Use bottled water, boiled water, or water that has been disinfected with bleach for drinking, food preparation, washing produce and cooking.
- If possible, use disposable plates, cups, and utensils.

Hygiene and Cleaning

- Wash hands with soap and tap water. When you are done washing and drying your hands, use an alcohol based hand-sanitizer and let hands air dry.
- Commercial dishwashers generally are safe to use if the water reaches a final rinse temperature of at least 165°F–180°F, as determined by your local or state authorities.
- If you are not able to use disposable plates, cups, and utensils and do not have a dishwasher, wash dishes by hand following these instructions:
- Wash and rinse the dishes as you normally would using hot water.
    - » In a separate basin, add 1 teaspoon of unscented household bleach for each gallon of warm water. The bleach label should say that it contains 8.25% of sodium hypochlorite.
    - » Soak the rinsed dishes in the water for at least 1 minute.
    - » Let the dishes air dry completely before using again.

The local health department may add requirements to protect public health during the boil water advisory, such as modifying food preparation, prohibiting menu items or closing operations. Consult with [health department contact] for specific requirements.

For more information, contact:

[Utility contact name] [Utility contact phone number] [Utility website]
[Local public health department phone number][Local public health department website]

Guidelines for Food Service Facilities During and After a Boil Water Advisory, continued

After the Boil Water Advisory is lifted

When a food service establishment is notified that the boil water advisory has been lifted and the drinking water supply is safe, the following actions need to be taken.

- Flush pipes throughout the facility by running each faucet with cold water for [X] minutes.
- Flush, clean, and sanitize appliances that use tap water (such as beverage dispensers, spray misters, coffee and tea urns, ice machines, glass washers, dishwashers) according to the manufacturer's instructions.
- Run water softeners through a regeneration cycle.
- Flush hot water tanks.
- Run drinking fountains continuously for [X] minutes to flush the system.
- Replace and sanitize water filter cartridges according to the manufacturer's instructions.
- Take proper steps to flush ice machines by following the manufacturer's instructions, including:
  - Throw out any remaining ice.
  - Flush the water line to the machine inlet.
  - Close the valve on the water line behind the machine.
  - Disconnect the water line from the machine inlet.
  - Open the valve and run 5 gallons of water through the valve.
  - Dispose of the water.
  - Close the valve.

For more information, contact:

[Utility contact name] [Utility contact phone number] [Utility website]
[Local public health department phone number][Local public health department website]

Recommendations for High Rise Buildings Before and During a Water-related Emergency

Recommendations for water/wastewater utilities and health departments before an incident

- Complete geolocation mapping for high rise infrastructure to locate critical water and wastewater connections for each building, including connections for emergency power, shut-off valves for sewage back flow prevention, potential inlet points for emergency potable water connections, and other essential connections.
- Identify persons in the high rise buildings who will have difficulty accessing water, sanitation, and hygiene (WASH) resources and link them to the geolocation mapping.
- Review previous high rise emergency response situations within your jurisdiction; use the lessons learned to make improvements for future incidents.
- Participate in exercises with the owners and managers of high rise buildings to test the written plans and improve the plans as needed.

Recommendations for high rise building personnel before and during an incident

Before and during an emergency incident, landlords, doormen, superintendents, and other building personnel are often primary sources of information for residents of high rise buildings, particularly in situations where traditional forms of communication (e.g., TV, radio, internet, etc.) are not readily available due to power outages.

Before an incident takes place, those in charge of the emergency operations planning should provide materials to building personnel (e.g., door hangers, flyers, posters, etc.) to distribute to residents that cover how to prepare an emergency water supply in the event of a service interruption (recommendations listed below) as well as answers to common questions that may arise during a drinking water advisory. These can be created using the information found in the section of this toolbox entitled "**Frequently Asked Questions About Boil Water Advisories**."

Building managers should flush affected potable water taps until the water meets control limits in accordance with water management plans compliant with **ASHRAE Standard 188**. Monitoring of residual disinfectant and other relevant water quality parameters (such as HPC in recreational water or pH in utility water) in all building water systems should be performed. Disinfection of water systems may be necessary if control limits are not met. Contact with potable, recreational, or utility water that is not within established control limits should be limited until the systems are restored to normal operating conditions.

Recommendations for residents of high rise buildings before and during an incident

Preparing for an emergency

- Store 1 gallon of water per person per day, for drinking and sanitation needs; a 3-day supply is recommended.
  - » Nursing mothers, children and individuals who are sick may require more water. If the temperature is likely to be very warm, 2 gallons of water per person per day is recommended.
- Fill up bathtubs before the emergency with water to use for toilet flushing.

Recommendations for High Rise Buildings Before and During a Water-related Emergency, continued

- Buy water treatment supplies from an outdoor supply store or unscented household bleach to disinfect tap water.
- Ensure you have batteries or recharging devices that do not require electricity so you can power your communication devices in case the electricity goes out.
- If you take medication, make sure you have a sufficient supply of it.
- Ensure you store all medical insurance and medication information in a safe place.

During an emergency

- Check in with sick, disabled, or elderly neighbors who may not be able to leave their apartments or navigate stairs to access additional sources of water.
- Form a bucket brigade or human chain to pass heavy items like bottled water up the stairs to higher floors.

Special Considerations

In emergencies involving high rise buildings, elderly and disabled residents are most likely to be adversely affected due to their limited mobility and reliance on home health aides, friends, or relatives who are unable to get to them in emergency situations. The needs and limitations of these residents should be taken into consideration by those in charge.

Guidelines for Healthcare Facilities During and After a Boil Water Advisory

During a Boil Water Advisory

General

- Post signs or copies of the water system's health advisory throughout your facility.
- Develop and implement a plan to notify and educate employees about emergency procedures.
- All employees with diarrheal illness should be regulated by standard rules of exclusion from work.
- Flush affected potable water taps until the water meets control limits in accordance with water management plans compliant with **ASHRAE Standard 188**. Monitoring of residual disinfectant and other relevant water quality parameters (such as HPC in recreational water or pH in utility water) in all building water systems should be performed. Disinfection of water systems may be necessary if control limits are not met. Contact with potable, recreational, or utility water that is not within established control limits should be limited until the systems are restored to normal operating conditions.

Patient care

- Water should **not** be delivered to patients through medical equipment with water line connections to the public water system. Turn off the water supply to such equipment. This restriction does not apply if the water source is isolated from the municipal water system (e.g., a separate water reservoir or other water treatment device cleared for use by the Food and Drug Administration).
- Use only bottled water or boiled water that has cooled to treat skin wounds.
- There is a risk from exposure to contaminated water when showering, bathing, or using soaking tubs. Patients with breaks in the skin should avoid contact with contaminated water.

Water use for food and drink

- Patients, families, staff, and visitors should only drink bottled water, boiled water that has cooled, or water that has been disinfected.
- Discontinue service of food and beverage equipment with water line connections (e.g., post-mix beverage machines, spray misters, auto-fill coffee/tea makers, instant hot water heaters, ice machines, etc.).
- Discard ice made prior to the boil water advisory issuance and discontinue making ice.
- Use commercially-manufactured ice.
- Discard drinks made using water prior to the boil water advisory issuance.
- Prepare drinks using bottled water, boiled water that has cooled, or water that has been disinfected with bleach.
- Discard any foods made with water (e.g., ready-to-eat food) or rinsed with water (e.g., fruits and vegetables) prior to the boil water advisory issuance.
- Prepare/cook food using bottled water, boiled water that has cooled, or water that has been disinfected and/or restrict the menu to items that do not require water.

Guidelines for Healthcare Facilities During and After a Boil Water Advisory, continued

For cooking and food preparation equipment/utensils/tableware:

- Use disposable plates, cups, and utensils, if possible. If not, sanitize equipment/utensils/tableware using the dishwashing machines that have a dry cycle or a final rinse that exceeds 113°F for 20 minutes or 122°F for 5 minutes or 162°F for 1 minute.
- Discontinue operations when inventories of clean equipment/utensils/tableware are exhausted.

After the Boil Water Advisory

- Make sure equipment with water line connections are flushed, cleaned, and sanitized according to the manufacturer's instructions.
- Managers of large buildings with water-holding reservoirs should consult with their facility engineer and health department about draining the reservoir.
- Flush pipes and faucets. Run cold water faucets continuously for at least 5 minutes.
- Flush drinking fountains. Run water continuously for at least 5 minutes.
- Run water softeners through a regeneration cycle.
- Drain and refill hot water heaters set below 113°F.
- Change all point-of-entry and point-of-use water filters, including those associated with equipment that uses water.
- Resume usual bathing practices and care for patients with breaks in the skin.

Considerations for Dialysis Centers Before and During a Water Advisory

Can we dialyze patients during a Boil Water Advisory (BWA)?

Depending on the water treatment system used, it may or may not be safe to dialyze patients during a BWA:

- If the water treatment components in use are sufficient to remove or destroy bacteria, Reverse Osmosis (RO) will protect the product water from having microbial contamination.
- Deionization (DI) unit does not remove or destroy bacteria, so if DI is being used as the main water treatment (rather than RO), you will need a submicron or endotoxin/ultrafilter downstream of the DI unit.
- If an ultraviolet (UV) irradiator is used, the dialysis filter should be located after the UV irradiator.

Close monitoring of the resistivity of the product water will be needed to detect any decrease in quality. Also consider weekly microbial assessment of the product water during the BWA.

Keep in close contact with the municipal water supplier because they may choose to "shock" treat (hyperchlorinate) their distribution system to bring it back into compliance with the acceptable standards for drinking water. If the city "shocks" their water system, you may see chlorine/chloramine break through. Review your testing procedures with staff and alert them to be vigilant for potential break through so that patients will be protected from exposure to chlorine/chloramine.

Additional Considerations

- All employees with diarrheal illness should be regulated by standard rules of exclusion from work.
- Monitor patients closely for signs and symptoms of gastrointestinal illness.

If your water system is treating water chemically beyond normal levels, advise dialysis units to:

- Sample water for chemical analysis to ensure compliance with AAMI standards.
- Conduct chlorine/chloramine tests to ensure compliance with AAMI standards.
- Monitor water system gauges once per shift.

Can we dialyze patients during a Do Not Drink water advisory?

To determine whether you are able to dialyze patients during a Do Not Drink water advisory, you will need to contact your state toxicologist. The toxicologist will be able to determine whether you may continue to dialyze patients based on your water treatment methods and the specifics of the contaminant or chemical that is responsible for the Do Not Drink advisory.

Your toxicologist will need to first know what water treatment method you use:

- Reverse Osmosis (RO)
- Deionization (DI)
  - » If using DI, do you have a submicron or endotoxin/ultrafilter downstream of the DI unit?
- Ultraviolet (UV) irradiator
  - » If using UV, is the filter located after the UV irradiator?

Considerations for Dialysis Centers Before and During a Water Advisory, continued

Once the toxicologist has an understanding of your treatment methods and the characteristics of the contaminant or chemical in question (e.g., whether it would foul or damage the filter membrane, etc.), they will be able to provide you will further dialysis guidance and recommendations.

In some cases, it might also be necessary to contact manufacturing experts to understand how the contaminant or chemical may affect the dialysis.

Additional Considerations:

If the water used for dialysis contains cyanotoxins, dialysis centers may need to provide additional water treatment to remove the cyanotoxins, such as granular activated carbon filtration, membrane filtration, or others depending on the type of cyanotoxins present in the water. For more information please consult EPA's **Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water**.

Point of Contact for Coordination During an Advisory

Primary Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

1st Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

2nd Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

3rd Alternate Contact: _____

Title: _____

Office Phone: _____ **Cell Phone:** _____

24/7 Contact: _____ **E-mail:** _____

Point of Contact for Coordination During an Advisory, continued

Standard Procedures for Coordination After Initial Notification

Criteria Used to Characterize Severity of Event and Guide Level of Response

Actions Upon Notification

Water System Information Worksheet

PURPOSE

Partners, government agencies, or other audiences may not know much about their water systems. This sheet can be used as a quick reference for those involved in an advisory by providing background information, basic water system information, and facts about the advisory. Sharing this document with everyone involved will help keep information consistent.

DIRECTIONS

Complete this sheet with specific information about the water system. Provide it to consecutive, wholesale, and neighboring water systems involved in an advisory. Place the completed form in your water system's emergency response plans and standard operating procedures. Also be sure to provide it to local public health departments, local government agencies, and community partners.

[Water System] Background Information

Number of service connections: _____

Number of people affected by this incident: _____

Source water [surface water, groundwater, name of reservoir or river, etc.]:_____

_____

Population served: _____

_____

Type of disinfection [free chlorine, chloramine]:_____

_____

Boundaries of service area [describe and use map if available]: _____

_____

_____

Consecutive, wholesale, and neighboring water systems (if applicable): _____

_____

_____

Water System Information Worksheet, continued

Agency Contacts Name, Title	Address, City, State, ZIP	Office Phone	24/7 contact	Cell Phone	E-mail	Notes
Water System Contact						
Water System Public Information Officer/ Communication						
Primacy Agency Contact						

Exercise Planning Template

PURPOSE

This form is designed to facilitate planning for exercises. The first section will help state objectives and desired outcomes from the planning session. The second section identifies participants and helps prepare them for discussion. The more preparation, the better the end product.

DIRECTIONS

- *Identify exercise leads and type of exercise (seminar, workshop, tabletop, game, drill, functional, full scale).*
- *Complete the purpose, scope, goal, and objectives. Invite staff and other organizations as appropriate.*
- *Include name and contact information for each participant.*
- *Identify and assign specific materials for participants to develop or provide.*

Step 1: Exercise Planning/Identification of Desired Outcomes

Planning meeting date/time/duration:
Exercise lead: Name Title Agency Phone E-mail
Exercise title and proposed date(s):
Exercise type:
Exercise purpose and scope:
Exercise goal:
Exercise objectives/desired outcomes:

Exercise Planning Template, continued

Step 2: Exercise Planning/Identification of Participant Roles/Responsibilities

Planning meeting date/time/duration:		
Exercise lead: Name Title Agency Phone E-mail		
Water System Departments	**Participants**	**Date and Materials**
Partner Organizations	**Participants**	**Date and Materials**

Tools & Templates

During an Incident—Issuing an Advisory

- Call Center Data Checklist
- Website Information Checklist
- Website Example
- Key Questions for the Public Information Office
- Basic Elements of a Spokesperson Statement
- Automated Messages
- Working with the Media Template
- Media Alert Template
- How to Use Press Release Templates
- Tier I Public Notification Rule Compliant Press Release Template
- Significant Pressure Loss Advisory Press Release Template
- Advisory Update Press Release Template
- Ending an Advisory Press Release Template

Call Center Data Checklist

PURPOSE

Call center data are useful to evaluate the advisory response and the information provided to customers.

DIRECTIONS

Identify types of data available in the water system customer service database. Replace information in brackets with specific water system and advisory information. Adapt the list below to meet your needs. If an advisory involves multiple organizations, request similar data from partners or other call centers.

Important call center data include:

- Call volumes (calls per hour, day, and week)
- Number of callers who listened to recorded information only
- Number of calls handled by a live agent
- Calls abandoned (caller hung up without listening to recorded information)
- Caller demographics (city, ZIP, county)
- Caller contact information (phone number or e-mail) if needed to provide follow-up information
- Call topic (drinking water advisory, outage, discoloration, taste, illness)
- Call reason (information request, report case, provide information)

Website Information Checklist

PURPOSE

Creating a website that provides details about the incident and advisory situation, relevant contact information, and regular updates can be an effective way to communicate with a variety of audiences. Reporters and other media outlets can use the website as a go-to source for information, as well as a place to direct their viewers, readers, or listeners.

DIRECTIONS

Work with a web developer to create a webpage or website where people can access concise, clear, and accurate information. Pictures of the incident can be useful if and when they are available. Be sure the site is designed to be straightforward and easy to navigate. All press releases, notifications, and other communication documents should be available from this page for easy access by the community.

This webpage will be the home base for you to use to direct users to your social media messages. Be sure the page is prominently promoted and linked from key website access points (e.g., front page of utility/health department/ emergency response sites and other local/state government pages) and includes social media buttons (e.g., Facebook, Twitter) so that users can forward them to other community members. Include a link to the webpage in all social media messages and other materials distributed to the media and other partners.

Use the information you've developed through your communications planning—such as your message map, SOCO, and information from the relevant FAQ fact sheets—to develop the website content and to ensure that messaging remains consistent throughout each and every communication channel.

The site should be updated regularly (daily, if possible) as new information becomes available.

Website content should include:

- *Details outlining the affected areas including a map, if possible*
- *Background information about the incident (e.g,. what happened, the day/time it occurred, etc.)*
- *What people and institutions (e.g., hospitals, restaurants, etc.) can and cannot do with their water*
- *What officials are doing to fix the situation*
- *Estimates of how long the advisory may continue*
- *Contact information for a person or a call center where people can go for questions or additional information*

Website Example

Put date and time of update here

These link to pages with detailed information on these topics

Latest info can be found immediately at the top of the page.

Previous updates can be found on a separate page to avoid overcrowding.

A map showing affected areas is a helpful tool that can be updated regularly.

Contact info is prominent yet unobtrusive. Can be found at a glance.

Use an image slideshow to avoid excessive scrolling down a page.

Website Title

Background Information | FAQs | Water Restrictions | Previous Updates

UPDATE xx/xx/xxxx

Boil Water Advisory Issued

Officials from xxx have issued a Boil Water Advisory effective immediately due to the presence of xx in the water supply. Use bottled water for xxxxxxxx until further notice from officials. If bottled water is not available, tap water should be boiled for 1 minute and left to cool before using for xxxxxxxx until further notice from officials.

More information can be found using the links at the top of this page.

This website will be updated regularly, so please check back for further information.

For more information, call: xxx-xxx-xxxx

Menu Options

Press #1 for: xxxx

Press #2 for: xxxx

Press #2 for: xxxx

Press #2 for: xxxx

You can also email: xxx@xxxxx.com with questions, concerns, or comments.

Area Affected by the Drinking Water Advisory

Key Questions for the Public Information Officer

PURPOSE

This list provides a quick review of important points to consider for public communication during an advisory.

DIRECTIONS

Use this list when working with the media. Provide this list to other water systems or organizations responding to an advisory.

As a public information officer, consider the following before releasing information to the media:

1. **Ability**—Do you have the appropriate information on the subject?
2. **Competency**—Are you qualified to discuss the topic with the news media? If you are not the expert, find out who the expert is and arrange to have him or her brief the media.
3. **Authority**—Do you have jurisdiction over the issue? It's always advisable to stay in close contact with upper management to coordinate your response.
4. **Security**—Is the information classified? The security limitation is extremely important because of the need to safeguard classified and operationally sensitive information.
5. **Accuracy**—Is the information accurate? Public information officers have an obligation to provide accurate, factual information and to avoid speculation.
6. **Propriety**—Is the information appropriate to the situation? Ensure that information released displays sensitivity and dignity. For example, do not release photographs that could distress individuals or their family members.
7. **Policy**—Do the policies of your organization permit release of this information?

Adapted from: Mobley, J, Tatham EL, Reinhart K, Tatham C. Strategic Communication Planning: A Guide for Water Utilities. Denver, CO: Water Research Foundation; 2006.

Basic Elements of a Spokesperson Statement

PURPOSE

Spokesperson statements are based on the messages developed using the **Message Mapping Template** *or the* **Single Overriding Communication Objective (SOCO) Worksheet**. *Developing statements with these outlines can help to keep communication consistent.*

DIRECTIONS

Review your messages and essential information for the advisory. Follow the outline provided and adapt to the specific advisory. Work with other organizations that will provide spokespeople to develop their statements. Use this outline to develop a statement for press conferences, briefings, or other public communications. Adapt and update the messages based on questions and feedback received during use.

Fill in information in brackets.

My name is [name], and I am the [position title] of [organization]. [Describe role].

This is an evolving situation, and I want to provide as much information as possible. As of now, I can confirm:

- At approximately [time], a [brief description of reason for drinking water advisory, area affected].
- At this point,
  - We know that [a main broke, positive coliform tests, there are no associated illnesses, etc.].
  - The areas impacted are: [give a clear delineation of boundaries of impacted area]
  - We do not know [number of illnesses, specific contaminant, etc.].
- We have a [system, plan, procedure] in place for this type of situation. [Describe actions].
- [Primacy agency, health department, etc.] are assisting by [actions].
- The situation is [under, not yet under] control, and we are working with [local, state, federal] authorities to [actions].
- We are asking the public to [actions and advice: boil water, throw out ice, location of alternative water].
- This advisory will continue until further notice [if possible, give an estimate of how long based on field staff feedback].
- We will continue to gather information and release it to you as soon as possible. I will be back to you [specific date, time] with an update.
- We appreciate everyone's patience as we work to correct [situation].

Automated Messages

PURPOSE

Automated messages take many forms. Developing the content for advisories requires careful planning. This information addresses automated messages specifically for drinking water advisories.

DIRECTIONS

Review the information about automated messages. Be sure your communication plan addresses automated messages specific to the water system and community capabilities and tools. Consult your primacy agency for specific requirements.

Automated broadcast notification is used to send messages quickly to large numbers of people. Broadcast notification systems use a wide variety of commercially available systems that include the following:

- **Voice:** Delivering messages by prerecorded or synthesized voice is suited for brief messages. Automated systems like Reverse 911 can be programmed to leave messages on answering machines if there is no answer.
- **Text (SMS):** Short Messaging Service (SMS) delivers messages of up to 160 characters to cell phones.
- **E-mail:** E-mail is suitable for more detailed messages and can be sent to large groups relatively quickly. E-mail is delivered over the Internet, which is typically a reliable network unless there is a power outage.
- **CodeRED:** A telephone communication service that allows counties or cities to quickly notify citizens who have signed up for the free service about local emergency situations.
- **Wireless Emergency Alerts (WEA):** Emergency messages sent by authorized government alerting authorities through mobile carriers. They can be sent to users in a specific area.

Note: SMS and e-mail systems cannot guarantee delivery to a contact.

Effective broadcast systems require:

- Accurate contact information
- Delivery to a relevant contact point (e.g., reaching a cell phone versus a home landline)
- Simple, concise language
- Coordination with other communication tools to provide access to more detailed information (e.g., website, customer call center)

Coordinate with other tools
Automated messages are useful tools in combination with press releases, door hangers, call center information, website information, and other outreach tools. These brief messages are useful in building awareness and are easily forwarded by the public, but are inadequate to provide all the information customers need to receive.

Automated Messages, continued

Accurate Contact Information

A notification system is only as good as the contact data. Uploading contact data is not ideal; data can be inaccurate (entry errors), false (purposefully wrong data), or invalid (phone number has changed or been disconnected). This is more likely when data are uploaded from customer records or purchased phone lists, or gathered from available databases. Even converting data from enhanced 911 systems to Reverse 911 programs will not assure accurate contact information. Automatically entering contact data into a system also has problems. Notification system vendors are wary of violating anti-spam laws and blacklisting.

Opt-in data collection can provide and validate content for notification. Individuals can be invited to join a list on a website or indicate their interest when opening an account. This option can make it easier for subscribers to update their own contact information. This improves the results and reach of a broadcast. Opt-in processes for collecting data help protect the provider from unlawful use, because each recipient is giving the notification provider permission for future contact. National averages for "opt in" program registration is not high, so consider promoting sign-up on a continuous basis so your area maximizes enrollment before an emergency.

Timing

Automated notification systems are quick, but not instantaneous. Time is required:

- To prepare the message
- To direct the message to appropriate audiences
  (e.g., customers in specific subsections of the distribution system)
- To distribute the advisory
  - » Voice systems may only make 1,000 calls per hour
  - » E-mail or text message distribution to similar numbers occurs in minutes
- For the recipient to listen to or read the message and take action.

Automated Messages, continued

Content

The purpose of an automated broadcast notification is to prompt people to seek information and take appropriate action. Messages for automated notification systems must be simple and concise. It is not practical to use language from standard public notification templates. Because these messages must be short, they cannot convey the detail required in EPA's Public Notification Rule.

- Key elements of abbreviated messages related to water quality concerns are:
  - Whom the message is from
  - What actions consumers should take
  - Whether alternative water supplies are available
  - Where consumers can obtain additional information (e.g., website, telephone number)

Abbreviated Message Template—Boil Water Advisory

The [name of water system] is asking customers to boil tap water or use bottled water.
For more information, go to [www.watersystemwebsite.org] or call [###-###-####].

Abbreviated Message Template—End of Boil Water Advisory

[Name of water system] customers no longer need to boil tap water.
For more information, go to [www.watersystemwebsite.org] or call [###-###-####].

Working with the Media Template

PURPOSE

These are sample statements to use if members of the media call before a press release is issued. Getting the facts correct is a priority. Do not give information to the media before confirming facts with field staff, the emergency operations center, and management. Changing information after it is released can lead to media confusion and loss of focus on the key messages.

DIRECTIONS

Review these statements and adapt them with specific information about the water system. Incorporate the template into your standard operating procedures (SOPs) and emergency response plans (ERPs). Add specific information related to the advisory. Rehearse the responses prior to speaking with media.

Insert information about a specific incident in the brackets. See the following examples. Adapt it as needed.

Pre-scripted Immediate Responses to Media Inquiries

Use this template if the media is "at your door" and you need time to assemble the facts for the initial press release statement.

Getting the facts is a priority. It is important that your organization not give in to pressure to confirm or release information before you have confirmation (e.g., from your scientists and emergency operations center).

The following responses give you the necessary time to collect the facts. Use the **Basic Elements of a Spokesperson Statement** to provide an initial press release statement after the facts are gathered.

NOTE: Get authorization BEFORE releasing information.

Date: _____ Time: _____

Approved by: _____

Working with the Media Template, continued

Pre-scripted Responses

If on the phone with the media:

- "We've just learned about the [situation, incident, event] and are trying to get more complete information now. How can I reach you when I have more information?"
- "All our efforts are directed at [bringing the situation under control]. I'm not going to speculate about [the situation]. How can I reach you when I have more information?"
- "I'm not the authority on this subject. Let me have [name] call you right back."
- "We're preparing a statement now. Can I get back to you in about [number of minutes or hours]?"
- "You may check our website for background information, and I will contact you with the time of our next update."

If in person at the incident site or in front of a press meeting:

"This is an evolving [situation, incident, event], and I know you want as much information as possible right now. While we work to get your questions answered, I want to tell you what we can confirm right now:

- At approximately [time], a [brief description of what happened].
- At this point, we do not know [how long the advisory will last, how many customers are affected, etc.].
- We have a [system, plan, procedure, operation] in place. We are being assisted by [local public health officials, emergency response officials] as part of that plan.
- The situation is [under, not yet under] control. We are working with [local, state, federal] authorities to [correct this situation, determine how this happened].
- We will continue to gather information and release it to you as soon as possible. I will be back to you within [amount of time in minutes or hours] to give you an update. As soon as we have confirmed information, it will be provided.
- We ask for your patience as we respond to this [situation, incident]."

Media Alert Template

PURPOSE

Water systems can invite the media to attend press conferences and briefings or to tour facilities related to advisories. This type of activity provides the media with a better understanding of drinking water infrastructure and why advisories occur.

DIRECTIONS

Use this template for media releases about press conferences, briefings, and facility tours. Replace information in brackets with specific water system and advisory information. Adapt the information as needed.

FOR IMMEDIATE RELEASE

Press contact: [name, title, organization, office phone, cell phone, e-mail]

Water system contact: [name, title, organization, office phone, cell phone, e-mail]

Press Conference for: [Water System]

What: [press conference, briefing, tour of facilities/labs/distribution area related to the advisory].

When: [Date, time]

Where: [Address, building, city, state, ZIP; provide directions to site of press conference, briefing, tour of facilities/lab/distribution area]

With Whom: [Water System spokesperson, title; partner spokespeople, titles]

Why: Water quality is a concern for us in the community. We invite you to a [press conference, briefing, tour of our facilities/lab/distribution area] so you can see how we [treat water, test water, etc]. The recent [type of advisory] put our community's drinking water quality into the spotlight. [Name of water system] will explain how the facility relates to the advisory and water quality. [Details—the reasons, actions, communication].

Please RSVP to [contact, phone, e-mail] by [date]

[Name of water system] provides water to [name of community, description of the organization].

How to Use Press Release Templates

PURPOSE

Press releases are a standard tool for an advisory. They can be the primary public notice, or they can communicate the advisory and direct customers to the official public notice. Website links or phone numbers can direct customers to the location of the official notice.

DIRECTIONS

A press release must include 10 required elements, EPA health effects language, and Public Notification Rule (PNR) required language to qualify as an official public notice.

The Tier 1 Public Notification Rule Compliant Press Release Template *includes the ten required elements and moves the most important customer information to the top. The PNR does not specify the order of the required elements.*

For more information about required elements of a public notice, see the **EPA's Revised Public Notification Handbook** *and* **Appendix C: Online Resources, Public Notification, Safety, and Preparedness**.

Tier I Public Notification Rule Compliant Press Release Template

PURPOSE

Use when a corresponding Tier 1 Public Notice boil water advisory is required and issued.

DIRECTIONS:

Replace information in brackets with specific water system and advisory information. Adapt it as needed.

▲ ***Denotes required element of a public notice per EPA's Public Notification Rule***

■ ***Denotes mandatory health effects language per EPA's Public Notification Rule***

[Date]

FOR IMMEDIATE RELEASE

Contact: [Name, Title, Phone, E-mail]

[Water System] issues a boil water advisory for all customers in [location]

[Water System] advises all customers to boil their drinking water. The boil water advisory is in effect until further notice.

▲ Customers should:

- Fill a pot with water.
- Heat the water until bubbles come quickly from the bottom of the pot to the top.
- Keep heating the water for one more minute.
- Turn off the heat source and let the water cool.
- Pour water into a clean, sanitized container with a cover for storage.

Use bottled water or boiled water that has cooled for:

- Drinking
- Brushing teeth
- Washing fruits and vegetables
- Preparing food and baby formula
- Making ice
- Giving to pets

The advisory is in effect until [Water System] and [other agencies] are confident there is no longer a public health concern. We will provide the next update at [date or timeframe]. Customers will be notified immediately when the advisory is lifted.

Tier 1 Public Notification Rule Compliant Press Release Template, continued

Tests results from [date] showed [▲contaminant] at [▲levels/amount]. The [Primacy Agency/Health Department] is working closely with [Water System] to find the contamination source and fix the problem. [*Optional—include a quote from system spokesperson*]

To correct the problem, we are [▲ what is being done (e.g., chlorine was applied to the entire system)]. [▲ Give dates or time estimate for duration of the advisory, if possible]. [Number or No] illnesses related to the community's drinking water are reported.

▲ If you are concerned about your health or your family, call your healthcare provider or the [local health department].

[▲ Required EPA Health Effects Language for specific contaminant or violation. (■ Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk to infants, young children, some of the elderly, and people with severely compromised immune systems.)]

These symptoms are caused by many illnesses other than drinking water. [People at increased risk should seek advice about drinking water from their healthcare provider.]

[If applicable: (▲ Water System or City) customers may pick up (alternative water supply, bottled water) at (location and time).]

■ ▲ Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses).

For more information, go to [website] or call [▲ phone]. Mail inquiries should be sent to [▲ name], [Water System], [▲ address]. [If applicable, include health department contact.]

[*Optional—General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.*]

Significant Pressure Loss Advisory Press Release Template

PURPOSE

Use for loss of pressure or a water outage boil water advisory that does not require a Tier 1 Public Notice.

DIRECTIONS

Use this template for media releases about pressure losses. Replace information in brackets with specific water system and advisory information. Adapt it as needed.

[Date]

FOR IMMEDIATE RELEASE

Contact: [Name, Title, Phone, E-mail]

[Water Main Break/Pressure Loss] in [location] causes [Water System] to issue a boil water advisory

Due to a [water main break/pressure loss], [Water System] advises customers to boil their drinking water. This advisory is for [specific areas (addresses, streets, boundaries)]. Customers in other areas of [Water System] are not affected and do not need to boil their water.

Customers should:

- Fill a pot with water.
- Heat the water until bubbles come quickly from the bottom of the pot to the top.
- Keep heating the water for one more minute.
- Turn off the heat source and let the water cool.
- Pour water into a clean, sanitized container with a cover for storage.

Customers should use boiled water that has cooled or bottled water for:

- Drinking
- Brushing teeth
- Washing fruits and vegetables
- Preparing food and baby formula
- Making ice
- Giving to pets

The [Water System] is [describe corrective action being taken] to fix the problem. We estimate the boil water advisory will end by [date or time frame]. We will provide the next update at [date or time frame].

This boil water advisory is a precaution. To limit risk, customers should follow the instructions contained in this release.

Significant Pressure Loss Advisory Press Release Template, continued

This boil water advisory is in effect until [Water System] and [other agencies, if applicable] determine the situation is corrected. Customers will be notified immediately when the advisory is lifted

(Add if applicable: [Water System or City] customers may pick up [alternative water supply, bottled water] at [location and time]).

For more information, go to [information website] or contact [Name, Title] at [Water System], [phone number] or [e-mail], or by mail at [address, city, state, ZIP]. *[Include health department contact, if appropriate.]*

[Optional—General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.]

Advisory Update Press Release Template

PURPOSE

Use to update information during a boil water advisory.

DIRECTIONS

Use this template for media releases during a boil water advisory. Replace information in brackets with specific water system and advisory information. Adapt it as needed.

[Date]

FOR IMMEDIATE RELEASE

Contact: [Name, Title, Phone, E-mail]

Drinking water advisory continues: [Water System] customers in [location] should [boil] their water

[Water System] customers should continue to [boil] their drinking water. [Contaminant or event] is still a concern.

Customers should:

- Fill a pot with water.
- Heat the water until bubbles come quickly from the bottom of the pot to the top.
- Keep heating the water for one more minute.
- Turn off the heat source and let the water cool.
- Pour water into a clean, sanitized container with a cover for storage.

Customers should use boiled water that has cooled or bottled water for

- Drinking
- Brushing teeth
- Washing fruits and vegetables
- Preparing food and baby formula
- Making ice
- Giving to pets

[Water System] continues to work with [Primacy Agency/Health Department] to [describe actions under way].

[*Optional—Include a quote from system spokesperson*]

We estimate that the [advisory] will end by [date or timeframe]. We will provide the next update at [date or timeframe].

This advisory is in effect until [Water System] and [other agencies, if applicable] determine [the tap water can be used for all purposes, does not present a public health concern]. Customers will be notified immediately when the advisory is lifted.

Advisory Update Press Release Template, continued

(Add if applicable: [Water System] customers may pick up [alternative water supply, bottled water] at [location and time]).

For more information, go to [information website] or contact [Name, Title] at [Water System], [phone number] or [e-mail address], or by mail at [street address, city, state, ZIP]. *[Include health department contact if appropriate.]*

[*Optional—General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.*]

Ending an Advisory Press Release Template

PURPOSE

Use to notify that a drinking water advisory has been lifted.

DIRECTIONS

Use this template for media releases about lifting of a water advisory. Replace information in brackets with specific water system and advisory information. Adapt it as needed.

[Date]

FOR IMMEDIATE RELEASE

Contact: [Name, Title, Phone, E-mail]

Water advisory ends for [Water System] customers in [area]

Customers in [Water System—affected area] can use tap water for all purposes. The [drinking water advisory] is lifted. [Water System's] water quality has returned to [standard].

Before using the tap water, however, [Water System] advises customers to first [throw out ice, flush faucets, flush other appliances, etc. depending on the situation] to ensure removal of all potentially contaminated water.

The [Water System] [provide details on tests results/corrective actions]. [Water system] consulted with [Primacy Agency/Health Department] to correct the problem.

On [date] a [boil water] advisory was issued to customers in [area] because of [test, main break, etc.] and to protect public health. The [System name] appreciates its customers' patience.

[Optional—Include a quote from water system spokesperson]

[Optional—Include a quote from health department or other agency spokesperson]

[Water System] will work with customers to answer questions [community meeting, phone number etc.]. Customers can look for information on this event in [bill stuffer, newsletter]. The [Consumer Confidence Report], due on [date] is another source for information.

Customers with questions or suggestions may call [telephone number] or e-mail [e-mail address]. Additional information is available from:

- [Water System—phone, website]
- [Health Department—phone, website]
- [Primacy Agency—phone, website]
- EPA Safe Drinking Water Hotline 1-800-426-4791

Tools & Templates

After an Incident—Evaluating an Advisory

- Sample Agenda for an After Action Review Meeting
- Debriefing Discussion Guide
- Advisory Feedback Guide
- Call Center Data Collection Framework
- Post-Advisory Community Survey
- Corrective Action Tracking Form
- Standard Operating Procedure (SOP) Updates
- Debriefing Evaluation Form
- Follow-Up Memo

Check with the Office of Management and Budget (OMB) guidance on the need for review or approval of any evaluation activities if federal funds are being used.

Sample Agenda for an After Action Review Meeting

An After Action Review aims to identify things that could be improved or needed more attention during an emergency incident. Inviting stakeholders to attend a meeting after a drinking water advisory soon after the incident is crucial to gather additional feedback and insight in the creation of a comprehensive After Action Review.

Below is a sample agenda for an After Action Review meeting* to help you get started as you consider the challenges your water system, customers, and communities faced during your water advisory.

Sample Agenda

- Introductions
- Main Issues
  - » Scale of issue
  - » Resources needed (water supplies for community, distribution channels, staff needs, etc.)
  - » How the meeting discussion will be used to improve processes in the future
- Coordination
  - » On site
  - » Remote locations
  - » Participant Responsibility
    - As a group
    - Individual Actions
    - Resources
- Communications
  - » Methods/Channels used
    - Any System Overloads? (e.g., not enough lines available, staffing constraints, effect on field operations)
  - » Prioritized messages? Who? Which organizations, businesses, etc.?
  - » Effectiveness
  - » Audience Reach
  - » Audience Understanding/Comprehension
  - » Consistent Messaging
    - Initiating Authority
    - Subsequent Communications
  - » Messaging Frequency

Sample Agenda for an After Action Review Meeting, continued

- » Audience groups
  - Vulnerable populations
    - Medical conditions
    - Physical challenges
    - Other issues (homeless, etc.)
  - Employees
  - Communities
  - Transients/travelers
- Emergency Preparedness
- Outside Regulations
- Who is responsible for what?
  - » Government
  - » Business
- Action Items

This agenda is based on what that was used after a large-scale boil water advisory incident in Dekalb County, GA in 2015.

Debriefing Discussion Guide

PURPOSE

Debriefings are productive when properly structured. This discussion guide provides an outline of key points to cover during the debriefing session.

DIRECTIONS

Use these questions as a starting point for a debriefing discussion about the drinking water advisory incident.

What were the goals of the drinking water advisory?

- Who were we trying to reach?
- What did we want the target audiences to do with the information?

What actually happened?

- List at least three things that worked really well and analyze why.
  - » How do you know they worked well?
  - » What goals or targets did they meet?
  - » Can you identify the successful actions that can be replicated in future incidents?
- List at least three things that did not work as planned and analyze why. Determine how they can be done differently.
  - » What criteria did you apply to determine that an action did not work as planned?
  - » Can you identify actions or decisions to avoid in the future?
  - » What might you do differently the next time?
  - » Did you collect or track the information needed to assess or evaluate the advisory properly?
- List any plans, procedures, communication materials, tools, or templates that need revision or development.

What needs to happen next?

- Who needs to be involved in improvements or tool/template updates?
- What is the time frame?
- How will others be informed about improvements and changes?
- What should be done differently next time?

Advisory Feedback Guide

PURPOSE

This form is intended to be used to gather information from water system staff and other agencies about the advisory protocol and process.

DIRECTIONS

Use the form and sample questions below to create your own survey for participating agencies or organizations. Remove the identifying data and compile the results. Use the data to update and modify advisory protocols.

Ensure that major water users and critical facilities, such as healthcare facilities, jails, dialysis centers, etc. are included in your survey efforts.

FOLLOW-UP

Consider holding a meeting or conference call with other local, state, and federal partners to discuss the responses and lessons learned.

Advisory Feedback Guide, continued

Advisory Incident: _____ Date: _____

Name: _____ Title: _____

Agency/Division: _____ Role in Advisory: _____

Telephone: _____ E-mail: _____

Sample questions for various key stakeholders that can be added to any survey

Suggested questions for state/local drinking water authorities and state/local health departments

1. Please describe the timeline of events that led to the water advisory.
2. What evidence contributed to the decision that it was necessary to start the drinking water advisory?
3. What evidence did you need to see to decide it was appropriate to end the drinking water advisory?
4. Did you use a critical customer list for outreach?
5. Was a call center established?
6. Who prepared the water advisory?
7. Was a particular format used?
8. Was a spokesperson designated for issuing the advisory?
9. Was a press conference or interview conducted for the media?
10. How often were updates provided to the public?
11. How were updates communicated?
12. Did you conduct an after action review after the water advisory ended?
13. List any resources you didn't have that you wish you would have had.
14. Whom in the population was prioritized to reach with the drinking water advisory? (rank your answers)
15. Which agencies or persons were involved in the decision making process on how to issue and implement the water advisory?
16. Did the target audience you were trying to reach change during the advisory?
17. What did you want the target audiences to do with the information?
18. What was the information that went out to the public?
19. What communication methods were used to convey that information?
20. What do you think were the most successful means of getting the information out?
21. Who was listed as the authority/authorities for the advisory?
22. How was the discontinuation of the advisory communicated?

Advisory Feedback Guide, continued

23. What was the information that went out to key contacts (e.g., businesses/hospitals/grocery stores/restaurants/pharmacies/dialysis centers)?
24. Did the information provided to the different businesses/organizations/institutions vary based on who was receiving them?
25. What communication methods were used to convey that information to these businesses/organizations/institutions?
26. What communication methods were used to advise of the discontinuation of the advisory to businesses/organizations/institutions?
27. From your perspective, what three things were done best during the advisory? (What went right?)
    a. How do you know they worked well?
    b. What goals or targets did they meet?
    c. Can you identify the successful actions that can be replicated in future incidents?
28. Based on your experience, list three improvements needed with issuing drinking water advisories.
29. What might you do differently the next time?
30. Which stakeholders need to be involved in improvements in the way the next advisory is carried out?
31. Did you have plans for how to communicate a drinking water advisory before?
32. If a similar situation occurred 6 months from now, how would you conduct the drinking water advisory? Please be specific about what information you would gather before/during/after the incident, what steps you would take, and how you would prioritize the different activities.
33. Are there estimates of cost or burden of this emergency? Did the water utility reimburse customers for flushing costs?
34. Did you have any loss of pressure issues with everyone flushing around the same time?
35. Were there any issues/concerns on the extra water that arrived at the wastewater treatment plant after everyone flushed?
36. Please provide additional comments.

Suggested questions for Businesses/Institutions/Organizations/Hospitals/Jails

1. How did you first hear about the drinking water advisory?
2. Who provided the notice of the drinking water advisory?
3. What date did you get the notice of the drinking water advisory?
4. What information was communicated to you?
5. Have there been follow-up communications? How have you received these, and what did you hear?
6. During the advisory, did you know who to contact if you had further questions?

Advisory Feedback Guide, continued

7. Did your questions from the advisory get answered?
8. How would you prefer your business/organization/institution/facility to receive formal notification of water service problems?
9. Were business operations disrupted due to the drinking water advisory? How?
10. Did your business/organization/institution/facility close because of water problems? How long? Why?
11. Was water purchased for the business? How much? What is the estimated cost?
12. Was any equipment bought to address your water problems? What? What is the estimated cost?
13. Was anything discarded as a result of the drinking water advisory? What? What is the estimated cost?
14. Please estimate your total losses.
15. Does your business have an emergency preparedness plan for drinking water emergencies/advisories?
16. What procedures were used for handwashing during the drinking water advisory?
17. What sources of water did you use during the boil water advisory?
18. What equipment was shut off due to the drinking water advisory?
19. Were there any special challenges your business/organization/institution/facility faced during the water advisory that haven't been asked about?
20. How were patients/school children/customers affected by the drinking water advisory?
21. If boil water situations impacted your normal operations, what agencies or partners do you communicate with to inform them of the situation?
22. What are the total estimated costs (including legal costs) to your business/organization/institution/facility from this boil water advisory?
23. Was the drinking water advisory discontinuation communicated to your business? How?
24. Were there any resources that could have better helped you deal with the water problem?

Call Center Data Collection Framework

PURPOSE

This data framework provides an example of how to apply call center or customer service (CS) data to an evaluation. The framework provides a more complete data set and includes measurements and goals. The framework approach can be used to evaluate other data from an advisory. This framework example uses specific goals and measurements for evaluation.

DIRECTIONS

Adapt the framework to reflect water system data. Collect and analyze the data using the measurements provided. Use data in customer service databases and from staff debriefings. Incorporate the findings into the advisory protocol as well as other call center and customer service actions.

Evaluation Question	Indicator or Measure	Unit of Measure	Advisory Objective
Did customers call for information about the advisory?	Calls made in response to the advisory	◦ Number of calls during the advisory	Customers know where to get information during an advisory
	Number of calls after the advisory	◦ Number of calls after lifting of the advisory ◦ Number of calls requesting more information	Customers know the advisory is lifted and how to get information
	Dates during which calls continued after the advisory	◦ Date of last call about advisory	Customers had continued concerns that were addressed
Did communication target the advisory area?	Calls sorted by area	◦ Number in specific area ◦ Number outside the area ◦ Percent area call/all calls	Communicate an advisory to a targeted area
Were customer questions anticipated and answered appropriately?	Call themes	◦ Number of calls by customer service (CS) code	Identify frequent questions to understand advisory concerns and reactions
	Response scripts and messages updated	◦ Yes/No ◦ Number of updates	CS staff are updated with new information
	Referred calls Location to which calls were referred	◦ Yes/No ◦ Number of calls referred by agency	CS staff are prepared to refer calls to other agencies as necessary

Call Center Data Collection Framework, continued

Evaluation Question	Indicators or Measure	Unit of Measure	Advisory Objective
Were Customer Service (CS) staff prepared for an advisory?	Response script preparation time	• Time to deliver response scripts to CS staff	Advisory communication material is available for CS in a timely manner
	Briefed CS staff Updated CS Staff	• Yes/No • Number of updates	Advisory information is provided and explained to CS staff
	Response scripts adequately address customer questions	• Yes/No	CS response scripts provide appropriate support
Did CS staff have the correct resources for an advisory?	Plan for staffing Hours for staffing, length of shift	• Yes/No • Time per day for advisory	CS staffing can adapt to increased demands during an advisory
	Phone lines were accessible Enough phone lines were available	• Yes/No • Yes/No • Number of phone lines	Communication lines have the capacity to meet increased demands during an advisory
	Call response time Length of advisory calls Web/e-mail response	• Time to return customer calls • Time per phone conversation • Number of e-mails received	CS staff have the resources to respond to customers in a timely manner during an advisory
Did CS data codes work for an advisory?	Rank customer service codes used during the advisory	• Number of calls/inquiries per each CS code listed	CS codes will provide information and data about advisories
Were CS evaluation results incorporated into protocols?	Customer survey	• Yes/No	Customers understand communication
	Apply survey data to advisory protocol and materials	• Yes/No	Use CS data to improve advisory response

Post-Advisory Community Survey

PURPOSE

Surveys are an important element of an evaluation. Conducting a survey after an advisory can provide crucial information about messages and the communication preferences of a water system's audiences.

DIRECTIONS

This survey can be used for phone, mail, or online formats. The questions provided are suggestions and should be adapted to suit the advisory and community. The questions in this example can be placed in regular water system surveys or in public health surveys.

[Letterhead or Logo]

[Water System] needs your help to better serve you and protect your community's health. We want to improve public information and advice. Specifically, [Water System] wants to understand how people received information and advice about the drinking water advisory on [date(s)]. Your participation will help [Water System] improve communication in the future.

The survey below will take about [##] minutes to complete. All information collected is confidential. We cannot identify who does or does not participate, or link answers to any one person.

We will use the results of this survey to [report data, describe how you will use/publish the data].

[Instructions about how to submit the survey: Consider using e-mail and an online survey tool to conduct the survey to make it easier to tabulate results. Otherwise, include a self-addressed stamped envelope or postage-paid form to improve response rates.]

For more information or if you have questions, please contact:

[Water system contact name]

[Water system contact phone]

[Water system website]

[Local public health department name]

[Local public health department phone]

[Local public health department website]

Post-Advisory Community Survey, continued

1. **Which type of water do you prefer to drink? Please rank your preferences using a scale of 1–4, with 1 as the most preferred type and 4 as the least preferred.**

   ____ Water straight from the tap

   ____ Bottled water

   ____ Filtered tap water

   ____ Other (please specify) _____

2. **How many 8-ounce glasses of water do you drink on a normal day?**

   ☐ 0 ☐ 4–6

   ☐ 1–3 ☐ 7+

On [date], [Water System] issued a [type] advisory because [reason].

3. **Did you know about this [type] water advisory on [date]?**

   ☐ Yes

   ☐ No (Skip to Question 14)

3a. What advice did you get during this [type] water advisory? Check all that apply.

☐ Do not use tap water

☐ Boil all tap water

☐ Not sure what the advice was

☐ Do not drink tap water

☐ Was told the water was safe

☐ I did not get any advice (Go to Question 4)

3b. Where did you get the information about this [type] water advisory? Check all that apply.

☐ Family member or friend or neighbor

☐ [Water System]

☐ [Local newspaper(s)]

☐ Local radio. Which station(s): _____

☐ [Local Health Department]

☐ Website, blog, other web format. Please specify: _____

☐ Television. Which station(s): _____

☐ Coworker

☐ Automated message (e.g., answering machine, voice mail, email, text message). Please specify: _____

☐ Social media (e.g., Facebook, Twitter) Please specify: _____

☐ Door hanger or Door-to-door visit

☐ Other. Please specify: _____ _____

Post-Advisory Community Survey, continued

4. During this [type] water advisory, did you use water straight from the tap to: (Check all that apply).

- ☐ Flush the toilet
- ☐ Brush teeth
- ☐ Make baby formula
- ☐ Wash hands
- ☐ Wash face
- ☐ Water plants
- ☐ Wash, prepare, or cook food
- ☐ Shower or bathe
- ☐ Give to pets
- ☐ Drink
- ☐ Make coffee or tea
- ☐ Make other beverages (e.g., fruit juice, powdered drink mix)

5. During this [type] water advisory, did you boil the tap water before you used it?

- ☐ Yes
- ☐ No (Go to Question 6)

5a. If yes, did you use boiled tap water to… Check all that apply.

- ☐ Flush the toilet
- ☐ Brush teeth
- ☐ Make baby formula
- ☐ Wash hands
- ☐ Wash face
- ☐ Water plants
- ☐ Wash, prepare, or cook food
- ☐ Give to pets
- ☐ Drink
- ☐ Make coffee or tea
- ☐ Make other beverages (e.g., fruit juice, powdered drink mix)

6. Did you hear the [type] water advisory ended on [date]?

- ☐ Yes
- ☐ No (Go to Question 7)

6a. If yes, where did you hear or see about the end of the [advisory]? Check all that apply.

- ☐ Family member or friend or neighbor
- ☐ [Water System]
- ☐ [Local newspaper(s)]
- ☐ Local radio. Which station(s): _____
- ☐ [Local Health Department]
- ☐ Website, blog, other web format. Please specify: _____
- ☐ Television. Which station(s): _____
- ☐ Coworker
- ☐ Automated message (e.g., answering machine, voice mail, email, text message). Please specify: _____
- ☐ Social media (e.g., Facebook, Twitter) Please specify: _____
- ☐ Door hanger or Door-to-door visit
- ☐ Other. Please specify: _____ _____

6b. When you heard the [type] water advisory ended, did you resume regular water use?

- ☐ Yes
- ☐ No

Post-Advisory Community Survey, continued

7. What sources of information about the [type] water advisory were most useful? Please rank using 1 as the most useful and 10 as the least useful.

_____ Family member or friend or neighbor

_____ [Water System]

_____ [Local newspaper(s)]

_____ Local radio. Which station(s): _____

_____ [Local Health Department]

_____ Website, blog, other web format. Please specify:_____

_____ Television. Which station(s):_____

_____ Coworker

_____ Automated message (e.g., answering machine, voice mail, email, text message). Please specify: _____

_____ Social media (e.g., Facebook, Twitter) Please specify:_____

_____ Door hanger or Door-to-door visit

_____ Other. Please specify: _____ _____

8. Did you want more information during the advisory?

☐ I really needed more information
☐ I would have liked more information
☐ I had enough information

9. How clear was the advice about your tap water? Select one.

☐ Very unclear
☐ Unclear
☐ Understandable
☐ Clear
☐ Very clear

10. Please add below any comments you would like to make about the information you received.

_____

_____

_____

_____

_____

Post-Advisory Community Survey, continued

11. During the [date range] water advisory, can you remember what caused the problem with your tap water? If so, please give details and where you heard it.

_____

_____

_____

_____

12. After the incident, did you find out more about what caused the problem with your tap water? If so, please give details of the new information you found and where you got it from.

_____

_____

_____

_____

13. How long did you boil your water?

- ☐ Until it started to bubble/ reached the boiling point
- ☐ A few seconds after it started to boil
- ☐ 1 minute after it started to boil
- ☐ 2–4 minutes after it started to boil
- ☐ 5 minutes or more after it started to boil
- ☐ I did not boil my water

14. If you could have gotten more information about the advisory, which source would you MOST have wanted to give you more information? Select one.

- ☐ Family member or friend or neighbor
- ☐ [Water System]
- ☐ [Local newspaper(s)]
- ☐ Local radio. Which station(s): _____
- ☐ [Local Health Department]
- ☐ Website, blog, other web format. Please specify: _____
- ☐ Television. Which station(s): _____
- ☐ Coworker
- ☐ Automated message (e.g., answering machine, voice mail, email, text message). Please specify: _____
- ☐ Social media (e.g., Facebook, Twitter) Please specify: _____
- ☐ Door hanger or Door-to-door visit
- ☐ Other. Please specify: _____ _____

Post-Advisory Community Survey, continued

Demographics

15. Did you live in [area] on [date of event]?

☐ Yes ☐ No

15a. If no, what was your ZIP code on [date]? _____

16. Gender

☐ Male ☐ Female

17. What is your age?

☐ 17 or under
☐ 18–30
☐ 31–40
☐ 41–50
☐ 51–60
☐ 61–70
☐ 70+

18. Do you have children under the age of 18 in your home?

☐ Yes, how many ____ ☐ No (Go to Question 19)

18a. How many children under the age of 18 are in your home? _____

18b. Age range of children. Check all that apply.

☐ 0–1 year
☐ 2–4 years
☐ 5–12 years
☐ 13–17 years

19. Is English the primary language in your home?

☐ Yes
☐ No, the primary language is _____

Thank you for taking the time to complete this questionnaire.

Corrective Action Tracking Form

PURPOSE

Tracking corrective actions to be taken after a drinking water advisory helps to ensure that follow-up items are completed. This form can be used for advisory debriefings, exercises, and other collaborations.

DIRECTIONS

Complete this form immediately after a session. Distribute to the responsible individual or organization.

TRACKING NO.	DATE ENTERED:
Responsible Staff:	
Organization:	
Phone:	E-mail:
Drinking Water Advisory Date:	
Short Description of Findings:	
Determination:	
Detailed Description of Action Needed:	
Estimated Completion Date:	
For Internal Use Only	
Entered By/Date:	Date Action Completed:

Standard Operating Procedure (SOP) Updates

PURPOSE

Updating SOPs based on the evaluation findings is the final step after an incident. This table provides a simple means of tracking action items and assigning responsibilities for those updates.

DIRECTIONS

In the table below:

- *Identify the participating departments, agencies, or other partners in the "Team/Group" columns*
- *Identify the area in need of improvement in the "Issue/Problem" column*
- *Identify the actions needed to make the improvement in the "Required Actions" column*
- *Identify the role or responsibility for each team/group involved in the action as one of the following:*

P = Primary	*O = Oversight*	*N/A = Not applicable; No responsibility related to this action*
S = Support	*C = Coordination*	

This table can be adapted to reflect current practices or terms used in a specific organization. Include the date as a point of reference.

Date						
Issue/Problem	[Team/Group] [e.g.,Water Quality]	[Team/Group] [e.g.,Operations]	[Team/Group] [e.g.,Communication]	[Team/Group] [e.g.,Administration]	[Team/Group] [e.g.,Management]	Required Actions
[For example: Individuals who are deaf or hard of hearing not effectively reached during event]	*[N/A]*	*[S]*	*[P]*	*[O]*	*[C]*	*[For example: Update list of susceptible populations and contacts]*

Debriefing Evaluation Form

PURPOSE

This evaluation form can provide data to help evaluate an exercise, advisory, and debriefing. The information can be used to improve advisories, as well as to develop and evaluate future protocols and exercises.

DIRECTIONS

Copy this form and give to the debriefing or exercise participants after the session. Ask them to complete the form before they leave. Collate the results and use them to evaluate the debriefing, advisory, or exercise. The form can also be used as an informal discussion guide for debriefings and exercises.

1. Did this exercise assist your organization in understanding the aspects of collaboration needed to respond to water and health issues?

   ☐ Yes ☐ No

   Please explain/elaborate: _____

   _____

   _____

2. Overall, will this experience assist you in better serving your community?

   ☐ Yes ☐ No

   Please explain/elaborate: _____

   _____

   _____

3. Were all of the organizations needed for this type of collaboration "at the table"?

   ☐ Yes ☐ No

   If no, which organizations or individuals should be involved in future collaborations? _____

   _____

   _____

4. Did you need more information to address the scenarios?

   ☐ Yes ☐ No

   If yes, what type of additional information did you need? _____

   _____

   _____

Debriefing Evaluation Form, continued

5. Were any methods of communication missing?

   ☐ Yes ☐ No

   If yes, what would you add? _____

   _____

   _____

6. What steps does your organization need to take to improve communication and relationships with stakeholders in your community? _____

   _____

   _____

   _____

7. What steps does your organization need to take to improve relationships with water systems/health departments/healthcare providers? _____

   _____

   _____

   _____

8. Please provide other comments or observations. _____

   _____

   _____

   _____

   _____

   _____

Thank you for your time and assistance with this project.

Follow-Up Memo

PURPOSE

Water systems and organizations involved with an advisory or exercise should communicate about results and actions. Sending a simple memo will keep staff and the communication network partners engaged and informed.

DIRECTIONS

Use this outline for the follow-up memo. Include details as appropriate. Adapt the memo for each specific advisory, exercise, or other incident.

MEMO: [Subject]

DATE:

TO: [All communication network participants and any other organizational representatives who are expected to undertake activities as a result of the drinking water advisory, exercise, or incident.]

FROM: [Water System Manager/Emergency Operations Plan Leader]

CONTENTS:

- [Thank you for your participation during the advisory/exercise/incident]
- [Describe general success of the advisory/exercise/incident]
- [Describe follow-up assignments]
  - [Actions/recommendations]
  - [Assigned to]
  - [Expected completion date]
  - [Report progress to whom, when]

ATTACHMENTS:

- [Advisory/Exercise/Incident report]
- [Corrective Action Tracking Form]

Appendix C: Online Resources

Amebas

- *Naegleria fowleri*—Primary Amebic Meningoencephalitis (PAM)—Amebic Encephalitis. Tap & Faucet Water. CDC. 2015. http://www.cdc.gov/parasites/naegleria/tap-faucet-water.html

Contaminants (chemical, biological, or radiological)

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- Chemical Safety of Drinking Water: Assessing Priorities for Risk Management. WHO. 2007. http://apps.who.int/iris/bitstream/10665/43285/1/9789241546768_eng.pdf
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- VOCs: Volatile Organic Chemicals in Private Drinking Water Wells. Minnesota Department of Health. 2015. http://www.health.state.mn.us/divs/eh/hazardous/topics/vocs.html
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- Drinking Water Contaminants. Western Australia State Health. 2016. http://www.public.health.wa.gov.au/3/961/2/drinking_water_contaminants.pm

Cyanobacterial Blooms/Cyanotoxins/Harmful Algal Blooms (HABs)

- General Information. Harmful Algal Blooms (HABS)-Associated Illness. CDC. 2016. www.cdc.gov/habs
- Health Studies Branch—Promoting Clean Water for Health. CDC. 2016. http://www.cdc.gov/nceh/hsb/cwh/default.htm
- Ground Water and Drinking Water—Cyanotoxins in Drinking Water. EPA. 2016. https://www.epa.gov/ground-water-and-drinking-water/cyanotoxins-drinking-water
- Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water. EPA, Office of Water. 2015. https://www.epa.gov/sites/production/files/2015-06/documents/cyanotoxin-management-drinking-water.pdf

Cyanobacterial Blooms/Cyanotoxins/Harmful Algal Blooms (HABs), continued

- 2015 Drinking Water Health advisories for Two Cyanobacteria Toxins. EPA, Office of Water. 2015. http://www2.epa.gov/sites/production/files/2015-06/documents/cyanotoxins-fact_sheet-2015.pdf
- For tools on how to communicate the risks of cyanotoxins in drinking water, see: https://www.epa.gov/ground-water-and-drinking-water/cyanotoxins-drinking-water

Data Management

- Analyzing Quantitative Data for Evaluation. Evaluation Briefs. CDC. 2009. http://www.cdc.gov/HealthyYouth/evaluation/pdf/brief20.pdf
- Analyzing Qualitative Data. Program Development & Evaluation. University of Wisconsin-Extension. 2003. http://learningstore.uwex.edu/assets/pdfs/G3658-12.pdf
- Collecting Evaluation Data: An Overview of Sources and Methods. Program Development and Evaluation. University of Wisconsin-Extension. 1996. http://learningstore.uwex.edu/assets/pdfs/G3658-4.pdf
- Data Collection Methods for Program Evaluation: Questionnaires. Evaluation Briefs. CDC. 2008. http://www.cdc.gov/HealthyYouth/evaluation/pdf/brief14.pdf
- Qualitative Research Guidelines Project. Robert Wood Johnson Foundation. 2006. http://www.qualres.org/index.html

Disinfecting Water

- Emergency Disinfection of Drinking Water. EPA. 2015. https://www.epa.gov/sites/production/files/2015-11/documents/epa816f15003.pdf
- Emergency Action Plans for Retail Food Establishments. Michigan Emergency Management, pp. 18–30. http://www.michigan.gov/documents/MDA_EmergencyActionPlan_109428_7.pdf

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- Blue Cascades Exercise Series. Center for Regional Disaster Resilience. Pacific Northwest Economic Region. 2007. http://www.regionalresilience.org/uploads/2/3/2/9/23295822/blue_cascades_iv_action_plan.pdf
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- Homeland Security Exercise and Evaluation Program (HSEEP). FEMA. 2015. https://www.fema.gov/media-library/assets/documents/32326
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- Emergency Response Planning Guide for Public Drinking Water Systems. State of Connecticut Department of Public Health. 2004. http://www.ct.gov/dph/LIB/dph/drinking_water/pdf/CT_ERP_GUIDE.pdf
- Drinking Water Emergency Exercises: Summary Reports. Washington State Department of Health. 2005. http://www.doh.wa.gov/Portals/1/Documents/Pubs/331-280.pdf

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- Emergency Planning for Water Utilities. American Water Works Association. 2001. http://www.awwa.org/portals/0/files/publications/documents/toc/M19ed4.pdf

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- How to Flush Plumbing Appliances. Toledo-Lucas County Health Department. 2014. http://ftpcontent4.worldnow.com/wtol/pdf/FlushingAppliancesB.pdf
- Residential Flushing Instructions. Nibley City, Utah. 2015 http://nibleycity.com/images/homepage/2015/RESIDENTIAL_FLUSHING_INSTRUCTIONS.pdf

Health Literacy

- Health Literacy. Health Resources and Services Administration. U.S. Department of Health and Human Resources. http://www.hrsa.gov/publichealth/healthliteracy
- Quick Guide to Health Literacy. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Sec. 3:1. https://health.gov/communication/literacy/quickguide/

Legionella/Legionellosis

- Legionellosis: Risk Management for Building Water Systems. American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). 2015. https://www.ashrae.org/resources--publications/bookstore/ansi-ashrae-standard-188-2015-legionellosis-risk-management-for-building-water-systems

National Incident Management System (NIMS)

- Critical Infrastructure and Key Resources Support Annex. NIMS Resource Center. FEMA. 2008. http://www.fema.gov/pdf/emergency/nrf/nrf-support-cikr.pdf
- Incident Command System. FEMA. 2015. http://www.fema.gov/incident-command-system-resources
- Water Sector National Incident Management System (NIMS) Implementation Objectives. EPA. 2009. http://www2.apwa.net/Documents/About/TechSvcs/NIMS_Fact_Sheet_for_Water_Sector%281%29.pdf

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- Links to Partners: State and Territorial Drinking Water Protection Programs. EPA. 2012. https://www.epa.gov/home/health-and-environmental-agencies-us-states-and-territories

Public Notification, Safety, and Preparedness

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- Boil Water Door Hanger in English and Spanish. Washington State Department of Health. **http://www.doh.wa.gov/Portals/1/Documents/4200/spa-eng-dr-hang.pdf**

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- Risk Communication in Action: The Tools of Message Mapping. EPA. 2007. **http://nepis.epa.gov/Adobe/PDF/60000IOS.pdf**
- A Primer on Health Risk Communication. U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 1994. **http://www.atsdr.cdc.gov/risk/riskprimer/index.html**
- Risk Communication. Water Quality: Guidelines, Standards and Health. World Health Organization. 2001. **http://www.who.int/water_sanitation_health/dwq/iwachap14.pdf**
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Sample Reporting Forms

- National Outbreak Reporting System–Waterborne Disease Transmission. CDC. 2008. http://www.cdc.gov/healthywater/pdf/statistics/wbdoss/nors/NORS_CDC_5212.pdf

Susceptible Populations

- The Modern Language Association Language Map. Modern Language Association. 2016. https://apps.mla.org/map_main
- American Fact Finder. U.S. Census Bureau. http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml
- Translations for Public Notification. Washington Department of Health, Office of Drinking Water. http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/DrinkingWaterEmergencies/PublicNotification/TranslationsforPublicNotification
- Preparing Your Drinking Water Consumer Confidence Report: Guidance for Water Suppliers. Second Revision. EPA. 2010. http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10072FC.txt
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Association of State Drinking Water Administrators

American Water Works Association

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