



# **Boil Water Notices - Frequently Asked Questions for Hospitals and Other Resident Medical Facilities**

Questions from hospitals, nursing homes and other long term resident care facilities may arise during a boil water event. Boil water events may result from a boil water notice or advisory issued by a public water utility or from a boil water order issued by the local Health Department to a medical facility that runs its own water supply. A boil water event may also be initiated voluntarily by a medical facility in response to water quality concerns that arise at the facility. Below are answers to questions that are commonly asked. Additional information may be found in separate fact sheets for food service providers and water utilities. The information in these fact sheets is intended to help regulated facilities deal with boil water events, and does not revise or supercede any applicable regulations or permit requirements. It is recommended that facilities work closely with their infection prevention and control experts and their NYS regional epidemiologists to ensure the safety of their patients, staff, and visitors during a boil water event.

## **Questions**

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### **Q1 - Why was a boil water notice or order issued for my water?**

The specific reason for a boil water event should be included in the notification that informs your facility about the need to boil water. Your water utility and your local Health Department can also answer questions about specific conditions creating the need to boil water and what to do. A boil water notice or order is issued by water utilities or health agencies as a precaution to protect consumers when an unexpected condition has created a potential for biological contamination of drinking water. Common reasons for a boil water event include loss of

pressure in the distribution system, treatment disruptions, and other unexpected water quality problems. These often result from events such as equipment failures, water line breaks, power outages and floods.

## **Q2 - Is there a recommended standard for boiling water?**

Bring water to a **FULL ROLLING BOIL for 1 MINUTE** and **COOL BEFORE USE**.

Because water may take 20 to 30 minutes to cool, plan ahead. When possible, prepare boiled water in advance so you will not need to use it when hot and risk scalds or burns.

## **Q3 -How long will the need to boil water continue?**

Public notification will be given when a boil water notice or order is lifted. Typically the need to boil water lasts for 24 to 48 hours, but can be longer and may last for several days or more. How long will depend on the conditions that caused the need to boil, how quickly the conditions are corrected, and how long it takes for laboratory results to confirm it is safe to return to normal water use. Your water utility and/or local Health Department can update you on the progress of corrective actions and how long the event is expected to last.

## **Q4 - Does the need to boil water apply to water used for patients? Staff? Visitors?**

Yes, it applies to everyone. When a boil water event occurs there is a potential for exposure to your patients, the public, and your staff from direct consumption, dermal contact and accidental ingestion. Exposures can also occur from: medical procedures and equipment that use water for operating and/or sanitizing processes; ingestion of beverages, food, ice, or solutions made with water; water contact with skin, aggravated gums and open sores; etc.

## **Q5 - What infectious organisms might be present in contaminated water?**

There are many possible waterborne pathogens. Organisms of concern in New York State include protozoa such as *Giardia* and *Cryptosporidium*; bacteria such as *Escherichia coli* and species of *Shigella*, *Salmonella*, *Vibrio*, *Campylobacter*; and viruses such as *hepatitis A*, adenoviruses, *hepatitis E*, enteroviruses (including polio-, echo, and coxsackie viruses), rotaviruses and caliciviruses. Opportunistic organisms, such as nontuberculous mycobacteria and *Ralstonia pickettii* can also be present in the water. These organisms primarily affect the gastrointestinal system, causing diarrhea, abdominal cramps, nausea, and vomiting with or without fever. In some circumstances contact with skin and other body tissues could also lead to infection.

## **Q6- What measures should be taken?**

The specific measures will depend on the situation and your facility needs. During a boil water event medical facilities must eliminate or control exposure to microbial contaminants that may be in the water supply. This is accomplished by identifying all means by which people can be exposed and then implementing measures to break the exposure pathways. This will require identifying ingestion and contact routes and evaluating processes and equipment that use potable water. Specific measures should be developed and included in your facility emergency plan as standard operating procedures to address boil water events as well as a loss of water supply.

The Center for Disease Control and Prevention's (CDC) Guidelines for Environmental Infection Control in Health-Care Facilities, dated 2003, details many potential processes and equipment pathways for waterborne pathogens and opportunistic microorganisms, and recommends recovery and remediation measures for water related emergencies.

## **Q7 - Is it safe to use bottled water?**

Bottled water that is certified for sale in New York State may be safely used for drinking, cooking, and washing with no further treatment. Certification can be verified by checking bottle labels for a NYSHD certification number. Bottled water may be preferable when boiling is not possible or is inconvenient. It is a good idea to keep a supply of bottled water on hand for just such a use.

### **Q8 - What is the shelf life/expiration date for bottle water?**

Bottled water can be used indefinitely if stored properly, but many manufacturers advise a two year period to preserve taste. The International Bottled Water Association advises consumers to store bottled water at room temperature (or cooler), out of direct sunlight and away from solvents and chemicals such as gasoline, paint thinners and dry cleaning chemicals.

### **Q9 - Are there any other ways to disinfect water so that it is safe to drink?**

Boiling and bottled water are reliable and preferred means to provide potable water during a boil water event. However, it may be impractical to use boiled or bottled water for some purposes. Chemical disinfection can be used, however this may not be as reliable as boiling water for destroying pathogens and is not very convenient, especially for large volumes of water. Medical professionals should only use chemical disinfectants when conditions support this decision.

**Chemical Disinfection** - If boiling water is not possible (for example during a power outage) potentially contaminated water can be made potable with chlorine or iodine. To disinfect with chlorine add six drops (1/8; teaspoon) of unscented, ordinary household bleach (5.25 percent sodium hypochlorite) per gallon of water. Mix the solution thoroughly and let stand for about thirty minutes before use. To disinfect using iodine, add eight drops of 2% tincture of iodine per quart of water. Mix thoroughly and allow the water to stand at least 30 minutes before it is used.

These disinfection methods can impact the normal taste of your water. Aerating the disinfected water by pouring it back and forth between two clean containers can help to restore normal taste.

Chemical disinfection may not be appropriate to protect vulnerable patients or where raw sewage or cyst (e.g. *Cryptosporidium*) contamination may be present. Chemical disinfection is only marginally effective against *Giardia* and *Cryptosporidium* and may not be effective when high volumes of solids or suspended matter are present (i.e. sewage contamination).

### **Q10 - What is an acceptable alternate source?**

Acceptable alternate sources of drinking water may include:

- Water from another, unaffected public water supply
- Water from another, unaffected public water supply
- Water from an approved source delivered by a NY State certified bulk water hauler
- Water provided in a State Office of Emergency Management (SOEM) tanker

### **Q11 - Does my water treatment system provide enough protection?**

It will depend on the contaminant, the treatment provided, and the extent of coverage of the treatment within the facility. Most dialysis units are capable of fully treating water. Some other treatments such as chloramination for *Legionella* control may also provide sufficient treatment. Common treatment devices that have limited or no ability to remove pathogens include: carbon filters; water softeners; ion exchange units; sediment filters; chlorine removers; and aerators.

If there is any doubt, consult with your technical staff and your local Health Department.

## **Q12 - Is it safe to use water from a water tanker?**

Water provided by a New York State certified bulk water hauler can be used for drinking, cooking, and washing with no further treatment. You may also rely on water from a tanker operated by your water utility or by an emergency response agency such as the NY State Office of Emergency Management. If you arrange for bulk water delivery on your own, you should ask the hauler to verify that:

- the bulk hauler is certified in New York State (you can ask for their certification number),
- the water to be delivered is from a source that is approved by the Health Department, or from another public water supply that is not under the boil water notice, and
- water will be transported in a sanitized water tanker (certified haulers have standard procedures for this).

A list of New York State certified bulk water haulers can be obtained from NYS-Certified Bulk Water Facilities web page.

## **Q13 - What specific measures should I take to protect my dialysis patients?**

Regulations of the U.S. Department of Health and Human Services, Centralized Medicaid and Medicare System (CMS) require that dialysis units be supplied a very high quality water that meets the standards set by the Association for Advancement of Medical Instrumentation (AAMI). If your dialysis center is equipped with a water treatment system that meets the AAMI water quality standards and is operated in full conformance with the CMS regulations, you should be able to continue treating patients without the need for boiling or other supplemental disinfection. However, since few (if any) dialysis facilities pipe water treated to AAMI standards to their sinks, fountains, hot water tanks, etc., the same precautions appropriate for other medical facilities should be taken to control potential exposures at these locations for patients, the public, and staff.

To help ensure that you meet the AAMI standards, it is recommended that your dialysis water treatment system be run and maintained by an operator certified in Biomedical Nephrology Technology by the National Nephrology Certification Organization. Your operator should be aware of the boil water event so that your dialysis system can be closely watched and adjusted if needed to maintain AAMI quality water during the boil water event.

Do not continue to provide dialysis treatment if you are unsure whether your system is in full compliance with the AAMI water quality standards and the applicable CMS regulations. If you stop providing dialysis treatment as a result of potential water quality concerns, you must ensure that all your patients have access to their needed treatment at alternative locations.

## **Q14 - What other water uses or units may be affected?**

This will depend on the equipment, infrastructure, procedures, and infection control measures employed by your facility. Some water uses noted in the CDC Guidelines (2003) that can be a concern during a boil water event include: bronchoscopy and endoscopy instrument reprocessing; facility prepared solutions and disinfectants; nebulizers; water baths; ventilator temperature probes; vaporizers; humidifiers; mist tents; hydrotherapy tanks/pools; showers, sinks, and baths; ice machines; ice baths for thermodilution catheters; eye wash stations; vacuum suction equipment; facility-prepared, deionized water; decorative fountains; and holy water.

## **Q15 - What should I do about sinks and fountains?**

All fountains and sinks accessible to the public should be shut off until the boil water event has ended and the water lines feeding them have been flushed. If these water sources cannot be shut off, they should be bagged or signs that legibly state "Do Not Use" must be posted at each location. Similar measures should be provided at locations where staff can access potentially contaminated public water, even if no patients or public normally

visit that location. Bottled or boiled water must be provided at a convenient location to meet the need for drinking water.

### **Q16 - Is potentially contaminated water safe for washing clothes/linens?**

Yes, unless a "Do Not Use" notification has been issued, it is safe to wash clothes and linens in tap water as long as the clothes are completely dried with heat before being used. However, increased turbidity that sometimes occurs during a boil water event may discolor items.

### **Q17 - Can I use alcohol-based hand sanitizers to clean my hands?**

In general, alcohol-based hand sanitizers (ABHS) are a safe and effective means of cleaning your hands when they are not visibly soiled. When hands are visibly soiled, they should be cleaned with soap (non-antimicrobial or antimicrobial) and clean, warm water.

Because ABHS have reduced effectiveness against certain disease causing organisms (e.g., *Cryptosporidium* and some bacterial spores), hands should be washed with soap (non-antimicrobial or antimicrobial) and clean, warm water after using the restroom. During a boil water event, potable or bottled water should be provided for soap and water hand washing in restrooms for patients, visitors, and staff.

### **Q18 - My facility also provides food service. How do I operate this during a boil water event**

To continue operating a food service during a boil water event, you must be able to fully protect patients, customers and staff from the exposures to potentially contaminated food and water. This is not a simple matter. For additional details please refer to the fact sheet on boil water notices for food service establishments.

### **Q19 - Can I use ice made at my facility?**

Ice from your ice maker can be used **if you can confirm** that it was all made well in advance of the boil water event (before the water quality problem arose). Any ice made since the boil water event began, ice whose age is uncertain, and any ice mixed with ice whose age is uncertain may be unsafe and must not be consumed or used in food preparation.

It is best to label ice as safe or unsafe. Discard unsafe ice to prevent accidental use unless it has a critical use and can be controlled to avoid exposures. Unsafe ice should not be placed into direct contact with any food or drink items (such as in seafood display coolers).

### **Q20 - What about the ice machine?**

The ice machine should be disconnected from the water line and drained. It should not be reconnected until after the boil water event has ended and the lines and machine are properly flushed and disinfected (per the manufacturer's directions). Disinfection should include the ice bin itself and any scoops or ice containers associated with the machine.

### **Q21 - Is potentially contaminated water safe for bathing and shaving?**

This question should be evaluated by your infection control staff for the circumstances leading to the boil water event, the conditions present at your facility, and individual patient needs.

As a general consideration, unless a "Do Not Use" notification has been issued, your water is probably safe for use by healthy individuals showering, bathing, and washing if a good soap is used and care is taken not to

swallow water. Children and disabled individuals should be supervised when bathing to ensure water is not ingested. Bathing time should be minimized and sponge bathing may be advisable to further reduce the potential for ingestion. People with open wounds, blisters/sores, recent surgical wounds, are immunocompromised, or are suffering from chronic illness should use boiled water (then cooled) or water from an acceptable alternate source for bathing, skin cleansing and shaving until the boil water event is ended.

## **Q22- Does a boil water event affect the use of toilets?**

There is no need to disinfect water used for flushing. Unless a "Do Not Use" notice or a water conservation notice was issued, there is no concern about using your toilet.

## **Q23 - What if patients or staff have already consumed potentially contaminated water?**

Usually the chance of becoming ill from consuming potentially contaminated water during a boil water event is low. However, illness is possible, especially for people that have a chronic illness or may be immunocompromised. This is why boil water events are initiated. Anyone experiencing symptoms of gastroenteritis, such as diarrhea, nausea, vomiting, abdominal cramps, with or without fever, should seek medical attention. These symptoms are not unique to exposure to waterborne organisms and a medical evaluation is key to identifying the cause of illness. If there is any suspicion of a waterborne illness and patients are exhibiting symptoms of a waterborne disease, clinical samples should be collected after consultation with your facility's infection prevention and control department.

## **Q24 - When can my facility return to normal use of the public water?**

Your water utility and/or local Health Department will advise you when the public water supply is again safe for normal use. However, because medical facilities serve people that are already ill or immunocompromised, and may have unique equipment or plumbing, there are precautions that must be taken before your facility can return to normal use of the public water supply.

## **Q25 - How do I make my facility ready to again rely on public water?**

Follow your emergency response plan, and work with your facility engineers and local Health Department officials to remove all water that may have entered the facility during the time that the boil water event was in effect. Individual facility managers should develop flushing procedures that are sufficient to completely clear all plumbing lines, fixtures and equipment of questionable water. All questionable water should be flushed to waste. Flushing procedures should provide for at least one full tank volume of water to be flushed through hot water tanks. Some of your medical equipment may need flushing, and specific disinfection procedures may need to be implemented before the equipment can be used for patients. If you do not have flushing or disinfection procedures already available for your equipment, check with your equipment supplier for advice.

More detailed information can be found in other fact sheets for certain consumers, such as for food service establishments, which are available from the New York State Department of Health or from your local Health Department. If you facility has its own water system, more detailed information can be found in the water utility fact sheets.

Additional equipment and processes may also be effected by a complete loss of public water or a Do Not Use Order; including but not limited to equipment that uses potable water for coolant or make up water such as X Ray machines, backup generators, and heating and ventilation equipment.