



Infectious Disease Epidemiology Section
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Boil-Water Advisories and Infection Control

Boil-Water Advisory

A boil-water advisory is a public health announcement that the public should boil tap water before drinking it. When issued, the public should assume the water is unsafe to drink.

Advisories can be issued after:

Precautionary advisory

- Failure of or substantial interruption in water treatment processes that result in increased turbidity levels or particle counts and mechanical or equipment failure;
- Circumstances that compromise the distribution system (e.g., water main break),
- Natural disaster (e.g., flood, hurricane, or earthquake).

Advisory with evidence of contamination

- Violations of the total coliform rule or the turbidity standard of the surface water treatment rule;
- Positive test results for pathogens (e.g., *Cryptosporidium*, *Giardia*, or *Shigella*) in water;

Definitions of term used for water:

- Tap water is water from the public water supply,
- Boiled water is water that has been boiled for 2 minutes and allowed to cool. Make sure that the water is cooled enough to prevent scalding,
- Bottled water is not sterile but does not contain any pathogens

Actions to take in Health Care Facilities:

- Drinking water: Patients, visitors, staff should not drink water from the tap. Use bottled water,
- Water fountains: Do not use water fountains. Place clearly labeled signs on each fountain,
- Coffee machines: Do not put tap water to percolate. Percolating is not sufficient to inactivate all microorganisms. Water must be boiled for 2 minutes before being put through the machine.

- **Hot water taps:** Do not use water from hot water taps because the time/temperature is not sufficient to inactivate pathogenic microorganisms.
- **Ice machines:** Do not use ice machines. Place clearly labeled signs on each machine,
- **Brushing teeth /Dentures:** Do not brush teeth with tap water. Dentures should not be soaked in tap water,
- **Bath for Newborn infants:** Do not use tap water to bathe infants. Use bottled water or boiled water that has been cooled (make sure it has been properly cooled),
- **Bath /Shower:**
For a precautionary advisory tap water may be used for patients with healthy immune system. Use bottled or boiled water for infants, young children and anyone with a weakened immune system.
For an advisory with evidence of contamination do not use tap water for bath or shower.
- **Sitz bath:**
For a precautionary advisory tap water may be used with addition of an antiseptic for patients with healthy immune system. Use bottled or boiled water for infants, young children and anyone with a weakened immune system.
For an advisory with evidence of contamination do not use tap water.
- **Wound care:** Do not use tap water.
- **Eye care:** Use normal saline.
- **Handwashing (Staff):**
If hands are not soiled, use hand sanitizers. Hand sanitizers are not effective if hands are wet or visibly soiled,
If hands are wet, dry them before applying hand sanitizers,
If hands are visibly soiled, wash them preferably with boiled water or disposable wipes. Once dry use hand sanitizers.
- **Humidifiers and other equipment using water:** Use boiled or bottled water.
- **Laundry, environmental cleaning (floors...):** Tap water may be used.
- **Carts** should not be cleaned with tap water. Use disinfectant solutions.
- **Any instrument /equipment connected to the plumbing system** should not be used.
- **Food preparation:** Use boiled water or bottled water to wash fruits or vegetables,

Use boil Order Advisory on ...to remind the potential users.	Boil Order Advisory Do not drink water From this fountain	Boil Order Advisory Do not use ice machine	Boil Order Advisory Use boiled or bottled water for this coffee machine
Signed to be removed only by maintenance staff Date __ / __ / __			

When the Advisory is Cancelled, flushing of water lines:

Flushing of waterlines is necessary to reduce residual microbial contamination. All incoming waterlines from the public water system inside the facility (e.g., faucets, waterlines, and equipment) should be flushed. No consensus exists regarding the optimal duration for flushing procedures after cancellation of the advisory; recommendations range from 1 to 5 minutes.

Actions to take in Dental Offices:

The Centers for Disease Control and Prevention (CDC) has been asked by the American Dental Association (ADA), state and local health departments, and local water regulators to provide guidance and scientific information regarding the risk of contamination from cross-connections from the dental operative unit.

The dental operative unit is a medical device at each dental chair through which water and compressed air flow during dental procedures. Cross-connections are the links through which contaminated materials may enter a potable water supply system when the pressure of the polluted source exceeds the pressure of the potable source (e.g., during a water main break).

- Equipment: Water should not be delivered to patients through the dental unit, ultrasonic scaler, or other dental equipment that uses the public water system. 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 marketing by FDA).
- Patients should rinse with bottled or distilled water until the boil-water advisory has been cancelled. During these advisory periods, tap water should not be used to dilute germicides or for hand hygiene unless the water has been brought to a rolling boil for >1 minute and cooled before use.
- For hand hygiene, antimicrobial products that do not require water (e.g., alcohol-based hand rubs) can be used until the boil-water notice is cancelled. If hands are visibly contaminated, bottled water and soap should be used for handwashing; if bottled water is not immediately available, an antiseptic towelette should be used.
- After the incoming public water system lines are flushed, dental unit waterlines should be disinfected according to the manufacturer's instructions

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Alternatives

Because water from the affected public system should not be delivered to the patient during a boil-water advisory, many dental procedures cannot be performed. Alternative water sources, such as separate water reservoirs that have been cleared for marketing by the FDA, can be used. However, if the alternative water source were to flow through a dental operative unit previously connected to the affected public water supply, the dental operative unit water lines should first be flushed and disinfected according to the manufacturer's instructions.

Q1 - Why was a boil water notice issued for my water?

A boil water notice is issued by water utilities or health agencies as a precaution to protect consumers from drinking water that may have been contaminated with disease causing organisms (also called pathogens). Boil water notices are typically issued when an unexpected condition has caused a potential for biological contamination of water in a public water system. Common reasons for a boil water notice include loss of pressure in the distribution system, loss of disinfection, and other unexpected water quality problems. These often result from other events such as water line breaks, treatment disruptions, power outages and floods.

The reason for your boil water notice should be included in the notification. Your water utility and your local Health Department office can also answer questions you may have about why a boil water notice was issued for your water supply, and what to do.

Q2 - How long will the need to boil water continue?

Public notification will be given when the boil water notice is lifted. Your water utility and your local Health Department office can also give you details on how long your boil water notice might last and will advise you when it is safe to return to normal water use.

Typically a boil water event lasts for 24 to 48 hours, but this can be longer and the need to boil water may last for several days or more. How long depends on the conditions that caused the need to boil, how quickly the conditions can be corrected, and how long it takes for laboratory results to confirm that your water is again ready to drink.

Q3 - How do I boil my water so that it is safe to drink?

Bring water to a **FULL ROLLING BOIL for 1 MINUTE**, then allow the water to **COOL BEFORE USE**. Because water may take 30 minutes to cool, plan ahead. Make up a batch of boiled water in advance so you will not be tempted to use it hot and risk scalds or burns. Boiled water may be used for drinking, cooking, and washing.

Here's an easy way to remember...ROLL for ONE then COOL.

Q4 - Does my in-home water treatment system provide enough protection?

No! The Department of Health does not encourage residents to rely on home treatment units. It is recommended that you use boiled (and then cooled) water or an alternate source such as bottled water that is certified for sale in New York State. Most in-home treatment devices are not designed to remove pathogens, and should not be relied on to protect you during a boil water event. Even treatment units that are designed to remove pathogens may not do so all the time unless they have been properly maintained. Common home treatment devices that have limited or no ability to remove pathogens include: carbon filters; water softeners and other ion exchange units; sediment filters; chlorine removers; and aerators.

Q5 - What if I have a reverse osmosis treatment unit on my faucet or house?

A properly operating reverse osmosis (RO) unit can remove pathogens, including viruses, bacteria and protozoa. However there are many units available to the public through hardware stores and elsewhere, not all of which can be relied upon to remove pathogens. Furthermore, RO units must be diligently maintained to assure effective treatment. If you are at all uncertain of the capabilities of your reverse osmosis unit, do not rely on it to remove potentially harmful pathogens. Instead, you should use boiled (and then cooled) water or water from an acceptable alternate source.

Q6 - What if I have a water pitcher/dispenser with a filter?

Most of these units are not capable of removing pathogens, including viruses, bacteria, and protozoa. The few that are designed to do so, may still require disinfection to address viruses and must be properly operated and diligently maintained to ensure effective treatment. It is recommended that you use boiled (and then cooled) water or an alternate source such as bottled water that is certified for sale in New York State.

Q7 - Are there any other ways to disinfect my water so that it is safe to drink?

Boiling and bottled water are the most reliable means to ensure safe potable water during a boil water event and should always be your first choices. However, in extended emergencies such as an area wide power outage, potable water that needs no further treatment may be supplied by your water utility or local emergency response agency from a tanker truck or a water trailer called a water "buffalo".

There are also disinfection methods using ordinary household chemicals that homeowners can use if needed. These can be found in several publications, including the State Department of Health pamphlet "Don't Be Left in the Dark", also available through your local Health Department.

CAUTION - Chemical disinfection is limited in effectiveness and is not appropriate for very turbid (muddy) water, or where raw sewage or other fecal matter may be present. In this case only use an alternate source of water.

Q8 - What is an acceptable alternate source for safe drinking water?

Acceptable alternate sources for drinking water include:

- Bottled water that is certified for sale in New York State
- Water from another public water supply (one that is not under the boil water notice)
- Water from a New York State (NYS) certified bulk water hauler
- Water from a water tanker or water "buffalo" that is provided by your water utility or by emergency response agencies.

Roadside springs are not a sure source of safe drinking water. They are seldom monitored and no one is in charge of keeping them safe. If you must use roadside spring water for drinking or food preparation, we recommend that you boil (and then cool) it before use.

Q9 - Is it safe to use bottled water?

It is safe to use bottled water that is certified for sale in New York State. Such water may be used for drinking, cooking, and washing with no further treatment. Bottled water may be preferable when boiling is not possible or is inconvenient. It is always a good idea for consumers to keep an emergency supply of bottled water on hand for just such a use.

Q10 - What is the shelf life/expiration date for bottled water?

Many manufacturers advise a two year period for taste, but bottled water can be used indefinitely if stored properly. 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.

Q11 - Is it safe to use water from a water tanker?

Bulk water is not as convenient as bottled water, but can be a much welcomed and safe alternate water source, and in extended emergencies may be provided to you at no charge.

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. Depending on the boil water event, tankers may be set up as temporary water stations in your community where you can fill containers for home use.

If you arrange for bulk water 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.

Q12 - What container should I use to obtain water from another location?

The container you use to get water from an alternate source or temporary water station can greatly affect your water. Never use a container that has ever held a chemical, gasoline or other fuel. Use only clean containers that you know are fit and that are free of all dirt and contaminants.

Q13 - Can I use my water for cooking?

No, any water used for food preparation or cooking needs to be from an acceptable alternate source or boiled first.

Q14 - What if I am boiling my water as part of the cooking process?

It is more protective to boil the water first, to prevent the potential for inadequate heating. The cooking process should bring the water to a full rolling boil for at least one minute before adding the food item (for example, making pasta). If the water will be at a slight boil for a long time, then this will also be protective. For example, you may be cooking beans or boiling chicken for 10 - 20 minutes.

Q15 - How should I wash fruit and vegetables and make ice?

Fruits, vegetables, and any other foods that will not be cooked should be washed and rinsed with boiled (and then cooled) water or water from an acceptable alternate source. Similarly, ice should be made with either boiled water or water from an acceptable alternate source.

Q16 - Can I use my water for making baby formula or drinks?

No, not without precautions! Any water used for baby food, formula, or making beverages must be boiled (and then cooled) or be from an acceptable alternate source.

Q17 - Is potentially contaminated water safe for washing dishes?

Hand-washed dishes: No! Use boiled (then cooled) water, water from an alternate source, or after washing with dish detergent rinse for a minute in a dilute bleach (1 tablespoon of unscented bleach per gallon of water). Allow dishes, cutlery, cups, etc. to **completely air dry** before use.

Home dishwasher: Yes, if the hot wash is at least 170o F and includes a full dry cycle. However, most home dishwashers do not reach this temperature. If you are uncertain of the temperature of your dishwasher, rinse in dilute bleach and **completely air dry** as described for hand washed dishes.

Commercial dishwasher: Yes, if it is a NSF listed washer and manufactured and operated with a heat sanitizing rinse set at 170oF that lasts for at least 30 seconds. Additional information on commercial dishwashers can be found in the fact sheets for food service establishments.

CAUTION - "Green" or "Environmentally Friendly" dish washer additives, which may be advertised as a disinfectant or anti-microbial, are weaker disinfectants and should not be relied on alone to eliminate potential pathogens.

Q18 - Is potentially contaminated water safe for washing clothes?

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

Q19 - Can I brush my teeth with the water without boiling it?

No! Any water you ingest or place in your mouth should be disinfected by boiling (and then cooled) or come from an alternate source. Bottled water is excellent for brushing your teeth.

Q20 - Is potentially contaminated water safe for bathing and shaving?

Unless a "Do Not Use" notification has been issued, your water may be used by healthy individuals for showering, bathing, shaving, and washing as long as care is taken not to swallow water and avoid shaving nicks.

To minimize the chance of infections, people with open wounds, cuts, blisters or recent surgical wounds and people who are immunocompromised or suffer from chronic illness should use boiled water (then cooled) or water from an alternate source*. Children and disabled individuals should be supervised to ensure water is not ingested. Sponge bathing is advisable, and bathing time should be minimized to further reduce the potential for ingestion.

Q21 - How should I wash my hands during a boil water notice?

Generally, vigorous hand washing with soap and your tap water is safe for basic personal hygiene. If you are washing your hands to prepare food, you should use boiled (then cooled) water, bottled water, or water from another acceptable source for hand washing.

If a "Do Not Use" notification has been issued (as example, when sewage or chemical contamination is present), your water should not be used for any purpose, including personal hygiene. Only water from an acceptable alternate source should be used instead.

Q22 - Should I use hand sanitizing lotion or wipes?

Hand sanitizing wipes alone are not enough, especially to clean your hands for making food. Alcohol based sanitizers work against some common germs (like *E. coli*, and *Salmonella*) but may not be effective for cryptosporidium and bacterium spores.

Q23 - Is the water safe to give to my pet?

To be certain, give them water that has been boiled then cooled or water from an acceptable alternate source. Many pets regularly drink some pretty bad water, but pets come in a wide variety with variable resistances to pathogens. Many pets are vulnerable to the same diseases that humans can get from contaminated water and can spread these diseases into the environment or pass them on to their owners. More specific information may be available from your veterinarian, based on the actual animal and conditions for the boil water notice.

Q24 - Does a boil water notice affect how I can use my toilets?

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

Q25 - What if I have already consumed potentially contaminated water?

The likelihood of becoming ill is low. However, illness is certainly possible, especially for people that have a chronic illness or may be immunocompromised. This is why boil water notices are issued.

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 potential contaminants/organisms in the water, and a doctor's involvement is key to identifying the cause of your illness. If your doctor suspects a waterborne illness, you may be asked to provide blood and/or stool samples.

Q26 - What infectious organisms might be present in contaminated water?

There are many possible water borne pathogens. The organisms of concern in New York State include protozoa such as *Giardia* and *Cryptosporidium*; bacteria such as *Shigella* and *E. coli*; and viruses.

These organisms primarily affect the gastrointestinal system, causing diarrhea, abdominal cramps, nausea, and vomiting, with or without fever. Sometimes, these illnesses are contracted by ingesting contaminated water, and in some circumstances skin contact could also lead to infection. Most of these illnesses are not usually serious or life threatening except in the elderly, the very young or those who are immune compromised.

Q27 - What should homeowners do when the boil water notice is lifted?

- Flush household pipes/faucets first: To flush your plumbing, run all your cold water faucets on full for at least 5 minutes each. If your service connection is long or complex (like in an apartment building) consider flushing for a longer period. Your building superintendent or landlord should be able to advise you on longer flushing times.
- Automatic ice makers: Dump existing ice and flush the water feed lines by making and discarding three batches of ice cubes. Wipe down the ice bin with a disinfectant. If your water feed line to the machine is longer than 20 feet, increase to five batches.
- Hot water heaters, water coolers, in line filters, and other appliances with direct water connections or water tanks: Run enough water to completely replace at least one full volume of all lines and tanks. If your filters are near the end of their life, replace them.
- Water softeners: Run through a regeneration cycle.
- Reverse Osmosis (RO) units: Replace pre-filters, check owner's manual.
- Replace other water filters, as they are disposable and may be contaminated. This applies especially to carbon filters and others that are near the end of their life.

Boil Advisory Guidelines for Food Service Operations

- ⇒ All retail food establishments should voluntarily close if they do not have water provided
- ⇒ Minimize food preparation and bare hand contact with ready to eat foods
- ⇒ Use single service utensils
- ⇒ Use bottled water from an approved source for drinking or follow boil advisory
- ⇒ Suggested hand-washing instructions using two (2) buckets of boiled or bottled water from an approved source:
 1. Use first bucket of clean potable water to remove soil off hands, using soap and water for a minimum of twenty (20) seconds, then rinse with clean potable water poured over hands
 2. Use second bucket as hand dip well containing 100 ppm free chlorine or 25 ppm iodine or 200 ppm quaternary ammonia
- ⇒ Disconnect or turn valves off to water supply lines for ice machines, dip wells, coffee machines, fountain drinks, Icee machines, or any other machines requiring a direct potable water line connection
- ⇒ Dump ice bin and clean with an approved sanitizer
- ⇒ Use only boiled water or bottled water from an approved source for washing dishes/utensils in a three (3) compartment sink – do not use a mechanical dish machine
- ⇒ Follow the water boil advisory until notification from the Office of Public Health that the water is safe for human consumption