

How to Use Water Safely in Acute Health Care Sites During a Boil Water Advisory

What facilities does this document apply to?

This document applies to health care facilities such as active treatment hospitals, acute care units, urgent care centres, non-hospital surgical facilities, health centres, and similar types of facilities. This is also applicable to departments within these facilities such as Infection, Prevention and Control (IPC), Facilities, Maintenance and Engineering (FM&E), Medical Device Reprocessing (MDR), Linen and Environmental Services (LES), Nutrition and Food Services (NFS), Emergency Disaster Management (EDM), etc.

If facility staff, such as FM&E and IPC personnel, are reviewing modifications to procedures or changes to service delivery, it may be prudent to contact the Environmental Public Health office that issued the boil water advisory to gather more information and insight. In most scenarios where a boil water advisory is issued, the greatest risk will be to a user consuming the water.

What is a boil water advisory?

A boil water advisory is a notification that the drinking water supply may be contaminated with pathogenic microorganisms (e.g., *E. coli* bacteria, *Giardia* parasite, etc.), and that drinking the tap water can make patients, residents, clients, staff and visitors sick. Boiling the tap water destroys pathogens and makes the water safe to drink and use. A boil water advisory may be issued for a variety of reasons, such as not meeting a treatment goal (noted below) or the presence of indicator bacteria in the drinking water supply.

What are the typical treatment goals for drinking water?

Drinking water is not sterile. Drinking water treatment, for example, does not target spore forming bacteria. For municipal water treatment plants, when the source water is at risk of microbial contamination, treatment involves reducing levels of waterborne disease causing viruses, bacteria and protozoa to acceptable public health levels. Waterborne infectious bacteria and enteric viruses are required to be reduced by at least 99.99% found in source water. Protozoa are typically required to be reduced to at least 99.9%.

What immediate steps must be implemented when a boil water advisory is issued?

- All alternate sources of water provided to patients, staff and visitors must be safe for drinking.
- Signs must be posted at the entrance to the facility and at all faucets, including the kitchen area, kitchenettes, washrooms and handwashing sinks, as a reminder that a boil water advisory is in effect and that the water is not safe to drink. See attached signs.
- Provide an alcohol based hand rub (ABHR) in all public and staff washrooms and at all stand-alone handwashing sinks. When providing clinical care, the Public Health Agency of Canada (PHAC) recommends an ABHR with an alcohol concentration above 60% and up to 90%, and have either a Health Canada Natural Product Number (NPN) or a Drug Identification Number (DIN). Post signs advising staff, patients, residents and visitors to apply the ABHR after normal handwashing procedures with warm tap water, soap and paper towels. ABHR provided in AHS facilities contain 70% alcohol.
- Disconnect all drinking water fountains, pop dispensers with post-mix service and ice making machines from the affected water supply.
- Shut down all ice machines for human consumption or therapy use attached to a plumbed water system.
- Discard any ice and beverages that may have been prepared with the affected water supply.
- If switching to bottled water, please note that commercially bottled water is not sterile. Clinicians should consider the supply needs for severely immunocompromised patients. In the event of a boil water advisory, there may be different types and qualities of bottled water that may be available in the facility including sterile water.
- Critical equipment that is connected to the water system should be evaluated by the facility departments including but not limited to Medical Device Reprocessing (MDR) and the hemodialysis unit to determine what equipment is to be taken off line (e.g. dialysis machines, automated endoscopic reprocessors, etc.).
- All departments should determine how the boil water advisory will impact their department procedures, and whether modifications can be set up (example: potable water tanks for handwashing may be set up to perform surgeries, etc.).

Note: Non-hospital surgical facilities on contract with AHS, if impacted by the boil water advisory, need to implement these immediate steps. If help is needed to review risks related to specific equipment or water systems used in medical device reprocessing and treatment, the IPC Contact at the facility may contact Environmental Public Health for additional advice.

When a boil water advisory has been issued, are there restrictions for using tap water?

Yes, there are restrictions as follows. **Do not** use the tap water to:

- drink
- prepare foods
- make juice
- make ice
- wash fruits or vegetables
- brush teeth
- give to pets or animals in pet therapy programs

During a boil water advisory, the water cannot be considered safe. Therefore, use boiled water, bottled water, or water from another safe public supply not affected by the advisory. Discard any ice in your freezer made with the affected water and sanitize the ice cube trays. Make ice with bottled water or with tap water that was previously boiled and cooled.

What is the correct way to boil water?

Boiling the tap water will destroy any pathogens that might be present, and it will make the water safe to drink and use. To correctly boil water, bring it to a rolling boil for at least one minute. Use an electric kettle if possible. Only boil as much water as you can safely lift without spilling. Be careful not to burn yourself or others.

What special precautions should patients with weakened immune system take?

Patients and residents with weakened immune systems and/or underlying health conditions may require special consideration, and this should be discussed with the unit manager, personal physician and IPC staff.

Is bottled water or water from self-serve water dispensers safe to use?

In most instances, bottled water is safe to use, but it depends on when and how the water was bottled. Bottling plants and water dispensers that operate in the municipality affected by the boil water advisory must treat the water to ensure that harmful microorganisms are removed. Check with the Environmental Public Health Office about providers of bottled water or water dispensers that are considered to be safe. Bottled water produced in locations that are not affected by the boil water advisory is considered to be safe.

Do water filtration devices make the tap water safe to drink or cook with?

No. Many water filtration devices may not remove all pathogens. If the water passes through a water filtration device in your facility, do not use this water unless it has been boiled first. FM&E should check with the water filter manufacturer to determine the effectiveness of the filters in place, and determine with IPC staff recommendations for return to use of the filters if not taken off line or if a filter change is required.

Do water filtration devices make the tap water safe for use with medical devices?

No. Medical devices must use potable water, and during a boil water advisory the water is not potable. It is recommended to always follow the manufacturer's directions regarding the quality of water for use with medical devices.

PERSONAL HYGIENE DURING A BOIL WATER ADVISORY

Can tap water be used to wash hands?

Yes, tap water can be used for handwashing but an ABHR should be applied afterwards. Wash your hands with warm tap water and soap, making sure to lather for at least 20 seconds. Rinse your hands well under running water and dry them with a paper towel. When hands are dry, apply ABHR.

Can tap water generally be used for showering or bathing?

Yes. Patients, residents and staff may take showers or baths with tap water, but they must be careful to avoid the face, and avoid swallowing any of the water. The use of hand-held showerheads is recommended to assist with this concern. Open wounds, cuts, blisters or recent surgical wounds should be covered with a waterproof covering, and care must be taken not to contaminate these areas during bathing, showering or towel-bathing. Pre-boiled water, sterile water and water from a safe alternate source can be considered instead of tap water if a bed-bath is required.

Are there special precautions for showering or bathing?

Neonates and patients with weakened immune systems should not be bathed with non-potable water and require special consideration. It is also recommended that sponge baths be given for infants and children who are at risk of swallowing the water. This should be discussed with the unit manager, personal physician and IPC staff.

Can tap water be used for brushing teeth?

During a boil water advisory, tap water is NOT safe for brushing teeth. Only pre-boiled water that is cooled, bottled water or water from another safe source should be used to brush teeth.

CLEANING AND DISINFECTION PRACTICES

Can tap water be used for cleaning and disinfecting high touch and other surfaces?

Yes. High touch surfaces such as door knobs, handles, railings, etc., and other surfaces such as walls, floors can be cleaned and disinfected using tap water and normal surface disinfectants.

Can tap water be used for washing laundry?

Yes. During a boil water advisory, tap water may still be used for general laundry procedures. However, wet laundry should be dried in a mechanical drying machine on a normal setting or hotter. For sterile linen processing, consult with Linen and Environmental Services and IPC staff to verify correct procedures.

Can automated reprocessing equipment be used during a boil water advisory?

MDR, FM&E and IPC staff will review equipment manufacturer's instructions for use (MIFU) and ensure appropriate reprocessing procedures using automated reprocessing equipment such as washer disinfectors, endoscope reprocessors, chemical sterilizers and steam sterilizers are implemented. Steam provided to sterilizers by boilers in the facilities physical plant is safe, and may be used during a boil water advisory. Instruments should be cleaned using water that meets the manufacturer's requirement for cleaning (e.g. potable tap water, filtered, or RO water). Staff must ensure that water comes from a safe source.

The use of any specialized medical equipment that is directly connected to a water system for invasive medical procedures should first be evaluated by clinical staff, Clinical Engineering, FM&E and IPC staff.

Can medical equipment that is directly connected to the water supply for any non-critical treatment procedures be used?

Generally No. Consult with FM&E, IPC and Environmental Public Health for any specific questions related to the water quality (equipment for example may include hydrocollators, hypothermia or hyperthermia blankets). Each department should evaluate the use of equipment that requires potable tap water.

PREPARING FOOD DURING A BOIL WATER ADVISORY

Can tap water be used in commercial coffee brewers and hot tea towers during a boil water advisory?

Yes. Ensure the coffee maker and hot tea towers produce water at 70°C/160°F. This temperature is sufficient to inactivate disease-causing microorganisms. It is recommended that the coffee pot be held for at least **five minutes** on the burner before consumption. The temperature should be verified using a probe thermometer.

Can tap water be used to wash dishes by hand?

Yes. Tap water can be used to wash and rinse dishes provided that the water is hot. After the dishes are washed and rinsed, dishes must be sanitized to destroy the pathogens. To do this, soak your dishes for at least two minutes in a chlorine bleach solution. To make a 100 mg/L chlorine bleach solution, mix 10 mL (2 tsp) of liquid, unscented bleach (5.25% sodium hypochlorite) in 5 litres (20 cups) of warm water. Let the dishes air-dry completely.

All on-unit programs that integrate cooking into patient therapy and activities of daily living need to consult with IPC staff to determine actions to consider including suspension of the program while in a boil water advisory situation.

Can domestic style dishwashers be used in the facility?

Yes, provided that the domestic style dishwasher has a hot temperature setting or sanitizer cycle. If the dishwasher does not have a hot temperature/sanitizer setting, the user should consider not using the dishwasher until the boil water advisory is over. If it is

necessary to use the dishwasher, it is recommended to stop the dishwasher at the start of the rinse cycle, add 20 mL (4 tsp) of liquid household chlorine bleach containing 5.25% sodium hypochlorite, and then re-start the dishwasher. Let the dishes dry completely, preferably using a heated dry cycle on the dishwasher.

Can tap water be used for cleaning and sanitizing counter tops, cutting boards and other kitchen surfaces?

Yes, tap water may be used to prepare sanitizing solutions. Wash kitchen surfaces with a hot soapy solution, then rinse and sanitize with a bleach solution. Make a new bleach solution every day (this is because bleach breaks down quickly once it is mixed with water), so it works well to destroy pathogens.

To prepare the sanitizer solution (sanitizer strength of 200 mg/L chlorine solution), add 5 mL (1 tsp) of liquid household bleach (5.25% sodium hypochlorite) to 1 litre (4 cups) of tap water. Apply this solution onto the food contact surfaces and let sit for a minimum of two minutes.

Vinegar is not an acceptable disinfectant.

Is there information on safe food preparation in a public food establishment?

Follow the procedures listed in the document, “How to Use Water Safely in Your Food Establishment During a Boil Water Advisory”. This document is available at <http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-water-safely-food-establishment-bwa.pdf>.

PROCEDURES TO TAKE AFTER A BOIL WATER ADVISORY HAS ENDED

- Flush all water-using fixtures, equipment and faucets by running them for five minutes. If your service connection is long or complex, consider flushing for a longer period of time.
- FM&E should be consulted to determine the most effective method to flush all water lines and building plumbing fixtures. A suggested method for flushing multi-storey buildings is as follows: start on the top floor flushing each fixture and faucet for five minutes. The fixtures may be flushed simultaneously. Proceed to the next floor, and continue the procedure until all fixtures and faucets on all floors are flushed.
- Ensure equipment with water line connections, such as medical equipment, refrigerator water and ice dispensers are drained, flushed, cleaned and disinfected according to the manufacturer’s recommendations.

- Reverse osmosis systems and dialysis water lines need to be managed by FM&E according to the manufacturer's recommendations.
- Flush, drain, clean and disinfect cisterns that contained the affected water source.
- Run water softeners through a regeneration cycle according to the manufacturer's recommendations.
- Replace the filters on any water filtration devices, and flush the fixture according to the manufacturer's directions.
- Drain and refill hot water heaters that have been set below 45°C/110°F.

Note: FM&E should be consulted or involved as the capacity to carry out these procedures is significant and the facility needs to preplan for the resumption of the use of the water supply.

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For more information, please contact your nearest Environmental Public Health office.

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Calgary Main Office

403-943-2288

Red Deer Main Office

403-356-6366

Lethbridge Main Office

403-388-6689

www.ahs.ca/eph

CAUTION !



**Boil Water Advisory in effect.
This water is not safe for drinking.**

Contact Environmental Public Health for more information.

Edmonton and Area Ph: 780-735-1800

Calgary and Area Ph: 1-855-943-2288

Southern Alberta Ph: 403-388-6689

Northern Alberta Ph: 780-513-7517

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Boil Water Advisory in effect.

WASH YOUR HANDS

Apply hand sanitizer after handwashing.

