



Food and Nutrition Service

U.S. DEPARTMENT OF AGRICULTURE



Food Safety  
**EMERGENCY  
RESPONSE  
POCKET GUIDE**  
Disaster Edition

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# INTRODUCTION

## (FNS PROGRAMS)

Through the administration of 15 Federal nutrition assistance programs, including the school meal programs, the U.S. Department of Agriculture (USDA), Food and Nutrition Service (FNS) works to increase food security and reduce hunger by providing children and low-income people access to food, a healthful diet, and nutrition education in a way that supports American agriculture and inspires public confidence.

The FNS Supplemental Nutrition and Safety Programs (SNAS) Office of Food Safety develops and delivers food safety education, training, and technical assistance to support FNS program operators with an emphasis on Child Nutrition Programs including the:

- ◆ National School Lunch Program (NSLP)
- ◆ School Breakfast Program (SBP)
- ◆ Summer Food Service Program (SFSP)
- ◆ Seamless Summer Option (SSO)



# USING THIS POCKET GUIDE

Emergencies may disrupt food service operations and increase food safety risks. Although closures may occur in some cases, during many emergencies food service in schools continues. Some schools may also be designated as shelters and may need to provide food to the community.

As a school nutrition professional, you play a critical role in ensuring that children continue to have access to safe meals during emergency situations. Developing, reviewing, and following an effective emergency response plan is an important component of your food safety program.

This pocket guide is designed to help child nutrition program operators respond to emergencies but can be utilized by any nutrition assistance program operator in a variety of emergencies. Always follow local, State, and Federal food safety regulations and contact the local health authority as soon as an emergency impacts your food service operation.

# TYPES OF EMERGENCIES

Emergencies may be caused by severe weather events and natural disasters such as hurricanes, tornados, wildfires, and floods. The region's weather trends and history should be considered to determine what types of disasters or emergencies are more likely to occur which will assist in planning and preparation. Types of emergencies may include:



**POWER OUTAGES  
(INTERRUPTION OF  
ELECTRICAL SERVICE)**



**WATER OUTAGES  
(INTERRUPTION OF WATER SERVICE)**



**WATER CONTAMINATION**



**SEWAGE ISSUES**



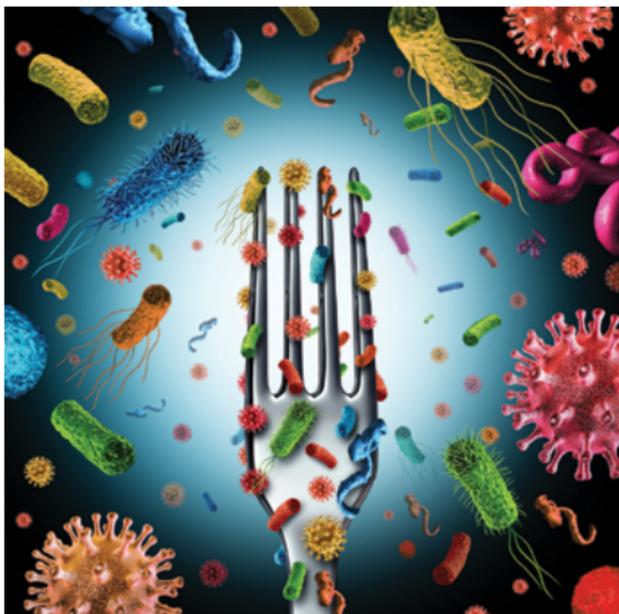
**FLOODS**



**FIRES**

# FOODBORNE ILLNESS IN THE UNITED STATES

The U.S. Centers for Disease Control and Prevention (CDC) estimates that each year, foodborne illnesses cause 48 million people to get sick, 128,000 hospitalizations, and 3,000 deaths.



# CAUSES OF FOODBORNE ILLNESS

A foodborne illness—or food poisoning—is a disease caused by consuming contaminated food or beverages. More than 250 foodborne illnesses have been identified and most are infections caused by bacteria, viruses, and parasites. The most common foodborne pathogens in the United States are:

- ◆ Norovirus
- ◆ *Salmonella*
- ◆ *Clostridium perfringens*
- ◆ *Campylobacter*
- ◆ *Staphylococcus aureus*

# SYMPTOMS OF FOODBORNE ILLNESS

Foodborne illness symptoms may range from mild to severe. Common symptoms include:

Upset stomach	Stomach cramps
Nausea	Vomiting
Diarrhea	Fever

Food service employees, and volunteers, who are experiencing symptoms of foodborne illness, or have a diagnosis of a foodborne illness should:

- Report the information to their supervisor/ manager immediately,
- Not work while sick, and
- Follow the employee health policy, including any required restriction or exclusion from normal work activities.

# FOODBORNE ILLNESS RISK FACTORS AND INTERVENTIONS

The top five foodborne illness risk factors are:

- Poor Personal Hygiene
- Food from Unsafe Sources
- Inadequate Cooking
- Improper Holding Temperatures
- Contaminated Equipment

Key interventions to preventing foodborne illness include:

- Knowledge and Application of Food Safety Practices
- Implementation of Employee Health Policies
- Controlling Hands as a Vehicle of Contamination
- Time and Temperature Parameters for Controlling Pathogens

# FOODBORNE SAFETY RISKS DURING EMERGENCIES

Emergency events can lead to increased food safety risks, including:

- Contaminated food and water
- Cross-contamination between surfaces and locations
- Lack of time and temperature control for safety

Key interventions to keep in mind during an emergency response include:

- Maintaining safe food temperatures
- Proper handwashing and glove use
- Sanitizing and disinfecting contaminated surfaces

# SAFE FOOD TEMPERATURES

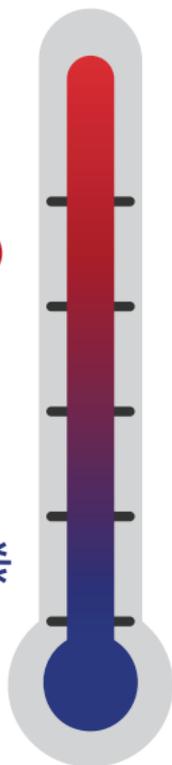
Foods that require time and temperature control for safety, commonly referred to as TCS foods, must be kept at certain temperatures for certain amounts of time to prevent the growth of foodborne pathogens or formation of toxins.

**Hot Hold:**  
**135°F or above**



**Danger Zone:**  
**41-135°F**

**Cold Hold:**  
**41°F or below**



# FOOD TEMPERATURE CHART

## SAFE MINIMUM INTERNAL TEMPERATURES

*as measured with a food thermometer*

Food Type	Internal Temperature
<b>Beef, Pork, Veal, and Lamb</b> (chops, roasts, steaks)	145°F with a 3-minute rest time
<b>Ground Meat</b>	155°F
<b>Ham, uncooked</b> (fresh or smoked)	145°F with a 3-minute rest time
<b>Ham, fully cooked</b> (to reheat)	135°F
<b>Poultry</b> (ground, parts, whole, and stuffing)	165°F
<b>Eggs</b>	Cook until yolk and white are firm
<b>Egg Dishes</b>	155°F
<b>Fin Fish</b>	145°F or flesh is opaque and separates easily with fork
<b>Shrimp, Lobster, and Crabs</b>	Flesh pearly and opaque
<b>Clams, Oysters, and Mussels</b>	Shells open during cooking
<b>Scallops</b>	Flesh is milky white or opaque and firm
<b>Leftovers and Casseroles</b>	165°F

Adapted from U.S. Food and Drug Administration. (2019).

*Safe minimum cooking temperatures charts.*

<https://www.foodsafety.gov/food-safety-charts/safe-minimum-cooking-temperature>

# HAND HYGIENE

Hand hygiene, or handwashing, reduces potential pathogens (harmful germs) on your hands. When it's done right, handwashing is one of the best ways to protect yourself and others from getting sick.



# HAND HYGIENE

## WHEN TO WASH YOUR HANDS

Wash your hands often before, during, and after food preparation to prevent the spread of germs.

Key times to wash your hands include:

- Before food preparation, including working with clean equipment and touching utensils or single-service items
- During food preparation, as often as needed to prevent cross-contamination
- Before putting on gloves to work with food and between glove changes
- Before and after eating or drinking
- After handling dirty equipment or utensils
- After using the toilet
- After coughing, sneezing, or touching body parts such as your face or hair
- After handling animals or animal waste
- After handling garbage
- When hands are visibly dirty
- After any activity that contaminates or may contaminate the hands

# HAND HYGIENE

## HOW TO WASH YOUR HANDS



Wet your hands with clean, running water (warm water recommended).



Lather your hands by rubbing them together with soap.



Scrub your hands for at least 20 seconds.



Rinse your hands well under clean, running water.



Dry your hands using a clean disposable towel or mechanical hand dryer.

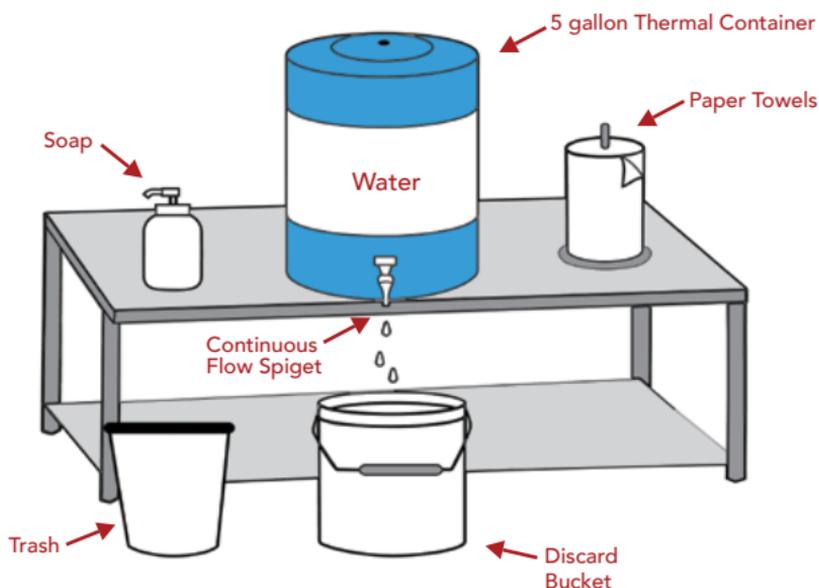


Avoid using your clean hands to turn off the faucet and open the bathroom door.

Adapted from OSHAcademy. (2020). *Hand hygiene - Reduce the risk of transmitting infections from person-to-person.* <https://www.oshatrain.org/courses/mods/138m1.html>

# TEMPORARY HANDWASH STATION

When there is an interruption in the water supply, or a hand sink is not accessible, you may need to use a temporary handwash station.



# HAND SANITIZERS

Handwashing with soap and water is more effective than hand sanitizers at removing many germs that cause foodborne illness. If a handwash station is not available, determine how you can modify your meal service options (e.g., serving pre-packaged foods) and talk to your local health authority to determine whether hand sanitizers or sanitizer towelettes are appropriate alternatives. Hand sanitizers should contain at least 60 percent alcohol.

## HOW TO USE HAND SANITIZER



Apply sanitizer to the palm of your hand.



Rub your hands, covering all surfaces of hands and fingers.



Rub all surfaces of your hands until they feel dry.

# GLOVE USE

## WEARING GLOVES FOR FOOD SAFETY



### Stop Transmitting Germs

Handling food with your bare hands can transfer germs from your hands to the food you prepare and serve. Wearing gloves puts a barrier between the germs on your hands and the food you're working with.



### Change Your Gloves Often

Wearing gloves doesn't guarantee that pathogens won't be transferred during food preparation. Soiled gloves can contaminate food. To ensure pathogens aren't spread, change your gloves:

- If they become damaged
- If they become contaminated
- When switching tasks



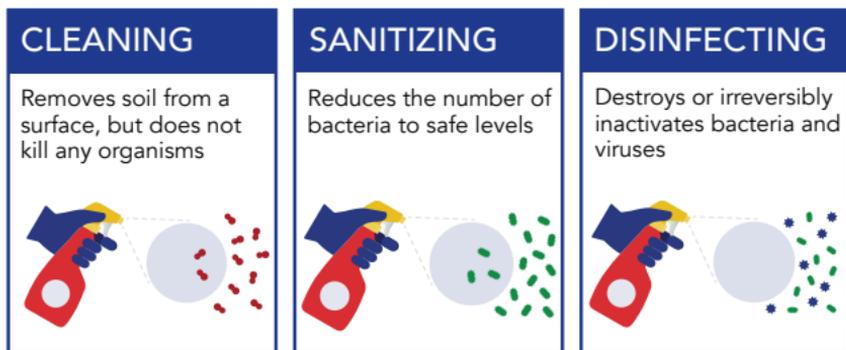
### Wash Your Hands

Always wash your hands before putting on new gloves.

Adapted from State Food Safety. (2016). *Wearing gloves for food safety poster*.  
<https://www.statefoodsafety.com/Resources/Resources/training-tip-wearing-gloves-for-food-safety>

# SANITIZING AND DISINFECTING

The U.S. Environmental Protection Agency (EPA) establishes standards for sanitizers and disinfectants. Sanitizers reduce levels of germs to safe levels and are approved for use on food contact surfaces. Disinfectants are much stronger substances that destroy or inactivate germs and are designed for use on non-food contact surfaces. Always follow the directions on the label of a commercial sanitizer or disinfectant and allow enough contact time for the chemical to be effective. Change solutions periodically—every 2 to 4 hours, or sooner, if visibly soiled.



# BLEACH AND WATER SOLUTIONS

Regular, unscented household bleach with a sodium hypochlorite concentration between 5 percent and 9 percent mixed with water can be used as sanitizers or disinfectants. Bleach and water solutions are cost-effective and easy to prepare in the event of an emergency.



# BLEACH AND WATER SOLUTIONS

## SANITIZING FOOD CONTACT SURFACES

Mix 1 tablespoon of bleach with 1 gallon of water. Use chlorine test strips to check the concentration of the solution, which should typically be 50–100 parts per million (ppm).

- Clean visibly soiled areas.
- Wash surfaces with soap and water. If available, use hot water.
- Rinse with clean water.
- Sanitize in bleach solution (at least 10 seconds).
- Allow to air dry.

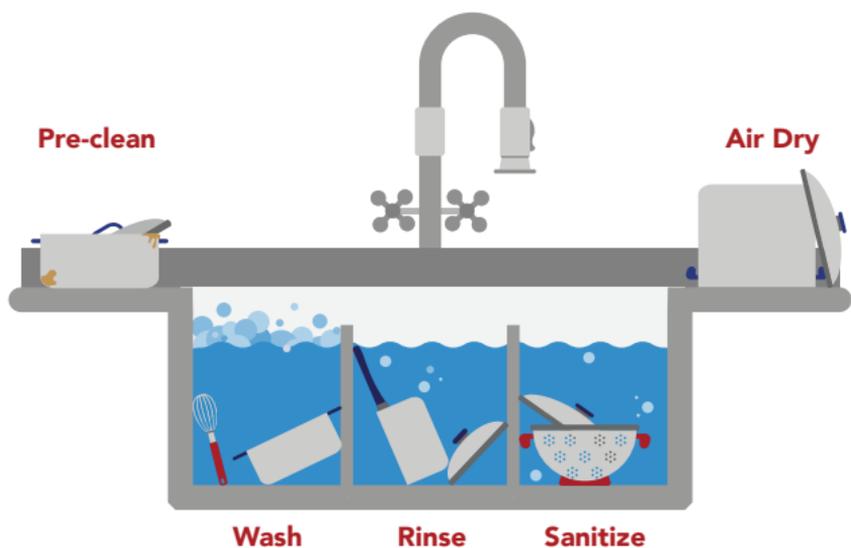
# BLEACH AND WATER SOLUTIONS

## DISINFECTING NON-FOOD CONTACT SURFACES

Mix 1 cup of bleach with 1 gallon of water.

- ◆ Clean visibly soiled areas. Scrub rough surfaces with a stiff brush.
- ◆ Wash surfaces with soap and water. If available, use hot water.
- ◆ Rinse with clean water.
- ◆ Disinfect surfaces with bleach solution.
- ◆ Allow to air dry.

# SANITIZING



# DISINFECTING

## 6 Steps for Safe and Effective Disinfectant Use

- 1 Make sure the product is EPA-registered.**  
Check [epa.gov/listn](https://epa.gov/listn) and registration number.
- 2 Read and follow the directions.**  
Look for precautionary statements (e.g., ventilation).
- 3 Pre-clean the surface with detergent and water.**  
Wash any surface grime before disinfecting.
- 4 Follow contact time.**  
Keep surface wet for the directed time.
- 5 Wear Personal Protective Equipment (PPE).**  
Use reusable gloves and safety glasses, etc.
- 6 Wash your hands.**  
Remove gloves, discard them in a trash can, and wash your hands thoroughly.

Adapted from UC San Diego, Blink. (2020). *COVID-19 disinfection guidance*.  
<https://blink.ucsd.edu/safety/research-lab/covid-19/decontamination.html>

# PREPARE

There are ways you can prepare to ensure that you are ready to respond quickly and effectively to almost any emergency.



# PREPARE

- ◆ Develop an emergency response plan. Review and update it at least annually. There are resources and information available (<https://www.fns.usda.gov/ofs/food-safety-resources>) to assist with the development of an emergency response plan, including the Emergency Readiness Plan (<https://theicn.org/icn-resources-a-z/emergency-readiness>).
- ◆ Develop handwashing procedures for emergencies in case standard procedures cannot be implemented and/or handwash facilities are not available.
- ◆ Develop an “emergency menu” with simplified recipes and food items that require limited preparation (e.g., shelf-stable, canned, and packaged food items).
- ◆ Train staff in emergency response procedures. Be prepared to provide on-the-spot training during an emergency.

# PREPARE

- Work with your State agency to understand the types of operational flexibilities and program adjustments that may be available (e.g., multiple meals at a time, grab-and-go meals, mealtime adjustments).
- Check with your local health authority for more information regarding specific regulations and guidance that may apply to emergency situations and when developing an emergency response plan.
- Keep paper copies of important records and documents that may not be available or accessible electronically; copies can be printed in advance and compiled in a disaster binder for easy access and portability.

# PREPARE

- Designate essential staff and substitutes in emergency situations. Review and update contact information at least annually and when there are staff changes.
- Compile an emergency contact list with information for important resources and organizations including:
  - Essential staff and other key employees
  - School administration and officials
  - Emergency management officials
  - State and/or local health departments
  - Fire departments
  - Police departments
  - Utility companies
  - Waste handling services
  - Supply vendors, etc.

# PREPARE

Create an emergency kit that includes a labeled, waterproof container with essential supplies. Consider assembling different kits with various combinations of supplies for different types of emergencies.

## Examples of Emergency Supplies

Documenting materials (pens, etc.)	Updated emergency contact lists	Emergency response plan and blank logs	Personal protective equipment (PPE) (gloves, etc.)
Generators and/or other power sources	Chemical sanitizer and sanitizer test strips	Thermometers (digital, ambient, and infrared)	Alcohol pads to clean probes of thermometers
Disinfectants and cleaning agents	Hand sanitizer (60% alcohol or higher)	Batteries of assorted sizes for various electronics	Flashlights and/or light sources
Bottled water and beverages	Packaged and shelf-stable food items	Sealed storage containers of various sizes	Garbage bags and storage bags
Alcohol swabs	Ice packs	Disposable utensils	Cleaning tools (mops)
Soap	Paper towels	First aid kit	Utility knife
Tape	Coolers	Timers	Scissors

Determine the best way to obtain emergency supplies that are not available on site.

# RESPOND

How you respond to an emergency will depend on the type of emergency and how it affects food safety in your operation.



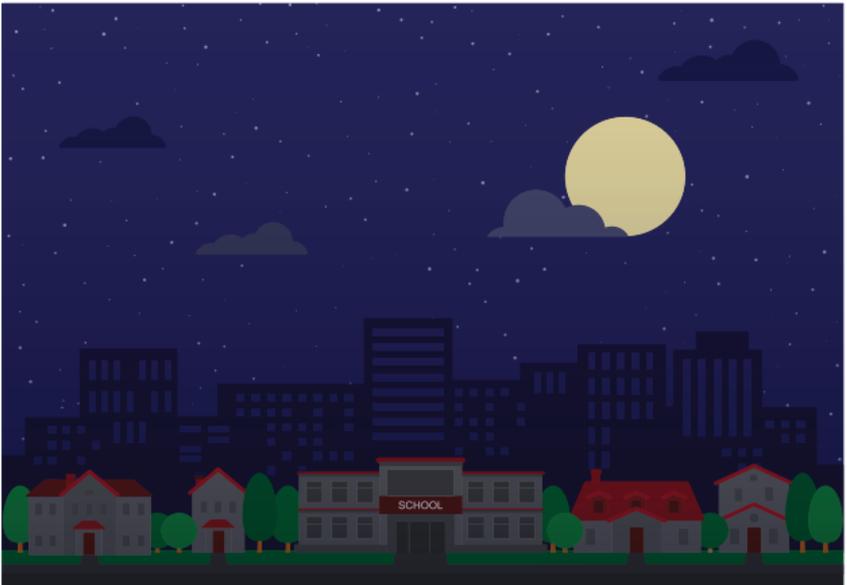
# POWER OUTAGES



# POWER OUTAGES



Power outages, or interruptions of electrical service, are one of the most common emergencies that impact food service operations. Shorter outages (e.g., up to 2 hours) may not require emergency procedures, which would otherwise need to be implemented during an extended loss of power (e.g., multiple days). The primary food safety risk during a power outage is time and temperature control of food; temperature abuse may result in unsafe food.



# POWER OUTAGES



- Immediately assess the impact on your food service operation (i.e., the size of the affected area and affected equipment).
- Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue (i.e., pre-packaged food items that require limited preparation). Food service activities should discontinue if there is an immediate health hazard.
- Coordinate with school officials to contact the power company to determine the cause, extent, and estimated duration of the outage. The length of the power outage will determine if a long-term or short-term plan needs to be utilized.
- Record the date, start time, and end time of the power outage.

# POWER OUTAGES



- Locate the appropriate emergency equipment and supplies needed (e.g., generators, light sources, ice packs, thermometers).
- Identify the equipment and food products that need immediate attention and priority. Prioritize food that requires time and temperature control for safety and refrigeration equipment.
- Frequently monitor and record food and equipment and temperatures from the start of the power outage, including during storage and transport.
- Transfer foods that require time and temperature control for safety from more vulnerable equipment to equipment that will maintain safe temperatures (e.g., from smaller units without doors/covers to freezers and walk-in units).
- Some schools may be able to contact and access a central storage or distribution site with power where food can be relocated and stored safely.

# POWER OUTAGES



- Ice packs and ice help keep refrigeration units cold temporarily. If power is lost for a prolonged period, moving food that requires time and temperature control for safety to a location with power is a safer option.
- Keep equipment doors closed as much as possible to minimize temperature loss and maintain proper temperatures. With doors closed, a refrigerator may keep food cold for about 4 hours, and a full freezer for about 48 hours (or 24 hours if it is half full).
- When power is restored, check and record temperatures of all refrigerators and freezers, and internal temperatures of food that requires time and temperature control for safety.
- Refrigerated food that doesn't require time and temperature control for safety should be checked for signs of spoilage, damage, or other quality issues.
- Frozen foods that remain solid or semi-solid and have not exceeded 41°F can be refrozen if the packages show no evidence of damage.

# POWER OUTAGES



- Residue and water may accumulate from melted ice and packages. It is important to clean and disinfect surfaces of affected equipment. After disinfection, food contact surfaces should be rinsed, sanitized, and allowed to air dry prior to use.
- Confirm that equipment and facilities are working properly (e.g., lighting, food equipment, dishwashing machines).
- During extended power outages (e.g., more than a day), designate staff to check equipment and temperatures, at least daily, to dispose of unsafe food items as needed and to avoid spoilage and unsanitary conditions in the refrigeration units.

# POWER OUTAGES



The Conference for Food Protection developed recommendations for handling and discarding refrigerated foods that require time and temperature control for safety during a power outage. Procedures for salvaging food should be prepared in advance, maintained at the facility, and available upon request.

These guidelines should only apply if time and temperature are monitored according to a written plan. Food that requires time and temperature control for safety should be discarded if it is not monitored during the power outage and the temperature may have exceeded 41°F (5°C).

<https://www.fns.usda.gov/ofs/food-safety-emergency-response>



# WATER OUTAGES



# WATER OUTAGES



It is always important to have safe, clean water in school nutrition operations. The primary food safety risk during a water outage is a lack of water to safely prepare and serve food, which may affect:

- ◆ Drinking water
- ◆ Handwashing
- ◆ Food preparation
- ◆ Using water as a food ingredient
- ◆ Cleaning
- ◆ Sanitizing

# WATER OUTAGES



- Immediately assess the impact on your food service operation (i.e., the size of the affected area and affected equipment).
- Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue (i.e., pre-packaged food items that require limited preparation). Food service activities should discontinue if there is an immediate health hazard.
- Coordinate with school officials to contact the water utility company to determine the cause, extent, and estimated duration of the outage. The length of the water outage will determine if a long-term or short-term plan needs to be utilized.
- Record the date, start time, and end time of the water outage.

# WATER OUTAGES



- ◆ Locate the appropriate emergency equipment and supplies needed (e.g., bottled water, bulk water storage containers, disposable utensils, gloves, hand sanitizer).
- ◆ If the school remains open, coordinate with school officials to obtain additional supplies needed including approved water sources.
- ◆ Identify all equipment and plumbing systems that require clean water and limit use until the water supply is restored. This includes sinks, dishwashers, and toilets.

# WATER OUTAGES



- ◆ Use only clean water from an approved source. Do not use the affected water supply if it has not been determined safe.
- ◆ Set-up a temporary handwash station to continue handwashing. Determine if hand sanitizer is an appropriate alternative to handwashing. Refer to pages 18–19.
- ◆ Use disposable utensils and supplies; limited food service should be discontinued when these items are exhausted or unavailable.

# WATER OUTAGES



- ◆ When water service is restored, check all equipment and facilities to ensure they are working properly. Review the water contamination section of this guide to address concerns about the safety of the water supply.
- ◆ Flush plumbing systems including faucets, toilets, and fountains before use. At least 5 minutes of flushing is typically recommended for faucets and at least 10–15 minutes is typically recommended for equipment water lines (e.g., ice machines, fountains, and beverage machines).
- ◆ Clean and sanitize food contact surfaces, utensils, and equipment before use including those with water connections (e.g., beverage machines and dishwashers).

# WATER CONTAMINATION



# WATER CONTAMINATION



Potable water refers to water that is suitable for human consumption—water that is safe for drinking or food preparation. The primary food safety risks during a water contamination incident is an unsafe water supply which may affect:

- ◆ Drinking water
- ◆ Handwashing
- ◆ Food preparation
- ◆ Using water as a food ingredient
- ◆ Cleaning
- ◆ Sanitizing

# WATER CONTAMINATION



After an emergency event or a natural disaster, the potable water supply may be unsafe due to contamination. In these cases, a “boil water” advisory is typically issued by the local health authority to alert the public and protect public health from harmful contamination. During a water contamination event, any tap water used for human consumption must be boiled, then allowed to cool before use. The water should be brought to a rolling boil for at least 1 minute or 3 minutes at elevations above 6,500 feet.



# WATER CONTAMINATION



- ◆ Immediately assess impact on your food service operation (i.e., the size of the affected area and affected equipment).
- ◆ Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue. Food service activities should discontinue if there is an immediate health hazard.
- ◆ Coordinate with school officials to contact the water utility company to determine the cause, extent, and estimated duration of the event.
- ◆ Locate the appropriate emergency equipment and supplies needed (e.g., bottled water, bulk water storage containers, disposable utensils, gloves, hand sanitizer).

# WATER CONTAMINATION



- Do not use any equipment connected to the water line, including ice machines and water fountains. Covers or signs should be posted at equipment to prevent use.
- Discard any food, beverages, and ice prepared before the advisory or incident, or that may have been exposed to contamination.
- Use bottled water or clean water from an approved source; if these options are unavailable, only boiled water should be used for consumption and food service activities.
- Additional alternative water sources that may be used include hauled water from an approved public water supply in a covered sanitized container or a licensed potable drinking water tanker truck.

# WATER CONTAMINATION



- Use only clean water from an approved source (e.g., bottled, boiled, or treated water). Do not use the affected water supply if it has not been determined safe.
- Set-up a temporary handwash station to continue handwashing. Determine if hand sanitizer is an appropriate alternative to handwashing. Refer to pages 18–19.
- Do not handle ready-to-eat foods with your bare hands. Use gloves, utensils, and paper to handle food.
- Use disposable utensils and supplies until a clean and safe water supply is available for dishwashing and sanitizing. Limited food service should be discontinued when these items are exhausted or unavailable.
- When the water supply is safe, take follow up action in accordance with the water utility company's guidelines and manufacturer's instructions.

# WATER CONTAMINATION



- Flush plumbing systems including faucets, toilets, and fountains before use. At least 5 minutes of flushing is typically recommended for faucets and at least 10–15 minutes is typically recommended for equipment water lines (e.g., ice machines, fountain, and beverage machines).
- Clean and disinfect contaminated utensils, equipment, and affected surfaces first. After disinfection, food contact surfaces should be rinsed, sanitized, and allowed to air dry prior to use.
- Discard the ice through three cycles in the ice machine, then clean and sanitize the ice machine prior to use.
- Discard and replace water filters in equipment connected to the water supply. (e.g., ice machines and beverage machines).

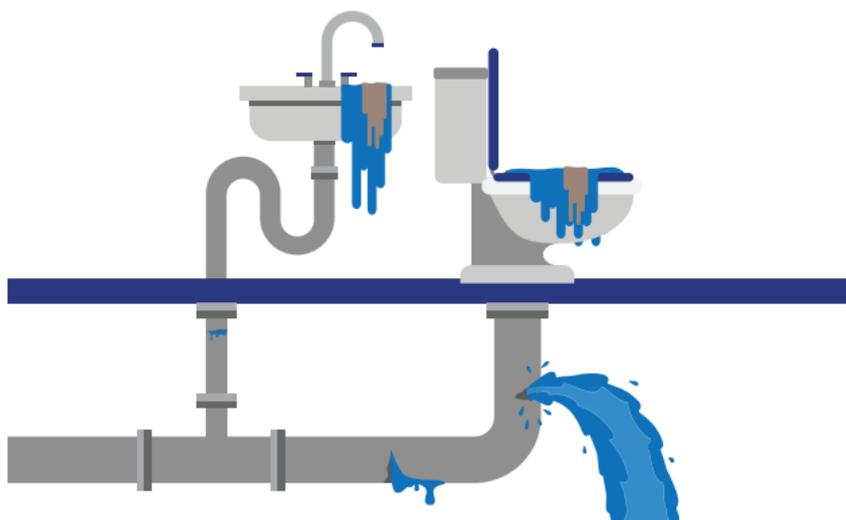
# SEWAGE ISSUES



# SEWAGE ISSUES



A sewage backup is the overflow of sewage from equipment or plumbing facilities. A sewage backup or issue may occur from a broken or obstructed sewer pipe or through a floor drain, toilet, sink, or another appliance. Pathogens may be present in sewage that can contaminate equipment, surfaces, and cleaning tools, as well as personal clothing and shoes. The primary food safety risks during a sewage issue include the presence of contaminants in the sewage, contaminated food and equipment, and poor personal hygiene (e.g., not following proper handwashing procedures).



# SEWAGE ISSUES



- Immediately assess the impact on your food service operation (i.e., the size of the affected area and affected equipment).
- Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue (i.e., pre-packaged food items that require limited preparation). Food service activities should discontinue if there is an immediate health hazard.
- Coordinate with school officials to contact the utility company to determine the best course of action.
- Locate the appropriate emergency equipment and supplies needed (e.g., cleaning supplies, disposable gloves, personal protective equipment).

# SEWAGE ISSUES



- ◆ In the case of damaged or blocked drain lines, it may be necessary to request a service visit or repair from a service company. They may find and remove the obstruction and/or replace damaged plumbing, as needed.
- ◆ Discontinue the use of affected equipment and facilities such as sinks and toilets. Label them to prevent additional use (e.g., marking a toilet “out of order”).
- ◆ Block/separate the affected area and prevent traffic between affected areas with sewage and nonaffected areas. Employees should remove footwear and protective clothing when leaving the affected area.
- ◆ Limit contamination from sewage by clearing the surrounding area. Move nearby items and food to an alternate and elevated location to avoid contact with sewage.

# SEWAGE ISSUES



- ◆ Wear appropriate personal protective equipment (e.g., eye protection, disposable gloves, disposable plastic apron) before handling and contacting sewage. Remove the sewage before starting clean-up procedures.
- ◆ For small affected areas or plumbing systems that do not affect the food service operation (e.g. one of three toilets), contact the health authority once the backup is cleared or repaired for guidelines on resuming operations.
- ◆ For larger affected areas involving onsite sewage disposal, a sewage pumping contractor can be used to pump exposed sewage (as well as the septic tank) and disinfect affected areas.

# SEWAGE ISSUES



- ◆ Clean and disinfect the affected surfaces, including floors and walls, using disinfectants and items suitable for vomiting and diarrheal events (e.g., bleach solution with a concentration of 1,000–5,000 parts per million (ppm)).
- ◆ Clean and disinfect faucets and other surfaces around the handwash sink areas to prevent contamination.
- ◆ Dispose and replace cleaning equipment or tools that cannot be decontaminated after they are used for clean-up activities.

# SEWAGE ISSUES



- ◆ Discard linens or uniforms contaminated by sewage or use an industrial laundry service that can disinfect the items.
- ◆ Discard food, disposable materials, and single-service items that were exposed to contamination.
- ◆ Clean and disinfect utensils, equipment, containers, and affected surfaces that were exposed to contamination. After disinfection, food contact surfaces should be rinsed, sanitized, and allowed to air dry prior to use.

# SEWAGE ISSUES



- Confirm that repairs are in progress and when they are completed. Check that equipment is working properly before resuming use.
- Food in hermetically sealed intact containers (e.g., cans, rigid plastic, pouches) can typically be salvaged and used after the containers are washed, rinsed, sanitized, and relabeled with all required information. Do not use cans that are severely dented, bulging, leaking, or rusted.
- Food and other items that were not in the affected area or contaminated can be used.

# FLOODS



# FLOODS



Floods can be caused by poor drainage systems, overflow from a body of water, a broken water line, and weather events (e.g., hurricanes or heavy rain for multiple days). Floods can vary in intensity and duration; factors to consider include the amount of flood water, the type of flood event, and the effect on drainage systems that may not handle large volumes of water for extended periods. Flood water may contain pathogens that can contaminate food, equipment, surfaces, and an employee's clothing, or personal items. In some cases, weather trends and forecasts for the region can be used to monitor flood risk and take action before the flooding occurs to minimize damage. Generally, food, equipment, and utensils should be stored at least 6 inches above the floor for protection from contamination. The primary food safety risks during a flood include the presence of contaminants in the flood water, contaminated food and equipment, and poor personal hygiene (e.g., not following proper handwashing procedures).

# FLOODS



- Immediately assess the impact on your food service operation (i.e., the size of the affected area and affected equipment).
- Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue (i.e., pre-packaged food items that require limited preparation). Food service activities should discontinue if there is an immediate health hazard.
- Locate the appropriate emergency equipment and supplies needed (e.g., cleaning supplies, disposable gloves, personal protective equipment).
- Block/separate the affected area and prevent traffic between affected areas with flood water, and unaffected areas. Employees should remove footwear and protective clothing when leaving the affected area.

# FLOODS



- Limit contamination from flood water by clearing the surrounding area. Move nearby items and food to an alternate and elevated location to avoid contact with flood water.
- Wear appropriate personal protective equipment (e.g., eye protection, disposable gloves, disposable mask, disposable plastic apron) before handling and contacting flood water. Remove the standing water prior to beginning clean-up procedures.
- For a larger and widespread flood event, a janitorial or custodial service with flood expertise may be used as an alternative.
- Clean and disinfect the affected surfaces, including floors and walls, with a suitable disinfectant.
- Clean and disinfect faucets and other surfaces around the handwash sink areas to prevent contamination.

# FLOODS



- ◆ Dispose and replace cleaning equipment or tools that cannot be decontaminated after they are used for clean-up activities.
- ◆ Discard linens or uniforms contaminated by flood water or use an industrial laundry service that can disinfect the items.
- ◆ Discard contaminated food, disposable materials, and single-service items.
- ◆ Clean and disinfect utensils, equipment, containers, and affected surfaces that were exposed to contamination. After disinfection, food contact surfaces should be rinsed, sanitized, and allowed to air dry prior to use.

# FLOODS



- Food in hermetically sealed intact containers (e.g., cans, rigid plastic, pouches) can typically be salvaged and used after the containers are washed, rinsed, sanitized, and relabeled with all required information. Do not use cans that are severely dented, bulging, leaking, or rusted.
- Food and other items that were not affected by flood water or contaminated can be used.
- Remove affected equipment from service. Some equipment and equipment parts may need to be replaced if the flood water enters the seams, openings, and damaged areas (e.g. coolers with porous wood flooring).
- Confirm that equipment and facilities in the affected area are working properly before resuming use.

# FIRES



# FIRES



Responses to fires vary based on nature and scope, including the size of the affected area and the cause of the fire (i.e., electrical, grease, mechanical). Other building systems like electrical power may also be impacted by fires. Considerations to keep in mind include fire damage, smoke damage, and the impact of water, foam, and other processes used to fight the fire such as use of high-pressure fire suppression systems and devices (i.e., ventilation hood fire suppression system or professional fire department equipment). Food can be compromised in a fire by three factors: the heat of the fire, smoke fumes, and chemicals used to fight fire. The primary food safety risks during a fire are contaminated food and equipment, and improper holding temperatures.

# FIRES



- Immediately discontinue food service activities and remove yourself from danger. Notify the fire department about any fire immediately. In some cases, smaller fires may be extinguished using a nearby fire extinguisher.
- Assess the impact on your food service operation (i.e., the size of the affected area and affected equipment).
- Determine, in consultation with the health authority and emergency management official(s), if and how limited food service operations can continue (i.e., pre-packaged food items that require limited preparation). Food service activities should discontinue if there is an immediate health hazard.
- The affected area may be closed/restricted if the fire is smaller; larger and widespread fires may lead to an expanded and/or extended closure. Employees should not access affected areas until safety is determined. Avoid traffic between affected areas and other areas.

# FIRES



- ◆ When it is safe and access is allowed, determine the impact on your operation (i.e., the size of the affected area and affected equipment).
- ◆ Locate the appropriate emergency equipment and supplies needed (e.g., cleaning supplies, disposable gloves, personal protective equipment).
- ◆ If the fire is caused by equipment, then it may need to be removed and replaced due to damage.
- ◆ Clean and disinfect utensils, equipment, containers, and affected surfaces that were exposed to contamination. After disinfection, food contact areas and surfaces should be rinsed, sanitized, and allowed to air dry prior to use.

# FIRES



- ◆ Discard food, disposable materials, and single-service items that were exposed to contamination (this includes exposure to heat, smoke, water, or fire extinguishing chemicals).
- ◆ Food in hermetically sealed intact containers (e.g., cans, rigid plastic, pouches) can typically be salvaged and used after the containers are washed, rinsed, sanitized, and relabeled with all required information. Do not use cans that are severely dented, bulging, leaking, or rusted.
- ◆ Food and other items that were not in the affected area or contaminated can be used.
- ◆ In more severe cases, smoke damage may have to be removed by a professional restoration company and/or with the use of specialized equipment like air purifiers.

# RETURNING TO NORMAL OPERATIONS

- Prior to reopening or resuming operations, consult with school officials and the local health authority.
- The emergency plan and response should be reviewed, to include strategies that were effective and revise areas that need to be corrected or improved.
- After an emergency, the school premises may not be safe to enter if there is significant and extensive damage. Prior to entry, confirm with emergency personnel or another available official (e.g. the fire department or building inspector) that entry is permitted.
- The local health authority may determine what food items will be disposed or salvaged depending on the exposure to contamination and severity of the emergency.
- Take detailed notes of inventory and items to be disposed, including the names and quantities of products. This documentation can be used to ensure that proper disposal procedures are followed and for insurance claim purposes.

# RETURNING TO NORMAL OPERATIONS

- Materials to be disposed of should be stored separately in designated covered refuse containers and kept in a separate and secure location for disposal by a waste management or refuse disposal company.
- Disposal should be conducted in accordance with State and local waste disposal regulations. Hazardous and non-hazardous material should be separated before disposal.
- Conduct a thorough inspection after the emergency to check for any significant or long-term damage. Some surfaces and systems may need repairs, replacement, and/or additional service (e.g., certain absorbent surfaces and insulation materials exposed to water damage may be susceptible to mold growth that should be removed and replaced).

# USEFUL TIPS

- ◆ Schools should include a food recovery plan in their school food safety program based on Hazard Analysis and Critical Control Point (HACCP) principles. A process to transfer food from defective equipment or closed facilities to a safer, approved location should be included (e.g., local business, warehouse, large school site). The local health authority may request to review the plan in advance.
- ◆ Shelf-stable and pre-packaged items should be incorporated in planning for emergencies and disasters. Keep a supply on hand or have a contract with a vendor/supplier that can quickly provide the items.
- ◆ Check and replace designated emergency supplies that may have been used over time to ensure they are always readily available.

# USEFUL TIPS

- Follow cleaning, disinfecting, and sanitizing procedures approved by the local health authority. For example, disinfectants identified for use during vomiting and diarrheal events are likely suitable for emergencies involving sewage and flooding. (More information can be found at <https://theicn.org/icn-resources-a-z/norovirus-resources/>).
- Refrigeration units should not be stocked to a capacity that blocks air circulation; leaving space between and around products allows better air flow and temperature distribution to keep foods safe.
- Generally, food, equipment, and utensils should be stored at least 6 inches above the floor for protection from contamination.
- When relocating or elevating items to safer locations, do not obstruct exits/entrances, utility areas, traffic areas, or damage utility lines by stacking items too high.

# REFERENCES AND RESOURCES

<https://www.cdc.gov/foodsafety/>

<https://www.fda.gov/food/retail-food-protection/fda-food-code>

<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6315a3.htm>

<https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/emergency-preparedness/>

<https://www.fda.gov/food/recalls-outbreaks-emergencies/food-safety-during-emergencies>

<http://www.foodprotect.org/guides-documents/emergency-action-plan-for-retail-food-establishment/>

<https://www.cdc.gov/healthywater/emergency/drinking/drinking-water-advisories/boil-water-advisory.html>



# REFERENCES AND RESOURCES

<https://www.fda.gov/food/buy-store-serve-safe-food/food-and-water-safety-during-power-outages-and-floods>

<https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-use-water-food-manufacturers-areas-subject-boil-water-advisory#:~:text=When%20a%20boil%2Dwater%20advisory,the%20risk%20from%20this%20contamination>



To access this pocket guide online, visit:  
<https://www.fns.usda.gov/ofs/food-safety-emergency-response>

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Food and Nutrition Service  
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