
FOOD EMERGENCY POCKET GUIDE



Version 2.0
2007

**A Ready Reference from the
Association of Food and Drug Officials**

*Made possible through a cooperative agreement between
the Association of Food and Drug Officials (AFDO) and
the Centers for Disease Control and Prevention (CDC)*

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January 2007 Reprint

Revisions made to the following sections:

- *Telephone Contacts for Chemical/Bioterrorism or Other Emergencies (p.59)*
- *FDA's Consumer Complaint Coordinators (p.60-62)*

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Introduction

Today's food safety threats bring new challenges to the food system in the United States. The food industry, scientists, and regulatory agencies have developed extensive expertise in food safety – protecting the food supply against unintentional food contamination. This type of contamination usually involves relatively well-known disease-causing agents such as *Salmonella spp.*, *E. coli* O157:H7 and *Listeria monocytogenes*. The food safety system is based on a high degree of coordination of activities toward the common goal of ensuring the safest food supply in the world.

After September 11th, we recognized a dramatically increased potential for terrorist threats and unprecedented new challenges associated with ensuring the *security* of our food supply – protecting against *intentional* food contamination. Terrorist threats could involve familiar agents the system is already looking for or can quickly respond to; but there is also the possibility of new, unfamiliar, or unexpected agents to be used in food and food systems.

The challenge we face is to build on the food safety systems we have in place by ensuring timely implementation of effective risk reduction practices, by being prepared to respond to an event, and by having plans in place to quickly recover after the incident.

Food regulators must be able to ensure a rapid response to significant threats to food safety and the health of the public. Often, these events involved close coordination with other local, state, and federal agencies. It is within the framework of the Emergency Management System that food emergency planning and response takes place.

The Purpose of This Manual

This pocket guide is intended for use by field staff in food regulatory programs. It is a “ready reference” to deal with some of the common - and uncommon – emergencies dealt with by food regulators. These emergencies can be due to foodborne outbreaks, natural disasters (floods, fires, hurricanes, etc.), accidental contamination of food supplies (truck & train accidents, building explosions, etc.), as well as willful acts of contamination.

There are sections of this guide that consist of advice for consumers; these sections may also be useful reference materials for regulators.

Disclaimer

This pocket guide is not a binding set of requirements. The information provided herein is based on experience and practical considerations as assembled by selected experts from within the AFDO membership. Compliance and enforcement will remain within the interpretations and decisions of the pertinent state and local regulatory authorities.

Emergency Supplies for Food and Environmental Health Staff

Here is a checklist of just some of the items that should be on hand to deal with food emergencies.

- Disaster Policies and Protocols
- Laptop with Internet communication link
- Cell phone/with charger & backup battery
- Flashlights with back up batteries
- Thermometers-analog and digital, infrared if available
- Specimen collection kits (food, water, human). Includes collection bottles, vials, swabs, spatulas, tamper evident labels or tape, Chain of Custody forms, etc.
- Pocket Knife
- Duct Tape
- Activity Reports or Log Book
- Equipment supply requisitions and logs
- Tablets, Pens, Pencils
- Personal Protection Equipment (PPE)
 - Nitrile gloves
 - Dust particulate masks (note: employers may be required to provide training/ fit testing if certain masks are provided)
 - Head gear (construction type hats)
 - Safety goggles
- Camera, digital or film
- Drinking water
- Anti-bacterial towelettes
- First aid kit
- Plastic garbage bags
- Biohazard bags
- Phone book/ emergency contact numbers
- Staff contact list (cell, home phones)
- Establishment inventory list
- Inspection forms
- Identification

Potential Indicators of Threats Involving Weapons of Mass Destruction or Exposure (WMD/WME) and Emergency Actions

The following three pages are from the Pennsylvania Emergency Management Agency.

This is intended to provide general information to assist sanitarians and other public health officials in working with industry in its efforts to recognize potential WMD-related threats or incidents. The information is not all encompassing, and its applicability should be evaluated on a case-by-case basis, in accordance with local conditions, policies, and procedures.

Chemical, biological, and radiological material can be dispersed in the air we breathe, the water we drink, or on surfaces we physically contact. Dispersion methods could include placing an open container in a heavily used area, using conventional (garden)/commercial spray devices, or detonating an improvised explosive device to disseminate chemical, biological or radiological material.

Chemical incidents are characterized by the rapid onset of medical symptoms (minutes to hours) and easily observed signatures (colored residue, dead foliage, pungent odor, and dead insect and animal life). In the case of a biological or radiological incident, the onset of symptoms requires days to weeks and there are typically few characteristic signatures.

Note: In the case of a biological or radiological incident, the onset of symptoms may be days or weeks and the characteristic signatures may vary widely.

In all cases, being alert to the following could assist law enforcement and emergency responders in evaluating potential threats.

Indicators to Look For

- ❑ Unusual packages or containers, especially those found in unlikely or sensitive locations, such as near HVAC or air intake systems, food storage, preparation or dining areas, or secure entrances.

- ❑ Unusual powders or liquids/droplets/mists/clouds, especially those found near air intake/HVAC systems, food storage, preparation or dining areas, or secure entrances.
- ❑ Indications of tampering in targeted areas/equipment (i.e., locked ventilation/HVAC systems; stocks of food; water supply).
- ❑ Reports of suspicious person(s) or activities, especially those involving sensitive locations within or around a building.
- ❑ Surveillance of targeted areas, including but not limited to hotels, entertainment venues, subway systems, aircraft, water sources, office buildings, warehouses, and apartment buildings.
- ❑ Theft of chemical products/equipment.
- ❑ An unusual number of dead animals/birds, fish, or insects.
- ❑ Unexplained/unusual odors. Smells may range from fruity/flowery to sharp/pungent, garlic/horseradish-like, bitter almonds, peach kernels, and new mown grass/hay.
- ❑ Unusual/unscheduled spraying or discovery of spray devices or bottles.
- ❑ An unexpected number of reported illnesses with similar symptoms after having consumed food or water from a food facility not attributable to accidental mishandling or person-to-person transmission.
- ❑ Reported illnesses having an unusually short incubation period, e.g. less than one hour.

Protective Measures

- ❑ Maintain a heightened sense of awareness.
- ❑ Place an increased emphasis on the security of immediate surroundings.
- ❑ Conduct periodic inspections of building facilities, HVAC systems, food storage or preparation areas, or on-site water supplies for potential indicators/irregularities.

- ❑ Review emergency operations and evacuation plans/procedures for all locations/organizations to ensure that plans are up to date.
- ❑ Promptly report suspicious activities to appropriate law enforcement authorities.

Emergency Procedures—Potential Threat Identified/Confirmed

- ❑ Maintain a safe distance/evacuate area (if outside move to upwind location; if inside keep outside doors/windows closed).
- ❑ Call your local 911 (law enforcement and public safety personnel) after reaching safe area.
- ❑ Do not handle or disturb suspicious objects.
- ❑ Remove possibly contaminated external clothing (including hats, shoes, gloves).
- ❑ Follow emergency operations plans/instructions from emergency response personnel.

Ensuring Good Communications

One of the first steps that field staff should take when they learn of an emergency event is to contact their supervisor. However, during major emergencies, clear and timely communication by field staff with their agency as well as multiple other agencies can be a challenge.

The telephone system may not have sufficient capacity for the increased demand or it may be damaged and disorganized, as happened during the response to the attacks on the World Trade Centers in New York City in September 2001. Furthermore, a large, sometimes overwhelming, number of inquiries made by members of the public will likely occur.

Here are some considerations for field communications during an emergency:

- ❑ Pre-arranged protocols should be developed for a “calling tree” within the agency. Field staff should immediately call the supervisor or other designated person and report their personal status when they learn of an emergency.
- ❑ Establish backup contacts. One field office may be affected by a power outage while a backup location in another part of the state may not.
- ❑ During emergencies, field staff may find themselves in areas affected by phone outages or overloaded cellular systems and may be unable to communicate with their office. Have a pre-arranged meeting location to which staff should report when phone or e-mail communication cannot be made.
- ❑ Establish telephone numbers for the public or affected businesses separate from internal department communication phone numbers. Assign enough staff to handle the calls from the public as well as calls from field personnel since office personnel may be tied up on other calls.
- ❑ Have an extra rotary-dial phone in field staff homes and business offices as a backup. In a power outage, cordless phones may be useless.

Emergency Procedures—Food Truck Accidents

The following three pages are from the New York State Department of Agriculture and Markets.

Emergency Response Data Sheet

At _____ AM / PM on (Date) _____

I received a page/telephone call from: *(Name, Title, Phone, Agency)*

Who informed me of the following emergency:

Has anyone been injured? _____

Where did it happen? _____

When did it happen? _____

Can they talk by phone or car radio to people on the scene?

If the answer is yes, we need the following information:

- What type of product is involved?
Fresh, frozen, refrigerated, perishable, non-perishable, meat/poultry, milk, fish/shellfish, other types of PHF's, bottled water/soda/fruit juice, fruits and vegetables, bakery items, beer/wine/liquor.
- How is it packed?
Glass, metal cans, plastic containers, paper/cardboard boxes
- Who owns the product? *(name and telephone number)*

- Where is the product headed? (*instate or out of state, name and telephone number of company*)

- Who is the towing company? (*name of responsible person and telephone number*)

- How long before we will be able to inspect/investigate?

- What other agencies have been notified? Are they responding?

- Name of Agency and Person Spoken to?

- Are they responding or not? _____
- Tell the caller you will be calling them back within (*time frame*).

Comments: _____

In the meantime, all foods and or drugs are under embargo and not to be moved without your permission.

Now is the time for you to make a decision on whether or not to respond, and what your response will be.

Call the person back to verify that he/she is who they say they are. At this point inform them of our response level and where and when it will take place.

Received by: _____

Assigned to: _____

Response time and location: _____

Embargoed NO YES Number _____ Seal # _____

Voluntary Disposal NO YES _____ lbs. \$ _____

Truck/product now located at _____

Other agencies we notified:

Person contacted:

____ USDA Meat and Poultry

____ FDA

____ State Departments:

Dept of _____

Dept of _____

____ Local Departments:

List here _____

Safety of Refrigerated Foods After a Power Outage

The information on the next five pages is derived from the University of Maine Cooperative Extension, the Land Grant University of the state of Maine and the U.S. Department of Agriculture cooperating. This is information to share with consumers. This can also serve as useful reference information for regulators.

Note that temperature recommendations are for consumers (40°F & 140°F). If applied to food establishments, use appropriate commercial, regulatory temperature standards.

Keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature.

All chopped meats, poultry and seafood sandwich fillings should not be left without refrigeration for more than two hours. If any perishable or potentially hazardous foods have exceeded 40 degrees F for more than two hours, throw it away.

Do not trust your eyes and sense of smell. Food may be unsafe, even if it doesn't smell bad or even if it looks safe.

You can extend your food supply by cooking all unspoiled meat immediately. Cooked meat needs to be kept above 140 degrees F if it cannot be cooled below 40 degrees F within four hours. A food thermometer will help you check food temperatures.

Here are some tips on popular perishable foods.

- **Large, solid, unbound pieces of fresh beef or lamb**, such as rump roast or leg of lamb, are least susceptible to quick spoilage.
- **Uncured sausage** is vulnerable to contamination because it is free of preservatives. Keep it frozen as long as possible, then cook before it completely thaws.
- **Raw chopped meats, like hamburger**, spoil quickly. Pork, fish and poultry spoil quickly, too. Dispose of these foods if they have been in a well-insulated, good working refrigerator without power for 12 hours or more and have exceeded 40 degrees F. **Do not trust your sense of smell.** Food may be unsafe, even if it doesn't smell bad.

- **Hard cheese** (like Romano, Cheddar, and Parmesan) usually keeps well at room temperatures. Throw them out when an off-flavor or unusual mold develops. Other cheeses, such as cream cheese, opened containers of cheese spreads and cottage cheese, brie, and gouda spoil quickly.
- **Milk** spoils quickly without refrigeration. Throw out spoiled milk. Soured milk may be used in baking.
- **Custard, gravies, creamed foods, chopped meats, poultry and seafood sandwich fillings** spoil quickly when unrefrigerated. They are ideal growing places for organisms that can make you sick. Dispose of these foods if they have warmed to over 40 degrees for two hours. Spoilage is hard to detect since they may not smell or taste bad.
- **Commercially made baked goods with cream fillings** are not safe if unrefrigerated. Keep them cold, and eat as quickly as possible.
- **Accidentally frozen canned goods** can present health problems. If they are merely swollen — and you are sure the swelling was caused by freezing — the cans may still be usable. Let the can thaw in the refrigerator before opening it. If the product does not look or smell normal, throw it out. **Do not taste it!** If the seams have rusted or burst, throw the cans out immediately.

Safety of Frozen Food After a Power Outage

If you think you might lose power, turn the freezer and refrigerator thermostats to the coldest settings. If you've already lost power, use these tips to keep food cold and safe to eat.

Keep the Freezer Closed

With the freezer closed, foods usually will stay frozen at least a day, perhaps two or three days, depending on the quantity of insulation. Food in well-fitted, well-insulated four-cubic-foot home freezers will not begin to spoil in fewer than three days. In 12- to 36-cubic-foot freezers, food will not begin to spoil in fewer than five days, and may be all right for seven or eight days if the food is very cold.

Open the freezer only to take out the food, to move it to a cooler or to add dry ice. With the door closed, food in most unopened freezers will stay below 40 degrees F up to three days, even in the summer.

Thawing rate depends on:

- the amount of food in the freezer (a full freezer stays cold longer than one half full);
- the kind of food (a freezer filled with meat stays cold longer than a freezer filled with baked goods);
- the temperature of the food (the colder the food, the longer it will stay frozen. Never put hot or warmed foods into the freezer since this will increase the temperature. Keep hot food covered, and throw out if you don't eat it within two hours. Meat should be kept above 140 degrees F);
- the freezer (a well-insulated freezer keeps food frozen longer than one with little insulation); and
- the size of freezer (the larger the freezer, the longer food stays frozen).

Use Emergency Measures

Cover the freezer with blankets, quilts, or crumpled newspaper. Do not cover the air vent openings. If alternate working mechanical refrigeration is available, use it. Use dry ice if it is available. (See section on [Using Dry Ice](#).)

Use Caution if Food has Thawed

Partial thawing and re-freezing can ruin the quality of foods, like fruits, vegetables and prepared foods. Red meats are affected less than many other foods. However, it may still be safe to eat. If a frozen, potentially hazardous food is thawed and still at or below 40 degrees, the food may be cooked and used immediately.

You may safely re-freeze some foods if they still contain ice crystals or if they have been kept at 40 degrees F or below for no more than two days.

Follow these guidelines for completely thawed foods:

- **Fruits.** Re-freeze fruits if they taste and smell good. Fruit that is beginning to ferment is safe to eat, but will have an off-flavor. Use off-flavor fruit in cooking.
- **Frozen dinners.** Do not re-freeze frozen dinners that have thawed. Cook and eat thawed frozen foods and frozen dinners right away if they are still cold. If any foods are warm or smell bad, don't eat them.
- **Vegetables.** Do not re-freeze thawed vegetables. Bacteria in these foods grow fast. Spoilage may begin before bad odors develop. Some spoilage may be very toxic. Re-freeze vegetables only if ice crystals remain throughout the package. But, **when in doubt, throw them out.**
- **Meat and Poultry.** Meat and poultry become unsafe to eat when they start to spoil. Examine each package of thawed meat or poultry. If odor is offensive or questionable or if the freezer temperature has exceeded 40 degrees F for two hours or longer, don't use the meat. It may be dangerous! Discard all stuffed poultry. Cook thawed but unspoiled meat or poultry right away. After cooking, meat can be re-frozen, but it's not recommended.
- **Fish and shellfish.** These spoil easily. Do not re-freeze unless there are ice crystals throughout the package. Seafood may be spoiled, even if it doesn't smell bad.
- **Ice cream.** Do not re-freeze melted ice cream. Throw it out or eat it as a liquid before an off-flavor develops.

Using Dry Ice

If it seems likely that your freezer will not be on for several days, dry ice may help keep frozen food from spoiling. The more dry ice you use, the longer the food will stay frozen. However, dry ice is very costly and may not be easy to get. If a flood or power outage is predicted, and you want to use dry ice, find a source in advance. You may be able to buy dry ice from a local dairy or cold-storage warehouse, or your power company may be able to direct you to a source. Follow these guidelines for using and handling dry ice:

- **Wear gloves when handling dry ice.** Do not touch it with your bare hands, because it causes severe frostbite and tissue damage.
- **Allow 2 1/2 to 3 pounds of ice per cubic foot of freezer space.** More will be needed for an upright freezer, because ice should be placed on each shelf.
- **Move any food from the freezing compartment to the storage compartment of the freezer.** Place boards or heavy cardboard on top of packages. Place dry ice on top of boards. In an upright freezer, place ice on each shelf.
- **Cover the freezer with blankets, quilts or some other covering:** it will help to put crumpled newspaper or wood shavings between the freezer and the blankets. Do not lock the freezer or cover the air vent openings: the gas given off by dry ice could cause an airtight container to explode.
- **The carbon dioxide gas given off by the dry ice** can cause suffocation if inhaled in large amounts. Open windows or doors for ventilation, and use care when opening the freezer or storage compartment.

Reopening Food Facilities after a Power Outage

This information was provided in a California Department of Health Services document, FSN-0102, June 19, 2001.

If the facility had been closed voluntarily, the following conditions should be verified prior to resuming food preparation and/or sale of potentially hazardous foods:

1. All unsafe potentially hazardous food has been discarded.
2. Electricity and gas services have been restored.
3. All circuit breakers have been properly reset as needed.
4. All equipment and facilities are operating properly, including:
 - a. Lighting
 - b. Refrigeration
 - c. Hot holding
 - d. Ventilation
 - e. Toilet facilities
5. Hot (minimum 100 degrees F) and cold potable water, under pressure for:
 - a. Hand washing
 - b. Proper dishwashing

If the facility was closed by the local environmental health agency or state food agency, it must remain closed until it obtains official approval from that agency to open.

Water Interruption at Food Facilities

The determination as to whether a food facility may remain open during a period of water interruption must be made by the regulatory authority having primary jurisdiction over that facility. There may be wide variation on how different agencies implement this decision, so the information in this document should not be interpreted as the only acceptable guidance in these matters.

A water supply serving a food facility is considered to be a public supply and under Federal and/or State regulations, is expected to meet certain drinking water standards. Should the supply become affected in such a way as to place public health at risk, a water supply may be required to take appropriate action to protect the public.

Municipal supplies will usually issue boil water notices to their customers or advocate not using the water at all. If a facility has its own water supply, regulations may require the provision of water from a safe, alternate source, advocate ceasing operations involving the need for potable water, or require a facility to close.

As with all emergency situations, field staff will be expected to work in consultation with their supervisor to address immediate public health concerns in a consistent manner. Risks are to be assessed according to the operation's dependence on potable water, etc., and risk control measures analyzed and implemented to provide the greatest protection to public health. Because of the complexity of water supply issues it is important to work with all of the appropriate agencies to assure the public of both safe food and drink.

Facilities should be encouraged to develop contingency plans to deal with water emergencies, to include an inventory of all food equipment connected to the water distribution system.

Since a sufficient supply of potable water is necessary for hand washing, food preparation, equipment cleaning and sanitization, and other food establishment operations, interruption or contamination of the water supply is especially important since water can serve as a direct vehicle of contamination to food and food contact surfaces.

Risk Assessment

Note: There may be circumstances where available alternatives are not sufficient to provide acceptable public health protection. To allow a food operation to remain open should be considered ONLY if 1) it is consistent with agency policies, and 2) appropriate actions are

taken by the operator to assure the safety of food, the cleanliness of utensils and equipment and the personal hygiene of employees.

Courses of action may be determined by:

- ❑ the establishment's dependency on potable water (e.g., nature of the operation, processes or food products containing water as an ingredient, etc.),
- ❑ whether the interruption involves a total loss of water or a loss of pressure,
- ❑ the type and duration of contamination resulting from the water interruption
- ❑ any advance contingency planning, and
- ❑ the ready availability of alternate approved supplies of potable water.

Risk Control Measures

In the event of an emergency which could result in the contamination of food including an unexpected interruption to the water supply, person in charge must take action to protect the public health and to promptly notify the regulatory authority. Some possible risk control measures may include:

- (1) temporarily ceasing operations; or
- (2) obtaining a temporary supply of potable water in accordance with State or Federal drinking water regulations. Examples of generally acceptable alternative supplies include, but are not limited to:
 - a. individual serving size containers of commercially bottled water
 - b. NSF-approved piping, tubing or hoses connected to an adjacent approved source in accordance with applicable regulations,
 - c. bulk water containers filled from an approved source,
 - d. a water/food tank truck filled with water from an approved source, or
 - e. an approved stationary water tank filled from an approved source.

An acceptable alternate supply must:

- be from a source approved by the local health department or
- appropriate drinking water agency in accordance with State or
- Federal drinking water regulations,
- protected from contamination, and
- must provide enough water to accommodate the needs of the establishment.

Bulk containers, tank trucks or water tanks used for transporting or storing potable water must be approved for use by the regulatory authority, cleaned, sanitized and filled in an acceptable manner.

Connections between the water distribution system should be sanitized at the time of use. (Requirements for alternate water sources might not apply to retail food facilities which offer only prepackaged food with no fountain beverage {or other food using water} service.)

Water Contamination at Food Facilities

Any public or private water supply may be subject to microbiological or chemical contaminants. It is often considered to be a potential hazard after water interruptions.

Risk Assessment

The most common contamination issues in a water supply in deal with the suspected or verified presence of coliform bacteria. These may enter a water supply through various means, such as a breach somewhere in the water lines, improperly constructed or maintained wells or naturally occurring contamination in the ground water. While the presence of coliform bacteria in drinking water may not necessarily be considered an imminent threat to public health, its presence in the water may be an indication of other, potentially more harmful organisms. The presence of FECAL coliform is considered a higher risk, and may affect how different optional procedures will operate

Coliform Contamination

Risk Control Measures

When a water supply has been interrupted OR when coliform bacteria are detected in a public water supply through lab analysis and determined to meet the definition of a *Maximum Contaminant Level* (Two or more coliform positive samples), action to protect the public health should be taken. *The suggested optional measures described below are to be used on an interim basis only, not as a long-term solution to the problem.*

Typically, a municipal water supply will issue a 'boil-water' notice to homeowners, advising them on how to treat small quantities of water for consumption. For some food facilities, there may be useful information available on these notices. However, for larger food facilities, this may not be an option, as the water needs may exceed their capacity to boil enough to meet them.

If a food facility is allowed to remain open, some of the establishment's operations which should be evaluated in the case of coliform contamination, along with some optional INTERIM procedures which may be considered and authorized by the regulatory authority are as follows:

**Operation Which
May be Authorized**

Thawing of frozen foods

Washing produce

Dipping and soaking produce

**Preparing food products
requiring water, including
reconstitution of dried foods**

Optional Procedures

Thaw only in refrigerator or
as part of cooking process

Obtain and use prewashed
packaged produce

Use produce washed prior
to interruption

Use frozen/canned
produce

Wash fresh produce with
potable water from an
alternate approved source

Use potable water from an
alternate approved source

Use only food that was
prepared prior to the
interruption

Discontinue sale of
prepared foods

Discard any food left on
site prepared with water
prior to the discovery of
the contamination

Use prepared food from an
alternate approved source

Use potable water from an
alternate approved source

Ice making

Use ice prepared before interruption

Discard ice prepared with contaminated water

Discontinue preparation of ice

Purchase packaged potable ice

Handwashing

Use potable water from an alternate source. In certain circumstances, if only total coliform is present, the water may be used to wash hands, followed by hand sanitizer. No bare-hand contact of RTE foods applies without exception. (Bare-hand contact plans are suspended until water meets drinking water standards) NOTE: If *E. coli*/fecal coliform is found in the water, it may not be used for hand washing.

Cleaning and sanitizing of Utensils

Use only single-service utensils

Use alternate approved water source if no water available OR use approved sanitizers in adequate concentration in final step to destroy bacterial contamination.

Use waterless cleaning or non-potable water for floors, garbage cans, etc.

Using garbage grinders

If no water available, dispose of garbage in

Flushing of employee toilets

proper containers together with the other refuse

If no water available use adjacent approved facilities which are readily available

If no water available utilize waterless toilets (portajohns)

Use non-potable water for flushing

Flushing of customer toilets and lavatories

If no water available , close these facilities

Thawing of frozen foods

Do not allow food that may be served to infants to come in direct contact with running water during thawing process

Thaw in refrigerator or as part of cooking process

Washing produce (for infant consumption)

Obtain and use prewashed packaged produce

Use frozen/canned produce

Wash fresh produce with potable water from an alternate approved source

**Dipping and soaking produce
(for infant consumption)**

Use potable water from an alternate approved source

**Preparing infant food products
requiring water, including
reconstitution of dried foods**

Discontinue sale of prepared foods may have been contaminated by high nitrates

Discard any food that may be fed to infants prepared with water prior to the discovery of the contamination

Use prepared food from an alternate approved source

Use potable water from an alternate approved source

**Ice production
for infant consumption**

Use ice prepared with water from an approved source

Purchase packaged potable ice

Concluding Actions

Once the water supply has been disinfected after a bacterial contamination event OR water interruption, it will be necessary to take actions to insure that:

- Information has been provided by the water utility or regulatory agency that the water is safe for use. This should include information on sample results taken for confirmation. The minimum requirement to place the water supply back into service is two, coliform-free samples, taken at least eight hours apart. The confirmation report should remain on file at the facility.

- Chlorinated water of adequate concentration has been flushed through the distribution system, including food processing equipment.
- Food contact surfaces have been adequately cleaned and sanitized prior to putting back in to use, including the interior of ice machines, beverage equipment, processing machinery, etc.
- Any food prepared with potentially contaminated water, such as ice, beverages, soups, gravies, sauces, etc., has been destroyed.
- See section on “Disposal of Food” in this document

In times of extreme crisis, local health departments may urge consumers to use more caution or to follow additional measures. If local public health department information differs from this advice, the local information should prevail.

Cleaning Automatic Ice Making Equipment after Floods or Water Contamination Events

From the California State Department of Health Services.

If an ice-making machine has been contaminated by flood waters or the water supply to the machine has been contaminated, the ice-making machine should be emptied, cleaned and sanitized before returning it to production.

Note: In all cases the manufacturer's recommended cleaning procedures should be followed if available.

- Water Supply Status.** Determine if the existing water supply is safe
- Public Water Supply - contact the water company.
 - Private well - determine if the well has been covered by floodwater, or if floodwaters have been nearby. If so, the well could be contaminated and well disinfection should take place.

Safe Water Supply: If the water supply is safe for drinking, proceed to one of the following steps:

- Commercial ice machines with removal ice contact surfaces - refer to Procedure 1,
- Commercial ice machines without removable ice contact surface - refer to Procedure 2,
- Residential ice makers - refer to Procedure 3.

Contaminated Water Supply: If the water supply is contaminated or subject to a "boil" order, then:

- Disconnect the unit from electrical power,
- Remove and discard any stored ice,
- Drain water from the machine,
- Do not initiate cleaning and sanitizing procedures until the water supply is safe.

Procedure 1: Commercial Removable. If the ice maker contains removable ice contact surfaces, then:

- 1.1 If available, follow the manufacturer's recommended cleaning procedure, or:
- 1.2 Run the unit through 2 or 3 freezing cycles. This should insure that water entering the unit is safe. Option: If the

water supply line to the machine can be drained and flushed by disconnecting it or bypassing the machine, the freezing cycle can be skipped. Drain enough water to thoroughly flush the incoming water line; a 20-30 second run should suffice;

- 1.3 Turn the water supply off;
- 1.4 Disconnect the unit from electrical power (recommended);
- 1.5 Remove and discard any ice;
- 1.6 Remove all ice-contact parts of the machine and,
 - 1.6.1 Wash in hot, soapy water
 - 1.6.2 Rinse in clean water
 - 1.6.3 Sanitize for at least 2 minutes in a solution of one ounce of household bleach per three gallons of water (~100 ppm available chlorine);
- 1.7 Reassemble the unit and re-start machine.

Procedure 2: Commercial Non-Removable. If the icemaker does not contain removable ice-contact surfaces or is designed to be cleaned in place, then:

Note: In equipment where ice contact surfaces are not readily removable, the tubing, pipe, fittings and valves are required to be arranged so cleaning and sanitizing solutions can be circulated throughout the fixed system. (See NSF, International Standard 12, Section 4.2, Automatic Ice Making Equipment)

- 2.1 If available, follow the manufacturer's recommended cleaning procedure, or:
- 2.2 Run the unit through 2 or 3 freezing cycles or flush the water supply line (See Procedure 1.2);
- 2.3 Turn off the water supply;
- 2.4 Drain the machine;
- 2.5 Circulate a cleaning solution of warm soapy water for two minutes; drain system;
- 2.6 Circulate clean water rinse for two minutes; drain system;
- 2.7 Circulate a sanitizing solution containing one ounce of household bleach per three gallons of water. Ensure at least two minutes of contact time;
- 2.8 Drain the system;
- 2.9 Wash, rinse, and sanitize the ice storage bin;
- 2.10 Return the drain valves to their normal operating positions and restart system.

Procedure 3: Residential Unit. Determine if the ice maker is removable.

3.1 If removable:

- 3.1.1 Run the icemaker through 2 - 3 freezing cycles or flush the water supply line. (See Procedure 1.2). A longer flushing time should be used for refrigerators with a built-in water dispenser to ensure that the water storage tank is completely flushed;
- 3.1.2 Turn the water supply off;
- 3.1.3 Disconnect the unit from electrical power (recommended);
- 3.1.4 Remove the ice storage bin and icemaker unit;
- 3.1.5 Wash, rinse, and sanitize the ice maker and storage bin (See Procedure 1.6.);
- 3.1.6 Reinstall the units and return the icemaker to service.

3.2 If not removable:

- 3.2.1 Run the icemaker through 2-3 freezing cycles or flush the water supply line (See Procedure 1.2). A longer flushing time should be used for refrigerators with a built-in water dispenser to ensure that the water storage tank is completely flushed;
- 3.2.2 Discard the ice and return the ice bin to the freezer;
- 3.2.3 Wash, rinse, and sanitize the icemaker in place. This can be done with spray bottles containing a warm soapy wash solution, followed by clean rinse water, and then a sanitizing solution as in Procedure 1.6. Use the ice bin to collect the drainage from this process;
- 3.2.4 Remove the ice bin;
- 3.2.5 Wash, rinse, and sanitize the ice bin;
- 3.2.6 Place the icemaker back into service.

Emergency Disinfection of Small Quantities of Drinking Water

There are two general methods by which small quantities of water can be effectively disinfected. One method is boiling. It is the most positive method by which water can be made bacterially safe to drink. Another method is chemical treatment. If applied with care, certain chemicals will make most water free from harmful or pathogenic organisms.

Filtration Prior to Disinfection

When emergency disinfection is necessary, examine the physical condition of the water. Disinfectants are less effective in cloudy water. Filter murky or colored water through clean cloths or allow it to settle, and draw off the clean water for disinfection. Water prepared for disinfection should be stored only in clean, tightly covered, containers, not subject to corrosion.

METHODS OF EMERGENCY DISINFECTION

Boiling:

- A rolling or vigorous boil for one minute will kill any disease-causing microorganisms present in water.
- Boiling is the recommended treatment for public water supplies in an emergency
- The flat taste of boiled water can be improved by pouring it back and forth from one container to another (called aeration), by allowing it to stand for a few hours, or by adding a small pinch of salt for each quart of water boiled.

Chemical Treatment:

- When boiling is not practical, chemical disinfection should be used.
- The two chemicals commonly used are chlorine and iodine.
- Chlorine and iodine are somewhat effective in protecting against exposure to *Giardia*, but may not be effective in controlling *Cryptosporidium*.
- Chlorine is generally more effective than iodine in controlling *Giardia*, and both disinfectants work much better in warmer water.
- Use iodine or chlorine only to disinfect well water (as opposed to surface water sources such as rivers, lakes, and springs), because well water is unlikely to contain these disease causing organisms.

Chlorine Methods

Chlorine Bleach:

Do not use chlorine bleach with fragrance added or stabilized chlorine for swimming pool use!

The procedure to be followed is usually written on the label. When the necessary procedure is not given, find the percentage of available chlorine on the label and use the information in the following tabulation as a guide.

Available Chlorine	Drops per Quart of Clear Water
1%	10
4-6%	2
7-10%	1

(If strength is unknown, add ten drops per quart of water. Double amount of chlorine for cloudy or colored water)

The treated water should be mixed thoroughly and allowed to stand for 30 minutes.

The water should have a slight chlorine odor; if not, repeat the dosage and allow the water to stand for an additional 15 minutes.

If the treated water has too strong a chlorine taste, it can be made more pleasing by allowing the water to stand exposed to the air for a few hours or by pouring it from one clean container to another several times.

Granular Calcium Hypochlorite. Add and dissolve one heaping teaspoon of high-test granular calcium hypochlorite (approximately 1/4 ounce) for each two gallons of water. The mixture will produce a stock chlorine solution of approximately 500 mg/L, since the calcium hypochlorite has an available chlorine equal to 70 percent of its weight. To disinfect water, add the chlorine solution in the ratio of one part of chlorine solution to each 100 parts of water to be treated. This is roughly equal to adding 1 pint (16 oz.) of stock chlorine to each 12.5 gallons of water to be disinfected. To remove any objectionable chlorine odor, aerate the water as described above.

Chlorine Tablets. Chlorine tablets containing the necessary dosage for drinking water disinfection can be purchased in a commercially

prepared form. These tablets are available from drug and sporting goods stores and should be used as stated in the instructions. When instructions are not available, use one tablet for each quart of water to be purified.

Tincture of Iodine

Common household iodine from the medicine chest or first aid kit may be used to disinfect water. Add five drops of 2 percent United States Pharmacopeia (U.S.P.) Tincture of iodine to each quart of clear water. For cloudy water add ten drops and let the solution stand for at least 30 minutes.

Iodine Tablets

Commercially prepared iodine tablets containing the necessary dosage for drinking water disinfection can be purchased at drug and sporting goods stores. They should be used as stated. When instructions are not available, use one tablet for each quart of water to be purified.

Note: water to be used for drinking, cooking, making any prepared drink, or brushing the teeth should be properly disinfected.

Safe Handling of Food and Utensils After a Flood

Flood waters may carry silt, raw sewage, oil or chemical waste that can make storm-damaged foods unsafe to eat. If you have a question about the safety of any item, dispose of it. Otherwise, keep the following points in mind.

Discard the following foods if floodwater has covered, dripped on or seeped into the package:

- Fresh produce; meat, poultry, fish and eggs;
- Paper, cloth or fiber;
- Cardboard boxes, even if the contents seem dry, including cereals, pasta products, rice, salt;
- Any "sealed" packages of crackers, cookies or mixes within a larger paper box;
- Foods with cardboard seals, such as mayonnaise and salad dressing, or foil or cellophane packages;
- Food in glass jars, including unopened jars with waxed paper, foil, cellophane or cloth covers;
- Home-canned foods (some tightly sealed home-canned foods may be safe depending on conditions. Contact a food preservation specialist or local health department for advice.);
- Spices, seasonings and extracts;
- Foods, liquids or beverages in crown-capped bottles or containers with pull-tab tops, corks or screw caps;
- All opened containers and packages; foods in bags or canisters;
- Cans that are dented, leaking, bulging or rusted; and
- Cans that have been tossed about and are far from their normal storage spot.

Destroy all foods that were covered by water that may have been contaminated with industrial or sanitary waste, including foods sealed in unopened cans.

Cans of food that do not have dents or rust can be saved if they are handled properly before they are opened. Be sure to wash and sanitize undamaged containers before opening the can. For added safety, boil food before eating it.

Disinfecting Food Cans

To disinfect undamaged cans (damaged cans should be discarded)

- Remove paper labels (paper can harbor bacteria) and re-label with a permanent marker.
- Wash the containers in a strong detergent solution.
- Use a brush to remove any dirt and silt.

- Rinse the scrubbed containers. Removing dirt and silt and rinsing is very important because the chlorine solution won't work well if cans are dirty.
- Wear rubber gloves to protect your hands during the disinfection process. Strong detergent and bleach solutions can be hard on bare hands.
- Immerse the clean, rinsed containers in a lukewarm (75 to 120 degrees F) solution of chlorine for two minutes. Use two (2) tablespoons of five percent chlorine bleach per gallon of water. Chlorine loses its effectiveness when it is in a solution and open to the air or when it comes in contact with unclean materials.
- Change this disinfecting solution frequently. Dump it out and mix fresh solution if the water gets cloudy.
- Take cans out and air dry before opening or storing.
- Use foods from disinfected containers as soon as possible because cans may rust.

Disinfecting Dishes and Utensils

- Wash all dishes and utensils in hot, soapy water with a brush to remove dirt.
- Sanitize glass, ceramic and china dishes, glass baby bottles, and empty canning jars in the same way as for undamaged cans.
- Dishes with deep cracks should be thrown away.
- Metal pans and utensils can be disinfected by immersing them in water and boiling for 10 minutes.
- Kitchen utensils made of iron will probably be rusted. Remove the rust by scouring with steel wool.
- Disinfect with a bleach solution and re-season. To do this, apply a light coat of unsalted fat or oil and place in a 350 degree F oven for about an hour.

Disinfecting Food Preparation and Serving Areas

- All food preparation and serving areas should be cleaned and sanitized prior to use.
- Use a chlorine solution equivalent to 100 ppm (1/2 tablespoon of household bleach (5.25% sodium hypochlorite solution) in 1 gallon of potable water to sanitize.
- Use chlorine test strips to insure adequate concentration of sanitizing solution.

Safe Food Handling After a Fire

Regulatory Actions-Prior to Visit

As soon as notification of a fire at a food service, retail, distribution or manufacturing facility is received, the inspector should arrange their schedule to be at the fire scene as soon as possible to evaluate the damage.

Contact the local fire and building authorities prior to visiting the site to determine if and when you may be able to enter the building, if it still standing. If damage is extensive, you may have to wait at least 48 hours before entering.

Find out from fire department personnel any pertinent facts concerning the fire, e.g. type of water used, chemicals used, if any, and if electrical service was interrupted at the scene.

Attempt to contact the building and business owners. It is the responsibility of the owner or custodian to properly dispose or salvage adulterated or misbranded food damaged in a fire. When improper disposal or salvage is apparent, a seizure should be placed on the entire contents until an evaluation can be made to determine the damage to the contents and proper disposal or salvage.

Regulatory Actions-During Evaluation

If the building can be entered, always wear protective clothing, e.g. helmet, coveralls or lab coat, safety glasses and boots.

Always carry a flashlight and cell phone in case of emergency.

Watch for weak ceilings, roof supports, walls and floors.

If electrical service is still on in the building, be careful to avoid loose or exposed wiring.

Record all food items noted, condition, damage, and approximate amounts. Determine if salvageable.

Total Loss

- If the damage to the food contents is total, follow your agency's procedures on the issuance of an embargo or seizure .
- Determine the approximate weight and value of the merchandise with the help of the owner or manager of the firm.

- Food shall be hauled to a licensed landfill in accordance with state and local transport requirements. The disposal firm may need to obtain prior approval from the state or local food regulatory authorities. This is especially true if the size of the damaged inventory is extensive.
- Follow up on the final dispositions to a point where there is a certainty that the entire lot has been properly disposed of. It may be advisable to visit the landfill site to make sure all food products are being properly disposed of, which may include decharacterizing, bulldozing, and immediate burial.

Partial Loss

If the fire damage is such that some or all of the food is salvageable, plans will have to be made to sort the salvageable from the non-salvageable as quickly as possible.

The time of year and geographic location is very important. Below freezing and extremely hot conditions may result in salvageable food being destroyed by the temperatures. If a laboratory is available for analysis, questionable lots may be sorted.

As a general rule, food should be handled as follows:

Alcoholic Beverages:

- Contact the state agency with liquor control authority to determine disposition of these products.

Bottled Soft Drinks:

- Unless protected by a plastic outer wrap or in bottles with sealed screw-on lids, soft drinks in glass bottles are almost impossible to salvage.
- To recondition, the most effective and only approved method is to return the containers to the plant to be run through the bottle warmer if the plant will accept the bottles. Check with them first. Often the bottle contents must be dumped before returning the containers. This can only be permitted if proper facilities for disposing of the liquid are available and a health nuisance is not created.
- If such facilities are not available, the product and container may have to be destroyed.

Canned Soft Drinks:

- May be salvaged if the contents have not been subjected to excessive heat or fire.
- The cans should be cleaned and disinfected, if necessary, also by returning them to the plant to be run through the can warmer if the plant is agreeable, check first.
- If the cans have been subjected to excessive heat, the contents must be destroyed.

Dairy Products, Eggs, Butter, Margarine, Cheese And Milk:

As a rule, all such dairy products must be destroyed with no attempt at salvage.

Sugars, Candies, Flour, Cereal Products, Bakery Products, Dried Beans, Rice, And Other Grains:

Usually, no attempt to salvage such products can be permitted.

Products In Glass With Metal Screw-Type Or Metal Slip Covers:

This includes pickles, olives, catsup, steak sauces, salad dressings, syrups, etc. This type of container is impossible to clean and disinfect and must be destroyed.

Fish And Meats—Fresh Or Frozen:

In almost all instances, these products must be destroyed.

Canned fish and meat products, e.g., hams, picnics, canned fish, may be salvaged if it can be determined that the heat from the fire has not been extensive. In this case, cleaning and disinfecting the cans is advisable.

Frozen Food:

Usually no salvage can be attempted unless frozen foods are stored in a completely enclosed walk-in or cabinet freezer and electrical service has not been interrupted.

Prompt removal of such foods to another suitable location is usually advisable.

Produce—Fresh Or Dried:

Usually, no attempt at salvage can be permitted and all such products must be destroyed.

Jams, Jellies, Peanut Butter And Baby Foods In Glass:

Typically, such products must be destroyed because it is nearly impossible to clean and disinfect the jars, especially under the lip of the cover. The food in the glass container will usually become contaminated when the lid is removed by an unsuspecting consumer.

Canned Goods:

Where the heat and water damage has been minimal, canned goods can be salvaged quickly by cleaning the exterior surfaces and removing them to suitable storage areas, preferably away from the fire scene. If the contents of the cans are satisfactory, but the labels are discolored or the canned goods have been subjected to exterior can contamination, e.g. metal discoloration from smoke or water, or contaminated water or chemicals have been used to fight the fire, salvage of the canned foods can be costly.

Exteriors of the cans must be cleaned and sanitized in an approved manner. With most grocery fires, the individual lots of canned foods are small. Labels will be difficult to replace and effective salvage will be time consuming and costly. In many cases, the insurance underwriter will prefer that the canned goods be destroyed since salvaged foods usually have a much lower value than the first line merchandise.

Salvaged Goods—Donation

It may be possible to divert foods mentioned above to a local food bank for distribution to charitable organizations; check with state guidelines to determine if this is allowed.

Salvaged Goods—Reconditioning

If the quantities of food involved are large; e.g. a large supermarket or a food warehouse, it may be feasible to attempt salvage for either human or animal consumption. They must either be destroyed or moved out of state under seizure to approved firms that have reconditioning capability. Such movement is coordinated with the U.S. Food and Drug Administration and the other states' officials.

Non-Food Products

If non-food packaged products are wholly or partially destroyed, lack of labeling, if specified in state or local ordinances may render such products unsalable under normal circumstances.

Sale to an industry, institution or charitable organization may be permitted if properly invoiced.

Closing Comments

As an inspector, you will realize that every time you are called upon to take part in a seizure and disposition of fire/smoke/water damaged foods, you have to make judgments that will vary from incident to incident.

You will also realize that in most cases this is a traumatic time for the owner/operator of the affected business.

While you must be firm in enforcing all laws and regulations that pertain to the affected foods, you should also be willing to offer assistance and advice to the operator.

An inspector's experience over the years may prove to be invaluable in assisting the operator to return to a normal business, if so desired.

An inspector may have been involved with the disposition of food at numerous fires over the years, but usually this is a once in a lifetime experience for most owners of food businesses

Safe Food Handling after an Ammonia Leak

This section is derived from the Food Salvage and Reconditioning Guideline of the Massachusetts Department of Public Health, Division of Food and Drugs, document FP-01.

Ammonia is often used for agricultural purposes, for refrigeration, and as a cleaner when dissolved in water. At room temperature it is a colorless, flammable gas with a pungent, suffocating odor. It becomes a clear, colorless liquid under increased pressure. Ammonia is usually shipped as a compressed liquid in steel cylinders.

Anhydrous ammonia is the form used primarily in refrigeration and agriculture. Ammonia dissolves in water to form ammonium hydroxide, a corrosive solution. Concentrations of ammonium hydroxide vary from 5 percent to 10 percent for household use and 25 percent or more for industrial use. The sheer volume of ammonia required to meet the needs of users places it on the list of the top ten chemicals produced in the U.S.

When learning of an ammonia leak or a release of ammonia due to an explosion, an immediate embargo of the food/non-food items used in the facility is recommended to prevent the accidental or intentional sale or use of these items.

Prior to entering a structure where an ammonia leak has occurred, it is necessary to consult with the appropriate officials to verify that the danger of exposure to ammonia has been eliminated. The use of breathing, eye, and skin protection is preferable, to prevent accidental exposure during the evaluation.

Contamination from ammonia leaks involves the absorption of ammonia fumes into the product as a result of *prolonged* or *concentrated* exposure to fumes. This occurs either by direct exposure or absorption through permeable packaging. Standing water or condensate on packages may also combine with ammonia fumes to result in high pH levels. Some foods will be unsuitable for reconditioning, due to their absorptive nature or lack of airtight, non-absorbent packaging.

Some packaging materials are more permeable by ammonia than others. The more permeable the packaging, the less likely the product can be salvaged. The following barrier characteristics should be noted when deciding whether a food product exposed to ammonia should be salvaged or destroyed.

- Water glaze or ice on food will absorb ammonia, but the rinsing action of melting ice may eliminate the ammonia
- Loose packed, individually quick-frozen (I.Q.F.) foods are more susceptible to contamination than block frozen foods;
- Kraft and other types of paper products are extremely permeable;
- Waxed paper overwrap and waxed cardboard are extremely permeable;
- Plastic films (polyethylene, saran, cryovac, etc.) are less permeable; and
- Brass, metal, and heavy aluminum foil or foil-lined packaging are often the best barriers.

Disposal of Food

If it is determined that food must be discarded:

- Remove to a designated condemned food storage area away from food preparation and equipment storage, and secured in covered refuse containers or other isolated areas to prevent either service to the public, or accidental contamination of the facility and other food.
- If the food must be retained until the distributor can credit the facility, it must be clearly labeled as “NOT FOR SALE”.
- Discarded refrigerated food may be stored in a refrigerated location separate from other food and held for credit until recorded by food supplier/distributor.
- The facility should document the type and amount of food, costs and the reason for disposal for insurance and regulatory purposes.
- Small volumes of food to be discarded can be denatured with a cleaning product (such as bleach) and placed in a covered refuse bin outside the facility.
- Large volumes of food should be stored in covered refuse containers in a secure location and disposed of by a refuse disposal company as soon as possible.
- All food waste is to be disposed of in accordance with state and local waste disposal regulations in a licensed landfill.
- Local landfills should be contacted prior to delivery of food from a private individual or carrier to insure acceptance of the waste.

If a facility is not in full compliance with disposal orders, it may be necessary to issue a notice of seizure or other applicable order and take all appropriate action to insure proper denaturing and disposal of the food. Record all information on types, amounts, estimated costs, etc. of the food under seizure.

Food Sanitation at Mass Feeding Centers

The information in this section was taken, in part, from the Red Cross publication "Safe Food Handling Procedures on Disaster Relief Operations" and the U.S. Public Health Service/Food and Drug Administration's 1999 Food Code.

This section provides information that sanitarians may use for inspection purposes or to educate operators/employees of these centers.

Food Source and Handling Precautions

- ALL perishable foods must be derived from an approved source and handled in accordance with food safety requirements. Typically, such food is available from food banks, vendors, restaurants, and the Red Cross.
- Commercially processed, non-perishable goods may be obtained through food drives, and from the agencies mentioned above.
- No home-prepared foods are allowed.
- Donated food must be prepared according to public health standards, i.e. licensed kitchens, caterers, other health department approved facilities.
- Food must be stored and transported carefully, maintaining appropriate temperatures.

Receiving and Storing Food

- All food must be checked-in and evaluated prior to use.
- Any food that has not been held at the appropriate temperature and sanitation conditions must be discarded.
- Any food with expired dates must be rejected.
- Any food with signs of damage, spoilage, or refreezing must be rejected. (discolored, bad smell, mold, slimy texture)
- No bulging, dented or rusty cans shall be accepted.
- Storage areas shall be clean, dry and protected from pests or insects.
- As food arrives, packages shall be dated using moisture-proof stickers, permanent marker or other method not affected by moisture or temperature.
- All food shall be stored in approved, covered containers that maintain appropriate temperatures.
- No chemicals, cleaners or refuse shall be stored near food.
- All refrigerated food shall be stored appropriately to prevent cross-contamination.
- All food items shall be stored 6" from the floor on pallets or shelves.

Preparing and Serving Food

- Wash hands and change gloves as often as needed, especially after raw food and cleaning the working area.
- All fresh fruits and vegetables shall be washed in clean, potable water.
- If no refrigeration available, perishable foods shall be delivered daily and should be served as soon as possible.
- A food thermometer must be used to monitor temperatures, and shall be cleaned and sanitized before every use.
- Always thaw food under refrigerated conditions, never at room temperature.
- Minimize hot holding times by cooking foods as close to serving times as possible.
- Use only potable water-if water is contaminated, use bottled water.
- Prepare only the quantity sufficient for immediate use. Leftovers must be avoided if refrigeration is inadequate.
- Cool all perishable foods rapidly. Use shallow pots and pans to divide hot foods.
- Observe temperature controls for potentially hazardous foods-keep it hot, 140 degrees F or above and cold, 40 degrees or below.
- Use single-service eating and drinking utensils.
- All employees shall practice good hygiene, have no illness, boils, wounds or be carriers of disease that may be transmitted through food or close contact.

Food Sanitation Requirements-Cleaning and Sanitizing, Facility Requirements

- All utensils and surfaces used in food preparation shall be washed, rinsed and sanitized:
 - After each use.
 - When changing products
 - At least every four hours for equipment in constant use.
 - Once a day for grill surfaces and griddles.
- Provide handwashing soap and paper towels at toilet facilities.
- Manual cleaning and sanitizing should be done in a three compartment sink. Five steps are necessary for proper cleaning.
 - Scrape, presoak and sort items
 - In the first sink, wash in clean, hot detergent solution.
 - In second sink, rinse in clear, hot, potable water.

- In third sink, sanitize items by:
 - immersing for 1 minute in 50 ppm chlorine solution or other equivalent chemical sanitizing solution;
 - immersing in hot water of at least 170 degrees F for 30 seconds
- Air-dry items. Do not towel dry. Reinspect items.
- A separate handwash sink with hot/cold running water, soap and paper towels should be available in the food prep area.
- A separate food preparation sink with potable running water should be present.
- Monitor the quality of water supplies in the food preparation areas, using a chlorine residual test on-site.
- If facility is set up as a temporary food establishment, a floor may be concrete, machine-laid asphalt, or dirt or gravel if it is graded to drain, AND covered with mats, removable platforms, duckboards, or other suitable approved materials that are effectively treated to control dust and mud; and walls and ceiling may be constructed of a material that protects the interior from the weather and windblown dust and debris
- Openings shall be protected against the entry of insects and rodents by:
 - 16 mesh to 25.4mm (16 mesh to 1 inch) screens;
 - Properly designed and installed air curtains; or
 - Other effective means.

Note: This rule does not apply if flying insects and other pests are absent due to the location of the establishment, the weather or other limiting condition.

- Wastewater from food facilities shall be disposed of in an approved manner to prevent contamination of surface waters and water supplies, eliminate the spread of disease, and minimize vermin attraction.
- Adequate toilet facilities are to be provided for employees, such as approved pit privies, porta-johns, or other facilities deemed acceptable by the local health department.

Emergency Management Training Log for Food Safety Field Staff

Name: _____

Basic Curriculum

<u>Course</u>	<u>Date Taken</u>
Introduction to Emergency Management	_____
First Responder Awareness	_____
Incident Command System	_____
Familiarization with State/Local Plan	_____
Weapons of Mass Destruction	_____
_____	_____
_____	_____
_____	_____
_____	_____

Supplemental Curriculum

<u>Course</u>	<u>Date Taken</u>
Radiological Response	_____
Damage Assessment	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

FEMA website for free on-line courses:
<http://training.fema.gov/EMIWeb/IS/>

Foodborne Outbreak Response

Foodborne outbreaks can be due to biological or chemical contaminants entering the food chain through accident or by mishandling. It can also be attributed to intentional acts, such as the Bhagwan Shree Rajneesh commune in The Dalles, Oregon in 1984. Members of the cult contaminated local salad bars with salmonella to influence the outcome of an election. Early indicators of a possible foodborne outbreak, either intentional or accidental, may be nearly identical, and may include:

- Increased reports of illness by residents to local health department;
- Increased reports by physicians, ERs or hospitals of an unusual number of people with similar symptoms or disease;
- Increased numbers of hospitalizations or deaths due to unusual disease or syndrome;
- Pharmacies or retailers reporting unusually high sales of anti-diarrheal medications.

Verifying the Diagnosis

Before assuming that an outbreak is occurring, a health professional must consider whether the number of cases of illness are significantly higher than previous years' reporting, whether the symptomology appears to be unusual, or there appears to be illnesses associated with an event or location. Be sure to use the definition of "foodborne disease outbreak" that has been adopted by your agency of jurisdiction.

"Foodborne disease outbreak means the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food."

2001 FDA Model Food Code

Searching for Additional Cases

When a potential outbreak has been identified, the health professional must quickly determine if other unidentified cases exist. This is best accomplished by notifying local physicians, ERs and hospitals of the concerns and requesting that the health authority be notified if cases showing certain symptoms or disease turn up. If a positive identification of a biological or chemical agent has been made, notifying the local or state diagnostic laboratories is useful as well in determining if additional cases may be related.

Determination of Association

Once gathering of epidemiologic information on known or suspected cases has been initiated and can be compared, it is vital to determine the time, place and person association between cases. Looking for specific common foods, events, geographic locations, etc. can be important in determining the possible source or cause of the outbreak. Whether the contamination is accidental or intentional, the primary goal is to quickly identify what occurred and taking appropriate action to prevent further illnesses.

Notification of Federal Agencies

If the implicated food products fall under the jurisdiction of the USDA, FDA or other Federal agency, notification to the appropriate agency should be made once there is reasonable suspicion that the source of the illness originated in the food itself and not through secondary contamination or mishandling after sale.

If an Intentional Act is Suspected

If an outbreak or illness appears to be the result of an intentional act, the health authority should immediately

- **Contact law enforcement to report the event and any pertinent data needed for investigative purposes.** *Bear in mind that personal data may fall under federal privacy act statutes, so your agency's legal representative should also be consulted before any release of personal information*
- **Contact the food facility to inform them of the report and have them immediately cease sale or service of the suspected food item(s)**
- **If necessary, initiate recall protocols**
- **Place a hold or seizure order on the implicated food to use as evidence and prevent sale.**
- **If authorized, submit appropriate samples for laboratory analysis using approved methods and maintaining chain of custody**
- **Determine which agencies or organizations may require samples for analysis prior to destruction of implicated foods.**

Twenty Federal Foodborne Illness Surveillance Programs

For a detailed description of these programs and contact information, check the Centers for Disease Control and Prevention Website at www.cdc.gov.

1. The Foodborne Disease Outbreak Surveillance System
2. FoodNet
3. PulseNet
4. Surveillance Outbreak Detection Algorithm
5. Botulism Surveillance System
6. CaliciNet
7. Creutzfeldt-Jakob Disease Surveillance Program
8. Epidemic Information Exchange (Epi-X)
9. Escherichia coli O157:H7 Outbreaks Surveillance System
10. National Antimicrobial Resistance Monitoring System
11. National Giardiasis Surveillance System
12. National Notifiable Diseases Surveillance System
13. National Salmonella Surveillance System
14. National Shigella Surveillance System
15. Salmonella Enteritidis Outbreak Surveillance System
16. Sentinel Counties Study of Viral Hepatitis
17. Trichinellosis Surveillance System
18. Typhoid Fever Surveillance System
19. Vibrio Surveillance System
20. The Viral Hepatitis Surveillance Program

Food Product Tampering Incident Procedures

This has been modified from a Connecticut Department of Consumer Protection policy.

Credible reports or threats of food tampering should be immediately reported to state or local law enforcement officials. While food inspectors may assist in investigations, in general these are criminal cases that will most likely be investigated by state or local police, the FBI, or FDA criminal investigators. However, it is most likely tampering incidents start out as isolated complaints that are investigated by food inspectors or sanitarians.

Tampering historically has occurred in unpredictable forms and products; and the perpetrator doesn't always tip off authorities ahead of time. Therefore, procedures need to be in place to treat every product complaint investigation as if it were to result in becoming a true tampering incident.

Expeditious resolution of food product complaints is important, especially when a health hazard may be involved. Inspectors should attempt to answer the following questions when a complaint is received:

1. Is it possible that tampering could have occurred, or can the condition of the product be explained by other means?
2. Is death, injury, or illness associated with the report and, if so, does it appear to be caused by the product?
3. Does the incident appear to be isolated, or widespread? (Do not hesitate to contact the company, it may be that it is either unaware of the problem or has received similar complaints. In any case, the manufacturer can be used as a good resource and needs to know immediately in case preventative measures can be taken.)
4. Is it likely other, similarly affected products remain in distribution, and if so, what is the extent and magnitude of distribution?
5. Where in the chain could the product tampering have occurred: at the ingredient source, at the production facility, during distribution, or at the retail store?
6. Can specific persons or points in the chain be identified as having likely access or opportunity to cause the problem?

Interview Techniques

While it is often advantageous to work in pairs during interviews with complainants or respondents this may not always be possible. In general interviews should be conducted in a location that reduces

unnecessary interruptions or distractions. Establish a rapport with the person or persons being interviewed to put them at ease. Listen to the person. Let them first tell the story in their own way and don't interrupt. If at all possible, avoid making written notes during the first interview. Listen carefully to each fact, be genuine and at ease. After hearing the entire story, ask them for more information to fill in details. This is where you clarify the key points.

Obtaining details and requesting clarification of key points allows you to assess the validity of the person's story. Compare the accuracy of the details with previous version of the information supplied. Note-taking may put the person being interviewed on edge. If this appears to be the case, do not take notes until you request clarification of key points. Ask who was with the person, what happened in the store, any problems noted with the product at the store, and other questions which will provide you with when, where, or why events took place, who was present, etc. If two investigators are involved in the interview, one should take notes while the other asks the questions.

During interviews watch for changes in attitude, body language, or hesitation in speech, as you observe and listen to the person being interviewed. Describe your observations of body language and personal characteristics in your report. There are some key signals that can tell you if certain parts to the story are credible or may be suspect as facts start to unfold later in the investigation.

Sampling

When collecting samples from the complainant, document them as official samples, in accordance with sampling policies. Samples received from a complainant in most cases will have been opened, tampered with or possibly held in sub-optimal storage conditions. Therefore, the likelihood exists that any misbranding or adulteration of the product, as subsequently reported by the laboratory, may be the result of the complainant's own act or omissions. These samples therefore are not considered "official regulatory samples" and are not used as a basis for seizure or official action against the product manufacturer or distributor.

Although the sample itself is limited to one for investigation rather than action, it is possible that the results of the sample analysis may at some date, in the future, be introduced as evidence in civil litigation. Therefore, it is important that the integrity of the sample be maintained. The sample should be submitted to the laboratory in the same condition as it was when received from the complainant, and precautions taken so that the sample is not contaminated by the inspector.

Control samples of the suspected product should be purchased, preferably from the same retail store as the original and submitted to the laboratory at the same time as the original. The control sample should have the same date, code or lot number and should be the same size and style as the original. Depending on the nature of the incident, multiple samples should be collected (in some cases this may mean issuing an embargo or seizure and collecting the entire inventory).

Collect any containers a suspect may have handled as they placed the tampered product on the shelf. Preparation of the sample and the shipping method should be carefully selected to insure the integrity and security of the samples.

*When handling the outside of product containers or other evidence associated with tampering, take care to avoid adding or smearing fingerprints by wearing cotton gloves, using tongs, forceps, or by picking the container up by opposing corners. Identify product containers carefully and in as small an area as possible. **Do not open outer containers to identify inner containers or inserts.***

Retail Site Investigation

When investigating a tampering report at a retail store or other point from which the complainant received the product, be aware of the concepts of evidence preservation. State & local police departments can be of assistance and provide advice. Before instituting any activities at the scene, protect the area to preserve any evidence on the store shelves, floor, adjacent products, or back room storage locations. Discuss with the store's management, and/or the personnel doing the stocking of the shelves, how material is received and handled prior to being placed on shelves.

Document the area using photographs of the product shelves, surrounding area, and any shots which would provide information on the product, its location and the store layout. Samples of materials in the area that may be applicable to the investigation should be collected. Because suspects are thought to handle multiple product containers when placing a tampered product on a store shelf, a diagram of the container relationships to each other should be prepared and individual containers of the same lot sampled separately or as sub-samples with instructions not to composite at the lab.

Interview store managers and employees to include as much detail in your report about how the products are handled from receiving to stocking the displays. Also check invoices or other documents to determine dates and methods of receipt.

Manufacturing Site Investigation

The key to a successful complaint investigation is to clearly define the objectives and to examine each facet of the operation in light of those objectives (see the complaint questions above). Evidence should be gathered that either exposes or eliminates steps in the flow of operation at the manufacturing site that are vulnerable to becoming a likely target.

Here are some areas to consider during the manufacturing site tampering investigation:

Raw Material Sources

- Suppliers, dates, and lots of incoming ingredients & raw materials for the suspect lot/product.
- Inspection protocols upon receipt, storage, testing, and use within the plant.
- Evaluate the raw material storage conditions to determine the potential for manipulation of materials.

Production

- Date when production of the first batch of the product under investigation was initiated.
- Other facilities that produce the product under investigation.
- If products handled are repackaged at this facility, give the name and address and method of receipt from the product source.
- Obtain the names, titles, addresses, office and residence telephone numbers of representatives of the company, including that of the Chief Executive Officer (CEO), who are specified as contacts for various aspects of the event under investigation. State whether these representatives are members of an established management team to deal with such events, or have they been identified for the particular instance at hand.
- Contract packagers, if any, should be described by name, location and products handled.
- Describe the lot numbering system, any plant identification numbers, and expiration dates placed on retail products and cases. Include a description of the in-process lot numbering systems for each phase of manufacturing, security for each process and/or product while in storage and during processing.
- For the suspect lot, give its lot number, the size of the lot, size and type of containers in which it was packaged, its history of production and distribution beginning with the date of weighing of the raw material, and the dates and description of steps in processing.

- If any product for export is processed at this plant, describe any differences in content or production from those of domestic products.
- If the product under investigation has tamper resistant packaging (TRP), determine the type of system utilized, and if the system utilized has been evaluated to determine if breaching is possible. If breaching is possible, describe. Describe lot numbers or code numbers placed on TRP and security measures taken for TRP materials on hand and those sent to contract packagers. Determine whether TRP materials are accountable.
- Report dates and description of each step in processing, including identification of storage locations between steps. Obtain estimates of flow rates and volume of materials in hoppers and drums at key stages. Determine distances between production areas or between processing equipment at critical points. This information can be useful for statistical evaluation of the likelihood of contamination at various points in the process.
- Determine how rejects and reworked materials are handled.
- Describe any unusual events which may have taken place during the period when the suspect material was in the facility.

In-House Testing

- Describe laboratory control tests and in-process tests performed on the finished packaged product and in-process materials. Determine if reserve samples are retained of all lots.
- If the plant process includes collection of samples for examination on the production line or by laboratory facilities, discuss where the samples are maintained, who has access to them, and their disposition.
- Determine if the firm has a plan to safeguard against tampering as part of its Quality Assurance program. If so, determine the implementation date of this plan and review any periodic assessment reports for potential problem areas.

If the Alleged Contaminant is Used in the Plant for Other Purposes

- Describe the characteristics of the suspected contaminant within the facility, its container type, its brand and generic name, its lot number, size of container, whether the container is full, or partially full and the approximate amount remaining.
- Describe security for the suspected contaminant including limitations of access, where it is stored, and responsibility for controlling access to the material.
- Describe what legitimate use, if any, the facility has for the suspected contaminant in each of the locations found.

- Determine how often the material is used and whether or not a log of its use is maintained.
- If a log is maintained, obtain a copy showing its use and discuss with plant management the legitimacy of each such use.
- Determine whether the firm verifies use and use rates and has a method of determining explanations for any discrepancies noted.
- Have samples of the suspect contaminant been obtained by the FDA or other agencies, and if so, what are the results of analysis?
- Does the firm test finished product for the contaminant under investigation?
- What method is utilized for such testing, and at what frequency?

Employees

- Describe any locations within the facility where an employee could have access to the contaminant being investigated.
- Determine whether the facility hires part-time employees, or transfers employees from one location to another on a temporary basis. Were any present during production of the suspect lot?
- Determine if employees can move from area to area within the facility. Describe any restrictions on their movements and if enforced.
- In some types of processes, there are provisions for an individual to ensure sufficient product is placed in each container being filled. Describe the circumstances and security for this process.
- If the suspect product was particularly vulnerable to in-plant tampering during certain stages of handling, identify particular employees who had access to product during these stages and interview them individually. There may be occasions when line employees may be able to remember suspicious activities on the part of co-workers or others working in the area when suspect lots were being produced.
- Your investigation may take you to a point where you will need to record the name of an employee assigned to a certain task associated with the likely point of contamination. You may also need to interview certain employees and take affidavits from them in cooperation with plant management.
- Determine if there have been any employee relations problems such as layoffs, firings, probation's, adverse actions, etc.

Distribution Facility Investigation

Here are some areas to consider during the manufacturing site tampering investigation. It may be necessary to obtain the following information at each level in the distribution chain:

- Amount of suspect lot on hand at time of inspection.

- Obtain the turnover rate for the product under investigation.
- Amount of suspect lot received, and any variations from amount consigned to the facility.
- Date & method received.
- Name and type of carrier that delivered the product. Determine security of the vehicle or container while in-transit.
- Obtain distribution history of the suspect lots.
- Describe the distribution area covered by the facility being inspected and the number of accounts served, whether they are retail or wholesale.
- Determine if the facility handles any cash and carry orders.
- Determine if the facility will accept returns and how are they handled.
- Describe stock rotation practices and how they can be assured.
- Determine if lot numbers of products distributed can be traced.
- Describe the method of packing of shipments; for example, plastic tote bins sealed with nylon tape, intact cartons only, cases are split, etc.
- Describe the methods of shipment utilized by the warehouse.
- Describe personnel practices, problems and other information on visitors, contractors, etc.

It is often advantageous to chart a pictograph or a time line chart of the distribution system that shows basic information on each level in the distribution chain and distances between each link in the chain. It is also often worthwhile to prepare a time-line chart showing the progression of the suspect lot through the manufacturing process to the source of the complaint, including the significant steps in the manufacture and distribution of the suspect product.

Security

In a tampering investigation, you may need to assess the security at any given site. It is important to note that when preparing the report, do not report the details of the security system, since an inadvertent release could compromise a facility's security system. Discuss with your supervisor how to include pertinent security information. Security concerns may include:

- General security arrangements, including the number of guards, their shifts, locations, and whether or not they patrol the facility or the areas the product was held.
- Identify any closed circuit TV systems, their locations, and any physical barriers to prevent access to the plant or grounds.
- Describe who is logged in and out of the facility and whether or not employees must display identification badges upon entry. If plant

employees are issued uniforms by color or design, which designate their work station locations, also describe.

- Determine whether visitors, contractor representatives, cleaning crews, etc., are subject to movement tracking or control, and if any were present during production of the suspect product.
- Describe the security measures taken for the processing area after hours, during work breaks, and at meal times. Be alert to those periods when in-process containers are left unattended on a packing/production line.

All refusals encountered during tampering investigations should be documented. A search warrant, subpoena or other court order may be appropriate in some circumstances. The feasibility and necessity of these actions should be discussed with your supervisor before such action is initiated.

Telephone Contacts for Chemical/Bioterrorism or Other Emergencies

(Please fill in **Your** Local Numbers and Contacts According to Your Local/State Protocols)

Police & Fire Safety (911 or) _____

Local Health Department _____

State Health Department _____

Local FBI Office _____

State Public Health Lab _____

State Ofc. of Emergency Mgt _____

Local Emergency Mgt. Office _____

Local Poison Control Office _____

NATIONAL POISON CONTROL(800) 222-1222

CHEMTREC(800) 424-9300

NATIONAL RESPONSE CENTER.....(800) 424-8802

US PUBLIC HEALTH SERVICE.....(800) 279-1605

CDC PUBLIC INQUIRIES(800) 311-3435

USDA MEAT & POULTRY(888) MPHonline or (888) 674-6854

FDA INFORMATION HOTLINE.....(888) SAFEFOOD or (888) 723-3366

FDA HQ: OFFICE OF EMERGENCY OPERATIONS(301) 443-1240

EPA SAFE DRINKING WATER HOTLINE(800) 426-4791

FOODSHIELD

<http://www.foodshield.org/>

NATIONAL FOOD SAFETY DATABASE WEBSITE

<http://www.foodsafety.gov/>

FDA's Consumer Complaint Coordinators

Alabama	(866) 289-3399
Alaska.....	(425) 483-4949
Arizona	(949) 608-3530
Arkansas	(214) 253-5237
California (Northern)	(510) 337-6741
California (Southern)	(949) 608-3530
Colorado.....	(303) 236-3044
Connecticut	(800) 891-8295
Delaware	(215) 597-4390, ext. 4510
District of Columbia	(410) 779-5713
Florida	(407) 475-4762 or (866) 337-6272
Georgia.....	(404) 253-1256
Hawaii.....	(510) 337-6741
Idaho	(425) 483-4949
Illinois	(312) 353-7840
Indiana.....	(313) 393-8198
Iowa.....	(913) 752-2440
Kansas	(913) 752-2440
Kentucky.....	(513) 679-2700, ext. 124
Louisiana	(866) 289-3399
Maine.....	(800) 891-8295

Maryland.....	(410) 779-5713
Massachusetts	(800) 891-8295
Michigan	(313) 393-8198
Minnesota.....	(612) 758-7221
Mississippi	(866) 289-3399
Missouri	(913) 752-2440
Montana	(425) 483-4949
Nebraska	(913) 752-2440
Nevada.....	(510) 337-6741
New Hampshire.....	(800) 891-8295
New Jersey.....	(973) 526-6017
New Mexico.....	(303) 236-3044
New York.....	(718) 662-5588
North Carolina	(404) 253-1256
North Dakota	(612) 758-7221
Ohio.....	(513) 679-2700, ext. 124
Oklahoma.....	(214) 253-5237
Oregon	(425) 483-4949
Pennsylvania.....	(215) 597-4390, ext. 4510
Puerto Rico.....	(800) 332-0127
Rhode Island	(800) 891-8295
South Carolina.....	(404) 253-1256
South Dakota.....	(612) 758-7221

Tennessee.....	(866) 289-3399
Texas.....	(214) 253-5237
Utah.....	(303) 236-3044
Vermont.....	(800) 891-8295
Virgin Islands.....	(800) 332-0127
Virginia	(410) 779-5713
Washington	(425) 483-4949
West Virginia	(410) 779-5713
Wisconsin.....	(612) 758-7221
Wyoming	(303) 236-3044

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