HACCP STAR POINT 1

Prerequisite Programs

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In the Introduction, the importance of prerequisite programs like training, sanitation, and active managerial control were discussed to give you insight to this first section of the book. In Star Point 1, we continue to discuss the basics of prerequisite programs (product instructions, equipment, and facility design) and food safety standard operating procedures (SOPs) using the International Food Safety Icons. We must be aware of the causes for unsafe food. We must also have rules and procedures in place to prevent the food from becoming unsafe. The prerequisite programs and established standard operating procedures can then be incorporated as part of the foundation for your HACCP plan.

Star Point Actions: You will learn to

- ★ Develop prerequisite programs.
- ★ Use prerequisite programs (product instruction, equipment, facility).
- ★ Recognize and understand the importance of SOPs.
- ★ Identify the causes for foodborne illness.
- ★ Describe how HACCP controls foodborne illness outbreaks.
- ★ Explain the transition between potentially hazardous food (PHF) and time/temperature control for safety of food (TCS).
- ★ Assist customers who have food allergies.
- ★ Identify the International Food Safety Icons.
- ★ Apply time and temperature controls to ensure food safety.
- ★ Prevent contamination of food.
- ★ Explain the personal responsibilities of each HACCP team member with regard to food safety.
- ★ Explain the difference between cleaning and sanitizing.

DEVELOPING PREREQUISITE PROGRAMS

The purpose for having food safety prerequisite programs in place is to control bacterial growth, protect products, and maintain equipment. The other benefits that you receive are customer satisfaction that result in increased customer counts and ultimately increased sales; employee satisfaction because you have designed a safe and easy working environment, resulting in increased productivity and money savings on labor; and energy savings because your foodservice facility is designed for efficiency and profit making.

Based on your operation these additional prerequisite programs will need to be reviewed before you start to implement an effective HACCP plan:

- ★ **Chemicals and Pest Control.** Do you have a secured locked location for chemicals? Are employees trained in the use of chemicals? Do you have an integrated pest management program with pesticides applied by a licensed pest control operator?

- ★ **Personal Hygiene/Employee Health.** Do you have a written dress code? Do employees follow the dress code? Do employees know the procedures for working when ill?
- ★ **Supplier Selection and Control.** Do suppliers have an effective HACCP plan? Do suppliers have effective food safety programs in place? Do suppliers apply food defense to their operation?
- ★ **Product Specifications.** Are specifications written for all ingredients, products, and supplies?
- ★ **Training.** Are employees receiving training in prerequisite programs, especially those related to their job duties such as personal hygiene, cleaning, sanitizing, and food safety?
- ★ **Food Safety.** Are procedures written and established for proper monitoring of food temperatures, cooling food, and reheating foods?
- ★ **Allergen Management.** Are employees aware of the primary food allergens? Do they know how to respond to customers' concerns regarding allergy questions?

Let's explore the prerequisite purpose in greater detail. The logical progression discussed in the Introduction showed that training your team is crucial, explained the difference between food safety and sanitation, and clarified why active managerial control is essential. If food can be time/temperature abused, then it is essential to control bacterial growth through such standard operating procedures as proper cooking and holding. If food is contaminated with biological (bacteria, viruses, and parasites), chemical (cleaning chemicals, pest control supplies, etc.), or physical (dirt, hair, glass, etc.) hazards, then prerequisite programs are used to protect the products from any of these contaminants. For example, following cleaning and sanitizing standard operating procedures is one step in preventing contamination.

Equipment is fundamental to the success of your foodservice operation prerequisite programs. To determine the necessary equipment needed, you must first decide on your menu, then the recipes and processes you will use. After you decide on the food products and required equipment, you can decide what type of facility you need to safely produce foods in the operation. This is why regulatory officials require a plan review before construction begins in a new foodservice facility. They are verifying that you have completely thought out your concept before the first nail is hammered. The next phase is product instructions (recipes), equipment, and facility design.

PRODUCT INSTRUCTIONS

Now that you clearly understand your concept, developed your menu, created recipes, and decided on the process and product instructions, it is time to apply it to the products you will offer. An example of this is in the recipe and instructions for mixed-fruit crisp.

MIXED-FRUIT CRISP

1 15-ounce can (443.6 ml)	mixed fruit
1/2 cup (118.29 ml)	quick rolled oats
1/2 cup (118.29 ml)	brown sugar
1/2 cup (118.29 ml)	all-purpose flour
1/4 teaspoon (1.24 ml)	baking powder
1/2 teaspoon (2.45 ml)	ground cinnamon
1/4 cup (59.15 ml)	butter or margarine

(Recommendation: prepare a day in advance.)

1. Preheat oven to 350ºF (176.6ºC).
2. Drain mixed fruit and set aside.
3. Lightly grease an 8- or 9-inch (20.32- or 22.86-cm) baking pan. Place the mixed fruit on the bottom of the pan.
4. In a smaller bowl, combine all of the dry ingredients. Cut in the butter or margarine with a pastry blender. Sprinkle mixture over mixed-fruit filling.
5. Bake for 30 to 35 minutes in conventional oven to a minimum internal temperature of 135ºF (57.2ºC) for 15 seconds.
6. Cool properly. Cool hot food from 135°F to 70°F (57.2°C to 21.1°C) within 2 hours; you then have an additional 4 hours to go from 70°F to 41°F (21.1°C to 5°C) or lower for a maximum total cool time of 6 hours.
7. Store in refrigeration at 41°F (5°C) or lower.
8. Reheat 165°F (73.9°C) for 15 seconds within 2 hours, serve warm.

As you can see in this example, the recipe is detailed with **ingredients, required measurements, smallwares,** and **equipment.** Product instructions are just one prerequisite program required for HACCP in your foodservice operation that we will put to good use. This is discussed in further detail in Star Point 3, Hazard Analysis.

EQUIPMENT

The prerequisite program for commercial foodservice equipment is based on product instructions. In the example of the mixed-fruit crisp, it is evident that the major equipment needed is an oven, pastry blender, refrigerator, and hot-holding equipment. The smallwares equipment needed is a baking pan, mixing bowls, spoons, can opener, timer, and measuring tools. Everyone knows you can't do a job properly without the right tools.

The benefits of using the right equipment are food safety and efficiency, plus better quality of food that increases sales and productivity, thereby saving labor cost. Dirty equipment, no preventive care, or waiting to make repairs is not only unsafe but will cost you more money because the equipment is not working efficiently, potentially causing more damage and in some cases completely destroying the piece of equipment. Additionally, these oversights could put employees in harm's way, injuring them or worse. No matter the foodservice operation, when injury occurs, it has a direct impact by lowering team morale and decreasing productivity, resulting in a substantial financial loss.

The efficiency of your foodservice is based on purchasing and using the correct commercial foodservice equipment. It is not mandatory; however, the industry standard is for all equipment to have the NSF International/UL (Underwriters Laboratories) seals of approval. Here is a basic list of minimum equipment standards that are safe and sanitary:

- ★ Equipment should come with written specifications. The equipment specifications are normally required by regulatory officials for your plan reviews. These specifications also provide instructions on how to install, utility (electrical/gas) requirements, information on performance tests including maximum performance capability, and recommendations on equipment maintenance.

- ★ Equipment construction requires food-contact surfaces to be smooth, nonporous, corrosion-resistant, and nontoxic. All corners and edges must be rounded off. If coating materials are used, they must be USDA or FDA approved to resist chipping, be nontoxic, and be cleanable. Additional sanitary design factors to prevent bacteria buildup must be considered, such as overlapping parts, drainage, exposed threads, and crevices.
- ★ All equipment must be simple to disassemble and easy to clean and maintain. The key is to have all parts of equipment readily accessible for cleaning, sanitizing, maintenance, and inspection without the use of tools. Follow preventive maintenance programs and equipment calibration schedules. Always keep an inspection and equipment maintenance log to track the preventive maintenance care of your equipment.

The final equipment prerequisite program is to set guidelines for repairing or replacing equipment and smallwares that fall below standard. These guidelines are based on the manufacturer's recommendations to prevent microbial growth and the direction of your regulatory agency. Another resource you can use is a third-party auditing company to help in the safety evaluation. Most foodservice operators use employee feedback/complaints and the tallying of maintenance bills to help in the decision process of "Do I replace or do I repair the equipment?"

STAR KNOWLEDGE EXERCISE: EQUIPMENT

In the Star Knowledge Exercise below, use the Key to determine the typical use or function of the following pieces of equipment. Using the Key, write the letter next to the piece of equipment. The first one is done for you.

Key Typical Use

A. Receiving and storage

B. Preparation

C. Service area

D. Ware washing

E. Waste removal

Equipment	Typical Use
1. Trash compactor	E
2. Mixer	
3. Convection oven	
4. Pot sink	
5. Hot-food table	

Equipment	Typical Use
6. Broiler	
7. Beverage dispenser	
8. Bain-marie	
9. Steamer	
10. Slicers	
11. Garbage disposal	
12. Grill	
13. Ice machine	
14. Freezer	
15. Scales	
16. Pulper	
17. Microwave oven	
18. Meat saw	
19. Cart	
20. Ware-washing machine	
21. Walk-in refrigerator	
22. Steam-jacketed kettle	
23. Coffee urn	
24. Fryer	
25. Dish-washing machine	

FACILITY DESIGN

Sanitary facility design is the next step that will keep food safe as it travels through the operation. It is more cost-effective to do it right the first time. Take advantage of the situation if you have the luxury of designing your facility and equipment placement from a "blank slate" and with preplanning. Doing so avoids having to go back and fix any design flaws due to poor planning or cutting corners. In an existing facility, you have to work with what you have. But you need to examine the possibilities of adding, moving, and modifying the facility and the equipment. Regulatory agencies mandate and have specific laws pertaining to a sanitary facility, and in the 2005 FDA Model Food Code, it is one of the responsibilities of the person in charge to always operate a safe and sanitary foodservice facility.

Whether you are planning a foodservice facility from scratch or working with an existing footprint, the goal is to prevent the contamination of food, starting with the

location. In business, a crucial factor for success is location, location, location. The location is usually considered first for real-estate value, traffic studies, and marketing potential, but that is not enough. The area surrounding your chosen location needs to be a factor in controlling sanitary facility design. What contamination can occur from the surrounding area? Are there any airborne contaminants that could affect your business? Odors? Are the structures infested with cockroaches? Do you have a pond with ducks and geese? Do your employees step in the duck and geese waste products and transport these harmful microorganisms into your facility? Is your facility near a river that rodents use to occasionally visit your operation for a bite to eat? These are examples of **environmental considerations** to apply to window/door placement, ventilation systems, pest control systems, waterproofing, drainage systems, shoe/boot cleaning systems, methods of food delivery, and so on.

Besides picking a good location, you must be sure the facility itself is correctly constructed with a proper sanitary facility design. Corporate chain stores and franchise organizations duplicate successful facility design over and over again by using similar sanitary design. Chains do this because they know their menu, equipment, and how to flow food through their facility so cross-contamination does not occur. Additionally, there is a huge savings of money on labor, creative design, architecture fees, and engineering costs associated with electrical and mechanical systems and plumbing.

Sanitary facility design is a prerequisite program because it is a proactive approach to **manage cross-contamination and prevent microbial growth.** The facility design needs to take into consideration the flow of the products through the operation to the customer. The design begins with the outside, then accounts for ingredients coming in, the proper storage of these products, complete preparation and processes used, as well as proper disposal of waste. Here is a list of facility considerations:

- ★ Interior materials (walls, floors, ceiling)
- ★ Equipment locations (flow)
- ★ Spacing of shelving and equipment 6 inches (15.23 cm) off of the floor and away from walls
- ★ Easy to clean and sanitize
- ★ Adequate lighting
- ★ Proper ventilation
- ★ Appropriate temperature: 50°F to 70°F (9.9°C to 21.1°C)
- ★ Correct humidity: 50%–60%
- ★ Potable water source
- ★ Water control (floor drains, self-draining equipment)
- ★ Effective plumbing (back-flow prevention devices, air gaps, vacuum breakers)

Whether you are dealing with new construction or modifying an existing structure, once your equipment is in place, the best practice going forward is to use a master cleaning schedule. The **master cleaning schedule** involves the who, what, where, when, why, and how of cleaning and sanitizing hoods, filters, grease traps, ceilings, walls, floors, and food-contact surfaces. This prerequisite is usually audited by visual inspections of the person in charge, who performs a “manager’s walk” or uses a detailed checklist of your equipment and facility.

UNDERSTANDING FOOD SAFETY

USING STANDARD OPERATING PROCEDURES (SOPs)

Standard Operating Procedures (SOPs) are **required** for all HACCP plans. They provide the acceptable practices and procedures that your foodservice organization requires you to follow. SOPs are only effective if they are followed! We will now define standard operating procedures in detail and provide an example of one. It is important for you to understand that SOPs play a large role in your HACCP plan and the safety of your facility and the food served.

SOPs are the practices and procedures in food production that ensure we produce safe food. SOPs must be in writing, and SOPs are required for a HACCP plan. Also, SOPs keep our foodservice operation **consistent** and our customers **safe**. We recommend that you take advantage of Star Point 1 in developing and then applying these food safety standard operating procedures to your foodservice operation.

The U.S. Department of Agriculture (USDA, www.usda.gov) has organized the SOPs in a consistent format. This format includes a description of the purpose, scope, key words, instructions, monitoring, corrective action, verification, and record keeping. This format also indicates dates for implementation, review, and revision and requires a signature verifying each action has taken place. Following are two examples of food safety standard operating procedures for purchasing and receiving.

SOP: Purchasing (Sample)

Purpose: To prevent contamination of food and to ensure safe foods are served to customers by purchasing food products from approved suppliers. These suppliers must be approved by appropriate regulatory services.

Scope: This procedure applies to foodservice managers who purchase foods from approved suppliers.

Key Words: Approved suppliers, regulatory services

Instructions: Contact regulatory services to ensure you are purchasing foods from approved suppliers. To find out if a supplier is approved, call

- ★ CDC (Centers for Disease Control and Prevention) Food Safety Office—404-639-2213 or www.cdc.gov
- ★ EPA (Environmental Protection Agency)—202-272-0167 or www.epa.gov
- ★ FSIS (Food Safety and Inspection Service)—888-674-6854 or www.fsis.usda.gov
- ★ FDA (Food and Drug Administration)—888-463-6332 or www.cfsan.fda.gov

1. Domestic/imported food (including produce, bottled water, and other foods) *but not meat and poultry*	★ Evidence of regulatory oversight: copy of suppliers, local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report ★ Third-party audit results [many vendors now provide third-party guarantees, including NSF International or American Institute of Baking (AIB)] ★ Microbiological or chemical analysis/testing results ★ Person-in-the-plant verification (i.e. chain food facilities may have their own inspector monitor food they buy) ★ Self-certification (guarantee) by a wholesale processor based on HACCP ★ For raw agricultural commodities such as produce, certification of Good Agricultural Practices or membership in a trade association such as the United Fresh Fruit and Vegetable Association ★ A copy of a wholesale distributor or processor's agreement with its suppliers of food safety compliance
2. Domestic/imported meat, poultry, and related products such as meat- or poultry-containing stews, frozen foods, and pizzas	★ USDA mark on meat or poultry products ★ Registration of importers with USDA
3. Fish and fish products	★ Evidence of regulatory oversight: copy of suppliers' local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report ★ Third-party audit results ★ Person-in-the-plant verification ★ Self-certification (guarantee) by a wholesale processor based on HACCP ★ A copy of a wholesale distributor or processor's agreement with its suppliers of HACCP compliance ★ U.S. Department of Commerce (USDC) approved list of fish establishments and products located at seafood.nmfs.noaa.gov
4. Shellfish	★ Shellfish tags ★ Listing in current *Interstate Certified Shellfish Shippers* publication ★ Gulf oyster treatment process verification if sold between April 1 and October 31 (November 1 to March 31 certification may be used in lieu of warning signs) ★ USDC approved list of fish establishments and products located at seafood.nmfs.noaa.gov

5. Drinking water (nonbottled water)	★ A recent certified laboratory report demonstrating compliance with drinking water standards ★ A copy of the latest inspection report
6. Alcoholic beverages	★ Third-party audit results ★ Self-certification (guarantee) by a wholesale processor based on HACCP ★ Person-in-the-plant verification ★ Evidence of regulatory oversight: copy of suppliers' local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report ★ A copy of a wholesale distributor or processor's agreement with its suppliers of food safety compliance

Monitoring:

1. Inspect invoices or other documents to determine approval by a regulatory agency.
2. Foodservice managers should be encouraged to make frequent inspections of the suppliers' on-site facilities, manufacturing facilities, and processing plants/farms. Inspections determine cleanliness standards and ensure that HACCP plans are in place.

Corrective Action:

Foodservice purchasing managers must find a new supplier if the supplier is not approved by the above regulatory services.

Verification and Record Keeping:

The foodservice purchasing manager will maintain all documentation from food suppliers. Documentation must be maintained for three years plus the current year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Receiving Deliveries (Sample)

Purpose: To ensure that all food is received fresh and safe when it enters the foodservice operation, and to transfer food to proper storage as quickly as possible

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cross-contamination, temperatures, receiving, holding, frozen goods, delivery

Instructions:

1. Train foodservice employees who accept deliveries on proper receiving procedures.
2. Schedule deliveries to arrive at designated times during operational hours.
3. Post the delivery schedule, including the names of vendors, days and times of deliveries, and drivers' names.
4. Establish a rejection policy to ensure accurate, timely, consistent, and effective refusal and return of rejected goods.
5. Organize freezer and refrigeration space, loading docks, and storerooms before receiving deliveries.
6. Before deliveries, gather product specification lists and purchase orders, temperature logs, calibrated thermometers, pens, and flashlights, and be sure to use clean loading carts.
7. Keep receiving area clean and well lighted.
8. Do not touch ready-to-eat foods with bare hands.
9. Determine whether foods will be marked with the date of arrival or the "use by" date and mark accordingly upon receipt.
10. Compare delivery invoice against products ordered and products delivered.
11. Transfer foods to their appropriate locations as quickly as possible.

Monitoring:

1. Inspect the delivery truck when it arrives to ensure that it is clean, free of putrid odors, and organized to prevent cross-contamination. Be sure refrigerated foods are delivered on a refrigerated truck.
2. Check the interior temperature of refrigerated trucks.
3. Confirm vendor name, day and time of delivery, as well as driver's identification before accepting delivery. If the driver's name is different than what is indicated on the delivery schedule, contact the vendor immediately.
4. Check frozen foods to ensure that they are all frozen solid and show no signs of thawing and refreezing, such as the presence of large ice crystals or liquids on the bottom of cartons.

5. Check the temperature of refrigerated foods.
   - ★ For fresh meat, fish, dairy, and poultry products, insert a clean and sanitized thermometer into the center of the product to ensure a temperature of 41°F (5°C) or below.
   - ★ For packaged products, insert a food thermometer between two packages, being careful not to puncture the wrapper. If the temperature exceeds 41°F (5°C), it may be necessary to take the internal temperature before accepting the product.
   - ★ For eggs, the interior temperature of the truck should be 45°F (7.2°C) or below.
6. Check dates of milk, eggs, and other perishable goods to ensure safety and quality.
7. Check the integrity of food packaging.
8. Check the cleanliness of crates and other shipping containers before accepting products. Reject foods that are shipped in dirty crates.

Corrective Action:

Reject the following:

- ★ Frozen foods with signs of previous thawing
- ★ Cans that have signs of deterioration—swollen sides or ends, flawed seals or seams, dents, or rust
- ★ Punctured packages
- ★ Expired foods
- ★ Foods that are out of the safe temperature zone or deemed unacceptable by the established rejection policy

Verification and Record Keeping:

The designated team member needs to record temperatures and corrective actions taken on the delivery invoice or on the receiving log. The foodservice manager will verify that foodservice employees are receiving products using the proper procedure by visually monitoring receiving practices during the shift and reviewing the receiving log at the close of each day. Receiving and corrective action logs are kept on file for a minimum of 1 year.

Date Implemented: _____ By: _____

Date Reviewed: _____ By: _____

Date Revised: _____ By: _____

STAR KNOWLEDGE EXERCISE: STORAGE SOP

In the space below, list the directions for instructions, monitoring, corrective action, verification, and record keeping needed for proper storage.

SOP: Storage (Exercise)

Purpose: To ensure that food is stored safely and put away as quickly as possible after it enters the foodservice operation

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cross-contamination, temperatures, storing, dry storage, refrigeration, freezer

Instructions:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

COMMON FOODBORNE ILLNESSES

This section helps you understand how to manage and control the microorganisms that cause foodborne illness. Vomiting, diarrhea, stomach cramps, and flulike symptoms are the most common symptoms associated with foodborne illnesses.

Ask yourself these questions:

- ★ Have you ever eaten food that made you sick?
- ★ Did you vomit?
- ★ Did you have stomach cramps?
- ★ Did you have diarrhea?
- ★ Did you cough up worms?

These symptoms may be the result of a foodservice facility not following prerequisite programs such as standard operating procedures. This chapter should help you to understand food safety so that you can protect yourself, your family, your friends, your neighbors, your fellow team members, your facility, and most of all, your customers.

The people at the **most risk** for foodborne Illness are

- ★ Children
- ★ People who are already sick
- ★ People taking medication
- ★ Pregnant women
- ★ Elderly people

Courtesy PhotoDisc, Inc.

If SOPs are not followed, you and your customers may contract a foodborne illness. Microorganisms are found everywhere, including the foods that you eat. Microorganisms can be categorized as bacteria, viruses, parasites, and fungi. Some types of microorganisms are helpful in the production of certain medicines (penicillin and vaccines) and foods (cheese, beer, and bread). Some fungi (yeast) are used in producing beer and making bread rise. Also, some bacteria help in our digestion process.

However, some microorganisms are **pathogenic**, which means they are disease-causing microorganisms. Every day we eat pathogens, but most people have enough antibodies to fight off a certain amount of the harmful aspects of pathogens when they are ingested. However, if there are too many pathogens in your system and your antibodies can't fight them off, you will become ill. Illnesses that travel to you through food are called **foodborne illnesses**. A foodborne illness will occur when pathogenic microorganisms are carried into your system through the food that you eat. This is referred to "contracting a foodborne illness." A foodborne illness outbreak may occur when as few as two people consume the same food and get the same illness.

Bacteria are managed through food, acidity, time, temperature, oxygen, and moisture, or the acronym **FATTOM**. These six elements are the conditions needed for microorganisms to grow. Let's look at each condition more closely:

- ★ **F—**Is the **food** potentially hazardous, or is time/temperature control for safety of food needed?
- ★ **A—**What is the **acidity**? How does the acidity interact with the water activity?
- ★ **T—**What is the total amount of **time** in the temperature danger zone (TDZ)?
- ★ **T—**Is the food in the **temperature** danger zone of 41°F to 135°F (5°C to 57.2°C)?
- ★ **O—**Is a reduced **oxygen** method used to store the food?
- ★ **M—**What is the **moisture** (water activity)? How does the water activity interact with the acidity?

Viruses can be controlled by hand washing, maintaining proper personal hygiene, cleaning, and sanitizing. **Parasites** are destroyed by cooking food to the minimum internal cooking temperature or by proper freezing methods. **Fungi** are controlled by purchasing from a reputable supplier, conducting a visual inspection, and carefully monitoring time and temperature.

Listed in the following are the most common foodborne illnesses and the sources associated with each illness. You need to be aware of the biological hazards related to the foods that you produce, serve, or eat. In addition, this information will be useful in HACCP Principle 1, "Conducting a Hazard Analysis."

VIRUSES

Disease: Virus	Typically a result of
Hepatitis A	★ Not washing hands properly; infected employee still coming to work; receiving shellfish from unapproved sources; handling RTE foods, water, and ice with contaminated hands ★ Highly contagious—**must report** to person in charge
Norovirus	★ Poor personal hygiene; receiving shellfish from unapproved sources; and using unsanitary/nonchlorinated water ★ Very common with people in close quarters for long periods of time (dormitories, offices, and cruise ships) ★ Highly contagious—**must report** to person in charge
Rotavirus Gastroenteritis	★ Not cooking foods to the required minimum internal temperature; not maintaining time/temperature control ★ Poor personal hygiene ★ Not cleaning and sanitizing properly

BACTERIA

Disease: Bacteria	Typically a result of
Salmonellosis (salmonella)	★ Improper handling and cooking of eggs, poultry, and meat; contaminated raw fruits and vegetables ★ Highly contagious—**must report** to person in charge
Shigellosis (bacillary dysentery)	★ Flies, water, and foods contaminated with fecal matter ★ Improperly handling ready-to-eat foods and time/temperature abuse ★ Found in the intestine of humans. Wash your hands! ★ Highly contagious—**must report** to person in charge

Disease: Bacteria	Typically a result of
Hemorrhagic colitis (E. coli)	★ Undercooked ground beef, unpasteurized juice/cider and dairy products, contact with infected animals, and cross-contamination ★ Highly contagious—**must report** to person in charge
Bacillus cereus	★ Improper holding, cooling, and reheating rice products, potatoes, and starchy foods
Botulism	★ Time and temperature abuse, garlic-and-oil mixtures, improperly sautéing and holding sautéed onions, serving home-canned products and improperly cooling leftovers, improper processing and storing of canned goods
Campylobacteriosis	★ Not cooking food, especially chicken, to proper internal temperatures, cross-contamination and using unpasteurized milk and untreated water.
Clostridium perfringens	★ Improper temperature control, reheating, cooling, and holding cooked food like meat, poultry, beans, and gravy ★ Found in the intestinal tract of humans
Listeriosis	★ Not cooking food to the required minimum internal temperature, not washing raw vegetables, and not cleaning/sanitizing food preparation surfaces ★ Associated with hot dogs, processed lunch meats, soft cheeses, unpasteurized milk/dairy products, and cross-contamination during packaging and processing
Staphylococcal gastroenteritis	★ Unwashed bare hands, having a skin infection while handling and preparing food; found on skin, hair, nose, mouth, and throat ★ Improperly refrigerating or cooling prepared food
Vibrio	★ Eating raw or partially cooked crabs, clams, shrimp, and oysters, receiving seafood from an unapproved supplier
Yersiniosis	★ Using unsanitary/nonchlorinated water and cross-contamination, unpasteurized milk and not thoroughly cooking food to the required minimum internal temperature

PARASITES

Parasites need a host to survive. A parasitic host can be humans, rats, pigs, bears, walruses, fish, and wild game.

Disease: Parasites	Typically a result of
Anisakiasis	★ Receiving seafood from unapproved sources, and serving undercooked or raw seafood
Cyclosporiasis	★ Drinking or using unsanitary water supplies
Giardiasis	★ Drinking or using unsanitary water supplies
Intestinal Cryptosporidiosis	★ Drinking or using unsanitary water supplies
Trichinosis	★ Improperly cooking pork and game meat, improperly cleaning and sanitizing equipment and utensils used to process pork and other meats, receiving meats from an unapproved supplier
Toxoplasmosis	★ Not properly washing hands after touching raw vegetables, cat feces, soil, or raw/undercooked meats (particularly poultry, lamb or wild game); and not cooking meats to the required minimum internal temperature

DUTY TO REPORT FOODBORNE ILLNESS DISEASES

If you find out you have contracted or have been exposed to any of the illnesses in the bacteria, virus, and parasite tables, notify your supervisor immediately. Your employees also need to report these illnesses to you or another person in charge.

Five of these foodborne illnesses are considered **highly contagious**. They are known as the **Big 5**. The newest addition to this list is the norovirus, which was added to the list in 2005. The CDC estimates that norovirus is the leading cause of foodborne illness in the United States. Following is the complete list of the Big 5:

- ★ **Norovirus** (also known as “Norwalk-like virus,” “small round-structured virus,” and “winter vomiting disease”)
- ★ **Salmonellosis** (also known as typhoid fever)
- ★ **Shigellosis** (also known as dysentery)
- ★ **Hemorrhagic colitis** (also known as E. coli)
- ★ **Hepatitis A** (noticed by a jaundiced condition)

Some companies have an infectious disease policy and procedures to follow. According to the 2005 FDA Model Food Code (www.cfsan.fda.gov), Forms 1-A, 1-B, and 1-C are designed to assist those responsible for reporting foodborne dis-

eases. The 2005 FDA Model Food Code specifies that the **permit holder is responsible** for requiring applicants to use (Form 1-A) and food employees to use (Form 1-B) to report certain symptoms, diagnoses, past illnesses, high-risk conditions, and foreign travel, as they relate to diseases transmitted through food by infected workers. The **food employee is personally responsible** for reporting this information to the person in charge.

Here is another opportunity to take action and use these forms to make a difference in your operation. Once an employee is confirmed with one of the Big 5 illnesses, the health practitioner or physician needs to complete Form 1-C. If the health practitioner denies your employee to return to work, because the employee might still be a carrier, then your employee might want to consult an infectious disease specialist. **FDA forms 1-A, 1-B, and 1-C follow (on pages 22 to 27) and can also be found at www.cfsan.fda.gov/~acrobat/fc05-a7.pdf.**

MAJOR FOOD ALLERGENS

Some of the symptoms associated with a foodborne illness are the same symptoms associated with an allergic reaction. When it comes to food safety, allergies are just as dangerous as foodborne illnesses. In the 2005 FDA Model Food Code, recent studies indicate that over 11 million Americans suffer from one or more food allergies. A **food allergy** is caused by a naturally occurring protein in a food or a food ingredient, which is referred to as an **allergen**.

Is your customer having an allergic reaction to food? Let's find out . . .

- ★ Is your customer's throat getting tight?
- ★ Does your customer have shortness of breath?
- ★ Does your customer have itching around the mouth?
- ★ Does your customer have hives?

Anyone can be allergic to **anything**. Sometimes people don't know they have a food allergy until they have a reaction to a food that causes some or all of the symptoms listed. In severe cases, anaphylactic shock and death may result. We have included this in the food safety standard operating procedures point of the HACCP Star because allergies are a growing concern in the effort to serve safe food.

If you are someone who has had an allergic reaction to food, you can understand how important it is to know what is in the foods you, your family, friends, neighbors, fellow team members, and customers are consuming.

The first step is to be aware of the most common allergens. Although there are others, the most common are known as **major food allergens** and the **Big 8.** These foods account for 90 percent or more of all food allergies. They are as follows:

- ★ Shellfish (crab, lobster, or shrimp)
- ★ Fish (bass, flounder, or cod)
- ★ Peanuts
- ★ Tree nuts (almonds, pecans, chestnuts, pistachios, Brazil nuts, etc.)
- ★ Milk
- ★ Eggs
- ★ Soy/tofu
- ★ Wheat

(continued on page 28)

FORM 1-A

Conditional Employee and Food Employee Interview

Preventing Transmission of Diseases through Food by Infected Food Employees or Conditional Employees with Emphasis on illness due to Norovirus, ***Salmonella* Typhi, *Shigella*** spp., Enterohemorrhagic (EHEC) or Shiga toxin-producing ***Escherichia coli*** (STEC), or hepatitis A Virus

The purpose of this interview is to inform conditional employees and food employees to advise the person in charge of past and current conditions described so that the person in charge can take appropriate steps to preclude the transmission of foodborne illness.

Conditional employee name (print) _____
Food employee name (print) _____
Address _____
Telephone *Daytime:*_____ *Evening:* _____
Date _____

Are you suffering from any of the following symptoms? (Circle one)

		If YES, Date of Onset
Diarrhea?	**YES / NO**	_____
Vomiting?	**YES / NO**	_____
Jaundice?	**YES / NO**	_____
Sore throat with fever?	**YES / NO**	_____

Or

Infected cut or wound that is open and draining, or lesions containing pus on the hand, wrist, an exposed body part, or other body part and the cut, wound, or lesion not properly covered? **YES / NO**
(Examples: *boils and infected wounds, however small)*

In the Past:

Have you ever been diagnosed as being ill with typhoid fever (*Salmonella* Typhi) **YES / NO**
If you have, what was the date of the diagnosis? _____
If within the past 3 months, did you take antibiotics for *S. Typhi?* **YES / NO**
If so, how many days did you take the antibiotics? _____
If you took antibiotics, did you finish the prescription? _____ **YES / NO**

History of Exposure:

1. Have you been suspected of causing or have you been exposed to a confirmed foodborne disease outbreak recently? **YES / NO**
If YES, date of outbreak: _____

a. If YES, what was the cause of the illness and did it meet the following criteria?
Cause: _____

i. Norovirus (last exposure within the past 48 hours)	**Date of illness outbreak** _____
ii. *E. coli* O157:H7 infection (last exposure within the past 3 days)	**Date of illness outbreak** _____
iii. Hepatitis A virus (last exposure within the past 30 days)	**Date of illness outbreak** _____
iv. Typhoid fever (last exposure within the past 14 days)	**Date of illness outbreak** _____
v. Shigellosis (last exposure within the past 3 days)	**Date of illness outbreak** _____

FORM 1-A (continued)

b. If YES, did you:
- **i. Consume food implicated in the outbreak?** _____
- **ii. Work in a food establishment that was the source of the outbreak?** _____
- **iii. Consume food at an event that was prepared by person who is ill?** _____

2. Did you attend an event or work in a setting, recently where there was a confirmed disease outbreak? **YES / NO**

If so, what was the cause of the confirmed disease outbreak? _____

If the cause was one of the following five pathogens, did exposure to the pathogen meet the following criteria?

a.	**Norovirus (last exposure within the past 48 hours)**	**YES / NO**
b.	***E. coli* O157:H7 (or other** EHEC/STEC **(last exposure within the past 3 days)**	**YES / NO**
c.	***Shigella* spp. (last exposure within the past 3 days)**	**YES / NO**
d.	***S.* Typhi (last exposure within the past 14 days)**	**YES / NO**
e.	**hepatitis A virus (last exposure within the past 30 days)**	**YES / NO**

Do you live in the same household as a person diagnosed with Norovirus, Shigellosis, typhoid fever, hepatitis A, or illness due to *E. coli* O157:H7 or other EHEC/STEC**?**
YES / NO Date of onset of illness _____

3. Do you have a household member attending or working in a setting where there is a confirmed disease outbreak of Norovirus, typhoid fever, Shigellosis, EHEC/STEC **infection, or hepatitis A?**
YES / NO Date of onset of illness _____

Name, Address, and Telephone Number of your Health Practitioner or doctor:
Name _____
Address _____
Telephone – *Daytime:* _____ *Evening:* _____

Signature of Conditional Employee _____ **Date** _____

Signature of Food Employee _____ **Date** _____

Signature of Permit Holder or Representative _____ **Date** _____

FORM 1-B

Conditional Employee or Food Employee Reporting Agreement

Preventing Transmission of Diseases through Food by Infected Conditional Employees or Food Employees with Emphasis on illness due to Norovirus, ***Salmonella* Typhi, *Shigella*** spp., Enterohemorrhagic (EHEC) or Shiga toxin-producing ***Escherichia coli*** (STEC), or hepatitis A Virus

The purpose of this agreement is to inform conditional employees or food employees of their responsibility to notify the person in charge when they experience any of the conditions listed so that the person in charge can take appropriate steps to preclude the transmission of foodborne illness.

I AGREE TO REPORT TO THE PERSON IN CHARGE:

Any Onset of the Following Symptoms, Either While at Work or Outside of Work, Including the Date of Onset:

1. Diarrhea
2. Vomiting
3. Jaundice
4. Sore throat with fever
5. Infected cuts or wounds, or lesions containing pus on the hand, wrist , an exposed body part, or other body part and the cuts, wounds, or lesions are not properly covered (*such as boils and infected wounds, however small)*

Future Medical Diagnosis:

Whenever diagnosed as being ill with Norovirus, typhoid fever (*Salmonella* Typhi), shigellosis (*Shigella* spp. infection), *Escherichia* coli O157:H7 or other EHEC/STEC infection, or hepatitis A (hepatitis A virus infection)

Future Exposure to Foodborne Pathogens:

1. Exposure to or suspicion of causing any confirmed disease outbreak of Norovirus, typhoid fever, shigellosis, *E.* coli O157:H7 or other EHEC/STEC **infection, or hepatitis A.**
2. A household member diagnosed with Norovirus, typhoid fever, shigellosis, illness due to EHEC/STEC, **or hepatitis A.**
3. A household member attending or working in a setting experiencing a confirmed disease outbreak of Norovirus, typhoid fever, shigellosis, *E.* coli O157:H7 or other EHEC/STEC **infection, or hepatitis A.**

I have read (or had explained to me) and understand the requirements concerning my responsibilities under the **Food Code** and this agreement to comply with:

1. Reporting requirements specified above involving symptoms, diagnoses, and exposure specified;
2. Work restrictions or exclusions that are imposed upon me; and
3. Good hygienic practices.

I understand that failure to comply with the terms of this agreement could lead to action by the food establishment or the food regulatory authority that may jeopardize my employment and may involve legal action against me.

Conditional Employee Name (please print) _____

Signature of Conditional Employee _____ **Date** _____

Food Employee Name (please print) _____

Signature of Food Employee _____ **Date** _____

Signature of Permit Holder or Representative _____ **Date** _____

FORM 1-C

Conditional Employee or Food Employee Medical Referral

Preventing Transmission of Diseases through Food by Infected Food Employees with Emphasis on Illness due to Norovirus, Typhoid fever (***Salmonella* Typhi**), **Shigellosis (*Shigella* spp.)**, ***Escherichia coli* O157:H7** or other Enterohemorrhagic (EHEC) or Shiga toxin-producing ***Escherichia* coli** (STEC), and hepatitis A Virus

The **Food Code** specifies, under ***Part 2-2 Employee Health Subpart 2-201 Disease or Medical Condition,*** that Conditional Employees and Food Employees obtain medical clearance from a health practitioner licensed to practice medicine, unless the Food Employees have complied with the provisions specified as an alternative to providing medical documentation, whenever the individual:

1. Is chronically suffering from a symptom such as **diarrhea;** *or*
2. Has a **current illness** involving Norovirus, typhoid fever **(*Salmonella* Typhi)**, shigellosis **(*Shigella* spp.)** ***E. coli* O157:H7** infection (or other EHEC/STEC), or hepatitis A virus (hepatitis A), *or*
3. Reports ***past illness*** involving typhoid fever **(*S.* Typhi)** within the past three months (while salmonellosis is fairly common in U.S., typhoid fever, caused by infection with ***S.* Typhi**, is rare).

Conditional employee being referred: (Name, please print) _____

Food Employee being referred: (Name, please print) _____

4. Is the employee assigned to a food establishment that serves a population that meets the Food Code definition of a **highly susceptible population** such as a day care center with preschool age children, a hospital kitchen with immunocompromised persons, or an assisted living facility or nursing home with older adults?
YES ☐ **NO** ☐

Reason for Medical Referral: The reason for this referral is checked below:

☐ Is chronically suffering from vomiting or diarrhea; or (specify) _____
☐ Diagnosed or suspected Norovirus, typhoid fever, shigellosis, ***E. coli*** O157:H7 (or other EHEC/STEC) infection, or hepatitis A. (Specify) _____
☐ Reported past illness from typhoid fever within the past 3 months. (Date of illness) _____
☐ Other medical condition of concern per the following description: _____

Health Practitioner's Conclusion: (Circle the appropriate one; refer to reverse side of form)

☐ Food employee is free of **Norovirus** infection, typhoid fever **(*S.* Typhi** infection**)**, ***Shigella*** spp. infection, ***E. coli*** O157:H7 (or other **EHEC/STEC** infection), or **hepatitis A** virus infection, and may work as a food employee without restrictions.
☐ Food employee is an asymptomatic shedder of ***E.*** coli O157:H7 (or other **EHEC/STEC**), ***Shigella*** spp., or Norovirus, and is restricted from working with exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles in food establishments that do not serve highly susceptible populations.
☐ Food employee is not ill but continues as an asymptomatic shedder of ***E. coli*** O157:H7 (or other **EHEC/STEC**), ***Shigella*** spp. and should be excluded from food establishments that serve highly susceptible populations such as those who are preschool age, immunocompromised, or older adults and in a facility that provides preschool custodial care, health care, or assisted living.
☐ Food employee is an asymptomatic shedder of **hepatitis A** virus and should be excluded from working in a food establishment until medically cleared.
☐ Food employee is an asymptomatic shedder of **Norovirus** and should be excluded from working in a food establishment until medically cleared, or for at least 24 hours from the date of the diagnosis.
☐ Food employee is suffering from Norovirus, typhoid fever, shigellosis, ***E. coli*** O157:H7 (or other **EHEC/STEC** infection), or **hepatitis A** and should be excluded from working in a food establishment.

FORM 1-C (continued)

COMMENTS: (In accordance with Title I of the Americans with Disabilities Act (ADA) and to provide only the information necessary to assist the food establishment operator in preventing foodborne disease transmission, please confine comments to explaining your conclusion and estimating when the employee may be reinstated.)

_____

_____

_____

_____

_____

_____

_____

_____

Signature of Health Practitioner _____ **Date** _____

Paraphrased from the FDA Food Code for Health Practitioner's Reference

From Subparagraph 2-201.11(A)(2) Organisms of Concern:

Any foodborne pathogen, with special emphasis on these 5 organisms:
1. **Norovirus** 2. ***S.* Typhi** 3. ***Shigella*** spp. 4. ***E. coli*** O157:H7 (or other EHEC/STEC) 5. **Hepatitis A** virus

From Subparagraph 2-201.11(A)(1) Symptoms:

Have any of the following symptoms:
Diarrhea **Vomiting** **Jaundice** **Sore throat with fever**

From Subparagraph 2-201.11(A)(4)-(5) Conditions of Exposure of Concern:

(1) Suspected of causing a foodborne outbreak or being exposed to an outbreak caused by 1 of the 5 organisms above, at an event such as a family meal, church supper, or festival because the person:
Prepared or consumed an implicated food; or
Consumed food prepared by a person who is infected or ill with the organism that caused the outbreak or who is suspected of being a carrier;
(2) Lives with, and has knowledge about, a person who is diagnosed with illness caused by 1 of the 5 organisms; or
(3) Lives with, and has knowledge about, a person who works where there is an outbreak caused by 1 of the 5 organisms.

From Subparagraph 2-201.12 Exclusion and Restriction:

Decisions to exclude or restrict a food employee are made considering the available evidence about the person's role in actual or potential foodborne illness transmission. Evidence includes:

Symptoms **Diagnosis** **Past illnesses** **Stool/blood tests**

In facilities serving highly susceptible populations such as day care centers and health care facilities, a person for whom there is evidence of foodborne illness is almost always excluded from the food establishment.

In other establishments such as restaurants and retail food stored, that offer food to typically healthy consumers, a person might only be restricted from certain duties, based on the evidence of foodborne illness.

Exclusion from any food establishment is required when the person is:
- Exhibiting or reporting diarrhea or vomiting;
- Diagnosed with illness caused by *S.* Typhi; or
- Jaundiced within the last 7 days.

For ***Shigella*** spp. or ***Escherichia coli*** O157:H7 or other EHEC/STEC infections, the person's stools must be negative for 2 consecutive cultures taken no earlier than 48 hours after antibiotics are discontinued, and at least 24 hours apart or the infected individual must have resolution of symptoms for more than 7 days or at least 7 days have passed since the employee was diagnosed.

In August 2004, the Food Allergen Labeling and Consumer Protection Act was enacted, which defines the term "major food allergen." This definition was adopted in the 2005 FDA Model Food Code. As of January 1, 2006, the new law requires food manufacturers to identify in plain language on the label of food any major food allergen used as an ingredient. Also, the FDA is to conduct inspections to ensure food facilities comply with practices to reduce or eliminate cross contact of a food with any major food allergens that are not intentional ingredients of the food. This new law will help foodservice operators assist their customers by identifying allergens quicker and faster because the label will be easier to read.

Be aware that some allergy symptoms are actually a result of **intolerance** to certain foods. For example, milk has a type of sugar in it called lactose that inhibits digestion in some people, resulting in lactose intolerance. Consuming any dairy product may result in experiencing symptoms like nausea, diarrhea, abdominal bloating, excessive gas, and cramping.

Other allergens associated with food preparation are

- ★ **MSG,** or **monosodium glutamate** (used as a food additive/flavor enhancer).
- ★ **Sulfites** or **sulfur dioxide** (used as a vegetable freshener/potato whitening agent).
- ★ **Latex** (latex residue can be transferred from the latex gloves to foods, such as tomatoes, before they are served). It is recommended that employees not wear latex gloves when touching food.

Considering some allergens cause reactions that may be mild or may be severe enough to cause death, you should take the following steps to ensure your customers avoid eating foods to which they are allergic. First of all, think about how you would like to be treated if you were the customer with a food allergy. Although all customers are special, an allergic customer will have a limited amount of restaurants that he or she will be able to frequent. If we earn the trust of an allergic customer, we also earn their repeat business. Then consider the following steps:

1. **Ask the customer** if he or she has any food allergies.
2. **Know your company's SOP.** What should you do if your customer indicates he or she has a food allergy?
3. **Know your menu.** Describe *all* ingredients and the preparation of foods you are serving to anyone who asks, even if it is a "secret recipe."
4. **Be honest.** It is OK to say, "I don't know." Immediately ask your manager to assist you.
5. **Be careful.** Make sure your customer is not allergic to anything in the food you are serving. You should also make certain that he or she is not allergic to anything with which the food has come into contact (SOP: Prevent Cross-Contamination).
6. **Be thoughtful and concerned**, but never tell a customer you are sorry he or she has an allergy to certain foods, because no one is at fault for someone having an allergy.
7. Manage allergens by **limiting the contact** of food for any allergic customer. It is best if **only 1 person** handles the customer's entire food preparation and service. Even utensils and plates can cause cross-contamination of allergens to several surfaces.

STAR KNOWLEDGE EXERCISE: FOODBORNE ILLNESSES AND ALLERGENS

1. If you have been diagnosed with or come in contact with someone who has hepatitis A, what should you do?

2. Name the Big 5 foodborne illnesses. What should you do if you contract one of them?

3. How would you handle a customer who tells you he is allergic to walnuts but wants to order the chicken salad, which has toasted nuts in it?

INTERNATIONAL FOOD SAFETY ICONS

We all know what the blue handicapped parking sign means when we drive around a parking lot. Signs with simple pictures tell us when it is safe to cross the street, when to check the oil in our cars, or how to get to the airport. With the same purpose in mind, **International Food Safety Icons** help make food safety easier for everyone to understand and help you remember basic food safety rules and procedures for food preparation. Throughout this section, you will see the various International Food Safety Icons, which will help you succeed in becoming a HACCP Superstar. The International Food Safety Icons provide a visual definition and reminder of the standard operating procedures for the foodservice industry. The leadership team at a particular foodservice operation has the responsibility to establish policies, procedures, and recipes that must be followed. The International Food Safety Icons make it easy for everyone working at the establishment to **understand**, **remember**, and **reinforce** these procedures.

The following Food Safety Match Game gives you an overview of the standard operating procedures used in most foodservices. Check your knowledge of food safety by matching the International Food Safety Icons with the associated rule. Earn a point for each correct answer. Select the food safety rule that best fits the food safety symbol.

FOOD SAFETY MATCH GAME

1. _____

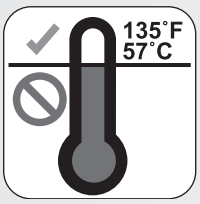
2. _____

3. _____

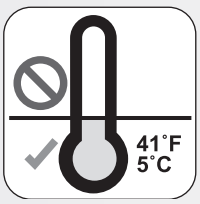
4. _____

5. _____

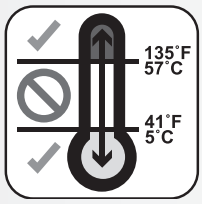
6. _____



7. _____

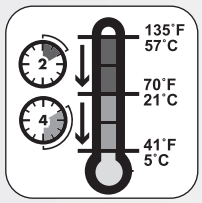


8. _____



9. _____

10. _____



11. _____

A. Potentially Hazardous Foods—Time/Temperature Control for the Safety of Food (PHF/TCS)

B. Wash, Rinse, Sanitize.

C. Cooling Food.

D. Temperature Danger Zone (TDZ)—41°F to 135°F (5°C to 57.2°C).

E. Cook All Foods Thoroughly.

F. Cold Holding—Hold cold foods below 41°F (5°C).

H. Hot Holding—Hold hot foods above 135°F (57.2°C).

I. Do Not Cross-Contaminate—From raw to ready-to-eat or cooked foods.

J. Wash Your Hands.

K. No Bare-Hand Contact—Don't handle food with bare hands.

L. Do Not Work If Ill.

How many points did you earn? _____

If you scored 10–11 points—Congratulations! You are a Food Safety Superstar!

If you scored 8–9 points—Good job! You have a basic understanding of food safety.

If you scored 5–7 points—The time for review is now! What a great opportunity to fine-tune your food safety skills.

If you scored 0–4 points—Everyone needs to start somewhere!

We are confident that if you follow the prerequisite programs, specifically the standard operation procedures in this manual, you will better understand why the basics of food safety must be mastered. The HACCP team must also master food safety basics as the first step toward creating an effective HACCP plan. You must know the proper ways to cook and prepare food before you can determine the mistakes being made in preparing the food at your facility. Then you need to write down the information in the form of a standard operating procedure to avoid mistakes in handling, preparing, and serving food to ensure food safety.

RESPONSIBILITES RELATED TO FOOD SAFETY

As a HACCP team member, some of your personal responsibilities related to providing safe food are staying home when sick, washing your hands, using gloves properly, and following a food-safe dress code. As we mentioned previously, each of the International Food Safety Icons represents a food safety standard operating procedure. Let's look at each one.

DO NOT WORK IF ILL

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If you have gastrointestinal symptoms like running a **fever**, **vomiting**, and **diarrhea**, or **you are sneezing and coughing**, you should not work around or near food and beverages. If you are diagnosed with a foodborne illness, it is critical that you stay home until your physician gives you permission to work around food again. It is important for you to notify the person in charge/manager of any illnesses you may have, especially if you have norovirus, hepatitis A, E. coli, salmonellosis, or shigellosis, because these diseases must be reported to the regulatory authority.

According to the 2005 FDA Model Food Code (www.cfsan.fda.gov), the following chart summarizes the CDC list and compares the common symptoms of each pathogen. Symptoms may include diarrhea, fever, vomiting, jaundice, and sore throat with fever. CDC has no evidence that the HIV virus is transmissible via food. Therefore, a food employee who is HIV positive is not of concern unless he or she is suffering from a secondary illness listed in the chart. Lists I and II include pathogens likely to occur in foods.

KEY: D = Diarrhea F = Fever V = Vomiting J = Jaundice S = Sore throat with fever					
LIST I. Pathogens often transmitted by food contaminated by infected persons who handle food.					
	D	**F**	**V**	**J**	**S**
1. Noroviruses	D	F	V		
2. Hepatitis A virus		F		J	
3. ***Salmonella* typhi**		F			
4. ***Shigella*** species	D	F	V		
5. ***Staphylococcus aureus***	D		V		
6. Streptococcus pyogenes		F			S
LIST II. Pathogens occasionally transmitted by food contaminated by infected persons who handle food, but usually transmitted by a contaminated source or in food processing or by non-foodborne routes.					
1. ***Campylobacter jejuni***	D	F	V		
2. ***Cryptosporidium parvum***	D				
3. Enterohemorrhagic ***Escherichia coli***	D				
4. Enterotoxigen ***Escherichia coli***	D		V		
5. ***Giardia lamblia***	D				
6. Nontyphoidal ***salmonella***	D	F	V		
7. ***Vibrio cholerae*** 01	D		V		
8. ***Yersinia enterocolitica***	D	F	V		

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- *Hand antiseptics should only be used on clean hands.*
- *Hand antiseptics are not a substitute for hand washing.*
- *Use only antiseptics approved by the FDA.*

WASH YOUR HANDS

Wash Your Hands! Wash Your Hands! Wash Your Hands!

Use the following hand-washing recipe:

1. If the paper-towel dispenser requires you to touch the handle or lever, the first step should be to crank down the paper towel. Let the paper towel hang there. Do not do this if the paper towel touches and cross-contaminates with the wall or the waste container.
2. Wet your hands (100ºF/37.8ºC).
3. Add soap.
4. Scrub for 20 seconds.
   - ★ Don't forget your nails, thumbs, and between your fingers!
   - ★ Some regulators require nailbrushes.
5. Rinse.
6. Dry with a paper towel.
   - ★ **Put on gloves** if touching ready-to-eat food.
   - ★ If exiting a restroom, wash your hands again when you reenter the kitchen to avoid any contamination that may have occurred when you exited the bathroom and touched the handle to the door.

When Do You Wash Your Hands and Change Your Gloves?

- ★ After going to the bathroom
- ★ Before and after food preparation
- ★ After touching your hair, face, or any other body parts
- ★ After scratching your scalp
- ★ After rubbing your ear
- ★ After touching a pimple
- ★ After wiping your nose and using a tissue
- ★ After sneezing and coughing into your hand
- ★ After drinking, eating, or smoking
- ★ After touching your apron or uniform
- ★ After touching the telephone or door handle
- ★ After touching raw food and before touching ready-to-eat products
- ★ After cleaning and handling all chemicals
- ★ After taking out the trash
- ★ After touching any non-food-contact surfaces
- ★ Every 4 hours during constant use
- ★ After touching a pen
- ★ After handling money
- ★ After receiving deliveries
- ★ Before starting your shift

NO BARE-HAND CONTACT

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You must not touch **ready-to-eat (RTE)** foods with bare hands. RTE foods are foods that are exactly that: "ready to eat," like bread, pickles, lunch meats, and cheese. These foods can be handled with gloves, deli paper, tongs, and utensils. One in three people do not wash their hands after using the bathroom, but gloves help stop cross-contamination via the fecal/oral route. This is why there is no bare-hand contact with RTE food.

However, some foodservice operators strongly disagree with the no-bare-hand contact of ready-to-eat food. In food safety training programs, trainers frequently hear the reasons why operators have to touch RTE with their bare hands:

- ★ "I've been in business for decades and I have never gotten anyone sick."
- ★ "It takes too much time if you have to wash your hands between every customer. People will be waiting forever!"
- ★ "If you are the only one making the food and using the cash register, it's not realistic."
- ★ "I am being forced to spend my hard-earned money on smallwares and gloves. Do you know the cost of gloves, serving utensils, spoons and tongs these days?"
- ★ "The gloves make the employees wash their hands less."
- ★ "The gloves are hard to get on after you wash your hands."
- ★ "The gloves don't fit right and they make my hands hot."
- ★ "I don't want to change."

A regulatory agency may consider your request and allow bare-hand contact with ready-to-eat food under the requirements of Form 1-D (application for barehand contact procedures). As the person in charge, the choice is yours: smallwares, gloves, additional training, a minor inconvenience versus possible contamination with fecal matter. The choice is yours, knowing that one out of three people do not wash their hands after using the restroom. Food safety is about leadership, being a role model, and making sound decisions. Following is FDA Form 1-D (www.cfsan.fda.gov/~acrobat/fc05-a7.pdf) to present to your health inspector in lieu of washing your hands. Good luck!

FORM 1-D

Application for Bare Hand Contact Procedure
(As specified in Food Code ¶ 3-301.11(D))

Please type or print legibly using black or blue ink

1. **Establishment Name:** _____

2. **Establishment Address:** _____

3. **Responsible Person:** _____ **Phone:** _____
Legal Representative Business

4. **List Procedure and Specific Ready-To-Eat-Foods** to be considered for use of bare hand contact with ready-to-eat foods:

_____

_____

_____

5. **Handwashing Facilities**:

(a) There is a handwashing sink located immediately adjacent to the posted bare hand contact procedure and the hand sink is maintained in accordance with provisions of the Code. (§ 5-205.11, § 6-301.11, § 6-301.12, § 6-301.14) ☐ YES ☐ NO (Include diagram, photo or other information)

(b) All toilet rooms have one or more handwashing sinks in, or immediately adjacent to them, and the sinks are equipped and maintained in accordance with provisions of the Code. (§ 5-205.11, § 6-301.11, § 6-301.12, § 6-301.14) ☐ YES ☐ NO

6. **Employee Health Policy:** The written employee health policy must be attached to this form along with documentation that food employees and conditional employees acknowledge their responsibilities. (§ 2-201.11, § 2-201.12, § 2-201.13)

7. **Employee Training**: Provide documentation that food employees have received training in:

- The risks of contacting the specific ready-to-eat foods with bare hands
- Personal health and activities as they relate to diseases that are transmissible through food.
- Proper handwashing procedures to include how, when, where to wash, & fingernail maintenance. (§ 2-301.12, § 2-301.14, § 2-301.15, § 2-302.11)
- Prohibition of jewelry. (§ 2-303.11)
- Good hygienic practices. (§ 2-401.11, § 2-401.12)

8. **Documentation of Handwashing Practices:** Provide documentation that food employees are following proper handwashing procedures prior to food preparation and other procedures as necessary to prevent cross-contamination during all hours of operation when the specific ready-to-eat foods are prepared or touched with bare hands.

9. **Documentation of Additional Control Measures:** Provide documentation to demonstrate that food employees are utilizing two or more of the following control measures when contacting ready-to-eat foods with bare hands:

- Vaccination against hepatitis A for food employees including initial booster shots or documented medical evidence that a food employee has had a previous illness from hepatitis A virus;
- Double handwashing;
- Use of nailbrushes;
- Use of hand antiseptic after handwashing;
- Incentive programs such as paid leave encouraging food employees not to work when they are ill; or
- Other control measures approved by the regulatory authority.

Statement of Compliance:

I certify all of the following: All food employees are individually trained in the risks of contacting ready-to-eat foods with bare hands, personal health and activities as they relate to diseases that are transmissible through food, proper handwashing procedures, prohibition of jewelry, and good hygienic practices. A record of this training is kept on site. I understand that bare hand contact with ready-to-eat food is prohibited except for those items listed in section four (4) above. A handwashing sink is located immediately adjacent to the posted bare hand contact procedure. All handwashing sinks are maintained with hot water, soap, and drying devices. I understand that documentation is needed for handwashing practices and additional control measures. I understand that records to document handwashing are kept current and kept on site.

SIGNATURE: _____ DATE _____
(Signature of legal representative of the facility listed above)

Regulatory Authority (RA) Use Only:

Permit Number: _____

File Review Conducted on History of Handwashing Compliance: ☐ Yes ☐ No

Site Visit Conducted ☐ Yes ☐ No Comments: _____

☐ Approved: Effective Date: _____ RA name _____

☐ Not Approved: Reason for Denial:

_____

Courtesy PhotoDisc/Getty Images.

STAR KNOWLEDGE EXERCISE: WASHING HANDS SOP

In the space below, provide the information related to the instructions, monitoring, corrective action, verification, and record keeping needed for the SOP for washing hands.

SOP: Washing Hands (Exercise)

Purpose: To prevent foodborne illness by contaminated hands.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Hand washing, cross-contamination

Instructions:

1.

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

DO NOT CROSS-CONTAMINATE

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Between Raw and RTE or Cooked Foods

Raw food is food that needs to be cooked before it is eaten, like raw meat and eggs. As mentioned previously, **ready-to-eat food** is food that doesn't need to be cooked and is ready to be eaten, like a sandwich roll or lettuce. **Cooked food** is food that has been properly cooked by reaching a specific temperature for an appropriate amount of time, like a cooked hamburger. Once food has been properly cooked, it is now considered a ready-to-eat food.

Food-Contact Surfaces

Cross-contamination occurs when raw food touches or shares contact with ready-to-eat and/or cooked foods. If you touch the walk-in (refrigerator/cooler) door handle, or a pen, or the telephone, and then make a sandwich, this is cross-contamination. Cross-contamination is using the same knife to cut both chicken and rolls. If raw chicken is stored in the refrigerator above lettuce and the chicken juice drips onto the lettuce, this is cross-contamination.

To avoid cross-contamination:

- ★ Properly store raw food below ready-to-eat food (chicken below lettuce).
- ★ Never mix food products when restocking.
- ★ Properly clean and sanitize utensils, equipment, and surfaces.
- ★ Clean and sanitize work areas when changing from raw food preparation to RTE food preparation.
- ★ Never store any food near any chemicals.

Between Tasks

It is critical to change gloves, wash hands, and use clean and sanitized utensils, cutting boards, and work surfaces between tasks to prevent contamination. Here are some ways to place a barrier between you and the cross-contamination.

One system to help prevent cross-contamination is to use color-coding. For instance, you can use different-colored gloves for different jobs. This system makes it easy to differentiate food-handling jobs from non-food-handling jobs. Ask your manager if your company has a SOP for gloves. Here are some examples of color-coding gloves:

- ★ Use clear gloves for food preparation.
- ★ Use blue gloves for fish.
- ★ Use yellow gloves for poultry.
- ★ Use red gloves for beef.
- ★ Use purple gloves for cleaning and for non-food-contact surfaces.

A similar practice designates different cloths and containers and color-codes them to separate food and non-food-contact surfaces. For example:

- ★ Use a white cloth for food-contact surfaces.
- ★ Use a blue cloth for non-food-contact surfaces.
- ★ Use a green container for cleaning (water and soap).
- ★ Use a red container for sanitizing (water and sanitizer).
- ★ You could also color-code cutting boards, knives, containers, and gloves.

STAR KNOWLEDGE EXERCISE: USING SUITABLE UTENSILS WHEN HANDLING RTE FOODS SOP

In the space provided, include information related to instructions, monitoring, corrective action, verification, and record keeping needed for using suitable utensils when handling ready-to-eat foods.

SOP: Using Suitable Utensils When Handling RTE Foods (Exercise)

Purpose: To prevent foodborne illness due to hand-to-food cross-contamination.

Scope: This procedure applies to foodservice employees who prepare, handle, or serve food.

Key Words: Ready-to-eat food, cross-contamination

Instructions:

1.

2.

3.

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

Dress Code Violations

Be a leader. Be a role model. Follow these rules to avoid violating the dress code:

- ★ Cover all cuts and burns with a bandage *and* a glove if you have an injury on your hand.
- ★ Wear your hat or proper hair restraint.
- ★ Wear clean, closed-toe shoes with rubber soles.
- ★ Take a bath or shower every day.
- ★ Always have clean and neat hair.
- ★ Properly groom fingernails and hands.
- ★ Do not wear nail polish or false nails.
- ★ Do not wear rings, necklaces, watches, bracelets, dangly or hoop earrings, or facial piercings. According to the 2005 FDA Model Food Code the **only exceptions** are that a plain wedding band may be worn, a medical alert necklace can be tucked under the shirt, or a medical alert ankle bracelet can be used.
- ★ Do not chew gum.
- ★ Only eat, drink, and smoke in designated areas.

Courtesy PhotoDisc/Getty Images.

Courtesy Corbis Digital Stock.

- ★ Do not touch your hair, your face, or any body parts when handling or serving food.
- ★ Remove aprons before leaving the food preparation areas.
- ★ Wear a clean apron and uniform at all times.
- ★ Never take your apron into the bathroom.

Sampling Food

Cross-contamination can occur when you are sampling food at your workstation. You should never eat at your workstation unless you are taste-testing the food that you are preparing. Here are some proper ways to sample food:

- ★ Use a single-use spoon. **Do not double dip!** *Single-use* means exactly that—only one taste per single-use spoon. **OR** Take a small dish and ladle a small portion of the food into the small dish. Put down the ladle. Step away from the pan or pot. Taste the food. Then place items in the dirty dish area of your establishment.
- ★ Always wash your hands and return to work.

STAR KNOWLEDGE EXERCISE: PERSONAL HYGIENE SOP

In the space below, provide information for instructions, monitoring, corrective action, verification, and record keeping needed for a personal hygiene SOP.

SOP: Personal Hygiene (Exercise)

Purpose: To prevent contamination of food by foodservice employees.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Personal hygiene, cross-contamination, contamination

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

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POTENTIALLY HAZARDOUS FOODS: TIME/TEMPERATURE CONTROL FOR SAFETY OF FOOD (PHF/TCS)

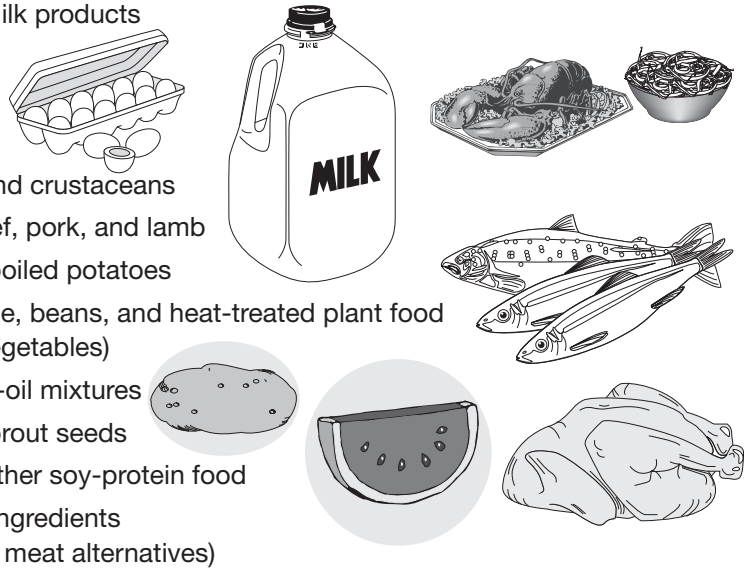
Potentially Hazardous Foods

A **potentially hazardous food (PHF)** is any food capable of allowing germs to grow rapidly. PHFs have the potential to cause foodborne illness outbreaks. They are usually **moist** (like watermelon), have lots of **protein** (like dairy and meat), and don't have very high or very low acidity (**neutral acidity**). Adding lemon juice or vinegar to foods slows the growth of the germs.

Potentially hazardous food requires strict time and temperature controls to stay safe. Food has been **time/temperature abused** anytime it has been in the **temperature danger zone (TDZ) (41°F to 135°F or 5°C to 57.2°C)** for too long. (More on the TDZ in the next section.) Potentially hazardous foods must be checked often to make sure that they stay safe. The caution sign includes a clock and thermometer to stress the importance of monitoring time **and** temperature. The clock is the reminder to check food at regular time intervals (such as every 2 or 4 hours). The thermometer required must be properly calibrated, cleaned, and sanitized. These are general guidelines describing the qualities of potentially hazardous

foods. Scientists have developed much more specific criteria for identifying potentially hazardous foods.

Here is a list of potentially hazardous foods (PHFs):



- ★ Milk and milk products
- ★ Shell eggs
- ★ Fish
- ★ Poultry
- ★ Shellfish and crustaceans
- ★ Meats: beef, pork, and lamb
- ★ Baked or boiled potatoes
- ★ Cooked rice, beans, and heat-treated plant food (cooked vegetables)
- ★ Garlic-and-oil mixtures
- ★ Sprouts/sprout seeds
- ★ Tofu and other soy-protein food
- ★ Synthetic ingredients (i.e., soy in meat alternatives)
- ★ Sliced melons

Time/Temperature Control for Safety of Food (TCS)

TCS is the new scientific criteria for foodservice operators whose regulators adopt the 2005 FDA Model Food Code. With these guidelines there is *no easy list of foods* to use as PHF because regulations are based on the characteristics of food. Characteristics involve the interaction of such factors as the following:

- ★ Salt concentration
- ★ Preservatives
- ★ Free available chlorine
- ★ Viscosity
- ★ Humidity
- ★ Oxygen
- ★ pH
- ★ Titratable acidity (**Titratable acidity** measures all the various acids present. An example is measuring the quantity of alkali needed to neutralize the components of a given amount of milk products and milk, and is expressed as percentage of lactic acid. This test is used to evaluate milk quality and to examine the progress of fermentation in cheese and fermented milks.)
- ★ Moisture
- ★ Water activity (a_w)
- ★ Time
- ★ Temperature

Some of these qualities are easy to measure; others will require new tools or gauges to measure. The change in measuring factors and the interaction between factors will help us make sure we are correctly identifying potentially hazardous foods so

we can properly control them to be safe. As scientists get more precise in refining (or expanding) the criteria for PHFs, operators need to adapt at the same time. This is one of the reasons the 2005 FDA Model Food Code is a changing, dynamic, adaptive guide that is updated every 4 years.

Anyone whose HACCP plan and its success is based on the 2005 FDA Model Food Code will be impacted and will use these latest guidelines. This includes schools, processors, packagers, and foodservice establishments. The goal of this change is to provide foodservice operators with additional tools to provide useful information to confirm if the food needs time/temperature control for safety (TCS).

Although the criteria to identify foods that need TCS (also known as PHF/TCS) has expanded, it may actually decrease the amount of foods that actually need time/temperature control for safety. For example, the previous definition of PHFs listed only moisture, protein, and neutral acidity as the combination of ingredients to classify a food as PHF. But now, using a matrix and tables of refined values, and the interaction of water activity and pH values and processing methods or preservatives used, we can more correctly identify food that need TCS.

This implementation of new scientific data may seem like more work, but the result is safer food, even giving us better quality of food. Decades ago, in order to kill the trichinosis parasites often found in pork, it was common practice to overcook pork to such a degree that when we ate it, it was dry, hard, and flavorless. Our advances in raising domestic pigs and scientific research now allows us to cook pork to 145°F (62.8°C) for 15 seconds to ensure a juicy pork chop that is still safe to eat. Is checking the temperature with a calibrated thermometer any more difficult than cutting the meat open to see if the pork is completely cooked? Of course not. This is the advantage that science-based HACCP gives us.

The matrix in Tables A and B provide a scientific approach for the interaction of water activity and pH values. These interaction tables were included with the definition of foods that require time/temperature control for safety to limit pathogen growth or toxin formation. The matrix is easy to use with the supporting tables in the appendix of this book. Simply reference the water activity and the pH of the food product in the tables, then compare it to Tables A and B. If the food is not in the table, ask your manufacturer to assist you with the water activity and pH levels in the foods you use.

In foodservice operations, sometimes an operator adds ice to quickly cool food. Sometimes water is added to reconstitute the food or to improve the quality. Remember, each time you alter the product, this impacts the characteristics of the food.

TCS Matrix

Table A. Interaction of pH and a_w for control for spores in food heat-treated to destroy vegetative cells and subsequently packaged

a_w values	pH values		
	4.6 or less	> 4.6–5.6	> 5.6
≤0.92	non-PHF*/non-TCS food**	non-PHF/non-TCS food	non-PHF/non-TCS food
> 0.92–.95	non-PHF/non-TCS food	non-PHF/non-TCS food	PA***
> 0.95	non-PHF/non-TCS food	PA	PA

* PHF means Potentially Hazardous Food
** TCS food means Time/Temperature Control for Safety food
*** PA menas Product Assessment required

Table B. Interaction of pH and a_w for control of vegetative cells and spores in food not heat-treated or heat-treated but not packaged

a_w values	pH values			
	< 4.2	4.2–4.6	< 4.6–5.0	> 5.0
0.88	non-PHF*/ non-TCS food**	non-PHF/ non-TCS food	non-PHF/ non-TCS food	non-PHF/ non-TCS food
0.88–0.90	non-PHF/ non-TCS food	non-PHF/ non-TCS food	non-PHF/ non-TCS food	PA***
> 0.90–0.92	non-PHF/ non-TCS food	non-PHF/ non-TCS food	PA	PA
> 0.92	non-PHF/ non-TCS food	PA	PA	PA

* PHF means Potentially Hazardous Food
** TCS food means Time/Temperature Control for Safety food
*** PA menas Product Assessment required

Water Activity of Foods

Water activity (a_w) is a critical factor that determines shelf life. While temperature, pH, and several other factors can influence if and how fast organisms will grow in a product, water activity may be the most important factor in controlling spoilage. Water activity refers to the availability of water in a food or beverage and thus the amount of water that is available to microorganisms. Pure water has an activity level of 1.00. Crackers have a water activity of 0.10. Most bacteria, for example, do not grow at water activities below 0.91, and most molds cease to grow at water activities below 0.80. By measuring water activity, you can predict which microorganisms will and will not be potential sources of spoilage. Various food products are highlighted in the table in the appendix.

pH of Foods

The pH and/or acidity of a food are generally used to determine processing requirements and for regulatory purposes. **pH** is the symbol for a measure of the degree of acidity or alkalinity of a solution based on a scale of 0 to 14. Values between 0 and 7 indicate acidity, and values between 7 and 14 indicate alkalinity. The value for pure distilled water is 7, which is considered neutral. Electrodes and pH meters are available from various manufacturers. To assist readers in determining the pH levels of different products, the appendix lists the approximate ranges of pH values.

The minimum pH for Campylobacter spp. to grow is 4.9, the optimum condition is between 6.5 and 7.5, and the maximum pH for growth is 9.0. Eighty percent of all poultry have Campylobacter spp., and poultry has an approximate water activity of 0.99 to 1.00 and a pH range of 6.2 to 6.4. But you must factor the water activity ranges that can support Campylobacter spp. The minimum is 98, and the optimum is 99. So, the higher the water activity, the better the conditions for bacterial growth. This is also the reason why poultry is a potentially hazardous food where time/temperature control is required for the safety of food.

In summary, it is important to understand and manage water activity and pH in controlling the growth of known pathogens. The tables in the appendix are provided for a simple and clearer understanding of pathogens that threaten the foods you prepare and serve. Identifying potentially hazardous foods/temperature control for safe foods helps you avoid putting your operation at risk.

Reduced Oxygen Packaging (ROP) Foods

In the 2005 FDA Model Food Code, reduced oxygen packaging (ROP) encompasses a large variety of packaging methods where the internal environment of the package contains a controlled oxygen level (typically 21 percent at sea level), including vacuum packaging (VP), modified atmosphere packaging (MAP), controlled atmosphere packaging (CAP), cook chill processing (CC), and sous vide (SV, French for “under vacuum”). Using ROP methods in food establishments has the advantage of providing extended shelf life to many foods because it inhibits spoilage organisms that are typically aerobic.

Most foodborne pathogens are anaerobic or facultative anaerobes able to multiply under either aerobic or anaerobic conditions. Therefore, special controls are necessary to control their growth. Refrigerated storage temperatures of 41°F (5°C) may be adequate to prevent growth and/or toxin production of some pathogenic microorganisms, but Clostridium botulinum and Listeria monocytogenes are able to multiply well below 41°F (5°C). For this reason, Clostridium botulinum and Listeria monocytogenes become the pathogens of concern for ROP. Controlling their growth will control the growth of other foodborne pathogens as well.

Some ROP refrigerated foods eliminate some of the preparation steps of foods usually prepared in a foodservice operation. These food items are packaged to extend shelf life. While the packaging inhibits growth of spoilage organisms, it may promote growth of pathogenic bacteria such as Clostridium botulinum and Listeria monocytogenes if the foods are time/temperature abused or served beyond the recommended “use-by” dates. Receiving and storage temperatures are critical for these products.

Examples of these foods are sous vide and MAP foods, as explained in the following:

Types of ROP

- ★ **Vacuum packaging (VP).** The process in which air is removed from a package of food and the package is hermetically sealed so that a vacuum remains inside the package. Consider lettuce: When stored in the refrigerator, it has a normal shelf life of 3 to 6 days; however, with VP, the shelf life is 2 weeks.
- ★ **Modified atmosphere packaged (MAP) foods.** Food is partially processed or lightly cooked before being put into a pouch or other container and sealed. Depending on the type of food product, the MAP process uses special gases or mixtures of gases with different properties. MAP specifically includes the reduction in the proportion of oxygen, total replacement of oxygen, or an increase in the proportion of other gases such as carbon dioxide or nitrogen. MAP is used to extend the shelf life and maintain quality food products. Cooked poultry from a manufacturer without MAP has a 5- to 15-day shelf life; however, with the use of MAP, the shelf life is extended to 21 to 30 days. These foods should be received and stored at temperatures of 41°F (5°C) or below.
- ★ **Controlled atmosphere packaging (CAP) foods.** CAP packaging modifies food so that until the package is opened, its composition is different from air, and continuous control of that atmosphere is maintained, such as by using oxygen scavengers (chemicals placed directly into the packaging wall that absorb oxygen that permeates into the package over time) or a combination of the total replacement of oxygen-respiring foods (i.e., meat and seafood), and impermeable packaging material. The food product is packaged in a laminate or film, and then the atmosphere inside the pack is controlled. After the pack is sealed or vacuum packed, the laminate or film prevents further transmission of gases in or out of the food package, extending the shelf life and ensuring a quality product. Food products where CAP is used include dry fruits, yeast, spices, cereals, rice, fish, meat, and cheese.
- ★ **Cook chill processing (CC).** Cook chill packaging occurs when cooked food is hot-filled into impermeable bags that have the air expelled and are then sealed or crimped closed. The bagged food is rapidly chilled and refrigerated at temperatures that inhibit the growth of pathogens. CC processing is commonly used for soups, sauces, and meats.
- ★ **Sous vide (SV).** SV packaged food is put into a package raw or partially cooked and then hermetically sealed in an impermeable bag, cooked in the bag, rapidly chilled, and refrigerated at temperatures that inhibit the growth of pathogens. These foods should be received and stored at temperatures of 41°F (5°C) or below. Foodservice operators are practicing cooking food such as short ribs and beef cheeks at low temperatures in vacuum-packed plastic bags.

ROP packaging has both concerns and benefits. The concerns include the following:

- ★ Refrigeration may be the only barrier to pathogenic growth.
- ★ Bacteria such as Clostridium botulinum and Listeria monocytogenes may not be killed.

- ★ Competing spoilage organisms may be killed. Spoilage organisms inhibit the growth of pathogenic bacteria by competing with them. You can see evidence of spoilage organisms, whereas the presence of pathogens (disease-causing organisms) is not noticeable.
- ★ Pathogens and their spores may not be destroyed.
- ★ An anaerobic condition is created, favoring the growth of pathogens such as Clostridium botulinum and Listeria monocytogenes.
- ★ Cooking may make food more favorable to pathogen growth.

Some benefits of ROP include the following:

- ★ Higher quality of food
- ★ Consistent food products
- ★ Labor savings
- ★ Menu flexibility
- ★ Convenience
- ★ Extended shelf life
- ★ Food safety

Besides scientific analysis, there are still standard operating procedures that must be followed with other foods. For example, washing fruits and vegetables is critical for their safety. Here is an exercise for standard operating procedures for washing fruits and vegetables.

STAR KNOWLEDGE EXERCISE: WASHING FRUITS AND VEGETABLES SOP

In the space below, list the directions for instructions, monitoring, corrective action, verification, and record keeping needed for washing fruits and vegetables.

SOP: Washing Fruits and Vegetables (Exercise)

Purpose: To prevent or reduce risk of foodborne illness or injury by contaminated fruits and vegetables.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Fruits, vegetables, cross-contamination, washing

Instructions:

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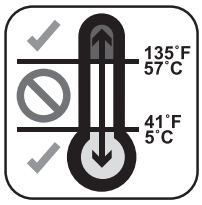
Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____



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TEMPERATURE DANGER ZONE (TDZ)

Be Safe—Monitor Time and Temperature!

This symbol means no food should stay between **41°F and 135°F (5°C to 57.2°C)**, as this is the **temperature danger zone (TDZ)**. Germs and bacteria grow and multiply very, very fast in this zone. If a PHF/TCS stays in the temperature danger zone of 41°F to 135°F (or 5°C to 57.2°C) for more than 4 hours, it is **time/temperature abused** and can make people very sick. That is why cold food must be kept cold at 41°F (5°C) or lower and hot food must be kept hot at 135°F (57.2°C) or above. It is important to practice **temperature control (TC)** to make sure foods are not time/temperature abused.

Since foods should not sit on the counter in the TDZ for more than 4 accumulated hours, you should put food away as soon as possible. In the 2005 FDA Model Food Code, there is a new exception to the 4-hour rule. If the internal temperature of food is 41°F (5°C) or lower, once it is removed from TC cold holding, it can remain out of TC for up to **6 hours** as long as the internal product temp does not go above 70°F (21.1°C).

Check holding units (ovens/refrigerators/freezers/warmers/serving lines) at regular intervals to ensure food safety. For example, if the steam table has been accidentally unplugged, it could result in the food temperature dropping to 120°F (48.9°C). If the last time you took the temperature of the food on the table was less than 4 hours ago, you can reheat the food to 165°F (73.9°C) for 15 seconds within 2 hours and continue to serve the product. But if the last time you took the temperature was more than 4 hours ago, then you MUST discard all the foods that are time/temperature abused. This unsafe food can make anyone who eats it sick.

Here is something to think about. What is the temperature of a healthy human?

Courtesy PhotoDisc/Getty Images.

If you answered 98.6°F (37°C), you are correct. But note that 98.6°F (37°C) is right in the middle of the temperature danger zone. Our bodies are ideal for germs because we are in the TDZ! Germs love people! Those germs will be transferred to people's food if you are not careful. That is why controlling time and temperature and maintaining good personal hygiene are keys to the success of food safety.

STAR KNOWLEDGE EXERCISE: TIME-/DATE-MARKING FOOD SOP

In the space below, provide information for instructions, monitoring, corrective action, verification, and record keeping needed for date-marking food.

SOP: Time-/Date-Marking Food (Exercise)

Purpose: To ensure appropriate rotation of ready-to-eat food to prevent or reduce foodborne illness from Listeria monocytogenes.

Scope: This procedure applies to foodservice employees who handle, prepare, store, or serve food.

Key Words: Ready-to-eat food, potentially hazardous food, date marking, cross-contamination

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

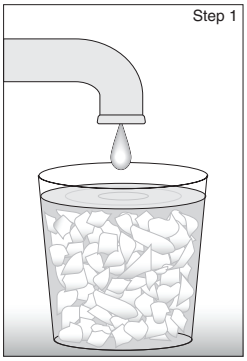
Checking Food Temperatures with Calibrated Thermometers

What is the point of checking temperatures if you have no clue whether the thermometer is working properly? Calibrated thermometers ensure temperatures of food are correct. There are many types of thermometers. Here are some types common to foodservice:

- ★ Bimetallic
- ★ Thermistor (digital)
- ★ Thermocouple
- ★ Disposable temperature indicators (t-stick)
- ★ Infrared with Probe

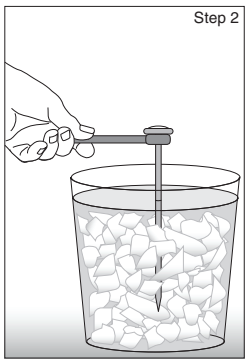
Thermometers must be checked during **every shift** for correct calibration. The simple act of either dropping a thermometer on the floor or banging the thermometer against a prep table can knock the thermometer out of calibration. All food must be checked with a properly calibrated thermometer. Follow these steps to calibrate a bimetallic stemmed thermometer, the most commonly used thermometer in the foodservice industry.

ICE-POINT METHOD



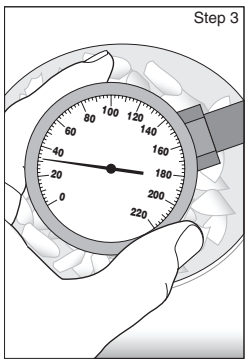
Step 1

Fill the container with crushed ice and water



Step 2

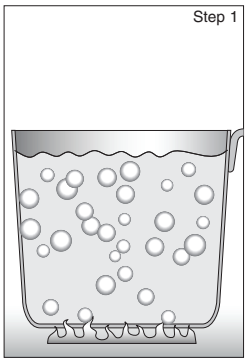
Submerge sensing area of stem or probe for 30 seconds



Step 3

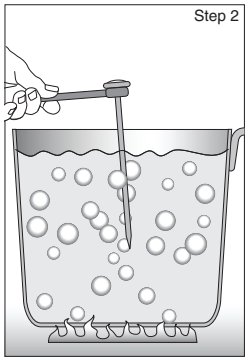
Hold calibration nut and rotate thermometer head until it reads 32°F (0°C)

BOILING-POINT METHOD



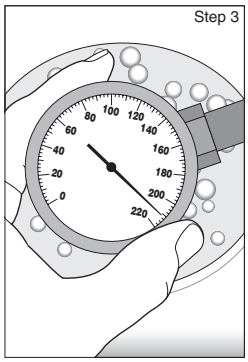
Step 1

Bring a deep pan of water to a boil



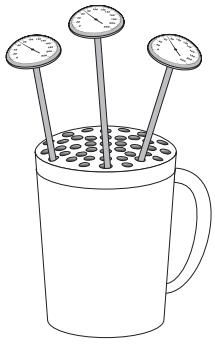
Step 2

Submerge sensing area of stem or probe for 30 seconds



Step 3

Hold calibration nut and rotate thermometer head until it reads 212ºF (100ºC)



<u>Thermometer Tips:</u>
Store several clean thermometers in a convenient location in a container filled with sanitizer solution. The sanitizer solution should be checked every 4 hours to verify concentration.

Properly Thaw Foods

Often we need to thaw food prior to starting the cooking process. How many times have you thought, "We can pull the turkeys from the freezer and let them sit on the worktable to thaw?" Sitting frozen food on the counter to thaw is **not** a safe food-handling practice. Food needs to safely move through the TDZ as it thaws. There are four safe methods for thawing food:

Method 1: **Thaw in the refrigerator.** As foods thaw, they may produce extra liquid. Be sure to place PHFs on the lowest shelves of the refrigerator giving consideration to the minimum internal cooking temperatue. Always store in a pan or on a tray to avoid cross-contamination.

Method 2: **Thaw in running water.** Foods to be thawed under running water must be placed in a sink with running water at 70°F (21.1°C) or cooler. The sink must be open to allow the water to push the microorganisms off the food and flow down the drain. Do not allow the sink to fill with water.

Method 3: **Cooking.** Frozen food can be thawed by following the cooking directions for the product. Frozen food may take longer to cook depending on the size and type of product.

Method 4: **Microwave.** Food can be thawed using the microwave if it will then be immediately cooked. When thawing food in the microwave, remember that there will be uneven thawing and some of the food may have started to cook, taking some of the food into the TDZ. This is why you must finish the cooking process immediately after microwave-thawing.

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COOK ALL FOODS THOROUGHLY

Each PHF/TCS has a minimum internal cooking temperature that must be reached and held for 15 seconds to ensure that it is safe and does not make anyone sick.

Minimum Internal Cooking Temperatures

Here are some minimum internal cooking temperatures to keep in mind when preparing food:

165°F (73.9°C) for 15 Seconds for:

- ★ Leftover foods and all reheated foods.
- ★ Poultry and wild game.
- ★ Stuffed products, including pasta.
- ★ Combining already cooked and raw PHF products (casseroles).
- ★ Foods cooked in a microwave; then let sit for 2 minutes.

155°F (68.3°C) for 15 Seconds for:

- ★ Ground product: fish, beef, and pork.
- ★ Flavor-injected meats.
- ★ Eggs for hot holding and later service (buffet service).

145°F (62.8°C) for 15 Seconds for:

- ★ Fish and shellfish.
- ★ Chops/steaks of veal, beef, pork, and lamb.
- ★ Fresh eggs and egg products for immediate service.
- ★ Roasts to 145°F (62.8°C) for **4 minutes**. (**Note:** The internal temperature needs to be held for longer than 15 seconds because it is a large product that is thick and dense.) For alternate roast temperatures, see tables below and on page 56.

135°F (57.2°C) or 15 Seconds for:

- ★ RTE foods.
- ★ Commercially processed products.
- ★ Vegetables that are to be held hot.
- ★ Hot holding for all PHF, cooked vegetables, and fruits.

Alternate roast temperatures from the 2005 FDA Model Food Code

Time/Temperature Ranges for Roast Chart I		
Cook to selected internal temperature and hold for specific time (seconds) to destroy organisms.		
°F	**°C**	**Time in Seconds**
158°F	70°C	0 seconds
157°F	69.4°C	14 seconds
155°F	68.3°C	22 seconds
153°F	67.2°C	34 seconds
151°F	66.1°C	54 seconds
149°F	65°C	85 seconds
147°F	63.9°C	134 seconds
Note: Alternate roast temperatures from the 2005 FDA Model Food Code.		

Time/Temperature Ranges for Roast Chart II		
Cook to selected internal temperature and hold for specific time (minutes) to destroy organisms.		
°F	**°C**	**Time in Minutes**
145°F	62.8°C	4 minutes
144°F	62.2°C	5 minutes
142°F	61.1°C	8 minutes
140°F	60°C	12 minutes
138°F	58.9°C	18 minutes
136°F	57.8°C	28 minutes
135°F	57.2°C	36 minutes
133°F	56.1°C	56 minutes
131°F	55°C	89 minutes
130°F	54.4°C	112 minutes
Note: Alternate roast temperatures from the 2005 PDA Model Food Code.		

STAR KNOWLEDGE EXERCISE: COOKING SOP

In the space below, provide information for the instructions, monitoring, corrective action, verification, and record keeping needed for cooking foods.

SOP: Cooking (Exercise)

Purpose: To prevent foodborne illness by ensuring that all foods are cooked to the appropriate internal temperature.

Scope: This procedure applies to foodservice employees who prepare or serve food.

Key Words: Cross-contamination, temperatures, cooking

Instructions:

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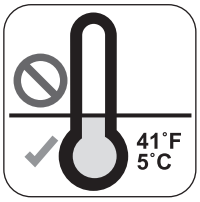
Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____



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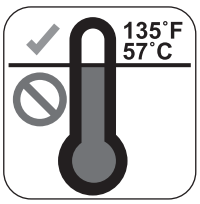
COLD HOLDING

Be Safe—Monitor Time and Temperature!

Here are time and temperature food safety rules:

- ★ In **cold-holding/self-service bars (refrigeration)**, store all cold food below 41°F (5°C).
- ★ Check temperatures of the food in cold holding a minimum of every 4 hours with a calibrated, clean, and sanitized thermometer.
- ★ Always keep food out of the TDZ.



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HOT HOLDING

Be Safe—Monitor Time and Temperature!

Here are time and temperature food safety rules:

- ★ In **hot-holding/self-service bars (steam table)**, store all hot food above 135°F (57.2°C).
- ★ Check temperatures of the food in hot holding a minimum of every 4 hours with a calibrated, clean, and sanitized thermometer.
- ★ Always keep food out of the TDZ.

STAR KNOWLEDGE EXERCISE: HOLDING HOT AND COLD PHF/TCS FOODS SOP

In the space below, provide information for the instructions, monitoring, corrective action, verification, and record keeping needed for holding hot and cold foods.

SOP: Holding Hot and Cold PHF/TCS Foods (Exercise)

Purpose: To prevent foodborne illness by holding foods at the correct temperature.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cross-contamination, hot holding, cold holding, storage, temperature

Instructions:

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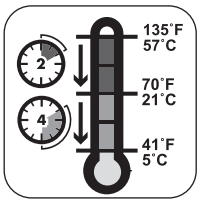
Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____



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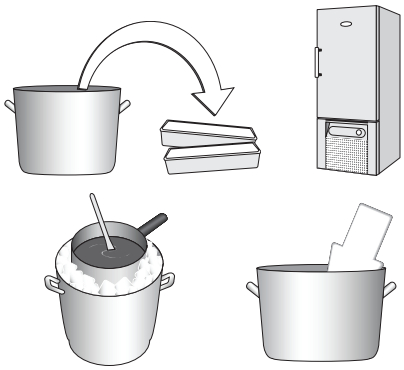
COOLING FOOD

Two-stage cooling allows potentially hazardous food to be in the temperature danger zone for more than 4 hours only if these strict guidelines are followed. Cool hot food from **135°F to 70°F (57.2°C to 21.1°C)** within 2 hours; you then have an additional 4 hours to go from **70°F to 41°F (21.1°C to 5°C)** or lower for a maximum total cool time of 6 hours. Note: If the food does not reach 70°F (21.1°C) within 2 hours, you must immediately reheat to 165°F (73.9°C) and then begin the cooling process again from that point.

Cool food as quickly as possible. Keep in mind that 6 hours is the maximum amount of time only if you reach **70°F (21.1°C) within 2 hours**. The reason you can have an additional 4 hours is that the food moves through the most dangerous section of the TDZ within the first 2 hours. **Less time is better.** Your goal when cooling food is to move food as quickly as possible through the TDZ. Proper ways to cool food quickly are as follows:



- ★ Use a clean and sanitized ice paddle.
- ★ Stir food to release the heat.
- ★ Use an ice bath.
- ★ Add ice as an ingredient.
- ★ Use a quick-chill unit such as a blast chiller.
- ★ Separate food into smaller portions or thinner pieces.

Once food has cooled to 70°F (21.1°C), it should be placed in the refrigerator as follows:

- ★ Place food in shallow stainless steel pans (no more than 4 inches deep).
- ★ Make sure pan cover is loose to allow the heat to escape.
- ★ Place pans on top shelves in refrigeration units.
- ★ Position pans so air circulates around them. *(Be cautious not to overload refrigerator tray racks.)*
- ★ Monitor food to ensure two-stage cooling process. Cool hot food from 135°F to 70°F (57.2°C to 21.1°C) within 2 hours or less; you then have up to an additional 4 hours to go from 70°F to 41°F (21.1°C to 5°C) or lower for a maximum total cool time of 6 hours.

The refrigerator and freezer are not designed to cool hot food. The warmest temperature food to be placed in a refrigerator is 70°F (21.1°C); in a freezer, 41°F (5°C). If hot food is placed in a refrigerator unit, the refrigerator unit will work harder and warm the other foods that are supposed to be cold, ruining both the foods and the expensive refrigeration unit.

STAR KNOWLEDGE EXERCISE: COOLING FOOD SOP

In the space below, provide information for the instructions, monitoring, corrective action, verification, and record keeping needed for holding hot and cold PHF/TCS.

SOP: Cooling Food (Exercise)

Purpose: To prevent foodborne illness by properly cooling food.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cooling, temperature

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

Reheating

The goal of reheating is to move food as quickly as possible through the TDZ. It is critical when reheating food to cook the food to a minimum of 165°F (73.9°C) for 15 seconds within 2 hours. If food takes longer than 2 hours to reheat, it must be discarded or thrown away. Use steam when possible to reheat food and not dry heat. **Never use hot-holding equipment to reheat food**, because this equipment is not designed for that purpose. Hot-holding equipment is designed to hold the temperature once the food is hot.

STAR KNOWLEDGE EXERCISE: REHEATING FOOD SOP

In the space below, provide the information for the instructions, monitoring, corrective action, verification, and record keeping needed for reheating.

SOP: Reheating Food (Exercise)

Purpose: To prevent foodborne illness by reheating food properly.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Reheating, temperature

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
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Date Revised: _____ By: _____

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WASH, RINSE, SANITIZE

Clean and Sanitize! "Sparkle!"

Follow proper cleaning and sanitizing food safety rules, as outlined in the following.

What Is Cleaning?

Cleaning is removing the dirt you can see on a surface. The expectation is for everything to "sparkle!" A sparkling-clean foodservice operation impresses each customer. Clean all surfaces, equipment, and utensils every 4 hours or when they become soiled or when they no longer sparkle. You can use detergents or solvents or scraping to clean.

What Does It Mean to Sanitize?

Sanitizing is reducing the unseen germs on a surface to a **safe** level.

1. Sanitize all things that come in contact with food, including utensils, cutting boards, and prep tables.
2. Clean and sanitize at minimum every **4 hours**.

3. You can sanitize with water that is at least 180°F/82.2°C (dishwashing machines) or use a chemical sanitizer.

You must follow the proper SOP for your foodservice operation. There are five important points to remember:

- ★ Always use a **sanitizer test strip** when preparing a sanitizer solution.
- ★ Use **separate cloths** for food surfaces like a prep table and non-food surfaces like a wall or floor.
- ★ Use a **designated sink system** like the three-compartment sink to clean and sanitize dishes and utensils. Never clean and sanitize dishes in the hand-washing or food preparation sinks. Mop water can only be emptied into the utility sink or the toilet, never in the three-compartment sink.
- ★ Always **keep chemicals and food products separate**. Never receive cleaning products and chemicals on the same pallet with food. Remember, to prevent cross-contamination, you should always be alert when receiving your deliveries. This is a serious concern associated with the potential chemical contamination of deliveries.
- ★ Keep copies of the **Material Safety Data Sheets** (MSDS) for each chemical used on premises.

How Do You Set Up a Three-Compartment Sink?

Step 1: Clean and sanitize entire sink and drainboards before starting.
Step 2: Scrape and rinse dirty dishes.
Step 3: Wash at 110°F (43.3°C) with soapy water.
Step 4: Rinse at 110°F (43.3°C) with clear water.
Step 5: Sanitize using your SOP.
Step 6: Air-dry.

Chemicals

When you are working with chemicals (poisonous and toxic), prerequisite programs need to be in place and followed in order to prevent a chemical contamination or misuse. All operations should have a chemical management plan clearly stating that only approved chemicals necessary to the establishment should actually be in the establishment. Your program needs to outline the specific **storage** procedures of all chemicals in a secure cabinet away from all food and utensils. The prerequisite programs also must illustrate the **proper use** of the chemicals. According to the 2005 FDA Model Food Code, medicines necessary for the health of employees may be allowed in a food establishment, but they should be labeled and stored to prevent contamination of food and food-contact surfaces. All chemicals should bear a legible manufacturer's label. All spray bottles, buckets, and working containers must be **clearly labeled** with the common name of the chemical. Make sure your chemicals are not being shipped on the same truck or pallet as food. Have your supplier verify that food is protected from chemical contamination during shipment. Any food that has been cross-contaminated with chemicals should be rejected or discarded immediately. Discard chemicals used in working containers and mop buckets in an appropriate service sink to prevent contamination of food and food-contact surfaces.

STAR KNOWLEDGE EXERCISE: CLEANING AND SANITIZING SOP

In the space provided, list the instructions, monitoring, corrective action, verification, and record keeping needed for the Cleaning and Sanitizing SOP.

SOP: Cleaning and Sanitizing (Exercise)

Purpose: To prevent foodborne illness by improper cleaning and sanitizing.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cleaning, sanitizing, cross-contamination

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

PEST CONTROL

The pest control prerequisite program should define the established pest control system and the use of a pest control log, address the grounds surrounding your facility, block pest access into the facility, and monitor and maintain facilities on a regular basis. This prerequisite program needs to work in cooperation with your licensed pest control operator (PCO). Your PCO should thoroughly survey and inspect the interior and exterior of your facility, develop a customized program based on detected problems, execute an effective treatment plan, and, finally, put preventative measures in place to maintain control over pests that may enter your facility during deliveries. Let's go into further detail for your pest control prerequisite program:

- ★ **Establish a pest control system.** This system must include routine inspections as well as daily cleaning as described in the master cleaning schedule. The chemicals and pesticides used to control the pests must be locked in a cabinet. Keep a copy of the corresponding Material Safety Data Sheets (MSDS) on the premises. Dispose of empty containers according to local regulations and manufacturer's directions.

- ★ **Use a pest control log.** Document the pest control actions taken by your PCO. File records with HACCP records.
- ★ **Maintain the grounds in good condition.** Properly landscape the outside of your facility. For example, tall grass provides excellent nesting and hiding places for pests.
- ★ **Block access of pests into facility.** Keep windows and doors closed. Seal all openings into the facility to prevent future entry of pests, rodents, or pets. Ensure that any rodents/pests that may have entered the facility are no longer present. Remove dead pests and sanitize any food-contact surfaces that have come in contact with pests.
- ★ **Monitor and maintain facilities regularly.** Condition of the physical structure of the establishment should be in compliance with local building and occupancy codes in a manner that does not compromise the safe and sanitary handling of food and equipment and the safety of employees. Conduct routine inspection of the facility.

SERVING FOOD AND OPERATING SELF-SERVICE BARS

SERVING FOOD

Can you answer **YES** to any of these questions?

- ★ Are dinner plates and/or coffee cups stacked when serving food and drink to customers?
- ★ Are the server's fingers on the edge of the plate in the food?
- ★ Are customers served, tables cleared, the phone answered, and payments taken without washing hands?
- ★ Are rolls, unwrapped butter, and uneaten garnishes (pickles) from plates recycled?
- ★ Are utensils, towels, or order pads stored in pockets or waistband?

If you answered YES to any of these questions, now is the time to start serving food safely. Don't let food safety end in the kitchen! Everyone in the foodservice operation can play an important role in food safety. Servers should never stack dinner plates and cups on top of one another, or on arms, or carry too many in one hand. It is a surefire way to cross-contaminate foods. Today's customer is more educated and will be more aware of servers who bus tables and then touch plates or glasses as they deliver food without washing their hands between each task. This same customer is also aware of the server who answers the phone, writes down an order, prepares the food, rings the register, and collects the money while wearing the same pair of gloves he or she wore when going through the same routine for the three previous customers. Think about the serving practices that need improvement in your foodservice operation.

It is very important not to **reuse** food like rolls, unwrapped butter, and uneaten pickle garnishes. The safest rule to follow is that any food that leaves your foodservice or your control should **never** be served to another customer.

You should always carry all utensils by the handle, carry all glasses by the side, and carry all plates from the bottom. Do not store utensils and cloths in your pockets or in the waistband of your clothes.

STAR KNOWLEDGE EXERCISE: SERVING FOOD SOP

In the space below, provide information for the instructions, monitoring, corrective action, verification, and record keeping needed for a Service SOP.

SOP: Serving Food (Exercise)

Purpose: To prevent foodborne illness by serving food properly.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Hand washing, cross-contamination

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SELF-SERVICE AREAS

Although many customers enjoy the convenience of self-service areas, some of them are not aware of the dangers that they inflict on those salad bars, beverage stations, condiment areas. Since we can not "train" a customer on how to properly and safely use these areas, signage is important. "Please use a new plate when returning to the salad bar."

It is also very important that employees are vigilant in maintaining all self-service areas.

- ★ Ensure every item on a buffet has its own serving utensil.
- ★ Every item must be labeled, so customers won't "taste it" for identification purposes.
- ★ Maintaining the cleanliness of the area without contaminating any food with cleaner.
- ★ Monitoring the customers at the self-service area and eliminating any item that has been touched, tasted, or returned because it has now been contaminated.

STAR KNOWLEDGE EXERCISE: SELF-SERVICE AREAS SOP

In the space provided, list the directions for instructions, monitoring, corrective action, verification, and record keeping needed for self-service areas.

SOP: Self-Service Areas (Exercise)

Purpose: To prevent foodborne illness by preventing contamination in self-service areas.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Hand washing, cross-contamination

Instructions:

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Monitoring:

Corrective Action:

Verification and Record Keeping:

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

PREREQUISITE PROGRAMS STAR CONCLUSION

If you know how to handle the following situations, you will ensure that your food is safe. As mentioned previously, foods may become unsafe accidentally because of cross-contamination, poor personal hygiene, improper cleaning and sanitizing, and time/temperature abuse. It's important that you keep the food, yourself, other employees, and your customers safe at all times. Now that you've read this chapter, let's see how much you know about food safety.

ARE YOU A FOOD SAFETY "SUPERSTAR"?

Match the following scenarios to the area(s) of concern related to the food safety practices listed.

A. Prevent cross-contamination.

B. Demonstrate proper personal hygiene.

C. Use proper cleaning and sanitizing procedures.

D. Monitor and take corrective action for time and temperature.

Situation/scenario	Identify the area(s) of concern (A-D) from the list above	What do you do to correct the situation? Make it a "REAL" solution!
1. A serving utensil falls on the floor.		
2. An employee wore a dirty uniform to work.		
3. You are stocking shelves and notice the date on a carton of shell eggs is expired.		
4. It is 3 p.m. and you find a pan of sausage on the prep table left out since breakfast. Breakfast ended at 11 a.m.		

(continues)

Situation/scenario	Identify the area(s) of concern (A-D) from the list on page 73	What do you do to correct the situation? Make it a "REAL" solution!
5. A fellow manager comes out of the bathroom. You see her tying her apron.		
6. A customer returns a meatball sandwich because it is cold.		
7. The sanitizer solution is supposed to be 200 ppm (parts per million). You see a new coworker set up the three-compartment sink, but he uses too much sanitizer.		
8. A customer is allergic to fish. The server tells the cook that her customer has a fish allergy. The customer ordered a hamburger but there is only one spatula on the production line that is used for everything.		
9. A employee is angry with a disgruntled customer and spits on the customer's plate.		
10. Right before closing, you have your employee cleaning the walls in the food service area. A customer rushes in and places an order.		

SUMMARY OF FOOD SAFETY STANDARD OPERATING PROCEDURES (SOPs)

The following USDA SOPs were completed during the various exercises in this Star Point. These completed versions can be compared to what you included. You can customize completed SOP examples as needed.

SOP: Purchasing (Sample)

Purpose: To prevent contamination of food and to ensure safe foods are served to customers by purchasing food products from approved suppliers. These suppliers must be approved by appropriate regulatory services.

Scope: This procedure applies to foodservice managers who purchase foods from approved suppliers.

Key Words: Approved suppliers, regulatory services

Instructions:

Contact regulatory services to ensure you are purchasing foods from approved suppliers. To find out if a supplier is approved, call

- ★ CDC Food Safety Office—404-639-2213 or visit www.cdc.gov
- ★ EPA—202-272-0167 or visit www.epa.gov
- ★ FSIS—888-674-6854 or visit www.fsis.usda.gov
- ★ FDA—888-463-6332 or visit www.cfsan.fda.gov

1. Domestic/imported food (including produce, bottled water, and other foods) *but not meat and poultry*	★ Evidence of regulatory oversight: copy of suppliers, local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report. ★ Third-party audit results [many vendors now provide third-party guarantees, including NSF International or American Institute of Baking (AIB)]. ★ Microbiological or chemical analysis/testing results. ★ Person-in-the-plant verification (i.e., chain food facilities may have their own inspector monitor food they buy). ★ Self-certification (guarantee) by a wholesale processor based on HACCP. ★ For raw agricultural commodities such as produce, certification of Good Agricultural Practices or membership in a trade association such as the United Fresh Fruit and Vegetable Association. ★ A copy of a wholesale distributor or processor's agreement with its suppliers of food safety compliance.
2. Domestic/imported meat, poultry, and related products such as meat- or poultry-containing stews, frozen foods, and pizzas	★ USDA mark on meat or poultry products ★ Registration of importers with USDA
3. Fish and Fish Products	★ Evidence of regulatory oversight: copy of suppliers' local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report ★ Third-party audit results ★ Person-in-the-plant verification ★ Self-certification (guarantee) by a wholesale processor based on HACCP ★ A copy of a wholesale distributor or processor's agreement with its suppliers of HACCP compliance. ★ U.S. Department of Commerce (USDC) approved list of fish establishments and products located at seafood.nmfs.noaa.gov
4. Shellfish	★ Shellfish tags ★ Listing in current *Interstate Certified Shellfish Shippers* publication ★ Gulf oyster treatment process verification if sold between April 1 and October 31 (November 1 to March 31 certification may be used in lieu of warning signs) ★ USDC-approved list of fish establishments and products located at seafood.nmfs.noaa.gov

5.	Drinking water (nonbottled water)	★ A recent certified laboratory report demonstrating compliance with drinking water standards ★ A copy of the latest inspection report
6.	Alcoholic beverages	★ Third-party audit results ★ Self-certification (guarantee) by a wholesale processor based on HACCP ★ Person-in-the-plant verification ★ Evidence of regulatory oversight: copy of suppliers' local enforcement agency permit, state or federal registration or license, or a copy of the last inspection report ★ A copy of a wholesale distributor or processor's agreement with its suppliers of food safety compliance

Monitoring:

1. Inspect invoices or other documents to determine approval by a regulatory agency.
2. Food service managers should be encouraged to make frequent inspections of the suppliers' on-site facilities, manufacturing facilities, and processing plants/farms. Inspections determine cleanliness standards and ensure that HACCP plans are in place.

Corrective Action:

Food service purchasing managers must find a new supplier if the supplier is not approved by the above regulatory services.

Verification and Record Keeping:

The food service purchasing manager will maintain all documentation from food suppliers. Documentation must be maintained for three years plus the current year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Receiving Deliveries (Sample)

Purpose: To ensure that all food is received fresh and safe when it enters the foodservice operation, and to transfer food to proper storage as quickly as possible

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cross-contamination, temperatures, receiving, holding, frozen goods, delivery

Instructions:

1. Train foodservice employees who accept deliveries on proper receiving procedures.
2. Schedule deliveries to arrive at designated times during operational hours.
3. Post the delivery schedule, including the names of vendors, days and times of deliveries, and drivers' names.
4. Establish a rejection policy to ensure accurate, timely, consistent, and effective refusal and return of rejected goods.
5. Organize freezer and refrigeration space, loading docks, and storerooms before receiving deliveries.
6. Before deliveries, gather product specification lists and purchase orders, temperature logs, calibrated thermometers, pens, and flashlights, and be sure to use clean loading carts.
7. Keep receiving area clean and well lighted.
8. Do not touch ready-to-eat foods with bare hands.
9. Determine whether foods will be marked with the date of arrival or the "use-by" date, and mark accordingly upon receipt.
10. Compare delivery invoice against products ordered and products delivered.
11. Transfer foods to their appropriate locations as quickly as possible.

Monitoring:

1. Inspect the delivery truck when it arrives to ensure that it is clean, free of putrid odors, and organized to prevent cross-contamination. Be sure refrigerated foods are delivered on a refrigerated truck.
2. Check the interior temperature of refrigerated trucks.
3. Confirm vendor name, day and time of delivery, as well as driver's identification before accepting delivery. If the driver's name is different than what is indicated on the delivery schedule, contact the vendor immediately.
4. Check frozen foods to ensure that they are all frozen solid and show no signs of thawing and refreezing, such as the presence of large ice crystals or liquids on the bottom of cartons.
5. Check the temperature of refrigerated foods.
   - ★ For fresh meat, fish, dairy, and poultry products, insert a clean and sanitized thermometer into the center of the product to ensure a temperature of 41ºF (5ºC) or below.
   - ★ For packaged products, insert a food thermometer between two packages, being careful not to puncture the wrapper. If the temperature exceeds 41ºF (5ºC), it may be necessary to take the internal temperature before accepting the product.
   - ★ For eggs, the interior temperature of the truck should be 45ºF (7.2ºC) or below.

6. Check dates of milk, eggs, and other perishable goods to ensure safety and quality.
7. Check the integrity of food packaging.
8. Check the cleanliness of crates and other shipping containers before accepting products. Reject foods that are shipped in dirty crates.

Corrective Action:

Reject the following:

★ Frozen foods with signs of previous thawing
★ Cans that have signs of deterioration—swollen sides or ends, flawed seals or seams, dents, or rust
★ Punctured packages
★ Expired foods
★ Foods that are out of the safe temperature zone or deemed unacceptable by the established rejection policy

Verification and Record Keeping:

The designated team member needs to record temperatures and corrective actions taken on the delivery invoice or on the receiving log. The foodservice manager will verify that foodservice employees are receiving products using the proper procedure by visually monitoring receiving practices during the shift and reviewing the receiving log at the close of each day. Receiving and corrective action logs are kept on file for a minimum of 1 year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Storage (Sample)

Purpose: To ensure that food is stored safely and put away as quickly as possible after it enters the foodservice operation

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cross-contamination, temperatures, storing, dry storage, refrigeration, freezer

Instructions: Answers

1. Freezer temperature is –10°F to 0°F (–23.3°C to –17.8°C).
2. Refrigerator temperatures are between 36°F and 39°F (2.2°C to 3.9°C).
3. Dry storage temperatures are between 50°F and 70°F (10°C and 21.1°C). Humidity is between 50 percent and 60 percent.
4. Record freezer and refrigerator temperatures on the appropriate log at the specific times.
5. Use a calibrated, clean, and sanitized thermometer (+/–2°F) or (+/– 1°C).
6. FIFO (first-in, first-out) procedures are used for storage. All items are dated upon delivery.
7. All food stored in the freezer, refrigerator, and dry storage must be covered, dated, labeled, and stored 6 inches off the floor.

8. Potentially hazardous foods are stored no more than 7 days at 41°F (5ºC) from the date of preparation.
9. Cooked and ready-to-eat foods are stored above raw foods. Store other foods based on minimum internal cooking temperature.
10. Always store food in its original container as long as it is clean, dry, and intact. If not, notify your manager, director, or person in charge.
11. Never put food in an empty chemical container. Never put chemicals in an empty food container.
12. Pesticides and chemicals are stored in a secure area away from food handling and storage areas. Never store pesticide and chemicals in the food preparation and storage areas. Always store them in a locked cabinet.

Monitoring:

1. Check frozen foods to ensure that they are all frozen solid and show no signs of thawing and refreezing, such as the presence of large ice crystals or liquids on the bottom of cartons.
2. Check the temperature of refrigerated foods.
   a. For fresh meat, fish, dairy, and poultry products, insert a clean, sanitized, and calibrated thermometer into the center of the product to ensure a temperature of 41ºF (5ºC) or below.
   b. For packaged products, insert a food thermometer between two packages, being careful not to puncture the wrapper. If the temperature exceeds 41ºF (5ºC), it may be necessary to take the internal temperature.
   c. For eggs, the ambient temperature should be 45ºF (7.2ºC) or below.
3. Check dates of milk, eggs, and other perishable goods to ensure safety and quality.
4. Check the integrity of food packaging.
5. Check the cleanliness of the dry storage room, refrigeration units, and freezer units.

Corrective Action:

1. Discard the following:
   a. Frozen foods with signs of previous thawing
   b. Cans that have signs of deterioration—swollen sides or ends, flawed seals or seams, dents, or rust
   c. Punctured packages
   d. Expired foods
   e. Foods that are out of the safe temperature zone or deemed unacceptable by the established rejection policy

Verification and Record Keeping:

Record temperature and corrective action on the appropriate storage log or chart. The foodservice manager will verify that foodservice employees are storing products using the proper procedure by visually monitoring storing practices during the shift and reviewing the storage log at the close of each day. Storage and corrective action logs are kept on file for a minimum of 1 year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Washing Hands (Sample)

Purpose: To prevent foodborne illness by contaminated hands

Scope: This procedure applies to personnel who handle, prepare, and serve food.

Keywords: Hand washing, cross-contamination

Instructions:

1. Train any individual that prepares or serves food on proper hand washing. Training may include showing a hand-washing video and demonstrating proper hand-washing procedure.
2. Post hand-washing signs or posters in a language understood by all foodservice staff near all hand-washing sinks, in food preparation areas, and in restrooms.
3. Use designated hand-washing sinks for hand washing only. Do not use food preparation, utility, and dish-washing sinks for hand washing. Do not use hand-washing sinks for food preparation, utility, or dish washing.
4. Provide warm running water, soap, and a means to dry hands. Provide a waste container at each hand-washing sink or near the door in restrooms.
5. Make hand-washing sinks accessible in any area where employees are working.
6. Hands must be washed:
   - ★ Before starting work
   - ★ During food preparation
   - ★ When moving from one food preparation area to another
   - ★ Before putting on or changing gloves
   - ★ After using the toilet
   - ★ After sneezing, coughing, or using a handkerchief or tissue
   - ★ After touching hair, face, or body
   - ★ After smoking, eating, drinking, or chewing gum or tobacco
   - ★ After handling raw meats, poultry, or fish
   - ★ After any cleanup activity such as sweeping, mopping, or wiping counters
   - ★ After touching dirty dishes, equipment, or utensils
   - ★ After handling trash
   - ★ After handling money
   - ★ After any time the hands may become contaminated
7. Use paper towel to open door when exiting the restroom.
8. Follow proper hand-washing procedures as indicated below:
   - ★ Wet hands and forearms with warm, running water (at least 100ºF / 37.8°C) and apply soap.
   - ★ Scrub lathered hands and forearms, under fingernails, and between fingers for at least 10 to 15 seconds. Rinse thoroughly under warm running water for 5 to 10 seconds.
   - ★ Dry hands and forearms thoroughly with single-use paper towels.
   - ★ Dry hands for at least 30 seconds if using a warm-air hand dryer.
   - ★ Turn off water by using paper towels.

9. Follow FDA recommendations when using hand antiseptics. These recommendations are as follows:
   - ★ Use hand antiseptics only after hands have been properly washed and dried.
   - ★ Use only hand antiseptics that comply with the 2005 FDA Model Food Code. Confirm with the manufacturers that the hand antiseptics used meet these requirements. Use hand antiseptics in the manner specified by the manufacturer.

Monitoring:

A designated employee will visually observe the hand-washing practices of the foodservice staff during all hours of operation. In addition, the designated employee will visually observe that hand-washing sinks are properly supplied during all hours of operation.

Corrective Action:

Employees that are observed not washing their hands at the appropriate times or using the proper procedure will be asked to wash their hands immediately. Employee will be retrained to ensure proper hand-washing procedure.

Verification and Record Keeping:

The foodservice manager will complete the Food Safety Checklist daily to indicate that monitoring is being conducted as specified. Maintain Food Safety Checklist for a minimum of 1 year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Personal Hygiene (Sample)

Purpose: To prevent contamination of food by foodservice employees

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Personal hygiene, cross-contamination, contamination

Instructions:

1. Train foodservice employees on the employee health policy (develop SOP for implementing an employee health policy) and on practicing good personal hygiene.
2. Follow the employee health policy.
3. Report to work in good health, clean, and dressed in clean attire.
4. Change apron when it becomes soiled.
5. Wash hands properly, frequently, and at the appropriate times.
6. Keep fingernails trimmed, filed, and maintained so that the edges are cleanable and not rough.

7. Avoid wearing artificial fingernails and fingernail polish.
8. Wear single-use gloves if artificial fingernails or fingernail polish are worn.
9. Do not wear any jewelry except for a plain ring such as a wedding band.
10. Treat and bandage wounds and sores immediately. When hands are bandaged, single-use gloves must be worn.
11. Cover a lesion containing pus with a bandage. If the lesion is on a finger, hand, or wrist, cover with a bandage and finger cot or a bandage and a single-use glove.
12. Eat, drink, use tobacco, or chew gum only in designated break areas where food or food-contact surfaces may not become contaminated.
13. Taste food the correct way:
    a. Place a small amount of food into a separate container.
    b. Step away from exposed food and food-contact surfaces.
    c. Use a teaspoon to taste the food. Remove the used teaspoon and container to the dish room. Never reuse a spoon that has already been used for tasting.
    d. Wash hands immediately.
14. Wear suitable and effective hair restraints while in the kitchen.
15. Follow state and local public health requirements.

Monitoring:

A designated foodservice employee will inspect employees when they report to work to be sure that each employee is following this SOP. The designated foodservice employee will ensure that all foodservice employees are adhering to the personal hygiene policy during all hours of operation.

Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily. Foodservice employees will record any discarded food on the Damaged or Discarded Product Log, which will be kept on file for a minimum of 1 year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Using Suitable Utensils When Handling Foods (Sample)

Purpose: To prevent foodborne illness due to hand-to-food cross-contamination

Scope: This procedure applies to foodservice employees who prepare, handle, or serve food.

Key Words: Ready-to-eat food, cross-contamination

Instructions:

1. Use proper hand-washing procedures to wash hands and exposed arms prior to preparing or handling food or at any time when the hands may have become contaminated.
2. Do not use bare hands to handle ready-to-eat foods at any time unless washing fruits and vegetables.
3. Use suitable utensils when working with ready-to-eat food. Suitable utensils may include the following:
   a. Single-use gloves
   b. Deli tissue
   c. Foil wrap
   d. Tongs, spoodles, spoons, and spatulas
4. Wash hands and change gloves:
   - ★ Before beginning food preparation
   - ★ Before beginning a new task
   - ★ After touching equipment (such as refrigerator doors) or utensils that have not been cleaned and sanitized
   - ★ After contacting chemicals
   - ★ When interruptions in food preparation occur, such as when answering the telephone or checking in a delivery
   - ★ Handling money
   - ★ Anytime a glove is torn, damaged, or soiled
   - ★ Anytime contamination of a glove might have occurred
5. Follow state and local public health requirements.

Monitoring:

A designated foodservice employee will visually observe that gloves or suitable utensils are used and changed at the appropriate times during all hours of operation.

Corrective Action:

Employees observed touching ready-to-eat food with bare hands will be retrained at the time of the incident. Ready-to-eat food touched with bare hands will be discarded.

Verification and Record Keeping:

The foodservice manager will verify that foodservice workers are using suitable utensils by visually monitoring foodservice employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily. The designated foodservice employee responsible for monitoring will record any discarded food on the Damaged and Discarded Product Log. This log will be maintained for a minimum of 1 year.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Washing Fruits and Vegetables (Sample)

Purpose: To prevent or reduce risk of foodborne illness or injury by contaminated fruits and vegetables

Scope: This procedure applies to foodservice employees who prepare or serve food.

Key Words: Fruits, vegetables, cross-contamination, washing

Instructions:

1. Train foodservice employees who prepare or serve food on how to properly wash and store fresh fruits and vegetables.
2. Wash hands using the proper procedure.
3. Wash, rinse, sanitize, and air-dry all food-contact surfaces, equipment, and utensils that will be in contact with produce, such as cutting boards, knives, and sinks.
4. Follow manufacturer's instructions for proper use of chemicals.
5. Wash all raw fruits and vegetables thoroughly before combining with other ingredients, including:
   a. Unpeeled fresh fruit and vegetables that are served whole or cut into pieces
   b. Fruits and vegetables that are peeled and cut to use in cooking or served ready-to-eat
6. Wash fresh produce vigorously under cold running water or by using chemicals that comply with the 2005 FDA Model Food Code. Packaged fruits and vegetables labeled as being previously washed and ready-to-eat are not required to be washed.
7. Scrub the surface of firm fruits or vegetables such as apples or potatoes using a clean and sanitized brush designated for this purpose.
8. Remove any damaged or bruised areas.
9. Label, date, and refrigerate fresh-cut items.
10. Serve cut melons within 7 days if held at 41ºF (5ºC) or below (see SOP for Date-Marking Ready-to-Eat, Potentially Hazardous Food).
11. Do not serve raw seed sprouts to highly susceptible populations such as preschool-age children.
12. Follow state and local public health requirements.

Monitoring:

The foodservice manager will visually monitor that fruits and vegetables are being properly washed, labeled, and dated during all hours of operation. In addition, foodservice employees will check daily the quality of fruits and vegetables in cold storage.

Corrective Action:

Unwashed fruits and vegetables will be removed from service and washed immediately before being served. Unlabeled fresh-cut items will be labeled and dated. Discard cut melons held at 41°F (5°C) or below after 7 days.

Verification and Record Keeping:

The foodservice manager will complete the Food Safety Checklist daily to indicate that monitoring is being conducted as specified in this procedure.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Time-/Date-Marking Food (Sample)

Purpose: To ensure appropriate rotation of ready-to-eat food to prevent or reduce foodborne illness such as Listeria monocytogenes

Scope: This procedure applies to foodservice employees who prepare, store, or serve food.

Key Words: Ready-to-eat food, potentially hazardous food, date marking, cross-contamination

Instructions:

1. Establish a date-marking system and train employees accordingly. The best practice for a date-marking system would be to include a label with the product name, the day or date, and time it is prepared or opened. Examples of how to indicate when the food is prepared or opened include
   a. Labeling food with a calendar date, such as “cut cantaloupe, 5/26, 8:00 a.m.”
   b. Identifying the day of the week, such as “cut cantaloupe, Monday, 8:00 a.m.,” or
   c. Using color-coded marks or tags, such as “cut cantaloupe, blue dot, 8:00 a.m.” means “cut on Monday at 8:00 a.m.”
2. Label ready-to-eat, potentially hazardous foods that are prepared on-site and held for more than 24 hours.
3. Label any processed, ready-to-eat, potentially hazardous foods when opened, if they are to be held for more than 24 hours.
4. Refrigerate all ready-to-eat, potentially hazardous foods at 41°F (5°C) or below.
5. Serve or discard refrigerated, ready-to-eat, potentially hazardous foods within 7 days.

6. Indicate with a separate label the date prepared, the date frozen, and the date thawed of any refrigerated, ready-to-eat, potentially hazardous foods.
7. Calculate the 7-day time period by counting only the days that the food is under refrigeration. For example:
   - ★ On Monday, 8/1, lasagna is cooked, properly cooled, and refrigerated with a label that reads, "Lasagna–Cooked–8/1."
   - ★ On Tuesday, 8/2, the lasagna is frozen with a second label that reads, "Frozen–8/2." Two labels now appear on the lasagna. Since the lasagna was held under refrigeration from Monday, 8/1 to Tuesday, 8/2, only 1 day is counted toward the 7-day time period.
   - ★ On Tuesday, 8/16, the lasagna is pulled out of the freezer. A third label is placed on the lasagna that reads, "Thawed–8/16." All three labels now appear on the lasagna. The lasagna must be served or discarded within 6 days.
8. Follow state and local public health requirements.

Monitoring:

A designated employee will check refrigerators daily to verify that foods are date marked and that foods exceeding the 7-day time period are not being used or stored.

Corrective Action:

Foods that are not date marked or that exceed the 7-day time period will be discarded.

Verification and Record Keeping:

The foodservice manager will complete the Food Safety Checklist daily.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Cooking PHF/TCS Foods (Sample)

Purpose: To prevent foodborne illness by ensuring that all foods are cooked to the appropriate internal temperature

Scope: This procedure applies to foodservice employees who prepare or serve food.

Key Words: Cross-contamination, temperatures, cooking

Instructions:

1. Train foodservice employees who prepare or serve food on how to use a food thermometer and cook foods using this procedure.
2. If a recipe contains a combination of meat products, cook the product to the highest required temperature.

3. Follow state or local health department requirements regarding internal cooking temperatures.

   If state or local health department requirements are based on the 2005 FDA Model Food Code, cook products to the following temperatures:

   A. 135°F (57.2°C)—Fresh, frozen, or canned fruits and vegetables that are going to be held on a steam table or in a hot box are to be held at 135°F (57.2°C).

   B. 145°F (62.8°C)—Seafood, beef, pork, and eggs cooked to order that are placed onto a plate and immediately served. (Roast 145°F/62.8°C for 4 minutes.)

   C. 155°F (68.3°C) for 15 seconds—Ground products containing beef, pork, or fish, fish nuggets or sticks, eggs held on a steam table, cubed or Salisbury steaks

   D. 165°F (73.9°C) for 15 seconds—Poultry, stuffed fish, pork, or beef, pasta stuffed with eggs, fish, pork, or beef (such as lasagna or manicotti)

Monitoring:

1. Use a clean, sanitized, and calibrated probe thermometer (preferably a thermocouple).
2. Avoid inserting the thermometer into pockets of fat or near bones when taking internal cooking temperatures.
3. Take at least **two** internal temperatures from each batch of food by inserting the thermometer into the thickest part of the product (usually the center).
4. Take at least **two** internal temperatures of each large food item, such as a turkey, to ensure that all parts of the product reach the required cooking temperature.

Corrective Action:

Continue cooking food until the internal temperature reaches the required temperature for the specific amount of time.

Verification and Record Keeping:

Foodservice employees will record product name, time, the two temperatures/times, and any corrective action taken on the Cooking–Reheating Temperature Log.

The foodservice manager will verify that foodservice employees have taken the required cooking temperatures by visually monitoring foodservice employees and preparation procedures during the shift and reviewing, initialing, and dating the temperature log at the close of each day. The Cooking–Reheating Temperature Logs are kept on file for a minimum of 1 year.

Date Implemented: _____ By: _____

Date Reviewed: _____ By: _____

Date Revised: _____ By: _____

SOP: Holding Hot and Cold PHF/TCS Foods (Sample)

Purpose: To prevent foodborne illness by ensuring that all foods are held under the proper temperature

Scope: This procedure applies to foodservice employees who prepare or serve food.

Key Words: Cross-contamination, temperatures, holding, hot holding, cold holding, storage

Instructions:

1. Train foodservice employees who prepare or serve food about proper hot- and cold-holding procedures. Include in the training a discussion of the temperature danger zone.
2. Follow state or local health department requirements regarding required hot- and cold-holding temperatures. If state or local health department requirements are based on the 2005 FDA Model Food Code:
   - ★ Hold hot foods at 135ºF (57.2°C) or above.
   - ★ Hold cold foods at 41ºF (5°C) or below.
3. Preheat steam tables and hot boxes.

Monitoring:

1. Use a clean, sanitized, and calibrated probe thermometer to measure the temperature of the food.
2. Take temperatures of foods by inserting the thermometer near the surface of the product, at the thickest part, and at other various locations.
3. Take temperatures of holding units by placing a calibrated thermometer in the coolest part of a hot-holding unit or warmest part of a cold-holding unit.
4. For hot foods held for service:
   - **a.** Verify that the air/water temperature of any unit is at 135ºF (57.2°C) or above before use.
   - **b.** Reheat foods in accordance with the Reheating for Hot Holding SOP.
   - **c.** All hot potentially hazardous foods should be 135ºF (57.2°C) or above before the food is placed for display or service.
   - **d.** Take the internal temperature of food before placing it on a steam table or in a hot-holding unit and at least every 2 hours thereafter.
5. For cold foods held for service:
   - **a.** Verify that the air/water temperature of any unit is at 41ºF (5°C) or below before use.
   - **b.** Chill foods, if applicable, in accordance with the Cooling (PHF/TCS) SOP.
   - **c.** All cold potentially hazardous foods should be 41ºF (5°C) or below before placing the food out for display or service.
   - **d.** Take the internal temperature of the food before placing it onto any salad bar, display cooler, or cold serving line and at least every 2 hours thereafter.
6. For cold foods in storage:
   - **a.** Take the internal temperature of the food before placing it into any walk-in cooler or reach-in cold-holding unit.
   - **b.** Chill food in accordance with the Cooling Potentially Hazardous Foods SOP if the food is not 41ºF (5°C) or below.
   - **c.** Verify that the air temperature of any cold-holding unit is at 41ºF or below before use and at least every 4 hours thereafter during all hours of operation.

Corrective Action:

For hot foods:

1. Reheat the food to 165ºF (73.9°C) for 15 seconds if the temperature is found to be below 135ºF (57.2°C) and the last temperature measurement was 135ºF (57.2°C) or higher and taken within the last 2 hours. Repair or reset holding equipment before returning the food to the unit, if applicable.
2. Discard the food if it cannot be determined how long the food temperature was below 135ºF (57.2°C).

For cold foods:

1. Rapidly chill the food using an appropriate cooling method if the temperature is found to be above 41ºF (5°C) and the last temperature measurement was 41ºF (5°C) or below and taken within the last 2 hours.
2. To rapidly chill the food, place the food in shallow containers (no more than 4 inches deep), cover loosely, and put on the top shelf in the back of the walk-in or reach-in cooler.

   Or use a quick-chill unit like a blast chiller.

   Or stir the food in a container placed in an ice-water bath.

   Or add ice as an ingredient.

   Or separate food into smaller or thinner portions.

   Or use a combination of these methods to cool the food as quickly as possible.
3. Repair or reset holding equipment before returning the food to the unit, if applicable.
4. Discard the food if it cannot be determined how long the food temperature was above 41ºF (5°C).

Verification and Record Keeping:

Foodservice employees will record temperatures of food items and document corrective actions taken on the Hot- and Cold-Holding Temperature Log. A designated foodservice employee will record air temperatures of coolers and cold-holding units on the Refrigeration Logs. Foodservice manager will verify that foodservice employees have taken the required holding temperatures by visually monitoring foodservice employees during the shift and reviewing the temperature logs at the close of each day. Maintain the temperature logs for a minimum of 1 year.

Date Implemented: _____ By: _____

Date Reviewed: _____ By: _____

Date Revised: _____ By: _____

SOP: Cooling (Sample)

Purpose: To prevent contamination of food by foodservice employees

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Cooling method, quick-chill

Instructions:

1. Potentially hazardous foods must be cooled to 70ºF (21.1°C) within 2 hours and to 41ºF (5°C) within an additional 4 hours, for a total of 6 hours.
2. Rapidly chill the food using an appropriate cooling method if the temperature is found to be above 41ºF (5°C) and the last temperature measurement was 41ºF (5°C) or below and taken within the last 2 hours.
3. To rapidly chill the food, place the food in shallow containers (no more than 4 inches deep), cover loosely, and put on the top shelf in the back of the walk-in or reach-in cooler.

   Or use a quick-chill unit like a blast chiller.

   Or stir the food in a container placed in an ice-water bath.

   Or add ice as an ingredient.

   Or separate food into smaller or thinner portions.

   Or use a combination of these methods to cool the food as quickly as possible.
4. Repair or reset holding equipment before returning the food to the unit, if applicable.
5. Discard the food if it cannot be determined how long the food temperature was above 41ºF (5°C).

Monitoring:

A designated foodservice employee will inspect employees and storage areas to be sure that each employee is following this SOP. The designated foodservice employee will monitor that all foodservice employees are adhering to the storage policy during all hours of operation.

Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily.

Date Implemented: _____ By: _____

Date Reviewed: _____ By: _____

Date Revised: _____ By: _____

SOP: Reheating (Sample)

Purpose: To prevent contamination of food by foodservice employees.

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: (PHF/TCS), Ready-to-eat food (RTE), preparation

Instructions:

1. An accurate, calibrated thermometer (+/– 2ºF) (+/– 1ºC) must be used to take the temperatures of potentially hazardous foods.
2. Discard foods if
   a. They are held in the temperature danger zone (41ºF – 135ºF or 5ºC – 57.2ºC) for more than 4 hours.
   b. It cannot be determined how long the food temperature was below 135ºF (57.2ºC).
   c. They have been cooled too slowly.
   d. They are not reheated to 165ºF (73.8ºC) (in the thickest part) within 2 hours.
3. Potentially hazardous foods must be cooled to 70ºF (21.1ºC) within 2 hours and to 41ºF (5ºC) within an additional 4 hours, for a total of 6 hours.
4. Reheat food to 165ºF (73.8ºC) or higher for at least 15 seconds within 2 hours if it seems the food will not cool to 70ºF (21.1ºC) within 2 hours. Serve the food immediately or begin the cooling process; use practical means to speedily cool.
5. If reheated in a microwave, foods must be reheated to an internal temperature of 165ºF (73.8ºC) and should stand for 2 minutes (this allows the heat to spread evenly throughout the food). Food should be stirred or rotated when possible.
6. Foods are to be labeled with the date and time of preparation before storing.
7. Refrigerated, potentially hazardous, ready-to-eat foods that are held for more than 24 hours after preparation must be used within 7 days or less if the food is held at 41ºF (5ºC) or lower. However, they must be used within 4 days from the preparation date if they are held at 45ºF (7.2ºC) or lower.
8. To reduce temperatures, potentially hazardous foods are cooled with an ice paddle, in an ice bath, or in shallow pans.

Monitoring:

A designated foodservice employee will observe employees following this SOP. The designated foodservice employee will monitor that all foodservice employees are adhering to the proper reheating practices during all hours of operation. The Reheating Log will be completed and reviewed.

Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded. The Corrective Action log will be completed.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily and review the Reheating and Corrective Action Logs.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Cleaning and Sanitizing (Sample)

Purpose: To prevent contamination of food by foodservice employees

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Kitchenware, fixed equipment, sanitizing, contamination

Instructions:

1. Train foodservice employees on how to:
   a. Properly wash, rinse, and sanitize kitchenware after each use.
   b. Clean equipment that handles potentially hazardous foods at least every 4 hours.
2. Ensure that the third sink of the three-compartment sink is used for sanitizing and that items are sanitized by being immersed in either:
   a. Hot water temperatures that vary based on regulatory requirements from 171°F to 180°F (77.2°C to 82.2°C) for 30 seconds or
   b. A properly mixed chemical sanitizing solution for the recommended time.
3. If using a machine with hot-water sanitizing, the wash water temperatures 150°F to 165°F (65.5°C to 73.9°C) and the sanitizing water 165°F to 194°F (73.9°C to 90°C) temperatures are checked, recorded, and maintained daily. (Temperatures vary depending on type of equipment.)
4. For fixed equipment, removable parts are removed, washed, rinsed, and sanitized by immersion after each use, and nonremovable food-contact surfaces are washed, rinsed, and sanitized with a cloth.
5. Sanitizing solution for worktables is kept in a labeled container and changed at least every 2 hours, frequently depending on use.

Monitoring:

A designated foodservice employee will inspect employees as they work to be sure that each employee is following this SOP. The designated foodservice employee will monitor that all foodservice employees are adhering to the cleaning and sanitizing policy during all hours of operation.

Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded, and affected equipment will be cleaned.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Serving Food (Sample)

Purpose: To prevent contamination of food by foodservice employees who are serving food

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: Hand washing, cross-contamination, sanitize

Instructions:

1. Hand washing must be monitored and enforced before the food handler is allowed to prepare or serve food.
2. Food handlers must be made aware of poor personal habits, such as touching the mouth, face, hair, dirty apron, or dirty cloth—they may be sources of cross-contamination.

Employees must be trained

1. Not to touch plates, utensils, drinking glasses or cups where the customer's food or mouth will come in contact with the surface.
2. When dishing a customer plate, to wipe drips with a clean cloth or fresh paper towel. The counter cloth should not be used so as to prevent cross-contamination.
3. To use sanitized utensils to handle food, not their bare hands.
4. To use proper serving utensils with long handles so as to prevent handles from coming in contact with food.
5. When scoop and ladles are not in use, to store them in the food with the handle out. Tongs must be stored on a dry, clean surface or in a separate pan.
6. To use gloves for some operations involving handling ready-to-eat foods and for which utensils are not practical, such as sandwich making. Gloves must be changed under the same conditions as hand washing.
7. To be aware of related duties that require hand washing before continuing with service, such as:
   a. Picking up an item from the floor
   b. Handling soiled dishes and linens
   c. Answering the telephone
   d. Handling cash

At self-service stations:

1. Use sneeze guards to protect food.
2. Provide sufficient long-handled utensils so that the handles do not come in contact with the food.
3. Don't overfill containers so that food comes in contact with utensil handles.
4. Require that customers use a fresh plate with each return to the self-service station.
5. Discourage eating or picking with hands at the station.
6. Constantly monitor the customers while they are at the station to prevent cross-contamination of food at the self-service station.

Monitoring:

A designated foodservice employee will inspect employees while they are serving to be sure that each employee is following this SOP. The designated foodservice employee will monitor that all foodservice employees are adhering to the service policy during all hours of operation.

Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____

SOP: Food Safety for Self-Service Areas (Sample)

Purpose: To prevent contamination of food by foodservice employees

Scope: This procedure applies to foodservice employees who handle, prepare, or serve food.

Key Words: PHF/TCS, ice bath, blast chiller

Instructions:

1. Separate raw meat, fish, and poultry from cooked and ready-to-eat food.
2. Monitor customers for unsanitary hygiene practices, such as the following:
   - ★ Tasting items.
   - ★ Handling multiple breads with their bare hands.
   - ★ Putting fingers directly into the food.
   - ★ Reusing plates and utensils; instead, hand out fresh plates to customers.

3. Label all food items.
4. Maintain proper temperatures.
   - ★ PHF/TCS must be cooled to 70ºF (21.1°C) within 2 hours and to 41ºF (5°C) within an additional 4 hours, for a total of 6 hours.
   - ★ Rapidly chill the food using an appropriate cooling method if the temperature is found to be above 41ºF (5°C) and the last temperature measurement was 41ºF (5°C) or below and taken within the last 2 hours.
   - ★ Place food in shallow containers (no more than 4 inches deep) and *uncovered* on the top shelf in the back of the walk-in or reach-in cooler.
   - ★ Use a quick-chill unit such as a blast chiller.
   - ★ Stir the food in a container placed in an ice-water bath.
   - ★ Add ice as an ingredient.
   - ★ Repair or reset holding equipment before returning the food to the unit, if applicable.
   - ★ Discard the food if it cannot be determined how long the food temperature was above 41ºF (5°C).
   - ★ Separate food into smaller or thinner portions.
   - ★ When refilling items, never mix old food with new food.

Monitoring:

A designated foodservice employee will inspect employees to be sure that each employee is following this SOP. The designated foodservice employee will monitor all self-service areas during all hours of operation.

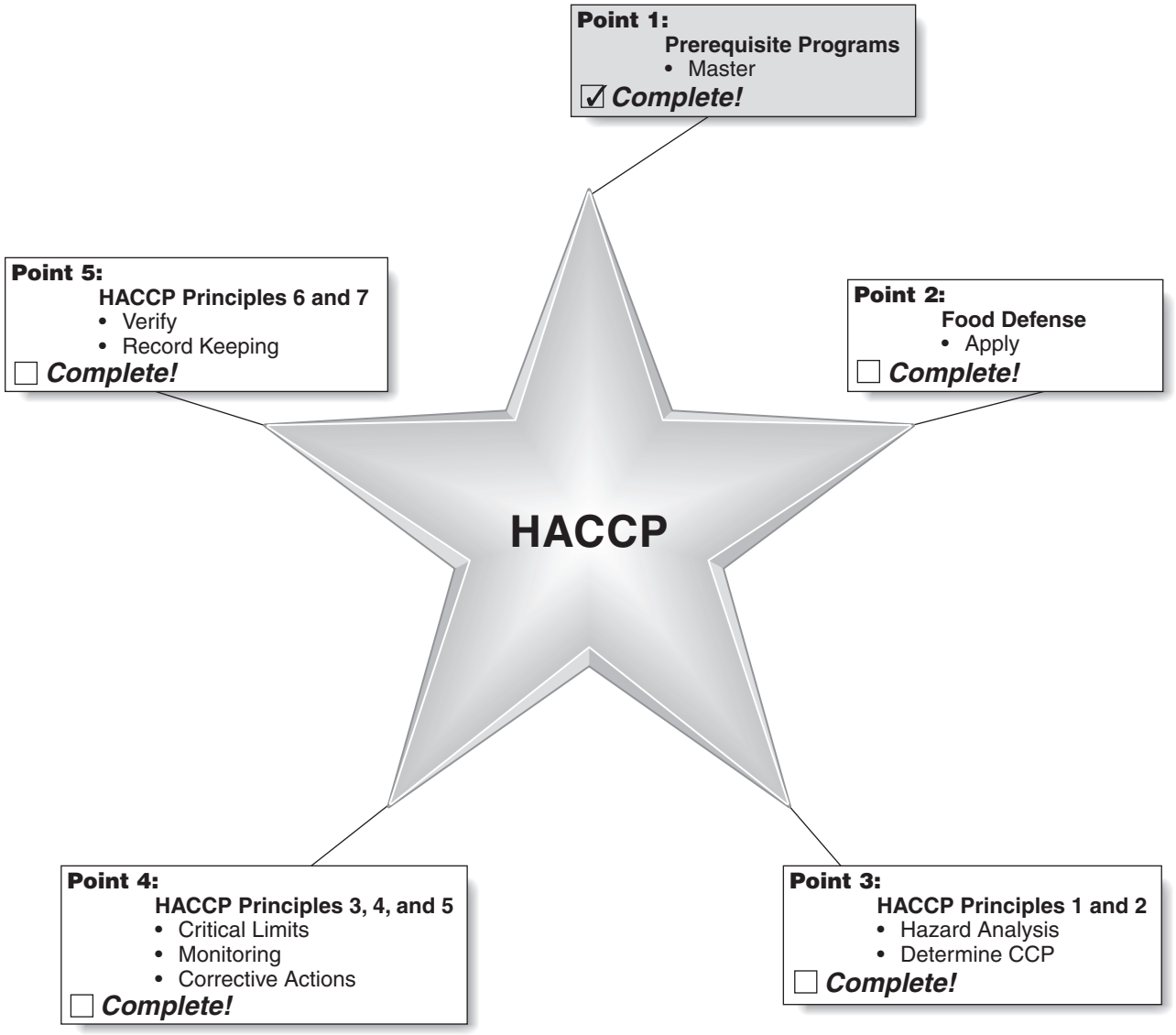
Corrective Action:

Any foodservice employee found not following this procedure will be retrained at the time of the incident. Affected food will be discarded.

Verification and Record Keeping:

The foodservice manager will verify that foodservice employees are following this policy by visually observing the employees during all hours of operation. The foodservice manager will complete the Food Safety Checklist daily.

Date Implemented: _____ By: _____
Date Reviewed: _____ By: _____
Date Revised: _____ By: _____:


Point 1:
Prerequisite Programs
• Master
☑ Complete!
Point 2:
Food Defense
• Apply
☐ Complete!
Point 3:
HACCP Principles 1 and 2
• Hazard Analysis
• Determine CCP
☐ Complete!
Point 4:
HACCP Principles 3, 4, and 5
• Critical Limits
• Monitoring
• Corrective Actions
☐ Complete!
Point 5:
HACCP Principles 6 and 7
• Verify
• Record Keeping
☐ Complete!
HACCP