

Orientation to School Nutrition Management

Food Safety

Instructor's Manual

Time: 1 ½ hours

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Key Area: 2
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Institute of Child Nutrition

The University of Mississippi

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VISION

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Professional Standards

FOOD SAFETY AND HACCP TRAINING – 2600

Employee will be able to effectively utilize all food safety program guidelines and health department regulations to ensure optimal food safety.

2620-Practice general food safety procedures.

Key Area 2: Operations

Lesson Objectives

At the end of this training, participants will be able to accomplish the following:

1. Describe good personal hygiene practices that reduce the risk of foodborne illness outbreaks.
 - a. Demonstrate proper handwashing procedures.
 - b. Describe the importance of no bare hand contact of ready to eat foods.
 - c. Understand how to handle workplace illness.

2. Describe best practices for keeping food safe throughout the food service process.
 - a. Explain safe food temperatures for hot and cold foods.
 - b. Understand proper cleaning and sanitizing techniques.
 - c. Explain how to calibrating thermometers
 - d. Define the temperature danger zone.

3. Describe the components of a Food Safety Program
 - a. Describe the principles of a Hazard Analysis Critical Control Point (HACCP) system.
 - b. Comprehend how the process approach is used to develop food safety plans.
 - c. Describe how Standard Operating Procedures (SOPs) are used in the School Nutrition Program.

Introduction

SHOW SLIDE: Orientation to School Nutrition Management: Food Safety

SAY: *Orientation to School Nutrition Management: Food Safety* is an overview course designed by the Institute of Child Nutrition (ICN) to highlight important aspects of food safety and encourage further education on the topic. This course was developed for new school nutrition directors and managers by providing a basic understanding of food safety enabling them to begin the job using safe food handling practices.

SHOW SLIDE: Overview

SAY: This section of *Orientation to School Nutrition Management* is **not** in-depth food safety training. We will talk briefly about personal hygiene, important food safety practices, proper cleaning and sanitizing, and creating a food safety program in your school. ICN encourages participants to seek more education on the topic of food safety. For more information and training on food safety, please visit the ICN website, **www.theicn.org**, to download all our materials free of charge. Several ICN food safety resources will be referenced during this session to provide more information on the topics discussed, materials for training your staff, and a list of additional food safety resources.

Ensuring the food served to children in schools is safe is crucial to any school nutrition program. Whether it is an outbreak of a foodborne illness or a hazard in a food, every action made by school nutrition employees impacts the safety of the meals that are prepared and served.

SHOW SLIDE: Foodborne Illness

SAY: A foodborne illness is an illness that results from eating contaminated food and drinking contaminated liquids. A foodborne outbreak is the occurrence of two or more cases of a similar illness resulting from ingestion of a common food. Over 40 different kinds of pathogens, including bacteria, viruses, parasites, and molds may occur in food and can cause foodborne illness. Foodborne illness also can be caused by other agents, such as chemicals, toxins, and metals. Foodborne illness is sometimes referred to as food poisoning or “stomach flu.” Employees should have food safety training to reduce the risk of a foodborne illness outbreak.

SHOW SLIDE: Food Safety is Top Priority

ASK: School nutrition programs are now required by law to have a food safety programs. What are some other reasons why food safety is a top priority in school nutrition programs?

DO: Pause to allow for participant's responses and write them on a flip chart.

FEEDBACK:

- Make sure we are providing the safest food possible.
- To prevent foodborne illness outbreaks.
- Let us know what we are doing right and help us correct what we are doing wrong.
- Identify where we need to make changes to our procedures and training.
- Provide us with on-the-spot recommendations to protect food.

Personal Hygiene

Describe good personal hygiene practices that reduce the risk of foodborne illness outbreaks.

DO: Refer participants to the *Employee Health and Personal Hygiene Schools* resource folder.

SAY: The information in this section can be found in the *Employee Health and Personal Hygiene Schools* resource folder which contains a guide for school nutrition directors and managers, a guide for school nutrition staff, and a training video mini-series. All these resources are available on the ICN website.

SHOW SLIDE: *Personal Hygiene*

SAY: Personal hygiene has been identified in many research projects as one of the food safety practices that is most needed and often is not followed. Two studies by the Food and Drug Administration (FDA) identified personal hygiene as one of three areas where school nutrition employees often are not in compliance with proper practices. Because there are compliance problems in school nutrition, this is an area that we need to discuss. All school nutrition programs that have Standard Operating Procedures (SOPs) should have one to cover personal hygiene. Let's look at a sample SOP.

DO: Go through the SOP and discuss various areas where there are usually personal hygiene requirements.

- Employee health
- Employee dress, including uniforms, shoes, and aprons
- Hair restraints
- Fingernails
- Jewelry
- Wounds and bandages
- Eating, drinking, and chewing gum
- Appropriate tasting methods

Describe proper handwashing procedures.

SHOW SLIDE: Importance of Proper Handwashing

SAY: Handwashing is one aspect of personal hygiene, and one of the most important practices for school nutrition employees. Handwashing reduces contamination on hands and prevents it from passing to food. Organisms can get on hands from a number of sources—such as a dirty cutting board, a pencil, or a refrigerator handle—and then move from hands to food or equipment during preparation and service. An infected school nutrition employee or one with unclean hands, or exposed portions of arms or fingernails can contaminate food, potentially causing illness. Food equipment contaminated by unclean hands can further spread illness through cross contamination. Cross contamination is the transfer of bacteria or viruses from hands to food, food to food, or equipment and food contact surfaces to food. We will now talk about how to properly wash hands and when hands should be washed. We will watch a short video on handwashing procedures.

SHOW SLIDE: Video: Handwashing to Prevent the Spread of Disease

DO: Steps for Effective Handwashing Activity

Instructions: Show the *Washing Hands to Prevent the Spread of Disease* video. After the video, ask a volunteer to come up to the front. Have the participants walk the volunteer through the steps for proper handwashing with the volunteer demonstrating the steps as instructed. This activity should take 5 minutes.

SHOW SLIDE: Proper Handwashing Activity

DO: Show video.

SAY: This video provided a quick look at how to wash your hands. Would someone please volunteer and come up to the front of the class? I am going to ask the class to repeat the steps in order for effective handwashing. Our volunteer will demonstrate the steps for us as instructed by the class. The steps are also available in the **Handwashing** handout in your Participant's Workbook.

DO: Have a volunteer come up. Ask the participants for each of the steps, and have the volunteer demonstrate the step. Make sure to praise the volunteer and thank them for their help. The steps of effective handwashing are:

1. Use soap and running water.
2. Lather hands with soap up to elbows and scrub for 10–15 seconds.
3. Wash backs of hands, wrists, between fingers, and under fingernails.
4. Rinse hands under running water.
5. Dry hands with paper towel or air dryer.
6. Turn off water with paper towel and use the paper towel to open the door before discarding.

ASK: When do you need to wash your hands during the day?

FEEDBACK:

- Whenever hands are soiled
- Before beginning food preparation
- Before putting on disposable gloves
- Before serving customers
- After arriving at work
- After breaks
- After using the restroom (and again at the kitchen handwashing sink)
- After eating, drinking, or chewing gum
- After using the telephone
- After using a handkerchief or tissue
- After handling inventory
- After handling raw food
- After touching or scratching areas of the body, such as ears, mouth, nose, or hair
- After coughing or sneezing
- After clearing or cleaning tables
- After clearing, scraping, or washing dirty plates or utensils
- After handling garbage

- After handling money on the cafeteria line
- After touching dirty aprons, clothing, or surfaces
- After using chemicals

DO: Say any answers that were not spoken by the participants

Locate the *How to Properly Wash Your Hands* poster in the toolbox materials.

SAY: ICN has many resources to help you remember how to wash your hands properly. The *How to Properly Wash Your Hands* poster provides both written and visual reminders to practice effective handwashing. This poster is available for download for free on the ICN website.

DO: Pass the poster around so participants can look at it as you move on with the lesson.

A Flash of Food Safety: <https://www.fns.usda.gov/ofs/food-safety-flashes>

SAY: You should have a set of Manager's Corner handouts in your notebook. Find *Manager's Corner - Personal Hygiene: Handwashing*. This is a sample of the *Manager's Corner: Food Safety – Series 1* training resource which contains roughly 15 minute lessons designed for directors/managers to use in training their staff. Every lesson plan contains the following:

- learning objective,
- statement explaining the importance of the topic,
- list of materials,
- instructions on how to present the information,
- questions to ask staff, and
- additional resources to strengthen or refresh the knowledge of the director/manager.

The entire resource is available on our website.

Explain why there should be no bare hand contact with ready-to-eat foods and describe how to properly use gloves.

SHOW SLIDE: No Bare Hand Contact with Ready-to-eat Foods

SAY: Bare hand contact with ready-to-eat foods (i.e., food that is eaten without further washing or cooking) can result in contamination of food and contribute to foodborne illness outbreaks. Therefore, school nutrition employees should always use suitable utensils such as spatulas, tongs, single-use gloves, or dispensing equipment when handling ready-to-eat foods.

SHOW SLIDE: Gloves

SAY: Many state food codes require that school nutrition employees wear disposable or single-use gloves when handling ready-to-eat foods, or those foods that will not receive any additional preparation such as cooking. Disposable gloves provide a second line of defense against cross contamination, but only when they are used properly. There are several guidelines for using gloves that should be followed by school nutrition employees. Please turn in your Participant's Workbook to the **Use Disposable Gloves Properly** handout and follow along with these guidelines.

- Use disposable gloves that fit well.
- Wash hands before and after use of disposable gloves.
- Wear gloves when preparing and serving ready-to-eat foods such as fresh fruits and vegetables, sandwiches, and salads.
- Change gloves frequently and between tasks.
- Never handle money and food while wearing the same gloves.
- Change gloves after sneezing, wiping nose, touching hair, or other contact with germs.
- Never reuse or wash gloves.
- Dispose of soiled or torn gloves after use.
- If gloves are used to handle raw animal food (meat, poultry, fish, eggs) the gloves can only be used for that task. They must be changed, and hands must be washed before working with different raw meats or ready-to-eat food.

ASK: Why would it be important for disposable gloves to fit well?

FEEDBACK: If large gloves are used, there is a possibility that the fingertips of the gloves could be cut off, creating a potential physical hazard.

ASK: Why is it important to wash hands before putting on gloves?

FEEDBACK: It helps prevent cross contamination.

ASK: Why is “changing gloves between tasks” a guideline?

FEEDBACK: It helps prevent cross contamination.

SAY: For more detailed information on bare hand contact with ready-to-eat food and gloves, please refer to our *Employee Health and Personal Hygiene for School Nutrition Managers and Directors Guide*. To help train your staff in proper glove use and personal hygiene, please refer to *Manager’s Corner - Personal Hygiene: Proper Glove Use and Attire*.

**List common foodborne illnesses and what causes them.
Describe ways that school nutrition employees can prevent foodborne illness.**

SHOW SLIDE: *The “Big 6” Foodborne Pathogens*

SAY: There are many types of foodborne illnesses. Some are more common than others. Today we will briefly talk about the “Big 6” foodborne pathogens. The FDA has singled out these six because they are highly contagious, can cause severe illness, and easily transmitted through food. The “Big 6” foodborne pathogens are:

- Norovirus
- Hepatitis A virus
- *Shigella* spp.
- Shiga toxin-producing *Escherichia coli* (STEC)
- *Salmonella typhi*
- Nontyphoidal *Salmonella* (NTS)

Please turn in your Participant’s Workbook to **Common Foodborne Illnesses** chart.

DO: Walk through some of the sections on the Big 6 symptoms, time of onset of symptoms, foods that are likely to be involved, and ways that employees can prevent the foodborne illness in a school nutrition program.

SAY: We did not go into detail about the Big 6 foodborne pathogens, their symptoms, the time of onset of symptoms, foods that are likely to be involved, and ways that we can prevent the foodborne illness in a school nutrition program, but this information has been made available in this chart and in the *Employee Health and Personal Hygiene* resource folder. There are other important microorganisms you should know about as a director or manager. Information about them is included on this chart.

While child nutrition professionals are not responsible for identifying the cause of a foodborne illness, we can prevent or eliminate a potential foodborne illness outbreak by gaining knowledge about how it is caused.

Describe the types of illness and symptoms of illness that food handlers must report to their supervisors.

SHOW SLIDE: *Report Symptoms*

SAY: While we are talking about practices to prevent foodborne illnesses, we need to talk about when employees should report symptoms to their supervisor. The *Food Code* states that employees should report any of the following symptoms:

- Vomiting,
- Diarrhea,
- Jaundice,
- Sore throat with fever, and
- Lesions containing pus, such as a boil or infected wound that is open and draining.

If a school nutrition employee has been diagnosed in the past three months by a health practitioner with one of the Big 6 foodborne pathogens, it needs to be reported immediately to the supervisor. If an employee has been exposed to any of these illnesses, it also needs to be reported immediately.

DO: Employee Health and Personal Hygiene Video Series Activity

Instructions: The trainer will show all three parts of the video mini-series, stopping in between each part to ask discussion questions. The questions and their possible answers are listed here. Key points from the video mini-series are in the **Employee Health and Personal Hygiene Video Key Points** handout in the Participant's Workbook – participants do not need to write anything down and should be encouraged to focus on the videos. These key points are in the Instructor's Manual in the form of discussion questions and answers for each video. This activity will take about 15 minutes.

SHOW SLIDE: Video: Reporting Illness

DO: Show the first video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 1: Reporting Illness*. After showing the video, ask participants the following discussion questions.

ASK: Discussion questions for *Part 1: Reporting Illness*

What did Chris do correctly?

FEEDBACK:

- She reported her symptoms to her supervisor.
- She did not come to work.

ASK: What symptoms should you report to your supervisor?

FEEDBACK:

- Diarrhea
- Vomiting
- Sore throat with fever
- Infected wound or boil on hands or arms
- Jaundice (yellowing of the skin and eyes)

- Diagnosis of a foodborne illness

ASK: What are the Big 6 foodborne pathogens?

FEEDBACK:

- Norovirus
- *Salmonella*
- *Salmonella* Typhi
- *E. coli*
- *Shigella*
- Hepatitis A

SAY: Good! Now, we will watch the second part of the video series. Once again, please pay attention to the video.

SHOW SLIDE: *Video: Handling Illness*

DO: Show the second video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 2: Handling Illness*. After showing the video, ask participants the following discussion questions.

ASK: Discussion questions for *Part 2: Handling Illness*

What is the difference between being excluded and restricted from work?

FEEDBACK:

- Exclusion means a school nutrition employee is not permitted to work in or enter a food preparation site. This requirement applies to areas where food is received, prepared, stored, packaged, served, vended, transported, or purchased.
- Restriction means a school nutrition employee's activities are limited to prevent the risk of transmitting a disease through food. A restricted employee cannot handle exposed

food; clean equipment, utensils, linens; or unwrapped single-service or single-use articles.

ASK: What symptoms require exclusion from work?

FEEDBACK:

- Vomiting
- Diarrhea
- Jaundice
- Diagnosed with one of the Big 6 foodborne pathogens
- Sore throat with fever if working with a highly susceptible population (i.e. preschool age children, immunocompromised people, or older adults)

ASK: What symptoms require restriction at work?

FEEDBACK:

- Sore throat with fever if **not** working with a highly susceptible population (i.e. preschool age children, immunocompromised people, or older adults)
- Open wounds or cuts on the hands or arms that are not properly covered

ASK: What are some jobs that can be performed under restriction?

FEEDBACK:

- Cashier
- Stocking canned or packaged food products
- Cleaning and maintenance outside of production kitchen

SAY: Good! Now, we will watch the final part of the video series.

SHOW SLIDE: Video: Preventing Illness

DO: Show the third video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 3: Preventing Illness*. After showing the video, ask participants the following discussion questions.

ASK: Discussion questions for *Part 3: Preventing Illness*

- What are the employee's incorrect actions that contributed to the foodborne illness outbreak?

FEEDBACK:

- She did not report her symptoms of illness to her supervisor.
- She did not wash her hands properly after throwing up in the restroom.
- She wiped her hands on her apron.
- She double gloved her hands.
- She sneezed into her gloves, did not throw her gloves away, wash her hands, or put on a new pair of gloves.
- She wiped her face with a towel and then used that towel to clean a scoop.

ASK: What are some ways to prevent a foodborne illness?

FEEDBACK:

- Report symptoms to your supervisor.
- Exclude or restrict employees based on symptoms.
- Wash hands properly and at proper times.
- No bare hand contact with ready-to-eat foods.
- Replace gloves when they become dirty or when switching tasks.

- Protect an infected cut or wound with a bandage and a single use glove.

For more detailed information on handling foodborne illness and responsibilities with reporting illnesses, please refer to our *Employee Health and Personal Hygiene for School Nutrition Managers and Directors Guide*. This resource contains the *Sample School Nutrition Employee Health and Personal Hygiene Agreement* that may be helpful in hiring staff.

Important Food Safety Practices

State the temperatures in the temperature danger zone and why it is important.

SHOW SLIDE: Temperature Danger Zone

SAY: One of the most important ways that we keep food safe is by controlling time and temperature. The temperature danger zone, which is 41 °F to 135 °F, is the temperature range where bacteria grow rapidly. Bacteria can double in number in as little as 20 minutes. At this rate, harmful bacteria that cause foodborne illness can quickly grow in food.

Instructor's Note: Different jurisdictions may have different requirements for the temperature danger zone. The *Food Code* uses the 41 °F to 135 °F guideline. If asked, the USDA's Food Safety Inspection Service uses the 40 °F to 140 °F temperature danger zone for consumer guidelines. Different states have adopted different versions of the Food Code and may have a different temperature danger zone.

SAY: Our goal in school nutrition is to keep food out of the temperature danger zone as much as possible, and when it is not possible, to limit the time that foods are in that temperature range. There are foods that need to be treated with extra care in regards to time and temperature exposure. These foods are called time and temperature control for safety foods (TCS Foods) and require these controls to limit growth of harmful microorganism or toxic formations.

SHOW SLIDE: TCS Foods

SAY: Foods that require control of time and temperature to limit pathogenic microorganism growth or toxin formation are known as time/temperature control for safety (TCS) foods. Examples include cooked meat, cut melons, cut leafy greens, cut tomatoes, and cooked rice.

You may ask why time and temperature are so critical to keeping food safe. Nutrients, water, and the acidity of these foods support bacterial growth. By limiting the time bacteria have to use these resources, you prevent bacterial growth. Cooking foods to their appropriate internal temperatures reduce bacteria numbers. By holding hot food at

or above 135 °F, it stays hot enough to prevent bacteria from growing. Likewise, by holding cold food at or below 41 °F, it stays out of the temperature range needed for bacteria growth.

Time and temperature control is important to limit the growth of microorganisms or toxin formation, therefore, it is important that school nutrition employees follow established guidelines to maintain safe food.

SHOW SLIDE: 1 Minute Challenge Activity

ASK: What do we do to keep foods at or below 41 °F?

DO: Have the participants complete the 1 Minute Challenge activity located in their Participant's Workbook. Give them 1 minute to complete the first block of how to keep cold foods cold. Review the answers with the group and then move on to the second task of listing ways to keep hot foods hot.

FEEDBACK:

- Receive refrigerated foods at or below 41 °F.
- Maintain refrigerator temperatures at or below 41 °F.
- Maintain milk coolers at or below 41 °F.
- Prepare salads, deli sandwiches, and other foods in batches.
- Serve cold food at or below 41 °F.
- Store cold foods appropriately.
 - Refrigerators
 - Milk coolers
 - Refrigerated serving lines
 - Ice around food
 - Ice packs

ASK: What do we do to keep foods at or above 135 °F?

DO: Continue to complete the 1 Minute Challenge Form in their Participant's Workbook. Give them 1 minute to complete this activity for keeping foods hot. Review the answers with the group

FEEDBACK:

- Cook food to appropriate internal temperatures.
- Batch cooking
- Using lids to reserve heat.
- Using heat lamps.
- Storing food in a warmer before serving.
- Cook food in batches near serving time (i.e. just-in-time service).
- Hold food in holding cabinets or insulated containers at or above 135 °F.
- Serve food from heated serving lines.

SAY: For more information on the temperature danger zone, refer to the *Temperature Danger Zone* food safety fact sheet. To help train your staff in foodborne illness prevention, please refer to *Manager's Corner - Temperature Danger Zone*.

Describe how to calibrate a thermometer using the ice-point method.

SHOW SLIDE: *Thermometers*

SAY: Controlling time and temperature is an important part of a school food safety plan. There are standard times and temperatures that must be used for storing foods, cooking foods, holding foods, cooling foods, and reheating foods. There is a requirement that temperatures are taken at each of these steps. Thermometers are needed to take the temperature of foods. Different thermometers are used for different situations. Document temperatures as soon as they are taken. Temperature logs should also be provided for cooling and thermometer calibration.

ASK: What happens if the temperatures taken are not accurate?

SAY: Let's walk through an example. For hamburger patties, the *Food Code* specifies that they must be cooked to an internal temperature of 155 °F. That recommendation is based on the

temperature at which *E. coli* O157:H7 is destroyed. Let's say that a cook takes the temperature of several hamburger patties and records that she cooked them to 155 °F. When the thermometer is checked, it is discovered that it measures 8 °F higher than the actual temperature. This means that the hamburger patties were only cooked to 147 °F, a temperature that is too low to kill the harmful bacteria.

This example points out the need for school nutrition employees to use only accurate thermometers for taking food temperatures. To make sure that the thermometers are accurate, they need to be calibrated.

SHOW SLIDE: Calibrating Thermometers

SAY: Thermometers should be calibrated frequently—ideally on a daily basis. Each time they are dropped, they must be calibrated again. Using the same thermometer to take temperatures of very cold and very hot foods may require that the thermometer be calibrated more frequently.

DO: Ask participants to turn to the **Ice-Water Method for Thermometer Calibration** handout. Walk through the steps for calibrating a thermometer.

SAY: We have provided the directions for using the Ice-Water Method to calibrate thermometers, but you can also calibrate a thermometer using the Boiling-Water Method. Many schools may choose to use the Ice-Water Method due to the safety concerns of dealing with boiling water. Each time that you calibrate a thermometer, you will need to record or document that you have calibrated it. You may have a thermometer calibration record that you use in your operation, or you may use the documentation form that was developed by the ICN.

SHOW SLIDE: Video: A Flash of Food Safety – Calibrating a Thermometer

SAY: Let's take a quick look at a short video on how to calibrate a thermometer.

DO: Show the video clip. **A Flash of Food Safety:** <https://www.fns.usda.gov/ofs/food-safety-flashes> - Calibrating a Thermometer

SAY: You need to use a thermometer correctly to ensure that you do not cross contaminate the food or take an incorrect temperature reading. To properly take temperatures with a thermometer, make sure to:

- Use a clean, sanitized, and calibrated thermometer,
- Avoid inserting the thermometer into pockets of fat or near bones when taking internal temperatures,
- Take at least two internal temperatures from each batch of food,
- Insert the thermometer into the thickest part of the food, and
- Record the temperature and the time that the temperature was checked.

Resources with more information on the using and calibrating thermometers include the *Using and Calibrating Thermometers Standard Operating Procedure* and the *Thermometer Information Resource*. To help train your staff in foodborne illness prevention, please refer to *Manager's Corner - Calibrate Thermometer*.

List the steps for safely handling food during flow of food service.

SHOW SLIDE: *Foodservice Process Steps*

SAY: It is important to follow basic food handling practices at each operational step. These operational steps include purchasing, receiving, storing, preparing, cooking, serving and holding, cooling, reheating, and transporting (if applicable to your facility). Basic safe food handling practices that are needed at each step include time and temperature control; employee personal hygiene; and prevention of contamination.

We will briefly talk about the important temperatures and food handling practices associated with each of these operational steps. These steps must be monitored, recorded, and have corrective actions in place to ensure that the best food safety practices are being followed. The process of taking corrective actions is an important key to any food safety program. Best phrase to remember when handling food is keep cold food cold and hot food hot!

Please turn to the **Temperatures through Food Production Chart** in your Participant's Workbook. This chart provides a quick look at some of the important temperatures and best practices required during the flow of foodservice operation. This chart is not all-encompassing

for all the operational steps and the best practices associated with them. For more information on the best practices during foodservice, please refer to our *Food Safety in Schools* training.

DO: Walk through the sections of the **Temperatures through Food Production Chart** asking people if they can think of any other best practices not mentioned on the chart.

Temperatures through Food Production

Important Temperatures	Why It Is Important	Best Practices
Purchasing		
<ul style="list-style-type: none"> • Cold food: 41 °F and below • Hot food: 135 °F and below 	Buy from vendors that have good food safety practices in place to ensure the food you purchase has not been temperature abused.	<ul style="list-style-type: none"> • Buy from reputable vendors. • Include food safety standards in purchasing agreements.
Receiving		
<ul style="list-style-type: none"> • Refrigerated food: 41 °F and below • Frozen food: at or below 32 °F • Hot food: held at or above 135 °F 	Cold foods must be received at 41 °F or below so that it is not in the temperature danger zone. Frozen food must be frozen and contain no ice crystals. Ice crystals are a sign that the food has been thawed and refrozen.	<ul style="list-style-type: none"> • Keep receiving area clean. • Inspect the delivery truck. Make sure it is clean and free of odors. Check food temperatures, paying particular attention to frozen and refrigerated products. • Look for signs of contamination and container damage. Reject damaged packages; their contents may also be contaminated or damaged. • Check for separation of raw and ready-to-eat or prepared foods during transport. • Store foods immediately.
Storing		
<ul style="list-style-type: none"> • Dry storage areas: between 50 °F and 70 °F • Refrigerated storage areas: at or below 41 °F • Deep chilling storage areas: between 26 °F and 32 °F • Freezer storage areas: between -10 °F and 0 °F 	Storing food out of the temperature danger zone assists in preserving food quality and decreases the likelihood of bacterial growth. However, dry storage items are shelf stable in the temperature danger zone because bacteria present in the sealed container is eliminated during processing.	<ul style="list-style-type: none"> • Use the First In First Out (FIFO) principle. Older products should be used first. • Store products in original packaging. Label foods with delivery date. • Keep raw foods separate from cooked or ready-to-eat products. • Store foods at least 6 inches off the floor and 6 inches away from the wall. • Keep storage areas clean, dry, and pest-free. • Store chemicals away from foods and food-related supplies. • Maintain, monitor, and record refrigerator, freezer, and dry storage room temperatures.

Important Temperatures	Why It Is Important	Best Practices
Preparing		
<ul style="list-style-type: none"> • Pre-chill ingredients for cold foods to 41 °F or below before combining with other ingredients. • Limit the preparation time of any ingredients to no more than 30 minutes at room temperature before cooking, serving, or returning to the refrigerator. 	<p>These methods prevent food from being in the temperature danger zone too long.</p>	<ul style="list-style-type: none"> • Wash hands frequently, properly, and at appropriate times. • Avoid cross contamination. • Keep foods out of the temperature danger zone. • Use batch cooking to limit the time between preparation and service. • Thaw foods properly. • Chill all cold foods as quickly as possible. • Prepare foods as close to serving time as the menu will allow.
Cooking		
<ul style="list-style-type: none"> • 165 °F – poultry, stuffing, stuffed meats, stuffed pasta, casseroles, leftovers • 155 °F – ground meats, such as hamburger, ground pork, sausage, eggs for hot holding • 145 °F – beef roasts, pork roasts, beef steaks, ham, fish • 135 °F – ready-to-eat foods taken from a commercially processed, hermetically sealed package; vegetables (frozen or canned) 	<p>Cooking foods to the correct internal temperature will destroy existing bacteria, even though it may not kill toxins or bacterial spores.</p>	<ul style="list-style-type: none"> • Avoid cross contamination. • Cook foods to the proper internal temperature for appropriate time. • Use a clean and calibrated food thermometer. • Record internal food temperature.

Important Temperatures	Why It Is Important	Best Practices
Holding and Serving		
<ul style="list-style-type: none"> • Cold food: held at or below 41 °F • Hot food: held at or above 135 °F 	<p>These temperatures keep food out of the temperature danger zone and prevent pathogen growth.</p>	<ul style="list-style-type: none"> • Avoid cross contamination. • Keep foods out of the temperature danger zone. • Monitor and record food temperatures. • Monitor the temperature of hot holding and cold holding equipment.
Cooling		
<ul style="list-style-type: none"> • Hot food must be cooled from 135 °F to 70 °F within 2 hours. If not, the food must be reheated to 165 °F for 15 seconds or discarded. • Food must be cooled within a total of 6 hours from 135 °F to 41 °F (if step one is achieved). • Foods that start at room temperature (70 °F) must be cooled to 41 °F within 4 hours. 	<p>This is the time and temperature regulations specified by the <i>Food Code</i> to safely cool foods in order to prevent bacterial growth.</p>	<ul style="list-style-type: none"> • Speed up cooling by using techniques such as: <ul style="list-style-type: none"> ○ Stirring frequently ○ Dividing food into small quantities ○ Using shallow pans ○ Using ice water baths or ice paddles whenever possible • Use a clean and calibrated food thermometer to check temperatures. • Monitor and record food temperatures during the cooling process. • Store foods appropriately – covered, labeled with product name and date prepared.
Reheating		
<p>165 °F for 15 seconds within 2 hours</p>	<p>This is the temperature and time required to kill any bacteria that may be present in the food.</p>	<ul style="list-style-type: none"> • Reheat to internal temperature of 165 °F for 15 seconds within 2 hours of less. • Monitor and record internal temperatures of foods. • Never reheat food in hot holding equipment. • Reheat food one time.
Transporting		
<p>Refer to temperatures for holding</p>		

Cleaning and Sanitizing

Describe how to mix and test chemical sanitizing solutions, and how to clean and sanitize.

SHOW SLIDE: Cleaning and Sanitizing

SAY: A clean and sanitary work space is needed to keep a food operation safe. This ensures that hazards cannot make it into the food. Cleaning and sanitizing is important to reduce the opportunity for bacteria and viruses to contaminate food. Now we need to talk about how to prepare chemical sanitizing solutions and how to manually clean and sanitize.

SHOW SLIDE: Chemical Concentrations

SAY: There are three approved sanitizers for foodservice: chlorine, quaternary ammonium, and iodine. The concentration of sanitizers is measured in parts per million (ppm). Requirements are:

1. Chlorine—50-100 ppm at 75 °F
2. Quaternary Ammonium—follow manufacturer's instructions
3. Iodine—12.5-25 ppm at 75 °F

Test strips are used to test the concentration of the sanitizers to ensure that they are strong enough to kill bacteria, but not so strong as to damage equipment materials.

SHOW SLIDE: Manual Cleaning and Sanitizing

SAY: There are three steps in the cleaning and sanitizing process.

1. Clean surfaces with warm, soapy water to remove all debris and grease film.
2. Rinse the surface with warm, clean water.
3. Sanitize the surface with sanitizing solution.

Sanitizing solutions lose effectiveness when they are contaminated with food particles or with detergent. It is important to follow to manufacturer's recommendations for how long a sanitizer will be effective over time.

Please turn in your Participant's Workbook to the **Cleaning and Sanitizing Food Contact Surfaces (Sample SOP)**. This sample SOP provides more details on cleaning and sanitizing different types of equipment and surfaces. Adapt this SOP to your school district's needs.

SAY: For more information on the proper cleaning and sanitizing, please refer to our *Food Safety in Schools* training. To help train your staff in foodborne illness prevention, please refer to *Manager's Corner - Correctly Preparing Sanitizer*.

Develop a Food Safety Program

Objective: List the components of a food safety program.

SHOW SLIDE: *Food Safety Programs*

SAY: Section 111 of the Child Nutrition & WIC Reauthorization Act of 2004 (Public Law 108-265) amended section 9(h) of the Richard B. Russell National School Lunch Act by requiring school food authorities (SFAs) to implement a food safety program for the preparation and service of school meals served to children. The food safety program must be based on all the food safety principles outlined in the U.S. Department of Agriculture guidance for the implementation of comprehensive food safety programs in schools participating in the National School Lunch Program. USDA recommends the Process Approach.

There are two components of a food safety program.

1. Written Standard Operating Procedures
2. Written food safety program for each school

Written Standard Operating Procedures guide practices and procedures for producing safe food. They address basic cleaning and sanitation programs and each step in the foodservice process (purchasing, receiving, storing, preparing, cooking, serving and holding, cooling, reheating, and transporting).

Standard Operating Procedures provide the foundation for the food safety program, and support use of the Process Approach. It is recommended that Standard Operating Procedures are written and include the following information:

- Temperature control points
- Monitoring procedures
- Corrective actions
- Suggested record keeping documents
- Verification procedures

DO: Ask participants to turn to the **Reheating Time/Temperature Control for Safety Foods (Sample SOP)**.

SAY: Please use this SOP as a reference as we walk through the parts of the SOP.

The key sections in a SOP are: purpose, instructions, monitoring, corrective actions, and verification and record keeping.

The **purpose statement** indicates why the Standard Operating Procedure is important and how it fits into the food safety program. The instructions provide a step-by-step description of procedures that should be followed. In the example, the purpose is to prevent foodborne illness by ensuring that all foods are reheated to the appropriate internal temperature.

Monitoring is the process of checking to make sure that an operation is following Standard Operating Procedures and meeting important times and temperatures for food. Documenting temperatures and times is part of the monitoring process.

Corrective Actions are specific, pre-planned actions that must be taken if a Standard Operating Procedure is not followed or if a time and temperature is not met. For example, if a cooking temperature is not met, additional cooking would be needed.

Verification is the procedure that confirms that a food safety program is working according to plan. The supervisor or kitchen manager plays an important role in verification by checking to make sure that monitoring and documentation is done. The verification process will identify changes that need to be made in the food safety program so that it will be effective.

Record Keeping is needed to document monitoring and corrective actions taken. Records should be retained for 1 year or longer if required by your state.

The Institute provides a variety of sample SOPs like the **Reheating Time/Temperature Control for Safety Foods (Sample)**. To find them on the ICN website, just type "SOP" in the search function on the main landing page. It is important to tailor SOPs to your personal school nutrition program. For example, if your operation has only has a three compartment sink, it would not be necessary to have information on using a dishmachine in your cleaning and sanitizing SOP. ICN makes them available in Word for this purpose. You also need to revisit your food safety plan regularly to verify that the components are still relevant to your school nutrition program. We are going to practice this with our next activity. It is essential that all

school employees be trained on SOPs annually to help them understand their responsibilities in the school nutrition program in maintaining a safe food environment.

To help train your staff in foodborne illness prevention, please refer to *Manager's Corner - Standard Operating Procedures*.

Identify the 7 HACCP principles.

SHOW SLIDE: HACCP Control

SAY: HACCP stands for Hazard Analysis and Critical Control Point. It is a specific approach to identifying measurable food safety hazards. Combined with SOPs, a food safety program based on HACCP principles will prevent, eliminate, or reduce the occurrence of foodborne illness risk factors. SOPs control non-specific hazards; HACCP controls specific, measurable hazards. The key application of HACCP principles is that the hazards must be measurable through Critical Control Points (CCPs) and critical limits. Schools are required (by federal law) to have a written school food safety program based on HACCP principles. USDA issued guidance for SFAs: <http://www.fns.usda.gov/fns/safety/pdf/HACCPGuidance.pdf>

SHOW SLIDE: HACCP Principles

SAY: Hazard Analysis Critical Control Points, or HACCP, is a specific approach for identifying food safety hazards. It involves finding potential food safety issues in your program and implementing preventative measures. School food safety programs need to be based on HACCP principles. In your Participant's Workbook, locate the **HACCP Principles**. This may be helpful as we discuss these in the upcoming example.

There are seven steps or principles to HACCP.

1. Conduct a hazard analysis
2. Determine critical control points (CCPs)
3. Establish critical limits
4. Establish monitoring systems

5. Identify corrective actions
6. Keep records
7. Review and verify your overall food safety program periodically

The first step is to thoroughly inspect your school nutrition operation and analyze it for hazards that are present in your operation. These hazards could be biological, such as bacteria from raw meat; chemical, such as sanitizer being stored above food in the dry storage; and physical, such as fingernail polish from an employee. It is important to think through your entire foodservice production from delivery to service for any potential hazards.

Once the hazard analysis is complete, the next step is to establish measures to prevent them. The key application of HACCP principles is using critical control points and critical limits to monitor and control the identified hazards. Critical control points, or CCPs, are the points in the foodservice operation where there is an identified potential hazard that is not already controlled by an SOP. Critical control points provide control during preparation, cooking, holding, serving, cooling, and reheating. Critical limits are the measures taken to eliminate, prevent, or reduce the food safety hazard identified by the CCP. For example, you identify that a recipe contains raw ground beef; this means there is a potential bacterial hazard from undercooked meat causing a foodborne illness. This becomes a critical control point for this recipe. The critical limit for this recipe is that ground beef must be cooked to a minimum of 155 °F to ensure it reaches the appropriate internal temperature to kill the bacterial hazard.

ASK: What are some potential critical control points you can think of in your school nutrition program, and what critical limits would you put into place to eliminate them?

FEEDBACK:

- Delivered cold food
 - CCP: If cold food is delivered in the temperature danger zone, there is the potential for bacterial growth.
 - Critical limit: cold food must be delivered at 41 °F or below
- Hot holding foods before service

- CCP: Food held in the temperature danger zone allows bacterial growth.
- Critical limit: keep hot food at 135 °F or higher to keep it out of the temperature danger zone

SAY: Those are very good examples of determining hazards, figuring out critical control points, and establishing critical limits to reduce or eliminate the hazard. The HACCP principles do not stop here though. After figuring out where hazards exist and how to control them, it is essential to create a monitoring program with written corrective actions in case a critical limit has not been met; these are the next two principles. Returning to our earlier example of raw ground beef in a recipe, an employee should monitor the food by using a thermometer to take the temperature to ensure that it reaches 155 °F. If during the monitoring process it is determined that the food is only 145 °F, the corrective action is to return the food to the oven to continue cooking until it has reached the required temperature.

The next step of HACCP involves recording your procedures concerning critical control points. It is vital to write down all monitoring performed and corrective actions taken. It is important to have documentation of food safety practices because in the case of a foodborne illness outbreak, if it was not recorded, it did not happen. You need documentation of procedures when trying to determine the cause of a foodborne illness or an allergic reaction. You can use logs to help monitor and document your food safety practices. You may recall that the **Reheating Time/Temperature Control for Safety Foods Sample SOP** provided verification and record keeping instructions on how to use a log for documentation. The log provides instructions for monitoring and recording food temperature as you cook or reheat it. The log records the date and time, food item, internal cooking temperatures, corrective actions, employee initials, and verifying person. This is all important information to have in the case of a foodborne illness outbreak. Returning to our earlier example of the ground beef recipe and using this log, the employee should record the time and date they took the temperature and the food item they were checking. The employee would also record the temperature reading (145 °F), along with the corrective action of placing the food back into the oven for further cooking when it was determined that the recipe did not meet the correct critical limit. The employee would then initial the log and follow up with their manager or director.

The final step for using HACCP principles in your food safety program is to review and verify that the procedures put into place are working. It is important to routinely verify that your food safety program is working. This could include talking to staff, checking logs, and testing established food safety best practices. This step helps identify any problems or practices that may need to be revised.

Recognize the Process Approach to HACCP.

SHOW SLIDE: The Process Approach to HACCP

SAY: Now that we have a clear understanding of the HACCP principles, we will discuss the Process Approach to HACCP. The Food and Drug Administration (FDA) developed a process approach to implementing HACCP programs. This approach was adopted and modified by USDA when they developed guidance for developing school food safety programs.

As you can see on this slide, there are three different processes: No Cook, Same Day Service, and Complex. The Process Approach to HACCP addresses menu items that are TCS. Each process is differentiated by the number of times it goes completely through the temperature danger zone. (No cook = 0 times, Same Day = 1 time and Complex + 2 or more times)

DO: Review Process 1, 2, and 3. Walk the participants through the HACCP principles for the food shown on each slide.

SAY: We are going to review each process and walk a food item through the HACCP principles.

SHOW SLIDE: Process 1 –No Cook Step

SAY: This slide provides an example flow of operational steps to consider which is “Receive – Store – Prepare – Hold – Serve”. An example food for No Cook would be fruit salad. Remember this does not go through the temperature danger zone.

SHOW SLIDE: Process 2 –Same Day Service

SAY: This slide provides an example flow of operational steps to consider which is “Receive – Store – Prepare – Cook – Hold – Serve“. An example food for Same Day Service would be a baked chicken. Remember this goes through the temperature danger zone at least once.

SHOW SLIDE: Process 3 – Complex Preparation

SAY: This slide provides an example flow of operational steps to consider which is “Receive – Store – Prepare – Cook – Cool – Reheat – Hot Hold – Serve “. An example food for Complex Preparation would be beef and bean tamale pie. Remember this goes through the temperature danger zone at least 2 times.

We are now going to do an activity where we categorize food items into the different process approaches.

DO: Activity - Menu Items by Process Category.

1. Ask participants to turn to the **Menu Items by Process Category** handout.
2. Ask the teams to decide which processes the menu item would be placed in: No Cook, Same Day Service, or Complex Food Preparation.
3. Ask each group to choose one menu item from each process category and identify which process steps need to be monitored and have temperatures taken.
4. Discuss items that might be placed into a different process, depending on the process used in a particular school.

Menu Items by Process Category

Menu Item	No Cook	Same Day Service	Complex Food Preparation
Egg patty		X	
Milk	X		
Nachos with meat and cheese		X	X
Stacked turkey with Swiss on bun	X		X
Seasoned corn		X	
Baked potato wedges		X	
Breakfast pizza		X	
Hot dogs		X	
Lettuce	X		
Spaghetti sauce		X	X
Tacos		X	X
Bean burritos		X	
Cole slaw	X		
Baked beans		X	
French toast sticks		X	
Sliced baked turkey		X	X
Try a few of your own items from your school or district. Enter the menu item and mark the appropriate box.			
Menu Item	No Cook	Same Day Service	Complex Food Preparation

The following food items may fall under more than one category depending on the specific preparation process.

Nachos with meat and cheese - same day or complex, depending on practices followed in specific foodservice operation

Stacked turkey with Swiss on bun - could be same day or complex if turkey was cooked and cooled and sliced in the operation

Spaghetti sauce - could be same day or complex, depending when the meat is cooked

Tacos - could be same day or complex, depending when the meat is cooked

Bean burritos - same day if it is a frozen product

Tuna salad sandwiches - no cook (if eggs are purchased precooked); complex if eggs are cooked and cooled prior to service

BBQ pork sandwich - same day or complex if pork roasts are cooked on site, cooled, and then made into BBQ

SAY: For more information on the Process Approach, please refer to ICN's *Developing a Food Safety Program Using the Process Approach*. To help train your staff in foodborne illness prevention, please refer to *Manager's Corner - The Process Approach: No Cook*, *The Process Approach: Same Day Service*, and *The Process Approach: Complex*.

Many more valuable resources and numerous SOPs can be found on ICN's website. Please explore, print, and use these in your operations.

ASK: Are there any questions?

SHOW SLIDE: *Institute of Child Nutrition*

Additional Food Safety Resources

Institute of Child Nutrition

- Cooling Foods Safely
 - Video
 - Fact sheets
 - Mini-posters
- Employee Health and Personal Hygiene
 - Resource Guides
 - School nutrition managers and directors
 - School nutrition staff
 - Videos: training mini-series
 - Resource folder
- Food Allergy Resources: **www.theicn.org/foodallergy**
 - Fact Sheets
 - Major Eight
 - SOP
 - Managing food allergies in school and CACFP programs
 - Common questions
 - Face-to-face training: *Managing Food Allergies in School Nutrition Programs*
 - Online course: *Managing Food Allergies in School Nutrition Programs*
 - Videos
 - Resource folder
- Food Safety Fact Sheets
- Food Safety for Summer Meals
 - Summer Meals Training Guide
 - Posters
 - Food Safety Tip Card
- Food Safety Mini - Posters
- General Food Safety Trainings

- 8-hour face-to-face training *Food Safety in Schools*
 - 4-hour face-to-face training *Food Safety Basics*
 - Online course: *Serving It Safe*
- HACCP-based Standard Operating Procedures
- *Manager's Corner: Food Safety – Series 1*
- Norovirus: **www.theicn.org/norovirus**
 - Face-to-face training
 - Mini-posters
 - Fact sheets
 - Video
 - Standard Operating Procedures
 - Three, 1-hour online courses
 - Resource folder
- Produce Safety: **www.theicn.org/producesafety**
 - Best practice for handling fresh produce in schools
 - Videos
 - Fact sheets
 - Presentations and talking points
 - *Conducting a Mock Recall*
 - Resource folder
- *Thermometer Information Resource*
- *Wash Your Hands: Educating the School Community*

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