**Chapter 1 Providing Safe Food**

Slide 3

An illness is considered an outbreak when:

* + Two or more people have the same symptoms after eating the same food
	+ An investigation is conducted by state and local regulatory authorities
	+ The outbreak is confirmed by laboratory analysis

Slide 4

* Foodservice operations work hard to minimize foodborne illnesses. As a result of these efforts, foodborne illnesses have declined in recent years. However, operations still face many challenges to food safety.
* Pressure to work quickly can make it hard to take the time to follow food safety practices.
* Your staff may speak a different language than you do, which can make it difficult to communicate. Cultural differences can also influence how food handlers view food safety.
* Staff often have different levels of education, making it more challenging to teach them food safety.
* Illness-causing microorganisms are more frequently found on food that once was considered safe.
* Food that is received from suppliers that are not practicing food safety can cause a foodborne-illness outbreak.
* The number of customers at high risk for getting a foodborne illness is increasing. An example of this is the growing elderly population.
* Training new staff leaves less time for food safety training.

The ServSafe program will provide the tools needed to overcome the challenges in managing a good food safety program.

**Slide 5**

Foodborne illnesses cost the United States billions of dollars each year. National Restaurant Association figures show that one foodborne-illness outbreak can cost an operation thousands of dollars. It can even result in closure. Some of the business costs were highlighted in the video.

**Slide 6**

Unsafe food is usually the result of contamination, which is the presence of harmful substances in food. To prevent foodborne illnesses, you must recognize the contaminants that can make food unsafe. These can come from pathogens, chemicals, or physical objects. They might also come from certain unsafe practices in your operation.

Slide 7

Purchasing food from unsafe sources is a risk factor for foodborne illness. The other risk factors for foodborne illness are related to four main practices: time-temperature abuse, cross-contamination, poor personal hygiene, and poor cleaning and sanitizing.

Slide 8

Pathogens can be spread to food if equipment has not been cleaned and sanitized correctly between uses.

Slide 9

The immune system is the body’s defense against illness.

Elderly people are at high risk because their immune systems have weakened with age.

Very young children are at high risk because they have not built up strong immune systems.

People with compromised immune systems. Certain medical conditions and medications can weaken a person’s immune system. These are people who are :

* + Cancer or receiving chemotherapy
	+ HIV/AIDS
	+ Transplants

Slide 10

Set up standard operating procedures that focus on these areas.

Slide 11

As a manager, your job is more than just understanding food safety practices and creating the necessary procedures. You also must train your staff to follow these procedures.

Staff should be trained when they are first hired and on an ongoing basis. Your entire staff needs general food safety knowledge. Other knowledge will be specific to the tasks performed on the job. For example, everyone needs to know the correct way to wash their hands. However, only receiving staff need to know how to inspect produce during receiving.

Staff need to be retrained in food safety regularly.

Slide 12

When a food handler completes food safety training, document it.

Once staff are trained, monitor them to make sure they follow the proper food safety procedures.

At times, you may notice employees doing tasks incorrectly. Each incorrect task could lead to an increase in risk. When this happens, it is important to correct the situation immediately. This is called corrective action. If an employee often completes a task incorrectly or if multiple employees complete a task incorrectly, they should be retrained.

Slide 13

Staff aren’t the only ones who need training to keep food safe. The FDA Food Code requires the person in charge of a foodservice operation to become a certified food protection manager. And theymust be onsite at all times during operating hours, in NC.

Slide 14

For some types of operations, the person in charge may not need to be onsite at all times. That is the case if the regulatory authority has decided that the operation poses a minimal risk for causing a foodborne illness. That decision would be based on the kind of operation it is and the type of food that’s served or sold. Cashier-less markets and convenience stores are good examples of operations where the person in charge may not need to be onsite at all times.

Slide15

The person in charge must also be able to show that they have the required knowledge. To become a Certified Food Protection Manager, you must pass a test from an accredited program. The program must be accredited by

an agency approved by a Conference for Food Protection. Completing the ServSafe Manager Course and passing the ServSafe Food Protection Manager Certification Examination meets this requirement.

Slide 16

But, why is it so important to become certified? A Centers for Disease Control and Prevention study suggests that the presence of a Certified Food Protection Manager reduces the risk of a foodborne illness outbreak for an establishment. The study also suggests that it was a distinguishing factor between restaurants that experienced a foodborne illness outbreak and those that had not.

Also, the FDA's Retail Food Risk Factor Studies suggest that the presence of a Certified Food Protection Manager has a positive correlation with more effective control of certain risk factors, such as poor personal hygiene, in different facility types.

Slide 17

The FDA issues a *Food Code.* This science-based code provides recommendations for food safety regulations. The *Food Code* was created for city, county, state, and tribal agencies. These agencies regulate foodservice for the following groups:

* + Restaurants and retail food stores
	+ Vending operations
	+ Schools and day care centers
	+ Hospitals and nursing homes

Although the FDA recommends that states adopt the *Food Code,* it cannot require it.

Slide 18

**The U.S. Department of Agriculture (USDA):**

Regulates and inspects meat, poultry, and eggs. Regulates food transported across state lines. Regulates food involving more than one state

**The Centers for Disease Control and Prevention (CDC), and The Public Health Service (PHS):**

Assist the FDA, USDA, and state and local health departments. Conduct research into causes of foodborne-illness outbreaks. Assist in investigating outbreaks

Slide 19

**State and Local Regulatory Authorities:**

Write or adopt codes regulating retail and foodservice operations. Codes may differ from FDA *Food Code*

**Food safety responsibilities include:**

Inspecting operations, Enforcing regulations, Investigating complaints and illnesses, Issuing licenses/permits

**Chapter 2 Forms of Contamination**

**Slide 21**

Contamination comes from a variety of places.

Contaminants are found in air, water, dirt, and the animals we use for food, and they occur naturally in food, such as bones in fish.

Food can be contaminated on purpose.

Most food is contaminated accidentally.

Examples of accidental contamination include food handlers who don’t wash their hands after using the restroom and then contaminate food and surfaces with feces from their fingers, and food handlers who pass contaminants

Slide 22

Contamination can occur through the fecal–oral route of contamination. For example, food handlers who do not wash their hands after using the restroom may contaminate food and surfaces with feces from their fingers. Once the food that the food handler touched is eaten, a foodborne illness may result. This is called the fecal–oral route of contamination.

Slide 23

**Contaminants come from a variety of places:**

* + Contact with a person who is sick
	+ From person to person
	+ Sneezing or vomiting onto food or food-contact surfaces
	+ Touching dirty surfaces/equipment and then touching food

Slide 24

These are the Big Six pathogens:*Shigella*spp. *Salmonella*Typhi, Nontyphoidal *Salmonella,*Shiga toxin-producing *Escherichia coli* (STEC), also known as *E. coli,* Hepatitis A and Norovirus. According to the Food and Drug Administration (FDA), there are over 40 kinds of bacteria, viruses, parasites, and molds that can occur in food and cause a foodborne illness. Of these, six have been singled out by the FDA. These have been dubbed the Big Six because they are highly contagious and can cause severe illness.

Slide 25

The symptoms of a foodborne illness vary depending on which illness a person has. But most victims of foodborne illness share some common symptoms.

Not every person who is sick from a foodborne illness will have all of these symptoms. Nor are the symptoms of a foodborne illness limited to this list.

How quickly foodborne-illness symptoms appear in a person is known as the onset time of the illness. Onset times depend on the type of foodborne illness a person has. They can range from 30 minutes to as long as six weeks. How severe the illness is can also vary, from mild diarrhea to death.

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Slide 26

Bacteria need six conditions to grow. You can remember these conditions by thinking of the words FAT TOM.

F= FAT A= Acidity T= Temperature T= Time O = Oxygen M= Moisture

Slide 27

**FOOD**

* + Most bacteria need nutrients to survive.
	+ TCS food supports the growth of bacteria better than other types of food.

Slide 28

**ACIDITY**

* + pH is the measure of acidity
		- The pH scale ranges from 0 to 14
		- A value of zero is highly acidic
		- A value of 14 is highly alkaline
		- A pH of 7 is neutral
	+ Bacteria grow best in food with a
	pH that is neutral to slightly acidic

Slide 29

**Temperature:**

* + Bacteria grow rapidly between 41ºF and 135ºF (5ºC and 57ºC)
	+ Bacteria growth is limited when food is held above or below the temperature danger zone

Slide 30

**TIME**

* + Bacteria need time to grow.
	+ The more time bacteria spend in
	the temperature danger zone,
	the greater chance they have to
	grow to unsafe levels.

Slide 31

**TIME**

* + Bacteria need time to grow.
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Slide 32

**MOISTURE**

* Bacteria grow well in food with high levels of moisture. The amount of moisture available in food for this growth is called water activity (aw). The aw scale ranges from 0.0 to 1.0. The higher the value, the more available moisture in the food. For example, water has a water activity of 1.0.

Slide 33

The FDA has identified four types of bacteria that cause severe illness and are highly contagious:

*Salmonella* Typhi, Nontyphoidal *Salmonella, Shigella* spp.,Shiga toxin-producing *Escherichia coli (E. coli)* (STEC)

Slide 34

Salmenela TyphI

Lives in a person’s bloodstream and intestines.

Commonly linked with ready-to-eat food and beverages.

In a person’s feces for weeks after symptoms have ended.

Washing hands and cooking food to required minimum internal temperatures can prevent me.

Lives in humans.

Slide 35

Nontyphoidal *Salmonella* Found in many farm animals The symptoms can be severe depending on how much is eaten.

 Can found in tomatoes, peppers, and cantaloupes.

 Cooking poultry or eggs to the right temperature can prevent it from causing illness.

Slide 36

*Shigella* spp.

Food easily contaminated by hands, such as salads containing TCS food (e.g., potato, tuna, shrimp, macaroni, chicken)

Food that has had contact with contaminated water, such as produce

Exclude food handlers who have diarrhea and have been diagnosed with an illness caused by *Shigella* spp. from the operation

Wash hands

Control flies inside and outside
the operation

Slide 37

 Shiga toxin-producing *E. coli* Found in the intestines of cattle.

Produces toxins in a person’s intestines, which cause illness.

Found in raw ground beef and contaminated produce.

Cooking ground beef to required minimum internal temperatures
can prevent E. Coli

Slide 38

The FDA has identified two viruses that are highly contagious
and can cause severe illness:

* + Hepatitis A
	+ Norovirus

Slide 39

Hepatitis A is mainly found in the feces of people infected with it.

The virus can contaminate water and many types of food.

It is commonly linked with ready-to-eat food. However, it has also been linked with shellfish from contaminated water.

The virus is often transferred to food when infected food handlers touch food or equipment with fingers that have feces on them.

Eating only a small amount of the virus can make a person sick.

An infected person may not show symptoms for weeks but can be very infectious.

Some viruses, such as hepatitis A, are not destroyed by normal cooking temperatures.

Slide 40

Norovirus is commonly linked with ready-to-eat food.

It has also been linked with contaminated water.

Norovirus is often transferred to food when infected food handlers touch food or equipment with fingers that have feces on them.

Eating only a small amount of Norovirus can make a person sick. It is also very contagious.

People become contagious within a few hours after eating it.

The virus is often in a person’s feces for days after symptoms have ended.

Slide 41

Some toxins are naturally associated with certain plants, mushrooms, and seafood. Toxins are a natural part of some fish.

Other toxins, such as histamine, are made by pathogens on the fish when it is time-temperature abused. This can occur in tuna, bonito, mackerel, and mahi-mahi. Some fish become contaminated when they eat smaller fish that have eaten a toxin. One of these toxins is the ciguatera toxin. It can be found in barracuda, snapper, grouper, and amberjack. Shellfish, such as oysters, can be contaminated when they eat marine algae that have a toxin.

Slide 42

The chemicals you use must be approved for use in a foodservice operation. They must also be necessary for the maintenance of the facility. In addition to the guidelines shown in the video, the slide shows additional measures to prevent chemicals from contaminating food.

Slide 43

**Physical Contaminates**

* Mild to fatal injuries are possible. This could include cuts, dental damage, and choking. Bleeding and pain may be the most outward symptoms.
* Purchase food from approved, reputable suppliers to prevent physical contamination. Closely inspect the food you receive. Take steps to make sure no physical contaminants can get into it. This includes making sure that food handlers practice good personal hygiene.

Slide 44

Intentional Contamination

So far, you have learned about methods to prevent the accidental contamination of food. But you also must take steps to stop people who are actually trying to contaminate it. This may include the groups listed on the slide.

These people may try to tamper with your food using biological, chemical, or physical contaminants. They may even use radioactive materials. Attacks might occur anywhere in the food supply chain. But they are usually focused on a specific food item, process, or business.

The best way to protect food is to make it as difficult as possible for someone to tamper with it. For this reason, a food defense program should deal with the points in your operation where food is at risk.

The FDA has created a tool that can be used to develop a food defense program. It is based on the acronym A.L.E.R.T. It can be used to help you identify the points in your operation where food is at risk.

Slide 45

**Assure:** Make sure that products you receive are from safe sources. Supervise product deliveries. Use approved suppliers who practice food defense. Request that delivery vehicles are locked or sealed.

**Look:** Monitor the security of products in the facility. Limit access to prep and storage areas. Locking storage areas is one way to do this. Create a system for handling damaged products. Store chemicals in a secure location. Train staff to spot food defense threats.

**Employees:** Know who is in your facility. Limit access to prep and storage areas. Identify all visitors, and verify credentials. Conduct background checks on staff.

**Reports:** Keep information related to food defense accessible: receiving logs, office files and documents, staff files, and random food defense self-inspections.

**Threat:** Identify what you will do and whom you will contact if there is suspicious activity or a threat at your operation. Hold any product you suspect to be contaminated. Contact your regulatory authority immediately. Maintain an emergency contact list.

Slide 46

Ask the person making the complaint for general contact information and to identify the food that was eaten. Also ask for a description of symptoms and when the person first got sick.

Contact the local regulatory authority if you suspect an outbreak.

Slide 47

Set the suspected product aside if any remains. Include a label with “Do Not Use” and “Do Not Discard” on it, as shown in the photo on the slide.

Log information about the suspected product. This might include a product description, production date, and lot number. The sell-by date and pack size should also be recorded.

Slide 48

Maintain a list of food handlers scheduled at the time of the suspected contamination. These staff members may be subject to an interview and sampling by investigators. They should also be interviewed immediately by management about their health status.

Cooperate with regulatory authorities in the investigation. Provide appropriate documentation. You may be asked to provide temperature logs, HACCP documents, staff files, etc.

Review food-handling procedures to identify if standards are not being met or procedures are not working.

Slide 49

To protect your customers, both you and your staff should know:

The signs of an allergic reaction and what to do when one occurs.

 The types of food that most often cause allergic reactions.

A food allergen is a protein in a food or ingredient.

When enough of an allergen is eaten, it can cause an allergic reaction in some people. This happens because their immune system mistakenly considers the food protein, which is normally harmless, to be a threat and attacks it.

Slide 50

Tens of millions of Americans have food allergies. Allergic reactions result in tens of thousands of emergency room visits every year—about once every three minutes.

Slide 51

An allergic reaction could include some or all these symptoms. Wheezing, Difficulty breathing, Hives, rashes, itching, Tingling in the mouth, Wheezing, Difficulty breathing, Hives, rashes, itching, Tingling in the mouth

Slide 52

Reactions can vary widely. In some cases, a person could suffer anaphylaxis—a severe life-threatening allergic reaction that can lead to death.

Slide 53

If you or your staff see a customer having severe symptoms, or the customer tells you they are having a severe allergic reaction, act immediately. Let other staff know that assistance is needed and instruct them to call emergency medical services. Do not leave the person alone.

Slide 54

You and your staff must be aware of the most common food allergens and the menu items that contain them.

While nearly any food can cause an allergic reaction, in the United States there are nine foods that are responsible for most.

They are called the Big Nine. Milk, Soybeans (soy), Eggs, Wheat, Fish, such as tuna and cod, Crustacean shellfish, such as crab, lobster, and shrimp, Peanuts, Tree nuts, such as almonds and pine nuts, Sesame

Slide 55

Food labels are an important tool used to identify allergens in the products that you purchase.

Federal law requires that major allergens be clearly identified in labels on packaged foods. The allergen must be found within the ingredient listing or directly after the listing on the label. The information must use the Big Nine Allergen common names. As an alternative, allergens can be listed in one spot using a “contains” label.

Slide 56

Both front of house and back of house staff need to do their part to avoid serving food containing allergens to people with food allergies. These precautions also apply to any food sensitivities that a customer might mention, such as a gluten intolerance.

Your front of house staff is critical when it comes to preventing allergic reactions. They have the first opportunity to find out about your guests’ food allergies. This information must be communicated to staff in the back of the house to prevent allergic reactions.

The way that you inform guests about allergens will depend on your menu and service style.

Slide 57

Keep in mind that some guests may not inform you that they have a food allergy.

The first person that a guest speaks with, the “first point of contact,” should have some knowledge of food allergies.

Slide 58

Provide kitchen staff with written notes about the guest’s allergen special order.

Verbally confirm the order with kitchen staff when it is placed.

When collecting the order from the kitchen, confirm the meal is correct and matches the ticket.

Always confirm the allergen special order verbally with kitchen staff.

Slide 59

Always confirm the order verbally with the guest.

To prevent cross-contact, some operations deliver the allergen special order first, separate from other items. Alternatively, all orders for the table can be delivered at the same time with an additional server or manager delivering just the special meal.

Slide 60 **Front of house staff should:**

* + **Avoid cross-contact in workstations**
		- Keep workstations clean
		- Don’t mix old product with new product
		- Be careful when restocking stations
		- Avoid spills and clean carefully if they happen
		- Use new, clean tools (ladles, serving baskets, etc.) when handling orders
		- Prepare breadbaskets, salads, and other items at a separate location used for allergen special orders

Slide 61 **Front of house staff should:**

* + **Clean and sanitize**
		- Replace soiled cloths and cleaning and sanitizing solutions regularly
		- Clear and reclean tables and chairs for guests with food allergies
		- When resetting tables, be mindful of condiments or other food items that may contain allergens
		- Clean spills immediately and common surfaces regularly

Slide 62

Staff must make sure that allergens are not transferred from food or food-contact surfaces containing an allergen to the food served to the customer. This is called cross-contact.

Cross-contact can happen when different types of food are cooked in the same fryer oil. It can also happen when food touches surfaces, equipment, or utensils that have touched allergens. For example, putting chocolate chip cookies on the same parchment paper that was used for peanut butter cookies can transfer some of the peanut allergen.

Slide 63

Check recipes and ingredient labels.

Any ingredient substitutions should be identified, tested in advance, and noted in recipes.

Managers, chefs, and purchasers should stay in regular communication with vendors. If there are any questions about uncertain or new ingredients, check with the vendor.

Slide 64 **Back of house staff should:**

**Receive and store items correctly**

 Check deliveries carefully

* + - Check ingredient labels on substituted items
		- Check for broken packaging or spills

 Reject deliveries if

* + - Inappropriate substitute items have been provided
		- Cross-contact is suspected

 Label and store items for allergen special orders separately from Big Nine allergens

Slide 65 **Back of house staff should:**

**Clean surfaces, utensils, and equipment**

* + - Scrape or remove food from items. Then wash, rinse, sanitize, and air-dry them to remove allergens
		- Use fresh cleaning solutions and cleaning cloths when cleaning items to be used for allergen special orders

**Use separate utensils and equipment for allergen special orders**

* + - All designated equipment should be properly identified and stored separately

Slide 66 **Back of house staff should:**

**Practice good personal hygiene**

* + - Wash hands and change gloves before preparing an order for a guest with a known food allergy
		- Avoid touching anything that may have had contact with a food allergen, including:
			* Uniforms
			* Skin
			* Hair

Slide 67 **Back of house staff should:**

**Prepare the allergen special order correctly**

* + - When the order is received
			* Check the ticket
			* Verbally confirm the order with the server
		- Check written recipes and ingredient labels to confirm the allergen in question is not present
		- Follow recipes and only use approved ingredient substitutions
		- Discard items if cross-contact has occurred
		- Do not add anything to an item that was plated or packaged
		- Verbally confirm the order with the person serving it
		- Do not serve items that cannot be prepared safely

Chapter 3 The Safe Food Handler

Slide 69

Don’t underestimate your role in a personal hygiene program. You have many responsibilities to help make the program work

Slide 70

Hands must be washed after theses activities

Slide 71

Infected wounds, cuts, and boils must be covered if they are open or draining to prevent pathogens from contaminating food and food-contact surfaces.

How an infected wound or boil is covered depends on where it is located.If the wound or boil is located on the hand, finger, or wrist, cover it with an impermeable cover like a finger cot or bandage. Impermeable means that liquid from the wound cannot pass through the cover. Then place a single-use glove over the cover.

A wound on the arm must be completely covered.

Slide 72 **Single-use gloves:**

Should always be worn when handling ready-to-eat food

* + - Except when washing produce
		- Except when handling ready-to-eat ingredients for a dish that will
		be cooked

Slide 73

Wash your hands before putting on gloves when starting a new task. You do not need to rewash your hands each time you change gloves as long as you are performing the same task and your hands have not become contaminated.

Select the correct glove size. Gloves that are too big will not stay on. Those that are too small will tear or rip easily.

Hold gloves by the edge when putting them on. Avoid touching the glove as much as possible.

Once you have put them on, check the gloves for rips or tears.

Slide 74

Store street clothing and personal belongings in designated areas. This includes items such as backpacks, jackets, electronic devices, keys, and personal medications. Make sure these items are stored in a way that does not contaminate food, food-contact surfaces, and linens.

Keep dirty clothing that is stored in the operation away from food and prep areas. You can do this by placing dirty clothes in nonabsorbent containers or washable laundry bags. This includes dirty aprons, chef coats, and other uniforms

Slide 75

You must tell your staff to let you know when they are sick. This includes newly hired staff who have not started working yet. Your regulatory authority may ask for proof that you have done this, which can be provided in the following ways:

* + Presenting signed statements in which staff have agreed to report illness.
	+ Providing documentation showing staff have completed training, which includes information on the importance of reporting illness.
	+ Posting signs or providing pocket cards that remind staff to notify managers when they are sick.

Slide 76

As a manager, you should watch food handlers for signs of illness.

* Vomiting
* Excessive trips to the bathroom
* Yellowing of the skin, eyes, fingernails
* Cold sweats or chills (indicating a fever)
* Persistent nasal discharge and sneezing

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**Chapter 4 Flow of Food Introduction**

**Slide 78**

The flow of food is the path that food takes through your operation. It begins when you buy the food and ends when you serve it. Detailed practices for each phase are covered in later chapters.

Buy food that doesn’t require much prepping or handling. For example, you could buy precooked chicken breasts or chopped lettuce.

**Slide 79**

You also need to separate raw meat, poultry, and seafood from unwashed and ready-to-eat fruits and vegetables. Do this during storage, preparation, holding, and display to prevent cross-contamination.

Slide 80

Most foodborne illnesses happen because TCS food has been time-temperature abused. Remember, TCS food has been time-temperature abused any time it remains between 41°F and 135°F (5°C and 57°C). This is called the temperature danger zone because pathogens grow in this range. But most pathogens grow much faster between 70°F and 125°F (21°C and 52°C).

Food is being temperature abused whenever it is handled in the following ways:

* + Cooked to the wrong internal temperature
	+ Held at the wrong temperature
	+ Cooled or reheated incorrectly

The longer food stays in the temperature danger zone, the more time pathogens have to grow. To keep food safe, you must reduce the time it spends in this temperature range. If food is held in this range for four or more hours, you must throw it out.

Slide 81

Learn which food items should be checked, how often, and by whom.

Use timers in prep areas to check how long food is in the temperature danger zone.

A policy limiting the amount of food that can be removed from a cooler when prepping it can limit the time food spends in the temperature danger zone.

Make sure food handlers know what to do when time and temperature standards are not met.

Slide 82

A bimetallic stemmed thermometer can check temperatures from 0˚F to 220˚F (–18˚C to 104˚C).

This thermometer measures temperature through its metal stem. When checking temperatures, insert the stem into the food up to the dimple. You must do this because the sensing area of the thermometer goes from the tip of the stem to the dimple. This trait makes this thermometer useful for checking the temperature of large or thick food. It is usually not practical for thin food, such as hamburger patties.

The calibration nut is used to adjust the thermometer to make it accurate. The indicator head must have easy-to-read markings. Clear markings reduce the chance that someone will misread the thermometer. The thermometer must be scaled in at least two-degree increments.

Slide 83

The sensing area on thermocouples and thermistors is on the tip of their probes. This means you don’t have to insert them into the food as far as bimetallic stemmed thermometers to get a correct reading. Thermocouples and thermistors are good for checking the temperature of both thick and thin food.

Slide 84

Thermocouples and thermistors come in several styles and sizes. Many come with different types of probes.

* + Immersion probes are used to check the temperature of liquids such as soups, sauces, and frying oil.
	+ Surface probes are used to check the temperature of flat cooking equipment such as griddles.
	+ Penetration probes are used to check the internal temperature of food. Small-diameter probes should be used to check the internal temperature of thin food such as meat patties and fish fillets.
	+ Air probes are used to check the temperature inside coolers and ovens.

Slide 85

**Infrared Lazer Thermometers**

These thermometers cannot measure air temperature or the internal temperature of food.

Hold the thermometer as close as possible to the food, food package, or equipment without touching it.

Following the manufacturer’s guidelines should give you the most accurate readings.

Slide 86

Other tools are available that can help you monitor temperature. A maximum registering thermometer is one type. This thermometer indicates the highest temperature reached during use and is used where temperature readings cannot be continuously observed. It works well for checking the final rinse temperature of dishwashing machines.

Some devices monitor both time and temperature. The time-temperature indicator (TTI), as shown in the photo, is an example. These tags are attached to packaging by the supplier. A color change appears in the window if the food has been time-temperature abused during shipment or storage. This color change is not reversible, so you know if the food has been abused.

Some suppliers place temperature-recording devices inside their delivery trucks. These devices constantly check and record temperatures. You can check the device during receiving to make sure food was at safe temperatures while it was being shipped.

Slide 87

Thermometers should be washed, rinsed, sanitized, and air-dried before and after each use to prevent cross-contamination. Be sure the sanitizing solution you use is for food-contact surfaces.

Make sure thermometers used for food are +/- 2 degrees.

Glass thermometers, such as candy thermometers, can be a physical contaminant if they break. They can only be used when enclosed in a shatterproof casing.

Slide 88

There are two ways to calibrate a thermometer:

* The **boiling-point method** involves adjusting the thermometer to the temperature at which water boils (212°F [100°C], depending on your elevation).
* The **ice-point method** involves adjusting the thermometer to the temperature at which water freezes (32°F [0°C]). The ice-point method is easier and safer.
	1. Fill a large container with ice, add tap water until the container is full.
	Note: Stir the mixture well.
	2. Put the thermometer stem or probe into the ice water. Make sure the sensing area is submerged. Wait 30 seconds or until the indicator stops moving.
	Note: Do not let the stem or probe touch the container.

Adjust the thermometer so it reads 32°F (0°C).

**Chapter 5 Flow of Food Purchasing, Receiving and Storage**

Slide 90

Food must be purchased from approved, reputable suppliers. These suppliers have been inspected and can show you an inspection report. They also meet all applicable local, state, and federal laws. This applies to all suppliers in the supply chain. Your operation’s chain can include growers, shippers, packers, manufacturers, distributors (trucking fleets and warehouses), and local markets.

Develop a relationship with your suppliers, and get to know their food safety practices. Consider reviewing their most recent inspection reports. These reports can be from the U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA), or a third-party inspector. They should be based on Good Manufacturing Practices (GMP) or Good Agricultural Practices (GAP).

Slide 91

Receiving and Inspecting **Arrange deliveries so they arrive:**

* + When staff has enough time to do inspections
	+ When they can be correctly received

**To make sure inspections are smooth**

**and safe:**

* + Make specific staff responsible for receiving
	+ Give staff the tools needed (e.g., thermometers)
	+ Make enough trained staff available
	+ Inspect deliveries immediately when received

Slide 92 **When deliveries arrive:**

1. Visually inspect the delivery vehicle

* + - Check for signs of contamination
		- Inspect overall condition of vehicle
		- Look for signs of pests

2. Visually inspect food items

* + - Check temperatures

3. Store items as quickly as possible

Slide 93

Some foodservice operations receive food after hours when they are closed for business. This is often referred to as a key drop delivery.

The supplier is given a key or other access to the operation to make the delivery. Products are then placed in coolers, freezers, and dry-storage areas. The delivery must be inspected once you arrive at the operation.

Slide 93

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Slide 94

Food items you have received may sometimes be recalled by the manufacturer. This may happen when food contamination is confirmed or suspected. It can also occur when items have been mislabeled or misbranded. Often food is recalled when food allergens have not been identified on the label. Most vendors will notify you of the recall. However, you should also monitor recall notifications made by the FDA and the USDA. Follow the guidelines in the slide when notified of a recall.

Identify the recalled food items by matching information from the recall notice to the item. This may include the manufacturer’s ID, the time the item was manufactured, and the item’s use-by date.

Remove the item from inventory, and place it in a secure and appropriate location. That may be a cooler or dry-storage area. The recalled item must be stored separately from food, utensils, equipment, linens, and single-use items.

Label the item in a way that will prevent it from being placed back in inventory. Some operations do this by including a “Do Not Use” and “Do Not Discard” label on recalled food items. Inform staff not to use the product.

Refer to the vendor’s notification or recall notice for what to do with the item. For example, you might be instructed to throw it out or return it to the vendor.

* is removed from the container, write the date on the tag, label, or invoice. Then, keep it on file, in chronological order, for 90 days from that date.
* Shellfish should remain in the container they were received in until sold or prepared for service. Shellfish from one container should not be mixed with shellfish from another container unless they have the same certification number or harvest date or are from the same growing area.

Slide 95

Food items must be delivered with the correct documents.

For example, molluscan shellfish must be received with a shellstock identification tag or label. These indicate when and where the shellfish were harvested. They also ensure that the shellfish are from an approved source.

Store molluscan shellfish (live, shucked, or in-shell product) in their original container. Do NOT remove the shellstock tag or label from the container until the last shellfish was used. When the last shellfish is removed from the container, write the date on the tag, label, or invoice. Then, keep it on file, in chronological order, for 90 days from that date.

Shellfish should remain in the container they were received in until sold or prepared for service. Shellfish from one container should not be mixed with shellfish from another container unless they have the same certification number or harvest date or are from the same growing area.

 Slide 96 **Fish to be eaten raw or partially cooked:**

* + Document must indicate fish was correctly frozen
	+ Keep document for 90 days from sale of fish

**Farm-raised fish:**

* + Document must state fish raised to FDA standards
	+ Keep document for 90 days from sale of fish

Slide 97

Storage

Slide 98

**Labels on food packaged on-site for retail sale must include:**

* + Common name of the food or a statement clearly identifying it
	+ Quantity of the food
	+ If the item contains two or more ingredients: a list of the ingredients
	and subingredients in descending order by weight
	+ List of artificial colors and flavors in the food, including
	chemical preservatives
	+ Name and place of business of the manufacturer, packer,
	or distributor
	+ Source of each major food allergen contained in the food

Slide 99

Refrigeration slows the growth of most bacteria, but some types grow well at refrigeration temperatures. When food is refrigerated for long periods of time, these bacteria can grow enough to cause illness. For this reason, ready-to-eat TCS food must be marked if held for longer than 24 hours. These TCS foods can be held for only seven days including the date prepped.

Slide 100

Keep all storage areas clean and dry.

Clean floors, walls, and shelving in coolers, freezers, dry-storage areas, and heated holding cabinets on a regular basis.

Clean up spills and leaks promptly to keep them from contaminating other food.

Slide 101 **Preventing cross-contamination:**

* + Store food items in the following
	top-to-bottom order:
		1. Ready-to-eat food
		2. Seafood
		3. Whole cuts of beef and pork
		4. Ground meat and ground fish
		5. Whole and ground poultry
	+ This storage order is based on the minimum internal cooking temperature of each food

Slide 102

**Food should be stored in a clean, dry location away from dust and other contaminants.**

* + To prevent contamination, NEVER store food in these areas:
		- Locker rooms or dressing rooms
		- Restrooms or garbage rooms
		- Mechanical rooms
		- Under unshielded sewer lines or leaking water lines
		- Under stairwells

Slide 103

 **Discard food that has become unsafe.**

* + Food missing a date mark
	+ Food exceeding the date mark
	+ Food exceeding time-temperature requirements

**If this food will be returned**

* + Store it away from other food and equipment
	+ Label the food so food handlers do not use
	the product

**Chapter 6 Flow of Food: Preparation**

**Slide 105**

Food and color additives:

* + Only use additives approved by your local regulatory authority
	+ NEVER use more additives than are allowed by law
	+ NEVER use additives to alter the appearance of food
	+ Do NOT sell produce treated with sulfites before it was received in
	the operation
	+ NEVER add sulfites to produce that will be eaten raw

Slide 106

Food must be offered to customers in a way that does not mislead or misinform them. Customers must be able to judge the true appearance, color, and quality of food.

Food also must be presented the way it was described.

Slide 107

Food that has become unsafe must be thrown out unless it can be safely reconditioned. All food—especially ready-to-eat food—must be thrown out in the situations highlighted in the slide.

 Sometimes food can be restored to a safe condition. This is called reconditioning. For example, a hot food that has not been held at the correct temperature may be reheated if it has not been in the temperature danger zone for more than two hours. This can return food to a safe condition.

**Slide 108**

**If packaging fish using a reduced-oxygen packaging method, the fish must:**

Be frozen before, during, or after packaging, Include a label that states the fish must be frozen until used

**Slide 109**

Certain chemicals may be used to wash fruits and vegetables. Also, produce can be treated by washing it in water containing ozone. This treatment helps control pathogens. Check your local regulatory requirements.

**Slide 110**

Make ice from water that is safe to drink.

Never use ice as an ingredient if it was used to keep food cold. For example, if ice is used to cool food on a salad bar, it cannot then be used in drinks.

Slide 111

You will need a variance when prepping food in certain ways. A variance is a document issued by your regulatory authority that allows a regulatory requirement to be waived or changed.

Slide 112

*Clostridium botulinum*and *Listeria monocytogenes* are risks to food packaged using a reduced-oxygen packaging method. This includes MAP, vacuum-packed, and *sous vide* food.

Slide 113

When applying for a variance, your regulatory authority may require you to submit a HACCP plan.

The HACCP plan must account for any food safety risks related to the way you plan to prep the food item.

 You must comply with the HACCP plan and procedures submitted.

Finally, you have to maintain the HACCP plan and any other associated documents—including the variance—at the operation. And you have to provide them to the regulatory authority, if requested.

**Slide 114**

* Records must show that you have procedures for monitoring critical control points—and are regularly monitoring them. They must also show that you are taking the necessary corrective actions if there is a failure at a critical control point and are verifying the effectiveness of the procedures or processes.

**Slide 115**

Minimum internal cooking temperature:

 165˚F (74˚C) for <1 second (instantaneous)

* + Poultry—whole or ground chicken, turkey,
	or duck
	+ Stuffing made with fish, meat, or poultry
	+ Stuffed meat, seafood, poultry, or pasta
	+ Dishes that include previously cooked TCS ingredients (raw ingredients should be cooked to required minimum internal temperatures)

**Slide 116**

Minimum internal cooking temperature:

 155˚F (68˚C) for 17 seconds

* + Meats that are not intact, including:
		- Ground meat—i.e., beef, pork, and other meat
		- Meat mechanically tenderized with needles or blades or by injecting it with brine or flavors (e.g., brined ham or flavor-injected roasts)
		- Meat vacuum-tumbled with marinades or other solutions
		- Meat that has been cubed or pounded
		- Ground meat from game animals commercially raised and inspected
		- Ground seafood, including chopped or minced seafood

Slide 117

Minimum internal cooking temperature:

 155˚F (68˚C) for 17 seconds

* + Ratites—including ostrich and emu
	+ Shell eggs that will be hot-held for service

Slide 118

Minimum internal cooking temperature:

 145˚F (63˚C) for 15 seconds

* + Seafood—including fish, shellfish, and crustaceans
	+ Steaks/chops of pork, beef, veal, and lamb
	+ Commercially raised game
	+ Shell eggs that will be served immediately

Slide 119

**Alternate cooking temperature for roasts:**

* + 130ºF (54ºC) 112 minutes
	+ 131ºF (55ºC) 89 minutes
	+ 133ºF (56ºC) 56 minutes
	+ 135ºF (57ºC) 36 minutes
	+ 136ºF (58ºC) 28 minutes
	+ 138ºF (59ºC) 18 minutes
	+ 140ºF (60ºC) 12 minutes
	+ 142ºF (61ºC) 8 minutes
	+ 144ºF (62ºC) 5 minutes

Slide 120

**Minimum internal cooking temperature:**

 **135˚F (57˚C) (no minimum time)**

* + Food from plants, including fruits, vegetables, grains (e.g., rice, pasta), and legumes (e.g., beans, refried beans) that will be hot-held for service

Slide 121

Some operations partially cook food during prep and then finish cooking it just before service. You must follow the steps in the slide if you plan to partially cook meat, seafood, poultry, eggs, or dishes containing these items.

Your local regulatory authority will require you to have written procedures that explain how the food cooked by this process will be prepped and stored. These procedures must be approved by the regulatory authority and describe the following:

* + How the requirements will be monitored and documented
	+ Which corrective actions will be taken if requirements are not met
	+ How these food items will be marked after initial cooking to indicate that they need further cooking
	+ How these food items will be separated from ready-to-eat food during storage, once initial cooking is complete

Slide 122

Some packaged foods contain manufacturer’s instructions for cooking. These instructions must be followed before using the product, especially before adding them to a ready-to-eat (RTE) food. Frozen vegetables are an example. They frequently contain cooking instructions from the manufacturer and are often intended for use only after cooking.

It is especially important to follow these instructions when using the frozen vegetables to make RTE foods, such as salads. If the vegetables contain a pathogen and the food is not cooked, the pathogen could multiply and cause foodborne illness.

Slide 123

If your menu includes TCS items that are raw or undercooked, you must note it on the menu next to these items. This can be done by placing an asterisk next to the item that points customers to a footnote at the bottom of the menu. The footnote must include a statement that indicates the item is raw or undercooked or contains raw or undercooked ingredients.

You must advise customers who order food that is raw or undercooked of the increased risk of foodborne illness. You can do this by posting a notice in your menu. You can also provide this information using brochures, table tents, signs, or other written methods.

Slide 124

The Food and Drug Administration (FDA) advises against offering raw or undercooked meat, poultry, seafood, or eggs on a children’s menu. This is especially true for undercooked ground beef, which may be contaminated with Shiga toxin-producing *E. coli* O157:H7.

Slide 125

NEVER serve:

* + Raw seed sprouts
	+ Raw or undercooked eggs, meat, or seafood
		- Over-easy eggs
		- Raw oysters on the half shell
		- Rare hamburgers
	+ Unpasteurized milk or juice
	+ Packaged food, such as frozen vegetables, that has not been cooked according to manufacturer’s instructions.

Slide 126

It’s critical to ensure food handlers are using the correct method to cool TCS food, cooling it quickly, and regularly monitoring temperatures during cooling.

In addition to the acceptable cooling methods, food can also be cooled by adding ice or cold water as an ingredient.

Slide 127

When storing food for further cooling:

* + Loosely cover food containers before storing them
	+ Food can be left uncovered if protected from contamination
		- Storing uncovered containers above other food, especially raw seafood, meat, and poultry, will help prevent cross-contamination

Slide 128

Commercially processed and packaged ready-to-eat food:

May be reheated to an internal temperature of at least 135ºF (57ºC),This includes items like cheese sticks and deep-fried vegetables

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**Chapter 7 Flow of Food Service**

**Slide 130**

Your operation may want to display or hold ready-to-eat TCS food without temperature control. However, if you primarily serve a high-risk population, you cannot do it.

If your operation displays or holds ready-to-eat TCS food without temperature control, it must do so under certain conditions. Also note that the conditions for holding cold food are different from those for holding hot food. Before using time as a method of control, check with your local regulatory authority for specific requirements.

The discard time on the label must be six hours from the time you removed the food from refrigeration. For example, if you remove potato salad from refrigeration at 3:00 p.m. to serve at a picnic, the discard time on the label should be 9:00 p.m. This is six hours from the time you removed it from refrigeration.

**Slide 131**

There are some alternatives to holding cold ready-to-eat TCS food without temperature control. If the food is discarded within four hours, it can be allowed to reach any temperature during service. However, the food must be held at 41°F (5°C) or lower before removing it from temperature control.  The discard time on the label must also be four hours from the time you removed the food from temperature control. And the food must be sold, served, or thrown out within four hours.

**Slide 132**

Here is another alternative. As previously stated, cold ready-to-eat TCS food must be held at 41°F (5°C) or lower before being removed from refrigeration if it will be held without temperature control. However, there is an exception to that temperature for certain products. That includes ready-to-eat fruit or vegetables that become a TCS food when they’re cut, chopped, or sliced—like sliced tomatoes, cut leafy greens, or cut melons. The same is true for hermetically sealed containers of food that become a TCS food when opened, like a can of tuna. These items can actually start with an initial temperature of 70°F (21°C) or lower. However, the product has to be discarded within four hours. And it can’t exceed 70°F (21°C) within the four-hour period. Finally, the discard time on the label must be four hours from the time the product became a TCS food.

**Slide 133**

Hot ready-to-eat TCS food can be held without temperature control for up to four hours if:

* + It was held at 135ºF (57ºC) or higher before removing it from temperature control
	+ It has a label specifying when the item must be thrown out
	+ It is sold, served, or thrown out within four hours

**Slide 134**

Before using time as a method of control, check with your local regulatory authority for specific requirements. The regulatory authority may require you to prepare written procedures and get written approval in advance. You will also need to maintain those procedures in the operation, and make sure that they are made available to the regulatory authority upon request.

**Slide 135**

Spoons or scoops used to serve mashed potatoes or ice cream can be stored:

* + Under running water
	+ In a container of water maintained at 135ºF (57ºC) or higher

**Slide 136**

Take-home food containers brought back by guests can be refilled if they were:

* + Designed to be reused
	+ Provided to the guest by the operation
	+ Cleaned and sanitized correctly

**Slide 137**

Take-home beverage containers brought back by guests can be refilled if:

* + The beverage is not a TCS food
	+ The container will be refilled for the same guest
	+ The container can effectively be cleaned at home and in the operation
	+ The container will be rinsed with fresh, hot water under pressure before refilling
	+ The container will be refilled by staff or the guest using a process that prevents contamination

Slide 138

If you preset tableware:

* + Prevent it from being contaminated; for example, you can wrap or cover the items
	+ It is unnecessary to wrap or cover table settings if extra or unused settings are:
	+ Removed when guests are seated
	+ Cleaned and sanitized after guests have left

Slide 139

You must protect condiments from contamination. Serve them in their original containers or in containers designed to prevent contamination. Offering condiments in individual packets or portions can also help keep them safe.

Do **NOT** combine leftover condiments with fresh ones.

Throw away opened portions or dishes of condiments after serving them to guests. Salsa, butter, mayonnaise, and ketchup are examples.

You may re-serve bottles of ketchup, mustard, and other condiments.

Slide 140

**To prevent contamination:**

Place food in display cases,Package food to prevent contamination, Stock food using the correct utensils.

Never use ice as an ingredient if it was used to cool food or beverages

**Do not offer raw meat, seafood, or poultry unless:**

It is sushi or raw shellfish, The portions will be cooked immediately on the premises (e.g., Mongolian BBQ),

It is raw, frozen, shell-on shrimp or lobster

Slide 141

**When labeling bulk food in self-service areas:** Make sure the label is in plain view of the guest, Include the manufacturer or processor label provided with the food,As an alternative, provide the information using a card, sign, or other labeling method

Slide 142

A label is not needed for bulk unpackaged food, such as bakery products, or unpackaged food portioned for customers if:

* + The product makes no claim regarding health or nutrient content
	+ No laws requiring labeling exist
	+ The food is manufactured or prepared on the premises
	+ The food is manufactured or prepared at another regulated food operation or processing plant owned by the same person

Slide 143

Delays from the point of preparation to the point of service increase the risk that food will be exposed to contamination or time-temperature abuse.

Check internal food temperatures. If containers or delivery vehicles are not holding food at the correct temperature, reevaluate the length of the delivery route or the efficiency of the equipment being used.

Slide 144

When delivering food off-site:

* + Make sure the service site has the
	correct utilities
		- Safe water for cooking, dishwashing,
		and handwashing
		- Garbage containers stored away from
		food-prep, storage, and serving areas
	+ Store raw meat, poultry, and seafood, and
	ready-to-eat items separately

Slide 145

Handle food prepped and packaged for vending machines with the same care as any other food served to guests. Vending operators should protect food from contamination and time-temperature abuse during transport, delivery, and service.

Check product shelf life daily. Products often have a code date, such as an expiration or a use-by date. If the date has expired, throw out the food immediately. Throw out refrigerated food prepped on-site if not sold within seven days of preparation.

Keep TCS food at the correct temperature. It should be held at 41°F (5°C) or lower, or at 135°F (57°C) or higher. These machines must have controls that prevent TCS food from being dispensed if the temperature stays in the danger zone for a specified amount of time. This food must be thrown out.

Consumer advisories: Notices must be provided to customers if you serve raw or undercooked menu items. These notices must include a statement about the risks of eating these foods.

**Chapter 8 Food Management Systems**

Slide 147

A food safety management system is a Group of practices and procedures intended to prevent foodborne illness. It actively controls risks and hazards throughout the flow of food

Slide 148

Having food safety programs already in place gives you the foundation for your system. The principles presented in the ServSafe program are the basis of these programs. You must have these systems in place to have a food safety management system, Personal hygiene program, Food safety training, supplier selection and specification program, a quality control and assurance program.

Slide 149

A cleaning and sanitation program, Standard operating procedures, facility design and equipment maintenance program, and a pest control program.

Slide 150

It is the manager’s responsibility to actively control these and other risk factors for foodborne illness. This is called active managerial control. It is important to note that active managerial control is proactive rather than reactive. You must anticipate risks and plan for them.

Slide 151

There are many ways to achieve active managerial control in the operation. According to the Food and Drug Administration (FDA), you can use simple tools such as training programs, manager supervision, and the incorporation of SOPs. Active Managerial Control can also be achieved through more complex solutions, such as a HACCP program.

Slide 152

To keep food safe:

* + Practice active managerial control throughout the flow of food
	+ Anticipate potential foodborne-illness risk factors and control or
	eliminate them
	+ Apply what you have learned in ServSafe
	+ Monitor the flow of food
	+ Provide staff with the proper tools to make sure food is safe
	(e.g., procedures and training)

Slide 153

There are some important steps to take when implementing active managerial control in your operation

To implement active managerial control:

* 1. Identify risks
	2. Monitor
	3. Corrective action
	4. Management oversight
	5. Training
	6. Re-evaluation

Slide 154

 **Identify Risks:**

* + Find and document potential foodborne illness risks in the operation
	+ Identify the hazards that can be controlled or eliminated

 **Monitor:**

* + Food will be safe if managers monitor critical activities
	+ Identify where employees must monitor food safety requirements
		- When temperatures must be taken
		- How often sanitizer concentrations should be tested

Slide 155

 **Corrective Action:**

* + Take appropriate steps to correct improper procedures or behaviors
		- If a sanitizer level is too low, increase the concentration level

**Management oversight:**

* + Verify that all policies, procedures, and corrective actions are followed

Slide 156

**Training:**

* + Ensure employees are trained to follow procedures and retrained
	when necessary

 **Re-evaluation:**

* + Periodically assess the system to make sure it is working correctly
	and effectively

Slide 157

The FDA provides specific recommendations for controlling the common risk factors for foodborne illness. These are known as public health interventions. They are designed to protect public health.

Demonstration of knowledge: As a manager, you must be able to show that you know what to do to keep food safe. Becoming certified in food safety is one way to show this.

Staff health controls: Procedures must be put in place to make sure staff are practicing personal hygiene. For example, staff must know that they must report illnesses and illness symptoms to management.

Slide 158

There are many systems you can implement to achieve active managerial control of foodborne-illness risk factors. Hazard Analysis Critical Control Point (HACCP) is one such system. HACCP (pronounced HASS-ip) is based on identifying significant biological, chemical, or physical hazards at specific points within a product’s flow. Once identified, the hazards can be prevented, eliminated, or reduced to safe levels.

Slide 159

Each HACCP plan is unique; a plan that works for one operation may not work for another.

**Chapter 9 Safe Facilities and Pest Management**

**Slide 161**

Once installed, flooring, walls, and ceilings must be regularly maintained. Replace missing or broken ceiling tiles. Do the same for flooring. Repair all holes in walls.

 Coving should be glued tightly to the wall to get rid of hiding places for insects. This also protects the wall from moisture.

**Slide 162**

Foodservice equipment must meet certain standards if it will come in contact with food. That includes being smooth, easy to clean, durable, and resistant to damage.

Slide 163

Organizations such as NSF have developed standards like these for the sanitary design and construction of foodservice equipment. They also certify equipment that meets these standards.

Other organizations classify equipment—or evaluate it to ensure that it meets the standards developed by others. These organizations must be accredited by the ANSI National Accreditation Board (ANAB), which is a wholly owned subsidiary of the American National Standards Institute (ANSI), a nonprofit corporation.

Slide 164

When purchasing equipment, look for the NSF mark, the UL EPH classified mark, or the ETL sanitation mark. These indicate that the equipment has been certified or classified for sanitation under an ANAB-accredited program.

Slide 165

When installing equipment:

* + Follow the manufacturer’s recommendations
	+ Check with the regulatory authority for requirements

Once equipment has been installed:

* + It must be maintained regularly
	+ Only qualified people should maintain it
	+ Set up a maintenance schedule with your supplier or manufacturer
	+ Check equipment regularly to make sure it is working correctly

Slide 166

Always follow the manufacturer’s instructions when installing, operating, and maintaining dishwashers.

Slide 167

Clean dishwashers as often as necessary. Follow the manufacturer’s recommendations and local regulatory requirements.

Slide 168

Blank

Slide 169

Areas designated for employees to eat, drink, chew gum, and use tobacco products must be carefully located to protect food, equipment, linens, and single-use items from contamination.

Slide 170

An operation uses many utilities and building systems. Utilities include water, electricity, gas, sewage, and garbage disposal. Building systems include plumbing, lighting, and ventilation. There must be enough utilities to meet the needs of the operation. In addition, the utilities and systems must work correctly. If they do not, the risk of contamination is greater.

Slide 171

There are national standards for water in the United States that are enforced by each regulatory authority. Only water that is drinkable can be used for the preparation of food and come in contact with food-contact surfaces. This is called **potable water**.

Slide 172

Backflow can be the result of pressure pushing contaminants back into the water supply. It can also happen when high water use in one area of an operation creates a vacuum in the plumbing system that sucks contaminants back into the water supply. This is called backsiphonage.

A running faucet below the flood rim of a sink is an example of a cross-connection that can lead to backsiphonage. A running hose in a mop bucket is another example.

Slide 173

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Slide 174

Good lighting makes it easier to clean things in your operation. It also provides a safer environment.

Local jurisdictions usually require prep areas to be brighter than other areas. This allows staff to recognize the condition of food. It also allows staff to identify items that need cleaning.

Once the appropriate level of lighting has been installed in each area of the facility, you must monitor it. Replace any bulbs that have burned out. And make sure they are the correct size. All lights should have shatter-resistant light bulbs or protective covers. These products prevent broken glass from contaminating food or food-contact surfaces.

Slide 175

**Ventilation systems,** Improve the air inside an operation, Remove heat, steam, and smoke from cooking lines. Must be cleaned and maintained according to manufacturer’s recommendations

Slide 176

Waste and recyclables must be stored separately from food and food-contact surfaces. The storage of these items must not create a nuisance or a public health hazard.

Place outdoor garbage containers on a surface that is smooth, durable, and nonabsorbent. Asphalt and concrete are good choices. They must always be covered.

Slide 177

Poor maintenance can cause food safety problems in your operation.

**To prevent food safety problems:**

Clean the operation regularly, Make sure building systems work and are checked regularly, Make sure the building is sound, No leaks, holes, cracks. Control pests and Maintain the outside of the building.

Slide 178

Certain crises can affect the safety of the food you serve. Common crises include electrical power outages, fire, flooding, and sewage backups.

Temperature control: Power failures and refrigeration breakdowns can threaten your ability to control the temperature of TCS food, which can result in the growth of pathogens.

Physical security: Unauthorized people inside a facility are a risk to food safety. This is especially true when they can access storage and processing areas. Also, acts of nature can weaken a facility’s security.

Drinkable water supply: Threats to the drinkable water supply must also be considered. Broken water mains and breakdowns at water treatment facilities are a risk to the safety of food. Terrorist contamination of the water supply could also be a threat

Slide 179

**How to respond to a crisis affecting the facility:**

Determine if there is a significant risk to the safety or security of your food.

If the risk is significant

* + - Stop service
		- Notify the local regulatory authority

Throw out spoiled food, contaminated food, and food with packaging that is not intact

Slide 180

Correcting problems may include:

* + Establishing time-temperature control of TCS food
	+ Cleaning and sanitizing surfaces in the operation
	+ Reestablishing the physical security of the operation
	+ Verifying that the water supply is drinkable
	+ Gaining approval of the local regulatory authority

Slide 181

The regulatory authority may allow an operation to continue operating in the event of a water or electrical interruption. To do this, however, there are certain conditions that you’ll have to meet. That includes having a written emergency operating plan—that’s approved in advance by the regulatory authority. You’ll also have to make sure that you’re taking immediate corrective action to prevent, eliminate, or control any food safety risks or imminent health hazards associated with the interruption. And finally, the regulatory authority has to be informed whenever you implement your emergency operating plan.

**Chapter 10 Cleaning and Sanitizing**

Slide 183

Cleaners must be provided and available to employees during all hours of operation.

Slide 184

Chemical sanitizers are regulated by state and federal environmental protection agencies. They must be provided and available to employees during all hours of operation.

Slide 185

Chlorine sanitizer

Should be 75 to 100 degrees

Must have a concentration of 50ppm to 99ppm

Must make contact for 7 seconds

Slide 186

Iodine sanitizer

Should be at 68 degrees

Must have a concentration of 12.5ppm to 25ppm

Must make contact for 30 seconds

Quats

Should be 75 degrees

Must make contact for 30seconds

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All surfaces must be cleaned and rinsed. This includes walls, storage shelves, and garbage containers. However, any surface that touches food, such as knives, stockpots, cutting boards, or prep tables, must be cleaned and sanitized.

* **1. Scrape or remove food from the surface.** Use the correct cleaning tool, such as a nylon brush or pad or a cloth towel.
* **2. Wash the surface.** Prepare the cleaning solution with an approved cleaner. Wash the surface with the correct cleaning tool, such as a cloth towel.
* **3. Rinse the surface.** Use clean water. Rinse the surface with the correct cleaning tool, such as a cloth towel.
* **4. Sanitize the surface.** Use the correct sanitizing solution. Prepare the concentration per manufacturer requirements. Use the correct tool, such as a cloth towel, to sanitize the surface. Make sure the entire surface has come in contact with the sanitizing solution.
* **5. Allow the surface to air-dry.**

Wash the equipment surfaces. Use a cleaning solution prepared with an approved cleaner. Wash the equipment with the correct cleaning tool such as a nylon brush or pad, or a cloth towel.

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Equipment manufacturers will usually provide instructions for cleaning and sanitizing stationary equipment, such as a slicer.

Unplug the equipment.

Take the removable parts off the equipment. Wash, rinse, and sanitize them by hand. You can also run the parts through a dishwasher if allowed.

Scrape or remove food from the equipment surfaces.

* Wash the equipment surfaces. Use a cleaning solution prepared with an approved cleaner. Wash the equipment with the correct cleaning tool such as a nylon brush or pad, or a cloth towel.

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Rinse the equipment surfaces with clean water. Use a cloth towel or other correct tool.

Sanitize the equipment surfaces. Make sure the sanitizer comes in contact with each surface. The concentration of the sanitizer must meet requirements.

Allow all surfaces to air-dry. Put the unit back together

Slide 190

Some pieces of equipment, such as soft-serve yogurt machines, are designed to have cleaning and sanitizing solutions pumped through them. Since many of them hold and dispense TCS food, they must be cleaned and sanitized every day unless otherwise indicated by the manufacturer. You should also check your local regulatory requirements.

Slide 191

Operations using high-temperature dishwashing machines must provide staff with an easy and quick way to measure the surface temperatures of items being sanitized. The method used must provide an irreversible record of the highest temperature reached during the sanitizing rinse. This ensures that the dishwasher can reach correct sanitizing temperatures during operation. Maximum registering thermometers or heat-sensitive tape are good tools for checking temperatures.

Slide 192

Setting up a three-compartment sink:

* + Clean and sanitize each sink and drain board
	+ Fill the first sink with detergent and water at least 110ºF (43ºC)
	+ Fill the second sink with clean water
	+ Fill the third sink with water and sanitizer to the correct concentration
	+ Provide a clock with a second hand to let food handlers know how long items have been in the sanitizer

Slide 193

If vomit or diarrhea contacts surfaces in the operation, it must be cleaned up correctly. These substances can carry Norovirus, which is very contagious. Cleaning these surfaces correctly can prevent food from becoming contaminated. It will also keep others from becoming sick. Employees must use P.P.E.

Personal Protective equipment.

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To be effective, operations must have written procedures for cleaning up vomit and diarrhea. These procedures must address specific actions that employees must take to minimize contamination and exposure to food, surfaces, and people. It is critical that employees be trained on these procedures.

Slide 195

Chemical use:

* + Never keep chemicals that are not required to operate or maintain the establishment
	+ Always cover or remove items that could become contaminated before using chemicals
	+ Make sure to clean and sanitize equipment and utensils after using chemicals
	+ Always follow the law and manufacturer’s directions when using chemicals

Slide 196

Storing chemicals:

* + Keep them separate from food, equipment, utensils, and linens
		- By spacing chemicals apart from other items
		- By partitioning off chemicals from other items stored in the same area

Chemicals must always be stored below food, equipment, utensils,
and linens

Slide 197

If chemicals are transferred to a new working container, the label on that container must list the common name of the chemical.

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When creating a cleaning program:

* + List all cleaning jobs in one area or in the order performed. If chemicals are transferred to a new working container, the label on that container must list the common name of the chemical.
		- Include food and nonfood surfaces
	+ List cleaning tools and chemicals by name
		- Post cleaning instructions near each item
		- Follow manufacturer's instructions when cleaning equipment

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When monitoring a cleaning program:

* + Supervise daily cleaning routines
	+ Check cleaning tasks against the master schedule daily
	+ Change the master cleaning schedule based on changes in menu, procedures, and equipment
	+ Ask staff during meetings for input on the program