**ServSafe® Food Managers Certification Class** **SEVENTH EDITION**

I. Providing Safe Food

II. Forms of Contamination

III. The Safe Food Handler

IV. The Flow of Food: An Introduction

V. The Flow of Food: Purchasing, Receiving, and Storage

VI. The Flow of Food: Preparation

VII. The Flow of Food: Service

VIII. Food Safety Management Systems

IX. Safe Facilities and Pest Management

X. Cleaning and Sanitizing

**Chapter 1: Providing Safe Food**

1. A **foodborne illness** is an illness transferred to food by people through contaminated hands or

coming in contact with contaminated surfaces. They are microscopic and usually cannot be seen,

smelled, or tasted. It considered to be an **outbreak** when: (1) two or more people have the

same symptoms after eating the same food, (2) an investigation is conducted by state and local

regulatory authorities, and (3) the outbreak is confirmed by a laboratory analysis.

2. Unsafe food is the result of contamination by **biological** (pathogens- living micro-organisms),

**chemical** (cleaners, polishes, toxic metals that leach), and/or **physical** hazards (foreign objects).

3. **Biological contaminants** consist of bacteria, viruses, parasites, fungi, and toxins.

4. Examples of **chemical contaminants** are cleaners, sanitizers, and polishes.

5. Some examples of **physical contaminants** are metal shavings, staples, bandages, glass, dirt,

and natural objects such as fish bones in a fillet.

6. The **five CDC risk factors** for **foodborne illness** (identified by the Centers for Disease Control

and Prevention) are: (1) Purchasing food from unsafe sources, (2) Failing to cook food correctly,

(3) Holding food at incorrect temperatures, (4) Using contaminated equipment, and (5) Practicing

poor personal hygiene.

7. Four ways that food becomes unsafe: (1) **time-temperature abuse,** (2) **cross-contamination,**

(3) **poor personal hygiene,** and (4) **poor cleaning and sanitizing.**

8. **Time-temperature abuse** is when food has stayed too long at temperatures good for pathogen

growth.

9. Food is **time-temperature abused** when: it has not been held or stored at correct temperatures;

it is not cooked or reheated enough to kill pathogens; and/or when it is not cooled correctly.

10. **Cross-contamination** occurs whenever microorganisms are transferred from one surface or food

to another.

11. **Cross contamination** can result in a **foodborne illness** when: contaminated ingredients are

added to foods that receive no further cooking; R**eady-to-Eat (RTE)** food touches contaminated

surfaces; a food handler touches contaminated food and then touches **ready-to-eat food**; and/or

whenever contaminated cleaning cloths touch **food-contact surfaces.**

12. **Poor personal hygiene** can cause **foodborne illness** when food handlers: fail to wash their

hands correctly after using the restroom, cough or sneeze on food, touch or scratch wounds and

then touch food, and/or work while sick (only a few samples).

*©2012 National Restaurant Association Educational Foundation (NRAEF). All rights reserved. ServSafe and ServSafe Alcohol are registered trademarks of the NRAEF, used under license by National Restaurant Solutions, LLC. The logo appearing next to ServSafe is a trademark of the NRAEF.*

13. **Poor cleaning and sanitizing** are most often the result of: equipment and utensils that are not

washed, rinsed, and sanitized between uses; **food contact surfaces** that are ”wiped” clean

instead of being washed, rinsed, and sanitized; wiping cloths that are not stored in a sanitizer

solution between uses; and/or sanitizer solution that is not prepared correctly.

14. **Time-temperature abuse** refers to food that has remained in the ***temperature danger zone,***

allowing for the growth of pathogens – usually during **holding, storing, cooking, reheating,**

and/or cooling the food.

15. Food that requires **time and temperature control for safety (TCS food)** is food that is most

likely to become unsafe due to **time and temperature abuse**. TCS food includes: milk and dairy

products, meat (beef, pork, and lamb), fish, poultry, eggs, baked potatoes, tofu and other soy

protein products, sliced melons and cut tomatoes and leafy greens, shellfish and crustaceans,

sprouts and sprout seeds, untreated garlic and oil mixtures, and heat-treated plant foods such as

cooked rice, vegetables, and beans.

16. **RTE – Ready-to-eat food** is food that can be eaten without further preparation, washing, or

cooking. It includes: cooked food, washed fruit and vegetables, deli meat, bakery items, sugar,

spices, and seasonings.

17. **High Risk Populations** include: elderly people, infants and pre-school age children; and people

with a compromised immune system such as cancer, HIV/AIDS, and open-heart surgery; and

transplant recipients.

18. To keep food safe, focus on these measures: controlling **time and temperature,** preventing

**cross-contamination,** practicing **good personal hygiene,** purchasing from approved, reputable

suppliers, and cleaning and sanitizing.

19. A **Regulatory Authority** is a governmental agency responsible for regulating/inspecting a **food**

**service establishment. Regulatory Authorities** include: the Food and Drug Administration

(FDA) – regulates/inspects all food except meat, poultry, and eggs; also issues the FDA Model

Food Code. The U.S. Department of Agriculture (USDA) – regulates/inspects meat, poultry, and

eggs. The Centers for Disease Control and Prevention (CDC) – research causes of **foodborne**

**illness outbreaks.** The U.S. Public Health Service (PHS) – researches the causes of **foodborne**

**illness outbreaks.** State and local regulatory authorities (the Health Department) –

regulate/inspect retail and **foodservice operations.**

**Chapter 2: Forms of Contamination**

20. Contaminants come from a variety of places. For example: from the animals that we use for food;

from the air we breathe; from contaminated water; from dirt; and from people, either deliberately

or accidentally.

21. People can contaminate food when: they don’t wash their hands after using the restroom; they

are in contact with a person who is sick; they sneeze or vomit onto food or food-contact surfaces;

and/or when they touch dirty food-contact surfaces and equipment and then touch food.

22. **Pathogens** are: biological contaminants – harmful microorganisms that can be seen only with a

microscope. They make people sick when eaten, and/or they may produce toxins (poisons) that

cause illness.

23. **Four types of pathogens** that can contaminate food and cause **foodborne illness** are:

**bacteria, viruses, parasites, and fungi.**

24. The most common symptoms of **foodborne illness** are diarrhea, vomiting, fever, nausea,

abdominal cramps, and jaundice (yellowing of skin and eyes). Their onset times depend upon the

type of foodborne illness obtained and can range from 30 minutes to 6 weeks.

25. Bacteria are found almost everywhere and can’t be seen, smelled, or tasted. They will grow

rapidly if **FAT TOM** conditions are correct. To prevent bacteria: control **time and temperature.**

26. **FAT TOM** is an acronym that represents **the conditions which favor the growth of most**

**foodborne bacterial pathogens.**

**Food**

To grow, **pathogens** need and “energy source,” such as carbohydrates or proteins. **TCS** food

supports the growth of bacteria better than other types of food.

Meat, fish, poultry, and their by-products, lettuce, tomatoes, melons, sprouts, and garlic oil mixtures,

Heat treated starches: potatoes, rice, beans, and pasta.

**Acidity**

pH: The measure of a food’s acidity or alkalinity. pH **above 7.0 is alkaline.** pH **below 7.0 is**

**acidic.** pH of **7.0 is neutral**. **Pathogenic bacteria grow well in food** with a pH between **4.6 and**

**7.5** (slightly acidic to neutral). Pathogens do ***NOT***grow best in food that is highly acidic or highly

alkaline. Pathogens **grow best in food between 4.6 to 7.5 of the pH scale.**

pH Scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Temperature

Ideal temperature for pathogens to grow: **41°F to 135°F**, also known as the **temperature**

**danger zone and the rapid growth zone** of 70-125 F should be avoided as pathogens grow

quickly in that range.

**Time**

**After 4 hours in the temperature danger zone**, **pathogens** will grow to high enough levels to

cause illness.

**Oxygen**

Some pathogens need oxygen to grow while others don’t. Rice, garlic-and-oil mixtures, and

**temperature-abused** baked potatoes are examples of food without oxygen where pathogens

can grow.

**Moisture**

**Water activity (aw)** is measured on a scale of 0 to 1.0, with water having aw of 1.0. Food with aw

of .85 or higher is ideal for the growth of **pathogens.**

27. The **FAT TOM** conditions you can control are **time and temperature:** Keep **TCS** food out of the

**temperature danger zone** and limit how long **TCS** food spends in the **temperature danger**

**zone.**

28. The FDA has identified three types of **BACTERIA** that cause severe illness and are highly

contagious: Salmonella Typhi, Shigella spp., Non-Typhoidal Salmonella, Enterohemorrhagic and

shiga toxin-producing Escherichia coli. Most food borne illnesses are caused by fecal matter

contamination.

29. Illness: Salmonellosis. Bacteria: Salmonella Typhi – found in people with Salmonella Typhi (Typhoid

Fever.)

*Food linked with the bacteria*: **Ready-to-eat food** and beverages

*Prevention measures*: **Exclude** food handlers who have diarrhea or have been diagnosed with

Salmonella Typhi from the operation, wash hands, and cook food to minimum internal

temperatures.

30. Illness: Shigellosis. Bacteria: Shigella spp. – found in the feces of humans with Shigellosis.

*Food linked with the bacteria*: Food easily contaminated by hands, such as salads containing

**TCS** food (potato, tuna, shrimp, macaroni, chicken), and food that has made contact with

contaminated water, such as produce. Flies are a key source.

*Prevention measures*: Exclude food handlers who have diarrhea or have been diagnosed with an

illness caused by Shigella spp. from the operation, wash hands, and control flies inside and

outside the operation.

31. Illness: Hemorrhagic colitis. Bacteria: Enterohemorrhagic and shiga-toxin producing *Eschurichia*

*coli (E. coli)* – found in intestines of cattle and infected people.

*Food linked with the bacteria*: Ground beef (raw and undercooked), and contaminated produce.

*Prevention measures*: Exclude food handlers who have diarrhea of have been diagnosed with E.

coli from the operation; cook food, especially ground beef, to minimum internal temperatures 155 F;

purchase produce from approved, reputable suppliers; and prevent **cross-contamination**

between raw meat and ready-to-eat food.

32. Illness: Non-Typhoidal Salmonella: Bacteria- found in poultry and eggs

*Prevention measures:* Cook all poultry to 165 F. Prevent cross contamination.

Bacteria: Best Prevention: Time and temperature control.

Viruses are the leading cause of foodborne illness. They’re carried by human beings and

animals and require a living host to grow. They do not grow in food but can be transferred through

food and remain infectious in food. They’re found in food, water, or any contaminated surface and

typically occur through fecal-oral routes.

33. Viruses are not destroyed by normal cooking temperatures. Good **personal hygiene** is the best

prevention. Caution must be practiced when handling food and food-contact surfaces to prevent

foodborne illness due to viruses. The quick removal and cleanup of vomit is important.

34. The FDA has identified two **VIRUSES** that are highly contagious and can cause severe illness:

**Hepatitis A and Norovirus**.

35. Illness: Hepatitis A. Virus: Hepatitis A – found in human feces.

*Food linked with the virus*: Ready-to-eat food and shellfish from contaminated water

*Prevention measures*: Exclude staff who have jaundice or have been diagnosed with hepatitis A

from the operation, wash hands, avoid bare-hand contact with ready-to-eat food, and purchase

shellfish from approved, reputable suppliers.

36. Illness: Norovirus gastroenteritis. Virus: Norovirus – found in human feces. #1 cause of foodborne

illness.

*Food linked with the virus*: Ready-to-eat food and shellfish from contaminated water

*Prevention measures*: Exclude staff who have diarrhea and vomiting or have been diagnosed

with Norovirus from the operation, wash hands, avoid bare-hand contact with ready-to-eat food**,**

and purchase shellfish from approved, reputable suppliers.

37. **PARASITES r**equire a host to live- (person, animal, or produce) They’re found on seafood, wild

game, and food processed with contaminated water, such as produce. To prevent parasites:

purchase food from approved, reputable suppliers, cook food to required minimum internal

temperatures **145 F**, and fish that will be served raw or undercooked must be frozen correctly by the

manufacturer.

38. Some **FUNGI** such as mushrooms produce toxins. Purchase from approved suppliers only.

**MOLD**: Throw out moldy food, unless mold is the natural part of the food. They are attracted to

sweet, moist foods like jams, jellies, and bread.

YEAST: Causes fermentation. Discard is sweet foods begin to smell like wine.

40. Biological **TOXINS** occur naturally in certain plants, mushrooms, and seafood.

41. Illness: Histamine poisoning

Toxin: Histamine – also known as histamine poisoning, it is caused by eating high levels of

histamine certain species of fish. When the fish are time/temp abused, bacteria

on the fish make the toxin. It can’t be destroyed by cooking, freezing, smoking or curing.

*Food linked with the toxin*: tuna, bonito, mackerel, and mahi-mahi

*Prevention measures*: prevent time/temp abuse during storage and preparation

42. Illness: Ciguatera fish poisoning

Toxin: Ciguatoxin – found in certain marine algae, the toxin builds up in certain fish when they eat

smaller fish that consumed the toxic algae.

*Food linked with the toxin*: barracuda, grouper, jacks and snapper

*Prevention measures*: prevent **time/temp abuse during storage and preparation.**

General symptoms of biological toxin illnesses are diarrhea or vomiting, and neurological

symptoms such as tingling in extremities, reversal of hot and cold sensations, flushing of the face

and/or hives, difficulty breathing, and heart palpitations. Symptoms and onset times vary with

illness, and people can experience illness within minutes.

43. Food can become unsafe when contaminated by chemicals and cause **toxic-metal poisoning**.

44. Sources of **toxic-metal poisoning** include: certain types of kitchenware and equipment (items

made from pewter, copper, zinc, and some types of painted pottery); cleaners, sanitizers,

polishes, machine lubricants, and pesticides; deodorizers, first-aid products, and health and

beauty products (hand lotions, hairsprays, etc.).

45. Symptoms of illness due to toxic-metal poisoning occur within minutes, and vomiting and

diarrhea are typical. Proper response if someone gets sick; call the emergency number in your

area and the Poison Control number. Also, consult the chemical’s **Safety Data Sheet**

**(SDS)**, which contains important safety information about the chemical required by **OSHA**

Occupational Safety Hazard Administration.

46. To prevent chemical contamination, chemicals must be: approved for use in foodservice

operations; purchased from approved, reputable suppliers; stored away from prep areas, food-storage areas, and service areas (must be separated from food and food-contact surfaces by

spacing and partitioning); and used only as intended (follow manufacturer’s directions). NEVER

store chemicals above food or food-contact surfaces.

47. To prevent chemical contamination: only handle food with equipment and utensils approved for

foodservice use; make sure the manufacturer’s labels on original chemical containers are

readable; keep MSDS current, and make sure they are accessible to staff at all times; follow the

manufacturers’ directions and local regulatory requirements when throwing out chemicals.

48. Symptoms of illness caused by **physical contaminants** such as fingernails, jewelry, staples, etc.:

mild to fatal injuries are possible; cuts, dental damage, and choking; and bleeding and pain.

Prevention measures: purchasing food from approved, reputable suppliers; closely inspecting

food received; taking steps to prevent physical contamination, including practicing good personal

hygiene.

49. A **Food Defense Tool** to use in response to deliberate contamination of food by

terrorists/activists/disgruntled current or former staff/vendors/competitors is **ALERT**:

**Assure** Make sure products received are from safe sources

**Look** Monitor the security of products in the facility

**Employees** Know who is in your facility

**Reports** Keep information related to food defense accessible

**Threat** Develop a plan for responding to suspicious activity or a threat to the operation

50. When responding to a food-borne illness outbreak: gather information, notify authorities,

segregate product, document information, identify staff present when illness occurred, cooperate

with authorities, and review procedures.

51. A **food allergen** is a reaction to a particular protein. For example, peanuts or tree nuts.

52. Symptoms most commonly associated with an **allergic reaction to food**: nausea, vomiting,

abdominal pain, hives, wheezing and difficulty breathing, and swelling of the body.

53. Examples of common **food allergens** include: milk and dairy products, eggs and egg products,

fish and shellfish, wheat, soy and soy products, and peanuts and tree nuts.

54. Service staff must: describe how the dish ordered is prepared, identify ingredients, suggest

simple menu items, and hand-deliver food to customers with food allergies.

55. Kitchen staff must: Avoid **cross-contact** (when allergens are transferred from food containing an

allergen to the food served to the customer), and keep from cooking different types of food in the

same fryer oil and putting food on surfaces that have touched common food allergens.

56. To avoid cross-contact, kitchen staff must: wash, rinse, and sanitize cookware, utensils, and

equipment after handling an allergen; wash their hands and change gloves before prepping food;

use separate fryers and cooking oils when frying food for customers with **food allergies**; prep

food for customers with food allergies in a separate area from other food; label food packaged

on-site for retail use with list of allergens.

**Chapter 3: The Safe Food Handler**

57. Food handlers can contaminate food when they: have a foodborne illness, have wounds that

contain a **pathogen**, sneeze or cough, have contact with a person who is sick, touch anything

that may contaminate their hands and then don’t wash them, and have symptoms such as

diarrhea, vomiting, or jaundice.

58. **Hand washing**: takes 20 seconds to complete thoroughly.

59. Use running water as hot as **100°F** for hand washing.

60. Scrub hands vigorously for 10 – 15 seconds, cleaning between fingernails and between fingers,

rinse hands and arms; dry them with a single use paper towel or hand blow dryer. Use paper

towel to turn off faucet and open restroom door.

61. Food handlers must wash their hands before they start work and after; using the restroom,

touching the hair, face or body; sneezing, coughing, or using a tissue; eating, drinking, smoking,

or chewing gum or tobacco; handling chemicals that might affect food safety; and before and after

handling raw meat, poultry, and seafood.

62. Food handlers must also wash their hands after: taking out garbage; clearing tables or busing

dirty dishes; touching clothing or aprons; handling money; leaving and returning to the

kitchen/prep area; handling service animals or aquatic animals; and touching anything else that

may contaminate hands.

63. **Hand antiseptics** are liquids or gels that are used to lower the number of **pathogens** on skin,

and should only be used after hand washing, not in place of it. They should be allowed to dry

before touching food or equipment, and they must comply with the CFR (Code of Federal

Regulations) and FDA Standards.

64. Do not wear false fingernails or use nail polish.

65. Cover hand wounds with a leak-proof bandage or finger cot and then a single use glove. Cover

wounds on arms with a leak-proof bandage.

66. **Single-use gloves**: should be used when handling ready-to-eat food (except when washing

produce or when handling **ready-to-eat ingredients** for a dish that will be cooked); must NEVER

be used in place of hand washing; must NEVER be washed and reused; must fit correctly.

67. How to use gloves: wash and dry hands before putting them on; select the correct glove size;

hold gloves by the edge when putting them on; once gloves are on, check for rips or tears;

NEVER blow into gloves; NEVER roll gloves to make them easier to put on; avoid contaminating

gloves when putting them on.

68. When to change gloves: as soon as they become dirty or torn; before beginning a different task;

after an interruption, such as taking a phone call; and after handling raw meat, seafood, or poultry

and before handling ready-to-eat food.

69. Bare-hand contact with ready-to-eat food must be avoided: some jurisdictions allow it (but

require policies on staff health and training in hand washing and personal hygiene practices);

NEVER handle ready-to-eat food with bare hands when you primarily serve a high-risk

population.

70. **Food handlers must**: wear a clean hat or other hair restraint; wear clean clothing daily; remove

aprons when leaving **food-preparation areas** (don’t wipe hands on aprons); remove jewelry,

including rings (except for a plain band), bracelets (including medical bracelets), and watches

from hands and arms before prepping food or when working around food prep areas**.**

71. Food handlers must NOT eat, drink, smoke, or chew gum or tobacco when: prepping or serving

food; working in food prep areas; and working in areas used to clean utensils and equipment.

Some regulatory authorities allow food handlers to drink from a covered container while in **food**

prep and dishwashing areas.

72. Food handlers diagnosed with a foodborne illness caused by any of the pathogens listed must

be **excluded** from the food service operation, and the local regulatory authority notified:

*Salmonella Typhi, Shigella spp., Shiga toxin-producing E. coli, Hepatitis A, or Norovirus.* Work

with the food handler’s medical practitioner and/or the local regulatory authority to decide when

the person can go back to work.

73. When to restrict or exclude a person who is ill from working in the food service operation:

**IF** **THEN**

The food handler has a sore throat with a fever: **Restrict** the person from working with or

around food.

**Exclude** the person from the operation if you primarily serve a high-risk population.

A **written release** from a medical practitioner is required before returning to work.

The food handler has at least one of these **Exclude** the person from the operation.

symptoms: Before returning to work, food handlers who

* + - * Vomiting vomited or had diarrhea must meet one of
* Diarrhea these requirements:

Have had no symptoms for at least 24

Hours

* Have a written release from a medical

practitioner

**IF** **THEN**

The food handler has jaundice: • **Exclude** food handlers who have had

jaundice for less than 7 days from the

operation.

* Food handlers with jaundice must have a written release from a medical practitioner and a note from the local regulatory authority before they can go back to work.

The food handler has been diagnosed with a • Exclude the person from the **food**

foodborne illness caused by one of these **pathogens: operation.**

* Salmonella Typhi • Notify the local regulatory authority.
* Shiga toxin-producing E. coli • Work with the person’s medical
* Hepatitis A practitioner and/or local regulatory
* Norovirus authority to decide when the person
* Shigella spp. can return to work.

**Chapter 4: The Flow of Food: An Introduction**

74. To prevent **cross contamination**, use separate equipment, such as colored cutting boards and

utensil handles, for each type of food. Clean and sanitize all work surfaces, equipment, and

utensils after each task.

75. To prevent cross contamination, prep food *at different times:* prepare raw meat, fish, and

poultry at different times than **ready-to-eat food** (when using the same prep table), or buy

prepared food that don’t require much prepping or handling.

76. **Holding** food in the range of 41°F to 135°F (5°C to 57°C) results in **time-temperature abuse**.

Food is also **time-temperature abused** whenever it is **cooked** to the wrong **internal**

**temperature** and **cooled** or **reheated** incorrectly.

77. To avoid time-temperature abuse: monitor time and temperature; make sure the correct kinds

of thermometers are available; regularly record temperatures and the times they are taken;

minimize the time that food spends in the temperature danger zone; and take corrective

actions if time-temperature standards are not met.

78. **Monitoring Time and Temperature**:

**Bimetallic Stemmed Thermometer**: scaled to measure temps from 0°F – 220°F; sensing area

to +/- - 2°F.

**Thermocouples and Thermistors**: have a sensing area on the tip of their probe. This means

you don’t have to insert them into the food as far as a bimetallic stemmed thermometer to get a

correct reading. They come with different types of probes. For example: **immersion probe** –

used to check liquids (sauces); **surface probe** – check flat cooking equipment; **penetration**

**probe** – check **internal temperature** of thin food, such as hamburger patties or fish fillets; **air**

**probe** – check temperature inside refrigerators and ovens.

**Infrared:** measures the surface of food and equipment but cannot measure air temperature or

the internal temperature of food. Hold as close to the food or equipment as possible, and

remove anything between the thermometer and the food, food package, or equipment.

**Time-Temperature Indicator (TTI)**: these are attached to packaging by the supplier. A color

appears in the window if the food has been time-temperature abused during shipment or storage.

**Maximum Registering Tape**: indicates the highest temperature reached during use. Tape is

used where temperature readings cannot be continuously observed, such as the final rinse

temperature in dishwashing machines.

79. When using thermometers: wash, rinse, sanitize, and air-dry them before and after use; calibrate

(adjust) them before each shift and when they fall onto the floor to ensure accuracy; make sure

thermometers used to measure the temperature of food are accurate to +/-2°F or +/-1°C; only use

glass thermometers if they are enclosed in a shatterproof casing.

80. To **calibrate a bi-metallic stemmed thermometer** using **the ice point method**: 1) fill a glass

with ice and water; 2) insert the thermometer into the water; 3) the temperature must read 32F

when steady; if it doesn’t, then 4) adjust the probe from the nut until it reads 32°F. Then it is

properly calibrated.

81. When using thermometers: insert the thermometer stem or probe into the thickest part of the

product (usually the center); take more than one reading in different spots; and wait for the

thermometer reading to steady before recording the temperature.

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

82. An approved, reputable supplier is one that has been inspected, meets all applicable local, state,

and federal laws, and has documentation of a Good Manufacturing Practice (GMP) and/or a

Good Agriculture Practice (GAP) program.

83. Arrange deliveries so they arrive when staff has enough time to do inspections and they can be

correctly received.

84. **Receiving principles**: make specific staff responsible for **receiving** (train them to follow food

safety guidelines and provide them with the right tools – purchase orders, thermometers, scales,

etc.); have enough trained staff available to **receive** food promptly (inspect delivery trucks for

signs of contamination and visually check food items and check temperatures); and **store items**

**promptly after receiving.**

85. In **key drop deliveries**: the supplier is given after-hour access to the operation to make

deliveries. Deliveries must meet the following criteria: must be inspected upon arrival at the

operation; must be from an approved source; must have been placed in the correct storage

location to maintain the required temperature; must have been protected from contamination in

storage; is NOT contaminated; and, must be honestly presented.

86. To **reject deliveries**: separate rejected items from accepted items; tell the delivery person what is

wrong with the item; get a signed adjustment or credit slip before giving the rejected item to the

delivery person; and log the incident on the invoice or receiving document.

87. For **food items recalled by the manufacturer**: identify the recalled food items; remove the item

from inventory, and place it in a secure and appropriate location (such as a cooler or dry storage);

store the item 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; inform staff not to use the

product; and refer to the vendor’s notification or recall notice to determine what to do with the

item.

88. To check the temperature of Reduced Oxygen Packaging (ROP) food (\*MAP, vacuum-packed,

and \*\*sous vide food): insert the thermometer stem or probe between two packages. As an

alternative, fold packaging around the thermometer stem or probe; avoid puncturing the package.

**ROP = Reduced-Oxygen Packaging; \*MAP = Modified Atmosphere Packaging** (oxygen is

replaced with other gases); and **\*\*sous vide** food is vacuum sealed and cooked in a water bath.

89. To check the temperature of other packaged food: open the package and insert the thermometer

stem or probe into the food (stem/probe must not touch package).

90. Temperature criteria for deliveries: reject frozen food if there is evidence of **thawing** and

**refreezing (time-temperature abuse);** fluids or water stains in case bottoms or on packaging;

and ice crystals or frozen liquids on the food or packaging.

91. Reject food and nonfood packaged items with: tears, holes or punctures in packaging (reject cans

with swollen ends, rust, or dents); bloating or leaking ROP food; broken cartons or seals; dirty

and discolored packaging; leaks, dampness, or water stains; signs of pests or pest damage;

expired use-by/expiration dates; and evidence of tampering.

92. Required documents: shellfish must be received with **shell stock identification tags** (tags indicate

when and where the shellfish were harvested, and must be kept on file for 90 days from the date

the last shellfish was used from its delivery container).

93. Required documents: for **fish that will be eaten raw or partially cooked**, documentation must show

the fish was correctly frozen before being received; keep documents for 90 days from the sale of

the fish to consumer. Farm raised fish must have documentation stating the fish was raised to

FDA standards; keep documents for 90 days from the sale of the fish to consumer.

94. To assess food quality for **time-temperature abuse**: check its appearance (reject food that is

moldy or has an abnormal color); check its texture (reject meat, fish, or poultry if it is slimy, sticky,

or dry, or if it has soft flesh that leaves an imprint when touched); and check for odor (reject food

with an abnormal or unpleasant odor).

95. **Labeling food for use on-site**: it is not necessary to label food if it clearly will not be mistaken for

another item (ex: dry pasta); all other items not in their original containers must be labeled; food

labels should include **the** common name of the food or a statement that clearly and accurately

identifies it.

96. **Labeling food packaged on-site for retail sale:** use the common name of the food or a statement

clearly identifying it; label with quantity of the food; if the item contains two or more ingredients,

list the ingredients in descending order by weight; list the artificial colors and flavors in the food

including chemical preservatives; list name and place of business of the manufacturer, packer, or

distributor; and list source of each major food allergen contained in the food.

97. **Date marking:** R**eady-to-Eat TCS food** must be marked if held longer than 24 hours. The date

mark must indicate when the food must be sold, eaten, or thrown out. TCS food can be stored for

**only seven days**. If it is held at 41°F (5°C) or lower: the count beings on the day that the food was

prepared or a commercial container was opened. Some operations write the day or date the food was

prepared on the label; others write the use-by date or date on the label.

99. **In date marking**, if a commercially processed food has a use-by date that is less than seven days

from the date the container was opened, the container should be marked with this use-by date, as

long as the date is based on food safety.

100. In date marking, when combining food in a dish with different use-by dates, the discard date of

the dish should be based on the earliest prepared food.

101. Temperatures for food storage: store **TCS** food at an internal temperature of 41°F (5°C) or lower

or 135°F (57°C) or higher; store frozen food at temperatures that keep it frozen; make sure

storage units have at least one air temperature measuring device; it must be accurate to +/-3°F or

+/-1.5°C; and place the device in the warmest part of refrigerated units, and the coldest part of

hot-holding units.

102. Temperatures for food storage: Do NOT overload coolers or freezers (it prevents airflow and

makes unit work harder; also, frequent opening of the cooler lets warm air inside, which can affect

food safety); use open shelving (lined shelving restricts circulation); and monitor food

temperatures regularly (randomly sample food temperatures).

103. **First In, First Out (FIFO):** method of stock rotation in which products are shelved based on their

use-by or expiration dates, so oldest products are used first. Throw out food that has passed its

manufacturer’s use-by or expiration date.

104. **Preventing cross-contamination:** store all items in designated storage areas: store items away

from walls and at least six inches (15 centimeters) off the floor; also store single-use items(e.g.,

sleeve of **single-use** cups, single-use gloves) in original packaging; store food in durable

containers intended for food; use containers that are durable, leak proof, and able to be sealed or

covered: NEVER use empty food containers to store chemicals; and NEVER put food in empty

chemical containers; keep all storage areas clean and dry; clean up spills and leaks immediately;

clean dollies, carts, transporters, and trays often; clean floors, walls, and shelving in coolers,

freezers, dry-storage areas, and heated holding cabinets on a regular basis; store food in

containers that have been cleaned and sanitized; store dirty linens in clean, nonabsorbent

containers or washable laundry bags; wrap or cover food and store raw meat, poultry, and

seafood separately from ready-to-eat food**.** If this if not possible, store ready-to-eat food above

raw seafood, meat and poultry (this will prevent juices from raw food from dripping onto ready-to-eat food; store food items in the following top-to-bottom order: ready-to-eat food, seafood,

whole cuts of beef and pork, ground meat and ground fish, and whole and grounded poultry. This

storage order is based on the minimum internal cooking temperature of each food.

105. 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,

restroom or garbage rooms, mechanical rooms, under unshielded sewer lines or leaking water

lines, and under stairwells.

**Chapter 6: The Flow of Food: Preparation**

106. When prepping food: Only remove as much food from the cooler as you can prep in a short

period of time (this limits time-temperature abuse). Return prepped food to the cooler or cook it

as quickly as possible. Make sure workstations, cutting boards, and utensils are clean and

sanitized.

107. 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.

108. Do NOT use the following to misrepresent the appearance of food: food additives or color

additive, colored overwraps, lights. Food not represented honestly must be thrown out.

109. Food must be thrown out: when it is handled by staff who have been restricted or excluded from

the food operation due to illness; when it is contaminated by hands or bodily fluids from the nose

or mouth; When it has exceeded the time and temperature requirements designed to keep food

safe.

110. **Four methods for thawing food:**

* Thaw food in a cooler, keeping its temperature at 41°F (5°C) or lower
* Submerge food under running water at 70°F (21°C) or lower. NEVER let the temperature of

the food go above 41°F (5°C) or lower for longer than four hours

* Thaw food in a microwave, only if cooked immediately after thawing
* Thaw as part of the cooking process

111. **Produce:**

* Make sure produce does not touch surfaces exposed to raw meat, seafood, or poultry. Wash

it thoroughly under running water before cutting, cooking, or combining with other ingredients.

* Produce can be washed in water containing ozone to sanitize it but check with your local

regulatory authority.

* When soaking or storing produce in standing water or an ice-water slurry, do not mix different

items or multiple batches of the same item. Refrigerate and hold sliced melons, cut tomatoes,

and cut leafy greens at 41°F (5°C) or lower. Do NOT serve raw seed sprouts if primarily

serving a high-risk population.

112. Handle pooled **eggs** (if allowed) with care. Cook promptly after mixing or store at 41°F (5°C) or

lower. Clean and sanitize containers between batches. Consider using pasteurized shell eggs or

egg products when prepping dishes that need little or no cooking. When cooking eggs for high-risk populations use pasteurized shell eggs if eggs will be pooled and when serving raw or

undercooked dishes. Unpasteurized shell eggs can be used if the dish will be cooked all the way

through (i.e., omelets, cakes).

113. For salads containing TCS food, make sure that the leftover TCS ingredients (i.e., pasta, chicken,

potatoes, etc.) have been handled safely by ensuring that they were cooked, held, and cooled

correctly. Store for less than seven days at 41°F (5°C) or lower.

114. NEVER use **ice** as an ingredient if it was used to keep food cold. Transfer ice using clean and

sanitized containers and scoops. NEVER **hold** ice in containers that held chemicals, raw meat,

seafood, or poultry.

115. A **Food Service Operation** needs to obtain a **variance or approval** if it **prepares** food in any of these ways:

* Packaging fresh juice on-site for sale at a later time, unless the juice has a warning label
* Smoking food to preserve it but not to enhance flavor
* Using food additives or components to preserve or alter food so it no longer needs time and

temperature control for safety

* Curing food
* Packaging food using a reduced-oxygen packaging (ROP) method
* Sprouting seeds or beans
* Offering live shellfish from a display tank
* Custom-processing animals for personal use (i.e. dressing a deer)

116. **Cook to 165°F (74°C) immediate temp**: all poultry, whole or ground (i.e., chicken, turkey, or

duck); stuffing made with fish and/or other meats; stuffed meats with seafood, poultry, and/or

pasta; reheating dishes that include previously cooked **TCS** ingredients and when microwaving food.

117. **Cook to 155°F (68°C) for 17 seconds**: ground meats; beef, pork, and other meats; injected meat

including brined ham and flavor-injected roasts; mechanically tenderized meat; ratites including

ostrich and emu; ground seafood including chopped or minced seafood.

**For eggs that will be *hot-held* for service**: **Hold** at **155°F (68°C) for 15 seconds.**

118. **Cook to 145°F (63°C) for 15 seconds:** seafood, including shellfish, fish and crustaceans; steaks

and chops of pork, beef, veal, and lamb; and commercially raised game. For eggs that will be

served immediately: **serve at 145°F (63°C) for 15 seconds.**

119. **Cook to 145°F (63°C) for 15 seconds:** Roasts of pork, beef, veal, and lamb: cook to **145°F for 15**

Roasts for 4 minutes.

120. **Cook to 135°F (57°C) for 15 seconds**: Fruits, vegetables, grains (rice, pasta), and legumes (beans,

refried beans) that will be **hot-held** for service:

121. **Cooking TCS Food in a Microwave**: meat, seafood, poultry, and eggs: **cook to 165°F (74°C)**

Guidelines for microwave cooking: cover food to prevent the surface from drying out; rotate or stir

it halfway through **cooking** so heat reaches the food more evenly; let it stand for at least two

minutes after **cooking** to let the food temperature even out; check the temperature in at least two

places to make sure the food is **cooked** through evenly.

122. **Partial Cooking During Preparation**

If partially cooking meat, seafood, poultry, or eggs (or dishes containing any of these items): 1)

NEVER cook the food for longer than 60 minutes during the initial **cooking cycle;** 2) **cool** the

food immediately after the initial cooking cycle; 3) **freeze** or **refrigerate** the food after **cooling** it

properly; 4) **reheat** the food to at least 165°F (74°C) for 15 seconds before serving it; or 5) **cool**

the food properly if it will NOT be **served** immediately or **held** for service.

123. **Consumer Advisories**

If a food service operation menu includes raw or undercooked TCS items, it must: note it on the

menu next to the items; asterisk the items; place a footnote at the menu bottom indicating the

item is raw, undercooked, or contains raw or undercooked ingredients; advise customers who

order this food of the increased risk of foodborne illness; post a notice in the menu; and provide

this information using brochures, table tents, or signs. The FDA advises against offering these

items on a children’s menu if they are raw or undercooked: Meat, poultry, seafood, and eggs.

124. **Cooling Food**

* **Step 1:** Cool food from 135°F to 70°F (57°C to 21°C) in less than two hours; **Step 2:** use the

remaining time to cool it from 41°F (5°C) or lower, for a total cooling cycle which cannot be

longer that six hours.

* Before cooling food, start by reducing its size: cut larger items into smaller pieces; divide

large containers of food into smaller containers or shallow pans.

* Methods for cooling food safely and quickly: place food in an ice-water bath; stir it with an

ice paddle; or place it in a blast chiller.

* When storing food for further cooling, loosely cover the food containers before storing

them in a cooler. 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.

125. **Reheating Food**

* Food “prepared in-house” for immediate service may be consumed at, or reheated to any

temperature if it was cooked and cooled correctly.

* Food “prepared in-house” to be hot-held must be reheated within two hours to an internal

temperature of 165°F (74°C) for 15 seconds. Then it must be held at 135°F (57°C).

* Ready to Eat (RTE) food commercially processed and packaged must be reheated to an

internal temperature of at least 135°F (57°C).

**Chapter 7: The Flow of Food: Service**

126. **Guidelines for Holding Food**

Food covers and sneeze guards protect food from contaminants. Covers protect food from

contamination and help maintain food temperatures.

**Hold TCS food** at the correct temperature. **Hot food**: 135°F (57°C) or higher. **Cold food**: 41°F

(5°C) or lower.

Throw out/discard any cold food not at 41°F (5°C) or lower; throw out/discard any hot food not at

135°F (57°C) or higher. (A) Check temperatures every two hours to leave time for corrective

action. (B) At a minimum, check temperatures at least every four hours.

**NEVER** use hot-holding equipment to reheat food unless it is designed for it. Reheat food

correctly, and then move it into a holding unit.

127. **Holding Food Without Temperature Control**

* Cold food can be held without temperature control for up to six hours if: it was held at 41°F

(5°C) or lower before removing it from refrigeration; it does not exceed 70°F (21°C) during

**service** (throw out food that exceeds this temperature: 70°F (21°C)); it has a label specifying

the time it was removed from **refrigeration** and the time it must be thrown out – the total time

is within six hours; it is sold, served, or thrown out within six hours.

* Hot food can be held without temperature control for up to four hours if: it was held at 135°F

(57°C) or higher before removing it from temperature control; it has a label specifying the time

it was removed from hot-holding and the time it must be thrown out – the total time is within

four hours; it is sold, served, or thrown out within four hours.

128. Prevent contamination when serving food:

Wear single-use gloves whenever handling ready-to-eat food. As an alternative to single-use

gloves, use spatulas, tongs, deli sheets, or other utensils when serving food; use clean and

sanitized utensils for serving food; use separate utensils for each food; clean and sanitize the

utensils after each task; at a minimum, clean and sanitize them at least once every four hours.

Store serving utensils correctly between uses on a clean and sanitized **food-contact surface** or

in the food with the handle extended above the container rim.

129. If you preset tableware prevent the tableware from being contaminated by wrapping or covering

the items (i.e., in a napkin, etc.)

Table settings do not need to be wrapped or covered if the extra settings are removed when

guests are seated; are cleaned and sanitized after guests have left.

130. **Re-Serving Food**

**NEVER** re-serve food returned by one customer to another customer (i.e., uncovered

condiments, uneaten bread, salsas, chips, or plate garnishes).

Generally, unopened prepackaged food in good sanitary condition **can be re-served** (i.e.,

condiment packets, wrapped crackers or individually wrapped breadsticks).

131. **Self-Service Areas**

Prevent time-temperature abuse and contamination by using sneeze guards, 14-inches above

the food counter and 7 inches beyond the food. Identify all food items by labeling the food (i.e.,

placing salad dressing names on the ladle handles).

132. To prevent **time-temperature abuse** and/or **cross-contamination** keep hot food at 135F (57C)

or higher, and cold food at 41°F (5°C) or lower; keep raw meat, fish, and poultry separate from

ready-to-eat food; do NOT let customers refill dirty plates or use dirty utensils at self-service

areas.

133. When delivering food off-site: use insulated, food-grade containers designed to stop food from

mixing, leaking, or spilling; clean the inside of delivery vehicles regularly; check internal food

temperatures; label food with a use-by date and time, and reheating and service instructions;

make sure the service site has the correct utilities (safe food 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.

**Chapter 8: Food Safety Management Systems**

134. **Food safety management systems** are a group of practices and procedures intended to prevent

foodborne illness. They control the risks and hazards that may be present throughout the Flow of

Food in a food service operation.

135. The foundation of a food safety management system is: 1) Good personal hygiene practices;

2) Food Safety Training Program; 3) Supplier Selection and Specification Program; 4)

Quality Control and Assurance Program; 5) Cleaning and Sanitation Program; 6) Standard

Operating Procedures (SOP); 7) Facility Design and Equipment Maintenance Program; and

8) Pest Control Program.

136. **Active Managerial Control** focuses on controlling the five most common **risk factors** for

**foodborne illness**: 1) Purchasing food from unsafe sources; 2) Failing to cook food adequately;

3) Holding food at incorrect temperatures; 4) Using contaminated equipment; and 5) Practicing

poor personal hygiene.

To achieve **active managerial control** in the **food service operation** use: A) Training Programs;

B) Managerial Supervision; C) Incorporation of a Standard Operating Procedure (SOP); D)

Hazard Analysis and Critical Control Point (HACCP) plan.

These are critical to the success of active managerial control: monitoring critical activities in

The Food service operation; taking the necessary corrective action when required; verifying

That the actions taken control the risk factors.

137. The **FDA provides recommendations** for controlling the common risk factors for foodborne

illness: demonstration of knowledge; staff health controls; controlling hands as a vehicle of

contamination; time and temperature parameters for controlling pathogens; consumer

advisories.

138. The **HACCP** approach is based on identifying significant biological, chemical, or physical hazards

at specific points within a product’s flow through an operation**.** Once identified, those hazards

can be prevented, eliminated, or reduced to safe levels.

* To be effective, a HACCP system MUST be based on a written plan. It must be specific to the

variables within each facility’s: a) menu, b) customers, c) equipment, d) processes, and e)

operations. A plan that works for one food service operation may not work for another due to

those variables.

139. **The seven HACCP principles:**

1. Conduct a hazard analysis

2. Determine critical control points (CCPs)

3. Establish critical limits

4. Establish monitoring procedures

5. Identify corrective actions

6. Verify that the system works

7. Establish procedures for record keeping and documentation

140. These specialized processing methods require a variance and may require a HACCP plan:

* Smoking food as a method to preserve it (but not to enhance flavor)
* Using food additives or components such as vinegar to preserve or alter food so it no longer

requires time and temperature control for safety

* Curing food
* Custom-processing (wild) animals
* Packaging food using the Reduced Oxygen Packaging (ROP**)** (including: MAP, vacuum-packed, and Sous vide) methods
* Treating (e.g., pasteurized) juice on-site and packaging it for later sale
* Sprouting seeds or beans

**Chapter 9: Safe Facilities and Pest Management**

141. **Interior requirements for a safe operation**

* Floors, walls and ceilings must be smooth and durable for easier cleaning and regularly

maintained.

* Foodservice equipment must meet these standards if it will come in contact with food: nonabsorbent, smooth, and corrosion resistant; easy to clean; durable; resistant to damage.

142. **Floor-mounted equipment** must be either six inches off the floor or sealed to a masonry base.

143. **Tabletop equipment** should be four inches off the floor or sealed to the countertop.

144. Once the **foodservice 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 and check the foodservice equipment regularly to make sure it is working

correctly.

145. **Dishwashing equipment** must be installed so it is reachable and conveniently located; in such a

way that keeps utensils, equipment, and other food-contact surfaces from becoming

contaminated; following the manufacturer’s instructions.

When selecting dishwashing equipment, make sure that the detergents and sanitizers used

are approved by the local regulatory authority; they have the ability to measure water

temperature, water pressure, and cleaning and sanitizing chemical concentration; and that

information about the correct settings is posted on the machine.

146. **Handwashing stations** must be conveniently located. They are required in: restrooms, food-prep

areas, service areas, and in the dishwashing area.

**Handwashing sinks** must be used *only for handwashing*.

**Handwashing stations** must have: Hot and cold running water, soap, a sanitary way to dry

hands, a garbage container, and signage (i.e. “All employees must wash hands before

returning to work”).

147. **Water and Plumbing**

* Some acceptable sources of drinkable water are: approved public water mains; regularly tested and maintained private sources; closed, portable water containers; and water transport

vehicles.

* Cross-connection is the physical contact point or link where contaminated water meets the

potable water supply. The physical link is dangerous because it increases the opportunity of

***back-flow***, or the unwanted reverse flow of contaminants, such as those from drains, sewers,

or other sources of wastewater into the establishment’s potable water system. It occurs when

the *pressure* in the potable water supply *drops below* the pressure of the contaminated

supply.

* Regarding backflow prevention, an **air gap** is the air space that is needed to maintain the

separation of a water supply outlet from any potentially contaminated water source. An air

gap prevents back-flow.

148. Consider the following when installing and **maintaining lighting**: Different areas of the facility have

different lighting intensity requirements; local jurisdictions usually require prep areas to be

brighter than other areas. All lights should have shatter-resistant light bulbs or protective

covers. Replace any burned-out bulbs with the correct size light bulbs.

149. **Ventilation systems** must be cleaned and maintained to prevent grease and condensation

build-up on walls and ceilings.

150. **Garbage**

Garbage should be removed from prep areas as quickly as possible. Clean the inside and the

outside of garbage containers frequently. Indoor garbage containers must be leak-proof, waterproof, and pest-resistant; easy to clean and covered when not in use. Outdoor garbage

containers must be placed on a smooth, durable, nonabsorbent surface, and have tight-fitting lids

for optimal maintenance.

151. **Imminent Health Hazards**: Emergencies that affect the facility. Like (threat of danger to health);

(power outages, fire, flood, sewage backups, water contamination or lack of hot H20, and pest.

Follow three steps if significant risk: 1) Stop service. 2) Notify regulatory authority 3) Wait for

permission to reopen.

152. **Pest Management**

* **Three rules of pest prevention**: 1) Deny pests access to the operation; 2) Deny pests food,

water, and shelter; and 3) Work with a licensed pest **control operator (PCO).**

* To keep pests from entering with food deliveries, check them before they enter the **food**

service operation. Refuse shipments if pests or signs of pests (egg cases, body parts) are

found. Make sure all of the points where pests can access the building are secure: screen

windows and vents, seal cracks in floors and walls and around pipes. Install air curtains

(also called air doors or fly fans) above or alongside doors.

* To deny pests shelter (outside): throw out garbage quickly and correctly; keep garbage

containers clean and in good condition; keep outdoor garbage containers tightly covered.

Clean up spills around garbage containers immediately; store recyclables correctly. Keep

recyclables in clean, pest-proof containers, and then keep the garbage containers as far

away from the building as regulations allow.

* To deny pests shelter (inside): store food and supplies quickly and correctly; keep them away

from walls and at least six inches (15 centimeters) off the floor; rotate products First in First

Out (FIFO) so pests cannot settle and breed; clean the food service operation thoroughly;

clean up food and beverage spills immediately; clean break rooms after use; keep cleaning

tools and supplies clean and dry.

**Chapter 10: Cleaning and Sanitizing**

153. Cleaners must be stable, noncorrosive and safe to use.

When using them: follow the manufacturers’ instructions; do not use one type of **detergent** in

place of another unless the intended use is the same.

154. Surfaces can be **sanitized** using: Heat (the water must be at least 171F and immerse the item for

30 seconds); or Chemicals (**Chlorine, Iodine**, or **Quaternary Ammonia (quats)).**

155. **Chemical sanitizing:** food-contact surfaces can be sanitized by soaking them in a sanitizing

solution or rinsing, swabbing, or spraying them with a sanitizing solution.

In some cased a detergent-sanitizer blend can be used (use it once to clean and a second time

to sanitize.)

156. **Sanitizer Effectiveness**

**Concentration:** Sanitizers should be mixed with water to the correct concentration: not enough

sanitizer may make the solution weak and useless. Too much sanitizer may make the solution

too strong, unsafe, toxic, and may corrode metal.

Check concentration with a test kit; make sure it is designed for the sanitizer used; check the

concentration often. Change the solution when: it is dirty; or with the concentration is too low.

Follow manufacturer’s recommendations for the correct temperature.

The sanitizer must make contact with the object for a specific amount of time. Minimum times

differ for each sanitizer.

Find out what your water hardness and pH is from your municipality. Work with your supplier to

identify the correct amount of sanitizer to use.

157. **Steps for cleaning and sanitizing surfaces are:** scrape or remove food bits, wash, rinse, sanitize,

and air dry.

158. All food contact surfaces need to be cleaned and sanitized at these times:

* After they are used
* Before food handlers start working with different type of food
* Any time an interruption takes place during a task and the items being used may become

contaminated

* After four hours of continual use

159. **When Cleaning and Sanitizing Stationary Equipment:** Unplug the equipment; take the

removable parts off the equipment; wash, rinse, and sanitize them by hand or run the parts

through a dishwasher if allowed; scrape or remove food from the equipment surfaces; wash the

equipment surfaces; rinse the equipment surfaces with clean water; sanitize the equipment

surfaces; make sure the sanitizer comes in contact with each surface; allow all surfaces to airdry; put the unit back together.

160. **High temperature dishwashing machines** have a sanitizing temperature of 180°F in the final

rinse cycle.

161. **Chemical-sanitizing machines** clean and sanitize items at a much lower temperature (120°F)

than other dishwashing machine**.**

162. **Dishwashing Operation**

Guidelines: Clean the machine as often as needed: scrape, rinse, or soak items before washing;

use the correct dish racks; NEVER overload dish racks; air-dry all items; check the machine’s

water temperature and pressure.

163. **Setting up a three-compartment sink**: Clean and sanitize each sink and drain board; fill the first

sink with detergent and water at least 110°F (43°C); 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**.**

164. Steps for cleaning and sanitizing in a **three-compartment sink**: rinse, scrape, or soak items

before washing them; wash items in the first sink; rinse items in the second sink; sanitize items in

the third sink; air-dry items on a clean and sanitized surface.

165. When storing clean and sanitized tableware and equipment; store them at least six inches (15

centimeters) off the floor; clean and sanitize drawers and shelves before items are stored; store

glasses and cups upside down on a clean and sanitized shelf or rack; store flatware and

utensils with handle up; cover the food-contact surfaces of stationary equipment until ready

for use; and clean and sanitize trays and carts used to carry clean tableware and utensils.

166. Clean nonfood-contact surfaces regularly (includes floors, ceilings, walls, equipment exteriors,

etc.): Prevent dust, dirt, food residue and other debris from building up.

167. **Develop a plan for cleaning up diarrhea and vomit in the operation**. It can carry Norovirus, which

is highly contagious. Correct cleanup can prevent food from becoming contaminated and others

from getting sick.

Consider the following when developing a plan for cleaning up of vomit and diarrhea: How you

will contain liquid and airborne substances, and remove them from the operation; how you will

clean, sanitize, and disinfect surfaces; when to throw out food that may have been contaminated;

what equipment needed to clean up these substances, and how it will be cleaned and disinfected

after use; when a food handler must wear personal protective equipment; how staff will be notified

of the correct procedures for containing, cleaning, and disinfecting these substances; how to

segregate contaminated areas from other areas; when staff must be restricted from working with

or around food, or excluded from working in the operation; how sick customers will be quickly

removed from the operation; and, how the cleaning plan will be implemented.

168. Store cleaning tools and chemicals in a separate area away from food and prep areas.

169. NEVER dump mop water or other liquid waste into toilets or urinals; NEVER clean tools in sinks

used for handwashing, food prep, dishwashing.

170. The **Occupational Safety and Health Administration (OSHA)** has requirements for using

chemicals in foodservice operations. OSHA requires chemical manufacturers and suppliers to

provide **Material Safety Data Sheets (MSDS)** for every hazardous chemical they sell. The

sheets contain information about the chemical; safe use and handling; physical, health, fire, and

reactivity hazards; precautions; protective equipment to wear; manufacturer’s name, address, and

phone number; preparation date of MSDS; and hazardous ingredients and identity information.

MSDS are usually sent with chemicals delivered. MSDS must be kept visible and available to

employees of the operation at all times.

171. Foodservice Chemicals: Only purchase those approved for use in foodservice operations; store

them in their original containers away from food and food-prep areas. If transferring them to a

new container, label it with the common name of the chemical; keep MSDS for each chemical.

When throwing chemicals out, follow instructions on the label and local regulatory requirements.

172. **Cleaning Program**

To develop an effective cleaning program, create a **master cleaning schedule**; train your staff

to follow it; and monitor the program to make sure it works.

To create a master cleaning schedule, identify: what should be cleaned; who should clean it;

when it should be cleaned; and how it should be cleaned.

When monitoring the cleaning program: supervise the daily cleaning routines; check the

cleaning tasks against the master schedule every day; change the master schedule as needed;

and ask the staff for input on the program.

When developing a cleaning program for a food operation, training employees to follow the

program is the key to its success.