

Food Safety Education
for Residential Child Care Institutions

**Food Safety Basics
Instructor Guide**

THE
UNIVERSITY
OF RHODE ISLAND

Food Safety Education
for Residential Child Care Institutions

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Introduction

Project Background

The National School Lunch Program (NSLP) is a federally assisted meal program that operates in public and non-profit private schools and Residential Child Care Institutions (RCCI). NSLP provides nutritionally balanced low-cost or free breakfasts, lunches, and after school snacks. While the Food and Nutrition Service (FNS) branch of the USDA administers the program at the Federal level, State education agencies administer the program at the State level through agreements with the local or district level school food authorities. In 2004, the Child Nutrition and WIC Reauthorization Act amended the National School Lunch Act by requiring the state school food authorities to implement a Hazard Analysis Critical Control Point (HACCP) based food safety program for the preparation and service of meals served during the school year beginning July 1, 2005 for all institutions that participate in either the NSLP or School Breakfast Programs (SBP). The Act also required that schools participating in these meal programs to undergo a minimum of two health inspections each year with State standards, such as the Food Code, used to guide the inspection process. As of January 14, 2010, the Food and Nutrition Service implemented the final rule which codifies the requirements regarding schools food safety program based on HACCP principles (7 CFR Parts 210 and 220). Since all NSLP and SBP recipients must comply with the food safety requirements, this new reauthorization requirement not only impacts public and private school based foodservice operations but also Residential Child Care Institutions (RCCI) that participate in these programs.

The term Residential Child Care Institutions refers to institutions that provide short or long term residential and care services to children who, because of their circumstances, do not or cannot live in their family home. Such institutions meet a broad definition of “school” for purposes of providing Child Nutrition Programs—the National School Lunch Program, the School Breakfast Program, and in some cases, the After School Snack Program. RCCIs, by definition, can include homes for the mentally, emotionally or physically impaired, unmarried mothers and their infants, group homes, halfway houses, orphanages, temporary shelters for abused and/or runaway children, long term care facilities for the chronically ill and juvenile detention centers (7 CFR part 210) (Office of Federal Register, 2006). The RCCI definition allows hospitals for chronically ill children to qualify to participate in the federally funded meal program. The definition also includes group homes or shelters serving as few as four children.

As RCCI clientele vary, so does their foodservice operation and staffing. RCCIs include hospitals or training schools, where designated staff is trained and already following HACCP principles. Many are classified as a “group home” or environment or transitional or “shelter” living program where the residents are active participants in food preparation and service (from shopping to preparation). This environment allows caregivers to make the setting more “home-like”. In other settings, RCCIs may have staff professionals who prepare meals in addition to other duties, while still others have a home-type setting but have foodservice professionals preparing meals. In an effort to help RCCIs successfully comply with the Federal requirement for a HACCP-based food safety plan at all locations serving food under the NSLP and/or the SBP programs, in 2007, food safety experts at the universities of Rhode Island and Massachusetts received CSREES/ USDA funding to design and pilot test a hands-on instructional program for personnel and residents at RCCI facilities.

The training resources were developed following a needs assessment of RCCIs, regardless of size, considered by FNS to be in the northeast region—New England (CT, RI, MA, NH, VT and ME) and New York. The survey was designed to collect information relating to RCCI foodservice/kitchen operations, food safety training needs and desired formats, site food safety procedures/practices and attitudes of site managers toward food safety implementation. Forty-four knowledge-based operational questions for 186 respondents were assessed using the Fight BAC!/Be Food Safe food safety categories as well as receiving/general food storage statements. Knowledge and attitude questions had reliability scores of .89 and .97, respectively. Of over 1200 surveys distributed, 186 were successfully completed and returned (return rate of 15%). Of the respondents, 48% had 20 or fewer residents at the site and 52% had over 20 clients. Using 80% as subject mastery standard for knowledge, the overall knowledge base for food safety practices of sites with more than 20 residents was significantly higher ($p < .05$) than those of 20 or less for all categories assessed. Smaller institutions received low scores for cook (59%), chill/cool (61%) and receiving/storage (71%). However, larger facilities still did not reach the standard, receiving scores of 72%, 73%, and 78%, respectively, in the same three categories. Smaller RCCIs were less likely to have a food safety plan (67% vs. 83% for larger) and recipes based on HACCP (28% vs. 64% for larger); both required to meet the regulatory requirements outlined by the USDA. Results of

the survey supported the need for outreach programming and training targeting RCCIs of 20 residents or less. Overall, there was a positive attitude toward the need to implement food safe practices, provide food safety training for staff and residents and to comply with health regulatory requirements.

Using the results of the survey, outreach strategies and training formats/resources were developed were pilot tested in five small (20 or fewer residents) RCCI sites in both RI and MA (total of 10 RCCI facilities). After modifications suggested during the pilot, the program was conducted by Tennessee State University and Kansas State University. Program evaluation results were utilized in the development of the final project materials.

Finally, while the target audiences for the project were small RCCI facilities of 20 residents or less, the materials and resources developed during this project are applicable to any RCCI foodservice operation.

Each RCCI that participated in the pilot project received a Food Safety Kit. The kit contained digital thermometers, sanitizer test strips, date labels, single use gloves and data collection logs. The logs are essential to the implementation of a food safety plan and process HACCP. The content of the kit were intended for use by the RCCI staff for training as well as when they receive, prepare and store food items in their facility. A complete listing of contents of the kit may be found in the Appendix.

Finally, it should be noted that the information and resources presented in these resources included in both the RCCI Food Safety Basics Staff Training Manual and the Instructor Guide are current as of its issue. However, food safety resources and research based information are constantly changing and evolving, it might be necessary to seek out the most current information in order to provide program participants with the latest research-based food safety information.

Project Goal

The overall goal of this project was to train and assist Residential Child Care Institution personnel to develop and implement a HACCP-based food safety plan as required by the Section 111 of the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108-265). Special emphasis was directed to smaller RCCI facilities of 20 residents or less.

Note: The websites listed in this document were assessed on 12/15/2011.

12/11

Acknowledgements

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Residential Childcare Facilities in Pilot Project

The project directors would like to thank the management and staff of residential childcare facilities in Massachusetts and Rhode Island.

Massachusetts

Community Care Services Lindencroft Program, Berkley, MA
Community Care Services, Inc. (Crossroads), Taunton, MA
The Home for Little Wanderers, Knight Children's Center, Jamaica Plain, MA
The Home for Little Wanderers Long View Farm, Walpole, MA
The Home for Little Wanderers Plymouth, MA
Institute for Developmental Disabilities, Inc., Assonet, MA

Rhode Island

Tannerhill, Pascoag, RI
Community Solutions, Coventry, RI
Whitmarsh Corp., Providence, RI
Phoenix House at Wallum Lake, Pascoag, RI
Greenville House, Greenville, RI

Mention of a commercial product in this document is not an endorsement by the University of Rhode Island.

How to Use the Instructor Guide

The information and resources included in the RCCI staff training program are designed to:

- Provide staff with an understanding of basic food safety principles and their application in a foodservice environment
- Provide staff with the resources necessary to develop and implement a HACCP based food safety plan as mandated by The Child Nutrition and WIC Reauthorization Act.
- Provide resources for RCCI staff to train residents on basic food safety principles.

The food safety information and resources presented in this staff training program are focused on two strategies for food safety 1. *Fight BAC!/Be Food Safe* and 2. *Hazard Analysis Critical Control Point (HACCP)*. *Fight BAC!/Be Food Safe* is a national food safety campaign designed to educate consumers about the four food safety principles: Clean, Separate, Cook and Chill. *HACCP* is a food safety management system that focuses on product, preparation and production to reduce food safety hazards. The process approach to HACCP is utilized in this RCCI staff training.

The materials and resources presented in this staff training program reflect food safety principles applicable to a food-service environment. The temperatures, handwashing times and cooling times included are based on the current FDA Model Food Code. A copy of the current FDA Model Food Code may be found at: <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2009>. To insure that you are providing correct information, check with your local/state health regulatory authority concerning regulations relating to foodservice operations.

Before the first training session, contact the supervisor at each RCCI training site to confirm the date time and location of the training. For the first training session, ask the supervisor to bring site menus that will be used to complete training activities. At the end of the modules remind staff to bring materials for the next session.

The training is divided into three modules:

1. Food Safety Basics for Residential Child Care Institutions (RCCI)
2. Developing a Written Food Safety Plan
3. Food Safety Plan Development

Modules 1 and 2 are general food safety staff training. **Module 1** focuses on the cause and prevention of foodborne illness using the four Fight BAC!/Be Food Safe Principles: Clean, Separate, Cook and Chill. **Module 2** focuses on the development of a food safety plan using process Hazard Analysis Critical Control Points (HACCP). Participant activities, along with charts and fact sheets necessary to complete them are located in the training manual.

Module 3 focuses on the contents and development of the food safety plan. Included in this module are sample documents and data collection forms that are required for the completion and implementation of the plan. Sample documents and data collection forms should be pre-loaded onto a flash drive and given to each RCCI participating in the training program for their use in developing their food safety plan.

Information is presented in a sequential format. Therefore, attendance at the Module 1 training is required before participants can attend Module 2. Modules 1 and 2 are required for participation in Module 3.

A flash drive containing all of the resources included in Module 3: Food Safety Plan Development as a word document should be given to each RCCI participating in the training.

Finally, while the target audience for the project was small RCCIs, the materials developed in this module are applicable to an RCCI foodservice operation of any size. For example, an RCCI with less than ten residents may purchase food from a warehouse or grocery store, therefore the Standard Operating Procedures for Receiving Deliveries and Transporting Food to Remote Sites (Satellite Kitchens) may not be applicable.

Appendix includes:

- Information and resources on using the “Food Safety Smart” video with RCCI residents. This information is also included in the Appendix of the Staff Training Manual.
- Fact sheets needed to complete the Participant Activities in each module, and provide additional food safety resources. They are also included in the Appendix of the Staff Training Manual.
- Data collection forms that support the food safety plan which are also included in the Staff Training Manual.
- A booklet listing of the contents of a food safety kit. A kit was given to each RCCI that participate in the pilot project for use by the RCCI staff. The instructors used the items included in the kit to demonstrate specific food safety practices i.e. checking digital food thermometers for accuracy. The kit included “food safety utensils/measuring tools: food thermometers, sanitizer test strips, dishwasher water temperature test strips and refrigerator temperature logs and other data collection logs.

Planning and Implementing RCCI Staff Food Safety Basics Training and Food Safety Plan Development

- Well in advance of the scheduled training session(s), contact the supervisor at each RCCI training site to confirm the date time and location of the training. For the first training session, ask the participants to bring site menus to the training They will be needed to complete training activities.
- The temperatures, handwashing times and cooling times included are based on the current FDA Model Food Code. A copy of the current FDA Model Food Code may be found at: <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2009>.
- Make any changes necessary to reflect state/local specific food safety regulations to the power point presentations and other program materials
- Review all the instructor/ staff training resources for all the modules. All of the power point presentations include trainer notes. There is space for an instructor to add additional notes if needed. The complete staff training module is located at the end of each of the module in the instructor guide.
- Make extra copies of participant resource materials, etc. as needed.
- After each training session, review the results of the session evaluation forms and plan for any adjustments that need to be made for the next training session

The guide includes the following for each module:



1. Introduction

2. Objective(s)

3. Materials Checklist: The materials needed to teach each module are listed in this section. Their location in the Staff Training Manual is listed in parenthesis after the name of the item. i.e. (STM P)



4. Approximate Training Time



5. Training Outline



6. Trainer Notes are included in the power point presentations for Modules 1 and 2. Space is provided for Instructors to add additional notes.



7. Participant Activities including trainer notes (Note: the times listed for the participant activities are an approximation). The location of each Participant Activity in the Staff Training Manual is listed in this section. A copy of each Participant Activity from the Staff Training Manual is included.



8. Assignment

9. Evaluation Form

10. Certificate of Completion



11. Frequently Asked Questions

12. Learn More About lists sources of additional information about the topics covered in the module including sources for food safety posters.



13. Staff Training Manual Contents are included at the end of each module.

Food Safety Basics

Overview, 1-1

Training Outline, 1-2

**Introductory Activity 1:
Pass the Apple, 1-3**

**Introductory Activity 2:
Remain Standing, 1-4**

Participant Activity 1, 1-5

Participant Activity 1, Trainer Notes, 1-6

Frequently Asked Questions, 1-7

Learn More About It, 1-9

Power Point Presentation, STM 1, 10-40

Certificate of Completion



Module 1

Food Safety Basics

Overview

Introduction

RCCI staff is responsible for effectively planning, preparing and serving “safe meals.” Therefore, it is essential that they have an understanding of food safety principles. This module provides an overview of the four Fight BAC!/Be Food Safe principles: Clean, Separate, Cook, and Chill.

Objective

Participants will become familiar with the causes and prevention of foodborne illness in a foodservice environment.



Training Time

1-1/2–2 hours (approximate)



Materials Checklist

1. Introductory Activities:
 - Instructor Guide p. 1-3. Pass the Apple
 - Instructor Guide p. 1-4. Remain Standing
2. Participant Activities from Food Safety Basics Staff Training Manual (STM):
 - STM p. 1-12. Assess Your Menus for Food Safety Hazards
 - STM p. 1-29. Go With the Flow to Keep Food Safe
 - STM p. 1-31. Participant Evaluation Form, Module 1
3. Fact Sheets provide participants with additional information on topics presented in Module 1 (Note. Fact Sheets are also included in the Instructor Guide Appendix.):
 - STM p. A- 8. Food Allergens
 - STM p. A-18. Microbial Foodborne Illness Chart Fact Sheet
 - STM p. A-13. Food Safety Facts for Food Workers
 - STM p. A-17. How to Sanitize with Chemical Sanitizers
 - STM p. A-21. Potentially Hazardous Foods (TCS Foods) Fact Sheet
 - STM p. A-23. Recommended Food Storage Times Cold and Dry Refrigerated and Frozen Food
4. Power Point Presentation, Module 1 (80 slides)
5. Evaluation Form
6. Certificate of Completion



Module 1

Food Safety Basics

Training Outline

1. Distribute a Staff Training Manual to participants.
2. Review the purpose of the training program. This information is located in "Overview of the Food Safety Basics RCCI Staff Training" on p. ii of the Staff Training Manual. Also, indicate more information about the program will be explained during the power point presentation.
3. Ask participants to introduce themselves using the "Pass the Apple" activity found on p. 1-3 in the Instructor Guide
4. Do Introductory Activity "Remain Standing" activity found on p. 1-4 in the Instructor Guide

Module 1

Food Safety Basics

Power Point Presentation

Training Outline



Trainer Notes

The 80 slide Power Point presentation, containing notes, is divided into two sections:

Section 1: Introduction provides a brief overview of the USDA funded project that developed the training materials. A brief explanation of the federal mandate requiring food safety programs for all institutions who participate in National School Lunch and Breakfast Programs is also included in this section.

Section 2: Food Safety Basics is a review of the cause and prevention of foodborne illness. This section discusses food safety practices that will reduce the risk of foodborne illness. The four Fight BAC!/Be Food Safe principles: Clean, Separate, Cook, and Chill are used to discuss prevention, intervention principles, and techniques. It should be noted the temperatures, handwashing times, and cooling times included are based on the current FDA Food Code, a copy of which may be found at: www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2009 Check with the local/state health regulatory authority concerning regulations relating foodservice operations. It may be necessary to modify the Power Point presentation to reflect local/state regulations.



Activity 1: Assess Your Menu for Food Safety Hazards (STM p. 1-12)

Activity 2: “Go With the Flow to Keep Food Safe” (STM p. 1-29) should be completed after Slide 78. There are opportunities throughout the presentation to discuss the Fact Sheets listed in the materials needed to teach this module.

At the conclusion of the training session:

1. Spend a few minutes reviewing the highlights of the information presented.
2. Remind participants of the assignment for the next training session and remind them to bring their Staff Training Manual.
3. Have participants complete the Session Evaluation Form (STM p. 1-31)
4. Distribute Certificates of Completion.



Assignment for Module 2 (outlined on Slide 79)

Bring the following to the next training session:

- Staff Training Manual
- Current menu and recipes
- Completed Facility Equipment List (STM p. 3-2)

Introductory Activity 1

Pass the Apple

Objectives

1. To give participants an opportunity to introduce themselves to others attending the training session.
2. To help participants understand how easily food can become contaminated with germs from person to person and person to food.



Materials Checklist

- 1 fresh red apple
- 1/2-inch yellow circle stickers



Training Time

10 minutes



Training Outline

1. Give each participant a 1/2-inch round, yellow sticker.
2. Beginning with the instructor, introduce yourself by giving your name and employer and place a sticker on the apple.
3. Pass the apple around the room having each participant place their sticker on the apple and introduce themselves.
4. When all participants have placed a sticker on the apple ask:

Question: What has happened to the fruit by the time it has gone around the room?

Discussion: Think about the grocery store and the number of people who have touched the fresh fruit and vegetables you have purchased. Discuss how fresh produce should be handled—stored, cleaned, and prepared.

Introductory Activity 2

Remain Standing

Objectives

1. To help participants realize the importance of practicing correct food safety principles.



Training Time

10 minutes



Trainer Instructions

1. Ask all participants to stand up.
Explain the goal of the activity is to be the last person to remain standing or the person who follows the most food safety practices.
2. Say: "Remain standing if you..." and read the first item. Instruct people to sit down if they don't follow the food safety practice you read. Wait until they sit down, or continue to next item if no one sits down.
3. Continue with the second item and so forth until the last item or no one remains standing.
Add and/or change questions appropriately.

Remain standing if you...

- ...Wash hands with soap and warm water before handling food.
- ...Check the temperature of the refrigerator daily.
- ...Know what FIFO means.
- ...Freezer has a food appliance thermometer.
- ...All dry foods are stored 6" off the floor, 3" from the wall and 18" from the ceiling.
- ...Inspect refrigerator and freezer gaskets regularly for adequate seal and cleanliness.
- ...Record refrigerator and freezer temperatures onto a log at least daily.
- ...All food in the refrigerator and freezer is labeled and dated.
- ...Know what to do if the refrigerator temperature is 50°F.
- ...Keep cold foods cold (below 41°F) and hot foods hot (above 135°F).
- ...Don't defrost meat on the counter.

Module 1

Food Safety Basics

Objectives

1. To identify potentially hazardous foods (referred to by the FDA Food Code as Time-Temperature Control for Safety or TCS-Food) in relation to potential biological hazards (pathogens related to foodborne illness).
2. To determine if appropriate food safety measures can be applied to various steps in “the flow of food” in order to prevent, eliminate, or control these hazards.



Materials Checklist

- Assess Your Menus for Food Safety Hazards (STM p. 1-21)
- Sample menus may be found on the National School Foodservice website, www.nfsmi.org/ResourceOverview.aspx?ID=196, or check the local school district’s website for school lunch menus.
- Fact Sheets
 - A. Microbiological Foodborne Illnesses Chart (STM p. A-18)
 - B. Potentially Hazardous Foods (TCS Foods), (STM p. A-21)

Training Time

15 minutes



Training Outline

1. Review directions for the Participant Activity.
2. Divide the participants into small working groups.

Instructions to Participants

In your working group:

1. Select a group leader, note taker, and spokesperson
2. Choose a menu
 - Review menus. Find five potentially hazardous foods (TCS-Foods) and list them in first column.
 - Use the Microbiological Foodborne Illness Chart (STM p. A-18) to identify one (1) pathogen most commonly found in the food you listed in the first column. Write the name of the pathogen in the second column.
 - In the third column, list potential sources of contamination for each food, especially in relation to your program and/or kitchen.
 - Report back to the group for discussion and comments.

Discussion Questions

1. What was the pathogen you found to be most common to the foods you listed?
2. Why do you think that is?
3. What “controls” could you put in place to control that pathogen during the flow of food through your foodservice operation?
4. In general, the causes of foodborne illness fall into five major categories. Can you name those categories?

Answer: According to the Centers for Disease Control (CDC), the major causes of foodborne illness are: food from unsafe sources, lack of temperature control, contamination/cross contamination, lack of cleaning and sanitizing, and poor personal hygiene practices.



Module 1

Food Safety Basics

Go With the Flow to Keep Food Safe

Trainer Notes

Objective

To determine the appropriate food safety measures that can be applied at various steps in the flow of food in order to prevent, eliminate, or control any potential biological hazards.



Materials Checklist

- Completed Participant Activity 1, Assess Your Menus for Food Safety Hazards (STM p. 1-12)
- Participant Activity 2, Go With the Flow to Keep Food Safe (STM p. 1-29)



Training Time

15 minutes



Instructions to Trainer

Participants can remain in same working group.

Instructions to Participants

In your working group:

1. Select a group leader, note taker, and spokesperson.
2. Choose one (1) food item from the Completed Participant Activity 1, Assess Your Menus for Food Safety Hazards.
 - Write the name of the selected food item in the space provided on Participant Activity 2, Go With the Flow to Keep Food Safe.
 - Describe the food safety measures you would use to keep food safe, prevent, eliminate, or control biological hazards at each stage in the flow of food.
 - In the second column, at each stage in the flow of food, list what you would do to prevent the food item from becoming unsafe, i.e. list the food safety measures that can be applied at each step in the flow of food to:
 1. control time-temperature abuse
 2. prevent cross-contamination
 - Report back to the group for discussion and comments

Discussion Question

Ask each group to report back 2 new strategies they learned and will use to keep food safe in their program/foodservice environment.

1. “Go With the Flow to Keep Food Safe”, Participant Activity 2, (STM p.1-29)



Module 1

Food Safety Basics

Frequently Asked Questions

1. At what ages are people at the greatest risk for foodborne illness?

People who are at the greatest risk of foodborne illness are infants and very young children. Other high risk groups include pregnant women, the elderly, and individuals of any age with weakened immune systems.

2. Should we use wooden, plastic, or glass cutting boards?

Cutting boards made of materials that can be easily cleaned and sanitized are recommended. The current FDA Food Code does allow for the use of wooden cutting boards if they have no seams. Color coded cutting boards can be helpful—red: meat, yellow: poultry, green: fruits and vegetable, etc. Cutting boards should be cleaned and sanitized after each use. (See Module 1, slides 41–48 for more information on cleaning and sanitizing).

3. How long can foods be safely kept in the freezer?

It depends on the food item and the type of freezer. You can keep most foods in your refrigerator/freezer for up to 12 months. Most foods may be kept frozen in an upright or chest type freezer for 2 months to a year, depending on the food. The Fact Sheet, “Recommended Food Storage Times Cold and Dry Refrigerated and Frozen Foods” (A-23), lists a wide variety of foods and their optimum storage times. (It is included in the Appendix.) More information on food storage times may be found at the Fight Bac!/Be Food Safe, USDA, and FDA websites listed on page 1-11.

4. Can we use scented disinfectant wipes to sanitize a countertop?

No. Scented sanitizers of any kind may not be used. If disinfectant wipes are used, the concentration of the sanitizer must be the same as required by the current FDA Food Code. Using disinfectant wipes alone does not take the place of the process of cleaning and sanitizing. This process includes washing the area with hot water and soap, rinsing with hot water, and wiping with a sanitizing solution.

5. Should we use a "fruit and vegetable cleaner" to rinse our fruits and vegetables?

It is not necessary to use a “fruit and vegetable cleaner” to rinse fruits and vegetables. Research has shown that a simple, effective way to clean fruits and vegetables is by using cool running tap water. All fresh fruits and vegetables, even those with rinds and skin that are not eaten, should be rinsed before eating. Very cold water may cause pathogens to be absorbed into certain produce through the stem or blossom end. While it is recommended that water should be no more than 10 degrees cooler than the produce being washed, make sure the water is as least close to the temperature of the produce as you can. A clean bristle brush should be used to scrub the rinds under cool running water. Washing before storage requires thorough drying to prevent spoilage and mold growth. Some produce, e.g. berries, should not be washed prior to storage.

6. What is the ratio of chlorine to water if we choose to make our own sanitizing solution?

The ratio of chlorine bleach to water should be 2 teaspoons of chlorine bleach to a gallon of water. More information on using chemical sanitizers is included in the Fact Sheet, “How to Sanitize with Bleach Fact Sheet” found in the Appendix (A-17). Also, chlorine bleach that is specifically approved for institutional use must be used. The strength of the sanitizing solution should be tested using the test strips provided in the food safety kit, (see Module 1, slides 46 and 47).

7. Do we have to take the internal temperature of a food every time after it has been cooked or cooled?

Yes. The temperature should be taken every time is food prepared. This insures that the food is cooked/cooled to the proper temperature, (see Module 1, slides 55–62).

8. Why can't we leave meat on the counter to thaw...my parents always did!

Food thaws from the outside in, therefore the outside of the food could be at room temperature while the center of the food is still frozen. Room temperature is the optimum temperature at which pathogenic bacteria can multiply and become present in large enough numbers to make someone ill. The best way to thaw foods is in the refrigerator; however, foods can also be thawed in cool running potable water or the microwave. If food is thawed in the microwave, the food should be immediately cooked. (See Module 1, slide 69)



Module 1

Food Safety Basics

Frequently Asked Questions

9. **Where can I get Material Safety Data Sheets (MSDS) for the cleaning and sanitizing chemicals we use in the kitchen?**

Copies of MSDSs may be found on the product manufacturer's website. Also, the website: www.msdsprovider.com includes MSDS for most chemicals used for cleaning and sanitizing. To assess the website information, you will need to register, which is free.

10. **Sometimes, community members ask about donating prepared food to our RCCI. Is it okay to accept and use the donated prepared food?**

No, you should not accept and serve donated prepared food. You have not been in control of purchasing, preparing, serving and storing this food item. It would be okay to accept donations of packaged food items that don't require refrigeration if the packaging is still intact. This may be an opportunity to develop a policy on donated foods.

Module 1

Food Safety Basics

Learn More About It

General Food Safety Information

Gateway to Federal Government Food Safety Information

A vast collection of food safety resources made available by all federal agencies. www.foodsafety.gov

FDA Center for Food Safety and Applied Nutrition

Under the food safety heading, provides Product-specific information on seafood, fruits, vegetables, milk, canned foods, and infant formula. <http://www.fda.gov/Food/default.htm>

Massachusetts Partnership for Food Safety Education

General food safety education materials including fact sheets and training modules for foodservice. www.mafoodsafetyeducation.info

Rhode Island Cooperative Extension Food Safety Education Program

Fact sheets on general food safety topics. www.uri.edu/ce/ceec/foodsafety.shtml

Posters

National Foodservice Management Institute

Colorful 8-1/2" x 11" mini-posters provide information at a glance on current food safety topics that are designed for use in the food preparation and service areas. www.nfsmi.org/ResourceOverview.aspx?ID=74

Penn State Cooperative Extension Foodservice Food Safety

Series of black and white mini posters addressing basic food safety topics: cooking, cooling and personal hygiene. Also available in Spanish and Chinese. <http://extension.psu.edu/food-safety/educators/posters>

Food Storage Information

University of Kentucky Cooperative Extension

Recommended Food Storage Times Cold and Dry Refrigerated and Frozen Foods includes charts listing refrigerator and freezer storage for cold foods as well as storage times for dry foods. A copy of this Fact Sheet is located in the Appendix. www.ca.uky.edu/HES/fcs/factshts/FN-SSB.085.PDF

Still Tasty—Your Ultimate Shelf Life Guide

Storage information on hundreds of food items. www.stilltasty.com

Posters

Gateway to Federal Government Food Safety Information

Food storage charts for dry, fresh and frozen foods. www.foodsafety.gov/keep/charts/storagetimes.html

Food Allergens

The Food Allergy and Anaphylaxis Network

Information, programs, and resources related to food allergy and anaphylaxis. www.foodallergy.org/

Gateway to Federal Government Food Safety Information

This website includes a large collection of fact sheets and resources concerning all aspects of food allergens. The website also provides a link to a website which “sign-up” for automatic notifications of allergy alerts issued by the FDA. www.foodsafety.gov/poisoning/causes/allergens

Mass. Dept. of Education: Managing Life Threatening Allergies in Schools

Includes guidelines to assist Massachusetts school districts and nonpublic schools to develop and implement policies and comprehensive protocols for the care of students with life-threatening allergic conditions.

www.doe.mass.edu/cnp/allergy.pdf

Module 1

Food Safety Basics

1

Food Safety Basics for Residential Child Care Institutions (RCCI)

Staff Training: Module 1



Funded by CSREES/USDA Project 2007-51110-03816 1

2

Food Safety Basics for Residential Child Care Institutions (RCCI)

Introduction



2

3

Food Safety Education: RCCI Staff

- **USDA funded project**
- **Multistate Development**
 - **Rhode Island**
 - University of Rhode Island
 - RI Department of Education
 - **Massachusetts**
 - University of Massachusetts
 - MA Department Elementary and Secondary Education

3

Module 1

Food Safety Basics

4

Why now?



FEDERAL MANDATE

- Child Nutrition Act of 2004 requires school foodservice authorities to implement a food safety program beginning July 1, 2005 and fully implemented by the end of the 2005/2006 school year. Final rule: 1/14/2010.
- Includes any agency participating in the National School Lunch and Breakfast Programs such as **Residential Child Care Institutions (RCCI)**

4

5

Why now?



FEDERAL MANDATE

- **Food safety program to be based on Hazard Analysis Critical Control Points (HACCP) and conforms to guidance issued by USDA**
- **Requires two inspections by local health regulatory agency each year**

5

6

After this program you will be able to...

- **Understand** food safety principles
- **Develop** a written food safety plan
- **Implement** food safety HACCP plan
- **Comply** with USDA regulations



6

7

Training program

Module 1

- Cause and prevention of foodborne illness
- Strategies to reduce the risk of foodborne illness

Module 2

- Components of an effective Food Safety Plan (HACCP)
- Components of effective Standard Operating Procedures (SOP's)

Module 3

- Developing a HACCP-based Food Safety Plan and SOP's
- Implementing monitoring strategies
- Using HACCP /food safety resources

7

8

Results of on-site pre-audits

Ten RCCI's evaluated: 5 RI, 5 MA

Common microbiological contaminated areas in kitchen:

- Refrigerator/freezer – shelves, drawers
(cold storage areas)
- Preparation areas/cutting boards
- Handles – sink, refrigerator, microwave keypad etc.

8

9

Results of on-site pre-audits

Common deficiencies in inspection reports:

- No Food Safety Plans
- No Standard Operating Procedures (SOP)
- Lack of internal temperature monitoring of food and lack of thermometer calibration
- No records for proper re-heating
- Lack of wrapping and dating – impacts FIFO
- No refrigerator/freezer records for temperature monitoring
- Food storage problems
- No MSDS
- Lack of monitoring sanitizer strength: no test strips

9

Module 1

Food Safety Basics

10

Food Safety Basics

10

11

You won't spot unsafe food by using your senses

From: <http://lancaster.unl.edu/food/pizza.shtml>

11

12

Foodborne Illness: Symptoms

- Nausea
- Vomiting
- Diarrhea
- Headache
- Fever

A "tiny taste" will not protect you ...
... as few as **10-100 bacteria or viruses** could make you sick!

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Foodborne Illness: People at Greatest Risk



Infants & Children



Pregnant women



Elderly



People with weakened immune systems

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14

Foodborne Illness: Dangers

- Cases: 48 million per year*
- Hospital: 127,000 per year
- Deaths: 3,000 per year
- Cost: Billions per year



* Scallan E, and others. 2011. Foodborne illness acquired in the US – unspecified agents. www.cdc.gov/EID/content/17/11/pdfs/09-1101p2.pdf
Scallan E, and others. 2011. Foodborne illness acquired in the US – major pathogens. www.cdc.gov/EID/content/17/11/pdfs/09-1101p1.pdf

14

15

Foodborne Illness: Food Safety Hazards:



Biological

Parasites
Viruses
Bacteria



Chemical

Allergens
Pesticides
Sanitizers
Lubricants



Physical

Plastic
Glass
Metal
Wood
Bandages
Jewelry and other personal items

15

16

Biological Food Safety Hazards:
What are the differences?

- **Bacteria** 
Salmonella spp.
- **Viruses** 
Norwalk virus
- **Parasites** 
Cryptosporidium parvum
- **Fungi**
(yeast and mold) 
Penicillium spp.

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Sources of Biological Contamination

- **Animals** 
- **People** 
- **Environment** 

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Source of pathogenic or harmful bacteria/viruses

- **Animal/human intestinal tract**
 - *Salmonella*
 - *E.coli*O157:H7
- **Human**
 - *Shigella*
 - Hepatitis A virus
 - Norovirus
 - *Staphylococcus*
- **Environment**
 - *Listeria*
 - *Clostridium*
 - *E.coli*O157:H7
- **Water**
 - Most of the above



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**Foodborne Illness:
Most likely sources**

- Potentially Hazardous Foods*

- Ready to Eat Foods

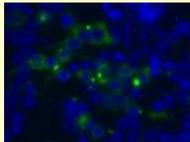

* Time/Temperature Control for Safety Foods (TCS-Food)

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Viruses

- Need suitable host in which to grow
- Does not require food, air, water to survive
- Spread via poor hygiene - fecal/oral
- Infect living cells, reproduce inside host cell
- Do not cause spoilage
- Survive in human intestines, water or food for months
- Heat resistant



Norwalk virus

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To Grow, Bacteria Need: FAT TOM

- Food
- Acidity
- Time to grow
- Temperature
- Oxygen
- Moisture



E. Coli 0157:H7

**Not all bacteria are created equal -
different bacteria have different
requirements**

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28

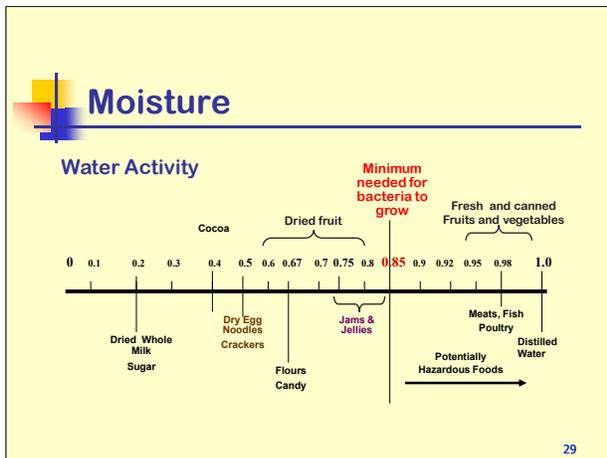
Oxygen

- Three groups of bacteria
 - Some must have oxygen to grow
 - Some can grow with or without oxygen
 - Some can only grow without oxygen
- Many harmful bacteria “swing” either way



28

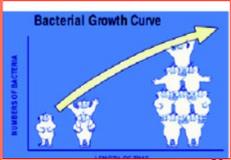
29



30

How do bacteria grow?

- If the right conditions exist (FAT TOM), bacteria will grow very quickly – **doubling every 20 minutes or faster.**
- One bacteria can multiply to more than 30,000 in 5 hours or millions in just 8 hours



30

28

Oxygen

- Three groups of bacteria
 - Some must have oxygen to grow
 - Some can grow with or without oxygen
 - Some can only grow without oxygen

▪ Many harmful bacteria “swing” either way

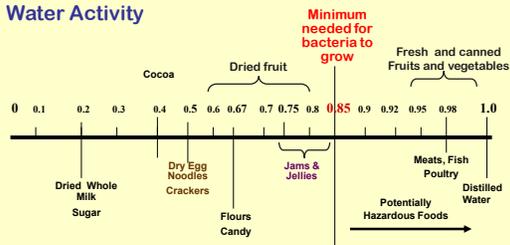


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Moisture

Water Activity

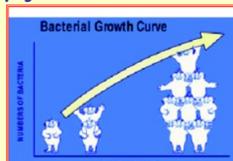


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30

How do bacteria grow?

- If the right conditions exist (FAT TOM), bacteria will grow very quickly – **doubling every 20 minutes or faster.**
- One bacteria can multiply to more than 30,000 in 5 hours or millions in just 8 hours



30

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Potentially Hazardous Foods (TCS-Food) are:

Foods that support the growth of pathogenic microorganisms are usually high protein, high moisture and/or low in acid such as:

- Raw or cooked meat
- Cooked vegetables
- Cooked pasta, beans and rice
- Other foods that have history of foodborne illness

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Food Safety Basics:
Activity 1

Menu assessment:

- Examine your group menu set (all available menus/recipes)
- Identify and list five (5) potentially hazardous foods (TCS-Food) among foods used in your group menu set
- Using the **Microbiological Foodborne Illness Chart, found in the Appendix**, identify the pathogen(s) associated with each food and potential sources of contamination for each food

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Food Safety Basics

Food safety practices to reduce the risk of foodborne illness



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Food Safety Basics:
Goals

- **Prevent contamination**
 - Practice good personal hygiene
 - Clean and sanitize
 - Separate, don't cross-contaminate
- **Prevent/Eliminate microbial growth**
 - Practice the four food safety principles

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Food Safety Basics:
Goals

- **Prevent contamination**
 - Practice good personal hygiene
 - Clean and sanitize
 - Separate, don't cross-contaminate
- **Prevent/Eliminate microbial growth**
 - Practice the four food safety principles

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Food Safety Basics - Clean

- Pathogenic or harmful bacteria can spread throughout the kitchen and get on hands, cutting boards, knives and countertops.
- Cleaning can keep that from happening



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Food Safety Basics - Clean

Wash hands

- Before handling food
- After using the bathroom
- Between tasks
- After eating or drinking
- Before putting on single use, disposable gloves



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Food Safety Basics - Clean

WASH hands with warm water and soap for 20 seconds before and after handling food

- Wet hands
- Apply soap
- Scrub thoroughly
- Rinse
- Dry



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Food Safety Basics - Clean

WASH food preparation utensils/equipment:

- in hot soapy water and rinse with hot water
- or wash in the dishwasher
- after preparing each food item and before you use it for the next food.



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Food Safety Basics - Clean

WASH countertops with hot soapy water and rinse after preparing each food item and before preparing the next food.



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Food Safety Basics - Clean

RINSE fruits and vegetables under running tap water, including those with skins and rinds that are not eaten.

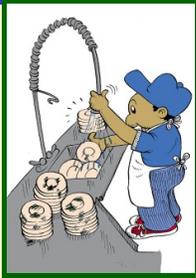
SCRUB fruits with rinds with a brush under running water



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**Food Safety Basics –
Clean and Sanitize**



Dishwashing

Cleaning **and** sanitizing food preparation equipment and utensils is an important part of keeping food safe

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**What is the difference between
cleaning and sanitizing?**

Clean:

Physical removal of soil and food residues from the surfaces of equipment and utensils.

Sanitize:

Treatment of cleaned surfaces with a sanitizer or high heat to eliminate or reduce the number of harmful microorganisms to a safe level.

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**Food Safety Basics –
Clean and Sanitize**



- Food-contact surfaces must be thoroughly cleaned prior to sanitizing
- Sanitizers do not work well on dirty surfaces
- Remember to use new paper towels or clean cloths to wipe spills and clean areas

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Food Safety Basics – Clean and Sanitize

Sanitize with chemicals:

- Chlorine, commonly used
- Others (Quats, Iodine)
- Household, scented, sanitizers not acceptable
- **Verify concentrations using appropriate test kits/strips**



Note: Material Safety Data Sheets (MSDS) are required, on-site, for chemicals used.

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Measuring sanitizer strength

- Test strips
- Chlorine: 50 – 200 ppm
- Quats: 200 – 400 ppm
- **More is NOT better.**
- **More or less is NOT allowed**

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Food Safety Basics – Clean and Sanitize

Sanitize with heat:

- Dishwasher: 165°F
 - Varies with dishwasher type
- **Verify temperatures**



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**Food Safety Basics –
Clean and Sanitize: 4 Steps**

- Wash hot soapy water
- Rinse hot water
- Sanitize
- Air Dry

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Food Safety Basics - Separate

Cross-contamination occurs when pathogenic bacteria are passed from one food or object to another

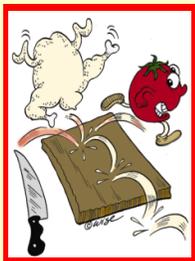


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Food Safety Basics - Separate

For example, when tomatoes are cut on the same cutting board as raw chicken without the cutting board being properly cleaned and sanitized **cross-contamination** occurs



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Food Safety Basics - Separate

Harmful bacteria can be transferred by

- People
- Equipment
- Utensils
- Other foods
- Pests



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Food Safety Basics - Separate

WASH cutting boards, dishes, utensils, and counter tops with hot soapy water after preparing each food item and before you go on to the next food.



USE one cutting board for raw meat, poultry and seafood and another for salads and ready-to-eat food

STORE raw meat, poultry, and seafood in a container or on a plate so juices can't drip on other foods.

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Food Safety Basics - Separate

When shopping, keep raw meat, poultry, seafood and their juices apart from other, ready to eat, or unpackaged food items in your grocery cart



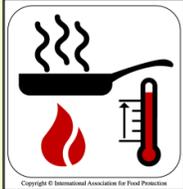
53

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Food Safety Basics

To prevent microbial growth:

Keep it Hot,
Keep it Cold,
or
Don't Keep It!!!



Copyright © International Association for Food Protection

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Food Safety Basics - Cook

Thorough **cooking** and **reheating** food to the right temperature is essential to destroy harmful microorganisms that could cause foodborne illness.



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Food Safety Basics - Cook

Food is **SAFELY COOKED** when it reaches a high enough internal temperature to kill the pathogenic bacteria that cause illness.



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Food Safety Basics - Cook



Keeping foods above 135°F will:

- Prevent growth of microorganisms
- Destroy harmful microorganisms

Keeping foods below 41°F will:

- Prevent or slow down the growth of bacteria.

Temperatures based on current FDA Food Code/USDA Guidance. State regulations may differ.

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Food Safety Basics - Cook

Food has potential to cause illness if:

- It is exposed to temperatures in the danger zone 41°F-135°F for more than 4 hours
- It is not cooked or reheated sufficiently to destroy harmful microorganisms.



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Food Safety Basics - Cook

USING a food thermometer is the only way to ensure that food is thoroughly cooked



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Food Safety Basics - Cook



The range of safe cooking temperatures can vary from:

145°F
To
165°F

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Food Safety Basics - Cook

Safe Cooking Temperatures

- Ground Meat & Meat Mixtures 155° F *
- Poultry (Chicken & Turkey) 165° F *
- Egg Dishes 145° F *
- Fish 145° F *
- Casseroles and Leftovers 165°F *

* All for at least 15 seconds

Temperatures based on current FDA Food Code/USDA Guidance. State regulations may differ.

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Food Safety Basics - Cook



- **ROTATE** and **STIR** food cooked in the microwave midway during cooking due to cold spots
- **Final** internal temperature :165°F
- **Stand** 2 minutes

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Food Safety Basics - Chill

- Pathogenic bacteria multiply rapidly at temperatures between 41°F and 135 °F
- Keeping foods cold is the most effective way to reduce the risk of foodborne illness.

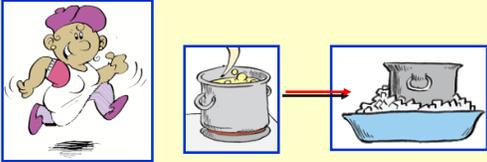


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Food Safety Basics - Chill

Pass foods through the temperature danger zone quickly and as few times as possible!



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Food Safety Basics - Chill

Two step process – total 6 hours:

Step 1: 135°F to 70°F within 2 hours

Step 2: 70°F to 41°F or less within 4 hours

Note: If Step 1 takes less than 2 hours, the complete cooling process still can be completed in 6 hours

Cooling temperature process based on current FDA Food Code/USDA Guidance. State regulations may differ.

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Food Safety Basics - Chill

CHILL leftovers within 4 hours

KEEP the refrigerator at 41 °F or below

USE a refrigerator thermometer



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Food Safety Basics - Chill

- The temperature of a refrigerator: 41°F or below.
- Place a thermometer on a middle shelf at the rear of the unit
- Check often and record at least 2 times/day



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Food Safety Basics - Chill

THAW frozen meat, poultry, and seafood in the refrigerator on a shelf below ready-to-eat foods and fresh produce.



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Food Safety Basics - Chill

Other ways to thaw:

Submerged under cool running water 

In a microwave for food cooked immediately 

 As part of the cooking process

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Food Safety Basics - Chill

How long would it take to cool this large stockpot of thick beef stew in a refrigerator at 41°F?

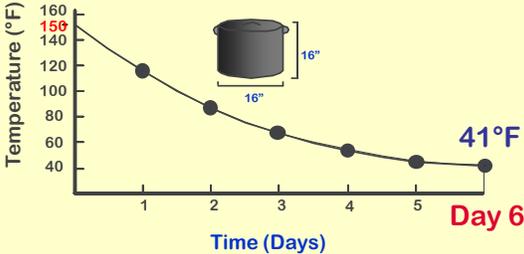


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Food Safety Basics - Chill

It would take 6 days to cool the beef stew in this large pot to 41°F!



Time (Days)	Temperature (°F)
0	150
1	120
2	85
3	70
4	60
5	50
6	41

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Food Safety Basics -
Keep Pests out of the Kitchen

No pests in the foodservice or kitchen area

Foodborne illnesses may be passed on by pests like rodents, flies and cockroaches and their droppings and urine



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What happens when a fly lands on your food ?



- Flies can't eat solid food, so to soften it up, they vomit on it
- Then they stamp the vomit in until it's liquid, usually stamping in a few germs for good measure
- Then, when it's good and runny, they suck it all back again, probably dropping some excrement at the same time
- And then, when they've finish eating, it's your turn

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Food Safety Basics:
Follow Flow of Food

- Purchasing
- Receiving
- Storage
- Preparation
- Cooking
- Holding/Serving
- Cooling/Storage
- Reheating

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75

 **FIFO**

- **First In First Out: Dry and Cold**
 - Storing
 - Wrapping/Covering
 - Labeling
 - Dating
 - Rotating
- **Food Storage Times – Dry and Cold**
 - University of Kentucky handout

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 **Recipes Wanted**

- **Do you have written recipes?**
- **You need them!**
 - Uniform production
 - Used during Food Safety Plan assessments



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 **Recipe Sources**

- <http://www.allrecipes.com>
- <http://www.fns.usda.gov/fdd/recipes/schrecipes.htm>
- http://www.fns.usda.gov/tn/Resources/usda_recipes.html
- <http://www.nfsmi.org/ResourceOverview.aspx?ID=115>

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Food Safety Basics:
Activity 2

Determine food safety measures that can be applied at various steps in the flow of food in order to prevent, eliminate or control food safety hazards

Food Safety Basics Module 1

Go With the Flow to Keep Food Safe

Instructions

1. In your working group:
 1. Select a group leader, note taker, and spokesperson.
 2. Choose one (1) food item from the Menu Assessment (Activity 1, pp 1-1 to 1-12).
2. Write the name of the food item you have chosen at the top the chart.
3. Describe the food safety measures you would use to keep food safe, including preventing, eliminating, or controlling biological hazards at each stage in the flow of food.
4. Next, list the food safety measures that can be applied at each stage in the flow of food to prevent the food from becoming unsafe. For example:
 - control time-temperature abuse
 - prevent cross-contamination
5. Report back to the group for discussion and comments

Food: _____

Food safety measures to prevent food from becoming unsafe	
Stages in the Flow of Food	Purchasing

	Receiving

	Storage

	Preparation

	Cooking

	Holding/Serving

	Cooling/Storage

	Reheating

Adapted from:
 University of Massachusetts Nutrition/ Food Safety Program
Food Safety Education to Assist Residential Child Care Institutions (RCCI)
in the Development and Implementation of a HACCP-based Food Safety
Plan, 2008.

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 **Homework**

- Bring Menu and recipes
- Bring Facility Equipment List
 - If don't have one, take a look and list
- Bring staff training notebook to the next session

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 **Resources for Illustrations**

1. International Association for Food Protection
<http://www.foodprotection.org/aboutIAFP/SafetyCons.asp>
2. National Registry of Food Safety Professionals, Essentials of Food Safety & Sanitation, 2004
3. Partnership for Food Safety Education. Be Food Safe. <http://www.befoodsafe.gov>

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Food Safety Basics Module 1

Please take a moment to complete this evaluation.
We are interested in your thoughts on today's presentation.

Strongly Agree Agree Undecided Disagree Strongly Disagree

- 1. Information was presented in a clear, organized manner.
- 2. Presenters were organized and well prepared.
- 3. Handouts and materials are relevant to the information presented.
- 4. Important points were reviewed and emphasized.
- 5. Group Participation and questions were encouraged.
- 6. Questions were answered sufficiently.
- 7. Handouts will be useful.
- 8. Food safety principles are understood.

9. What did you like most and/or least about today's sessions?

10. What new information did you learn today?

11. What could presenters do differently to deliver this information more effectively?

Name of University

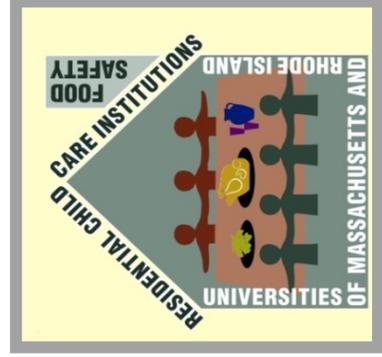
This is to certify that

Participated in a 2-hour, Module 1

Food Safety Basics Training for Residential Childcare Institutions
(add date here)

Instructor

Program Co-coordinator



Developing a Written Food Safety Plan

Introduction, 2-1

Training Outline, 2-2

Participant Activity 1, Trainer Notes, 2-3

Participant Activity 1, Description of the Facility, 2-4

Participant Activity 2, Trainer Notes, 2-6

Participant Activity 2, Your Menu Items, 2-7

Participant Activity 3, Trainer Notes, 2-8

Participant Activity 3, Critical Control Points, 2-9

Participant Activity 4, Trainer Notes, 2-10

Participant Activity 4, Checking the Accuracy of a Food Thermometer, 2-11

Participant Evaluation, 2-12

Certificate of Completion, 2-13

Frequently Asked Questions, 2-14

Learn More About It, 2-15

Power Point Presentation, 2-16

Certificate of Completion



Module 2

Developing a Written Food Safety Plan

Introduction

Module 2 focuses on the components of an effective food safety plan based on HACCP principles that address the control of food safety hazards throughout the foodservice environment from receiving raw ingredients to serving and storing food. The principles of the process approach to HACCP are also explained in this module.

Note: While the target audience for the project was small RCCIs of less than 20 residents, the materials developed in this module are applicable to an RCCI foodservice operation of any size. For example, an RCCI with less than 10 residents may purchase food from a warehouse or grocery store, therefore the Standard Operating Procedures for Receiving Deliveries and Transporting Food to Remote Sites (Satellite Kitchens) may not be applicable.

Objectives

Participants will become familiar with the elements of a HACCP based food safety plan and the process HACCP approach to the control of food safety hazards.



Training Time

2–2-1/2 hours (approximate)



Materials Checklist

1. Participant Activities from Food Safety Basics Staff Training Manual (STM):
 - STM p. 2- 9. Description of the Facility/Standard Operating Procedures Checklist
 - STM p. 2-20. Your Menu Items
Weekly /Monthly Menus
 - STM p. 2-26. Determine Critical Control Points (CCPs) and Critical Limits (CLs)
for one food from the Process 2 items
 - STM p. 2-29. Food Safety Fact Sheet, Calibrating a Thermometer
2. Digital food thermometer (from Food Safety Kit)
3. 2 quart glass container
4. Crushed ice
5. Cold water
6. Power Point Presentation, Module 2 (76 slides)
7. Evaluation Form
8. Certificates of Completion



Module 2 Developing a Written Food Safety Plan Training Outline

1. Give a brief review of Module 1.
2. Review the purpose of the training program. This information is located in Overview of the Food Safety Basics RCCI Staff Training on p. ii of the Staff Training Manual. Also, indicate more information about the program will be explained during the power point presentation.



Trainer Notes

The 76 slide power point presentation (some slides with notes) is divided into two sections.

Section 1. Introduction includes a brief review of the federal mandate requiring food safety plans and the brief overview of the USDA funded project which developed the training materials.

Section 2. Getting Started on a Food Safety Plan describes the fundamentals of food safety plan development and implementation:

1. Standard Operating Procedures
2. Process Approach to HACCP



Activity 1: Description of the Facility/ Standard Operating Procedures (SOP) Checklist should be completed after viewing Slide 22 (STM p. 2-9).

Activity 2: Your Menu Items should be completed after viewing Slide 47 (STM p. 2-20).

Activity 3: Determining Critical Control Points (CCPs) and Critical Limits (CLs) should be completed after viewing Slide 61 (STM p. 2-26).

Activity 4: Checking the Accuracy of a Food Thermometer using the ice bath method should be completed after Slide 65 (STM p. 2-29). Note: This activity may be done as a demonstration or group activity by following the instructions on the Food Safety Fact Sheet: Calibrating a Thermometer (STM p. 2-29).



Assignment for Module 3

Bring the following to the next training session:

- Staff Training Manual
- Current menu and recipes
- Description of the Facility and SOP checklist (completed Module 2 Participant Activity 1 (STM, P 2-9)
- Copies SOPs

Note: If Module 3 is going to be taught as a large session with representatives from various RCCIs, it might be a good idea to ask each RCCI to bring a laptop computer if possible. The work of the actual development of the necessary SOPs could be completed during this session in small groups. If this is not possible, the paper copies could be used.

At the conclusion of the training session

1. Spend a few minutes reviewing the highlights of the information presented.
2. Remind participants of the assignment for the next session and their staff training notebooks.
3. Have participants complete the Evaluation Form for Module 2, (STM, P 2-34)
4. Distribute Certificates of Completion.

Module 2

Developing a Written Food Safety Plan

Participant Activity 1

Trainer Notes



Objectives

- To develop a complete written description of the RCCI foodservice operation including number of meals served, number of staff and all food preparation, serving and storage equipment (kitchen equipment) as the first step in the development and implementation of a comprehensive food safety plan.
- To determine those standard operating procedures already in place and those that need to be developed.



Materials Checklist

- Participant Activity 1, Description of the Facility/Standard Operating Procedures Checklist (STM p. 2-9)

Inform participants that the information collected during this activity is the first step in the food safety plan development process and will be used in Module 3.

Note: If participants are all from one facility and depending on the number of participants, this activity could be a group activity.



Training Time

10 minutes

Instructions to Participants

Complete the worksheet, describing the number of meals served, the food service staff and the kitchen equipment needed.

Food Safety Basics Module 2

Description of the Facility

Required Standard Operating Procedures Checklist

(Check all that currently apply)

Standard Operating Procedure (SOP)	Policy is in Place	Policy is not in Place	Don't Know
1. General Food Safety Practices			
a. Personal Hygiene e.g. Washing Hands			
b. Calibrating a Thermometer			
c. Operating Without Power			
d. Operating Without Hot Water			
e. Storing and Using Chemicals			
f. Implementing an Employee Health Policy			
g. Practicing first-in-first-out (FIFO) Product Rotation			
h. Preventing Cross-Contamination			
2. The Flow of Food			
a. Purchasing Food from Reputable Vendors			
b. Receiving Deliveries			
c. Storing Food in Appropriate Storage Containers and Keeping Food Covered At All Times during Storage			
d. Washing Fresh Fruits and Vegetables			
e. Thawing Food Properly			
f. Cooking Potentially Hazardous Foods (TCS Foods)			
g. Cooling Potentially Hazardous Foods (TCS Foods)			
h. Labeling and Date Marking Ready-to-Eat, Potentially Hazardous Foods (TCS Foods)			
i. Holding Cold and Hot Potentially Hazardous Foods (TCS Foods)			
j. Reheating Potentially Hazardous Foods (TCS Foods)			
k. Handling Ready-to-Eat Foods e.g. Preventing Bare Hand Contact with Ready-to-Eat Foods			
l. Transporting Food			

Module 2

Developing a Written Food Safety Plan

Participant Activity 2

Trainer Notes



Your Menu Items

Objective

- To begin the process of developing process HACCP based plans for the various categories of food items prepared and served.



Materials Checklist

- Participant Activity 2, Your Menu Items (STM p. 2-20)
- Weekly/Monthly Menus



Training Time

15 minutes

Instructions to Participants

1. In section A list 8 menu items on the current weekly/monthly menu.
2. In section B list the menu items in section A by process:
 1. no cook
 2. cook and serve the same day, or
 3. complex food preparation

If there is question about the food item, review Module 2, slides 33–46.

Discussion Questions

1. Review the basics of the three processes. In which process area were most of your menu items?
2. Where there any items you were not sure about?
3. Based on completing this activity, are their any menu items you plan to change and why?



Module 2

Developing a Written Food Safety Plan

Participant Activity 3

Trainer Notes

Determining Critical Control Points and Critical Limits

Objective

Participants will begin to understand how to develop and implement a food safety plan by identifying hazards and the points in the process where these hazards can be prevented, eliminated, or reduced to safe levels.



Materials Checklist

- Participant Activity 3, Determine Critical Control Points (CCPs) and Critical Limits (CLs) for One Food from the Process 2 Items Worksheet (STM p. 2-26)
- Completed Participant Activity 2, Your Menu Items Worksheet (STM p. 2-20)



Training Time

20 minutes

Instructions to Participants

1. List the food item in the blank provided
2. Briefly describe the steps in the preparation of the food item
3. List the Critical Control Point in the first column, next list the Critical Limit in the second column. Under the comments section, describe the hazard and how it will be prevented, eliminated, or reduced to safe levels by applying CCPs and CLs.

Discussion Question

What criteria did you use to determine which preparation steps were Critical Control Points and which were Critical Limits?



Module 2

Developing a Written Food Safety Plan

Participant Activity 4

Trainer Notes

Checking the Accuracy of a Food Thermometer Ice Bath Method

Objective

Participants will understand how to check the accuracy of a food thermometer using the ice bath method.



Materials Checklist

- Food Safety Fact Sheet, Calibrating a Thermometer, (STM p. 2-29)
- Digital Food Thermometer (from Food Safety Kit)
- Beaker or large deep glass bowl (at least two quarts)
- Crushed ice
- Cool water

Training Outline

20 minutes

Instructions to Participants

Note: This activity may be done as a demonstration or group activity.

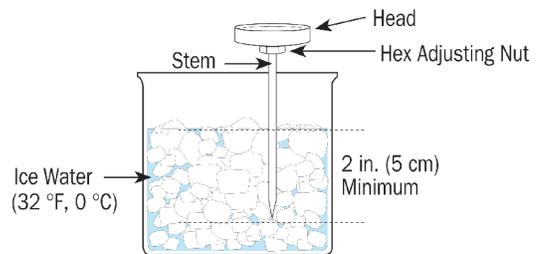
1. Follow the directions for the ice water method on the Food Safety Fact Sheet, Calibrating a Thermometer
2. Explain how to read if the thermometer is not accurate. Adjust up or down.
Note: if it is off by 10 degrees, check the manufacturer warranty as you should discard the thermometer and get a new one.
3. Review the record keeping forms located in the Appendix related to temperature control, refrigerator and food temperature logs, cooling charts, and thermometer accuracy logs (STM pp. A-36–40).

Food Safety Basics Module 2

Checking the Accuracy of a Food Thermometer

Ice Water Method

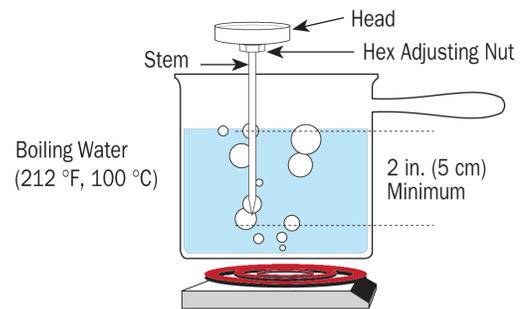
1. Fill a 2-quart measure with ice.
2. Add water to within 1 inch of top of container.
3. Stir mixture well.
4. Let sit for one minute.
5. Place thermometer in container so that the sensing area of stem or probe is completely submerged over the dimple.
6. Keep the thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving.
8. Place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
9. Some digital stemmed thermometers (thermistors) and thermocouples have a reset button which should be pushed.
10. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Boiling Water Method

1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
4. Do NOT let the thermometer stem/probe touch sides or bottom of container.
5. Let thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex adjusting nut and rotate until the thermometer dial reads 212 °F, while in boiling water.
7. Some digital thermometers (thermistors) and thermocouples have a reset button which should be pushed.
8. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Note: The boiling point of water is about 1 °F lower for every 550 feet above sea level. If you are in high altitude areas, the temperature for calibration should be adjusted. For example, if you were at 1100 feet above sea level, the boiling point of water would be 210 °F.

Food Safety Basics Module 2

Please take a moment to complete this evaluation. We are interested in your thoughts on today's presentation.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Information was presented in a clear, organized manner.					
2. Presenters were organized and well prepared.					
3. Handouts and materials are relevant to information presented.					
4. Important points were reviewed and emphasized.					
5. Group Participation and questions were encouraged.					
6. Questions were answered sufficiently.					
7. Handouts will be useful.					
8. Food safety principles are understood.					

9. What did you like most and/or least about today's sessions?

10. What new information did you learn today?

11. What could presenters do differently to deliver this information more effectively?

Name of University

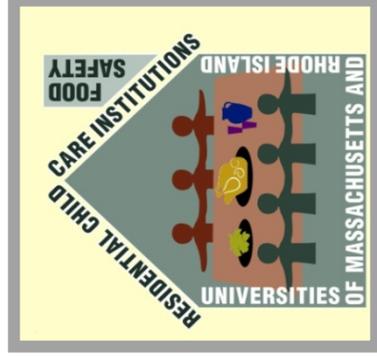
This is to certify that

_____ Participated in a 2-hour, Module 2

Food Safety Basics Training for Residential Childcare Institutions
(add date here)

_____ Instructor

_____ Program Co-coordinator





Module 2

Developing a Written Food Safety Plan

Frequently Asked Questions

1. Why do we need written recipes?

In order to develop the food safety plan, you must know the ingredients and preparation steps for the food items that are prepared in your facility. The ingredients and preparation steps will determine how the food item should be categorized (process 1, 2 or 3). Additionally, the process identifies the steps that need to be taken from the time all ingredients arrive at your facility, through preparation, service, and storage of leftovers. (See Module 2, Slides #33-46).

2. Is recording the temperature of refrigerator(s) and freezer(s) once a day sufficient?

Refrigerator temperatures should be recorded at least twice a day- before breakfast and at mid-afternoon. Opening and closing the refrigerator causes the temperature to rise and fall. You want to insure that the refrigerator unit is maintaining a constant temperature between 32° F and 41° F.

3. What type of food thermometer should we use?

It is recommended that a digital thermometer be used. It is considered to be more accurate than a bimetallic dial thermometer. More information on the various types of thermometer may be found at www.fsis.usda.gov, click on thermometer (see Module 2, slides 63–64).

Module 2

Developing a Food Safety Plan

Learn More About It

USDA Food and Nutrition Service Guidance for School Food Authorities: Developing Food Safety Program Based on the Process Approach to HACCP.

The guidance document for implementation of HACCP-based food safety programs participating in the National School Lunch and Breakfast Programs. www.fns.usda.gov/fns/safety/pdf/HACCPGuidance.pdf

National Foodservice Management Institute: Developing a Food Safety Plan

Includes all the elements needed to develop and implement a food safety plan, including staff training resources, forms, and other resources. <http://nfsmi-web01.nfsmi.olemiss.edu/ResourceOverview.aspx?ID=57>

Process Hazard Analysis Critical Control Points (HACCP)

Iowa State University Hazard Analysis Critical Control Point Information Center

Provides resources for the development of HACCP programs in foodservice establishments including schools, assisted living, childcare, and restaurants. www.iowahaccp.iastate.edu

FDA: Managing Food Safety: A Manual for the Voluntary Use of HACCP Principles for Operators of Food Service and Retail Establishments

The site is a “roadmap” for writing and implementing a food safety management system based on HACCP principles. www.fda.gov/Food/FoodSafety/RetailFoodProtection/ManagingFoodSafetyHACCPPrinciples/Operators/default.htm

Recipes

National School Food Service Management Institute, USDA recipes for Schools

This site includes numerous recipes that include Critical Control Point information according to the current FDA Food Code. www.nfsmi.org/ResourceOverview.aspx?ID=115

USDA Food and Nutrition Service Food Distribution Programs, Recipes for Schools

This site links to recipes that are intended to assist school food service personnel and household program administrators find new and different ways to prepare USDA commodities. www.fns.usda.gov/fdd/recipes/schrecipes.htm

AllRecipes.Com

Is a collection of recipes for a wide variety of foods. A calculator included with each recipe allows you to calculate the ingredients needed for a specific number of servings. www.allrecipes.com

Standard Operating Procedures

USDA/National Foodservice Management Institute, HACCP Based Standard Operating Procedures

This site includes an extensive collection of sample HACCP-based Standard Operating Procedures and worksheets that list the minimum elements necessary to develop and implement a food safety program. <http://nfsmi-web01.nfsmi.olemiss.edu/documentlibraryfiles/PDF/20080207024226.pdf>

Thermometers

USDA Safety Food and Inspection Service

Click on Thermometers and Food Safety for information on how to use a thermometer, types of food thermometers, research on thermometers, and correct thermometer placement. www.fsis.usda.gov/Food_Safety_Education/Thermometers_&_Food_Safety/index.asp

Module 2 Developing a Written Food Safety Plan

1

Food Safety Basics for Residential
Child Care Institutions (RCCI)

**Staff
Training:
Module 2**



Funded by CSREES/USDA Project 2007-51110-03816 1

2

Food Safety Basics for
Residential Child Care
Institutions (RCCI)



**Developing a Written
Food Safety Plan**

2

3

**FEDERAL
MANDATE**



- Child Nutrition Act of 2004 requires school foodservice authorities to implement a **food safety program** beginning July 1, 2005 and fully implemented by the end of the 2005/2006 school year. Final rule: 1/14/2010.
- Includes any agency participating in the National School Lunch and Breakfast Programs such as **Residential Child Care Institutions (RCCI)**

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Module 2 Developing a Written Food Safety Plan

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Training program

Module 1

- Cause and prevention of foodborne illness
- Strategies to reduce the risk of foodborne illness

Module 2

- Components of effective Standard Operating Procedures (SOP's)
- Components of an effective Food Safety Plan (HACCP)

Module 3

- Developing a HACCP-based Food Safety Plan and SOP's
- Implementing monitoring strategies
- Using HACCP /food safety resources

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**Getting Started:
Purpose of a Food Safety Plan**

Control of food safety hazards:

- From receiving of ingredients to serving and storing food
- Throughout the food service environment - personal hygiene, sanitation, cross-contamination, pests etc.

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**Getting Started:
Fundamentals of the Program**

Two parts to a food safety program:

- Standard Operating Procedures (SOP's)
- Process Approach to HACCP

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Module 2 Developing a Written Food Safety Plan

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Let's Review: FAT TOM

- What does bacteria need to grow?
 - Food
 - Acidity
 - Time to grow
 - Temperature
 - Oxygen
 - Moisture

Illness

an (HACCP)
ng

Module 3

- Developing a HACCP-based Food Safety Plan and SOP's
- Implementing monitoring strategies
- Using HACCP /food safety resources

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**Let's Review:
Four Food Safety Principles**

- Clean
- Separate
- Cook
- Chill



clean. separate.
cook. chill.
www.befoodsafe.com

8

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**Step 1: Getting Started on a
Food Safety Plan**

**Describe the
Foodservice Operation**



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Module 2
Developing a Written
Food Safety Plan

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Getting Started on a Food Safety Plan

- Describe Facility/Equipment
- Describe Employees
- Describe Residents role
- Review current food preparation activities
- Review current food safety practices



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Facility/Equipment

- Describe facility (e.g. central kitchen, self preparation, satellite)
- Average number of meals served – breakfast, lunch, dinner
- Inventory of food preparation equipment

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Employees/Residents

- Number of employees/residents at each site and their responsibilities
- Records of employee/residents training, topics, attendees
- Any documentation required by state/local health regulatory authority (e.g. food safety manager certification, employee illness reporting agreements)

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Module 2
Developing a Written
Food Safety Plan

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Current Food Preparation Activities

- Assemble and organize menus and recipes



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Recipes Wanted - Reminder

- Do you have written recipes?
- **You need them!**
 - Uniform production
 - Used during Food Safety Plan assessments



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Recipe Sources - Reminder

- <http://www.allrecipes.com>
- <http://www.fns.usda.gov/fdd/recipes/schrecipes.htm>
- http://www.fns.usda.gov/tn/Resources/usda_recipes.html
- <http://www.nfsmi.org/ResourceOverview.aspx?ID=115>

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Module 2 Developing a Written Food Safety Plan

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Current Food Safety Practices: **What is in place?**

- Are there any food safety-related records?
- Are there any written food safety policies?
- Are there any written purchasing policies?
- What are the standard operating procedures related to food safety for the facility? Are they written?
- Is there a food safety plan? Is this written?

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Step 2: Implementing a Food Safety Program

Developing and Implementing Standard Operating Procedures (SOP's)



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What are SOP's?

- Practices that support process HACCP and help reduce food safety hazards
- Based on food safety guidance or regulation
- In place before HACCP can be effective
- Non-specific and specific SOP's
- Foundation for employee food safety training

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SOP's: Non-specific or Facility-Wide

- Written instruction for operations that impact the foodservice environment regardless of product or preparation
 - **Examples of topics for SOP's**
 - Personnel hygiene
 - Cleaning and sanitizing
 - Pest control
 - Preventing cross-contamination
 - Calibration of thermometers
 - Date-marking
 - Storing and labeling chemicals
 - Receiving deliveries



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SOP's: Specific

- General written instructions for the different food preparation processes
 - Not specific menu items
 - Includes written procedures for monitoring and corrections
 - **Examples of topics for SOP's**
 - Cooking potentially hazardous food *
 - Cooling potentially hazardous food *
 - Hot and cold holding
 - Reheating
 - Transporting food to satellite sites

* TCS - Food



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Format for Written SOP's

- Purpose
- Instructions
- Monitoring
- Corrections
- Verification/Records
- Date implemented and by whom
- Date reviewed and by whom
- Date revised (if necessary), reviewed and by whom
 - Signatures

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Group Activity 1

- Description of facility
- Required SOP's
- Checklist

Food Safety Basics Module 2

Description of the Facility

Overview/Description

Date developed	Foodservice Director	Facility
----------------	----------------------	----------

The program follows the USDA guidance on developing a food safety program based on the Process Approach to HACCP.

Average Daily Participation

Breakfasts	Lunches	Dinners
------------	---------	---------

Foodservice Staff

Manager/Supervisor	Baker	Dish washer
Line worker	Server	Driver
Other		

Kitched Equipment

Food Preparation Equipment

- | | | |
|--|---|---|
| <input type="checkbox"/> Mixer | <input type="checkbox"/> Toaster | <input type="checkbox"/> Slicer |
| <input type="checkbox"/> Electric can opener | <input type="checkbox"/> Food processor/Blender | <input type="checkbox"/> Other (list) _____ |

Cooking Equipment

- | | | |
|---|---------------------------------------|---|
| <input type="checkbox"/> Range/oven | <input type="checkbox"/> Grill | <input type="checkbox"/> Other (list) _____ |
| <input type="checkbox"/> Microwave oven | <input type="checkbox"/> Crock pot | _____ |
| <input type="checkbox"/> Electric fry pan | <input type="checkbox"/> Other (list) | _____ |

Small Wares

- | | |
|---------------------------------|--|
| <input type="checkbox"/> Knives | <input type="checkbox"/> Serving utensiles |
|---------------------------------|--|

Refrigeration

- | | |
|---|--|
| <input type="checkbox"/> Refrigerator and freezer | <input type="checkbox"/> Ice machine, Ice storage bin, Ice dispenser |
| <input type="checkbox"/> Milk dispensers | <input type="checkbox"/> Other (list) _____ |
| <input type="checkbox"/> Beverage dispenser | _____ |

Other

- | | |
|--|---|
| <input type="checkbox"/> Dishasher | <input type="checkbox"/> Garbage disposal |
| <input type="checkbox"/> Trash compactor and can crusher | <input type="checkbox"/> Trash barrels |

Menu

- Week/Month Cycle with recipes/instructions in notebook in manager's office

Food Safety Basics Module 2

Required Standard Operating Procedures Checklist

(Check all that currently apply)

Standard Operating Procedure (SOP)	Policy is in Place	Policy is not in Place	Don't Know
1. General Food Safety Practices			
a. Personal Hygiene e.g. Washing Hands			
b. Calibrating a Thermometer (Check fo Accuracy)			
c. Operating Without Power			
d. Operating Without Hot Water			
e. Storing and Using Chemicals			
f. Implementing an Employee Health Policy			
g. Practicing first-in-first-out (FIFO) Product Rotation			
h. Preventing Cross-Contamination			
2. The Flow of Food			
a. Purchasing Food from Reputable Vendors			
b. Receiving Deliveries			
c. Storing Food in Appropriate Storage Containers and Keeping Food Covered At All Times during Storage			
d. Washing Fresh Fruits and Vegetables			
e. Thawing Food Properly			
f. Cooking Potentially Hazardous Foods (TCS Foods)			
g. Cooling Potentially Hazardous Foods (TCS Foods)			
h. Labeling and Date Marking Ready-to-Eat, Potentially Hazardous Foods (TCS Foods)			
i. Holding Cold and Hot Potentially Hazardous Foods (TCS Foods)			
j. Reheating Potentially Hazardous Foods (TCS Foods)			
k. Handling Ready-to-Eat Foods e.g. Preventing Bare Hand Contact with Ready-to-Eat Foods			
l. Transporting Food			

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Step 3: Implementing a Food Safety Plan

Developing and Implementing the Process HACCP Approach



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Hazard Analysis and Critical Control Point (HACCP)



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HACCP Purpose: Food Safety Management

Control/prevent/minimize food safety hazards that may cause illness or injury:

- **Biological:** bacteria, viruses, parasites
- **Chemical:** compounds causing illness either immediately or from long-term exposure
- **Physical:** foreign objects like metal or glass



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The HACCP System: A Food Safety Management Tool

- Focuses on factors that cause foodborne illness
- Analyzes potential hazards
- Determines critical points in process that assures food safety
- Develops monitoring procedures to confirm safety control

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HACCP is NOT:

- Crisis management
- About quality
 - Quality issues do not mean safety problems
 - Safety issues could be present without clear quality indicators



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HACCP DOES:

- Emphasize process control
- Concentrate on the points in the process that are critical to the safety of the product
- Work to **prevent** rather than react
- Minimize risk and maximize safety

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**STEPS IN
DEVELOPING A
HACCP PLAN**



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- 1) **Conduct** hazard analysis and identify prevention or control measures
- 2) **Identify** critical control points (CCPs)
- 3) **Determine** critical limits (CL)
- 4) **Monitor** each critical control point/process step
- 5) **Establish** corrective action with a critical limit deviation
- 6) **Verify** that the food safety plan is working
- 7) **Recordkeeping** for critical control points, corrective action and verification

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HACCP

Risk Assessment = Evaluation
• **Hazard Analysis**

Risk Management = Control
• **Critical Control Points**
• **Critical Limits**
• **Monitoring**
• **Corrective Action**
• **Verification**
• **Recordkeeping**



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**What is Process HACCP?**

- **HACCP**: Food safety management system that focuses on **product, preparation and production** to reduce food safety hazards
- **Process HACCP**: Basic HACCP principles that are **modified for foodservice operations**

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STEPS IN DEVELOPING A PROCESS HACCP PLAN



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**Process HACCP for Foodservice**

- Assessment (Hazard Analysis)
 - Menu review and group by **Process**
 - Identify control measures
- Identifying Critical Control Points (CCP)
- Identifying Critical Limits (CL)
- Monitoring Critical Control Points
- Recordkeeping
- Review

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Module 2 Developing a Written Food Safety Plan

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Getting Started

Beginning risk assessment
Procedural Step #1

Group menu items into one (1) of three (3) preparation processes that reflects trips through the “**temperature danger zone**”. This will begin to group hazards.

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Categorize Menu Items

Trips Through the Danger Zone

135° F

41° F

¹No Cook Step

²Same Day Service

³Complex Food Prep

COOK COOL REHEAT

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Food Preparation Action Plan

Review menu items and sort by process

Process I No Cook	Process II Cook & Serve Same Day	Process III Complex Food Preparation

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Flow charts

Diagrams that show step-by-step progression of food preparation

- Will help to group menu items
- May help develop SOP's (prerequisite programs) common to recipes
- Will help identify food flow in recipe/prep procedures into **major operational steps**
 - Receiving, storing, preparing, cooking, holding etc.

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Examples of Major Operational Steps Used for Flow Charts

- Receiving
- Storing
- Preparing
- Cooking
- Cooling
- Assembling
- Reheating
- Holding
- Serving



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Process 1: Food Preparation with No Cook Step

Receive → Store → Prepare → Cold Hold → Serve

Example: Sandwiches w/ "Ready-to-Eat" (RTE) Fillings

- Canned Tuna
- Canned Chicken
- Lunch Meat
- Fruit salad



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Module 2 Developing a Written Food Safety Plan

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Example:
Flow Chart from Recipe
Baked Chicken



1. Chicken breasts are received frozen and stored in the refrigerator until thawed.
2. Chicken is dipped in milk and seasoned bread crumbs.
3. Chicken is baked for 30 minutes at 375° F.
4. Chicken is placed to metal sheet pan and placed under a heat lamp/steam table until served.
5. Chicken is placed on clean plates using tongs and is immediately picked up by residents.

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Flow Chart for Baked Chicken

```

    graph LR
      RECEIVE[RECEIVE] --> STORE[STORE]
      STORE --> PREPARE[PREPARE]
      PREPARE --> COOK[COOK]
      COOK --> HOT_HOLD[HOT HOLD]
      HOT_HOLD --> SERVE[SERVE]
      SAME_DAY[SAME DAY PREP]
  
```

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Example: Menu Items Sorted by Process

PROCESS 1 (NO COOK)	PROCESS 2 (COOK AND SERVE SAME DAY)	PROCESS 3 (COMPLEX FOOD PREPARATION)
Milk	Green Beans in Cheese Sauce	Bean Burrito
Juice	Chili	Bean Soup
Tuna Salad Sandwich	Macaroni and Cheese	Potato Salad
Waldorf Fruit Salad	Scrambled Eggs	Baked Pasta
Cole Slaw	Sloppy Joe on Roll	Hot turkey sandwich from leftovers
Fresh Fruit	Fried Chicken	
Egg Salad Sandwich	Scalloped Potatoes	
Broccoli Salad	Chicken Taco	
Three Bean Salad	Taco Salad	
Store purchased Chicken or Turkey Salad	Hamburger	Chicken or Turkey salad made from cooked leftovers

Source: Modified from Guidance for School Food Authorities. USDA/FNS June 2005 46

 **Group Activity 2**
Sorting menu items in
process categories

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 **Identifying control measures**

Procedural Step #2

- Identify significant hazards
 - Biological, Chemical, Physical
- Assess likelihood of occurrence
- Determine control or prevention methods to eliminate or minimize identified hazards



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 **Recognize the Problems:**
Foodborne illness risk factors

Specific – Preparation Process

- Inadequate cooking
- Inadequate cooling
- Improper holding/time-temperature

Non-specific – SOP's (Facility-wide)

- Contaminated equipment
- Poor personal hygiene
- Food from unsafe sources

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 **Recognize the Problems:**
Control Measures for HACCP:

- Proper time/temperature for cooking
- Proper temperature for hot/cold hold
- Proper time/temperature for cooling
- Proper time/temperature for reheating
- Proper temperature for thawing

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Procedural Step #3

- Identify and implement Control Measures
- Determine Critical Control Points
- Establish Critical Limits

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Critical Control Point (CCP)

An operational step in a food preparation process where control measures must be applied to **prevent or eliminate or reduce** a food safety hazard to an acceptable level.



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Process 1: NO COOK

Example: Fruit Salad

RECEIVE

Control Measures: Known Source, Receiving Temperatures

STORE

Control Measures: Proper Storage Temperatures, Prevent Cross Contamination, Store away from chemicals

PREPARE

Control Measures: Personal Hygiene, Restrict Ill Employees, Prevent Cross Contamination

CCP: COLD HOLDING

Critical Limit: Hold at 41°F or Below.
Check and record temperatures.

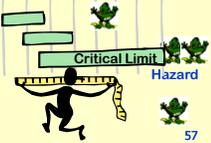
SERVE

Control Measures: No Bare Hand Contact with Ready to Eat Food, Personal Hygiene, Restrict Ill Employees

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Critical Limits

- A critical limit is a criteria or boundary that must be met for each control measure at a CCP.
- A maximum and/or minimum value to ensure that the biological, chemical or physical hazard identified at the CCP is controlled.



The illustration shows a person balancing a horizontal beam on their shoulders. On the left side of the beam is a green box labeled 'Critical Limit'. On the right side is a green box labeled 'Hazard'. The person is walking on a yellow path that leads towards the hazard, suggesting the need to maintain the critical limit to avoid the hazard.

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Determining Critical Limits

- Usually established by a regulatory standard - FDA Food Code/State-Local regs/USDA
- Can be measured, quantified, monitored
- Based solely on food safety
- May need >1 CL to control a hazard

Time and Temperature

- **Critical Limits vs. Operational Goals**
 - Safety vs. Quality

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Recipes as a Guide

- Using recipes as part of the food safety plan
- Include critical temperature and time at appropriate food preparation step(s)
 - Preparation steps = CCP
 - Temperature/time = CL

Module 2
Developing a Written
Food Safety Plan

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USDA: Quantity Recipes for School Food Service

National Food Service Management Institute's website (University of Mississippi):

http://www.nfsmi.org/Information/school_recipe_index_alpha.html

Recipes with CCP and CL that fulfill process approach requirements to HACCP

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Group Activity 3

Determining CCP(s) in one of the menu items from those sorted into process category 2 from Group Activity 2

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Procedural Steps #4 and #5

- Establish Monitoring Procedures
 - ✓ Who, What, When, How
 - ✓ Visual, temperature, time
 - ✓ Document
 - ✓ Track operation/assess that CCP in control
- Develop Corrective Actions
 - ✓ Correct deviations from CL
 - ✓ Determine disposition of food
 - ✓ What to do if something goes wrong?
 - ✓ Document



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Thermometer Accuracy/Calibration



- Importance
 - Cannot evaluate hot or cold temperature of food without accurate thermometer
 - Internal temperature only as good as the accuracy and calibration of the thermometer
- Bimetallic and Digital
- Ice water or boiling water ?



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Measuring accuracy of thermometers

Recommendations:

- Measuring cold internal temperature of food:
 - Ice bath accuracy check
 - 32 ° F
- Measuring hot internal temperature of food:
 - Boiling water
 - 212 ° F

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 **Group Activity 4**

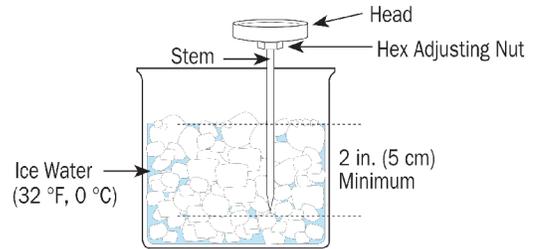
- Checking the accuracy of a food thermometer using ice bath
- Group or Demonstration

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Checking Food Thermometer Accuracy

Ice Water Method

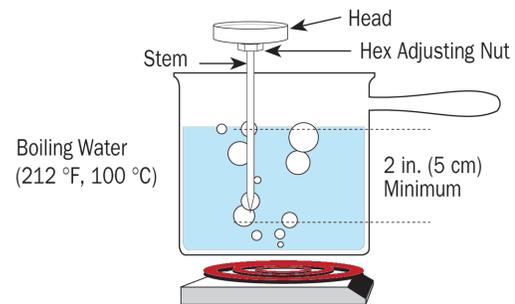
1. Fill a 2-quart measure with ice.
2. Add water to within 1 inch of top of container.
3. Stir mixture well.
4. Let sit for one minute.
5. Place thermometer in container so that the sensing area of stem or probe is completely submerged over the dimple.
6. Keep the thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving.
8. Place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
9. Some digital stemmed thermometers (thermistors) and thermocouples have a reset button which should be pushed.
10. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Boiling Water Method

1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
4. Do NOT let the thermometer stem/probe touch sides or bottom of container.
5. Let thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex adjusting nut and rotate until the thermometer dial reads 212 °F, while in boiling water.
7. Some digital thermometers (thermistors) and thermocouples have a reset button which should be pushed.
8. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Note: The boiling point of water is about 1 °F lower for every 550 feet above sea level. If you are in high altitude areas, the temperature for calibration should be adjusted. For example, if you were at 1100 feet above sea level, the boiling point of water would be 210 °F.

For more information, contact NFSMJ at 800-321-3054 or www.nfsmi.org.

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Review to validate

- Initially – to make sure the food preparation or process is doing what it is supposed to do
- New processes or menu items
- Changes in suppliers, equipment
- New food safety information
- Periodic, at least yearly

Monthly audit check recommended

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Examples of Validation Review

- Cooling Chart – Product specific
 - Chicken soup made with broth and vegetables
 - Chicken soup made with cream, (thickened) and vegetables
 - Cooling time records (Appendix) to document rate
- Cooking time/temperatures from the Food Code and/or USDA/FNS

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Review to verify

- On-going - daily, weekly, monthly
 - Monthly audit checklist
- Review CCP monitoring logs
 - Receiving/storage temperature
 - Cooking temperature
 - Cooling temperature
 - Reheating temperature
- Review menus periodically



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Records



- Records documenting SOP's
- Monitoring records (e.g. temperature)
- Corrective Action records
- Calibration records
- Review of records (verification)

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Examples of Records

- Food temperature logs
- Refrigerator temperature logs
- Freezer temperature logs
- Sanitizer concentration logs



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Recipes Wanted – Don't forget

- Do you have written recipes?
- **You need them for Module 3**
- Bring staff training notebook to next training



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Questions ???



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Resources for Illustrations

1. International Association for Food Protection
<http://www.foodprotection.org/aboutIAFP/SafetyIcons.asp>
2. National Registry of Food Safety Professionals, Essentials of Food Safety & Sanitation, 2004
3. Partnership for Food Safety Education. Be Food Safe. <http://www.befoodsafe.gov>

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Food Safety Plan Development

Introduction, 3-1

Section 1: Description of the Facility, 3-2

Section 2: Standard Operating Procedures (SOPs), 3-2

Section 3: Food Safety Plan, 3-4

Section 4: Food Safety File Record Keeping, 3-6

Section 5: References and Resources, 3-7

Participant Activity 1, Food Safety File Record Keeping, 3-8

Frequently Asked Questions, 3-14

Learn More About It, 3-15

Food Safety Development Plan, 3-16

Certificate of Completion



Module 3

Food Safety Plan Development

Introduction

This module is designed to help participants develop a food safety plan tailored to their facility. The two previous modules provided participants with information and resources on the application of food safety principles and process HACCP. This module contains all the necessary forms, etc. for the development and implementation of a workable food safety plan. After completion of this module and follow-up consultations with the Instructor, RCCI staff should be able to develop and implement a workable food safety plan tailored to their facility.

The Standard Operating Procedures and the record sheets/logs included in this module are sample documents that may be modified to address the specific operational needs of the facility. The exceptions are those operational procedures or critical limits that are mandated by the current model FDA Food Code or the state/local health regulatory authority.

A flash drive should be provided that includes the templates for SOPs, record sheets, and logs.

Module 3 is divided into five sections:

Section 1 is a detailed description of the foodservice facility including the number of meals served and a listing of all the food preparation equipment. This should have been completed during Module 2, Participant Activity 1, Description of the Facility (STM p. 2-9).

Section 2 begins with a Standard Operating Procedures Checklist to help identify those specific SOPs that are needed for the facility. Note; The Checklist should have been completed during Module 1 (STM p. 2-10). Following the Checklist is a collection of various SOPs that address both specific hazards and nonspecific hazards

in the facility. SOPs for specific hazards address those food preparation activities that are specific to preparing and serving a particular food item. Examples are cooking and cooling procedures. SOPs for nonspecific hazards address those operations that impact the foodservice environment regardless of product or preparation. Examples include personal hygiene, cleaning and sanitizing, and pest control. Many of the SOPs include the necessary record-keeping documents required to document the SOP. The final item in this section is a listing of general responsibilities for the foodservice manager and workers.

Section 3 includes instructions for

1. categorizing menu items
2. identifying critical control measures and critical control points
3. using standard operating procedures to complement the process approach
4. establishing monitoring procedures
5. establishing corrective actions
6. recordkeeping procedures
7. revising the food safety plan if necessary (validation/verification)

Also included in this section are examples of menu items for all three processes, as well as blank forms which may be used to categorize a menu items by process.

Section 4 includes all the logs/records needed to verify that the food safety principles addressed in the HACCP/SOP are being followed.

Section 5 includes a listing of references and resources specific to the development of a food safety plan.

Module 3

Food Safety Plan Development

Description of the Facility

Identifying Critical Control Measures and Critical Control Points

This activity is designed to help participants begin the process of identifying and including Critical Control Points and Critical Limits in recipes.

Objectives

- Participants will be provided the necessary tools and resources to develop a facility-specific food safety plan.
- Participants will begin the development of facility-specific food safety plan with HACCP and SOP components.

Training Time

2–3 hours

Materials Checklist

- Staff Training Manual
- Food Safety Smart DVD: Food Safety Education for Residential Childcare Institutions
- Sample menus if needed, may be found on the National School Foodservice website, www.nfsmi.org/ResourceOverview.aspx?ID=196 or on the local school district's website for school lunch menus.
- Collection of various colors of small post-it notes
- Flash drives for each facility participating in the training containing the food safety plan resources

Note: The flash drive should be given to the person in charge of the RCCI foodservice operation who attended the training. Take a moment to review its contents.

- Copies of data collection forms found in Module 3, Section 4 (STM pp.3-5, 6-3–68), and the Appendix (STM pp. A-32–A-40)
- Lap-top computer (if available) and/or extra of printed forms (samples are included in the Staff Training Manual and on the flash drive as word documents)
- Power point presentations from previous modules: Module 2, slides 16–21
- Participant Activity 1, Identifying Control Measures and Critical Control Points (STM p. 3-69)
- Evaluation Form (STM p. 3-73)
- Certificates of Completion

Training Outline

1. If time allows, show the Food Safety Smart: Food Safety Education for Residential Childcare Institutions 15 minute video and review the resources found in the Appendix of the Staff Training Manual for food safety education for RCCI residents (STM pp. A-1–A-6).
2. Give a brief review of the information and resources presented and discussed in the previous two modules.
3. Review and discuss the resources contained in each section of Module 3 and their specific uses.

Module 3

Food Safety Plan Development

Description of the Facility

Trainer Notes

Section 1. Description of Facility

- Description of Facility is a detailed description of the facility, including the number of meals served and a listing of all the food preparation equipment. This activity should have been completed during Module 2, Participant Activity 1 (STM p. 2-9).
- Ask participants to review Module 2, Participant Activity 1, Description of the Facility (STM p. 2-9) and make any changes if necessary.

Section 2. Standard Operating Procedures

- What are Standard Operating Procedures? (see Module 2, slide 18)
Standard Operating Procedures are:
 1. Practices that support process HACCP and help to reduce food safety hazards
 2. Based on food safety guidance or regulation
 3. Must be in place and followed before HACCP can be effective
 4. Either specific or non specific
 5. Foundation for employee food safety training
- SOPs for specific hazards address those food preparation activities that are specific to preparing and serving a particular food item. Examples are cooking and cooling procedures.
- SOPs for non specific hazards address those operations that impact the foodservice environment regardless of product or preparation. Examples include personal hygiene, cleaning and sanitizing and pest control.
- SOPs Should Include: (see Module 2, slide 21)
 1. Purpose
 2. Instructions
 3. Monitoring
 4. Corrections
 5. Verification/Records
 6. Date Implemented and by whom
 7. Date revised (if necessary), reviewed and by whom
 8. Signatures
- Refer to the checklist completed in Module 2, Participant Activity 1, Part 2: Required Standard Operating Procedures (STM p. 2-10).
- Ask participants to use the completed checklist to determine those SOPs that are already in place, those that need to be developed or modified. Emphasize that current SOPs might be reviewed and modified. It is only necessary to develop SOPs for those areas that have not been previously addressed.
- Discuss the sample SOPs located in Section 2 of Module 3 (STM pp. 3-3–5-31).
- Participants from each facility can work together to review this section of the module and indicate the status of their facilities SOPs. (Note: Participants might find it helpful to use colored post-it notes to determine the status of each SOP (i.e. pink: completed, blue: needs to be modified, yellow: need to develop, and green: n/a.)

Reminder: Procedures and critical limits required by the current FDA Model Food Code and/or your state/local regulatory agency cannot be changed. The SOPs are sample documents. Modify them to meet the operational needs of your facility.

Module 3

Food Safety Plan Development

Food Safety Plan

Introduction

- The menu should be posted in the food preparation area.
- Each menu item must be included in the food safety plan.
- The food safety plan should be updated/changed when menu items/ingredients change. Information on menu items removed from the menu should be kept for a short period of time.
- Each menu item must be reviewed to determine which process is applicable and to identify control measures, critical control points (CCPs) and critical limits (CLs).
- The foodservice manager is responsible for providing the food preparation staff with the information about the correct food safety control measures for each food item on the menu.
- The foodservice manager is responsible for keeping a copy of the current food safety plan and supporting documentation.
- Training of new foodservice staff should include an overview of the process approach to HACCP before they engage in any food preparation activities. This same training/information must be given to substitute foodservice staff.
- All foodservice staff should receive continuous training on the process approach to HACCP emphasizing the importance of recordkeeping as well how to record the necessary information on the forms provided.

Module 3

Food Safety Plan Development

Section 3

Section 3. Categorize Menus

Identify Critical Control Points (CCP) and Critical Limits (CL)

Review instructions

- Documenting CCP and CL – this must be done for all menu items in each PROCESS category
- Bridging Gaps: Connect the specific and/or facility wide SOP
- Monitoring: Monitor/control/document
 1. Time and Temperature
 2. Who – Food Service Director/ Staff member
- Corrective Actions
 1. Food Service Director – develops corrective action plans
 2. Staff – documents corrective action taken and results

Complete Module 3, Participant Activity 1:

Identifying Control Measures, Critical Control Points, Monitor Procedures, Corrective Actions, and Record Keeping (STM pp. 3-69 –3-72)

Module 3

Food Safety Plan Development

Section 4

Trainer Notes

Section 4. Food Safety File Record Keeping (Weekly/Monthly Recordkeeping)

- Review importance of Record Keeping – needed to verify that Food Safety Plan is working
- Staff will document results
- Food Service Director is ultimately responsible for documentation being completed and documents filed
- Menu Items by Process
- Review Processes 1, 2 and 3 from Module 2, slides #40-47
- Category that menu item/recipe falls into depends on the number of trips through the Danger Zone
 - Process 1 – no cook
 - Process 2 – same day cook and serve
 - Process 3 – complex food preparation
- Emphasize all menu items and recipes need to be in the Food Safety Plan. As new menu items/recipes are added the Food Safety Plan needs to be updated. Likewise, as menu items/recipes are deleted the Food Safety Plan needs to be updated.
- Control Measures. Identify measures CCP/CL and corresponding SOPs that directly tie into CCP identified
- Process 1
- Chart – menu item
- Recipe – include the CCP/ CL and Monitor within recipe for each item

Assignment

Make arrangements for follow-up contacts with a responsible individual from each RCCI participating in the training for an on-site visit. Also, be sure to provide them with your contact information so they can be in touch if they have questions. Follow-up is essential to the plan development process. Contact should be made prior to the on-site visit. It may be necessary to make a number of visits to complete the plan.

At the conclusion of the training session

1. Spend a few minutes reviewing the highlights of the information presented
2. Have participants complete the Module 3 Evaluation Form
3. Distribute Certificates of Completion

Module 3

Food Safety Plan Development

Section 4

Participants Activity 1

Identifying Control Measures, Critical Control Points, Monitor Procedures, Corrective Actions, and Record Keeping

Trainer Notes

Objectives

- To identify the appropriate control measures and critical control points (CCPs) using the process approach
- To evaluate each menu item to determine which of the three processes is applicable

Materials Checklist

- Participant Activity 1 (STM pp. 3-69–3-72). Identifying Control Measures, Critical Control Points, Monitoring Procedures, Corrective Actions, and Record Keeping
- Current menu and recipes for all menu items

Training Time

30 minutes

Teaching Outline

1. Review the examples with participants following the instructions to participants. Break into work groups and complete the worksheet for one food item from each of processes 1, 2, and 3.
Note: The participant activity includes examples of recipes for food items for each of processes 1, 2, or 3. Participants may use the sample recipes to complete the activity, or use recipes from their facilities' menu. Blank forms are located on pp. 3-49 and 3-50 in the Staff Training Manual.
2. After the completion of the activity, review and point out that in order to complete this for each food item, recipes are needed.

Instructions to Participants

1. Using your current menu, list the menu items by process (1, 2, or 3) on the Menu Items/Recipes by Process sheet (STM p. 3-70)
2. List all the food items for each process on the Menu Items by Process Charts (STM pp. 3-43)
3. Use one Recipe Sheet (STM pp. 3-44–3-45) for each food item.
 - A. List all the ingredients.
 - B. List the preparation steps and indicate whether they are a Critical Control Point (CCP), Critical Limit (CL), or a Monitoring Step.
4. List Corrective Actions

Module 3 Food Safety Plan Development Section 4

Participants Activity 1

Identifying Control Measures , Critical Control Points, Monitor Procedures, Corrective Actions, and Record-keeping

Instructions

1. Using your current menu, list the menu items by process (1, 2, or 3) on the Menu Items/Recipes by Process sheet (STM p. 3-70)
2. List all the food items for each process on the Menu Items by Process Charts (STM pp. 3-43)
3. Use one Recipe Sheet (STM pp. 3-44–3-45) for each food item.
 - A. List all the ingredients.
 - B. List the preparation steps and indicate whether they are a Critical Control Point (CCP), Critical Limit (CL), or a Monitoring Step.
4. List Corrective Actions

Module 3 Food Safety Plan Development Section 4

Example Recipe Name: Tuna Salad

Process 1 2 3 (circle process)

Ingredients 1 can tuna, drained 3 T mayonnaise 2 T finely chopped celery
--

Preparation

	CCP	CL	Monitor
1. Drain and flake tuna			
2. Combine tuna, celery and mayonnaise			
3. Mix lightly until all ingredients are well blended			
4. Cover and refrigerate until ready to use			

Corrective Action

Records Kept

Module 3

Food Safety Plan Development

Section 4

Example Recipe Name: Baked Chicken

Process 1 2 3 (circle process)

Ingredients

4 chicken breasts

Coating mixture: 1 cup flour, 1 t onion powder, 1/4 t black pepper, 1 t paprika, large plastic bag

2 T finely chopped celery

Preparation

CCP

CL

Monitor

1. Preheat oven 375°

2. Combine dry ingredients in large plastic bag and shake

3. Use tongs or other cooking utensil to place chicken in bag

4. Shake until all chicken pieces are coated

5. Use tongs or other cooking utensils to remove the coated chicken pieces and place in a 13 x 9 baking dish

6. Bake 20–30 minutes

Corrective Action

Records Kept

Module 2

Developing a Food Safety Plan

Learn More About It

USDA Food and Nutrition Service Guidance for School Food Authorities: Developing Food Safety Program Based on the Process Approach to HACCP.

The guidance document for implementation of HACCP-based food safety programs participating in the National School Lunch and Breakfast Programs. www.fns.usda.gov/fns/safety/pdf/HACCPGuidance.pdf

National Foodservice Management Institute: Developing a Food Safety Plan

Includes all the elements needed to develop and implement a food safety plan, including staff training resources, forms, and other resources. <http://nfsmi-web01.nfsmi.olemiss.edu/ResourceOverview.aspx?ID=57>

Process Hazard Analysis Critical Control Points (HACCP)

Iowa State University Hazard Analysis Critical Control Point Information Center

Provides resources for the development of HACCP programs in foodservice establishments including schools, assisted living, childcare, and restaurants. www.iowahaccp.iastate.edu

FDA: Managing Food Safety: A Manual for the Voluntary Use of HACCP Principles for Operators of Food Service and Retail Establishments

The site is a “roadmap” for writing and implementing a food safety management system based on HACCP principles. www.fda.gov/Food/FoodSafety/RetailFoodProtection/ManagingFoodSafetyHACCPPrinciples/Operators/default.htm

Recipes

National School Food Service Management Institute, USDA recipes for Schools

This site includes numerous recipes that include Critical Control Point information according to the current FDA Model Food Code. www.nfsmi.org/ResourceOverview.aspx?ID=115

USDA Food and Nutrition Service Food Distribution Programs, Recipes for Schools

This site links to recipes that are intended to assist school food service personnel and household program administrators find new and different ways to prepare USDA commodities. www.fns.usda.gov/fdd/recipes/schrecipes.htm

AllRecipes.Com

Is a collection of recipes for a wide variety of foods. A calculator included with each recipe allows you to calculate the ingredients needed for a specific number of servings. www.allrecipes.com

Standard Operating Procedures

USDA/National Foodservice Management Institute, HACCP Based Standard Operating Procedures

This site includes an extensive collection of sample HACCP-based Standard Operating Procedures and worksheets that list the minimum elements necessary to develop and implement a food safety program. <http://nfsmi-web01.nfsmi.olemiss.edu/documentlibraryfiles/PDF/20080207024226.pdf>

Thermometers

USDA Safety Food and Inspection Service

Click on Thermometers and Food Safety for information on how to use a thermometer, types of food thermometers, research on thermometers, and correct thermometer placement. www.fsis.usda.gov/Food_Safety_Education/Thermometers_&_Food_Safety/index.asp

Appendices

1. Food Safety Education for RCCI Residents

- Using the Food Safety Smart Video, A-1
- Resident Food Safety Activity 1, A-2
- Resident Food Safety Activity 2, A-6

2. Fact Sheets, A-7

- 1. Food Allergens, A-8
- 2. Calibrating a Thermometer, A-10
- 3. Food Safety Facts for Food Service Workers, A-13
- 4. How to Sanitize by Hand with Chemical Sanitizers, A-17
- 5. Microbiological Foodborne Illness Chart, A-18
- 6. Potentially Hazardous Foods (TCS Foods), A-21
- 7. Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods, A-23
- 8. This Is What Happens When a Fly Lands on Your Food, A-31

3. Data Collection Tools, A-32

Monthly Audit Checklist, A-33

Log Sheets

- 1. Food Contact Surfaces Cleaning and Sanitizing Log, A-35
- 2. Hot Holding Food Temperature Log, A-36
- 3. Food Temperature Log, A-37
- 4. Refrigeration Temperature Log, A-38
- 5. Thermometer Calibration Accuracy Log, A-39
- 6. Time/Temperature Cooling Log, A-40

4. Food Safety Kit, A-41

5. References, A-46



Food Safety Education for RCCI Residents Using Food Safety Smart Video

Introduction

The food safety principles presented in Module 1: Food Safety Basics are based on the four *FIGHT BAC!/Be Food Safe* principles: Clean, Separate, Cook and Chill. FIGHT BAC is a food safety initiative designed to educate consumers of all ages about steps they can take to reduce the risk of foodborne illness.

The 15 minute Food Safety Smart video features four students preparing a simple meal during which the *FIGHT BAC!/Be Food Safe* principles are addressed. The video is divided into seven chapters: Planning, Proper Storage, Preparation, Cooking, Serving, Refrigerate and Cleaning. Each chapter of the video is divided into two sections. The first showing incorrect food safety behaviors and the second demonstrating correct food safety behaviors. Following the incorrect behaviors there is an opportunity to pause the video for discussion.

The video can be found at <http://www.uri.edu/ce/ceec/food/educ.html>. Scroll down to *Food Safety Education for Residential Child Care Institutions*.

Food Safety Education Activities using the Food Safety Smart Video

Asking these 3 questions for each topic portrayed in the video would take about 10 minutes. The video can be found at www.uri.edu/ce/ceec/foodsafety.shtml. Click on *Food Safety Education for Residential Child Care Institutions*.

1. Play the first part of each chapter of the video.
2. Ask residents to list what food safety behaviors need to be changed and why.
3. Continue the video showing the correct food safety behaviors and discuss why they are correct.

Food Safety Education for RCCI Residents Using Food Safety Smart Video

Resident Food Safety Activity 1

Below is a series of multiple choice questions pertaining to the food safety concepts presented in the video. The correct answer is highlighted. Also at the end of each question, the part of the video which explains the concept is listed.

A listing of these questions as an interactive power point can be found at: <http://www.uri.edu/ce/ceec/food/educ.html> Scroll down to *Food Safety Education for Residential Child Care Institutions*.

Interactive Power Point

The food safety concepts presented in this Interactive Power Point Presentation include *FIGHT BAC! / Be Food Safe* principles: Cook, Chill, Clean, and Separate. The correct answer is highlighted.

Following each question is location in the video (minutes) of the food safety concept.

1. You can tell when food is unsafe to eat by using:
 - a. your sight
 - b. your smell
 - c. your taste
 - d. **none of your senses**

2. Bacteria and viruses that can get into food and make you sick can come from:
 - a. only animals
 - b. only people
 - c. only equipment
 - d. **everywhere**

(Video – 5:38)

3. Harmful bacteria can spread throughout your kitchen by:
 - a. only dirty hands
 - b. only dirty utensiles (knives, forks, spoons)
 - c. only dirty countertops
 - d. only uncooked food
 - e. **all of the above**

(Video – 5:38)

4. For bacteria to grow quickly, it needs:
 - a. food, water and very hot temperatures
 - b. food, no water and warm temperatures
 - c. **food, water, warm temperatures and time**
 - d. water, warm temperatures, time and no food

5. The Temperature "Danger Zone" is:
 - a. the temperature range where bacteria are killed
 - b. **the temperature range where bacteria like to grow**
 - c. the temperature range where bacteria cannot live
 - d. the temperature range that food should be cooked

(Video – 9:08, 9:45)

Food Safety Education for RCCI Residents Using Food Safety Smart Video

6. The temperature range for the “Danger Zone” is:
 - a. 70°F – 140°F
 - b. **40°F – 140°F**
 - c. 72°F – 165°F
 - d. 100°F – 140°

7. Microorganisms can grow rapidly in the:
 - a. **in the Temperature Danger Zone**
 - b. refrigerator
 - c. hot oven
 - d. freezer

8. Your hands should be washed using:
 - a. **warm water and soap, rubbing your hands together for 10 seconds**
 - b. warm water only
 - c. cold water only
 - d. cold water only

(Video – 4:30)

9. You should always wash your hands before preparing food.
 - a. **Yes**
 - b. No

(Video – 4:21)

10. You should clean pots and pans, utensils and dishes that were used to prepare food by:
 - a. washing with cold water and soap and rinsing in cold water
 - b. **washing with hot water and soap and rinsing in hot water**
 - c. washing with cold water and wiping with a dishcloth or towel
 - d. wiping with a clean dishcloth or towel

(Video – 16:00)

11. The **most important** reason to thoroughly cook chicken or beef is to:
 - a. Make sure it is warm enough for you to eat
 - b. **destroy harmful microorganisms that can make you sick**
 - c. make sure it is the right color
 - d. make sure it tastes good

(Video – 9:45)

12. You know a food is cooked correctly:
 - a. **when it reaches the correct internal temperature using a food thermometer**
 - b. after it has been cooked for a certain amount of time using a timer
 - c. after it has been cooked at a certain oven temperature
 - d. after you taste it

(Video – 9:08)

13. The temperature of your refrigerator should be no higher than:
 - a. 0°F
 - b. **40°F**
 - c. 50°F
 - d. 60°F

(Video – 14:07)

Food Safety Education for RCCI Residents Using Food Safety Smart Video

14. Storing foods in the refrigerator is important to food safety because cold temperature:
- will kill bacteria
 - will make food taste better
 - will prevent or slow the growth of bacteria**
 - will make the food look better
- (Video–13:45)
15. After cooking chicken or meat, where should you place a food thermometer to check the temperature to see if it is thoroughly cooked?
- all the way through to the other side
 - at the edge of the food
 - in the middle of the food
 - in the thickest part of the food**
- (Video–9:27)
16. After cooking a casserole, where should you place a food thermometer to check the temperature to see if it is thoroughly cooked?
- all the way through to the other side
 - at the edge of the food
 - in the middle of the food**
 - in the thickest part of the food
17. If cooked chicken is left out on the table overnight, the best thing to do so you don't get sick is to:
- reheat it so it is very hot
 - put it in the refrigerator right away
 - throw it out**
 - put it in the freezer
18. It is okay to put a large amount of hot cooked soup in one big container in the refrigerator so all the soup can be in one place and take up less room.
- true
 - false**
- (Video–13:53)
19. It is safe to thaw frozen meat, chicken or fish:
- only in the refrigerator
 - only under cold running water
 - only in the microwave oven
 - all of the above**
20. If juices from uncooked (raw) chicken or beef drop on fresh fruit that will be served for a dessert, you should:
- rinse with cool water and store in refrigerator
 - wipe it off with a clean paper towel and serve
 - throw the fruit away**
 - the fruit should be served right away
- (Video–2:43))
21. Cutting boards should be thoroughly cleaned after cutting raw chicken and before cutting vegetables that you will be using in a salad.
- true**
 - false
- (Video–4:58, 7:00)

Food Safety Education for RCCI Residents Using Food Safety Smart Video

22. When you go shopping, put raw meat and chicken:
- in your shopping cart anyplace there is room
 - with all other foods that need to be kept cold
 - away from all ready to eat foods in your cart or in a separate bag**
 - with your fruits and vegetables
23. Keeping yourself clean will help keep food safe when you prepare a meal.
- true**
 - false
- (Video—4:11, covers wearing clean clothes)
24. Keeping food safe is simple if you know the following:
- only cooking thoroughly
 - only chilling quickly
 - only practicing good hygiene and cleaning
 - only separating uncooked, raw food that is ready to eat
 - all of the above**

Food Safety Education for RCCI Residents Using Food Safety Smart Video

Resident Food Safety Activity 2

If allowed, residents could assist in the planning, preparation, serving and clean-up of a meal. During the various meal preparations, serving and clean-up activities meal, the following questions could be discussed and answered in by the residents:

1. Which steps in the recipes being prepared are important to the food safety of the recipe?
2. What food safety steps are needed at each point in the recipe directions where food safety steps are important to the safety of the final recipe? (Have residents think about food safety principles that apply to the cooking and chilling steps in the recipe.
3. Review all the activities and the food safety principles that applied to each food purchase, storage, preparation, serving and clean-up activity

Food Safety Education for RCCI Residents Fact Sheets

1. Food Allergens
2. Calibrating Thermometers
3. Food Safety Facts for Food Workers
4. How to Sanitize With Chemical Sanitizers
5. Microbiological Foodborne Illness Chart
6. Potentially Hazardous Foods (Time/Temperature Control for Safety Foods (TSC Foods))
7. Recommended Storage Times Cold and Dry Refrigerated and Frozen Foods
8. This Is What Happens When A Fly Lands On Your Food

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COOPERATIVE EXTENSION FOOD SAFETY EDUCATION PROGRAM

Food Allergens

A food allergy is the negative reaction to an otherwise harmless food protein (food allergen). FDA believes there is scientific consensus that the following foods can cause serious allergic reactions in some individuals and account for more than 90 percent of all food allergies:

- Peanuts
- Soy and soy products
- Milk and dairy products
- Eggs and egg products
- Fish
- Shellfish
- Tree nuts
- Wheat

One third of all adults believe they have some sort of a food allergy. True food allergies affect less than two percent of the population. Only five percent of young children are diagnosed with food allergies and many of those outgrow them by the time they reach adulthood. However, to this small percentage of the population, food allergies can be fatal. People have died because they have disregarded food allergy-related symptoms.

Typically, an allergic reaction begins within minutes to a few hours after the food. However, in very sensitive individuals, just touching or smelling the food can result in an allergic reaction. Most often, but not always, the symptoms of an allergic reaction begin with: a sensation that the lips and tongue are swelling; itching or tingling in the mouth; sensation of warmth; redness to the skin or hives; tightness in the throat; itchy, watery or swollen eyes; nausea, vomiting, cramping, or diarrhea. Anaphylaxis occurs when several parts of the body have food-allergic reactions at the same time. This condition is rare, but can be fatal.

Symptoms of food allergy vary among individuals as to the severity, when they begin, and the amount of food that is eaten. The same food can produce different reactions in different people and different foods can cause the same reaction in one person. Individuals with asthma appear to be at greater risk of food allergies.

Diagnosing and managing a food allergy requires medical treatment. People with known food allergies and those that have been diagnosed with food allergies through an examination including a complete medical history and a series of specialized tests should avoid the foods.

To eliminate the offending food from the diet it is necessary to read and understand food ingredient labels. By law, a list of ingredients in each food product should be listed on the label. Labels should be re-checked regularly as the ingredients in products change. Specific information about the ingredients is available from the company producing or processing the food product.

The August 2004 *Food Allergen Labeling and Consumer Protection Act* (Public Law 108-282, Title II) defines the term "major food allergen." This definition is included in the current FDA Model Food Code. The Food Allergen and Consumer Protection Act includes the following requirements for foods labeled on or after January 1, 2006:

- Food manufacturers must identify in plain language on the label of the food any major food allergen used as an ingredient in the food, including a coloring, flavoring, or incidental additive.
- FDA is to conduct inspections to ensure that food facilities comply with practices to reduce or eliminate cross-contact of a food with any major food allergens that are not intentional ingredients of the food. Within 18 months of the date of enactment of the new law (i.e., by February 2, 2006).
- FDA must submit a report to Congress that analyzes the results of its food inspection findings and addresses a number of specific issues related to the production, labeling, and recall of foods that contain an undeclared major food allergen.
- Within two years of the date of enactment of the new law (i.e., by August 2, 2006), FDA must issue a proposed rule, and within four years of the date of enactment of the new law (i.e., by August 2, 2008), FDA must issue a final rule to define and permit the use of the term "gluten-free" on food labeling. (2005 FDA Model Food Code, Annex 4, p 483).

Food service establishments have a responsibility to provide correct and up to date information about food items on the menu. "Secret" ingredients which are considered allergens such as peanuts, nuts, eggs, milk, shellfish, and fish should not be used in any food items.

Fact Sheet 1, Part 2

Food Allergens

Wait staff should take customer inquires about allergies seriously. They should be familiar with all the ingredients in the food items on the menu and how they are prepared. For example, waitstaff should know the ingredients in a batter used to bread meats or fish. If the ingredients change, they should be advised of the change.

Avoid cross contact during food preparation. Cross contact is the transfer of a food allergen from one food or surface to another (i.e. human hands, cooking utensils, frying different foods in the same oil). An individual had an allergic reaction when he ate a sandwich that had been made with a knife that had been used to make a peanut butter sandwich.

If a patron has an allergic reaction, respond quickly. Ask if there is a history of food allergies and check for a medical bracelet or necklace. Call 911 for immediate medical assistance. The sooner the reaction is treated, the less severe it will be.

Persons sensitive to these specific allergens should avoid the following foods/ingredients:

- Eggs** Albumin
Egg (including whites and yolk)
Eggnog
Mayonnaise and other dressings
Ovalbumin
Ovomucoid
Simplese
Egg-based glaze on baked goods
- Fish** Anchovy (including anchovy paste)
Caviar
Fish byproducts
Imitation crab (surimi)
Roe
Oil used to fry fish would cause a reaction
- Milk** Cream
Curds
Dry milk solids
Lactalbumin, lactalbumin phosphate
Lactose
Milk (derivative, protein, solids)
Artificial butter flavor
Butter, butter fat
Buttermilk
Casein, rennet casein
Cheese
Sour cream or milk solids
Caseinates (ammonium, calcium, magnesium, potassium, sodium)
Whey (delactosed, demineralized, protein concentrate)
Yogurt
- Peanuts** Cold pressed peanut oil
Mixed nuts
Nu-nutsâ flavored nuts
Peanut butter
Peanut flour
Foods containing peanut protein including:
Chinese and Thai dishes: egg rolls
Baked goods: pastries, cookies, danish
Candy
Chili
Marzipan
Soups
- Tree nuts** Almonds / Almond paste
Brazil nuts
Cashews
Chestnuts
Filberts/Hazelnuts
Hickory nuts
Giandiju (chocolate nut mix)
Macadamia nuts

Revised 5/06, 06/09

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Food Safety Fact Sheet

2009

Calibrating Thermometers

Introduction

Food temperatures must be checked throughout the food preparation process, and the thermometers used must be accurate. Child nutrition employees are responsible for checking the accuracy of thermometers and calibrating them if they are not accurate.

Here Are the Facts

Thermometers that are not accurate will give misleading information. For example, if you use a thermometer that registers 10 °F higher than the actual temperature, you would cook ground beef to 145 °F rather than 155 °F. That would be inadequate cooking to make sure the ground beef is safe to serve. If the thermometer registers too low, you could easily overcook food.

Application

It is important for child nutrition employees to know when and how to calibrate bimetallic stemmed and digital (that can be calibrated) thermometers. Follow state or local health department requirements.

How to Take Temperatures

When?

Thermometers are sensitive and can lose calibration. It is important to calibrate them:

- Weekly,
- When they are dropped,
- More often if specified by local policy.

How?

There are two methods that can be used to calibrate thermometers.

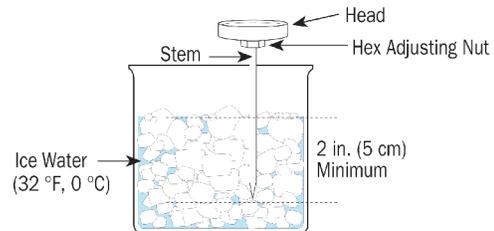


Food Safety Fact Sheet

Calibrating Thermometer, continued

Ice Water Method

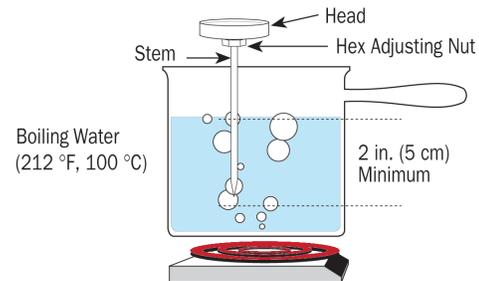
1. Fill a 2-quart measure with ice.
2. Add water to within 1 inch of top of container.
3. Stir mixture well.
4. Let sit for one minute.
5. Place thermometer in container so that the sensing area of stem or probe is completely submerged over the dimple.
6. Keep the thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving.
8. Place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
9. Some digital stemmed thermometers (thermistors) and thermocouples have a reset button that should be pushed.
10. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Boiling Water Method

1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
4. Do NOT let the thermometer stem/probe touch sides or bottom of container.
5. Let thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex adjusting nut and rotate until the thermometer dial reads 212 °F, while in boiling water.
7. Some digital thermometers (thermistors) and thermocouples have a reset button that should be pushed.
8. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Note: The boiling point of water is about 1 °F lower for every 550 feet above sea level. If you are in high altitude areas, the temperature for calibration should be adjusted. For example, if you were at 1100 feet above sea level, the boiling point of water would be 210 °F.

Fact Sheet 3, Part 1
Food Safety Facts for Food Service Workers

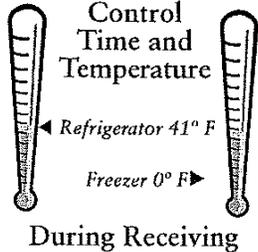
Food Safety Facts for Food Workers

Most foodborne illness can be avoided by handling food properly. Foods from animal sources and cooked beans, rice and pasta are especially risky. These foods are "Potentially Hazardous Foods" (PHFs) now called Time/Temperature Control for Safety Foods (TCS Foods). Follow these basic food safety principles and practices to keep the food you prepare and serve safe to eat. These recommendations are consistent with the current FDA Model Food Code.

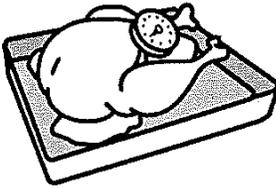
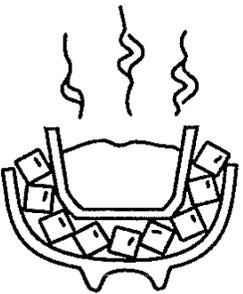
STAY HEALTHY

Key Principle	Hazard	Food Safety Message
Be in Good Health	Microbiological Contamination	<ul style="list-style-type: none"> Don't prepare food when you are ill or have an open cut or sore on your hands or arms. Report illnesses to the manager. Avoid coughing and sneezing in food areas.
	Microbiological Contamination	<p>Always wash your hands after you:</p> <ul style="list-style-type: none"> use the restroom. cough, sneeze, or use a handkerchief or tissue. work with raw foods. handle dirty equipment or utensils. take out the garbage.
	Cross-contamination	<ul style="list-style-type: none"> Use a designated hand sink.
	Physical Contamination	<ul style="list-style-type: none"> Wear clean clothing on the job.
	Microbiological and Physical Contamination	<ul style="list-style-type: none"> Wear effective hair restraint while working in a food preparation area. Don't eat, drink or smoke while preparing food. Keep nails trimmed.

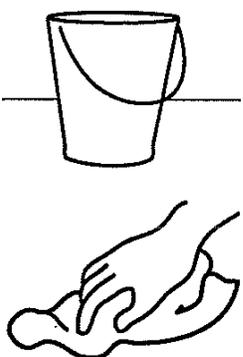
CONTROL TIME AND TEMPERATURE

Key Principle	Hazard	Food Safety Message
	Bacterial Growth, Toxin Production	<p>Keep foods out of the "Danger Zone": 41°F - 135°F</p> <ul style="list-style-type: none"> Use a calibrated food thermometer to check food temperatures. <p>Receive and store food at proper temperatures</p> <ul style="list-style-type: none"> Refrigerated foods at 41°F or below. Frozen foods at 0°F or below.
During Preparation	Bacterial Growth, Toxin Production	<p>Thaw frozen foods in:</p> <ul style="list-style-type: none"> Refrigerator. Potable cold running water below 70°F for 2 hours or less. Microwave oven followed by cooking or as part of the cooking process.

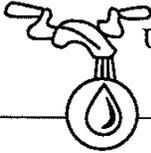
Fact Sheet 3, Part 2
Food Safety Facts for Food Service Workers

CONTROL TIME AND TEMPERATURE		
Key Principle	Hazard	Food Safety Message
<p>Control Time & Temperature</p> <p>During Cooking</p> 	<p>Bacterial Survival, Toxin Production</p>	<p>Cook each food to proper internal temperature:</p> <ul style="list-style-type: none"> • 165°F for 15 seconds: poultry, stuffed meat, fish, pasta and stuffing containing meat, poultry or fish. • 155°F for 15 seconds: ground poultry, turkey. • 155°F for 15 seconds: for ground beef • 145°F for 15 seconds: pork and game animals • 145°F for 15 seconds: fish and raw shell eggs that are intended for immediate service. • 140°F for 12 minutes: whole roast beefs • 130°F for 112 minutes: whole roast beefs <p>Microwaved Food Temperatures: heating to an internal temperature of 165°F</p>
<p>During Holding</p>	<p>Bacterial Growth, Toxin Production</p>	<ul style="list-style-type: none"> • Hold hot Potentially Hazardous Foods (TCS Foods) at 135°F and above. • Hold cold PHFs at 41°F or below.
<p>During Cooling</p> 	<p>Bacterial Growth, Toxin Production</p>	<p>Cool cooked Potentially Hazardous Foods (TCF Foods):</p> <p>Two step process-total 6 hours:</p> <p>Step 1- 135°F to 70°F in 2 hours.</p> <p>Step 2 - 70°F to 41°F in 4 hours</p> <p>Note: If Step 1 takes less than 2 hours, the complete process can be completed in 6 hours.</p>
<p>During Reheating</p>	<p>Bacterial Survival and Growth, Toxin Production</p>	<ul style="list-style-type: none"> • Rapidly reheat PHFs (TFS Foods) to 165°F (2 hours or less) and hold at 135°F.

Fact Sheet 3, Part 3
Food Safety Facts for Food Service Workers

PREVENT CONTAMINATION		
Key Principle	Hazard	Food Safety Message
<p>Protect Food from Contamination</p> 	<p>Microbiological and Physical Contamination</p>	<ul style="list-style-type: none"> • Prevent bare-hand contact with ready-to-eat foods by using utensils like disposable gloves, deli tissue, spatulas, tongs or dispensing utensils. • Minimize bare-hand contact with exposed foods that are not in ready-to-eat form. • Store food in covered containers or original packaging. • Do not store packaged food in absorbent packaging in direct contact with ice or water. • Do not store unpackaged food in direct contact with undrained ice. • Wash fruits and vegetables before cooking or serving. • Store foods in a clean, dry location that is not subject to splash, dust or other contaminants and is 6 inches above the floor.
<p>Prevent Cross-contamination</p> 	<p>Cross-contamination</p>	<ul style="list-style-type: none"> • Separate raw animal foods from ready-to-eat animal foods and other ready-to-eat foods (sushi, molluscan shellfish, fruits and vegetables) during storage, preparation, holding and serving.
	<p>Microbiological Contamination</p>	<ul style="list-style-type: none"> • Clean and sanitize food thermometers before and after each temperature check of raw and ready-to-eat foods.
	<p>Cross-contamination</p>	<ul style="list-style-type: none"> • Do not mix raw animal foods with cooked food.
<p>Keep Food Contact Surfaces Clean</p> 	<p>Microbiological Contamination</p>	<p>Clean and sanitize food contact equipment and utensils:</p> <ul style="list-style-type: none"> • Before you use a different type of raw animal food (beef, fish, lamb, pork and poultry). • When you change from working with raw foods to working with ready-to-eat foods. • Between preparing raw fruits and vegetables and Potentially Hazardous Foods (TCS Foods). • At any time during the operation when contamination may have occurred. • Every 4 hours if used with Potentially Hazardous Foods (TCS Foods) at room temperature greater than 55°F. • Clean and sanitize food thermometers before using and storing.

Fact Sheet 3, Part 4
Food Safety Facts for Food Service Workers

KEEP YOUR FOOD SUPPLY HEALTHY		
Key Principle	Hazard	Food Safety Message
<p>Consider the Source and the Condition of the Food</p>	<p>Microbiological, Physical and Chemical Contamination</p>	<ul style="list-style-type: none"> • Use foods from approved suppliers. • Do not use food prepared in a private home. • Do not use food from bulging or dented cans or from damaged packaging.
 <p>Use Safe Water</p>	<p>Microbiological and Chemical Contamination</p>	<ul style="list-style-type: none"> • Use only safe, potable water. • Ice for food use must be made from potable water.
<p>Use Safe Transportation/Travel</p>	<p>Microbiological and Chemical Contamination</p>	<ul style="list-style-type: none"> • Protect food from contamination during transportation. • Transport in clean vehicles and equipment. • Keep refrigerated foods cold (41°F or below). • Keep hot foods hot (135°F or above).
<p>Use and Store Chemicals and Pesticides Safely</p> 	<p>Chemical Contamination</p>	<ul style="list-style-type: none"> • Store and use only chemicals that are absolutely necessary. • Use chemicals in accordance with manufacturers' instructions. • Do not store chemicals where they can contaminate food equipment, utensils, linens and single service/single use articles. • Only licensed Pest Control Operators (PCO's) should apply pesticides.

Adapted from *Food Safety for Food Workers*, University of Massachusetts, Massachusetts Partnership for Food Safety Education. 2003 05/06, revised 06/09

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Fact Sheet 4

How to Sanitize by Hand with Chemical Sanitizers

How to Sanitize by Hand with Chemical Sanitizers

There are three common types of chemical sanitizers that are approved for use with food contact surfaces:

- 1. Chlorine (institutional bleach)
- 2. Quaternary ammonium compounds (quats)
- 3. Iodine

When you use these chemicals correctly they will reduce the number of germs to a safe level.

FOLLOW THESE 4 STEPS

1. MAKE A SANITIZING SOLUTION.

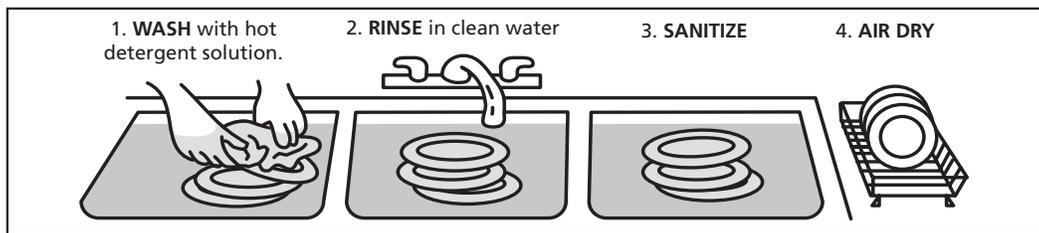
- Read the container label
- Be sure it has instructions for use on food equipment and utensils
- Mix according to the manufacturer's directions

2. CHECK THE CONCENTRATION WITH A TEST KIT.

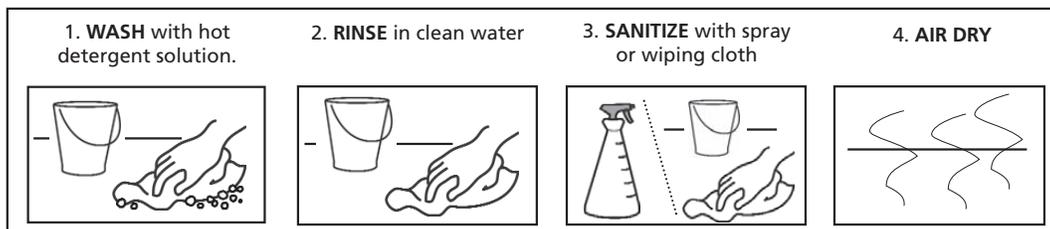
This way you will know if it is too weak or too strong.

3. USE WITH FOOD CONTACT SURFACES SUCH AS:

a. pots, pans, dishes, cutting boards and utensils



b. countertops, tables or other stationary equipment



4. Monitor with a test kit to check concentration.

Any sanitizing solution can lose strength over time. To be effective it must be clean and at proper strength.

For the person in charge. When ordering and receiving sanitizers, look for EPA approval for food contact surfaces. Make sure that the recommended water temperature, contact time and concentration of the solution are followed to ensure that the sanitizing solution will be effective. Make sure that the correct test kit is available for the type of sanitizer used.



Developed by the MA Partnership for Food Safety Education with support from the Massachusetts Department of Elementary and Secondary Education in cooperation with the University of Massachusetts Extension Nutrition Education Program. UMass Extension is an equal opportunity provider and employer, United States Department of Agriculture cooperating. Contact your local Extension office for information on disability accommodations or the UMass Extension Director if you have complaints related to discrimination, 413-545-4800. revised 3/08



Fact Sheet 5, Part 1

Microbiological Foodborne Illnesses

Microbiological Foodborne Illnesses <small>UMass Extension Nutrition Education Program</small>					
ILLNESSES/ MICROORGANISMS	SOURCE	ONSET/DURATION OF ILLNESS (without complications)	SYMPTOMS (other than nausea, vomiting, diarrhea & cramps)	COMMON FOODS INVOLVED	PREVENTION
INFECTIOUS					
SALMONELLOSIS <i>(Salmonella species)</i>	Intestinal tract of animals and humans	onset: 5-36 hours lasts: 2-7 days	"Flu," headache, fever, dehydration; may trigger arthritis	Raw and undercooked eggs, poultry, meat, fish, dressings, meat, pies, cream desserts, dairy products	<ul style="list-style-type: none"> • Cook animal foods thoroughly • Prevent cross contamination
CAMPYLOBACTERIOSIS <i>(Campylobacter jejuni)</i>	Intestinal tract of animals, soil and water	onset: 2-5 days lasts: 2-7 days	"Flu," fever, bloody stools; complications: meningitis, arthritis	Undercooked meat, poultry, fish, raw dairy products	
LISTERIOSIS <i>(Listeria monocytogenes)</i>	Soil, intestinal tract of animals	onset: 24 hours to 3 weeks lasts: 2-7 days	Headache, fever; in immunocompromised possible meningitis, blood poisoning, abortion, death	Raw milk, cheeses made from raw milk, cabbage, undercooked meat and poultry, hot dogs, cold smoked fish (grows @ 34°-113° F)	<ul style="list-style-type: none"> • Good Sanitation • Use only pasteurized milk & milk products, • Cook meat & poultry thoroughly • Prevent cross-contamination • Limit refrigerator storage – watch "use-by" dates
YERSINIOSIS <i>(Yersinia enterocolitica)</i>	Intestinal tract of animals, esp. pork, raw milk, water	onset: 3-7 days lasts: 2-3 weeks	Fever; bloody stools, pseudoappendicitis Complications: blood poisoning, arthritis, meningitis, liver disease	Meat, esp. pork, poultry, shellfish, raw milk and vegetables (grows @ 32°-113° F)	
VIBRIOSIS <i>(Vibrio species)</i>	Seawater (esp. warm months)	onset: 2-76 hours lasts: 3-8 days	Chills, fever; dehydration, weakness, blood poisoning	Undercooked seafood: oysters, shrimp, crabs and clams	<ul style="list-style-type: none"> • Cook all seafood thoroughly • Prevent cross-contamination • Keep cold foods cold (below 40° F)
HEMORRHAGIC COLITIS <i>(E.coli O157-H7)</i>	Intestinal tract of animals and humans	onset: 3-8 days lasts: 2-10 days	Bloody stools, urinary infection & kidney failure, strokes, seizures, coma & death	Undercooked meats and poultry, ground beef, raw milk & cheeses, unpasteurized apple juice and cider	<ul style="list-style-type: none"> • Cook meats thoroughly • Prevent cross-contamination • Keep cold foods cold (below 40° F)
SHIGELLOSIS <i>Bacillary dysentery (Shigella species)</i>	Intestinal tract of humans and primates	onset: 1-57 days lasts: 3-14 days to months	Fever, pus or blood in stools, asymptomatic carrier state in convalescence lasting days to months, secondary infection frequent	Salads, seafoods, milk, dairy products, poultry, potato salad, parsley	<ul style="list-style-type: none"> • Good Sanitation • Minimize contact of hands with food • Keep cold foods cold (below 40° F) <p style="text-align: right;"><small>* Toxin heat resistant</small></p>



Adapted from S.A.F.E., Colorado State University Cooperative Extension, by UMass Extension, June, 1999.

Fact Sheet 5, Part 2 Microbiological Foodborne Illnesses

Microbiological Foodborne Illnesses <small>UMass Extension Nutrition Education Program</small>					
ILLNESSES/ MICROORGANISMS	SOURCE	ONSET/DURATION OF ILLNESS (without complications)	SYMPTOMS (other than nausea, vomiting, diarrhea & cramps)	COMMON FOODS INVOLVED	PREVENTION
INTOXICATIONS					
STAPHYLOCOCCAL INTOXICATION <i>(Staphylococcus aureus)</i>	Skin, nose, throat, hands (coughs & sneezes), hair, sores, pimples, raw milk; and sewage	onset: 1-6 hours lasts: 1-2 days	Usually no fever	Ham, processed meat, tuna, poultry, red meat, sandwich fillings, potato and meat salads, dairy products, imitation dairy products, raw milk	<ul style="list-style-type: none"> Minimize hand contact with food Keep foods hot (>140° F) or cold (< 40° F) Cool leftovers quickly <i>* Toxin heat resistant</i>
BOTULISM <i>(Clostridium botulinum)</i>	Soil	onset: 12-72 hours to 14 days lasts: days to months/years 10% death rate	Headache, dizziness, tired, double vision, muscle weakness and difficulty speaking, swallowing and breathing, death without antitoxin	Smoked and home canned meat and vegetables, low-acid cooked foods held at room temperature in low-oxygen environment	<ul style="list-style-type: none"> Can foods properly Prepare and store foods properly Boil home canned vegetables and meats 15-20 minutes before tasting
C. PERFRINGENS FOOD POISONING <i>(Clostridium perfringens)</i>	Intestinal tract of humans and animals, soil, dust, water	onset: 8-24 hours lasts: 1-2 days	Acute abdominal pain, fever	Improperly held, cooled and/or reheated meat and poultry, stews, meat pies, casseroles and gravies	<ul style="list-style-type: none"> Keep foods hot (>140° F) or cold (< 40° F) Cool quickly in small portions Reheat to 165° F
B. CEREUS FOOD POISONING <i>(Bacillus cereus)</i>	Soil, dust, water	onset: 1-5 hours lasts: 1-2 days	Two types of illness: Mild: abdominal pain and diarrhea Severe: nausea and vomiting	Cereal and rice dishes, macaroni and cheese, spices, dairy products, puddings, soups, sauces, mashed potatoes, meat	<ul style="list-style-type: none"> Good Sanitation Keep foods hot (>140° F) or cold (< 40° F) Cool leftovers quickly Reheat to 165° F <i>* Spores very heat resistant</i>
VIRAL INFECTIONS					
INFECTIOUS HEPATITIS <i>(Hepatitis A virus)</i>	Infected workers, contaminated water, shellfish from contaminated water	onset: 15-30 days lasts: weeks/months	Fever; loss of appetite, fatigue, jaundice, darkened urine, enlarged liver	Raw oysters and clams, foods handled and not cooked after handling such as bakery products, luncheon meats, salads, sandwiches, fruits, raw milk or water	<ul style="list-style-type: none"> Good personal hygiene Minimize hand contact with food Separate infected persons from food preparation Cook all foods properly, esp. seafood
VIRAL GASTROENTERITIS <i>(norovirus)</i>	Infected workers, contaminated water, shellfish from contaminated water	onset: 1-2 days lasts: 1-2 days	Mild fever, headache, pains	Raw or undercooked shellfish, sandwiches, salads, etc.	<ul style="list-style-type: none"> Good personal hygiene Minimize hand contact with food Cook shellfish well
PARASITIC INFECTIONS					
TRICHINOSIS <i>(Trichinella spiralis)</i>	Muscle of meat-eating animals, esp. pigs and bears	onset: 3-30 days lasts: weeks/months	3 stages: Intestinal: flu-like; Muscle invasion: fever, puffy eyes, sweating, weakness, muscle pain; Convalescence: toxemia, myocarditis	Raw and undercooked pork, bear and game	<ul style="list-style-type: none"> Cook all pork products to 160° F Prevent cross-contamination

Fact Sheet 5, Part 3 Microbiological Foodborne Illnesses

ILLNESSES/ MICROORGANISMS	SOURCE	ONSET/DURATION OF ILLNESS (without complications)	SYMPTOMS (other than nausea, vomiting, diarrhea & cramps)	COMMON FOODS INVOLVED	PREVENTION
INTOXICATIONS					
STAPHYLOCOCCAL INTOXICATION (<i>Staphylococcus aureus</i>)	Skin, nose, throat, hands (coughs & sneezes), hair, sores, pimples, raw milk; and sewage	onset: 1-6 hours lasts: 1-2 days	Usually no fever	Ham, processed meat, tuna, poultry, red meat, sandwich fillings, potato and meat salads, dairy products, imitation dairy products, raw milk	<ul style="list-style-type: none"> Minimize hand contact with food Keep foods hot (>140° F) or cold (< 40° F) Cool leftovers quickly <i>* Toxin heat resistant</i>
BOTULISM (<i>Clostridium botulinum</i>)	Soil	onset: 12-72 hours to 14 days lasts: months/years 10% death rate	Headache, dizziness, tired, double vision, muscle weakness and difficulty speaking, swallowing and breathing, death without antitoxin	Smoked and home canned meat and vegetables, low-acid cooked foods held at room temperature in low-oxygen environment	<ul style="list-style-type: none"> Can foods properly Prepare and store foods properly Boil home canned vegetables and meats 15-20 minutes before tasting
C. PERFRINGENS FOOD POISONING (<i>Clostridium perfringens</i>)	Intestinal tract of humans and animals, soil, dust, water	onset: 8-24 hours lasts: 1-2 days	Acute abdominal pain, fever	Improperly held, cooled and/or reheated meat and poultry, stews, meat pies, casseroles and gravies	<ul style="list-style-type: none"> Keep foods hot (>140° F) or cold (< 40° F) Cool quickly in small portions Reheat to 165° F
B. CEREUS FOOD POISONING (<i>Bacillus cereus</i>)	Soil, dust, water	onset: 1-5 hours lasts: 1-2 days	Two types of illness: Mild: abdominal pain and diarrhea Severe: nausea and vomiting	Cereal and rice dishes, macaroni and cheese, spices, dairy products, puddings, soups, sauces, mashed potatoes, meat	<ul style="list-style-type: none"> Good Sanitation Keep foods hot (>140° F) or cold (< 40° F) Cool leftovers quickly Reheat to 165° F <i>* Spores very heat resistant</i>
VIRAL INFECTIONS					
INFECTIOUS HEPATITIS (<i>Hepatitis A virus</i>)	Infected workers, contaminated water, shellfish from contaminated water	onset: 15-30 days lasts: weeks/months	Fever; loss of appetite, fatigue, jaundice, darkened urine, enlarged liver	Raw oysters and clams, foods handled and not cooked after handling such as bakery products, luncheon meats, salads, sandwiches, fruits, raw milk or water	<ul style="list-style-type: none"> Good personal hygiene Minimize hand contact with food Separate infected persons from food preparation Cook all foods properly, esp. seafood
VIRAL GASTROENTERITIS (<i>norovirus</i>)	Infected workers, contaminated water, shellfish from contaminated water	onset: 1-2 days lasts: 1-2 days	Mild fever, headache, pains	Raw or undercooked shellfish, sandwiches, salads, etc.	<ul style="list-style-type: none"> Good personal hygiene Minimize hand contact with food Cook shellfish well
PARASITIC INFECTIONS					
TRICHINOSIS (<i>Trichinella spiralis</i>)	Muscle of meat-eating animals, esp. pigs and bears	onset: 3-30 days lasts: weeks/months	3 stages: Intestinal: flu-like; Muscle invasion: fever, puffy eyes, sweating, weakness, muscle pain; Convalescence: toxemia, myocarditis	Raw and undercooked pork, bear and game	<ul style="list-style-type: none"> Cook all pork products to 160° F Prevent cross-contamination

**Fact Sheet 6, Part 1
Potentially Hazardous Foods**

**THE
UNIVERSITY
OF RHODE ISLAND**
COLLEGE OF
THE ENVIRONMENT
AND LIFE SCIENCES

COOPERATIVE EXTENSION FOOD SAFETY EDUCATION PROGRAM

**POTENTIALLY HAZARDOUS FOODS
(TIME/TEMPERATURE CONTROL FOR SAFETY FOODS)**

Potentially hazardous food (time/temperature control for safety) is any food that requires time/temperature control for safety (TCS) to limit the growth of pathogenic microorganisms or the production of toxins.

Potentially hazardous foods (time/temperature control for safety) are:

- of animal origin, e.g., meat, poultry, milk, fish, shellfish, crabs, and lobster
- of plant origin and has been heat treated
- raw seed sprouts
- cut melons
- garlic-in-oil mixtures

There is an additional approach used in the 2005 RI Food Code to determine if a food should be treated as a potentially hazardous food (time/temperature control for safety food). This approach takes into consideration the interaction and level of pH and water activity. If time and temperature controls are not going to be used, then the Tables A and B apply (below). These tables are from Chapter 1- Purpose and Definitions of the 2007 RI Food Code.

These tables are the result of a study undertaken at the request of FDA, by International Food Technologists (IFT). IFT-member food scientists developed a framework that could be used to determine whether a food is a PHF (TCS food) or not. This framework includes the two tables that consider the interaction of pH and water activity in a food, whether the food is heat treated, and whether it is packaged. These tables also provide guidance as to when a food must undergo microbiological challenge studies.

Table A. Interaction of pH and A_w for control of spores in FOOD heat-treated to destroy vegetative cells and subsequently PACKAGED			
A_w values	pH values		
	4.6 or less	> 4.6 - 5.6	> 5.6
≤ 0.92	non-PHF*/non-TCS FOOD**	non-PHF/non-TCS FOOD	non-PHF/non-TCS FOOD
> 0.92 - .95	non-PHF/non-TCS FOOD	non-PHF/non-TCS FOOD	PA***
> 0.95	non-PHF/non-TCS FOOD	PA	PA

* PHF means POTENTIALLY HAZARDOUS FOOD
 ** TCS FOOD means TIME/TEMPERATURE CONTROL FOR SAFETY FOOD
 *** PA means Product Assessment required

Fact Sheet 6, Part 2 Potentially Hazardous Foods

Table B. Interaction of A_w and pH for control of vegetative cells and spores in FOOD not heat-treated or heat-treated but not PACKAGED				
A_w values	pH values			
	< 4.2	4.2 - 4.6	> 4.6 - 5.0	> 5.0
< 0.88	non-PHF*/ non-TCS food**	non-PHF/ non-TCS food	non-PHF/ non-TCS food	non-PHF/ non-TCS food
0.88 – 0.90	non-PHF/ non-TCS food	non-PHF/ non-TCS food	non-PHF/ non-TCS food	PA***
> 0.90 – 0.92	non-PHF/ non-TCS food	non-PHF/ non-TCS food	PA	PA
> 0.92	non-PHF/ non-TCS food	PA	PA	PA

* PHF means POTENTIALLY HAZARDOUS FOOD
 ** TCS FOOD means TIME/TEMPERATURE CONTROL FOR SAFETY FOOD
 *** PA means Product Assessment required

Often Overlooked Time/Temperature Control for Safety Foods

- Bacon - if not fully cooked.
- Mayonnaise or other acidified salad dressings - if pH is above 4.5 and/or combined with other food products.
- Onions - cooked or reconstituted dehydrated onions.
- Beans - all types of cooked beans.
- Eggs - fresh egg shells, fresh eggs with outer shell removed, and hard-boiled eggs.
- Whipped butter - whipping introduces bacteria.
- Cheese - soft unripened cheese such as cottage, ricotta, Brie, and cream cheese are more hazardous than hard cheese. All cheeses should be refrigerated.
- Coffee creaming agents - all non-dairy coffee creaming agents in liquid form, except those approved by food safety authorities (labeled UHT only).
- Pasta – cooked.
- Pastries - meat, cheese, and cream filled
- Pies - meat, fish, poultry, natural cream, synthetic cream, custard, pumpkin, and pies covered with toppings that support microbial growth
- Garlic - garlic in oil products.
- Potatoes - baked, boiled, or fried.
- Refried beans - all varieties.
- Rice - boiled, steamed, fried, Spanish, and cooked rice used in sushi.
- Sauces - Hollandaise and other sauces that contain potentially hazardous ingredients.
- Sour cream - if the pH is above 4.6 and/or combined with other food products.
- Soy protein - tofu and other moist soy protein products.
- Seed sprouts - all types

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Fact Sheet 7, Part 1
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods

FN-SSB.085

UK COOPERATIVE EXTENSION SERVICE
 UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

**Recommended Food Storage Times Cold and Dry
 Refrigerated and Frozen Foods**

Americans lose money every day because of improper storage of food. The recommended storage time of food depends on what kind of food it is and the length of time and temperature the food is stored, before and after you purchase it. Properly storing food results in improved nutritional quality, reduced waste from spoilage, decreased risk in foodborne illness when eaten, and fresher, better tasting food. Food that is held past the recommended storage time may still be safe, but the quality may have begun to deteriorate. The tables below give the recommended storage times for maintaining good quality. Always start with high quality food. Refrigerator temperature should be kept below 40°F and freezer temperature below 0°F. Some food may not freeze well, resulting in changes in appearance, texture, color, or moisture, but they may still be safely frozen. Remember to rotate your foods using the FIRST IN, FIRST OUT rule.



Dairy Products



Food Product	Refrigerator Storage	Freezer Storage
Butter or margarine	1-3 months	6-9 months
Buttermilk	1-2 weeks	Freezes poorly
Cheese spread, opened	2 weeks	Freezes poorly
Condensed milk, opened	3-5 days	1 month
Cottage or farmer's cheese	1 week	Freezes poorly
Cream, half and half	3-4 days	4 months
Cream cheese	2 weeks	Freezes poorly
Evaporated milk, opened	3-5 days	Freezes poorly
Fluid milk	5-7 days after sell-by date	1-3 months
Hard cheese	6 months(unopened), 3-4 weeks (opened)	6 months
Ice cream and sherbet	Do not refrigerate	2 months
Nonfat Dry Milk (NFDM)	5-6 months	10-12 months
Processed cheese	3-4 weeks	4 months
Pudding	2 days after opening	Freezes poorly
Reconstituted NFDM	3-5 days	Freezes poorly
Sour cream	7-21 days	Freezes poorly
Whipped cream	2-3 hours	1 month
Whipping cream	10 days	2 months
Yogurt	1 week after sell-by date	1-2 months

Fact Sheet 7, Part 2

Recommended Food Storage Times

Cold and Dry Refrigerated and Frozen Foods

Some foods may have open dates on the package to assist the consumer in proper storage. The most commonly used open dates are the sell-by date, use-by date, expiration date, or pack date. The sell-by date is the last recommended day of sale, but it allows for home storage and use. Breads and baked goods commonly have sell-by dates. Use-by dates recommend how long the food will retain top quality after you buy it. Packaged foods often have use-by dates. An expiration date indicates the last day the food should be eaten, commonly found on egg cartons. Canned or packaged foods may have pack dates that indicate the date of processing or the food may have a coded date that only the manufacturer understands. These dates offer no safety or quality information.



Eggs

Food Product	Refrigerator Storage	Freezer Storage
Fresh in shell	3-5 weeks	Freeze poorly
Raw yolks, whites	2-4 days	1 year
Liquid pasteurized eggs, egg substitutes	10 days (unopened) 3 days (opened)	1 year (unopened) Freeze poorly
Hard cooked	1 week	Freeze poorly



Meat Products

Food Product	Refrigerator Storage	Freezer Storage
Roasts and steaks	3-5 days	6-12 months
Chops	3-5 days	4-6 months
Ground and stew meats	1-2 days	3-4 months
Bacon	1 week	1 month
Canned ham	6-9 months (unopened) 3-5 months (opened)	Freezes poorly 1-2 months
Corned beef, in pouch	5-7 days	1 month, drained
Ham, slices (fully cooked)	3-4 days	1-2 months
Ham, half (fully cooked)	3-5 days	1-2 months
Ham, whole (fully cooked)	1 week	1-2 months
Hotdogs	2 weeks (unopened) 1 week (opened)	1-2 months 1-2 months
Sausage	1-2 days	1-2 months
Smoked breakfast links, patties	7 days	1-2 months
Organ meats	1-2 days	3-4 months
Lunch meats	2 weeks (unopened) 3-5 days (opened)	1-2 months 1-2 months
Vacuum-packed dinners with USDA seal	2 weeks (unopened)	Do not freeze
Cooked meats, casseroles, soups, stews	3-4 days	2-3 months
Gravy and meat broth	1-2 days	2-3 months

Fact Sheet 7, Part 3
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Food Product	Refrigerator Storage	Freezer Storage
Chicken or turkey, whole	1-2 days	1 year
Chicken or turkey, pieces	1-2 days	9 months
Ground poultry and giblets	1-2 days	3-4 months
Duck, goose, game birds	1-2 days	9 months
Fried or boiled chicken	3-4 days	4 months
Cooked poultry casseroles	3-4 days	4-6 months
Cooked poultry with broth or gravy	1-2 days	6 months
Nuggets or patties	1-2 days	1-3 months



Food Product	Refrigerator Storage	Freezer Storage
Lean Fish – cod, flounder, haddock, halibut, pollack, ocean perch, rock fish, sea trout, sole	1-2 days	6 months
Fatty fish – bluefish, mackerel, mullet, salmon, smelt, swordfish, tuna	1-2 days	2-3 months
Cooked fish	3-4 days	4-6 months
Smoked fish, vacuum packaged	14 days or date on package	2 months
Surimi	2 weeks	9 months
Breaded fish	Do not refrigerate	3 months
Shrimp	1-2 days	3-6 months
Scallops	1-2 days	3-6 months
Crayfish	1-2 days	3-6 months
Squid	1-2 days	3-6 months
Clams	1-2 days (shucked) 2-3 days (live)	3-6 months 2-3 months
Mussels	1-2 days (shucked) 2-3 days (live)	3-6 months 2-3 months
Oysters	1-2 days (shucked) 2-3 days (live)	3-6 months 2-3 months
Lobster	1-2 days (live)	2-3 months
Crab	1-2 days (in shell)	2-3 months
Cooked shellfish	3-4 days	3 months

Fact Sheet 7, Part 4
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Fruits

Food Product	Refrigerator Storage	Freezer Storage
Apples	1 month	8-12 months
Apricots	3-5 days	8-12 months
Avocados	5 days	8-12 months
Bananas	5 days at room temperature	Freeze poorly
Berries	2-3 days	8-12 months
Cherries	2-3 days	8-12 months
Cranberries	1 week	8-12 months
Grapes	5 days	10-12 months
Guavas	1-2 days	8-12 months
Kiwis	6-8 days	4-6 months
Lemons, limes, oranges, grapefruit	2 weeks	4-6 months
Mangos	Ripen at room temperature	8-12 months
Melons	1 week	8-12 months
Nectarines	5 days	8-12 months
Papayas	Ripen at room temperature	8-12 months
Peaches	2-3 days	8-12 months
Pears	5 days	8-12 months
Pineapples	5-7 days	4-6 months
Plantains	Ripen at room temperature	8-12 months
Plums	5 days	8-12 months
Rhubarb	1 week	8-12 months
Canned fruits	2-4 days (opened)	2-3 months
Frozen juice concentrate	Do not refrigerate	2 years
Frozen juice reconstituted	6 days	6-12 months

Power Outages

- Without power a full upright chest freezer or refrigerator freezer, will keep food frozen about two days, if you do not open the lid. If the freezer is only half-full, it will keep for one day. If the power will be off for an extended period, transport food to freezers where there is electricity or use block or dry ice. Handle dry ice according to instructions. Do not touch or breathe fumes.
- Without power, a refrigerator will keep food cool for four to six hours, depending on the kitchen temperature. Use block or dry ice to keep food cold for long periods.
- When the electricity returns, if ice crystals are present in food or the food feels refrigerator-cold, it can be refrozen, but there may be a loss of quality in color, texture, flavor, and nutrient content. Any thawed food that has risen above room temperature and remained there for two hours or more should be discarded. Foods with a strange color or odors should be discarded.
- **IF IN DOUBT, THROW IT OUT!**

Fact Sheet 7, Part 5
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Food Product	Refrigerator Storage	Freezer Storage
Artichokes	2-3 days	Freeze poorly
Asparagus	2-3 days	8-12 months
Beets	2 weeks	8-12 months
Broccoli	3-5 days	8-12 months
Brussels sprouts	3-5 days	8-12 months
Cabbage	1 week	8-12 months
Carrots	2 weeks	8-12 months
Cauliflower	1 week	8-12 months
Celery	1 week	8-12 months
Corn, in husks	1-2 days	8-12 months
Cucumbers	1 week	8-12 months
Eggplant	2-3 days	8-12 months
Green beans	1-2 weeks	8-12 months
Greens	3-5 days	8-12 months
Jicama	2-3 weeks	8-12 months
Kohlrabi	1 week	8-12 months
Lettuce and salad greens	3-5 days	Freeze poorly
Lima beans	3-5 days	8-12 months
Mushrooms	1-2 days	8-12 months
Okra	3-5 days	8-12 months
Onions, green	3-5 days	Freeze poorly
Parsley	2-3 days	3-4 months
Peas	3-5 days	8-12 months
Peppers	1 week	8-12 months
Radishes	2 weeks	Freeze poorly
Squash, winter	Store in a dry place	8-12 months
Squash, summer	3-5 days	8-12 months
Tomatillos	1 week	8-12 months
Tomatoes	1 week	8-12 months
Yuca	1-2 days	8-12 months
Zucchini	3-5 days	8-12 months
Frozen vegetables	Do not refrigerate	8 months
Canned vegetables	1-4 days (opened)	2-3 months

Fact Sheet 7, Part 6
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Baked Products



Refrigerated storage of breads promotes staleness. Store breads at room temperature for 3 to 7 days unless otherwise indicated.

Food Product	Refrigerator Storage	Freezer Storage
Bread, yeast	Room temperature	4-6 months
Biscuits	Room temperature	2-3 months
Muffins	Room temperature	2-3 months
Quick breads	Room temperature	2-3 months
Pancakes and waffles	Room temperature	1-2 months
Rolls, yeast	Room temperature	2-3 months
Refrigerated biscuits	Use-by date	Do not freeze



Cakes and Cookies



Food Product	Refrigerator Storage	Freezer Storage
Angel	1-3 days at room temperature	2 months
Chiffon and sponge	1-3 days at room temperature	2 months
Cheesecake	3-7 days	2-3 months
Fruitcake	6-8 months	1 year
Pound	3-5 days at room temperature	6 months
Iced layer cake	1-3 days at room temperature	6 months
Baked cookies	5-7 days at room temperature	4-6 months
Unbaked cookie dough	Use-by date	2 months



Pastries and Pies



Food Product	Refrigerator Storage	Freezer Storage
Danish and doughnuts	1-3 days at room temperature	3 months
Chiffon pie	2-3 days	1 month
Fruit pie	2-3 days	1 year
Mincemeat pie	2-3 days	4-8 months
Pumpkin pie	2-3 days	1 month
Unbaked fruit pie	Do not refrigerate	8 months

Fact Sheet 7, Part 7
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Baby Food

Food Product	Refrigerator Storage	Freezer Storage
Expressed breast milk	3-5 days	3 months
Formula mixed with water	2 days	DO NOT FREEZE
Strained fruits and vegetables	2-3 days	6-8 months
Strained meat and eggs	1 day	1-2 months
Strained meat and vegetable combination	1-2 days	1-2 months
Homemade baby foods	1-2 days	1-2 months



Miscellaneous

Food Product	Refrigerator Storage	Freezer Storage
Fresh Pasta	1 week	1 month
Mayonnaise	2 months	Freeze poorly
Nuts	6 months	1 year
Sandwiches	1-2 days	1 week
Tofu	1 week	1 month
Coffee and tea	4-6 weeks	1 year
Peanut butter	6-8 months	6-8 months
Catsup, chili, cocktail sauce	6 months (opened)	Freeze poorly
Mustard	6-8 months	8-12 months
Coconut, shredded, opened	8 months	1 year
Honey, jams, jellies, syrup	6-8 months (opened)	Freeze poorly
Bottled salad dressing	3 months	Freeze poorly
Vegetable shortening	6-9 months	Freeze poorly



Canned Goods

Food Product	Shelf Life
High acid canned foods and juices including tomatoes, grapefruit, apple products, mixed fruit, berries, pickles, sauerkraut, and vinegar-based products	1 year
Low acid canned foods including meat and poultry products, vegetable soups (not tomato), all vegetables	2-5 years
Home-canned products – all types	1 year

Fact Sheet 7, Part 8
Recommended Food Storage Times
Cold and Dry Refrigerated and Frozen Foods



Dry Good Shelf Storage



Staples	Shelf Life
Baking powder and soda	18 months
Barley	2 years
Bread crumbs	6 months
Bulgar	5-6 months
Cereal, ready-to-eat	2-3 months (opened) 6-12 months (unopened)
Cereal, ready-to-cook	6 months
Chocolate, baking	6-12 months
Cornstarch	18 months
Flour, bleached	6-8 months
Flour, whole wheat	6-8 months
Honey and syrup	1 year
Noodles, egg	6 months
Noodles, plain	1-2 years
Olive oil	6 months
Pasta	2 years
Rice	2 years
Rice, brown or wild	6 months
Sugar, brown	4 months
Sugar, granulated	2 years +
Sugar, powdered	18 months
Pasta	2 years
Wheat germ	8-12 months (unopened)
Yeast, dry	Expiration date

References

- Arizona Department of Health Services (2005), *Safe Food Storage Times and Temperatures*.
- National Restaurant Association Educational Foundation (2002), *Be Cool-Chill Out! Refrigerate Promptly*.
- United States Department of Agriculture (2001), *Cold Storage Chart*.

Clip art Microsoft® 2007.

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THIS IS WHAT HAPPENS WHEN A FLY LANDS ON YOUR FOOD:



Flies can't eat solid food, so to soften it up they vomit on it.

.....

Then they stamp the vomit in until it's a liquid, usually stamping in a few germs for good measure.

.....



Then when it's good and runny, they suck it all back up again, probably dropping some excrement at the same time.

.....

And then when they've finished eating, it's your turn.



From Prize Winning Poster Health Education Council

United States Department of Agriculture cooperating.
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Data Collection Tools

Monthly Audit Checklist

Log Sheets

1. Food Contact Surfaces Cleaning and Sanitizing Log
2. Hot Holding Food Temperature Log
3. Food Temperature Log
4. Refrigeration Temperature Log
5. Thermometer Accuracy/Calibration Log
6. Time/Temperature Cooling Log

Audit Monthly Checklist page 1 of 2

	YES	NO	NOT OBSERVED	COMMENTS
I. Food Safety Plan				
There is a food safety plan in place				
Documentation is collected as required by the food safety plan				
II. Personal Hygiene/Employee Health				
SOPs relating to personal hygiene and employee health are in place and adhered to				
Staff/residents wear clean clothing when preparing and serving food				
Hair is covered/restrained				
Fingernails are trimmed with no polish				
Jewelry is limited to plain ring, watch				
Hands are washed properly, frequently and at appropriate times				
Chewing gum, smoking, eating or drinking while preparing and serving food is not allowed				
Sinks used for handwashing are stocked with single-use paper towels, and soap				
Water used for handwashing is at least 100°F				
People who are sick are not allowed in the kitchen to prepare and/or serve food				
Cuts and other wounds are properly bandaged and covered with a waterproof bandage				
III. Food Preparation				
SOPs relating to all aspects of food preparation are in place and adhered to				
There is no bare-hand contact with ready-to-eat foods				
Single-use gloves properly are used				
Frozen food is properly thawed				
Fresh fruits and vegetables are washed before preparing and/or severing				
Food is tasted using the proper procedure				
Food is cooked to the required internal temperature and is tested with a calibrated food thermometer and final cooking temperature is recorded in food temperature logs				
Leftovers and food prepared for reheating are properly cooled				
Leftovers and other foods are reheated to the proper temperature and final reheat temperature is recorded in food temperature logs				

Adapted from: RI Food Establishment Inspection Form, RIDOH, 10/08; Food Safety Checklist, *Guidance for School Food Authorities: Developing a School Food Safety Program* MSP/2/09
 Based on the *Process Approach to HACCP Principles*, United States Department of Agriculture, Nutrition Service, June 2005, pp 70–73.

Audit Monthly Checklist page 1 of 2

	YES	NO	NOT OBSERVED	COMMENTS
I. Food Safety Plan				
There is a food safety plan in place				
Documentation is collected as required by the food safety plan				
II. Personal Hygiene/Employee Health				
SOPs relating to personal hygiene and employee health are in place and adhered to				
Staff/residents wear clean clothing when preparing and serving food				
Hair is covered/restrained				
Fingernails are trimmed with no polish				
Jewelry is limited to plain ring, watch				
Hands are washed properly, frequently and at appropriate times				
Chewing gum, smoking, eating or drinking while preparing and serving food is not allowed				
Sinks used for handwashing are stocked with single-use paper towels, and soap				
Water used for handwashing is at least 100° F				
People who are sick are not allowed in the kitchen to prepare and/or serve food				
Cuts and other wounds are properly bandaged and covered with a waterproof bandage				
III. Food Preparation				
SOPs relating to all aspects of food preparation are in place and adhered to				
There is no bare-hand contact with ready-to-eat foods				
Single-use gloves properly are used				
Frozen food is properly thawed				
Fresh fruits and vegetables are washed before preparing and/or severing				
Food is tasted using the proper procedure				
Food is cooked to the required internal temperature and is tested with a calibrated food thermometer and final cooking temperature is recorded in food temperature logs				
Leftovers and food prepared for reheating are properly cooled				
Leftovers and other foods are reheated to the proper temperature and final reheat temperature is recorded in food temperature logs				

Adapted from: RI Food Establishment Inspection Form, RIDOH, 10/08; Food Safety Checklist, *Guidance for School Food Authorities: Developing a School Food Safety Program* MSP/2/09
 Based on the *Process Approach to HACCP Principles*, United States Department of Agriculture, Nutrition Service, June 2005, pp 70–73.



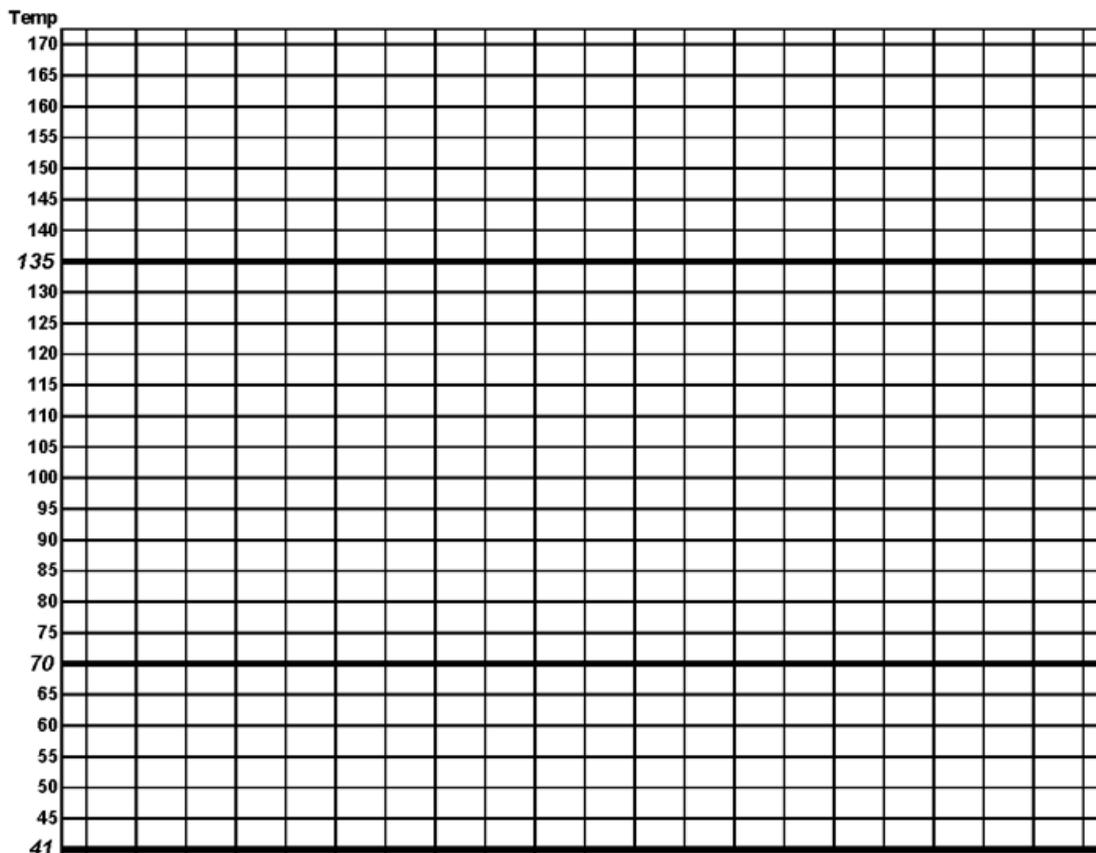
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF HEALTH
Safe and Healthy Lives in Safe and Healthy Communities



TIME / TEMPERATURE COOLING GRAPH

Time/Temperature Cooling Log

Date:	
Product:	
Container:	
Method of Cooling:	



Must cool from 135F-70F within 2 hrs.

Total Time from 135F-41F in less than 6hrs.

	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	End Time (41F)
Start Time (135F)	(Hours)																					
	Time from 135F to 70F (<2hrs) _____ + Time from 70F to 41F _____ = Total Time (<6hrs) _____																					

USE A SEPARATE FORM TO EVALUATE COOLING METHODS FOR EACH POTENTIALLY HAZARDOUS FOOD COOKED ONE OR MORE DAYS IN ADVANCE.

COOLING METHOD APPROVED BY: _____

Notes: _____

T.N. 02/2007

**Food Safety Education for RCCI Residents
Fact Sheets**

Food Safety Kit

Food Safety Education
for Residential Child Care Institutions

Food Safety Kit Products and Sources



Sources

amazon.com
www.amazon.com

Hubert
9555 Dry Fork Road
Harrison, OH 4530-1994
Phone: 866-482-4357
Fax: 513-367-8603
www.hubert.com

GLO-GERM
P.O. Box 189
Moab, UT 84532
Phone: 800-842-6622
Fax: 435-259-5930
www.glogerm.com

Miljoco Corporation
14335 East Nine Mile Road
Warren, MI 48089
Phone: 888-888-1498
Fax: 586-777-7891
www.miljoco.com

Disclaimer: Specific items included in this kit are not endorsed by the Universities of Rhode Island and Massachusetts. Similar items are available from other vendors. You should consult your vendor to find the product that is best for your use.

Audit Monthly Checklist

The audit checklist is used by managers/leads to ensure proper techniques are followed when handling food, equipment, utensils, etc. The checklist is an audit for food safety assessment and should be built into the facility Standard Operating Procedures and should be conducted monthly. The checklist is included in the food safety kit.

Logs and Audit Forms

The following forms are included in the food safety kit. It is suggested to keep copies of the completed forms for at least 30 days. They should also be reviewed periodically to insure that Standard Operating Procedures and correct food safety practices are being followed. If not, the proper steps should be taken to correct the practices.

Refrigerator Temperature Log

Refrigerator temperatures should be taken twice a day to ensure proper temperature and control of bacteria growth. The temperature of the refrigerator should be checked at least twice a day, in the morning and afternoon. The temperature should be recorded in a *Refrigerator Temperature Log* sheet included in the food safety kit. Deviations and corrective actions should be noted in the log. It is suggested that logs should be saved for at least 30 days. Refrigerator temperature should be between 34° and 40°F.

Food Temperature Log

Food temperatures should be taken with a food thermometer to ensure foods are cooked or served at the proper temperature to control or destroy the growth of bacteria. Once taken, food temperatures should be recorded on a *Food Temperature Log* sheet included in the food safety kit. For temperatures that do not meet the requirements, corrective action should be noted. It is suggested that logs should be saved for at least 30 days.

Log for Thermometer Accuracy

Thermometers should be checked for accuracy on a regular basis and the results recorded. This chart is included in the food safety kit.

Sanitation Log

After checking the sanitizer concentration of the water used to sanitize pots, pans, dishes, etc. the level should be recorded on the sanitation log. Sanitizer levels should be checked using a test strip every time sanitizer is prepared, used or the sanitizing sink refilled.

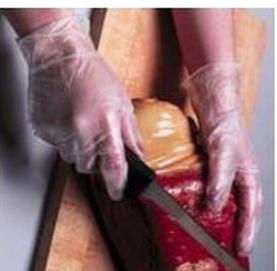
Alcohol Towellettes



Alcohol wipes should be used to wipe off the food thermometer probe after use to prevent cross contamination. Always throw away the towellette after it has been used.

Source: Hubert

Disposable Gloves



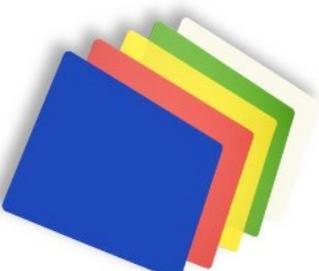
Disposable gloves should be worn when handling ready-to-eat foods. To use disposable gloves properly:

- Wash and dry hands thoroughly before using gloves, when changing to a new pair, and after removing gloves.
- Use a new pair of disposable gloves: when changing tasks; after blowing your nose, touching hair, or going to the bathroom; after four hours of continuous use; when torn, etc.

Disposable gloves are not to be used in place of proper hand washing. Check local regulations about the use (and non-use) of latex gloves.

Source: Hubert

Colored Cutting Boards



Although colored cutting boards are included in your kit as an added protection against cross-contamination, they are not necessary. Any cutting boards can be used with proper cleaning and sanitizing. It is imperative to wash ALL cutting boards with soap and hot water and to sanitize them between each use!

When using colored cutting boards, designate a color for a specific use and post the information in your food service establishment. For example:

Use the **Green** board for chopping vegetables/fruits

Use the **Blue** board for preparing fish

Use the **Red** for preparing meat

Use the **Yellow** for preparing poultry

Use the **White** for other foods such as cheese, breads, etc.

Source: amazon.com

Dishwasher test strips



A dishwasher test strip should be used to verify the water temperature. To use the test strip, place one on a plate, cup, etc. to be washed. Following the dishwasher cycle the strip should be bright orange indicating the water temperature has reached 165°F. If the strip does not turn orange it indicates the water temperature is not high enough and therefore cannot be used to sanitize. Have maintenance check your dishwasher.

Source: Day Dots

Test Strips for Determining Sanitizer Strength



Test strips are used to determine sanitizer strength of the water being used to sanitize clean dishes, pots, utensils, etc. These strips are used to test for the proper concentration of the sanitizing agent being used. Place a droplet of water onto the strip and wait for the color to change. The strip can also be dipped into a clean, small container of sanitizer. Color change reflects the sanitizer concentration. Match the color on the strip to the package to find chemical strength in ppm's.

Chlorine: 50–200 ppm Quats: 200–400 ppm

The results should be recorded on the *Food Contact Surfaces Cleaning and Sanitizing Log* which is included in the food safety kit.

Source: Hubert

Glo-Germ Kit



The GLO-GERM kit can be used to demonstrate proper handwashing. Apply a small amount of lotion to hands and rub in. Shine UV light onto hands. White spots indicate improper handwashing and the possibility of bacteria that could be transferred to food and cause illness. Wash hands and view again with UV light.

Source: Glo-Germ

Day of the Week Dots



Day of the Week Dots are used for inventory control and to control food quality as well as food safety. They should be used after opening a product and before placing it in the refrigerator for storage. The labels should be marked with the date and time the food product was originally opened. Use older foods first. First In First Out. Labels like these are used to determine how old the product is and when it should be reused or discarded.

Source: Hubert

Refrigerator Thermometer



Refrigerator thermometers are used to measure the air temperature of the refrigerator. Controlling temperature is one of the critical factors in controlling bacterial growth in food. The thermometer should be hung in the center of your refrigerator. The temperature should be checked in the morning and afternoon to ensure that the refrigerator is maintaining the proper temperature between 34° and 40°F. Temperatures should be recorded on the *Refrigerator Temperature Log* sheet which is included in the food safety kit.

Source: Miljoco Corporation

Food Thermometer



A food thermometer is used to ensure foods are cooked to an internal temperature high enough to destroy harmful bacteria. The sensor of a digital thermometer is located at the tip of the probe so inserting the thermometer one-half inch into the food is sufficient. When using a bi-metallic thermometer be sure the “dimple” (indentation on the stem of the thermometer) is completely inserted into the center of the meat or casserole. A digital thermometer is preferred for measuring temperatures of thin foods such as hamburger patties; however, if only a bi-metallic thermometer is available the probe should be inserted sideways with the dimple in the very center of the patty.

Calibrate/test thermometers frequently to ensure accuracy. Use an ice bath or boiling water to check temperatures: ice bath should have a reading of 32°F and boiling water should read 212°F.

Source: Miljoco Corporation

References

Developing a School Food Safety Program Participant's Workbook, The National Food Service Management Institute, University of Mississippi, 2006.

FDA, *Managing Food Safety: A Manual for the Voluntary Use of HACCP Principles for Operators of Food Service and Retail Establishments*. www.fda.gov/Food/FoodSafety/RetailFoodProtection/ManagingFoodSafetyHACCPPrinciples/Operators/default.htm

Massachusetts Partnership for Food Safety Education. www.mafoodsafetyeducation.info

National Registry of Food Safety Professionals, *Essentials of Food Safety & Sanitation*, 2004.

Partnership for Food Safety Education, *Be Food Safe*. www.befoodsafe.gov

Rhode Island Cooperative Extension Food Safety Education Program.
www.uri.edu/ce/ceec/foodsafety.shtml

USDA Food and Nutrition Service Guidance for School Food Authorities: Developing a Food Safety Program Based on the Process Approach to HACCP. www.fns.usda.gov/cnd/Lunch/Downloadable/HACCPGuidance.pdf