

Section 2.3 Activities

1. Study Skills/Group Activity: Safeguarding the Flow of Food

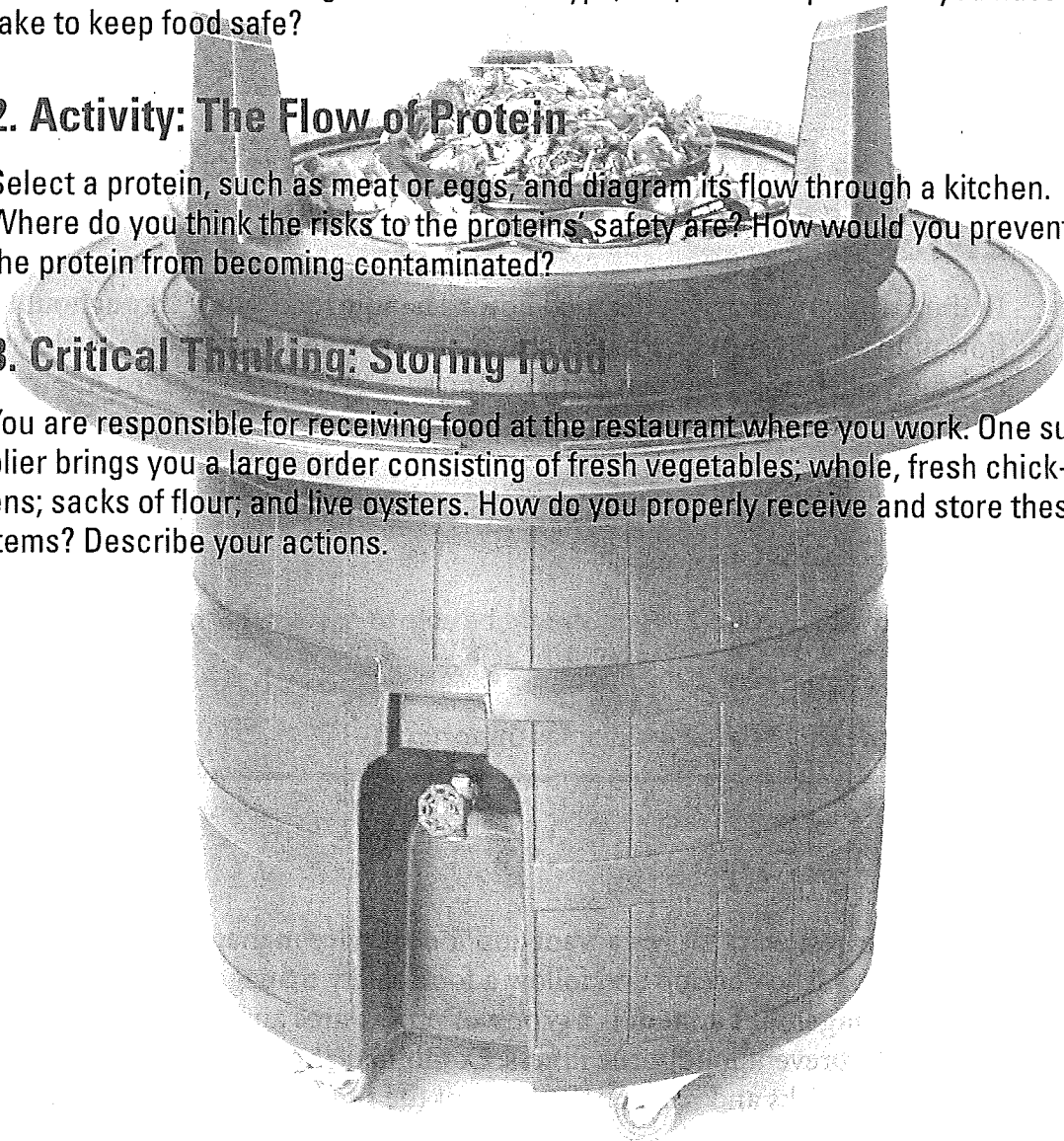
As a group, brainstorm three types of off-site foodservice—for example, catering an event at a banquet hall versus catering a beachside clambake versus catering a summer luncheon in a garden. For each type/site, what steps would you have to take to keep food safe?

2. Activity: The Flow of Protein

Select a protein, such as meat or eggs, and diagram its flow through a kitchen. Where do you think the risks to the proteins' safety are? How would you prevent the protein from becoming contaminated?

3. Critical Thinking: Storing Food

You are responsible for receiving food at the restaurant where you work. One supplier brings you a large order consisting of fresh vegetables; whole, fresh chickens; sacks of flour; and live oysters. How do you properly receive and store these items? Describe your actions.



2.1 Introduction to Food Safety

- What is a foodborne illness?
- Forms of contamination
- Biological contamination
- Chemical contamination
- Physical contamination
- Food defense
- Allergens
- U.S. regulation of food safety

2.2 Good Personal Hygiene

- How foodhandlers can contaminate food
- Personal cleanliness and work attire
- Handwashing
- Bare-hand contact with ready-to-eat food
- Work requirements related to illness

2.3 Preventing Hazards in the Flow of Food

- Cross-contamination
- Time-temperature abuse
- Purchasing
- Receiving
- Storage
- Preparation
- Cooking
- Holding, storing, and reheating
- Serving

2.4 Food Safety Management Systems

- The HACCP plan

2.5 Cleaning and Sanitizing

- How to clean effectively
- Sanitizing
- Developing a cleaning program
- Controlling pests

SECTION 2.4 FOOD SAFETY MANAGEMENT SYSTEMS

In the earlier sections, you learned how to handle food safely throughout the flow of food. The next step in preventing foodborne illness is the development of a food safety management system. One such system is a Hazard Analysis Critical Control Point system, or HACCP.

Study Questions

After studying Section 2.4, you should be able to answer the following questions:

- What are the HACCP principles?
- Why are the HACCP principles important?

The HACCP Plan

One of the best ways for restaurant and foodservice managers to prevent foodborne illness is to develop and follow a food safety management system. A **food safety management system** is a group of procedures and practices that work together to prevent foodborne illness. Combined, these procedures and practices control risks and hazards throughout the flow of food in an operation.

A **Hazard Analysis Critical Control Point**, or **HACCP** (HASS-ip), system is an example of a food safety management system. HACCP identifies major hazards at specific points within a food's flow through the operation. The idea is that if managers can figure out where a biological, chemical, or physical hazard might happen, then they can prevent, eliminate, or reduce it.

An effective HACCP system is based upon a written plan that considers an operation's menu, customers, equipment, processes, and operations. Because there are so many variables, each HACCP plan is unique. A plan that works for one operation might not work for another.

HACCP Principles

A HACCP plan is based on seven basic principles. Each HACCP principle builds on the information gained from the previous principle. Consider all seven principles, in order, when developing a plan:

1. Conduct a hazard analysis.
2. Determine critical control points (CCPs).
3. Establish critical limits.
4. Establish monitoring procedures.
5. Identify corrective actions.
6. Verify that the system works.
7. Establish procedures for record keeping and documentation.

In general terms, the principles break into three groups:

- Principles 1 and 2 help identify and evaluate hazards.
- Principles 3, 4, and 5 help establish ways for controlling those hazards.
- Principles 6 and 7 help maintain the HACCP plan and system, and verify its effectiveness.

Principle 1: Conduct a Hazard Analysis

First, look for the potential hazards in the food an operation serves. These hazards might be physical, chemical, or biological.

A good place to begin looking for hazards is to see how food on the menu is processed in the operation. Many types of food are processed in similar ways. For example, both salads and cold sandwiches are usually prepared and served without any cooking. Next, identify any TCS food in these items. Then determine where any food safety hazards are most likely to happen for each TCS food. Figure 2.36 on page 129 shows Principles 1, 2, and 3 in action.

Principle in Action

The management team at Enrico's Italian Restaurant decides to create a HACCP program. They begin by analyzing their hazards.

The team members note that many of the ingredients for their dishes are received, stored, prepared, cooked, and served the same day. The most popular of these items is the spicy charbroiled chicken breast.

The team determines that bacteria are the most likely hazard for food prepared this way.

Principle 2: Determine Critical Control Points (CCPs)

Find the points in the process where the identified hazard(s) can be prevented, eliminated, or reduced to safe levels. These are the **critical control points (CCPs)**. Depending on the menu item, there may be more than one CCP.

Principle in Action

Enrico's management identifies cooking as the CCP for food that is prepared and cooked for immediate service. This includes the chicken breasts.

These food items must be handled safely throughout the flow of food. However, proper cooking is the only step that will eliminate or reduce bacteria to safe levels.

Because the chicken breasts are prepared for immediate service, cooking was the only CCP identified.

Principle 3: Establish Critical Limits

For each CCP you have identified, determine its critical limit. A critical limit is a requirement, such as a temperature requirement, that must be met to prevent, eliminate, or reduce a hazard. Make sure a critical limit is very specific and clearly written. Ideally, the limit should state a requirement and a preferred method for achieving that requirement. Figure 2.37 on page 130 illustrates Principles 4, 5, and 6.

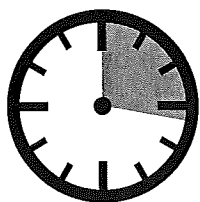
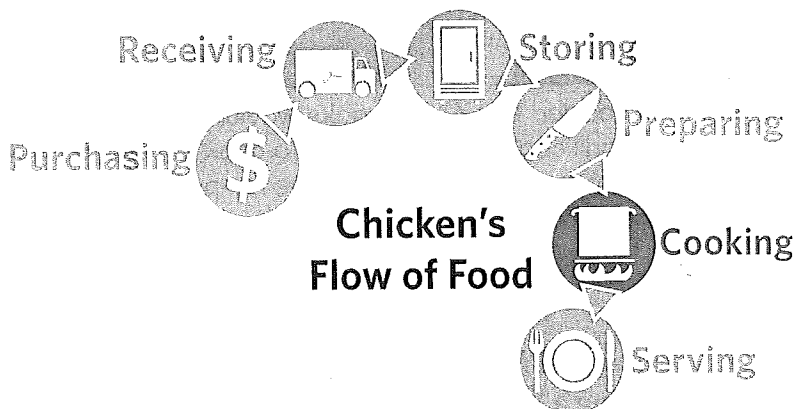
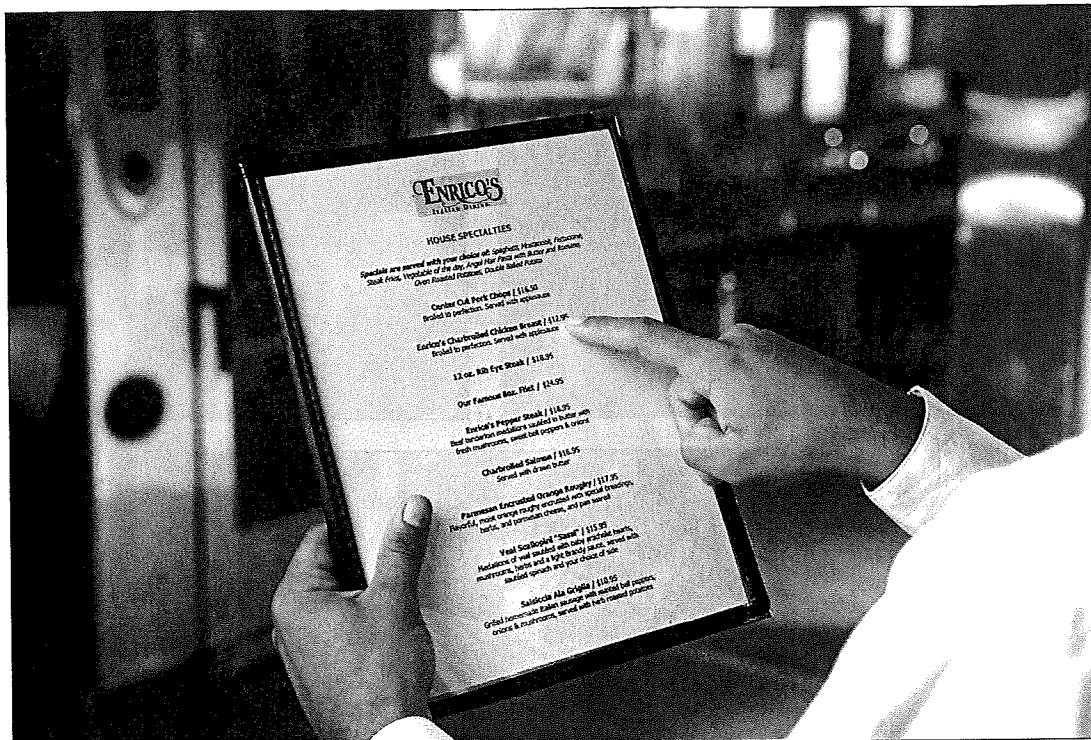
Principle in Action

A critical limit is needed for the cooking CCP for the chicken breasts. Management decides that the critical limit will be cooking the chicken to a minimum internal temperature of 165°F for 15 seconds.

Team members determine that the critical limit can be met by cooking the chicken breasts in the broiler for 16 minutes.

Principle 4: Establish Monitoring Procedures

Determine the best way for your operation to check to make sure critical limits are being met. Make sure the limits are consistently met. Identify who will monitor them and how often.



16 minutes

Figure 2.36: Enrico's managers put HACCP principles in action by 1) analyzing their menu; 2) identifying the critical control point for their popular chicken sandwich; and then 3) establishing the critical limit for the CCP.

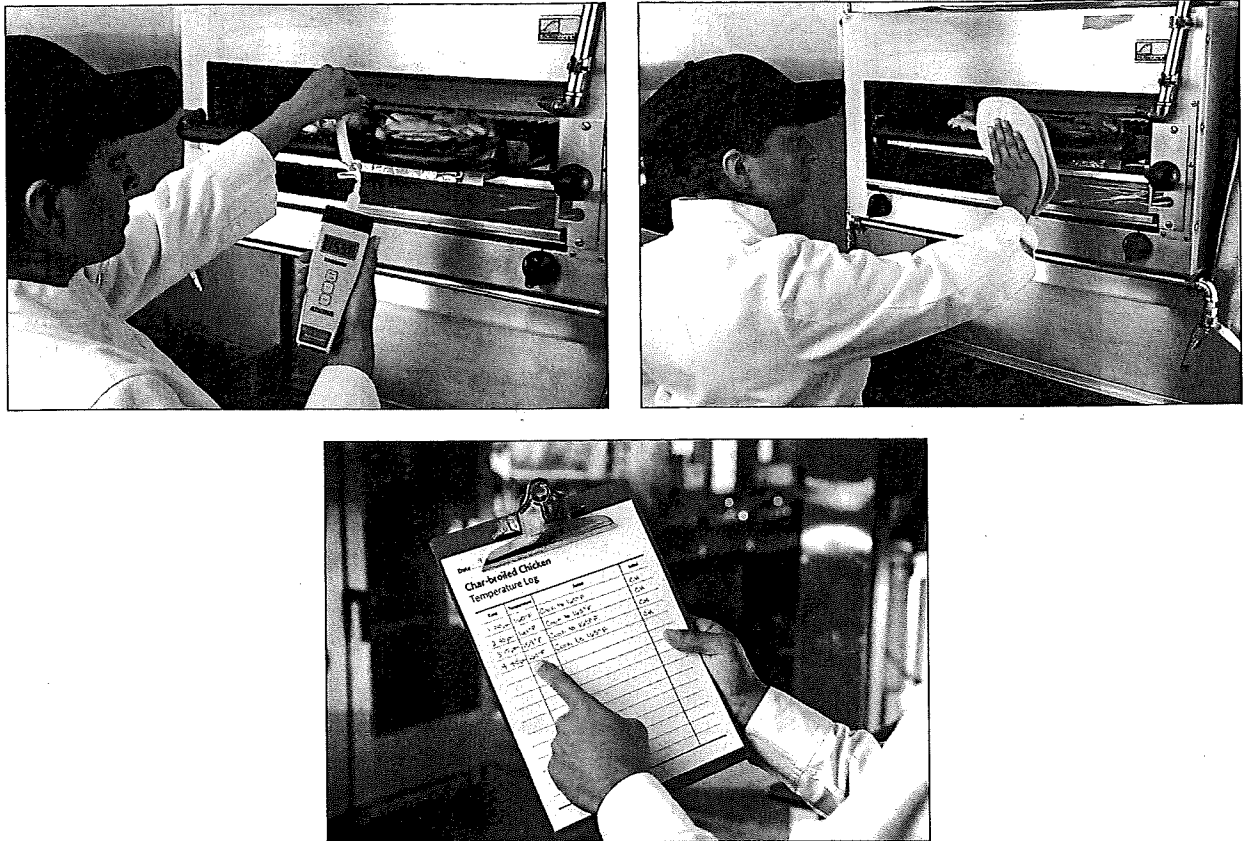


Figure 2.37: Enrico's managers then decided that 4) grill cooks would check the temperature of each chicken after cooking; 5) that the grill cook would continue to cook the chicken if it didn't meet the right temperature; and that 6) managers would check the temperature logs that grill cooks complete to make sure the system was working.

Principle in Action

At Enrico's, each chicken breast is cooked to order. So the team decides to check the critical limit by inserting a clean and sanitized thermocouple probe into the thickest part of each chicken breast.

The grill cook must check the temperature of every chicken breast after cooking. Each chicken breast must reach the minimum internal temperature of 165°F for 15 seconds.

Principle 5: Identify Corrective Actions

What do you do if a critical limit hasn't been met? You must take a **corrective action**, a step to fix the problem. Corrective actions should be determined in advance so everyone knows what to do when critical limits aren't met.

Principle in Action

If the chicken breast hasn't reached its critical limit within the 16-minute cook time, then the grill cook at Enrico's must keep cooking the chicken breast until it has reached it for the required 15 seconds.

This and all other corrective actions are noted in the temperature log.

Principle 6: Verify That the System Works

Determine if the plan is working as intended. Evaluate it on a regular basis. Good record keeping will help you to identify patterns. Use your monitoring charts, records, and hazard analysis to determine if your plan prevents, reduces, or eliminates identified hazards.

Principle in Action

Enrico's management team performs HACCP checks once per shift. They make sure that critical limits have been met and that appropriate corrective actions have been taken when needed.

They also check the temperature logs on a weekly basis to identify patterns. This helps to determine if processes or procedures need to be changed. For example, over several weeks they notice problems toward the end of each week. The chicken breasts often fail to meet the critical limit. Appropriate corrective action is being taken.

Management discovered that Enrico's receives chicken shipments from a different supplier on Thursdays. This supplier provides a 6-ounce chicken breast. Enrico's chicken specifications list a 4-ounce chicken breast. Management works with the supplier to make sure they receive 4-ounce breasts. The receiving procedures are changed to include a weight check.

Principle 7: Establish Procedures for Record Keeping and Documentation

Maintain the HACCP plan and keep all documentation created when developing it. Keep records for the following actions:

- Monitoring activities
- Taking corrective action
- Validating equipment (such as records of inspections or repairs)
- Working with suppliers (such as invoices and purchase specifications)

Principle in Action

Enrico's management team determines that time-temperature logs should be kept for three months. Receiving invoices will be kept for 60 days. The team uses this documentation to support and revise the HACCP plan.

[fast fact]

Did You Know...?

The Center for Food Safety and Applied Nutrition (CFSAN) is one of six centers within the Food and Drug Administration (FDA). Its major responsibility is to ensure that food is safe, nutritious and wholesome. The Center regulates approximately \$240 billion worth of domestic food and \$15 billion worth of imported foods.

Summary

In this section, you learned the following:

- The HACCP principles are as follows:
 - Principle 1: Conduct a hazard analysis
 - Principle 2: Determine critical control points (CCPs)
 - Principle 3: Establish critical limits
 - Principle 4: Establish monitoring procedures
 - Principle 5: Identify corrective action
 - Principle 6: Establish verification procedures
 - Principle 7: Establish procedures for record keeping and documentation
- A HACCP system is important because it focuses on identifying specific points within a food item's flow through the operation that are essential to prevent, eliminate, or reduce hazards to safe levels.

Section 2.4 Review Questions

- ① Describe what happens in each of the seven principles of a HACCP system.
- ② What is a critical control point (CCP)?
- ③ What is the purpose of a food safety management system?
- ④ What is a critical limit?
- ⑤ What might Melisa Bouchard do to ensure that all employees understand the importance of a HACCP system?
- ⑥ Linda and Chef Jean need to update their HACCP system. They are adding a new menu item, Texas Chili. Identify the hazards for this dish, and then determine the CCP(s), critical limits, and monitoring procedures that the staff should use to keep the chili safe.
- ⑦ Suppose you are in a restaurant or foodservice organization with a higher-than-average turnover in the kitchen. How would you ensure adequate monitoring procedures and corrective actions?

Section 2.4 Activities

1. Study Skills/Group Activity: Develop a HACCP Plan

In a group, develop a HACCP system for chicken noodle soup that will be cooked, held, cooled, and reheated.

2. Activity: HACCP in Your Community

HACCP systems are often found in chain restaurants and franchises. Call or visit a local chain or franchise restaurant, and ask the manager how HACCP is implemented in the operation. Write a one-page report on the system you learn about, including examples of how HACCP is implemented.

3. Critical Thinking: Making a Food Safety Management System Work

Think about what you have learned so far about preventing foodborne illnesses. What types of policies or procedures do you think should be in place to support a food safety management system?