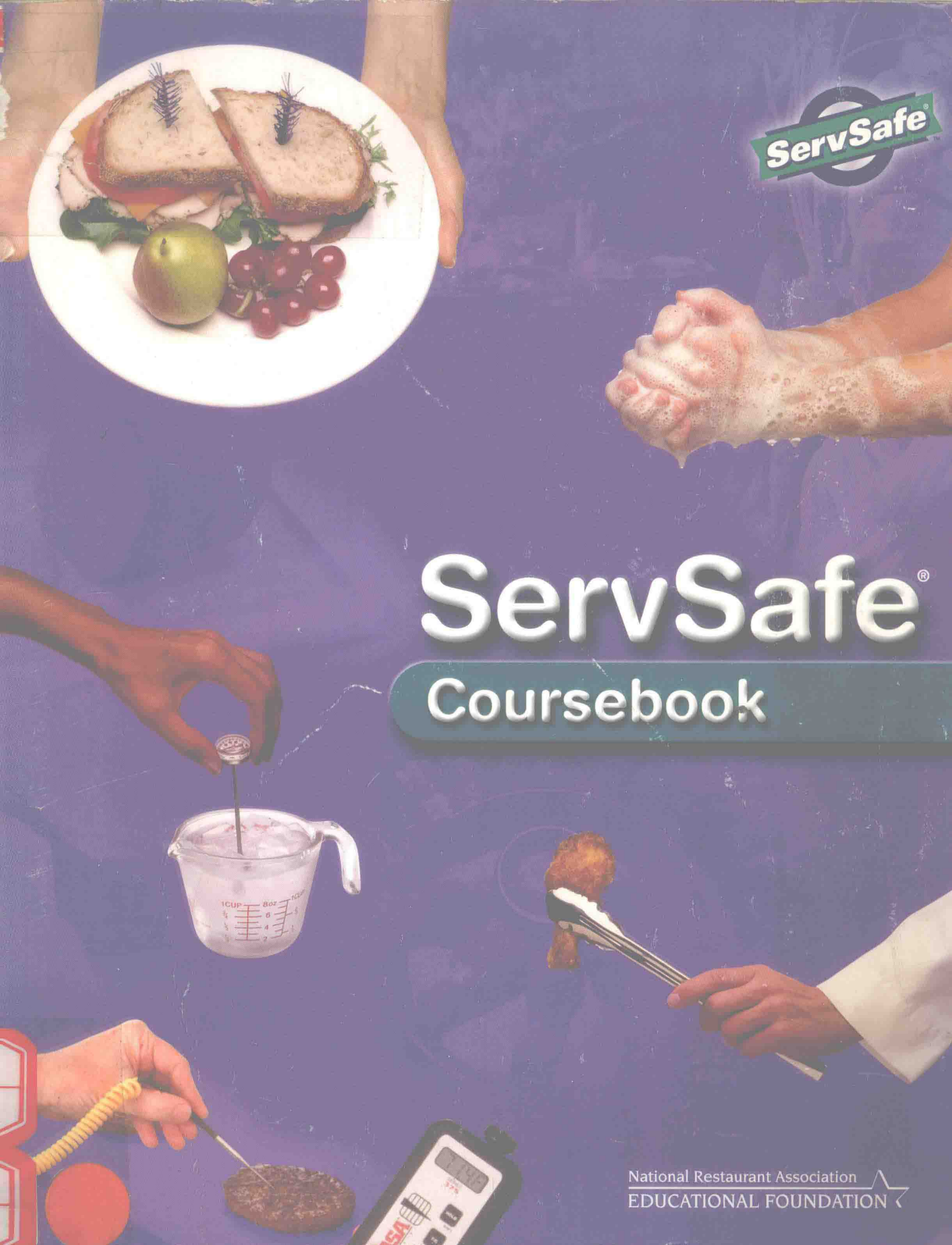

ServSafe®

Coursebook

National Restaurant Association
EDUCATIONAL FOUNDATION

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National Restaurant Association
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DISCLAIMER

The information presented in this book has been compiled from sources and documents believed to be reliable and represents the best professional judgment of the National Restaurant Association Educational Foundation. However, the accuracy of the information presented is not guaranteed, nor is any responsibility assumed or implied, by the National Restaurant Association Educational Foundation for any damage or loss resulting from inaccuracies or omissions.

Laws may vary greatly by city, county, or state. This book is not intended to provide legal advice or establish standards of reasonable behavior. Operators who develop food safety-related policies and procedures as part of their commitment to employee and customer safety are urged to use the advice and guidance of legal counsel.

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A Message From

THE NATIONAL RESTAURANT ASSOCIATION EDUCATIONAL FOUNDATION

Food safety is non-negotiable. Serving safe food is not an option. It's our obligation as restaurant and food service professionals. Proper training is one of the best ways to create a culture of food safety within our establishments.

By opening this book you have made a significant commitment to promoting food safety. We applaud you for that commitment.

The ServSafe® program has become the industry standard in food-safety training and is accepted in almost all United States jurisdictions that require employee certification. The ServSafe program provides accurate, up-to-date information for all levels of employees on all aspects of handling food, from receiving and storing to preparing and serving. You will learn science-based information on how to run a safe establishment—information all of your employees need to have in order to be a part of the food-safety team.

Your food-safety education does not end once you are certified in the ServSafe program. You have the responsibility to take your knowledge back to the unit and make your coworkers part of the food-safety culture. You will qualify to participate in the International Food Safety Council, which will help you share your knowledge. The Council, a coalition of restaurant and foodservice professionals created by the National Restaurant Association Educational Foundation in 1993, is a valuable resource that promotes the importance of food-safety training.

Whether you are new to the restaurant industry or continuing your career, your participation in ServSafe training will make you more qualified to serve safe food and to spread that knowledge throughout the industry.

Thank you for making the commitment to food-safety training and becoming an active part of the food-safety culture within the rapidly growing restaurant, foodservice, and hospitality industry.

Features of the ServSafe Coursebook

We have designed the ServSafe Coursebook to enhance your ability to learn and retain comprehensive food-safety knowledge. Here are the key features you can expect to find in each chapter of this book.

TEST YOUR FOOD-SAFETY KNOWLEDGE:

Each chapter begins with five True or False questions, which are designed to test your prior knowledge of some of the concepts presented in the chapter. To find the answer to each question, and for further explanation, go to the section and page number indicated.

TABLE OF CONTENTS:

The chapter content is organized under the major headings identified in this section.

LEARNING OBJECTIVES:

The learning objectives identify what you should be able to do after completing the chapter. These objectives are linked to the tasks required to keep your establishment safe.

KEY TERMS:

Terms that are important for a thorough understanding of the chapter content are identified in this section and appear in the order in which they occur in the chapter text. Throughout the chapter, these terms are highlighted in green. Each key term has also been defined in the Glossary.

EXHIBITS:

Throughout each chapter exhibits have been placed which visually reinforce or review key concepts presented in the text. The Exhibits, which are referenced in the chapter text by chapter number and a letter, include charts, photographs, illustrations, and tables.

Throughout each chapter, icons will appear in the margins of the page. These icons emphasize concepts presented in the text that are important to your understanding of food safety.

ICONS:

Throughout each chapter, icons will appear in the margins of the page. These icons emphasize concepts presented in the text that are important to your understanding of food safety.

Key Point icons are the most common type of icon to appear in the chapters. However, concept icons related to HACCP, personal hygiene, health, cross-contamination, and time-temperature abuse appear throughout. Look for these icons as you read through the chapter.

A CASE IN POINT:

These real-world scenarios give you the opportunity to apply concepts that you have learned in the chapter.

TRAINING TIPS FOR THE CLASSROOM:

These tips appear at the end of the chapter and are designed to give you training tools that you can use to teach others the food-safety concepts presented in the chapter. Each training tip begins with an objective, which tells you what your learner should be able to do after completing the activity. These tips are best suited for teaching food-safety in a classroom environment.

TRAINING TIPS ON THE JOB:

These tips appear at the end of the chapter and are designed to help you implement food-safety concepts back at your establishment with your personnel. Specifically, these are designed to aid you in sharing the food-safety knowledge you have acquired. Each training tip begins with a statement that describes the purpose of the activity.

DISCUSSION QUESTIONS:

These open-ended questions are designed to make you think about some of the more important food-safety concepts presented in the chapter.

MULTIPLE-CHOICE STUDY QUESTIONS:

These questions are designed to test your knowledge of the food-safety concepts presented in the chapter. These questions are similar to the ones that you will find on the certification exam. If you have difficulty answering these questions, review the content further.

ADDITIONAL RESOURCES:

In this section you will find resources such as books, articles, and Web sites which will enable you to further explore the food-safety concepts presented in each chapter.

ANSWERS:

The answers for the following are found in the Instructor's Guide: Test Your Food-Safety Knowledge, A Case in Point, Discussion Questions, and Multiple-Choice Study Questions.

UNIT 1

THE SANITATION CHALLENGE

Food safety is an integral element of our organizational culture, which incorporates mutual respect and trust among guests, employees and vendors. Our guests expect not only a high quality dining experience, but a safe dining experience as well. The ServSafe Food Safety Training Program is the foundation we use to build awareness at all levels in the organization. Every manager in our system has been ServSafe certified. Commitment to food safety has the same organizational relevance as great tasting food, excellent service, and a clean environment.

David Goronkin
Executive Vice President, Operations
Buffets, Inc.

Table of Contents

Chapter 1
Providing Safe Food

TEST YOUR FOOD-SAFETY KNOWLEDGE

1. **True or False:** Improperly washed hands can cause a foodborne illness. *(See Poor Personal Hygiene, page 1-9.)*
2. **True or False:** Young children may be more likely than adults to become ill from contaminated food. *(See Populations at High Risk for Foodborne Illness, page 1-5.)*
3. **True or False:** Food has been time-temperature abused any time it has been allowed to remain at temperatures favorable to the growth of microorganisms. *(See Time-Temperature Abuse, page 1-8.)*
4. **True or False:** A foodhandler's dirty clothing can cross-contaminate food. *(See Practicing Good Personal Hygiene, page 1-9.)*
5. **True or False:** Potentially hazardous foods are generally dry, low in protein, and highly acidic. *(See Foods Most Likely to Become Unsafe, page 1-6.)*

Key Terms

- Foodborne illness
- Outbreak of foodborne illness
- Warranty of sale
- Reasonable care defense
- Hazard Analysis Critical Control Point (HACCP)
- Flow of food
- Model Food Code
- Immune system
- Potentially hazardous foods
- Heat-treated
- Ready-to-eat foods
- Contamination
- Biological, chemical, and physical hazards
- Cross-contamination
- Food-contact surface
- Personal hygiene
- Clean
- Sanitary

Table of Contents

Learning Objectives

After completing this chapter, you should be able to:

- Explain the dangers of foodborne illness.
- Identify high-risk populations for foodborne illness and explain why they are at risk.
- Identify the characteristics of potentially hazardous foods.
- Identify three types of contamination associated with food.
- Describe how foodborne illness occurs.
- Describe four key practices that can help ensure food safety.

When diners eat out, they expect safe food, clean surroundings, and well-groomed workers. Overall, the restaurant and foodservice industry does a good job of meeting these demands, but there is still room for improvement.

The risk of foodborne illness impacts the industry. Several factors account for this. They likely include the following.

- The emergence of new foodborne pathogens (disease-causing organisms)
- The importation of food from countries where food-safety practices may not be well developed
- Changes in the composition of foods, which may leave fewer natural barriers to the growth of microorganisms
- Increases in the purchase of take-out and home meal replacement (HMR) foods
- Changing demographics, with an increased number of individuals at high risk for contracting foodborne illness
- Employee turnover rates that make it difficult to manage an effective food-safety system

In the face of these challenges, all establishments must take the necessary steps to help ensure that the food they serve is safe. The first step is to develop a food-safety system that includes effective and ongoing employee training.

THE DANGERS OF FOODBORNE ILLNESS

An outbreak of foodborne illness is an incident in which two or more people experience the same illness after eating the same food.

The greatest dangers to food safety are foodborne illnesses. A **foodborne illness** is a disease that is carried or transmitted to people by food. The Centers for Disease Control and Prevention (CDC) defines an **outbreak of foodborne illness** as an incident in which two or more people experience the same illness after eating the same food. A foodborne illness is confirmed when laboratory analysis shows that a specific food is the source of the illness.

Each year, millions of people become ill from foodborne illness, although the majority of cases are not reported and do not occur at restaurants or other foodservice establishments. However, the cases that are reported and investigated help us understand some of the causes of illness, and what we, as restaurant and foodservice professionals, can do to control these causes in each of our establishments. The most commonly reported causes of foodborne illnesses are failure to properly cool foods, failure to cook and hold foods at the proper temperature, and poor personal hygiene.

Fortunately, every restaurant and establishment, no matter how large or small, can take steps to ensure the safety of the food it prepares and serves to its customers.

The Costs of Foodborne Illness

National Restaurant Association figures show that a foodborne-illness outbreak can cost an establishment thousands of dollars. It can even cause an establishment to close.

If your establishment is implicated in an outbreak of foodborne illness, your costs may include increased insurance premiums and lawyer and court fees. You may have to pay for testing food supplies and employees, and may spend time and money retraining employees and cleaning and sanitizing the establishment. Food supplies that may or may not be contaminated will have to be discarded. Other risks could include lowered employee morale and absenteeism, embarrassment and bad publicity, loss of customers and sales, and loss of prestige and reputation *(see Exhibit 1a).*

Today, customers are very willing to sue to obtain compensation for injuries they feel they have suffered as a result of the food they were served.

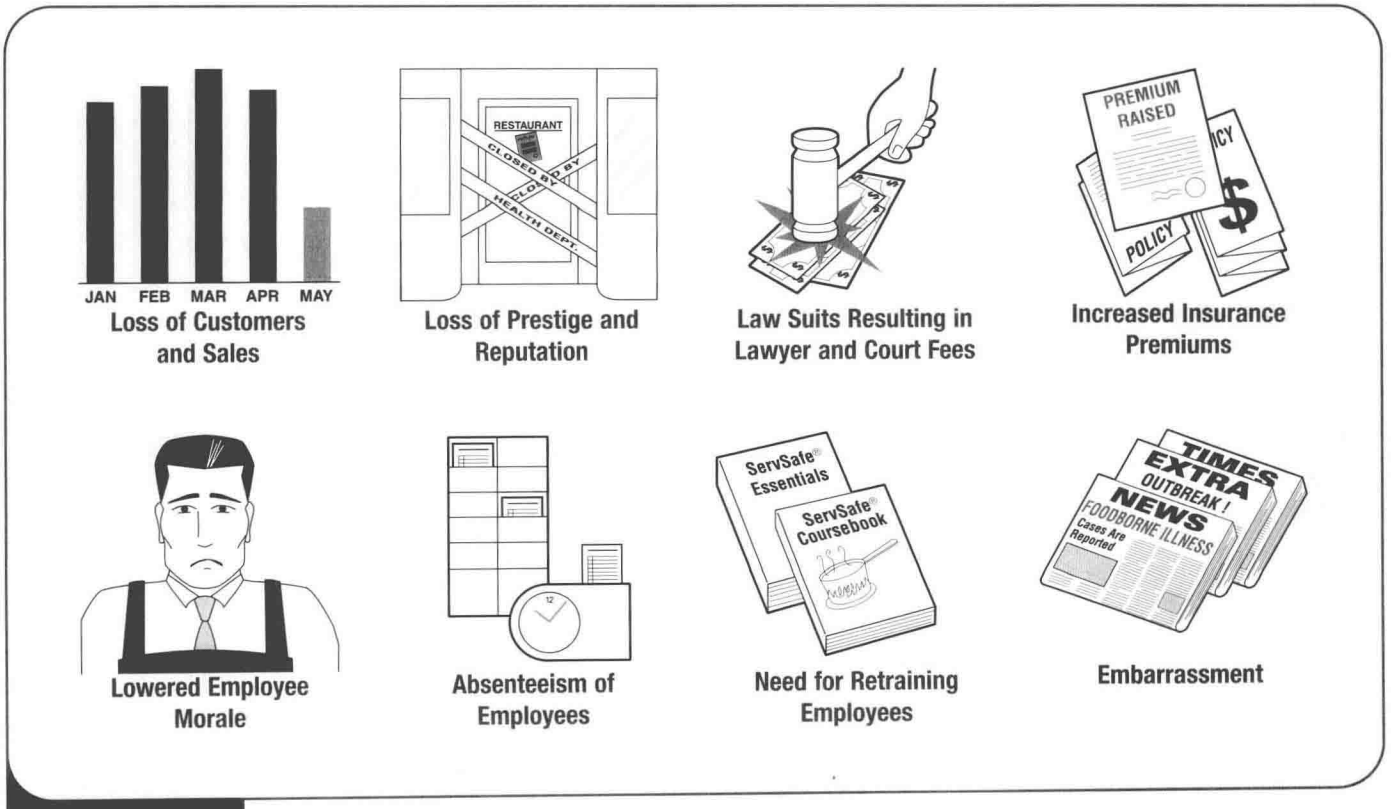


Exhibit 1a Cost of a Foodborne Illness to an Establishment

Under the federal Uniform Commercial Code, a plaintiff bringing about a lawsuit must prove all of the following.

- The food was unfit to be served.
- The food caused the plaintiff harm.
- In serving the food, the establishment operator violated the **warranty of sale,** that is, the rules stating how the food must be handled.

If the plaintiff wins the lawsuit, he or she can be awarded two types of damages. Compensatory damages are awarded for lost work, lost wages, and medical bills. Punitive damages are awarded in addition to normal compensation, to punish the defendant for wanton and willful neglect.

If you have a quality food-safety program in place, however, you can use a **reasonable care defense** against a food-related lawsuit. A reasonable care defense requires proof that your establishment did everything that could be reasonably expected to ensure that the food served was safe. Evidence of written standards, training practices, procedures such as a HACCP plan and its documentation, and positive inspection results are the keys to this defense.

The Benefits of a Food-Safety System

Serving safe food is vital to your establishment's success. A well-designed food-safety program can help protect your establishment's employees, customers, and reputation. Repeat business from customers and increased job satisfaction among employees can lead to higher profits and better service. Your establishment may benefit directly from reduced or minimized insurance costs, and will most likely benefit by reducing health-code violations and becoming less open to lawsuits claiming injury and negligence.

An added benefit to a food-safety program is that by handling food safely, you also preserve its quality. Safe foodhandling will help maintain the appearance, flavor, texture, consistency, and nutritional value of food. Food that is stored, prepared, and served properly is more likely to provide the quality that your customers deserve and demand. Safe foodhandling can also lead to lower food costs due to less waste.

PREVENTING FOODBORNE ILLNESS

There are many challenges to preventing foodborne illness. These include high employee turnover rates, service to an increasing number of high-risk customers, and the service of potentially hazardous foods. Establishing a comprehensive food-safety management program, however, greatly reduces the likelihood of causing foodborne illness.

Training Employees in Food Safety

One of the challenges that managers typically face is a high employee turnover rate. Preparing and serving safe food in public establishments is a serious responsibility. All restaurant and foodservice employees need to be trained in the procedures that can protect the public and themselves from foodborne illnesses.

Food-Safety Programs

An establishment should have an effective, proactive program that is based on preventing food-safety hazards before they occur. A reactive program that corrects a problem after it has occurred is not an effective system. The **Hazard Analysis Critical Control Point (HACCP)** program, which is discussed throughout this text, is a proactive, comprehensive, science-based food-safety system that allows operators to continuously monitor their establishments and reduce the risk of foodborne illness.

The key to the HACCP system is the emphasis on how food flows through the operation. This **flow of food** is the path food takes from receiving and storage through preparation and cooking, holding, serving, cooling and reheating. An establishment's HACCP plan identifies the points in the operation where contamination or growth of microorganisms can occur. Control procedures can then be implemented based on the hazards identified at those points. HACCP will be covered in more detail in Chapter 9.

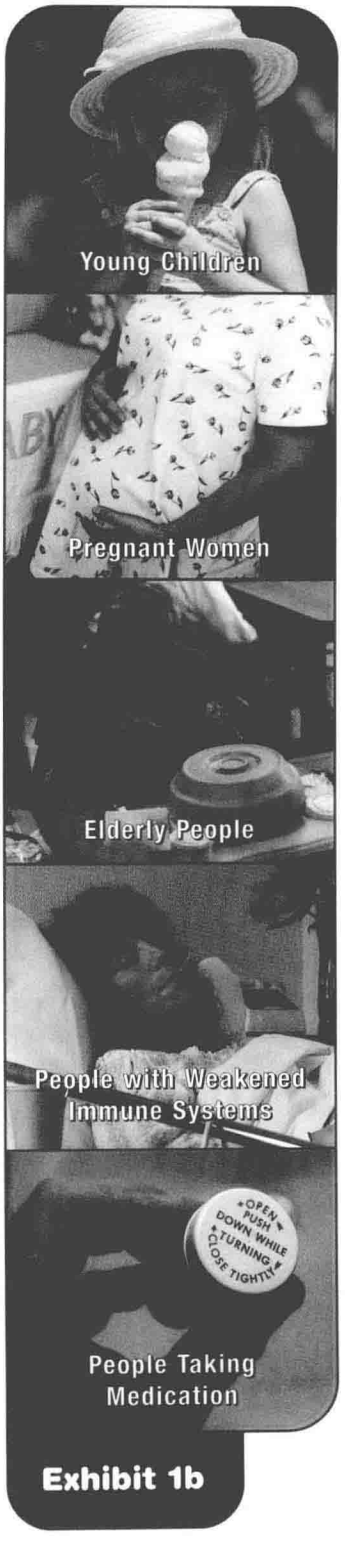
A HACCP system is designed to prevent food-safety hazards from occurring.

The National Restaurant Association and the Food and Drug Administration's (FDA) Model Food Code encourage an establishment to develop and use a HACCP-based food-safety system to prevent foodborne illness. The **Model Food Code** is a science-based reference for retail restaurants and establishments on how to prevent foodborne illness. Local, state, and federal regulators often use the Food Code as a model to help develop or update their own food-safety regulations, and to ensure consistency with national regulatory policy.

Populations at High Risk for Foodborne Illness

The demographics of our population show there is an increase in the percentage of people at high risk of contracting a foodborne illness *(see Exhibit 1b on the next page)*. These individuals include the following groups of people.

- Infants and young children
- Pregnant women
- Elderly people
- People taking certain medications, such as antibiotics and immunosuppressants
- People with weakened immune systems (those who have recently had major surgery, are organ-transplant recipients, or who have pre-existing or chronic illnesses)



People at High Risk for Foodborne Illness

Young children are more at risk for contracting foodborne illnesses because they have not yet built up adequate **immune systems** (the body's defense system against illness) to deal with some diseases. This knowledge is especially important for quick-service restaurants since, according to a recent survey, 58 percent of families with children eat at such restaurants at least once a week.

Elderly people are more at risk because their immune systems and resistance may have weakened with age. In addition, as people age, their senses of smell and taste are diminished, so they may be less likely to detect "off" odors or tastes which indicate that food may be spoiled.

Foods Most Likely to Become Unsafe

Although any food can become contaminated, most foodborne illnesses are transmitted through foods in which microorganisms are able to grow rapidly. Such foods are classified as **potentially hazardous foods.** These foods typically have a history of being involved in foodborne-illness outbreaks, have a natural potential for contamination due to methods used to produce and process them, and are often moist, high in protein, and have a neutral or slightly acidic pH.

The FDA Model Food Code identifies potentially hazardous foods *(see Exhibit 1c)* as any food that consists in whole, or in part, of the following.

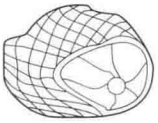
- Milk or milk products
- Shell eggs
- Meats, poultry, and fish
- Shellfish and edible crustacea (such as shrimp, lobster, crab)
- Baked or boiled potatoes
- Tofu or other soy-protein foods
- Garlic-and-oil mixtures
- Plant foods that have been **heat-treated** (cooked, partially cooked, or warmed)
- Raw seeds and sprouts
- Sliced melons
- Synthetic ingredients (such as textured soy protein in hamburger supplement)

Care must be taken when handling **ready-to-eat foods,** which may also be considered unsafe because they are intended to be eaten without further washing or cooking. Proper cooking reduces the number of microorganisms on food to safe levels. Foods that have been properly cooked, as well as washed whole or cut fruits and vegetables, are considered ready-to-eat foods.

Milk and Milk Products

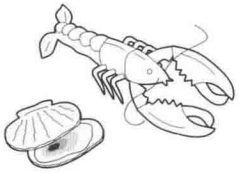
Sliced Melons

Garlic-and-Oil Mixtures

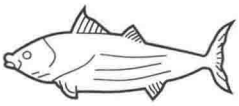


Meat: Beef, Pork, Lamb

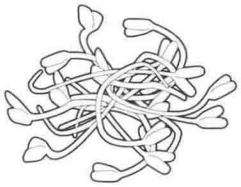
Poultry



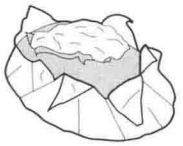
Shellfish and Crustacea



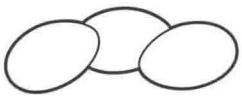
Fish



Sprouts and Raw Seeds

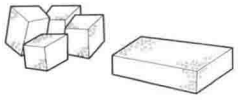


Baked or Boiled Potatoes

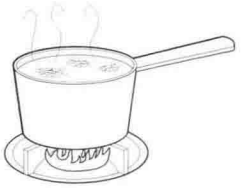


Shell Eggs

Soy-Protein Foods



Tofu



Cooked Rice, Beans, or Other Heat-Treated Plant Foods

Exhibit 1c Potentially Hazardous Foods

Potentially hazardous foods are often moist, high in protein, and have a neutral or slightly acidic pH.