

Food Safety: What Is Safe Food?



Safe food is defined as food free of contamination with contamination occurring at any point in the growing, preparing, processing, storing, selling or serving of food. According to the Centre for Disease Control and Prevention, approximately 70% of all foodborne disease is due to viruses spread by direct or indirect contact with infected individuals. The CDC further states that 5,000 people die each year from tainted food, 325,000 are hospitalized and 76 million people become ill annually from food contamination. From a fiscal standpoint that translates to U.S. \$152 billion per year according to a report from the Pew Charitable Trust. It is vital therefore that food handlers at the restaurant level be aware of the serious consequences related to poor food handling as well as have a basic understanding of the tools and processes available to reduce or eliminate the likelihood of contamination. This article will review common restaurant food safety related problems and costs, key sources of food contamination and some important practices that help employees reduce or eliminate contamination risks.

Common Problems

Restaurants, including fast food chains, bear a heavy responsibility to providing customers with contaminate free food. Problems related to food safety affect both the customer and the business. Poor food safety planning, training, organizing and monitoring at a restaurant can lead to food contamination which in turn may lead to disease, illness and even death. For a business this can result in loss of reputation, a loss of customers, lower profits, fines, lawsuits, or closure of the business. These problems coupled with the need to obey all food safety regulations, legislation and inspections requires restaurants to provide proper equipment & training to its employees as well as developing and implementing a formal food safety management system.

Associated Costs

A restaurant's costs related to delivering contaminate free food

are varied and include the cost of equipment, training, monitoring, and inspection fees. Training is an important component when you consider that over 80% of foodborne illness can be tracked to an employee's failure to follow safety procedures. Training is a continuous process and its costs include purchasing materials and allocating time to train but the benefits include improved quality, fewer accidents, and improved customer satisfaction. All restaurants are subject to inspection fees with the potential for additional costs being incurred should violations be cited that require the restaurant to repair, replace or purchase new equipment or services. Equipment to store, prepare and serve food must meet recognized standards to assure safe food delivery but a restaurant's equipment costs goes beyond the initial purchase price to include installation cost, operating costs and maintenance costs. Finally, monitoring equipment

is needed to track and record product and environmental factors related to food safety. These include meters, thermometers and sanitization tools. These costs at first glance may seem daunting but are far less than the cost of just one episode of foodborne illness resulting from your establishment both from a monetary and moral viewpoint.

Sources Of Contamination

Key to understanding how to prevent food contamination is understanding the sources by which food can become contaminated. These sources are biological, chemical, physical and intentional in nature.

Biological contamination includes viruses, bacteria and parasites that find their way into food either by human touch, improper storage/handling or contaminated equipment. As the most common type of contamination biological contamination is typically the result

of poor hygiene, inadequate space or poor structural design. Depending on the type and quantity of bacteria ingested a consumer may have no reaction, mild, moderate or severe reactions or even death.

Chemical contamination is the result of unwanted or harmful chemicals finding their way into food. The most common source of this type of contamination within the restaurant is the use of cleaning agents, refrigerants and pesticides in the food preparation area while food is nearby. This contamination can be toxic to consumers and steps should be taken to assure that food is covered and stored properly prior to using chemicals in the food preparation or storage areas.

Physical contamination occurs when any type of foreign object finds its way into food. Examples of these types of contaminants may include hair, glass, skin, insects or dirt. This can occur at any stage in food preparation and can also have dire consequences. Care should be taken to inspect food on delivery and storage and employees must adhere to the company's hygienic policy in order to avoid this type of contamination.

Intentional or tampering contamination is the intentional contamination of food by a group,

individual or employee. It is a serious problem that each restaurant must address with a comprehensive safety plan.

Contamination Target Areas

Food is highly susceptible to cross contamination which occurs when the food itself is not tainted but becomes so either from improper storage, preparation, cooking or serving. This can occur by hand to food, food to food, or equipment to food. Putting intentional contamination or tampering aside for the purposes of this article, 4 of the most important areas a restaurant can address in the fight against contamination involve improper food temperature control, inadequate attention to personal hygiene/health, poor sanitization or storage control and implementation of a food safety program.

Temperature

Approximately, 40 percent of all prepared food related health risks come from improper holding times and temperature. Improper temperature management can increase the risk of foodborne illness. Being able to control the temperature of food is vital to keeping bacteria growth at bay. Keeping foods out of its danger zone as much as possible will limit the chances of bacteria multiplying. The danger zone for food is between 41 degrees Fahrenheit

and 135 degrees Fahrenheit with cold foods being kept below 41 Fahrenheit and hot foods being kept above 135 Fahrenheit. Practices and equipment must be put into place to ensure that food is stored at the proper temperature, cooked thoroughly, kept hot until served and thawed under refrigeration. These measures will ensure that while the food is being thawed, cooked and heated it will spend as little time as possible in the danger zone. Refrigerated storage should maintain temperatures below 41 degrees Fahrenheit, be cleaned regularly, have open shelving, and house properly covered food.

Personal Hygiene And Health

People are the most threat or hazard to the contamination of food in a restaurant. Attention to personal hygiene is vital and includes hand washing & use of gloves, personnel cleanliness, proper work attire, masks, hair netting, and restriction of work for illness. When instructing employees on personal hygiene, emphasis should be given to hands, nose, mouth, ears and hair. Proper hand washing is important and nails should be clean and short at all times. Employees should be instructed to avoid coughing, sneezing, blowing noses, biting nails, chewing gum or food and scratching their skin or eyes. Proper work clothing should be worn and this may include masks, hats, aprons & smocks. Any illness

should be reported to a manager as that employee may need to be restricted from handling food. Particular attention should be given to employees who have a fever, sore throat, vomiting or diarrhea.

Cleaning And Sanitizing

Restaurants are required to be clean not only for esthetic value but to reduce the chance of food contamination. Important to note here is that an item may look clean when in actuality it may still be contaminated. Therefore some items may need both cleaning and sanitizing which are not the same activities. The purpose of cleaning is to remove food particles, dirt, grime, grease or any other soiled material. This can be done by scrubbing with chemicals and/or very hot water. The purpose of sanitization is to reduce microorganisms by using steam, very hot water or chemical sanitizers. All equipment must be cleaned but select equipment must be sanitized including surfaces that come in contact with employee's hands, food contact surfaces and easily contaminated items. These types of items include processing machinery, cutting boards, tables, containers, handles on equipment, switches, trash containers, mops and much more.

HACCP

Preparation for avoiding the issues listed above is critical so having

a food safety plan in place is imperative. Food safety plans of the past were based on a type reactive basis where corrective measures were documented in the event of a contamination event had already occurred. This did little to identify and anticipate problems prior to a contamination event so a more proactive approach was developed to address this issue. The Hazard Analysis Critical Control Point System was established to approach food safety from a preventative methodology. HACCP, as it is commonly referred to, is used by food managers to identify and prevent hazardous events from occurring by having in place specific procedures to follow in the event of a contamination problem. With a HACCP system in place managers can analyze potential risky steps or procedures and have ready corrective measures to resolve these problems. A HACCP system is focused primarily on specific issues that are known to contribute to foodborne disease such as controlling temperature and time.

Food Safety Tools For Food Handlers

Temperature Control

Specialized temperature control tools are available for cooking, food preparation, cool down & hot food holding, measuring without contact, and environmental monitoring. Some examples of these tools designed for cooking and food preparation include:

- Probe thermometers used during cooking and monitoring food during cooling and storage.
- Thermometers for monitoring foods in refrigerators or freezers can record minimum or maximum temperature information over time as needed.
- Thermometers with specialized heat shields are available to verify temperatures in commercial dishwashers and pot washers.
- Ruggedized probe thermometers ideal for inspectors who need a sturdier thermometer.
- Pocket dial thermometers are ideal for monitoring hot liquids.

Thermometers designed for food cool down or food holding allow restaurants to monitor the foods as they cool through the temperature danger zone. Some examples of these tools are:

- Programmable thermometers with audible alarms for monitoring time and temperature during cooking and cool down.
- Alarmed thermometers designed for refrigerators, freezers, salad bars, display cases and water tanks.

Thermometers for items that cannot use a probe approach such

as deep fryers, ovens, grills or foods on a conveyor are available using Infrared technology. These Infrared thermometers are available in compact waterproof models.

- Non contact Infrared thermometers are ideal for measuring food in display cases, refrigerators, freezers of incoming inspection on a receiving dock.

Environmental monitoring tools are available to measure an environment such as a storage room for both temperature and humidity. Thermo-hygrometers allow managers to measure proper temperature and humidity which can cause mold and shorten shelf life.

- Thermo-hygrometers are able to monitor and record both temperature and humidity which is ideal for food service establishments' storage areas to ensure foods that are susceptible to humidity are monitored.

Hygiene

Personal safety products are available to help prevent contamination of foods and also keep employees safe from many different hazards. Gloves, masks, and caps all prevent the spread of harmful contaminants.

Sanitization & Food Safety

There are a variety of food safety and sanitization tools currently available. These include meters to monitor pH and sanitization chemical concentrations. Other tools include wipes, test papers thermal labels and timers.

For restaurant managers kits are available to allow them to monitor the critical control points outlined in their safety plan. Kits are available with multiple items needed to conduct food safety checks. Originally developed for the inspectors and sanitarians of the California Department of Health Services, this same kit is now available for restaurants, schools, hospitals, health care facilities, and all food service establishments where food safety is critical.

Conclusion

Restaurant management and employees are accountable for maintaining a clean and safe eating establishment for their customers. This applies not only to the physical building but to the food itself. Preparing and serving safe food can be a challenge given the various contaminants potentially waiting to infect the food every step of the way. There are available cost effective preventive tools and procedures to address even the most pressing

contamination culprits of temperature, hygiene & sanitation. Managers and food handlers alike should be aware of these contamination sources and the tools to combat them.

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More information
DeltaTrak
Vallierie Cureton,
vcureton@deltatrak.com
www.deltatrak.com

