

Food Service Facts

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22. Food Safety & Sanitation

School food service employees are entrusted with the health and safety of those they serve. It is absolutely essential that all employees are equipped with a thorough understanding of how to keep food safe.

Food borne illnesses can be caused by fungi, chemicals, viruses or parasites, but most are caused by bacteria. Poor sanitation, insufficient cooking and improper storage can cause a food to become contaminated and allow the amount of bacteria in the food to increase until the food becomes dangerous to eat. Contaminated food may look and even taste normal. When eaten by young children and others with a weak immune system, contaminated food can cause serious illness, or even death. Foods can cause illness if mishandled in your school kitchen even if it was safe to eat when purchased or first prepared. Likewise, proper handling and thorough cooking can kill several harmful types of bacteria, such as E. coli 0157: H7 and salmonella, rendering the previously contaminated food safe to eat.

Food Safety Resources

Website Resources

The Child Nutrition & Wellness website provides easy access to all of the food safety resources listed below and many, many more. Go to www.kn-eat.org and click "Food Safety" on the home page.

KN-TRAIN Resource Center

The "Kansas Nutrition Training Resource And Information Network" (KN-TRAIN) is a lending library offering many food safety resources available on loan at no charge. See Chapter 31, Resources for more information on KN-TRAIN or go to www.kn-eat.org or to www.kn-train.org to order materials online.

Focus on Food Safety

This 21-page booklet designed by the Kansas Department of Health and Environment's (KDHE) Bureau of Consumer Health contains basic food safety information in an attractive, easy to follow format. It is available at www.kdhe.state.ks.us/fpcs.

Kansas Food Code

All licensed food service establishments in Kansas must follow rules set forth in the most recent edition of the Food Code from KDHE. A copy of the current Food Code is available free of charge from regional health department offices or by calling KDHE's Bureau of Consumer Health at 785-296-1500. It can also be accessed from the web site: www.kdhe.state.ks.us. Although KSDE adheres to the Kansas Food Code, there are a few KSDE policies that are even more stringent than those established in the Food Code.

For example, the Food Code requires the “person in charge” to demonstrate a strong knowledge of basic sanitation principle while KSDE requires all food service staff to have a basic knowledge of food safety.

Requirements for Employees

The Kansas Department of Health and Environment’s (KDHE) Food Code governs all food preparation, service and storage in an establishment. Food safety and sanitation requirements for school food service are briefly summarized on the following pages. Child Nutrition & Wellness, Kansas State Department of Education (KSDE), recommends that these practices should also be used by all other student, staff and community groups or organizations that use a sponsor’s food service facility. KSDE encourages school administrators to put in place appropriate safeguards to ensure that all users of a school facility follow Kansas Food Code requirements.

Hand Washing & Glove Use

1. Wash hands and forearms with warm water and soap. Rub soapy hands together vigorously for at least 20 seconds. Rinse well. Use a towel to turn off the faucet. Dry hands with an air-dryer or single-use towel. Hand sanitizers and plastic gloves NEVER replace good hand-washing practices.
2. Always wash hands thoroughly:
 - ◆ Before starting work
 - ◆ Before touching food
 - ◆ After blowing nose or coughing
 - ◆ After touching mouth or hair
 - ◆ After going to the restroom
 - ◆ After smoking
 - ◆ After touching raw meat, poultry or eggs
 - ◆ After handling soiled dishes
 - ◆ After handling money
 - ◆ As hands become soiled when working
3. Gloves, utensils, or methods other than bare hand contact must be used when handling ready-to-eat foods. If single-use gloves are used, the following guidelines are recommended:
 - ◆ Wash hands before putting on gloves.
 - ◆ Put gloves on only when you are ready to handle ready-to-eat food.
 - ◆ Use gloves for only one task, such as preparing a ready-to-eat food, then discard.
 - ◆ If an interruption occurs during food preparation, remove gloves.
 - ◆ Use clean gloves when you resume food preparation.
 - ◆ Dispose of gloves immediately upon removal.
 - ◆ Single-use gloves should not be used around heat or hot fats.
 - ◆ Gloves are susceptible to contamination, so discard when soiled or damaged.
4. Fabric or reusable gloves may not be used with ready-to-eat food.

Hygiene & Grooming

An employee must always be clean and well groomed. These characteristics improve appearance, personal pride and self-reliance. A well-groomed employee should:

1. Wear clean, neat clothing and an apron. Wear comfortable, well-fitting shoes with closed toes. Keep shoes clean and in good repair.
2. Avoid wearing jewelry while working with food.
3. Keep nails clean, filed short, free of hangnails and infection. Do not wear artificial nails or nail polish.
4. Wash hair frequently and comb in a neat, suitable style. The Kansas State Department of Education (KSDE) requires all employees in the food service production area to wear hairnets or clean caps designed and worn to effectively restrain all hair, including bangs and sideburns. Student workers must also wear effective hair restraints and smocks or aprons.
5. Bathe daily and use an effective deodorant.
6. Practice good oral hygiene.
7. Do not smoke in any receiving, production or food storage area.

Health

At the time of employment, public school districts are required to obtain a Certification of Health for School Personnel (Form 22-A) for each employee. The form must be completed by a licensed physician and includes a tuberculosis test and a statement certifying the health of the employee.

Kansas law states “Every board of education shall require all persons, whether employees of the school district or under the supervision thereof, who come in regular contact with the pupils of the school district, to submit a certification of health signed by a person licensed to practice medicine and surgery under the laws of any state on a form prescribed by the secretary of health and environment. The certification shall include a statement that there is no evidence of physical condition that would conflict with the health, safety, or welfare of the pupils; and that freedom from tuberculosis has been established by chest x-ray or negative tuberculin skin test. If at any time there is reasonable cause to believe that any such person is suffering from an illness detrimental to the health of the pupils, the school board may require a new certification of health. “

The Kansas Food Code requires employees to report health problems before starting work. The person in charge of food service needs to know when to restrict or exclude food handlers from work because of injury or illness and when to report illnesses to the regulatory authority. No one may work if he or she:

- ◆ Has been diagnosed with an illness due to salmonella typhi, shigella spp., escherichia coli 0157:H7, or hepatitis A virus
- ◆ Has a symptom caused by illness or infection associated with an acute gastrointestinal illness, such as diarrhea, fever, vomiting, jaundice or sore throat with fever. In addition, an employee who has a lesion containing pus (such as a boil or infected wound) may not work unless certain precautions are in place.

Employees who become ill or injured during a shift must report this immediately.

Control Bacterial Growth to Keep Food Safe

Bacteria require (1) adequate time, (2) a comfortable temperature, (3) a potentially hazardous food with (4) adequate moisture and (5) a neutral or slightly acidic pH value in order to multiply. Bacterial growth can be minimized or even eliminated; and foods can be kept or made safe to eat by controlling these five factors.

Bacteria multiply by dividing in half every 20 to 30 minutes. At the end of four (4) hours in the temperature danger zone a potentially hazardous food will contain enough bacteria to cause an illness. Every effort should be made to minimize the amount of time that a potentially hazardous food is left in the temperature danger zone.

The temperature danger zone, 41° to 140° F, is the range of temperatures at which bacteria multiply quickly. Refrigeration at or below 41° F will slow but not stop the growth of bacteria. Freezing at 0° F or below will practically stop bacteria growth and cooking to at least the minimum required temperature will also kill bacteria. See Temperature Chart for Eggs, Fish, Meat & Poultry (Form 22-C) for a list of minimum required cooking temperatures.

Potentially hazardous foods, defined as any food or food ingredient capable of supporting the growth of microorganisms, include raw and cooked foods of animal origin, cooked foods of plant origin and a few other foods such as cut melons and plant foods containing raw seed sprouts. Potentially hazardous foods should be treated with special attention when received, stored, prepared and served.

Procedures to Control Bacterial Growth

- ◆ Store all potentially hazardous food at or below 41° F.
- ◆ Thaw frozen raw meat, poultry or fish safely:
 - In the refrigerator
OR
 - In a watertight package, under cold, running water
OR
 - In the oven, steamer or microwave as a continuous process of cooking
- ◆ When preparing a potentially hazardous food (i.e., breaded chicken), remove from refrigeration and prepare only the quantity needed.
- ◆ Ready-to-eat, potentially hazardous foods prepared and held refrigerated for more than 24 hours must be date-marked. These items must be marked with the “consume by” date. Allow seven days if held at 41°F, or four days if held at 45°F. This also applies to commercially processed and packaged, refrigerated, ready-to-eat, potentially hazardous food, once the original container is opened.
- ◆ Heat potentially hazardous foods to the minimum internal temperatures as specified on the Temperature Chart (Form 22-C).
- ◆ Never partially cook meat or poultry one day and complete the cooking the next day.
- ◆ Keep extra pans of hot food ready for service in a thermostatically controlled hot box or oven.
- ◆ Keep salads, sandwiches, etc. in the refrigerator until needed on the serving counter.
- ◆ Place leftover cooked food in two-inch deep pans for storage. Cool to 70° F within 2 hours and to 41° F within an additional 2 hours.
- ◆ When reheating a cooked product, heat to 165° F within 2 hours or less.
- ◆ Remove garbage and trash from the premises daily.

Procedures to Prevent Contamination of Food

- ◆ Cover pans with a lid or foil to protect food and keep it clean.
- ◆ Use suitable equipment, utensils or disposable gloves to mix or portion food.
- ◆ Never use fingers to taste food; always use a tasting spoon.
- ◆ Do not lick fingers to remove food.
- ◆ Wipe off tops of cans of food before opening.
- ◆ Cover food being transported from one location to another.
- ◆ Wash fresh fruits and vegetables thoroughly to remove residue from spray and soil.
- ◆ Discard food that shows signs of spoilage. When in doubt, throw it out.
- ◆ Do not cough or sneeze near food.
- ◆ Report health problems, illness or injury before starting work. To determine if an employee should be excused from work due to illness, refer to *Requirements for Employee Health* earlier in this chapter.
- ◆ Do not use the same utensils, equipment or gloves in the preparation of more than one food because of the possibility of cross contamination.
- ◆ Use an air dryer or single-use towel to dry hands.
- ◆ Keep the kitchen and storeroom free of insects and rodents.
- ◆ Limit traffic in the kitchen to only those employees directly involved in the production or service of food.
- ◆ Maintain a clean and orderly kitchen and storeroom at all times.
- ◆ Cover cuts and burns with a bandage or finger cot and glove.

Procedures to Prevent Contamination of Equipment, Pans & Dishes

- ◆ Keep work surfaces and equipment clean. Food contact surfaces should be cleaned and sanitized before food production. Cafeteria tables should be cleaned and sanitized before meal service begins.
- ◆ Clean corners and seams when washing equipment.
- ◆ Report any equipment in need of repair.
- ◆ Follow recommended instructions to clean and operate equipment.
- ◆ Invert all utensils stored on tables or shelves.
- ◆ Never re-use soiled utensils for food. Wash them before re-use.
- ◆ Allow washed dishes and utensils to air dry. Do not dry with towel.
- ◆ Never allow pans to touch the floor.
- ◆ Keep garbage and trashcans covered.
- ◆ Handle bowls and plates by the outer edge or rim.
- ◆ Pick up glasses at the bottoms.
- ◆ Keep knives, forks and spoons in a sanitary receptacle with only the handles exposed.
- ◆ Pick up spoons, knives and forks by the handles.
- ◆ Do not use the top plate or dish of a stack if they have not been covered in storage.
- ◆ Do not keep a scoop, spoon or tongs in the ice machine. Store in a clean covered container near the ice machine when not in use.
- ◆ Dispose of cracked, scratched or chipped dishes or trays.

Procedures for Dishwashing

Dishwashing, whether done manually or mechanically, should include the following steps:

1. Scrape
2. Pre-rinse
3. Wash
4. Rinse
5. Sanitize
6. Air dry

Manual Dishwashing

- ◆ Manual dishwashing requires a three-compartment sink.
- ◆ Long-handled wire baskets should be provided to permit immersion of dishes in the rinsing and disinfecting compartments.
- ◆ A soiled-dish counter of adequate length should be provided preceding the dishwashing compartment.
- ◆ A clean dish counter should be provided for air drying the dishes. These counters preferably should be constructed of stainless steel.

The procedure for manual dishwashing is as follows:

Compartment 1: Wash in hot soapy water. Maintain water temperature at 110° or above unless otherwise specified by manufacturer of the cleaning agent.

Compartment 2: Rinse by emersion. Maintain water temperature at 110° or above.

Compartment 3: Sanitize using one of the following methods.

1. Use sanitizing solution of water and either chlorine, quarternary ammonia (sometimes referred to as “quats”) or iodine. Refer to manufacturer’s recommendations for water temperature and concentration. Use test strips to check the strength of the solution every 30 minutes. Replace solution as needed.
OR
2. Use water at 180°F. A thermometer should be readily available for checking the temperature.

Dishes, glasses and utensils are to be submerged for at least two minutes in the sanitizing compartment. Use enough sanitizing solution or hot water to completely cover the dishes.

Mechanical Dishwashing

- ◆ Dishwashing machines should be equipped with thermometers that accurately indicate the temperature of the wash water and rinse water.
- ◆ Dishwashing machines should sanitize using one of the following:
 1. **Hot water** at or below 194° but at least 165° for a stationary rack, single temperature machine or at least 180° for other machines
 2. **Chemical sanitizer** - Concentrations and minimum water temperatures must be maintained as specified by the manufacturer.
- ◆ Ensure that the dishwashing machine is constructed and operated correctly. For more information, contact the manufacturer and review the requirements in the Kansas Food Code.
- ◆ Never touch or load soiled items and then touch or remove clean items from the dishwashing machine without first washing and sanitizing hands.

Policies for Serving Safe Food

It is important to keep food safe during the serving period as well as during production and storage.

Sneeze Guards

- ◆ The purpose of a sneeze guard is to interrupt the direct line between the consumer and the food. Sneeze guards should be in place on all serving lines and in all self-service areas.
- ◆ Placement of the sneeze guard should be appropriate for the serving situation. For example, if elementary students will be served, sneeze guard placement should be relative to their height.

Serving Seconds

If second portions of food are offered:

- ◆ They must be served to consumers on clean dishes, trays or disposable-ware.
- ◆ Clean dishes, trays or disposable-ware must be provided at self-service bars.

Re-Serving Unopened Milk Cartons

Milk cartons that have been served and returned unopened may be re-served if the following procedures are used. Within 30 minutes after students return the unopened milk carton, the carton must be:

- ◆ Served to students as a second carton with their meal
OR
- ◆ Placed in an ice bath for students to consume at a later time
OR
- ◆ Placed in a refrigerated area designated for returned unopened milk.

Returned unopened milk cartons are not to be intermixed with fresh milk in the milk cooler. Before storing returned unopened milk cartons, the cartons must be identified with a mark indicating they are returned (e.g. an “R” or a slash mark). Returned unopened milk cartons can be used in the food service for cooking purposes or consumed by students as second cartons with their meals.

The expiration dates on returned unopened milk cartons must be monitored and milk with expired dates is to be destroyed.

Family Style Meal Service

Family style meal service is a method of serving food to groups of students with adult supervision. Sanitary procedures must be followed to assure the safety of the food during the meal service.

- ◆ Tables must be cleaned and sanitized before each group of students arrives for the meal service.
- ◆ The students and adult supervisors must wash their hands before the meal is served.
- ◆ Food should be held at proper temperatures (hot foods hot, cold foods cold) until everyone is seated and ready to be served.
- ◆ Each table must have its own set of serving containers.
- ◆ There must be no bare hand contact with ready-to-eat food. Appropriate serving utensils should be provided to serve the food.
- ◆ Students must pass the serving containers without putting their fingers into the containers or touching the food within the containers.
- ◆ Food that has been on tables cannot be offered to students at other tables or at other meals.
- ◆ Clean serving containers must be used for each group of students who arrive for lunch. The serving containers/utensils that were used by students at a previous meal service must be washed and sanitized before being used for the next meal service.

Storing Foods Brought from Home

Food brought from home (sack lunches, food for fundraisers, etc.) should not be stored with food prepared in the food service kitchen.

Procedures for Handling Food Borne Illness Complaints

The first step in dealing with a complaint of possible food borne illness is to gather as much information as possible. Interview the parent(s) and/or student(s) involved. Ask for a three-day history of food eaten by the student. Also, ask:

- ◆ Which meal(s) did the student consume at school?
- ◆ Which foods were selected?
- ◆ Which foods were eaten?
- ◆ At which school did the student eat?
- ◆ In which serving period did the student eat?

Gather data from the school. Determine which employee prepared particular foods. Determine whether anyone in the kitchen displayed signs of illness or has recently been ill. Should there be sufficient reason to suspect that food borne illness has occurred, a sample of the food served must be available for testing.

Inform the principal, school nurse and food service manager at the site that you have received a complaint. Ask them to report any and all other complaints to you.

Notify the local health department when a complaint has been received. A sanitation inspection may be conducted by the Kansas Department of Health and Environment or another agency. Cooperate with any investigation to determine the cause of the illness. Further information on handling an outbreak of food borne illness can be accessed through the Child Nutrition & Wellness website: www.kn-eat.org.

Procedures for Hazardous Chemicals

- ◆ The Hazardous Communication Program requires that *Material Safety Data Sheets* (MSDS) be maintained in all work areas where hazardous chemicals are in use.
- ◆ MSDS are available from the supplier/distributor of chemical products. They outline handling precautions and provide emergency care information to be used in case of an accident.
- ◆ All chemical substances should be prominently and distinctly labeled, preferably in their original containers.
- ◆ Chemicals should be stored away from, and never above food, equipment, utensils, single-service articles or food contact surfaces. Chemicals should preferably be stored in closed cabinets.

Food Safety Training Requirements

School food service employees are entrusted with the health and well-being of those they serve. It is absolutely essential that all employees have a thorough understanding of how to keep food safe. To help prepare employees for this critical responsibility, a statewide system of required food safety training was implemented in January, 2002.

All personnel employed in local school food service operations in Kansas that participate in the federal Child Nutrition Programs must complete one of the required food safety classes every five years. This includes:

- ◆ Substitutes, if they work on a regular basis (such as once a month or more) or may be required to work alone in the kitchen
- ◆ Truck drivers, if they are responsible for monitoring the temperature of food being transported

The training is not required for volunteers, student workers, cashiers who never handle food or mentally disabled employees. These persons should be supervised by a person trained in food safety.

The food safety training requirement is being implemented in phases.

1. All school food service employees in a management or supervisory role (directors, supervisors, coordinators, managers and head cooks) were required to complete training by the end of 2002 (if training had not been completed since 1998).
2. All new school food service employees are required to complete approved food safety training within six months of their employment date.
3. All other school food service employees must complete an approved food safety class by the end of 2006.

Each employee must meet the requirement using one of the following five approved methods:

1. Attend the 3-hour “Food Safety Basics” class offered by KSDE at various locations at no charge in the spring and fall or as an in-service free of charge for a group of 30 or more
2. Attend the 6-hour “Food Safety Survival” class offered by KSDE during the summer or as a local in-service upon request for a fee
3. Attend the 12-hour “Food Service Sanitation” class offered by KSDE during the summer or as a local in-service upon request for a fee
4. Attend the 13-hour “ServSafe” class offered by K-State Research and Extension at locations throughout the state.

5. Submit a locally developed food safety class with a minimum of three contact hours to Child Nutrition & Wellness, KSDE for approval. For more information, contact Child Nutrition & Wellness' Training Coordinator (see Chapter 1 for contact information).

Employees who have previously completed one of the approved classes have five years from the year of the class to update their training. For example, if training was completed in 2002, the employee is not required to take another class until the end of 2007.

Spanish speaking employees who are not fluent in English may meet the food safety training requirement by watching a series of food safety videos in Spanish and then completing a brief examination. Please contact Child Nutrition & Wellness' Training Coordinator for more information.

Sponsors are required to document completion of food safety training on the Food Safety Training Record (Form 22-D). The form may also be downloaded from www.kn-eat.org. Use this record to list each employee's name, date of employment, name of food safety class completed and date the class was completed. The sponsor must also maintain a copy of each employee's completion certificate. These documents must be retained on file at the local level for review or audit by KSDE.

Hazard Analysis Critical Control Points (HACCP)

The Child Nutrition and WIC Reauthorization Act of 2004 requires that by July 2005 sponsors must implement a school food safety program for the preparation and service of meals that complies with any "hazard analysis and critical control point system established by USDA." At the time this book was printed, USDA had not issued guidance on this provision of the law

When guidance is issued, KSDE will provide training and additional information on implementation of this requirement. As a starting point, the HACCP Manager's Self-Inspection Checklist (Form 22-B) provides a valuable tool to assess food safety and sanitation in school kitchens. This form is an adaptation of one developed by the National Food Service Management Institute as a companion to USDA's food safety publication, *Serving It Safe*.