

# Volunteer Quantity Cooking Safety

Londa Nwadike, Ph.D.,

Kansas State University/University of Missouri Extension Food Safety Specialist

## Introduction

Food is a great way to bring people together, and selling food is often a key way for nonprofit groups such as 4-H clubs, churches, schools, and others to raise funds for their activities. However, cooking the large quantities of food required for events such as fundraising dinners, concession stands, community meals, family reunions, or funeral meals is different than cooking for your family.

Most of the cooks for these events are volunteers and the events generally do not have any regulatory oversight. Because volunteers for these organizations may not be accustomed to cooking in such large quantities and may not necessarily have the proper equipment, serious food safety problems can occur if proper practices are not followed. Unfortunately, numerous cases of foodborne illness have been linked to such events.<sup>1</sup> In addition to the great remorse that an organization's members would feel for making someone sick, such an occurrence also could lead to a tarnished reputation or even legal repercussions for the organization.

The same food-safety practices that should be used when cooking for you or your family should also be practiced when cooking for large groups. Also, follow some additional steps because of the large volume of food. The following checklist can be used to help ensure that food served at your next event is as safe as possible.



The same food-safety practices that should be used when cooking for you or your family should also be practiced when cooking for large groups. Also, follow some additional steps because of the large volume of food. The following checklist can be used to help ensure that food served at your next event is as safe as possible.

## Planning

Done ✓

Item:

Determine if licensing is needed. In Kansas, licensing is not required for food and beverage sold ready-to-eat directly to consumers by community groups for fundraising purposes.<sup>2</sup> However, regulations in other states vary.

If possible, designate a person with food service experience to coordinate and supervise the activity.

Do NOT serve high-risk foods, such as raw or undercooked meat, poultry, fish or seafood; raw milk; raw fruit juice or cider; foods with raw/undercooked eggs; or raw sprouts — these foods are more often associated with foodborne disease outbreaks.

Ensure that all the needed equipment (food thermometers, refrigerator and freezer thermometers, food-grade containers, etc.) and personnel will be available to keep food safe in each of the following steps.

Be sure that everyone handling food follows the safe food-handling practices listed in the section below.

## Personnel

Done ✓

Item:

Wash hands thoroughly<sup>3</sup> for at least 20 seconds with soap and hot water before starting work, when changing tasks, after using the bathroom, and after taking out the trash. Hand sanitizer is NOT a substitute for hand washing.

Wear clean clothing and hair restraints.<sup>4</sup>

Keep hands away from mouth, nose, and hair. Cover coughs and sneezes with a shoulder or a tissue.

Never work around food if you have any infection, cut, cold, or any communicable disease.

Bandage any cuts or wounds on the hands and wear a disposable glove over the bandage.

Never smoke, eat, or drink in food preparation or equipment washing areas.

Do not use cooking utensils to taste food.

<sup>1</sup> For some examples, search for terms such as “community dinner” in this database or others: [www.outbreakdatabase.com](http://www.outbreakdatabase.com).

<sup>2</sup> Refer to Kansas State Regulations 4-28-33 (Sanitation and hygiene requirements for exempt food establishments) and 4-28-34 (Exemption from licensure; definitions) for more specific details.

<sup>3</sup> See page 4 for information on setting up a low-cost, portable hand washing station if one is needed.

<sup>4</sup> In situations where it may be difficult for food handlers to wear clean clothes (such as 4-H fair concession stands), it is important to provide clean cloth aprons or disposable plastic aprons, and clean visors or hats for workers to use.

## Shopping

Done ✓	Item:
	Acquire food from safe sources. For example, buy from reputable suppliers; ensure that any homegrown produce you use is raised using safe food-growing practices. <sup>5</sup>
	Separate raw meats from ready-to-eat products in the cart and in your grocery bags. For example, place raw meat on the bottom rack of the cart with ready-to-eat food in the top of the cart.
	When bagging groceries, separate raw meat from ready-to-eat foods.
	Plan shopping so that perishable foods <sup>6</sup> will not be in the temperature danger zone of 40°F to 140°F for more than 2 hours (1 hour if outside temperature is >90°F). <sup>7</sup> If needed, bring enough coolers with ice packs or ice along to keep products cool in transit.

## Storing

Done ✓	Item:
	Ensure you have enough storage space for the larger quantities of food purchased, particularly refrigerated storage for perishable foods.
	Clean all storage areas, including refrigerator, freezer, and dry goods storage.
	To maintain proper cold air circulation, don't overfill your refrigerator.
	Use a refrigerator thermometer to ensure the temperature stays below 40°F.
	Store refrigerated food in the proper arrangement: poultry on the bottom, with ground meats above that, followed by whole muscle meat cuts, and ready-to-eat foods, such as lettuce, tomatoes, and cheeses on top.
	Use a freezer thermometer to ensure the freezer temperature stays below 0°F. Ensure the freezer is not too full for the door to close properly.
	Do NOT store nonperishable foods such as canned goods directly on the floor; rather, store them on a wire rack or somewhere that is easily cleanable and is less likely to be in contact with insects or rodents.
	Use only food-grade containers for storing food to ensure no microbial or chemical contamination. Do not use garbage cans, garbage bags, or other containers not meant for holding foods.

## Preparing food

Done ✓	Item: <i>Chill</i>
	Thaw meat in the refrigerator, in cold water (that is changed regularly), in the microwave, or as part of the cooking process. Do NOT thaw meat at room temperature or in the sink in hot water.
	After cooking, ensure that the internal product temperature gets to <40°F within 4 hours of cooking. To achieve this, you could: <ul style="list-style-type: none"><li>• put large containers of hot food into an ice bath in your sink,</li><li>• stir the food to transfer out heat to help it cool faster, and/or</li><li>• divide large quantities of food into smaller quantities or place in shallower pans.</li></ul>
	Put cooked food in the refrigerator within 2 hours of cooking.
Done ✓	Item:
	<i>Cook:</i> Use a tip-sensitive, accurate food thermometer <sup>8</sup> to ensure that foods reach a safe internal product temperature to kill harmful microorganisms. <sup>9</sup> See table on page 4 for a list of safe temperatures.
	<i>Clean:</i> Clean and sanitize <sup>10</sup> all equipment used to prepare and handle food.
	<i>Separate:</i> Do not use the same utensils or equipment (cutting boards, plates, utensils, etc.) for raw and ready-to-eat foods unless they are washed and sanitized.

<sup>5</sup> More information on fresh produce safety, particularly for school and community gardens, is available from: [www.bookstore.ksre.ksu.edu/pubs/MF3152.pdf](http://www.bookstore.ksre.ksu.edu/pubs/MF3152.pdf)

<sup>6</sup> Perishable foods are those that require time and temperature control for safety because they support rapid and progressive growth of pathogenic microorganisms or toxin formation. Examples include: meats, poultry, fish, and shellfish; milk and milk products; shell eggs; cooked rice, pasta, beans, and vegetables including baked potatoes; cut fruits and vegetables; raw seed sprouts; cream pies.

<sup>7</sup> Microorganisms can double every 20 minutes when in the temperature danger zone, so it is important that perishable foods are not in this zone for long periods of time.

<sup>8</sup> Stem food thermometers and refrigerator thermometers can be purchased for less than \$10 at most grocery stores and hardware stores. Be sure that the stem food thermometer can be calibrated and check its calibration occasionally. More information on calibrating thermometers is available on p. 9 of publication MF3138: [www.bookstore.ksre.ksu.edu/pubs/MF3138.pdf](http://www.bookstore.ksre.ksu.edu/pubs/MF3138.pdf)

## Transporting prepared food

Done ✓

### Item:

Keep hot food hot (>140°F) and cold food cold (<40°F) when transporting. Wrap hot food in blankets or use an insulated cooler as needed to maintain temperature.

Do not allow perishable foods to be in the temperature danger zone (40°F–140°F) for more than 2 hours.

Transport food in clean vehicle compartments. Cover food to protect it from potential sources of contamination, such as family pets or children.

## Serving food

Done ✓

### Item:

If reheating food, ensure the internal food temperature reaches 165°F within 2 hours. This will require food to be reheated in a microwave, on the stove top, or in the oven. (Slow cookers or candle warmers cannot achieve this high of a temperature.)

Hot foods must be held at 140°F or warmer during serving. Use a food thermometer to check internal product temperature in the center or thickest part at least once an hour. Electric roasters, slow cookers, and adequate candle warmers may be able to achieve this temperature, but the temperature must be checked.

Cold foods must be held at 40°F or lower.

Keep hot foods covered as much as possible.

Ensure that everyone handling food washes their hands properly, including before serving food.

Even if wearing gloves for serving foods, servers need to wash their hands properly.<sup>11</sup> Hand sanitizer and/or gloves are not a substitute for hand washing.

It is preferable to allow no bare-hand contact with ready-to-eat foods. Servers should instead use spoons, tongs, deli paper, or gloves to handle food.

If guests serve themselves, they should get a new plate each time they return to the serving line, rather than reusing a soiled plate.

## Cleaning up

Done ✓

### Item:

Thoroughly wash and sanitize countertops and utensils, particularly after handling raw meat. The sanitizing solution should be freshly made at least daily or every 3 to 4 hours for longer events, using 1 teaspoon bleach in 1 gallon potable water.

Clean and sanitize customer tables in the eating area, if possible after each use.

Commercial dishwashers, if available, are the best option for cleaning tableware. If using a sink, clean the sink first to remove any germs or residue. Scrape, soak or rinse leftover food from the dirty dishes; then wash, rinse, sanitize (see steps below for more details) and let air dry.<sup>12</sup>

## Steps for cleaning and sanitizing in a three-compartment sink

Step	Where	Details
Wash	1 <sup>st</sup> sink	Clean detergent solution in >110°F water. Use brush or cloth to loosen soil.
Rinse	2 <sup>nd</sup> sink	Clean potable water (>110°F). Remove all traces of food and detergent so sanitizer will be more effective.
Sanitize	3 <sup>rd</sup> sink	Immerse items in hot water (>170°F) for 30 seconds or in a chemical sanitizing solution for 1 minute. Chlorine concentration should be at least 50 parts per million (1 teaspoon bleach per 1 gallon of water). Follow manufacturer's directions for other sanitizers such as quaternary ammonia. Note that cloths used to sanitize countertops and tables after cleaning should be allowed to soak in a solution of the same concentration.

*Note that if a three-compartment sink is not available, a dishpan can be used for one or more of the above steps.*

<sup>9</sup> Note that thermometers must be cleaned and sanitized (wiped with a clean washcloth and with sanitizing solution) between different foods or different containers of the same food to prevent cross-contamination.

<sup>10</sup> More information on sanitizing is available on page 4.

<sup>11</sup> See page 4 for information on setting up a low-cost, portable hand washing station if one is needed.

<sup>12</sup> Using cloth towels for drying can recontaminate the dishes, as the towels often get dirty from drying previous dishes, from dirty hands, or touching dirty objects.

## Leftovers

**Done ✓ Item:**

Do not reuse foods that have been served, such as put out on a buffet or put on a plate at a table. \*One exception to this is non-potentially hazardous foods still in their original packaging, such as crackers.

Foods that were prepared but not served can be reused if they were held at proper temperatures (<40°F for cold foods or >140°F for hot foods) and cooled properly (internal product temp to <40°F within 4 hours).

Reuse prepared but not served food within 1 to 2 days. Do not reuse more than once.

## Internal cooking temperatures

Product	Minimum Internal Temperature
All poultry — whole birds, parts, ground products	165°F
Stuffing (should be cooked outside of bird when served to large groups)	165°F
Ground meats (other than poultry)	160°F
Steaks, roasts, chops (beef, veal, lamb, pork)	145°F with a 3-minute rest time
Precooked ham (to reheat)	140°F
Eggs	Cook until yolk and white are firm
Egg dishes (quiche, etc.)	160°F
Reheating leftovers, casseroles	165°F
Fin fish	145°F or until flesh is opaque and separates easily with a fork
Shrimp, lobster, crabs, scallops	Cook until flesh is opaque
Clams, oysters, and mussels	Cook until shells open during cooking

## Setting up a portable handwashing station

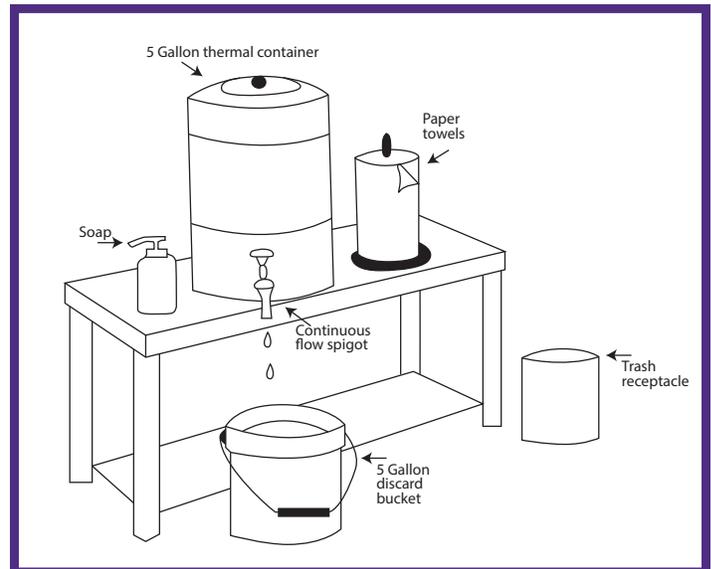
The following components are needed for a portable handwashing station:

- 5-gallon cooler modified with a hands-free spigot<sup>13</sup>
- Catch basin for waste-water
- Liquid soap
- Paper towels
- Adequate supply of warm water
- Trash receptacle

### Next Steps:

Based on the checklist above, develop a list of the top items that you should work on before the next time you or your organization will prepare a larger quantity of food than normal:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



<sup>13</sup> Standard 5-gallon coolers can be easily modified to have a free-flow spigot through the following steps: 1) Unscrew the original push button spigot; 2) Install a hands-free replacement spigot available for bottled water coolers. These are commonly available at hardware and home-brewing stores for less than \$8. See [http://pubstorage.sdstate.edu/AgBio\\_Publications/articles/ExEx14083.pdf](http://pubstorage.sdstate.edu/AgBio_Publications/articles/ExEx14083.pdf) for more information on hand washing stations.

### Sources for Further Information:

*Parties and Large Groups General Information.* Foodsafety.gov. Available from: [www.foodsafety.gov/keep/events/parties](http://www.foodsafety.gov/keep/events/parties)  
*Cooking for a Crowd.* Penn State Extension. 2003. Available from: <http://extension.psu.edu/food/safety/educators/cooking-for-crowds>

Publications from Kansas State University are available at: [www.ksre.ksu.edu](http://www.ksre.ksu.edu)

Publications are reviewed or revised annually by appropriate faculty to reflect current research and practice. Date shown is that of publication or last revision. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit Londa Nwadike, *Volunteer Quantity Cooking Safety, Fact Sheet*, Kansas State University, July 2015.

### Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, John D. Floros, Director.