LESSON 5
Clean: Do You Want to Eliminate a Million…Bacteria?

GOAL

To understand the importance of cleanliness, healthy workers, and proper handling of garbage, waste, and bodily fluids in commercial food service.

OBJECTIVES

- To understand the need for equipment and personal cleanliness when preparing food for others.
- To demonstrate proper hand-washing techniques.
- To identify times when hands should be washed when preparing food for others.
- To demonstrate proper use of gloves.
- To make an approved sanitizing solution and to know when and how to use it.
- To list proper handling procedures for garbage, waste products, and bodily fluids.
- To recognize when sick employees should not handle food.

TEACHER BACKGROUND INFORMATION

Lesson 5 covers

1. Personal hygiene, especially proper hand washing
2. Food-contact surface cleaning and sanitizing
3. Correct garbage/waste/bodily fluid (vomit, blood, excrement) handling
4. Restrictions and exclusions for sick employees

Approximate time to teach lesson: 25–50 min.

Definitions

chlorine—One of the chemical elements that forms hypochlorite. Hypochlorites are used in sanitizing solutions. Chlorine compounds deodorize, control a wide range of microorganisms, and are economical to use. They are colorless and nontoxic to humans when used in the recommended concentrations. Chlorine bleach should NEVER be mixed with other chemicals, especially ammonia-based cleaners, unless specifically stated on the chemical label.

clean—Free of visible soil, including food particles and dirt. Refers to outward appearance.

cleaner—Soap or detergent that loosens soil and food so they can be rinsed away.

food-contact surface—Any surface of equipment, utensils, containers, and wrappings that come in direct contact with food.

ppm—Parts per million. A measurement used to define sanitizer concentrations. One ppm = 1 mg per liter = mg/L.

sanitary—Clean and free of harmful microorganisms and other contaminants. To be effective, sanitizing must follow a thorough cleaning.

sanitation—The act of reducing microbial organisms to a safe level on cleaned food-contact surfaces.
sanitizer—An approved substance to use when sanitizing food-service equipment and utensils.
sterile—The absence of all living microorganisms.
ware washing—The process of cleaning and sanitizing equipment, utensils, pots, pans, and dishes.

Food Safety Implications
Sick employees, poor hygienic practices, and contaminated equipment are major causes of foodborne-disease outbreaks. Therefore, maintaining a clean and sanitary facility and clean employees can greatly enhance the safety of food prepared in a food establishment. Hand washing is recognized by the Centers for Disease Control and Prevention (CDC) as the most important means of preventing germs from spreading.

People can carry disease-causing microorganisms and pass them on to others through food. In some cases, they don't show any signs of illness themselves. For example, people can infect food with Hepatitis A for 15 to 50 days before any symptoms of the illness emerge.

A major key to controlling foodborne illness in commercial food service is clean hands and the use of frequently changed, single-use, disposable gloves when handling food. Workers often handle both raw and cooked food. Washing hands and changing gloves is required when changing tasks from handling raw to handling cooked or ready-to-eat food to prevent harmful bacteria from contaminating foods.

Hand-Washing Activity
A UV (black) light and GlitterBug Potion or Glo Germ Gel (fluorescing hand lotions) are useful in demonstrating how well students wash their hands. Students put the lotion on their hands, rub it in well, and inspect their hands for the presence of germs under a black light in a darkened room. The GlitterBug Potion or Glo Germ Gel, which simulates germs, is invisible under regular light but glows under a black light. After viewing their hands and observing the fluorescence of white residue, students wash their hands thoroughly, rubbing for 20 sec with warm water and soap. Again, they use the black light in a darkened area to see if their hand washing was effective. (The area around the fingernails is frequently missed.)

(Note: A GlitterBug or Glo Germ Powder is also available to test for the presence of germs on paper, pencils, your hands, etc. It is particularly useful in showing how easily people cross contaminate multiple surfaces. Information about ordering supplies can be found in the References section following the lesson.)

Single-Use Gloves
Bare-hand contact with ready-to-eat foods is prohibited by the *Idaho Food Code* (3-301.11). Food service personnel are required to use

tongs, disposable deli tissue, or other barriers, or they must wear single-use gloves when handling these foods. Gloves must be changed whenever hand washing is required.

The expense of providing gloves for students in the classroom is an issue. However, the Idaho Department of Health and Welfare does not allow single-use gloves to be washed and reused.

Latex Gloves
The use of latex gloves by food-service workers is of concern to some individuals because latex may transfer to food, causing an allergic response. The *Idaho Food Code* does not prohibit latex gloves in food service.

Infected Wounds (*Idaho Food Code* 2-201.11 [A][1])(e).
Idaho regulations specify that people with infected wounds on hands or wrists should not handle food unless the wound is washed, covered with an impermeable bandage, and gloved. Employees with an infected wound on their hand, arm, or face should consult their food-service supervisor at the beginning of their shift. The supervisor may have them work at a nonfood task, such as seating restaurant guests or manning the cash register, or s/he may decide that they should not work.

Waterless Hand Sanitizers
The waterless hand sanitizers that do not require rinsing are alcohol-based products that indiscriminately kill microbes—both naturally occurring microbes, which are beneficial, and transient microbes, which may be pathogenic (disease-causing). Their wide-net casting may destroy too many naturally occurring microbes, their competitors, thus allowing pathogenic bacteria to grow more aggressively on the skin. Waterless hand cleaners also may dry out skin excessively if used frequently, although improvements in their formulation have resulted in products that are gentler on the skin.

Waterless hand sanitizers are not acceptable as a substitute for washing hands with soap and water. They may be used in addition to washing hands for 20 sec.

Personal Hygiene (*Idaho Food Code* 2-3)
Cleanliness in food service requires more than clean hands. It is important to wear a clean uniform or clean apron (if provided) over clean street clothes. Hair should be clean, with long hair pulled back away from the face. Because fingernail polish or artificial nails could chip and fall into the food being prepared, either is not allowed unless the employee wears gloves over them. Fingernails should be clean and trimmed. Jewelry may not be worn on the hands or arms, because it can harbor pathogens, get caught in equipment, or fall into food. One exception is a plain ring, such as a wedding band.

People make decisions about the cleanliness of a food-service establishment by looking at its workers. Projecting a neat and clean appearance is important for any food service enterprise.

Sanitizing Solutions/Ware Wash Sanitizing Rinse (*Idaho Food Code* 4-7 [Sanitation of Equipment and Utensils] & 4-501.114 [Chemical Sanitizing Solutions]) Food-contact surfaces must be sanitized. Chlorine bleach is commonly used as a sanitizing agent, because it is readily available and inexpensive. Other sanitizing chemicals include iodine and quaternary ammonia compounds. Heat at specified temperatures can also be used for some items. Procedures for each type of sanitizing must be followed precisely to be effective.

When using chlorine bleach as a sanitizer, the concentration required varies with the solution temperature and pH (see the table below). Since bleach solutions in the classroom may be difficult to maintain above 75°F, 100 ppm (mg/L) concentration is recommended. A 100 ppm sanitizing solution is made by adding 1 Tbsp of chlorine bleach (unscented, with 5.25% sodium hypochlorite) to 2 gal of water.

Minimum Temperatures Required for Chlorine Sanitizing Solutions at Various Concentrations and pHs

Minimum Chlorine	Amount of 5.25% sodium hypochlorite bleach per gallon of water	Minimum Temperature	
mg/L (ppm)		pH 10 or less	pH 8 or less
25	⅜ teaspoon	120°F	120°F
50	¾ teaspoon	100°F	75°F
100	½ Tablespoon	55°F	55°F

The time that a sanitizer must be in contact with the surface to be sanitized is specified for each concentration and is very important for effectiveness. Contact time is 10 sec for a 100 ppm chlorine solution.

Sanitizing solutions lose their germicidal effectiveness over time or when they become dirty. Consequently, make fresh solutions at least every four hours or more often if they are used frequently or if they are contaminated with food or waste debris.

Manual Ware Washing (*Idaho Food Code* 4-6)
The three-compartment sink method of washing dishes, utensils, and equipment is recommended in food service. In Family and Consumer Sciences classroom kitchens, however, three-compartment units may not be available. In that case, use a tub on the counter as the third compartment. The two-compartment sink can hold the wash and rinse water while the tub fills with the sanitizing solution.

Air drying of equipment and utensils is also required for food service; the use of towels is not allowed. This can be a problem in a classroom, where sharing equipment and hosting different class meetings are regular procedure. Some options include using the hottest sanitizing rinse water as possible, since hot water dries more quickly; or using paper towels to wipe items dry.

Garbage/Waste/Bodily Fluid Handling
Entry-level employees may be asked to do jobs other employees avoid, such as taking out the garbage or disposing of waste water. They also may be asked to clean up bodily wastes that may result from a customer (or staff member) vomiting, having an uncontrolled diarrheal episode, or changing a baby's diaper in an inappropriate location. For all waste handling, but particularly in the case of cleaning up potentially highly infectious bodily fluids, employees should request protective equipment (gloves, apron, mask, as needed), a safe handling procedure, and appropriate cleanup tools.

MATERIALS NEEDED

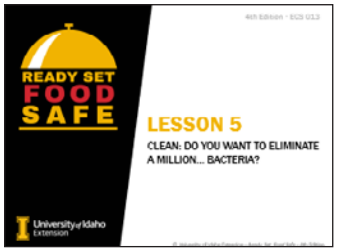
- White board or easel with paper, pad, and appropriate markers
- GlitterBug Potion or Glo Germ Gel (fluorescing hand lotion) for the "Hand Washing" activity
- UV (black) light for the "Hand Washing" activity
- One bag each of loose, unwrapped candy (gummi bears or licorice are good) and wrapped candy pieces for the "Sharing Food" activity (or use pictures on Slide 14)
- Items needed for the "Food Server Role Place" activity:
  - Table, paper tablecloth, and two chairs
  - Paper plates, stack of plastic cups, plastic silverware, and two menus
  - Apron, server tray, and cloth towel for wiping up spills
- Items needed for the "Measuring Chlorine Concentration" activity:
  - Chlorine sanitizer test strips (available at restaurant supply stores)
  - Five containers of different concentrations of bleach solutions
  - Eyedropper
  - Unscented chlorine bleach (5.25% sodium hypochlorite)
  - Triscuit crackers and 1 Tbsp flour to contaminate a sanitizing solution
- UV fluorescing powder and UV (black) light for the "Who's a Star at Cleaning" activity
- Worksheet for each student: "When Should Sick Employees Not Handle Food?" A master and answer key provided at the end of the lesson

Preparation for "Food Server Role Play" activity
Before class, set up a table in front of the room. Put two chairs by the table. Place a tablecloth on the table. Right before the activity, put on an apron.

Preparation for "Sanitizing Solution" activity
Prior to class, make up three different sanitizing solution

concentrations of 2 cups each: 50 ppm (6 drops of bleach in 2 cups water), 100 ppm (12 drops of bleach in 2 cups water), and 200 ppm (24 drops of bleach in 2 cups water). Use water that is room temperature (75°F) and mix well. Make up two additional containers of 100 ppm. Label each container so that you know which is which, but that students won't know until completing the activity. The solutions will be used near the end of the lesson for the sanitizer-testing activity. Try out the test strips ahead of time. Use the chart in the test strip container to determine the chlorine concentration according to the test strip color. Read the strip immediately after dipping. (The 50 and 100 ppm solutions are more difficult to tell apart than higher concentrations.)

Preparation for "Who's a Star at Cleaning?" activity
Before class, dust small amounts of UV fluorescing powder in places kitchen users often overlook when cleaning a food-preparation area. During the activity, ask a student volunteer to clean the prep area, then use a black light to evaluate its quality.



(Slide 1) **Lesson 5**
Clean: Do You Want to Eliminate a Million…Bacteria?

This lesson covers
- Proper hygiene—unclean hands are a major cause of illness traced to restaurants
- Recommended cleaning and sanitation practices for food-contact surfaces
- Handling garbage and bodily fluids
- Not working when sick

1. **Personal Hygiene, Especially Hand Washing**
   a. (Slide 2) **Required Hand-Washing Facilities**. Food-service establishments are required to provide a separate sink for hand washing (*Idaho Food Code* 5-203.11). It must include
      - Hot and cold water
      - Soap
      - Sanitary drying method (paper towels or hot air)
      - Garbage can
      - Hand-washing signage

(Slide 3) **Who's a Star at Washing?**
Ask for volunteers to test how well they wash their hands (suggestion: everyone in the room may want to try this). Have students place GlitterBug Potion or Glo Germ Gel on their hands, rub it in well like hand lotion on both the front and back of their hands, and then inspect their hands under the black light in a darkened room. After viewing their hands glowing with the lotion, have the students wash their hands again and thoroughly, rubbing for 20 sec with warm water and soap. Cast the black light on their hands so they can see what areas they missed during their hand wash.(The area around the fingernails is frequently missed.)

Next, ask your students if they know the correct way to wash hands when handling food. Remind them that this isn't a silly question. Surgeons take classes on how to wash their hands properly for surgery!

b. (Slide 4) **Proper Steps to Use in Hand Washing** (*Idaho Food Code* 2-301.12) . The key steps in washing hands properly when preparing food for others include the following:
   - Wash only in an approved hand-washing sink. Do not use a food-preparation or equipment-washing sink for hand washing.
   - Use warm running water and soap. Note: cool water makes it difficult to remove grease and oil.
   - Rub hands with soapy lather for at least 10–15 sec. Abrasive rubbing with a rich lather of soap removes bacteria and soil from the skin most effectively. The process of hand washing doesn't destroy pathogens; it lifts them away.
   - Wash wrists and lower arms.
   - Rinse thoroughly under clean, running warm water. Note: incomplete rinsing could allow microbes and soil loosened by washing to remain on the skin. Incomplete rinsing can also cause skin irritation and roughness.
   - Use a paper towel or hot air dryer to dry hands. Note: a multiuse cloth towel is not considered sanitary.
   - Protect your clean hands by using the paper towel to turn off the water faucet and to open the restroom door. Dispose of the paper towel in a waste can outside of the restroom.

c. (Slide 5) **Fingernails and Jewelry**. The *Idaho Food Code* (2-302.11-12) requires nails to be trimmed, filed, and maintained so the edges and surfaces are cleanable and not rough.
   - Long nails (real or artificial) and colored fingernail polish can hide bacteria.
   - Fingernail polish can chip and fall into food.
   - Fingernail polish and/or artificial nails may be worn if gloves are always used to cover the nails.
   - Jewelry may not be worn on the hands or arms, including medical-information jewelry, except for a plain ring.

d. (Slide 6) **Antibacterial Soaps and Waterless Hand Sanitizers**. Antimicrobial soaps do not need to be used for proper hand washing. Waterless hand cleaners may not be used in place of hand washing with soap and water; however, they may be used in addition. (Waterless hand cleaners contain alcohol as the bacteria-killing agent and thus can excessively dry skin if used frequently.)

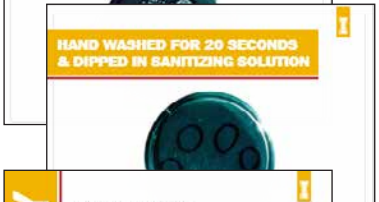
(Slide 7) **"Hand Washing"**
Show the video clip (33 sec) by clicking on the picture on Slide 7. The clip demonstrates the proper way to wash hands.

e. (Slide 8) **Hands Should Be Washed—Or Gloves Changed** (*Idaho Food Code* 2-301.14). Hands should be washed or gloves replaced

- Before working with food.
- After using the restroom, sneezing, or coughing into your hands. Note: it is especially important to wash hands after restroom use, because many foodborne illnesses are passed through the fecal-oral route.
- When changing food-preparation tasks.
- After handling raw meat, poultry, fish, or eggs.
- After touching dirty equipment, dishes, work surfaces, clothing, or washcloths.
- After caring for or handling service animals or aquatic animals.
- After eating food or drinking beverages.
- After touching your ears, mouth, nose, or hair.

Can you think of other times that you should wash your hands?

- After smoking, chewing gum, or using tobacco.
- After taking out the garbage.
- After handling money.



f. (Slide 9) **Microbes on Hands**. The next five slides show photos of an experiment that tested various hand-washing and -rinsing techniques. A person touched an agar plate with their fingertips before and after various treatments. After the agar plates were incubated, the bacteria deposited from the fingertips grew enough to be visible.

(Slide 10) **Unwashed Hand**. The unwashed fingertips contained so many bacteria that the areas they touched on the agar plate grew masses of colonies.

(Slide 11) **Rinsed-only Hand**. A 20-sec cold-water rinse removed large particles of dirt and some bacteria, but millions of bacteria remained. As you can see, rinsing your hands with cold water is not a very good way to clean them.

(Slide 12) **Hand Washed for 20 Sec**. Washing with soap and water for 20 sec reduced the number of bacteria greatly. A longer wash—or a second wash—reduces the bacteria even more.

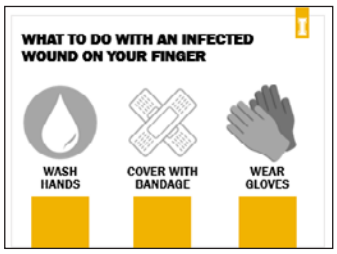
(Slide 13) **Hand Washed for 20 Sec and Then Dipped in Sanitizing Solution**. No bacteria grew on the agar plate after the fingers were dipped in a sanitizing solution. The sanitizer stopped bacterial growth. Some people may not be able to use a sanitizing solution because it may irritate their skin.

(Slide 14) **Sharing Food**
Show the students packages of similarly wrapped and unwrapped

candy pieces (we were able to find wrapped and unwrapped gummi bears.) Ask students to discuss which bag they would prefer to be passed around the classroom for sharing. Discuss how they would feel about taking a piece of food that isn't wrapped. Is cross contamination of germs a concern? Would anyone not take a piece of unwrapped candy because it could carry the bacteria from another person who had handled it? Would they have less concern when they know their classmates are handling food they eat, rather than when strangers are handling it? This activity reinforces that all of us can contaminate food someone else will eat. (Share the wrapped candy with the students.)

g. (Slide 15) **No Bare-Hand Contact Rule**. Idaho regulations (3-301.11 & 3-304.15) require wearing disposable gloves or using suitable utensils such as tongs, deli tissue, or spatulas if you are handling ready-to-eat foods that are not heated before serving. This is the "no bare-hand contact" rule.
   - Hands must be washed before putting on gloves, including when changing to a new pair of gloves.

   - (Slide 16) Gloves must be changed
     - Whenever hands should be washed.
     - If the gloves tear.
     - When beginning a new task.
     - At least every four hours.
     - After handling raw meat.
     - Before handling cooked or ready-to-eat food.



h. (Slide 17) **What to Do with an Infected Wound on Your Hand**. Cuts, wounds, and burns can easily become infected with disease-causing bacteria. Bandages plus disposable or single-use gloves allow an employee with a hand wound or sore to continue to work.

   These are the steps to follow to prevent transferring microbes to food if you are working in food service with an infected sore on your hand:
   - Wash hands well.
   - Cover the affected area completely with a plastic bandage.
   - Wear disposable gloves.

(Slide 18) **"Gloves"**
Show video clip (36 sec) by clicking on the picture on Slide 18. The video clip demonstrates the use of gloves in food service.

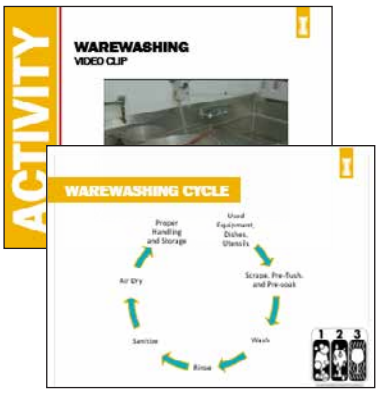
i. (Slide 19) **Personal Hygiene Is More Than Clean Hands**. Cleanliness doesn't mean just having clean hands. Good personal hygiene includes
   - A clean uniform or apron.
   - Clean hair and face.
   - Bathing or showering before going to work.
   - Restraining long hair before starting work.

2. (Slide 20) **Food-Contact Surface Cleaning and Sanitizing**. A food-contact surface is any surface of equipment, utensils, containers, or wrappers that comes in direct contact with food.
   - Food-contact surfaces must be washed, rinsed, and sanitized.
   - Food Servers should not touch the food-contact areas of plates, bowls, glasses, or utensils.

(Slide 21) **Food Server Role Play**
Ask for two volunteers to be customers. Invite them to sit at the table. Tell the class that you will be playing the part of a server in a restaurant. Have the class watch to see if you make any mistakes when you serve the table. Purposely make several mistakes as you serve the table. Here are some mistake ideas:

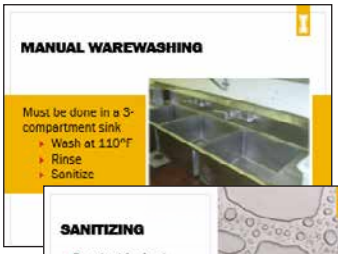
- Carry a stack of cups against your body.
- Hold utensils by food-contact surfaces as you set the table.
- Pick up water glasses by the rim.
- Serve food to customer with your thumbs resting on top of the plates.
- Sneeze into your hands and wipe hands on your apron before serving food.
- Use a glass to scoop ice.
- Wipe up a spill using a towel stored in your apron.

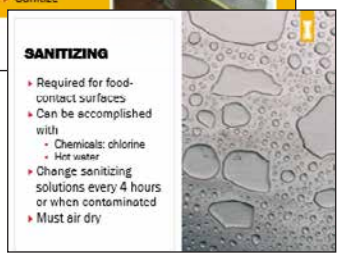
After the activity is over, ask the students if they noticed the server making any mistakes. For each mistake identified, ask them to tell you what should have been done. Also, ask what other food safety mistakes they have noticed when eating at a restaurant.



(Slide 22) **"Manual Ware washing"**
Show video clip (31 sec) by clicking on the picture on Slide 22. The video clip demonstrates the steps of the ware washing cycle.

a. (Slide 23) **Warewashing Cycle**. Dish washing—whether it is done by hand or machine—is called ware washing in the food service business.
   - Start with a clean sink and washing area.
   - Collect dirty equipment and utensils.
   - Scrape off leftover food.
   - Preflush—rinse under running water to remove additional food particles.
   - Presoak—remove food particles that are cooked on or difficult to loosen.
   - Wash in hot water with the correct amount of approved cleaning compound. Use a detergent formulated for the type of washing you are doing--manual or machine.
   - Rinse in clean water.
   - Sanitize with chemicals or hot water (covered in more detail in the next section).
   - Air dry. Do not dry with a towel.
   - Store equipment, dishes, and utensils properly.



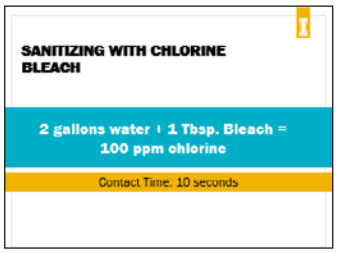


(Slide 24) For manual ware washing, use a three-compartment sink. The first sink is the wash sink with a water temperature of 110°F; the second is the rinse sink; and the third is for sanitizing.

b. (Slide 25) **Sanitizing**. Sanitizing food-contact surfaces is a food-service requirement. Sanitizing must follow cleaning (because soil can inactivate chemical sanitizers). Sanitizing can be accomplished with
   - Chemicals: chlorine, iodine, or quaternary ammonium compounds (only chlorine is covered in *RSFS*; it is the least expensive and most commonly used chemical sanitizer).
   - Hot-water immersion at 171°F (minimum) for 30 sec for manual dish washing.

   A chlorine sanitizing solution can be made up and kept on hand for up to four hours when used in cleaning food-contact surfaces. It should be changed more frequently if it is used often or is contaminated with waste or food particles. Organic material like food bits uses up the germicidal effectiveness of the chlorine bleach.

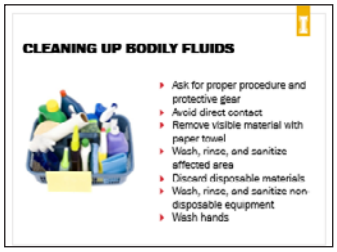
   After the sanitizer has been applied, air dry the dishes or equipment.



(Slide 26) Use of a chlorine sanitizer requires knowledge of its temperature, pH, and concentration. Use of 100 ppm chlorine sanitizing solution is most practical in classrooms. A 100-ppm chlorine sanitizing solution is made by mixing 1 Tbsp of chlorine bleach (5.25%) in 2 gal of clean water. For this solution, the allowable contact time of the sanitizing solution with the dishes or equipment is 10 sec. (Other concentrations and sanitizers may have different contact-time requirements.)

Sanitizing compounds can be dangerous if handled improperly or used incorrectly.
- Ask to be trained on machine operation and washing procedures before working with a ware-washing machine.
- Don't mix any chemicals you are unsure of, especially chlorine bleach and ammonia-based cleaners, to avoid serious health risks.

(Slide 27) **Measuring Chlorine Concentration**
Ask for volunteers to use the test strips to measure the chlorine concentration in each sanitizing solution made up prior to class. Remind them to be careful, because these solutions can bleach clothing if splashed or dripped. Add 2 Triscuits to one of the extra 100 ppm chlorine solutions, and 1 Tbsp of flour to the other one. Wait 5 min before measuring the chlorine concentration with the test strips. The presence of cracker crumbs and flour bind up the chlorine and use up its germicidal properties. Although it was made up as a fullstrength sanitizing solution, it isn't effective now, and needs to be replaced.



c. (Slide 28) **Clean Versus Sanitized**. *Clean* means free of visible soil, but an item could still harbor invisible microbes. *Sanitized* means free of harmful microbes and other contaminants.

(Slide 29) **"Clean vs. Sanitized"**
Show the video clip (54 sec) by clicking on the picture on Slide 29. The video clip discusses the difference between *clean* and *sanitary*.

(Slide 30) **"Sanitizing"**
Show the next video clip (24 sec) by clicking on the picture on Slide 30. This video clip discusses sanitizing.

(Slide 31) **Who's a Star at Cleaning?**
Put GlitterBug or Glo Germ Powder on kitchen surfaces. Have the students clean the kitchen. Then use a UV (black) light to determine the quality of the students' cleaning practices. Afterward, discuss the proper way to clean equipment and food-contact surfaces.

3. (Slide 32) **Correct Garbage/Waste/Bodily Fluid Handling**. It isn't just the shift supervisor, teacher, or last one out the door who handles garbage and waste removal! Every worker needs to know how to handle garbage correctly—both solid and liquid waste.

   a. **Handling Solid Waste**.
      - Take garbage to the dumpster away from a restaurant when kitchen waste cans are full.
      - Put the lid on the dumpster to prevent pests from getting into the garbage.
      - Wash your hands after dumping or handling garbage.
      - Waste cans in the kitchen should be closed-lidded during food preparation.
      - Clean waste cans often.

   b. **Handling Liquid Waste**.
      - Mop water and equipment-cleaning or food-preparation waste liquids must be disposed of in a floor drain or a sink specifically designated for cleanup.
      - Occasionally, you can use a toilet to dispose of kitchen-waste liquids.
      - Avoid a fly-breeding problem by not dumping liquid waste just outside the back door.

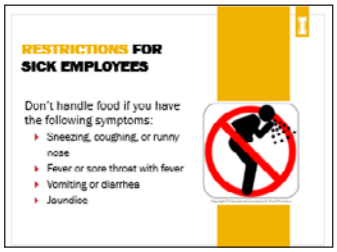
   c. (Slide 33) **Cleaning Up Bodily Fluids**. Unfortunately, people become ill and accidents happen. It may be your responsibility to clean up bodily fluids (urine, feces, vomit, or blood). Bodily fluids have the potential to spread germs. Germs in vomit and diarrhea may travel through the air on tiny droplets, so it is very important to clean them up quickly. Follow your food establishment's procedure and use the proper equipment if you are requested to do this task. Here are a few general guidelines:
      - Ask for and use protective equipment.

- Avoid direct contact with bodily fluids by using disposable gloves, mask, and apron.
- Remove all visible material using paper or single-use towels.
- Wash the area with soap or detergent, rinse, then sanitize with a strong bleach solution. Bleach must contact the affected area for at least 10 min.
- Discard all disposable materials in a plastic bag.
- Wash nondisposable cleaning equipment; then rinse and sanitize with a strong bleach solution.
- Wash your hands after removing gloves.

(Slide 34) **"Reporting Illnesses"**
Show the video clip (35 sec) by clicking on the picture on Slide 34. The video clip designates when employees should not work because of sickness.

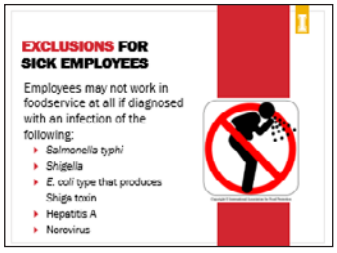
4. **Restrictions and Exclusions for Sick Employees.** In food-service work, healthy workers are essential, because sick people can pass disease-causing bacteria and viruses on to others. There are two classifications of illnesses:
   - Illnesses that restrict employees from food handling (can work at other tasks).
   - Illnesses that exclude employees from the food-service establishment.

   In both cases, illness should be reported to the food-service supervisor.



   a. (Slide 35) **Work Restrictions for Sick Employees.** Although other tasks are permitted, workers may not handle food or clean equipment and utensils if they have any of the following symptoms:
      - Sneezing, coughing, runny nose
      - Fever or sore throat with fever
      - Vomiting or diarrhea
      - Jaundice (yellowing of skin and eyes; this is a symptom of Hepatitis A)

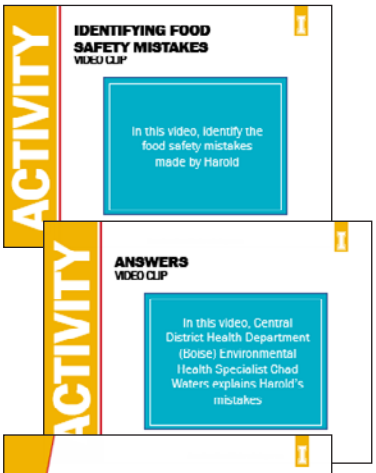
      (Note: if working in a facility that houses people who are at higher risk of foodborne disease, such as a hospital or a nursing home, persons exhibiting the above symptoms may not work at all.)



   b. (Slide 36) **Work Exclusions for Sick Employees.** Workers may not work in food service at all if they have:
      - *Salmonella* typhi
      - *Shigella*
      - *E. coli* O157:H7
      - Hepatitis A
      - Norovirus

Before being allowed to return to work, they must have written medical documentation that verifies they are no longer infectious. Some of the above restrictions are even more stringent for those working with high-risk populations. Workers with a foodborne illness cannot work in hospitals or nursing homes while contagious.

(Slide 37) **Sick Employees—When Should They Avoid Food Handling?**
Give the worksheet to students and ask them to work individually or in small groups to answer the question by circling the answers that describe when an employee should not work around food. Discuss the correct answers: 2, 3, 5, 7, 9 and 13.
Notes: #8—An employee with an infected finger shouldn't work unless their hands are washed, the wound bandaged, and the employee wears gloves.
#10—A worker should report being ill rather than work if s/he is coughing or sneezing or his or her nose is dripping. If a person takes medication to control these symptoms and they are effective, it is acceptable for that employee to work.



(Slide 38) **"Identifying Food Safety Mistakes"**
(The video clip will appear with a click.) Show the video clip (1:10) by clicking on the picture in Slide 38. The video clip tells the story of Harold, who works as a cook at a food establishment. Have students write down food-safety mistakes that are made in the video.

(Slide 39) **"Answers"**
(The video clip will appear with a click.) Show the video clip (39 sec) by clicking on the picture in Slide 39. The video clip highlights the food-safety mistakes made in the Harold story clip. See which student was able to identify the most food-safety mistakes.

(Slide 40) UNDERSTANDING CHECK

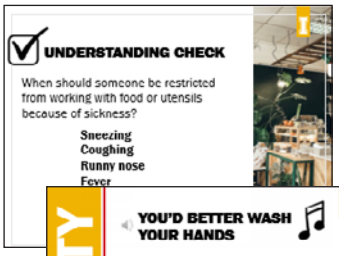
(Slide 41) **Question**: How long should you wash your hands?
Answer: 20 sec.

Question: When should gloves be worn?
Answer: When working with ready-to-eat foods that will not be heated before serving or to avoid bare-hand contact. Spatulas, tongs, and deli tissue may also be used to avoid bare-hand contact.

Question: What precautions should be taken with an infected cut on your hand?
Answer: Wash hands, bandage the cut, and wear gloves.

(Slide 42) **Question**: What are the most important steps in the warewashing cycle?
Answer: Scrape, wash, rinse, sanitize, air dry, store.

Question: How much bleach should be added to 2 gallons of water to make a 100-ppm chlorine sanitizing solution?
Answer: 1 Tablespoon



(Slide 43) **Question**: When should someone be restricted from working with food or food-contact surfaces because of sickness?
Answer: If they are sneezing, coughing, or vomiting or if they have a runny nose, fever, diarrhea, or jaundice.

(Slide 44-46) **You'd Better Wash Your Hands (2:20)**
This song stresses the importance of hand washing to reduce contamination and includes a description of proper hand-washing techniques. This reinforces the hand-washing demonstration.

YOU'D BETTER WASH YOUR HANDS ("I Want to Hold Your Hand" by The Beatles)

Oh yeah, I'll tell you something
I think you'll understand
For the sake of sanitation
You'd better wash your hands
You'd better wash your hands
You'd better wash your hands

Before, and after meals
And when you use the can
Soap and water, for twenty seconds
Should be part of your plan
That's how you wash your hands
That's how you wash your hands

And when you're finished you'll feel happy inside
Washin' so thorough that microbes
They can't hide, they can't hide, they can't hide
Make sure you clean your nails
And dry with towel or fan
Prevent those nasty microbes
From spreadin' 'cross the land
You'd better wash your hands
You'd better wash your hands

And when you're finished you'll feel happy inside
Washin' so thorough that microbes
They can't hide, they can't hide, they can't hide
Oh yeah, I'll tell you something
I think you'll understand
For the sake of sanitation
You'd better wash your hands
You'd better wash your hands
You'd better wash your hands

Additional related activities not included in the lesson:

- Ask students to monitor a restroom in school, at the mall, in a business, or in a restaurant to see how many people using the facilities wash their hands properly.
- Assign students working in small groups to produce a 20-second TV public service announcement or ad for a commercial cleaning product or piece of equipment. Video these and show them on your school's channel one program.

REFERENCES

- *Cleanliness: You and Your Kitchen*, Practical Food Safety for Food Service Supervisors Training Program, University of Idaho Extension, 1996.
- Food Marketing Institute. *Food Handler's Pocket Guide for Food Safety and Quality*. Washington, DC: Food Marketing Institute, 2000.
- *Food Safety Education: Community Service Learning Curriculum: A Program Using the Community Service Learning Model to Teach Youth Food Safety*. Volume 2: Teacher's Guide. USDA funded project #96-EFSQ-14 169. University of Rhode Island Cooperative Extension and University of Vermont Extension.
- *Idaho Food Code*. http://healthandwelfare.idaho.gov/Health/FoodProtection/IdahoFoodCode/tabid/765/Default.aspx.
- McSwane, D., N. Rue, and R. Linton. *Essentials of Food Safety and Sanitation*. Upper Saddle River, NJ: Prentice Hall, 1998.
- National Restaurant Association Educational Foundation. *ServSafe Coursebook*. Upper Saddle River, NJ: Prentice Hall, 2000.
- Sanitizer test strips are available from restaurant supply stores or contact your school district food service supervisor to see if strips are available to purchase.
- Schuler, G.A., and J.A. Christian. *Food, Hands and Bacteria*. The University of Georgia College of Agricultural and Environmental Sciences Cooperative Extension System, Bulletin 693 (2010). https://www.chilledfood.org/wp-content/uploads/2015/07/Food-Hands-Bacteria.pdf.
- Supplies for the black light hand-washing activity may be purchased from Brevis, 225 West 2855 South, Salt Lake City, UT 84115; ph: 800-383-3377; fax: 801-485-2844; email: info@brevis.com; website: www.brevis.com or GloGerm, 1101 S. Murphy Ln., Moab, UT 84532; ph: 800-842-6622; fax: 435-259-5930; email: info@glogerm.com; website: www.glogerm.com. In addition to the lotion, powder, and UV lights, teaching materials and a video are available, as well as promotional materials such as balloons, stickers, T-shirts, mugs, and posters.
- Video clip "Clean vs. Sanitized" from *First Day... Every Day: Basics for Food Service Assistants, Part 1*, October 1997. Courtesy of the National Food Service Management Institute and the University of Mississippi, 800-321-3054, www. nfsmi.org.
- Video clips "Hand Washing,""Gloves,""Warewashing,""Sanitizing," "Reporting Illness,""Identifying Food Safety Mistakes," and "Answers" used from Central District Health Department Food Safety Videos, Parts 3 and 4, http://www.cdhd.idaho.gov/eh-food-training.php.