



INFECTION PREVENTION IN THE KITCHEN: KEY AREAS OF FOCUS FOR ENSURING FOOD SAFETY IN YOUR FACILITY

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<https://spice.unc.edu/>
<https://spice.unc.edu/ask-spice/>

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OBJECTIVES



Describe outbreaks of foodborne illness



Identify state and federal regulations requiring food safety oversight.



Describe areas of Infection Prevention/Control Oversight of Food Services recommended by APIC



Discuss employee health implications for food service employees



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FOODBORNE ILLNESS: A PROBLEM?

► ¹Impact of foodborne illness:

- CDC estimates 48 million people/year affected
- 128,000 require hospital treatment
- 3,000 deaths

► ²Definition:

- "An incident in which two or more persons experience a similar illness from the ingestion of a common food"



¹<https://www.cdc.gov/foodborneburden/index.html>

²https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html

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FOODBORNE ILLNESSES: WHICH IS THE MOST COMMON?

- Norovirus
- Hepatitis A
- Campylobacter
- Salmonella
- E. coli
- Vibrio

- Norovirus is the leading cause of vomiting and diarrhea, and foodborne illness in the United States.
- People of all ages can get infected and sick with norovirus.
- Proper handwashing and other simple steps can help prevent getting and spreading norovirus.

<https://www.cdc.gov/norovirus/about/index.html>

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CDC typically coordinates between 17 and 36 investigations of foodborne illnesses involving multiple states each week. The table below shows the number of active CDC investigations for *Campylobacter*, Shiga toxin-producing *E. coli*, *Listeria monocytogenes*, and *Salmonella*.



Germ	Number of Active Multistate Investigation (9/25/24)
Campylobacter	0
E. Coli	1
Listeria	4
Salmonella	16

<https://www.cdc.gov/foodborne-outbreaks/active-investigations/index.html>



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STEPS IN A FOODBORNE OUTBREAK INVESTIGATION



► Detect Outbreak

- Surveillance for illness nationwide

► Find Illness

- Define who will be included, find additional cases

► Generate Hypotheses

- Interview people who get sick

► Test Hypotheses

- Use statistical analysis/food testing

► Solve Outbreak

- Identify contaminated food and point of contamination

► Control Outbreak

- Recalls, cleaning and closing of facilities and warning public

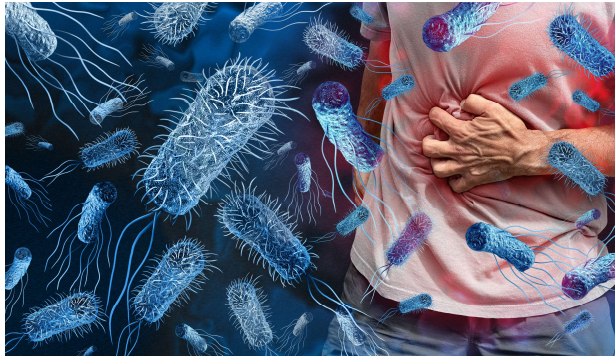
► Decide End of Outbreak

- No more new illnesses and the contaminated food is no longer available



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MAJOR CAUSES OF FOODBORNE ILLNESS- FIVE MAJOR



<https://www.fda.gov/food/fda-food-code/food-code-2022>

- ▶ Improper temperature storage
- ▶ Inadequate cooking, such as undercooking raw shell eggs
- ▶ Contaminated equipment
- ▶ Food from unsafe sources, and
- ▶ Poor personal hygiene



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JOINT COMMISSION CITATIONS 1Q 2024

▶ IC 02.02.01

- ▶ Soup bowls stacked in drying area after washing, still wet (Moderate, Pattern level finding)
- ▶ Dry glasses/cup ware stored in proximity to utility/handwashing sink without adequate protection (Moderate Limited finding)

▶ PC 02.02.03

- ▶ Patient food refrigerator not monitored
- ▶ Patient food refrigerator not cleaned (visible food spills)
- ▶ Patient food not dated when stored in patient food refrigerator
- ▶ Cardboard found stored on floor in walk in kitchen refrigerator
- ▶ Dish machine water temperature not checked according to manufacturer instructions for use

*Reference: Slide from Timothy Bowers MS CIC FAPIC CPHQ
APIC-NC Fall conference 9/10/2024*



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KEY CONCEPTS: NUTRITION SERVICES

- Standards for purchasing and receiving food
- Maintain clean and functional work areas
- IPC Oversight of policies and procedures
- Cleaning, disinfection, and sanitation practices
- Compliance with local health department regulations
- Infection Prevention and Control education for staff



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ENVIRONMENTAL CONCERNS

- ▶ Water supply protected from contamination-avoid cross connectors-physical link between drains, waste pipes and potable water
- ▶ Plumbing fixtures clean
- ▶ Poisonous or toxic materials (insecticides, detergents, disinfectants) clearly labeled and stored separately from food storage or preparation area
- ▶ Lighting, ventilation and humidity controls-prevent condensation of moisture and growth of mold
- ▶ HVAC designed and installed so that air intake and exhaust vents do not contaminate food, contact surfaces or utensils

<https://text.apic.org/toc/infection-prevention-for-support-services-and-the-care-environment/nutrition-services>



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IP KITCHEN INSPECTION: 10 KEY AREAS AT A GLANCE

1. Receiving and storage areas are clean and organized
2. Workspaces and preparation areas are clean
3. Equipment is clean and properly maintained
4. Food is stored in ways that prevent cross contamination
5. Fridge and freezer logs are complete, and action plans are present on those that have out of range entries



<https://www.fda.gov/food/guidanceregulation/haccp/>



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IP KITCHEN INSPECTION: 10 KEY AREAS AT A GLANCE...continued

6. Staff can demonstrate Hazard Analysis Critical Control Point (HACCP) procedures for testing and evaluating safety of food
7. Safety measures for serving food are clearly visible
8. No apparent evidence of cross contamination in kitchen workflow
9. Life safety and staff hygiene equipment is clearly labeled and functional
10. Staff are visibly healthy and can speak to work restriction requirements



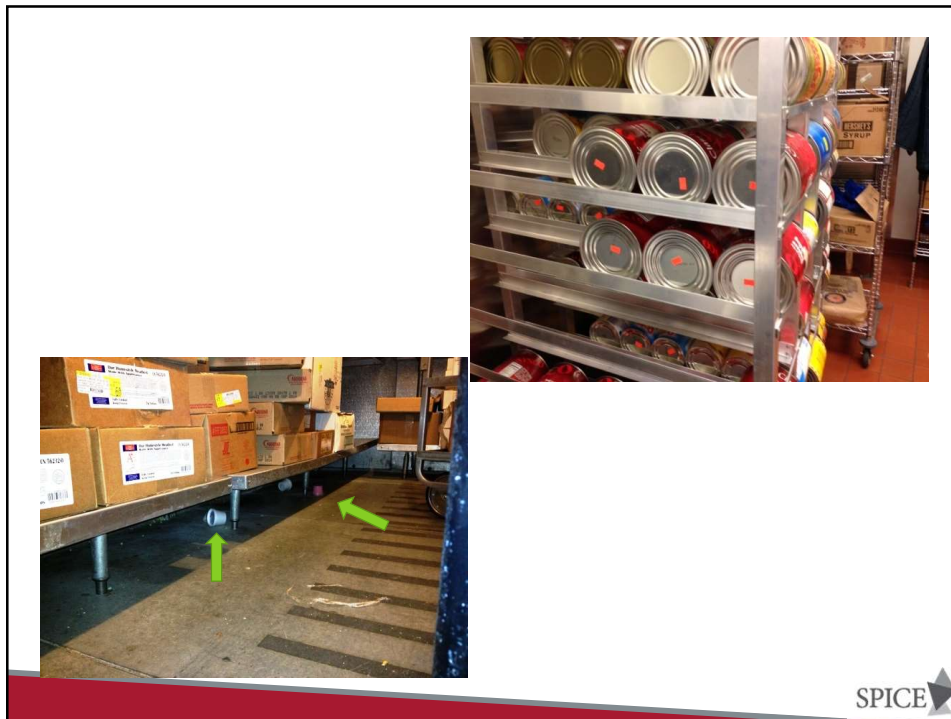
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POLICIES-STORAGE AND RECEIVING

- Containers and waste boxes are broken down and disposed of quickly
- Food storage areas are clean with items not found within 6 inches from floor and 18 inches from ceiling (allowed to have slatted bottom shelf)
- Food is inspected and approved when it is brought into the facility.
 - Ensure logs of testing are kept and staff know criteria for accepting and rejecting product to prevent problems from intrinsic contamination.

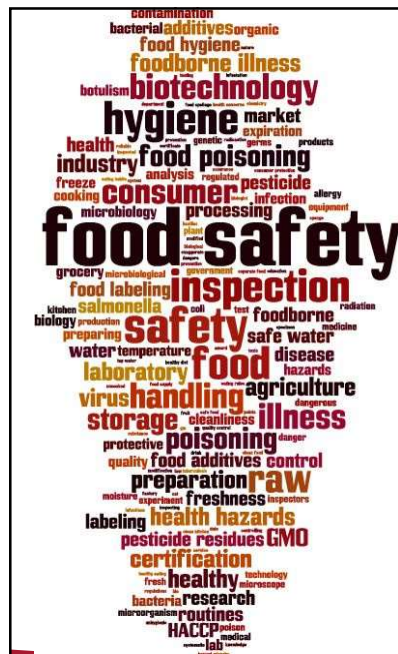


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- The image shows a computer monitor displaying a web-based monitoring interface. The browser's address bar shows a URL starting with "http://". The page title is "UWC Hospital". The interface displays a "Group: All Sensors" section with a table of sensor data. The table has four columns: "Air Column #1 Temperature", "Air Column #2 Temperature", "Air Column #3 Temperature", and "Ambient Humidity Sensor". Each column contains a large temperature reading, a range, a status (e.g., "LOW BATTERY"), and a timestamp. The "Ambient Humidity Sensor" column is empty. The interface also includes a "Status Overview" section with a table of sensor data, a "Current CPU Temperature Under 100°C/Watt", and a "CPU Temperature Under 100°C/Watt" section. The monitor is part of a rack of equipment, with other monitors visible in the background.
- | Group: All Sensors | | | |
|---|---|---|---|
| Air Column #1 Temperature
36.7°F
Range: 35.0°F - 38.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-046 | Air Column #2 Temperature
38.7°F
Range: 35.0°F - 42.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-048 | Air Column #3 Temperature
25.3°F
Range: 22.0°F - 27.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-049 | Ambient Humidity Sensor
Range: 35.0°F - 65.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-050 |
| LOW BATTERY | LOW BATTERY | | |
| Status Overview
33.8°F
Range: -40.0°F - 120.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-042 | Status Probe #1
34.0°F
Range: 33.0°F - 40.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-043 | Status Probe Number
35.8°F
Range: 33.0°F - 40.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-044 | Cooling
41.7°F
Range: 32.0°F - 45.0°F
10/22/2011 11:55:00 AM
Sensor ID: 123-045 |
| Current CPU Temperature Under 100°C/Watt | Current CPU Temperature Under 100°C/Watt | Current CPU Temperature Under 100°C/Watt | Current CPU Temperature Under 100°C/Watt |
| 40.6°F
Range: 35.0°F - 45.0°F | 37.9°F
Range: 35.0°F - 45.0°F | 45.3°F
Range: 35.0°F - 45.0°F | 41.7°F
Range: 35.0°F - 45.0°F |



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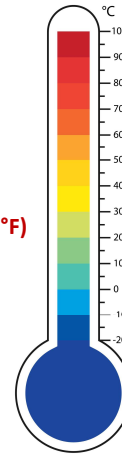
HOLDING AND SERVING PREPARED FOOD

- ▶ Cold food must be refrigerated to keep temperature less than 5°C (41°F)
- ▶ Frozen food must remain frozen at -18°C (0°F)
- ▶ Hold hot food, for serving, at above 60°C/140°F (or higher)

AVOID THE DANGER ZONE (41°F – 135°F)
temperature range for rapid multiplication of virtually all bacteria associated with foodborne disease

Cooked food must be cooled from 135°F to 41°F within 6 hours

- ▶ 135°F - 70°F in 2 hours (rapid cool)
- ▶ 70°F – 41°F in 4 hours



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HACCP SAFETY MEASURES FOR SERVING

- ▶ Visualize that prepared food is transported to other areas in closed food carts or covered containers within proper time limit.
- ▶ Observe that food is served with clean tongs, scoops, forks, spoons, spatulas, or gloves to avoid direct contact with food.
- ▶ When checking temperatures on foods ensure that thermometers are cleaned appropriately before and after temp.
- ▶ Ask how foods prepared to be served later are cooked, chilled, and reheated.
- ▶ Staff should be interviewed on process for cooling potentially hazardous foods (i.e. use of blast chiller)

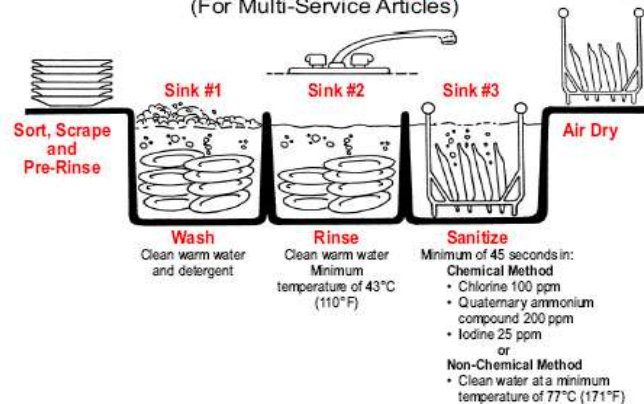


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3-SINK METHOD OF MANUAL WARE WASHING AND SANITIZING

3-Sink Dishwashing Method

(For Multi-Service Articles)



<http://www.wdgpulichealth.ca/?q=node/435>

www.wdghu.org



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What about ice??

- Use only potable water to manufacture ice
- Store ice in a covered ice bin, keep covered when not in use
- Hand hygiene prior to scooping
- Use non-breakable scoop
 - Never store in or on top of bin
 - Clean and sanitize daily (dish machine)
- No food or beverages on top of bin
- Frequently clean the ice bin
- Ice used to display cold foods is not to be used for any other purpose



<https://text.apit.org/toc/infection-prevention-for-support-services-and-the-care-environment/nutrition-services>



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WHEN- Should Food Employees Wash Their Hands

- When entering a food preparation area;
- Before putting on clean, single-use gloves for working with food and between glove changes;
- Before engaging in food preparation;
- Before handling clean equipment and serving utensils;
- When changing tasks and switching between handling raw foods and working with RTE foods;
- After handling soiled dishes, equipment, or utensils;
- After using the toilet;
- After coughing, sneezing, blowing the nose, using tobacco, eating, or drinking;

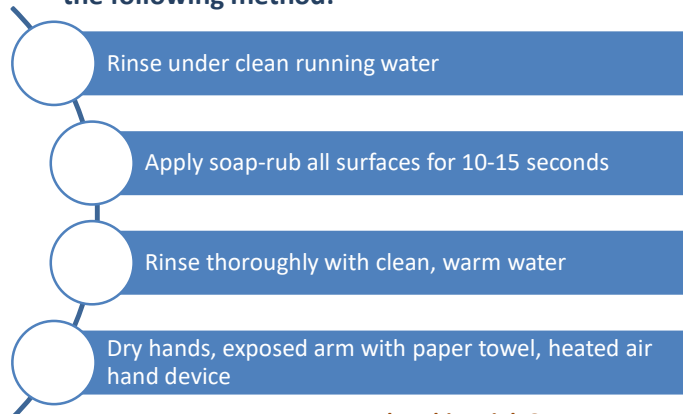


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HOW-Steps to Follow-HH

Clean hands and exposed portions of arms, including surrogate prosthetic devices for hands and arms, for at least 20 seconds by the following method:

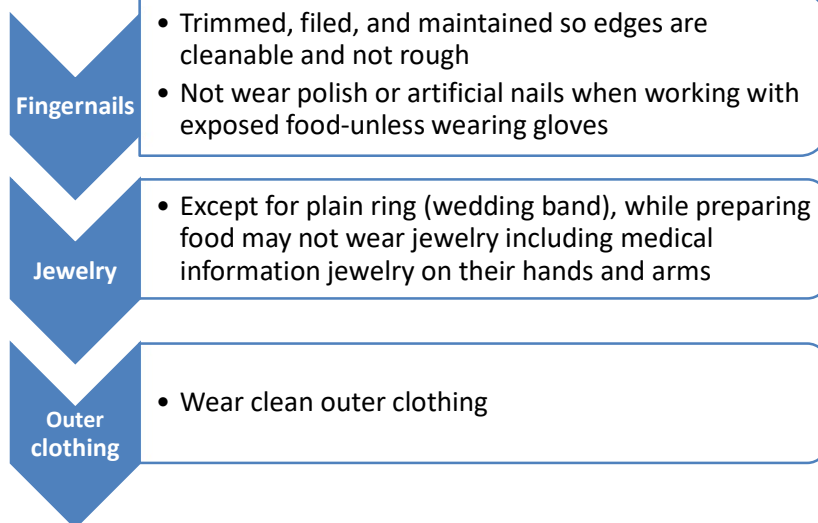


Hand antiseptics can be applied **ONLY** after this procedure.

Handwashing sink ONLY

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HEALTH OF FOOD SERVICE STAFF

► All food services employees **must**
report any of the following:

► Symptoms:

- Vomiting
- Diarrhea
- Jaundice
- Sore throat with fever OR
- A lesion containing pus such as a boil or infected wound that is open or draining



- Reportable diagnosis
- Reportable past illness
- Reportable history of exposure

<https://www.fda.gov/food/fda-food-code/food-code-2022>

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Employee Health Policy Agreement

Reporting: Symptoms of illness

I agree to report to the manager when I have:

1. Diarrhea
2. Vomiting
3. Jaundice (yellowing of the skin and/or eyes)
4. Sore throat with fever
5. Infected cut or wounds, or lesions containing pus on the hand, wrist, an exposed body part (such as boils and infected wounds, however small).

Reporting: Diagnosed illnesses

I agree to report to the manager when I have:

1. Norovirus
2. Salmonella Typhi (typhoid fever)
3. Shigella spp. infection
4. E. coli infection (Escherichia coli O157:H7 or other EHEC/STEC infection)
5. Hepatitis A

Note: The manager must report to the Health Department when an employee has one of these illnesses.

Reporting: Exposure of illness

I agree to report to the manager when I have been exposed to any of the illnesses listed above through:

1. An outbreak of Norovirus, typhoid fever, Shigella spp. infection, E. coli infection, or Hepatitis A.
2. A household member with Norovirus, typhoid fever, Shigella spp. infection, E. coli infection, or Hepatitis A.
3. A household member attending or working in a setting with an outbreak of Norovirus, typhoid fever, Shigella spp. infection, E. coli infection, or Hepatitis A.

Exclusion and Restriction from Work

If you have any of the symptoms or illnesses listed above, you may be excluded* or restricted** from work.

*If you are excluded from work you are not allowed to come to work.

**If you are restricted from work you are allowed to come to work, but your duties may be limited.

Returning to Work

If you are excluded from work for having diarrhea and/or vomiting, you will not be able to return to work until more than 24 hours have passed since your last symptoms of diarrhea and/or vomiting.

If you are excluded from work for exhibiting symptoms of a sore throat with fever or for having jaundice (yellowing of the skin and/or eyes), Norovirus, Salmonella Typhi (typhoid fever), Shigella spp. infection, E. coli infection, and/or Hepatitis A, you will not be able to return to work until Health Department approval is granted.

Agreement

I understand that I must:

1. Report when I have or have been exposed to any of the symptoms or illnesses listed above; and
2. Comply with work restrictions and/or exclusions that are given to me.

I understand that if I do not comply with this agreement, it may put my job at risk.

Food Employee Name (please print) _____

Signature of Employee _____ Date _____

Manager (Person-in-Charge) Name (please print) _____

Signature of Manager (Person-in-Charge) _____ Date _____

<https://ehs.dph.ncdhhs.gov/faf/docs/foodprot/EmployeeHealthPolicyTrainingDocumentFinalWebVersion-2012.pdf>

► This agreement form was made for food handlers that prepare and serve food for pay, that are regulated as food establishments by the local health departments. The requirements on that form come directly out of the FDA Food Code. This agreement covered food handlers at restaurants, food trucks, nursing homes and hospitals, grocery stores, and any other location where food is offered for pay.

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A KITCHEN INSPECTION IS NOT THE ONLY IMPORTANT PIECE

- ▶ Education
- ▶ Collaboration with Food Services Management
- ▶ Formal oversight process
 - ▶ Risk Assessment and reporting to Infection Control Committee
- ▶ Performance Improvement /Continuous Readiness Mindset
 - ▶ IPC inspections provide Food Services staff with good opportunity to practice for regular CDPH inspections
 - Consistency of policies and procedures



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TIPS FOR IPC EDUCATION FOR FOOD SERVICES STAFF

- ▶ Educate Food Services Staff
 - ▶ Upon Hire
 - ▶ Annually
 - ▶ As needed based on survey or assessment results
- ▶ Tailor IPC material to Food Services Staff – focus on rationale for preventative steps
- ▶ Discuss basic general principles of IPC as they relate to patient food services
 - ▶ Hand Hygiene
 - ▶ Cleaning and Disinfection
 - ▶ Standard Precautions



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TIPS FOR STRENGTHENING POLICIES AND PROCEDURES

- ▶ Incorporate food services specific issues in policies
 - ▶ Care and Maintenance of Vending Machines / Ice Machines
- ▶ Ensure food handling policies are consistent with facility IPC principles and policies
- ▶ ***Ensure policy for restriction of ill food service workers is incorporated into EHS and IPC policy***
- ▶ Ensure facilities has proper policy for care and maintenance of food services equipment



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IMPORTANT LINKS

FDA Food Code

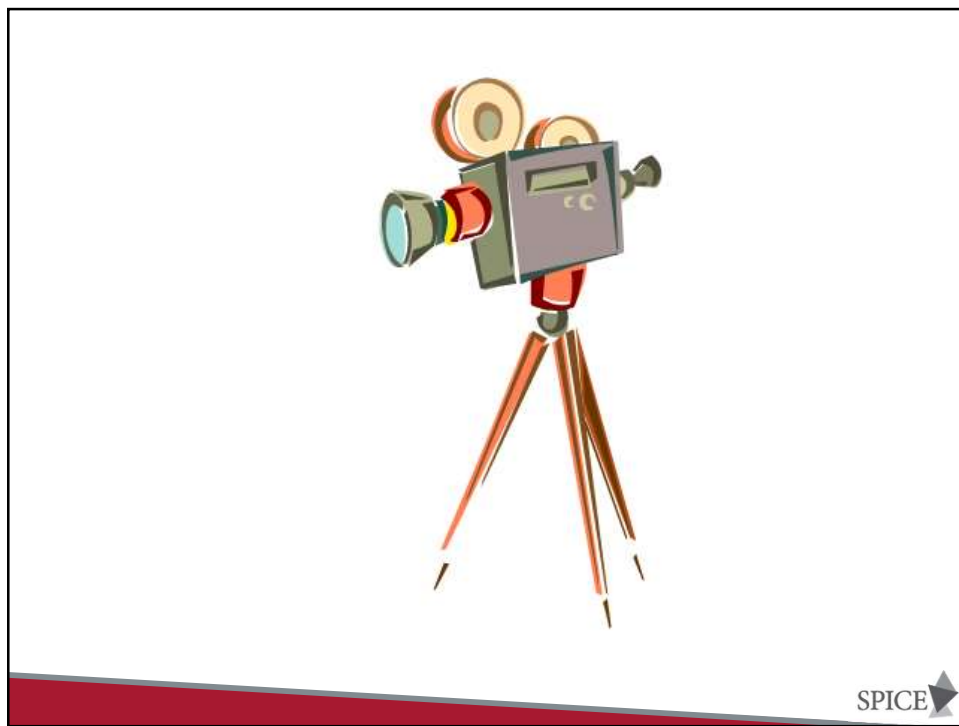
<https://www.fda.gov/food/retail-food-protection/fda-food-code>

HACCP Guidelines – FDA Food Guide Annex 5

<http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/ucm089302.htm>



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