

The Centers for Disease Control and Prevention's Vessel Sanitation Program is proud to bring to you the following session:

Foodborne Illness

While this presentation is primarily intended for cruise vessels under the jurisdiction of the Vessel Sanitation Program it may also be used by anyone who is interested in this topic.

This session should not be used as a replacement for existing interactive training but should be used as an adjunct to a comprehensive training program.



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Foodborne Illness

Causes and Prevention

Vessel Sanitation Program

2007



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Learning Objectives

- List individuals who are considered “high risk”
- List the ways in which we can control outbreaks of illness associated with spore forming bacteria
- Give an example of a bacteria that produces a heat labile, fatal toxin
- Give an example of a bacteria that produces a heat stable toxin



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Learning Objective

- List the pathogens associated with foodborne illness and the control measures associated with each
- List some of the signs and symptoms supervisors should observe food employees for
- List the isolation time for food employees and non-food employees



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High Risk Individuals



- Elderly
- Very Young
- Immunocompromised
- Pregnant Women
- Underlying Illness



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Carriers

- Asymptomatic carriers
 - Mary Mallon-Salmonella typhi
- Symptomatic carriers

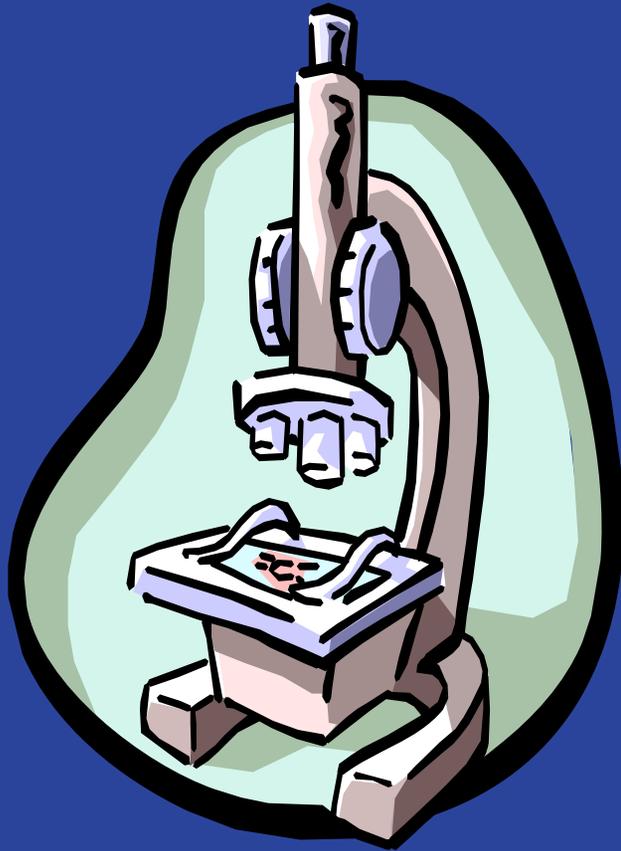


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Pathogen Categories



- Viruses
- Bacteria
- Parasites



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Transmission of Pathogens

- Fecal contamination
- Cross-contamination
- Animals or animal waste
 - Flies, roaches, rodents, birds, cattle, etc

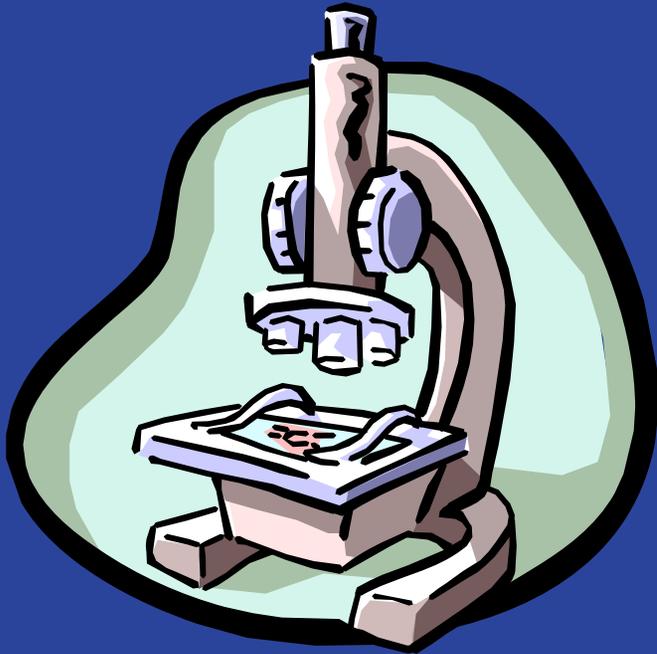


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Major Causes of Foodborne Illness



- Improper holding
- Improper cooling
- Improper cooking/reheating
- Infected employees
- Poor personal hygiene
- Cross-contamination



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Norovirus (Norwalk Virus)

- Foods contaminated by feces
 - Source
 - Food handler
- Water

Personal hygiene, source protection



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Hepatitis A Virus

- Foods contaminated by feces
 - Source
 - Food handler
- Water

Personal hygiene, source protection



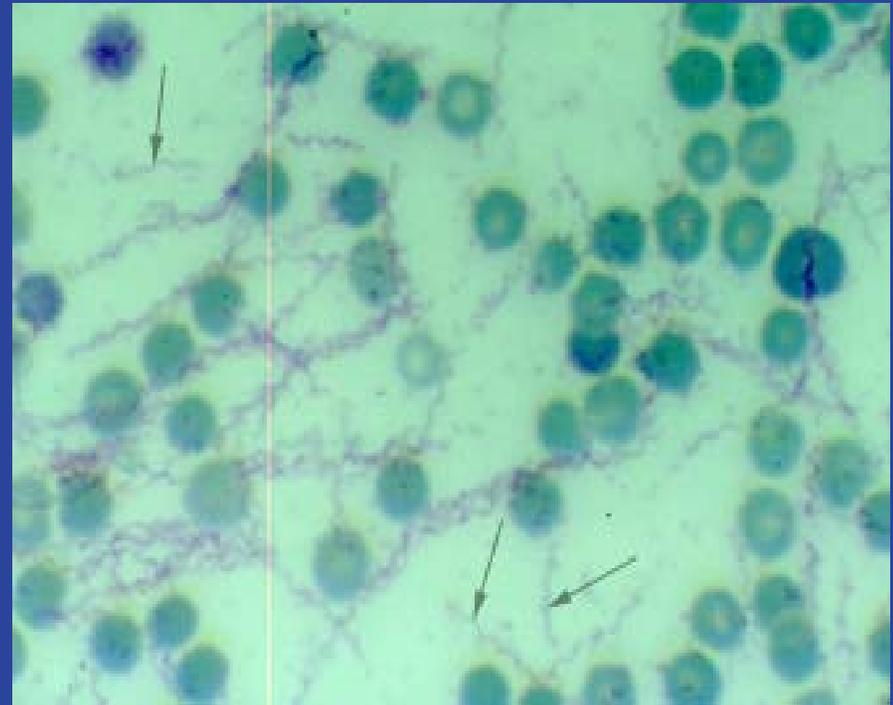
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Bacterial Illness Characterization

- Infection
- Intoxication
- Toxicoinfection



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Clostridium botulinum

- Intoxication
- Low acid canned foods
- Oil infused with garlic
- Foil wrapped baked potatoes
- Can be fatal
- Spore former

Prohibit home canned foods, temperature control



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Campylobacter jejuni

- Infection
- Food
 - poultry
- Raw milk

Cross-contamination, Cooking, Hands



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Staphylococcus aureus

- Intoxication
- Cold protein salads
- Meats
- Cream pastries
- Humans-skin

Time and temperature control, personal hygiene



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E. Coli 0157:H7

- Toxicoinfection
- Ground beef
- Raw milk
- Water

Cooking, cross-contamination, personal hygiene



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Clostridium perfringens

- Toxicoinfection
- Spore former
- Meats
- Gravies
- Stews

Time/temperature (cooking, cooling, reheating)



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Salmonella spp

- Infection
- Meats, poultry, eggs
- Humans and other animals are reservoirs

Cooking, cross-contamination, personal hygiene



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Listeria monocytogenes

- Infection
- Soft cheeses (raw milk)
- Cold cuts, hot dogs
- Unpasteurized milk
- Grows at less than 5 C

Cross-contamination, pasteurization



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Toxins

- Fish Toxins
- Shellfish Toxins
- Aflatoxins



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Seafood Toxins

- Heat stable
- Toxic algae
- Spoilage bacteria



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Plant Toxins

- Mushrooms-certain species
- Aflatoxins-fungi
contaminated grains
- Hemlock, Jimson Weed



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Parasites

- Anisakis simplex and related worms
- Herring, cod, haddock, fluke, pacific salmon, flounder
- Trichina
- Wild boar, bear, moose



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Toxic Chemicals and Metals

- Metals (zinc, copper, antimony, lead,)
- Cleansers, sanitizers, polish, etc
- Pesticides



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Physical Contaminants

- Glass
- Metal
- Hair
- Nail polish
- Bandages
- Cigarette butts



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Allergens

- Milk
- Eggs
- Legumes
- Tree nuts
- Wheat
- Crustacean
- Fish
- Mollusks

Undeclared allergens result in thousands of recalls/year



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Food Employee Health



- Salmonella typhi
- Shigella spp.
- Escherichia coli O157:H7
- Hepatitis A virus
- Norovirus (2005 FDA Food Code)
- Others



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Observe Food Employees For Signs and Symptoms

- Cuts, sores, open wounds
- Diarrhea or vomiting
- Jaundice
- Coughing, sneezing, nasal discharge



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Food Employee Restriction

- Diagnosis
- Suspect
- Symptomatic
- Exposed

- Return to Work
 - Follow-up required
 - Free from symptoms
 - In writing



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Isolation-How Long?

- Food Employees
 - 48 hours
- Non-food Employees
 - 24 hours
- 2005 FDA Food Code
 - Provides more detailed information on exclusions and restrictions



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Asymptomatic cabin mates and immediate contacts

- Restrict exposure
- Verbal interviews
- Advise on hygiene
- Continue for 48
hours after onset
- Document



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Passenger Illness

- Encourage isolation for 24 hours
- Handwashing tips and personal hygiene information sheet



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References and Resources

- www.cdc.gov
 - www.cdc.gov/nceh/vsp
- www.fda.gov
 - www.cfsan.fda.gov
 - Bad bug book
- www.usda.gov
 - www.fsis.usda.gov



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