

Environmental Health Training in Emergency Response

Module 5—Food Safety



Objectives

- Explain the role of environmental health in food safety
- Describe food safety preparedness considerations
- Discuss operational considerations for mass feeding



Courtesy of CDC



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Objectives (continued)



Courtesy of CDC

- Discuss the methods that may be used for assessing food safety
- Describe the considerations in reopening a food establishment
- Discuss actions that environmental health professionals can take to promote food defense



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Environmental Health Role

- Ensure safe food supply
- Respond to inquiries and complaints
- Provide food safety information, training and education
- Conduct needed interventions
- Reopen food establishments
- Reduce risk of foodborne illness



Courtesy of CDC



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Reasons for Concern



Courtesy of FEMA

- Disrupted utilities
- Contaminated food
- Dependence on emergency food supplies
- Donated food and food sources
- Food salvaging
- Affected workforce
- Varied responder readiness
- Increased risk of foodborne illness
- Intentional acts



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Key Partners

- Emergency management agency (EMA)
- State, local and tribal agencies
- Federal agencies – FEMA, FDA, CDC, USDA, DOD
- Non-governmental organizations (NGOs)
- Law enforcement
- Food industry
- Media



Courtesy of FEMA



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Safety



Courtesy of FEMA

- Utilities dangers
- Structural damage
- Broken glass
- Poor air quality
- Other dangers



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Preparedness

- Food safety plan
- Equipment
- Guidance
- On-call & contact lists
- Training, education & exercises



Courtesy of FEMA



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Preparedness (continued)

Quaternary Ammonia Test Strips



Chlorine Test Strips



Thermocouple Thermometer



Thermister



Equipment

- Temperature measurement
- Alcohol swabs
- Sanitizer measurement
- T-strips
- Flashlight
- GPS
- Disposal gloves
- Handwashing signs
- Permit modification forms
- Closure signs



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Preparedness (continued)

Guidance

- FDA Food Code 2009
- State/local food codes
- State/local response plans
- Guidance and fact sheets
- Other References



Courtesy of FDA



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Preparedness (continued)



Courtesy of FEMA

Other considerations

- Plan for blocked roadways and missing signs
- Maps and geocoding
- List of establishments
- Response capacity



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Retail Food Industry

- Response plans
- Compromised utilities
- Food contamination
- Food defense



Courtesy of FEMA



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Mass Feeding Considerations



Courtesy of FEMA

Food preparation options

- Prepackaged foods
- Charcoal and gas grills
- Electric generators



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Mass Feeding Considerations (continued)

Toilets

- Indoor toilets – water for flushing
- Portable toilets with handwashing



Courtesy of CDC



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Mass Feeding Considerations (continued)



Courtesy of FEMA

Service of Food

- Limited menu
- Single-service items
- Limited dishwashing
- Avoid leftovers



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Mass Feeding Considerations (continued)

Ice and Cold Storage

- Approved source
- Separate coolers
- Sealed foods
- Pack ice on top of and around food
- Drain water from ice
- Avoid ice baths for drinks
- Storage



Courtesy of FEMA



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Mass Feeding Considerations (continued)



Courtesy of CDC

Water

- Approved source
- Tank
- Proper cover and seal
- Hoses and pumps
- Backflow prevention
- Disinfectants



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Mass Feeding Considerations (continued)

Blackwater/Sewage Disposal

- Tank/bladder storage
- Portable treatment units
- Discharge into sanitary sewer



Courtesy of CDC



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Mass Feeding Considerations (continued)



Courtesy of CDC

- Graywater Disposal
- Higher oil/grease content
 - Tank/bladder storage
 - Covered seepage pits



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Mass Feeding Considerations (continued)

Water Advisories and Food Operations

- Type of advisory
- Situational awareness
- Operational guidelines
- Notification methods
- Compliance monitoring



Courtesy of FEMA



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Mass Feeding Operations

- ESF 6 – Mass Care, Emergency Assistance, Housing and Human Services
- ESF 8 – Public Health and Medical Services
- NGOs
- Private industry
- Preparation sites
- Previously established sites



Courtesy of CDC



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Mass Feeding Operations (continued)



Courtesy of FEMA

Responder Feeding

- Professional catering services
- Responder camps
- Standards are the same



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Mass Feeding Operations (continued)



Courtesy of CDC and FEMA



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Mass Feeding Preoperational Assessment



Courtesy of CDC

Key Information

- 24/7 management contact information
- Type of food operation
- Menu complexity
- Food suppliers
- Food preparation, service and disposal



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Mass Feeding Preoperational Assessment (continued)

Key Information (continued)

- Food preparation schedule
- Food safety training of management and staff
- Safe water source
- Sewage disposal
- Solid waste disposal
- Vector and pest control
- Plans for disrupted utilities



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Mass Feeding Operational Assessment

- Approved sources
- Personal hygiene
- Protection from contamination
- Proper holding temperatures
- Proper cooking



Courtesy of FEMA



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Mass Feeding Operational Assessment (continued)



Courtesy of FEMA

Approved Sources

- Commercially prepared
- Donated foods



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Mass Feeding Operational Assessment (continued)

Personal Hygiene

- No bare hand contact
- No sick employees
- Handwashing
- Clean outer garments
- Hair restraints



Courtesy of FEMA



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Mass Feeding Operational Assessment (continued)



Courtesy of CDC

Handwashing

- Warm water
- Soap
- Disposable towels
- Trash can
- Portable units and service contracts
- Hand sanitizers are not a substitute for handwashing



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Mass Feeding Operational Assessment (continued)

Protection from Contamination

- Cleaning and sanitizing equipment
- Protection of prepared food
- Transportation of prepared food



Courtesy of FEMA



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Mass Feeding Operational Assessment (continued)

- Proper Holding Temperatures
- Cold holding
 - Hot holding
 - Cooling

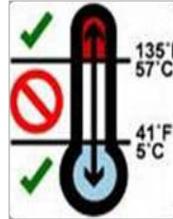


Courtesy of FEMA



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Mass Feeding Operational Assessment (continued)



Courtesy of CDC

- FDA Food Code
- Avoid the "Danger Zone"
- Use "Time" or "Temperature" Control
- Maximum time in the danger zone is four hours
- Avoid leftovers
- American Red Cross "Rule of 4's"



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Mass Feeding Operational Assessment (continued)

- Proper Cooking
- Food preparation
 - Equipment
 - Temperature taking
 - Reheating



Courtesy of FEMA



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Mass Feeding Operational Assessment (continued)



Courtesy of FEMA

- Other Considerations
- Liquid and solid waste disposal
 - Vector and pest control
 - Protection from elements
 - Poisonous or toxic item control
 - Physical security/control
 - General safety



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Mass Feeding Operational Assessment (continued)



Play Video
Hurricane Katrina Operational Assessment
U.S. Food and Drug Administration



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Corrective Actions During Mass Feeding Operations

- Immediate, on-the-spot corrections
- Manager involvement
- ICS involvement
- Involvement of other agencies/partners
- Hostile issue resolution/correction



Courtesy of NOAA



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Unpermitted Food Operations



Courtesy of FDA

- Common and can vary greatly in size and scope
- May be difficult to identify
- Most have good intentions
- Should use critical thinking, sound judgment, and professionalism when dealing with them
- Look for good food safety practices



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Unpermitted Food Operations (continued)

- Operational assessment
- Assessing level of risk for foodborne illness is key
- Must have jurisdictional food regulatory authority
- Education and training may be needed
- Follow local/state rules, laws, and guidance
- Implement system for identifying assessed operations
- Warnings, citations, and closing operations
- Assistance from ICS, health officer, or law enforcement



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Reopening Food Establishments

- Develop an assessment plan
- Develop reopening criteria
- Develop assessment forms
- Conduct an initial rapid assessment
- Determine which establishments can reopen quickly
- Develop a system to track progress



Courtesy of CDC



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Reopening Food Establishments (continued)



Courtesy of FEMA

Potential Issues

- Decomposed food
- Rodents, insects, and animals
- Utilities and trash service
- Mold
- Lack of workforce
- Limited food suppliers
- Damaged equipment



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Reopening Food Establishments (continued)

Water Service Interruption or Contamination

- Discontinue food service
- Disconnect ice & beverage systems
- Limit menu and use only single service utensils
- Dishwashing limitations
- Handwashing units



Courtesy of CDC



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Reopening Food Establishments (continued)



Courtesy of CDC

After a Water Advisory

- Flush water through lines for five minutes
- Empty ice bins
- Discard first hour of ice production
- Clean and sanitize ice machines & ice bins
- Clean or replace filters, aerators and strainers



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Reopening Food Establishments (continued)

Sewage Backup/Flood Cleanup

- Pump and de-water
- Remove damaged equipment
- Thoroughly air-dry area
- Clean and sanitize affected hard surfaces
- Use qualified service personnel
- Reopen upon approval of regulatory authority



Courtesy of FDA



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Food Salvaging



Courtesy of FDA

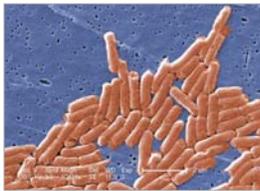
Foods That Cannot Be Salvaged

- Food submerged in floodwater
- Food in contact with sewage
- Open food
- Food in open containers
- Food in screw-top, crimped cap, snap-open containers
- Food in flexible packages
- Single-service items



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Food Defense



Courtesy of CDC

Food defense is the collective term used by FDA, USDA, DHS, and other federal agencies and organizations to encompass activities associated with protecting the nation's food supply from deliberate or intentional acts of contamination and tampering



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Food Defense (continued)

Examples of intentional food contamination incidents

- 1984 – *Salmonella* added to 10 salad bars to sway local election (751 illnesses, 45 hospitalizations)
- 1989 – Threat of Chilean grapes imported to U.S. containing cyanide (\$200 million in lost revenue)
- 2003 – Disgruntled supermarket worker adds nicotine-based pesticide to ground beef (92 illnesses)
- 2009 – Disgruntled Mexican restaurant employees add Methomyl-based pesticide to salsa (40+ illnesses, \$250,000 in lost revenue)



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Food Defense (continued)



Courtesy of CDC

Role of Environmental Health Preparedness

- Education
- Risk identification
- Hazard and vulnerability assessment
- Planning
- Training
- Exercises



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Food Defense (continued)



Courtesy of DOE

Role of Environmental Health Response

- Working with law enforcement and other partners
- Conducting assessments
- Technical assistance and consultation
- Other types of support based on incident
- Priority is to prevent spread of illness



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Food Defense (continued)

Role of Environmental Health Recovery

- Technical assistance & consultation
- Other types of support based on specific incident
- May be most engaged in this phase



Courtesy of USDA



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Food Defense (continued)



Courtesy of FEMA

Role of Environmental Health Mitigation

- Food defense planning
- Education
- Training
- Exercises
- After-action reviews
- Corrective action planning



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Environmental Health Training in Emergency Response

Food Safety—End of Module



FEMA

