

# Food Safety After a Disaster



Patric “Pat” Moloney, MPAH, RS, CHO  
PMaloneyRS@aol.com

# Emergency Preparedness Public-Environmental Health

- **MDPH-Office of Preparedness and Emergency Management**  
<https://www.mass.gov/open-resources-for-public-health-and-healthcare-partners>
- **CDC-Environmental Health Training in Emergency Response (EHTER)**  
<https://www.cdc.gov/environmental-health-response-and-recovery/php/ether/>
- **FEMA-Emergency Management Institute**  
<https://training.fema.gov/emiacourses/> ICS 100, 200, NIMA 700, Risk Communications and more!

# Learning Objectives

**By the end of this module, participants will be able to:**

- Explain the role of environmental health in food safety
- Describe food safety preparedness considerations
- Discuss operational considerations for mass feeding sites
- Assess food safety at mass feeding sites
- Describe considerations to reopen a food establishment





# Environmental Health Functions

- Ensure safe food supply
- Respond to inquiries and complaints
- Provide food safety information, training and education (mass care feeding and general public)
- Conduct needed interventions
- Reopen food establishments
- Reduce risk of foodborne illness





# Reasons for Concern

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- 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

# Key Partners

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





# Safety

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- Utilities dangers
- Structural damage (building and roads)
- Broken glass
- Poor air quality
- Other?



# Priority Activities

- Plan for emergencies and disasters
- Identify food establishments and mass care feeding sites
- Be aware of the possible health risks and safety hazards that can be present at a disaster incident
- Provide technical assistance to officials and food establishments
- Know whom to notify and refer events to appropriate agencies; advise response leadership
- Provide information and assistance to the public with regard to food safety after an event



# Preparedness

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



# Preparedness

Quaternary Ammonia Test Strips



Chlorine Test Strips



Thermocouple Thermometer



Thermister



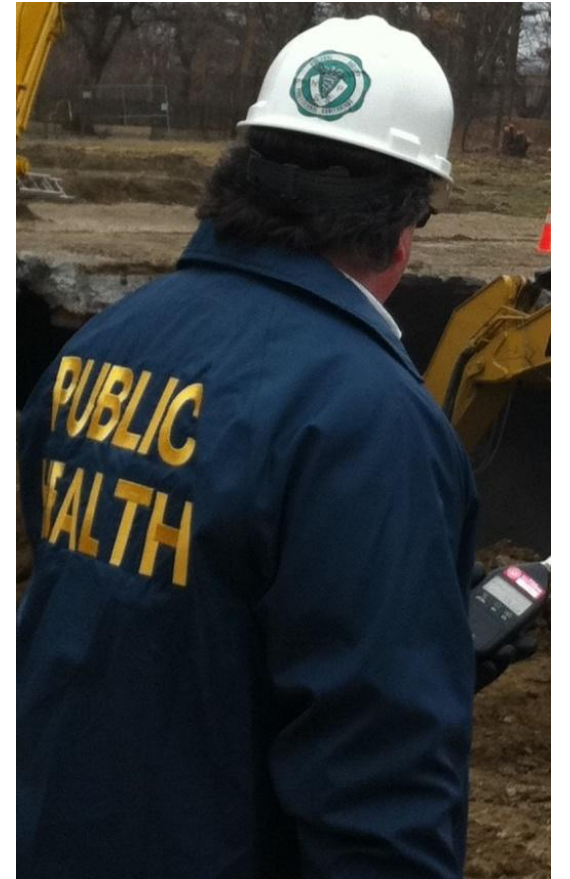
## Tools

- Food code and guidance
- Thermometers
- Alcohol swabs
- Sanitizer test kits
- Flashlight
- GPS

# Preparedness, con't

## Tools

- Disposal gloves/booties/PPE, coveralls
- Handwashing signs
- Closure signs
- Hard hat
- Public Health ID – Shirt - Jacket



# Food Establishments

## Response Plans

- Water and electrical interruptions
- Contaminated water
- Sewage backups
- Fires and floods
- Others?

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## Guidance for Emergency Action Planning for Retail Food Establishments

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Practical guidance for retail grocery and food service establishments to plan and respond to emergencies that create the potential for an imminent health hazard.

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With appreciation to:  
Emergency Preparedness Committee of Council II  
2004-2006 Conference for Food Protection  
City of Detroit Health Department  
Macomb County Health Department  
Michigan Department of Agriculture  
Michigan Restaurant Association  
Oakland County Health Department

Massachusetts Department of Public Health  
Center for Environmental Health  
Food Protection Program

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# Mass Feeding Sites

## Considerations:

- Food safety
- Human waste
- Water
- Site assessments and inspections



# Food Safety Tips

- Use prepackaged foods or limit menu (i.e., using charcoal and gas grills or generators)
- Prevent cross contamination
  - Use separate coolers, bags and containers
- Use ice from approved source and handle safely
- Limit dishwashing (use single service items)
- Use gloves





# Human Waste

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## Toilets

- Use indoor toilets – add water for flushing
- Secure portable toilets with handwashing facilities
- Insure routine service (pumping) cleaning, sanitizing, and supplies



# Water

- Advisories (i.e., boil water)
- Bulk water
- Community water distribution





# Assessment

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- Pre-operation
- On-site
  - ☐ Approved source
  - ☐ Personal hygiene
  - ☐ Contamination prevention
  - ☐ Holding
  - ☐ Cooking
- Corrective Action



# Pre-operation

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What are some examples of key information that you should gather?





# Site Assessment

## Approved Sources

- Commercially prepared
- Donated?
- Other?



# Site Assessment

## Personal Hygiene

- No bare hand contact
- Proper handwashing
- No sick employees
- Clean outer garments and hair restraints



*Courtesy of FEMA*



# Site Assessment

## Protection from Contamination

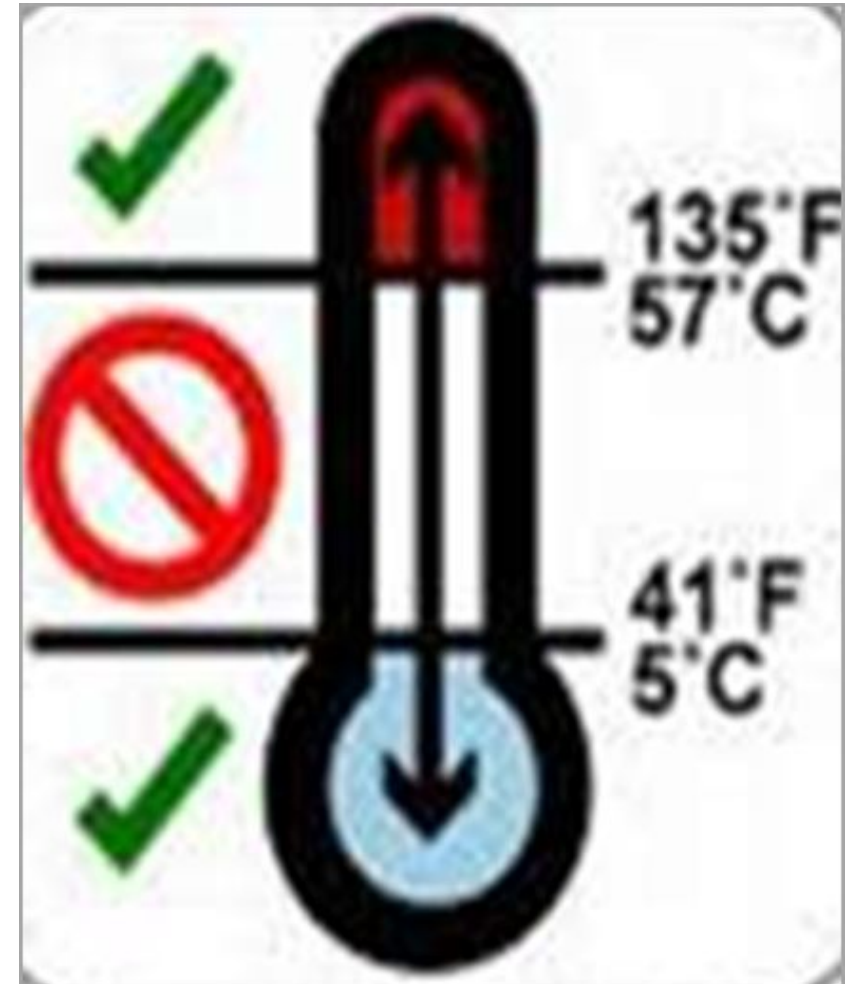
- Cleaning and sanitizing
- Personal hygiene
- Protection of prepared food (transportation, storage, service)



# Site Assessment

## Proper Holding Temperature

- Cold
- Hot
- Cooling
- Storage



# Site Assessment

## Proper Cooking

- Food Preparation
- Equipment
- Monitoring

### 99 FOOD SPEC SHEET

TABLE 1: MINIMUM COOKING TEMPERATURES & HOLDING TIME AT SPECIFIED TEMPERATURES

165°F (74°C) for 15 seconds 7 log reduction in microorganisms (or 7D kill)	poultry; live caught or field dressed; wild game animals according to Law; STUFFED fish, meat, pork, pasta, poultry or ratites; and STUFFING containing fish, meat, poultry or ratites. Meat includes cattle, swine, sheep, goats, etc., <i>except fish, poultry &amp; wild game animals</i>		
165°F (74°C) with a 2 minute post cooking hold 7D kill	Microwave Cooking: for raw animal foods: covered, rotated or stirred throughout or midway through the cooking process, and held for 2 minutes covered.		
155°F (68°C) for 15 seconds or 158°F (70°C) for <1 second 150°F (66°C) for 1 minute 145°F (63°C) for 3 minutes 5D kill	ratites; injected meats; COMMINUTED raw animal foods such as fish, meat, commercially raised & processed by Law game animals, exotic animals or rabbits; and RAW SHELL EGGS not prepared for immediate service (combined or hot hold). (also see Highly Susceptible Populations (HSP)).		
145°F (63°C) for 15 seconds 3D kill  ----- surface temperature ≥145°F (63°C) + cooked color change on all external surfaces	raw shell eggs prepared for immediate service; commercially-raised game animals, exotic animals or rabbits; and other raw animal foods not otherwise specified in this table.  ----- WHOLE-MUSCLE, INTACT BEEF STEAK that is properly labeled as such may be served raw or undercooked as RTE if not serving a HSP		
145°F (63°C) for 3 minutes* or 144°F (62°C) for 5 minutes* 142°F (61°C) for 8 minutes* 140°F (60°C) for 12 minutes* 138°F (59°C) for 19 minutes* 136°F (58°C) for 32 minutes* 134°F (57°C) for 47 minutes* 132°F (56°C) for 77 minutes* 130°F (54°C) for 121 minutes* 7D kill	WHOLE ROASTS OF BEEF, CORNED BEEF, PORK OR CURED PORK: * Note: holding time may include post-cooking heat rise		
	Oven Type	Roast Weight < 10 lbs (4.5 kg)	Roast Weight ≥ 10 lbs (4.5 kg)
	Still Dry	≥ 350°F (177°C)	≥ 250°F (121°C)
	Convection	≥ 325°F (163°C)	≥ 250°F (163°C)
	High Humidity*	≤ 250°F (121°C)	≤ 250°F (121°C)
140°F (60°C)	PLANT FOOD COOKING FOR HOT HOLDING: fruits & vegetables that will be hot held shall be cooked to the hot holding temperature of 140°F (60°C)		



# Site Assessment

## Other Considerations

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





# Corrective Actions

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- Immediate, on-the-spot corrections
- Manager involvement



*Courtesy of NOAA*

# Unpermitted Food Operations

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- Common and can vary greatly in size and scope
- May be difficult to identify
- Most have good intentions
- Look for good food safety practices
- Temp Applications - Permits



*Courtesy of FDA*



# Re-opening Food Establishments

- Develop reopening criteria
- Specify forms
- Conduct initial assessment
- Determine which establishments can reopen
- Develop a system to notify the public and track progress

**Dept of Health and Hospitals**  
**Office of Public Health**

LOUISIANA  
Department of  
HEALTH and  
HOSPITALS

Record # \_\_\_\_\_

***Approved For Re-opening  
Following Hurricane Katrina***

BY ORDER OF THE STATE HEALTH OFFICER  
DO NOT REMOVE BEFORE JANUARY 1, 2006  
MUST REMAIN CONSPICUOUSLY POSTED

Sanitarian Name and Reg# \_\_\_\_\_

Date \_\_\_\_\_

*Courtesy of FDA*



# Potential Issues

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- Decomposed food
- Rodents, insects, and animals
- Interrupted services (utilities, trash)
- Mold
- Lack of workforce
- Limited food suppliers
- Damaged equipment





# Water Tips

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## After a Water Advisory

- Flush water through lines for five minutes
- Empty ice bins
- Discard 1<sup>st</sup> hour of ice production
- Clean and sanitize ice machines/ice bins
- Clean or replace filters, aerators and strainers



# Sewage Tips

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## After a Flood or Back-up

- Pump and de-water
- Remove damaged equipment
- Thoroughly air-dry area
- Clean and sanitize hard surfaces
- Use qualified service personnel



*Courtesy of FDA*



# Food Salvaging

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## What can't 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



# Resources

- CDC Emergency & Terrorism Preparedness (ETP) for Environmental Health Practitioners (see Food Protection Section) [www.cdc.gov/nceh/ehs/ETP/default.htm](http://www.cdc.gov/nceh/ehs/ETP/default.htm)
- CDC, Disaster Food, Water, Sanitation, and Hygiene Information <http://emergency.cdc.gov/disasters/foodwater>
- FDA Investigations Operations Manual [www.fda.gov/ICECI/Inspections/IOM/default.htm](http://www.fda.gov/ICECI/Inspections/IOM/default.htm)
- MDPH Guidance for Emergency Action Planning for Retail Food Establishments <http://www.mass.gov/eohhs/docs/dph/environmental/foodsafety/emergency-action-plans.pdf>
- Michigan Emergency Action Plans for Retail Food Establishments [www.michigan.gov/mda/0,1607,7-125-50772\\_45851-105442--,00.html](http://www.michigan.gov/mda/0,1607,7-125-50772_45851-105442--,00.html)
- Twin Cities Metro Advanced Practice Center, Emergency Handbook for Food Managers [www.naccho.org/topics/environmental/foodsafety/EmergencyHandbookFSManagers.cfm](http://www.naccho.org/topics/environmental/foodsafety/EmergencyHandbookFSManagers.cfm)
- USDA Food Safety and Inspection Service Food Defense and Emergency Response Web Page [www.fsis.usda.gov/Food\\_Defense\\_&\\_Emergency\\_Response/index.asp](http://www.fsis.usda.gov/Food_Defense_&_Emergency_Response/index.asp)