Learning Objectives

By the end of this module participants will

• Increase understanding of shelter issues faced in disasters
• Increase understanding of the role of environmental health practitioners in addressing shelter issues
• Be able to identify key response partners
• Increase understanding of the basic components of shelters
• Practice and demonstrate basic skills related to shelter assessment
• Identify key messages for the public and response partners
Environmental Health Functions

EH practitioners protect the public from hazards in the environment

- Food
- Water
- Waste
- Vector control
- Built environment
Reasons for Concern

- Close living quarters
- Stressed population
- Disrupted protection systems
- Health care maybe limited
- Increased demands on facility

Reliant Park – Houston
Priority Activities

Before the event

• Advise on shelter site selection
• Advise on organization and layout of shelter
• Assist with training
Priority Activities

During the event
• Assure food safety
• Assure safety of water for consumption
• Ensure that personal hygiene amenities are provided
• Assure wastewater is properly managed
• Ensure proper management of solid waste
• Assure air quality is controlled
• Identify and assess general safety issues
• Monitor housekeeping, cleaning, and sanitation
• Identify and assist with vector/pest control
• Evaluate outside grounds
• Monitor childcare for safety and sanitation
• Recognize needs of population
• Provide health education to public, volunteers, response partners
Key Partners

• Emergency management agency
• Volunteer and community organizations
  – American Red Cross
  – Faith-based organizations
• Emergency Support Functions (ESF)
  – 6, Mass Care, Emergency Assistance, Housing, Human Services
  – 8, Public Health and Medical Services
• Industry
• Media
Define Your Role

• Ensure environmental health is included in emergency response plans
• Use your environmental health skills
  – Volunteers can direct traffic
• Assist partner organizations
Job #1 - Safety

- Personal sanitation
- Electrocution
- Carbon monoxide
- Musculoskeletal hazards
- Thermal stress
- Structural instability
- Hazardous materials
- Confrontations
- Fire
- Drowning
- Mechanical
- Personal protective equipment: use it!
- Driving, animals, insects, slips/falls
- Stress, fatigue
- Confined spaces - must be trained
Standards and Resources

• American Red Cross Shelter Operations Management Toolkit
• Public Health Guidance Document for Shelters
• SPHERE – Humanitarian Charter and Minimal Standards in Disaster Response
• Environmental Health in Disasters – WHO
• California Disaster Field Manual for Environmental Health
• CDC Shelter Resources
• National Health Care for Homeless
• FL Dept. Health–Standards for Hurricane Evacuation and Disaster Event - Special Needs Shelter (SpNS) Selection
<table>
<thead>
<tr>
<th>Events and Requirements</th>
<th>Warning</th>
<th>No Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Hurricane Evacuation</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>Short Term Sheltering Needs</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>More time to open shelter</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Time to advise residents to bring essential items</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Residents can prepare emotionally</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Less need for long term services</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Fewer supply requirements</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Example: Apartment Fire, HAZMAT Spill</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>Long Term Sheltering Needs</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>More time to open and establish logistics</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Need longer term services</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Greater supply needs</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Need for longer term staffing</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Shelters become a focal point for relief services</td>
<td>WWWWWW</td>
<td>WWWWWW</td>
</tr>
<tr>
<td>Example: Slow –Rising Floods, Hurricane</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>Example Earthquake, Tornado</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
<tr>
<td>Example: Apartment Fire, HAZMAT Spill</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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</tr>
<tr>
<td>Example Earthquake, Tornado</td>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
</tbody>
</table>
Types of Shelters

• General population shelter – self sufficient
• Special needs shelters – physical, mental, cognitive impairment, or sensory disabilities
  – Functional needs
    • Hearing, mobility, sight
  – Medical needs
    • Medically dependent
• Medical shelters
• Homeless shelters
Mega Shelters Report
## Shelter Classification

<table>
<thead>
<tr>
<th>Shelter Classification</th>
<th>Sleeping Space Allocation</th>
<th>Operation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evacuation Shelter General Population</td>
<td>20 ft²</td>
<td>24 hrs before to 72 hrs after event</td>
</tr>
<tr>
<td>(Short Term)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelter General Population (Recovery</td>
<td>40 ft²</td>
<td>72 hrs after event and beyond</td>
</tr>
<tr>
<td>Phase)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Needs Shelter (SpNS)</td>
<td>60-100 ft²</td>
<td>24 hrs before to 72 hrs after event</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 hrs before to 72 hrs after event</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 hrs after event and beyond</td>
</tr>
<tr>
<td>Responder Camps/Base</td>
<td>40 ft²</td>
<td>Beginning of event and beyond</td>
</tr>
</tbody>
</table>
Shelter Selection & Design
Shelter Selection

Standards for Hurricane Evacuation Shelter Selection

Publication # ARC 4496
American Red Cross Form 6564

SHELTER FACILITY SURVEY

Please print all information. This form is generic to many types of shelters; some of the questions on this form might not apply to every site. In such cases, answer N/A (not applicable).

Site Name: 
Street Address: 
Town/City: ______ County/Parish: ______ State: ______ Zip Code: ______
Mailing Address (if different): 
Phone: (____) _____-____ Fax: (____) _____-____
Email address (if applicable): 

EMERGENCY CONTACT INFORMATION:

To authorize facility use, contact (Name[s], phone number[s], cell number[s]); include secondary contacts:

________________________________________

To open the facility 24/7, contact (Name[s], phone number[s], cell number[s]); include secondary contacts:

________________________________________

Directions to the facility from the nearest major highway evacuation route. Use major landmarks (e.g., highways, intersections, rivers, railroad crossings, etc.). Do not use landmarks likely to be destroyed or unrecognizable after the disaster. Include latitude and longitude if available (they can be obtained via GPS).

Latitude: ____ Longitude: ____

CAPACITY

Capacity for all shelters should be calculated using any space that could feasibly be used as sleeping space for an event. In an evacuation shelter, capacity should be calculated using 15 to 20 square feet per person. In a general shelter, use 40 to 60 square feet per person to determine capacity.

Capacity 
Evacuation = _____ at _____ square feet
General = _____ at _____ square feet
Basic Shelter Guidance

- Life-safety code compliant (two: fire egress, emergency lighting)

- Space
  - ARC evacuation shelter, useable space 20 ft$^2$ per person – short term
  - ARC recovery shelter, useable space 40 ft$^2$ – longer term
  - Adequate air space/person
  - Adequate spacing: 3 ft between cots (consider family clusters)

- Structural integrity
  - Hurricane rating
  - Earthquake protection
Basic Shelter Guidance

- Water and sanitation
  - 4-5 gallons of water per person/day
  - ARC 1 toilet per 20 people, California Manual 1 toilet per 20 people
  - ARC 1 shower per 20 people, California Manual 1 shower per 15 people
  - ARC 1 hand sink per 20 people, California Manual 1 hand wash station per 15 people (soap, disposable towels)
  - Laundry facilities: onsite or contracted services
  - Solid waste: one 30 gallon container per 10 people
  - Sewage disposal: consider system capacity
Tent City- Hurricane Andrew
Site Selection Considerations

Location

• Out of flood zones
• Protected areas – inland
• Accessible to population

Types of facilities used

• Schools
• Places of worship
• Cafeterias
• Sports facilities
• Convention Centers
**Florida Sanitary Package (SanPac)**

<table>
<thead>
<tr>
<th>Location:</th>
<th>PODS</th>
<th>Food Prep</th>
<th>SpNS</th>
<th>LSA</th>
<th>Staging (48 hrs)</th>
<th>Mass Feeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>V</td>
<td>VI</td>
</tr>
<tr>
<td>Resources:</td>
<td>Toilet</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>ADA Toilet</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Hand Wash Station</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Dumpsters</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>NA</td>
</tr>
<tr>
<td>Services:</td>
<td>Toilet</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>Once</td>
</tr>
<tr>
<td></td>
<td>Hand Wash Station</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>Daily</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Dumpsters</td>
<td>3rd Day</td>
<td>3rd Day</td>
<td>3rd Day</td>
<td>3rd Day</td>
<td>NA</td>
</tr>
</tbody>
</table>

**PODS (Point of Distribution)** = 40 people including workers (multiple of Type I’s to be used as numbers grow

**Food Prep** = Place where food is prepared but not served (Up to 30 workers)

**SpNS (Special Needs Shelter)** = One Type III for each 40 clients/workers

**LSA (Logistics Staging Area)** = (large) to support workers and deliver staff only

**Staging** = Off-site staging of delivery inbound supplies to LSA or other location (delivery personnel only)

**Mass Feeding** = Food preparation and distribution (100 including workers and clients at any given time)
Sanitary Facilities
Hurricane Andrew
Shelter Assessments
Staffing EH for Shelters

• Robust EH staffing
  – County and state mutual aid
  – EMAC: state-to-state assistance compacts
  – ESF 8: federal support

• Guard against misuse of EH expertise

• Recommend staffing
  – 24 hr on-call staff
  – Permanent staff in large facilities
  – Minimal 1 EH specialist per facility depending on size
  – Be apart of the team, help operations when you can
  – Security: use buddy system
Shelter Assessments

- Length of operation
- Size and type of facilities
- Number and availability of EH staff
- Rapid vs comprehensive assessment
- Survey/assessment forms
# Public Health and Medical Team in a Shelter

<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th>Provides public health and medical function within a congregate facility for a displaced population.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category:</strong></td>
<td>Public Health and Medical</td>
</tr>
<tr>
<td><strong>Kind:</strong></td>
<td>Team</td>
</tr>
</tbody>
</table>

## Resource Types:

<table>
<thead>
<tr>
<th><strong>Component</strong></th>
<th><strong>Metric</strong></th>
<th><strong>Type I</strong></th>
<th><strong>Type II</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>1. Manage basic medical service for 500 persons in a shelter</td>
<td>Team that can perform the following public health and medical activities under the authority having jurisdiction:</td>
<td>N/A</td>
</tr>
<tr>
<td>Resource</td>
<td>2. Provide basic public health protection for shelter</td>
<td>Provide basic medical service and public health protection in a congregate setting to activate, manage, and demobilize Mass Care tactical operations</td>
<td></td>
</tr>
<tr>
<td>Clinical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected</td>
<td>Expected performance capacity for 12-hour operational period</td>
<td>500 persons per shift</td>
<td>N/A</td>
</tr>
<tr>
<td>Capacity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel</td>
<td>Team Composition</td>
<td>1 Shelter Team Leader, 1 Physician, 4 Registered Nurses2, 2 Behavioral Health Professionals, <strong>1 Environmental Health Generalist</strong>, 1 Epidemiology Data Specialist</td>
<td>N/A</td>
</tr>
<tr>
<td>Equipment</td>
<td>Equipment and supplies needed to meet mission objectives for the resource kind and type.</td>
<td>Basic ACC Cache</td>
<td>N/A</td>
</tr>
<tr>
<td>and Supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Comments:

Footnotes:

1. ACC refers to Concept of Operations for the Acute Care Center. This document can be found at [http://www.nnemnrs.org/surg](http://www.nnemnrs.org/surg).
2. Registered nurses must be 2 with clinical focus and 2 public health nurses.
Exercise
Exercise Scenario

You are an environmental health specialist whose city is providing shelter for a displaced population of 5,000 people. A large convention center is being used as the shelter. The Health Department Director has asked you to conduct a comprehensive environmental health assessment of the shelter and to develop an assessment form for the ongoing assessment of the operation.
Exercise Assignment

- Develop the framework of an assessment form
- Start by developing a list of the areas or operations that might need to be assessed
- For each operation, list the primary items that you would need to assess and included on your form
Emergency Preparedness and Response

CDC Shelter Assessment Tool

CDC has developed an Environmental Health Shelter Assessment Tool to assist environmental health practitioners in conducting a rapid assessment of shelter conditions during emergencies and disasters. The tool is an assessment form that covers 14 general areas of environmental health, ranging from basic food safety and water quality to pet (companion animal) wellness, and allows for the documentation of immediate needs in shelters. It can be easily modified to meet local needs. Learn more about the tool >>

Shelter Assessment Tool

- Tool in PDF Version
  Instructions in PDF Version
- Tool in Word Version - English
  Instructions in Word Version - English
- Tool in Word Version - Spanish
  Instructions in Word Version - Spanish
- Listen to audio training for the tool
Do You Have a Shelter Guidance Document?

Public Health Guidance Documents for Evacuation Shelters

Dallas County
Health and Human Services
Dallas, Texas
How Do You Share Preparedness Information?
Assessment Process

- Consider schedule of assessment
- Correct on-site when possible
- Identify training needs: staff, volunteers
- Make reports clear and easy to read
  - Summarize reports if needed
  - Look for system fixes
  - Larger facilities: divide report by section
    - Housekeeping, food service, maintenance
- Review findings with shelter managers
- Be aware of staff rotation
Operations within Shelters
Nursery/Daycare

- Health screening
- Cleaning procedures for fecal/vomiting accidents
- Diaper-changing areas
- Hand washing
- Choking/safety hazards
- Clean toys and surfaces
- Appropriate toilet facilities
- Approved childcare workers
  - background checks
Nursery/Daycare
Nursery/Daycare
Cleaning/Housekeeping

- Proper disinfectants and concentrations
- Adequate supplies
- Cleaning methods
- Frequency of cleaning
- Trained staff
- Staff protection
- Bodily fluid clean-up: spill kits
Spill Kit and Personal Protection

Protective equipment

- Disposable latex/vinyl gloves
- Eye protection/face shield
- Mask/respirator (N95)
- Protective gowns or aprons
Spill Kit Supplies

Supplies

• Paper towels
• Plastic garbage bags
• Absorbent
• Mop and mop bucket
• Approved disinfectant for norovirus
Spills and Cleanup

Disinfectants

• Bleach (Household 5.25%)
  – Food/mouth contact: 1/3 cup / gallon of water; 1000 ppm
  – Nonporous surfaces: 1/3 cup / gallon of water; 1,000 ppm
  – Porous surfaces, floors: 1 and 1/2 cup /gallon; 5,000 ppm
  – Spot Cleanup: 1 and 1/2 cup /gallon; 5,000 ppm

• Other EPA approved
  – http://www.epa.gov/oppad001/list_g_norovirus.pdf
Spills and Cleanup

Cleaning steps

• Put on protective equipment
• Secure area to limit access
• Apply absorbent
• Bag waste
• Appropriate disposal
• Flood area with disinfectant
• Allow sufficient contact time
• Clean and disinfect mop
• Take off protective equipment
• Wash hands
• Restock kit
Cleaning Resources

- Guidelines for Environmental Infection Control in Health-Care Facilities
- CDC Norovirus Resources
- Guidelines For Environmental Cleaning and Disinfection of Norovirus
- EPA’s Registered Antimicrobial Products Effective Against Norovirus
Laundry Services

• Laundry handlers: gloves and aprons
• Hot wash 105-120°F for 10 minutes
• Hot drying 160°F for 30 minutes
• No bleach necessary if above criteria met
• Dispose of linens if soiling is severe
• Separate sorting and folding areas
• Separate clean and soiled storage-clearly marked
Food Safety

• Handwashing
• Temperature control
  – Hot above 135°F
  – Cold food below 40°F
• Donated food
• Volunteers
• Simple menu – safe foods
American Red Cross
Together, we can save a life

Disaster Kitchen Training
ARC 3068-30A
February 2005

Participant's Workbook
American Red Cross
Emergency Response Vehicle (ERV)
Salvation Army Mobile Canteen
Number of Foodborne Outbreaks, 2004-2005, Hurricane Related
Impact of Food-Safety Activities

- No foodborne illness outbreaks reported in Florida after hurricanes – 2004-2005
  - People eating out less; fewer restaurants open
  - People eating prepackaged food
  - Normal reporting mechanisms disrupted
- Heightened epidemiology surveillance was established
- EH specialists were deployed in the field
- Food safety and sanitation training outreach programs
Special Needs Shelters

got needs? get prepared.
Special Needs Shelter Clients

- One who needs assistance during evacuations and sheltering because of physical or mental handicaps (Chapter 252.355, FS)
- The level of care goes beyond basic first aid
- ESF 8 is usually the lead
Special Needs Shelters
Additional Considerations

- Space requirements (60–100 ft²)
- ADA standards (toilets, doors, etc.)
- Special diets
- Increase staffing needs
- Vulnerable population as client
- Refrigerated medication
- Medical gases
- Sharps disposal
- Medical waste
- Bodily fluids cleanup
- Adult personal care products
- Bed height
Special Needs Facilities
Safety in a Special Needs Shelter

- Elderly and mobility issues
- Equipment issues
  - cots /showers/seats/ramps
- Medical gases secured
- Food safety
- Access to emergency pharmacy services
- Restroom accessibility
- Handwashing accessibility
Is This the Way to Transport Cylinders?
Infection Prevention and Control for Shelters During Disasters

Prepared by:
2007/2008 APIC Emergency Preparedness Committee

Lead Author:
Terri Rebbmann, PhD, RN, CIC

Secondary Authors:
Rita Wilson, BS, CLS, MT(ASCP), CIC; Sharon Alexander, MPH, BSN, MT(ASCP), CIC; Michael Cloughesy, BSEH, CIC; Dianne Moroz, RN, MS, CIC, CCRN; Barbara Citarella, RN, BSN, MS, CHCE; Barbara Russell, RN, MPH, CIC; Bill Coll, M.Pub.Aff, LP; Sue Lapointe, RN, MS, Ed, CIC; Bill Wagner, ScD, CHCM, CHSP; Michael Olsen, BS, MPH, CIC; Veronica Urdaneta, MD, MPH

*This document is not intended for medical use and for individual populations (hospital, chronic individuals, etc.). These recommendations should only be used for disaster-related circumstances in which there are large numbers of displaced individuals who may expose others.

*Photos from FEMA Photo Library: Top right: Photo ID: 767866, Author: FEMA/Wikimedia Commons, Left middle photo: FEMA/Audra Booker, Photo ID: 767867, Author: FEMA/Wikimedia Commons, Top right: Photo ID: 767866, Author: FEMA/Wikimedia Commons, Left middle: Photo ID: 767867, Author: FEMA/Audra Booker.*
Infection Control

Transmission routes

• Airborne
• Droplet
• Contact
  – Direct (person to person)
    • Bloodborne, STD
  – Indirect (person to object to person)
    • Objects, common surfaces
Infection Control

• Separate area for ill persons
  – Maintain separation until symptoms have ceased for 24 hours
• Hand washing/sanitizing stations at each entrance to isolation/observation area
• Cleaning schedule increased
• Respiratory hygiene
  – Cough/sneeze into sleeve
  – Use disposable tissues, dispose of immediately
  – Wash hands often, minimize contact with others
  – Have hand sanitizers available
Infection Control

• Maintain adequate supplies
  – Tissues, soap, disposable towels, hand sanitizer
• Open restroom doors
• Increased restroom cleaning frequency
  – Hourly
• Sanitize common surfaces with bleach or other EPA-approved disinfectant
Pet Shelters and Human Shelters

Pet Care Area – California Wildfires

Pet Shelter- Florida Hurricane
Exercise

Determine Sanitation Needs for Shelters
Disaster Animal Response Training Program for 2008

The Humane Society of the United States Disaster Services department is pleased to offer the following information about our top-notch training program in animal disaster response.

- Registration Information
- Disaster Animal Response Team (DART) Course Description and Training Dates/Locations
- Emergency Animal Sheltering (EAS) Course Description and Training Dates/Locations
- The Humane Society University's Disaster Services Volunteer Instructor Program
- Organizing a Training in Your Community
- For more information

Registration Information:

Online Registration:

We now offer online registration for most of these classes. Visit Humane Society University for information about each course offering, a downloadable course brochure, and online registration. With a credit card, you may register online.

To find class and registration information about the HSUS disaster courses, click on “On site Workshops,” then enter “disaster” in the course search field.
Disaster Preparedness Resources

Below is information to help you prepare and protect your companion animals and livestock in the event of a disaster. There is also a manual that can help communities include animals in their disaster plans. There's even a quiz to help gauge your disaster preparedness IQ.

- Disaster Preparedness Brochures
- Disaster Preparedness Quiz
- Disaster Preparedness for Horses
- Disaster Preparedness for Livestock
- Disaster Preparedness for Pets
- HSUS Disaster Planning Manual for Animals
- Help Protect Animals in Disasters
- How Pets Can Help You Cope with Disaster
- Keep your Pet Safe and Happy When Caught in "Evacuation Gridlock"
- Keeping Pets Safe During a Tornado
Pet Shelter Considerations

• Disease transmission to humans
• Potable water needs
• Hand washing
• General cleaning and disinfection
• Allergies
• Air flow and temperature control
• Worker training and protection
• Fecal management
• Biohazards/sharps
• Animal food storage
• Animal control and handling safety
Options for Emergency Shelters

- People & pets in same room
- People & pets in separate spaces in same building
- Animal-only shelters
- Large animal/livestock facilities
People & Pets in Same Building

- Owners in same building, but separate area
  - Still care for pets
- Somewhat labor-intensive
  - Owners not immediately available
- Used in many Florida counties during 2004 hurricanes
Pet Shelter Requirements

• Meet safety standards
• Conducive to housing animals
  – Solid, non-porous floors
  – Good ventilation
• Free of other obligations during declared emergencies
Marion County
Preparing Building

Lining hallway with plastic
Marion County
Preparing Building

Placing rubber runner
Marion County
Pet Shelter Registration

Fastening armbands on owners & neckbands on dogs
Marion County
Floor Still Shiny
Health Education

• Printed materials and public announcements
• Target audience: occupants, workers, volunteers
• Language
• Hearing impaired
• Messages: simple and easy to read, illustrated
• Examples
  – Handwashing
  – Food handling for volunteers
  – Reporting illness
Help Us Keep You Healthy...

Clean and Wash Your Hands

- Before you eat food
- Before you insert or remove contact lenses
- When your hands are dirty
- After you use the bathroom
- After you change a diaper
- After you handle garbage
- After you blow your nose, cough, or sneeze
- When you have been in close contact with someone who is ill

Help Us Keep You Healthy...

Clean and Wash Your Hands

Help Us Keep You Healthy...

Do you have these symptoms?

1. Coughing with mucus
2. Fever
3. Chills
4. Sweating at night
5. Coughing up blood

YES

You need to call Harris County Public Health & Environmental Services
(713) 439-6214
Hand Washing Education in Cafeteria
Optional Exercises and Activities

- Visit a local homeless shelter and contrast and compare health issues with those found in emergency shelters
- Attend American Red Cross training on shelters
- Conduct joint shelter training sessions with American Red Cross & VOADs
- Conduct a joint shelter exercise with Public Health and American Red Cross & VOADs
Shelter Resources

- American Red Cross Shelter Operations Management Toolkit
  http://www.redcross.org

- Big Bend Disaster Assistance Response Team – http://www.bigbenddart.org/

- California Disaster Field Manual for Environmental Health –

- A Guide for Shelter Care and Planning and Alameda provides a great overview on shelter planning.

- Public Health Guidance Document for Shelters
  http://www.cdc.gov/nceh/ehs/Docs/Shelter_Guidance_Dallas_County

- CDC Shelter Resources – http://www.cdc.gov/nceh/ehs/ETP/shelter.htm

- Infection Prevention and Control for Shelters During Disasters

- Public Health Guidance Document for Shelters –
Shelter Resources

- CDC Environmental Health Services Norovirus Topic Page:
  http://www.cdc.gov/nceh/ehs/Topics/norovirus.htm


- CDC Emergency Preparedness and Response: Evacuee Educational Materials –


- EPA - List G: EPA’s Registered Antimicrobial Products Effective Against Norovirus –
  http://www.epa.gov/oppad001/list_g_norovirus.pdf

- Florida Department of Health – Special Needs Shelter –
  http://www.doh.state_fl.us/PHNursing/SpNS/SpecialNeedsShelter/SpecialNeedsShelter.html

- CDC / HUD Healthy Housing Reference Manual:
  http://www.cdc.gov/nceh/publications/books/housing/housing.htm
Shelter Resources

- Florida Disaster Animal Response Team – http://www.fldart.org/

- Florida Department of Environmental Health has developed a website for environmental health responders - http://def.sharepoint.doh.ad.state.fl.us/DEH/Preparedness

- Florida State Agriculture Response Team - section on pets in disasters http://www.flsart.org/library/index.htm#PD


- The Humane Society’s Disaster Preparedness Resources http://www.hsus.org/hsus_field/hsus_disaster_center/resources


Shelter Resources

• Michigan Department of Community Health - Guidelines For Environmental Cleaning And Disinfection of Norovirus

• National Resource Center for Health and Safety in Child Care and Early Education –
  [http://nrc.uchsc.edu/CFOC/index.html]

• SPHERE – Humanitarian Charter and Minimal Standards in Disaster Response –
  [http://www.sphereproject.org/content/view/27/84]

• The Sphere Project (Humanitarian Charter and Minimum Standards in Disaster Response) :
  Welcome to the Spher Handbook 2004 Revised Edition –
  [http://www.sphereproject.org/content/view/27/84]

• State Agricultural Response Team (SART) : Creating an Effective County SART: 12 Steps to Success Program –
  [http://www.flsart.org]

• Volusia County Florida’s Disaster Preparedness Guide for People with Special Needs
  [www.volusia.org/storm/specialneeds.htm]

• World Health Organization (WHO ) - Environmental Health in Disasters –
  [http://www.who.int/water_sanitation_health/hygiene/emergencies]