Environmental Health Response to Chemical Emergencies

Hurricane Katrina: Environmental Health Response

Mark Johnson, PhD, DABT
Senior Environmental Health Scientist
Agency for Toxic Substances and Disease Registry (ATSDR)
Public Health Service/DHHS

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Mississippi Coastline

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National Response Plan

Emergency Support Function Annexes
ESF #1 Transportation
ESF #2 Communications
ESF #3 Public Works and Engineering
ESF #4 Firefighting
ESF #5 Emergency Management
ESF #6 Mass Care, Housing, and Human Services
ESF #7 Resource Support
ESF #8 Public Health and Medical Services
ESF #9 Urban Search and Rescue
ESF #10 Oil and Hazardous Materials Response
ESF #11 Agriculture and Natural Resources
ESF #12 Energy
ESF #13 Public Safety and Security
ESF #14 Long-Term Community Recovery and Mitigation
ESF #15 External Affairs
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Initial Response Phase
Public Health Issues- ESF8

- Communication and Coordination challenges
- Lack of Basic Sanitation
- Availability of Safe Drinking Water
- Evacuation Procedures
- Shelter Locations and Conditions
- Response Worker Safety Concerns
- Concerns about Infectious Disease
- Vaccination of Residents and Workers
- Availability of Medical Services
Medical Services

Rapid Needs Assessment-Medical Services

- Structure
  - Damage?
- Ingress/egress
  - Blocked by debris/flooding?
- Power
  - Generator/utility
  - Amount of fuel
  - Partial? Intermittent?
  - HVAC
- Water
  - Available? Potable?
- Sanitation
- Communications
- Replenishables
  - Blood supply
  - Oxygen
  - Pharmaceuticals
  - Medical supplies
  - Food
  - Ice
- Operations
  - ER, ICU, L&D, OR
- Staffing
- Census
- Mortuary

How sustainable for the next 24 to 72 hours?

Isolated and Inaccessible Medical Facilities
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Public Health Activities

- Locate and Monitor Shelters
- Evaluate Municipal Water & Sewer Conditions
- Vector Control
- Evaluate/Inspect Food Service Establishments

Animal Care
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Re-Internment

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Response Workers

- Immunizations
  - Tetanus
  - Hepatitis B
- Training & Certification
  - HAZWOPER
  - Respirator fit testing
  - Chainsaw
  - Professional licenses
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Response/Recovery Phase
Hazardous Materials Issues - ESF10

- Monitor Dewatering of Flooded Areas
- Integrity of Industrial Chemical Facilities
- Containment of Oil Spills
- Identification and collection of Orphaned Hazmat
- Air Quality Concerns - dust, fires
- Concerns about Contaminated Sediment
- Biohazards from decaying foods and indoor mold
- Debris Removal and Disposal
- Removal of Household Hazardous Waste
- Insect abatement
- Conditions of relief operation areas
- Re-occupancy criteria for homes and buildings

Debris/Household Hazardous Waste/Orphaned Hazmat

Source: Wall Street Journal – September 12, 2005
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Pool Supply Stores

Above Ground Storage Tanks
Murphy Oil Spill - 1,000,000 gallons of crude oil
Debris Handling Issues

- Debris Clearance
- Debris Disposal
  - Concern about termite spread
  - Limited landfills, inter-parish conflicts, high water table
  - Grinding to reduce volume
- Monitor air near demolition, removal, and burning
  - Dust, Metals, VOCs, SVOCs, Asbestos

Debris Burning - Health Concerns

When is it safe to go home?
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Relocation considerations

• Houses unvented for many weeks
• Water saturated, high temps (95 most days)
• Decomposition gases likely generated
• Structural integrity compromised
• Extensive mold growth inside buildings

ATSDR
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Restoration vs Demolition vs Redevelopment

- Restoration:
  - Building Inspection (Local)
  - EPA & ATSDR Hazard Assessment (Fed)
  - 4 Gas meter: CO, H2S, Methane (LEL), O2
  - FEMA trailer placement

- Demolition
  - Permission of property owner
  - Removal of personal property
  - Who pays?

- Redevelopment???

The Recovery Continues
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