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Public Health Hazard & Vulnerability Assessment

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Presentation Outline

- Define PH HVA
- Federal Directives
- Existing FL HVA Efforts
- FL PH HVA Program Objectives
- Examples of Projects

PH HVA Definitions

- Hazard
  - A potential threat to humans and their welfare
- Vulnerability
  - The extent to which a person, group or socio-economic structure is likely to be affected by a hazard (susceptibility and resilience)
- Risk = Hazard x Vulnerability
  - The likelihood of a specific disaster event occurring and its probable consequences for people and property
Traditional HVAs don’t take into consideration key factors that may affect public health vulnerability

- Socio-economic status
  - Demographics
  - Economic indicators
  - Education
  - Linguistic
- Health status
  - Health indicators
  - Health finance
  - Healthcare access
- Geospatial analysis
  - Geographical isolation
  - Population density
  - % urban population
- Preparedness analysis
  - Public risk perception
  - Public health preparedness quotient
  - Hospital preparedness quotient(s)

Factors That Affect PH Vulnerabilities

- Poverty
- Childhood/Elderly
- Gender
- Disability
- Lack of information, education and communication
- Lack of experience and process
- Inadequate healthcare
- Geographical location / isolation
- Inadequate social and organizational integration / coordination
- Inadequate preparedness and mitigation
- Malnutrition
- Inappropriate developmental policies
- Food insecurity
- Societal stratification
- Poor water and food quality
- Limited state & local resources
- Political perceptions
- Negative social interactions: administrative graft / corruption, competition
- Lack of social order
- High burden of illness and/or injuries
Directives/Requirements-
US Dept of Health and Human Services

- Health Resources and Services Administration (HRSA), Healthcare Systems Bureau
  - National Bioterrorism Hospital Preparedness Program
  - http://www.hrsa.gov/grants/default.htm
- Centers for Disease Control (CDC),
  Public Health Emergency Preparedness
  - http://www.bt.cdc.gov/planning/coopagreement/#fy06

HRSA Guidance

- “public health departments, in conjunction with hospital and other healthcare entities, law enforcement and other first responders, engage in active planning and information sharing around HVAs…already conducted”
- “Ensure that response plans are in accordance with identified and predictable scenarios”
HRSA Critical Tasks

- Decrease the time to intervention by identification and determination of potential hazards and threats, including quality of mapping, modeling and forecasting
- Decrease human health threats associated with identifying community risks and vulnerabilities
- Through partners, increase capability to monitor movement of releases and formulate PH response and interventions based on dispersion and characteristics over time

HVA Supports HRSA Priorities & Critical Benchmarks

- #2-1 Surge Capacity: Beds, Minimal Level of Readiness — ‘events that could adversely affect the quality, capacity and continuity of healthcare operations for each participating hospital and other healthcare facility and describe plans to mitigate consequences.’
- #2-1 Number of participating hospitals
- #2-1 Number of beds, above the current daily staffed bed capacity, in other regions of the state for which predictable high-risk scenarios have been identified through HVA (within 3 hours post-event and within 24 hours post-event)
- #2-2 Capacity to maintain at least one suspected highly infectious disease in negative pressure isolation (within 3 and 24 hours post-event).
HVA Supports HRSA Sentinel Indicators

- #2-5 Number of hospitals that have access to pharmaceutical caches to cover hospital personnel, first responders and associated family members for 72 hour period
- #2-6 Numbers of PPE to protect current and additional health care personnel deployed
- #4-1 Number of hospital lab personnel trained in the protocols for referral of clinical sample and associated information
- #4-2 Number of EMS providers, poison control centers, community health centers
- #5 Number of healthcare personnel trained through competency-based programs
- #6 Number of drills or exercises conducted that include hospital personnel, equipment or facilities, drills or exercises that focus on CBRNE

CDC Cooperative Agreement

- “Recipients required to develop a risk mitigation plan based on HVA…to ensure that the public health consequences of them are minimized.”
- “The State HVA should be a compilation of assessments from local jurisdictions and any other risks identified by the state.”
Department of Homeland Security
Target Capabilities List

- Defines capabilities needed to achieve national preparedness
- Phase I – primary focus was response
- Phase II (initiated summer 2006) – focuses on capabilities that support the prevention and protect missions and long-term recovery

Target Capabilities Identify:

- Need for geocoding (critical infrastructure, EH facilities, PH facilities, resources, etc)
- Building capacity to share information/data
- Building capacity to analyze data (GIS techs)
PH HVA Program for FL Counties

- Purpose:
  - To identify and prioritize hazard probability and potential impact
  - To estimate population vulnerability according to standard indicators
  - To identify gaps in public health resources
  - To assess feasibility and define protective strategies, based on HVA data foundation, to define appropriate protection, prevention and mitigation strategies for potential public health consequences

PH HVA Program Objectives

- Populate ArcCatalog with pertinent data for Florida
- Survey FL counties for capabilities and prioritize assistance for regional/county level PH HVAs
- Ensure data availability/analysis tools for each CHD
- Regional workshops to train and assist
- Ongoing evaluation of efforts
- Assessment of Chemical Antidote Program in FL
- Assessment of Drought and Wildfires in FL
Compilation of FL HVA Efforts

- Dept. of Community Affairs – regulates chemical storage facilities
- Dept. of Health – assisting with hospital HVAs
- Law Enforcement – Critical Infrastructure Assessment
- County Emergency Management – Local Mitigation Strategies (LMS)

Other Partners
- RDSTFs
- Department of Environmental Protection
- Department of Agriculture & Consumer Services
- Department of Elder Affairs
- Agency for Health Care Administration

HVA Process Checklist

I. Title/Issue/Scenario
II. Introduction/Discussion
   a. Purpose
   b. Scope
III. Data/Background Information/Analysis
   a. Literature Search – peer reviewed
   b. Internal existing documents
   c. Data Sources
      i. Demographics
      ii. Environmental concerns
      iii. Health care data
      iv. Critical Infrastructure
      v. Logistics/resources
      vi. Hazards
   d. Caveats and limiting parameters, constraints, restrictions
IV. Data Analysis
   a. Data Overlay
   b. Data Display – GIS
V. Summary/Recommendation
   a. Primary
   b. Alternate
VI. Appendices
   a. Glossary
   b. References
HVA Data Flow

http://def.sharepoint.doh.ad.state.fl.us/DEH/Preparedness/hva.aspx
Mapping Hazards & Vulnerabilities

http://www.myfloridaeh.com/programs/EhGis/EhGisIndex.htm

Florida's Health

The Division of Environmental Health has staff members who work with Geographic Information Systems (GIS) to store, manage, model, and map environmental health data. Please visit http://www.myfloridaeh.com to view the Division of Environmental Health Map Gallery.

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http://www.myfloridaeh.com/programs/EhGis/EhGisIndex.htm
Purpose - Assessment of chemical antidotes for EMS responders and its effectiveness in protecting public health of Florida

Data Sets
- EMS providers – EMTs and Paramedics
- ALS & BLS trucks, air support
- Pharmaceutical cache locations
- Hospitals – personnel counts for PPE and potential treatment
- Population densities, critical infrastructure, large venues (all indicators for potential targets)
PH HVA Drought & Wildfires

- **Purpose** – To assist in planning and operation phase for ESF8 response
- **List of Subject Matter Experts**
  - Epidemiology
  - PH Nursing
  - Public Information Officer
  - EH – Air and Water
  - Behavioral Health
  - Pediatrics
  - Animal
  - Medical Advisor
  - Evacuation/Sheltering

- **Objectives**
  - Brainstorm scenarios and potential concerns
  - Develop IAP objectives
  - Predetermine data sets for planning and response
  - Develop map templates for decision making
  - Define roles and responsibilities for EH

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PH HVA Drought & Wildfires

- **Examples of mapping scenarios**
  - fires and evacuation of critical infrastructure (hospitals, SNF, ALFs, schools, etc)
  - Smoke plumes and vulnerable populations (asthma, cardiovascular disease, etc)
  - Smoke/fire estimates for distribution of Public Service Announcements
  - EPI surveillance data for PSAs and direct resources
  - Drought information and well water quality issues (chlorides, water conservation, etc.)
http://def.sharepoint.doh.ad.state.fl.us/DEH/Preparedness/droughtfire.aspx

Sharing Data Across Agencies - Groove
FL Acres Burned/ Drought Index

- KBDI – Keetch Byram Drought Index
  - 0 = no moisture deficiency
  - 800 – maximum drought possible
Theory Into Practice

- Justification for resource allocation
- Establishment of MOA’s across HVA county stakeholders
- Targeting training & education for program direction and public awareness
- Educate local emergency management
- Ongoing system for evaluation, changing trends and conditions