



# Essential Environmental Health Services Provided by USPHS Applied Public Health Teams After Disasters

Sven E. Rodenbeck, Sc.D., P.E., BCEE

Captain, US Public Health Service

# 10 Essential Public Health Services

- Monitor health status to identify community health problems.
- Diagnose and investigate health problems and health hazards in the community.
- Inform, educate, and empower people about health issues.
- Mobilize community partnerships to identify and solve problems.
- Develop policies and plans that support individual and community health efforts.
- Enforce laws and regulations that protect health and ensure safety.
- Link people to needed personal health services and ensure the provision of health care when otherwise unavailable.
- Assure a competent public health and personal health care workforce.
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Research for new insights and innovative solutions to health problems.



# Core Public Health Competencies

- Analysis and assessment
- Policy development and program planning
- Communication
- Cultural competency
- Community dimensions of practice
- Basic public health sciences
- Financial planning and management
- Leadership and systems thinking



# Hurricane Katrina Lesson

Early in the disaster response and recovery, federal, state, and local elected officials and community leaders recognized the importance of public health in the post-hurricane rebuilding of New Orleans.



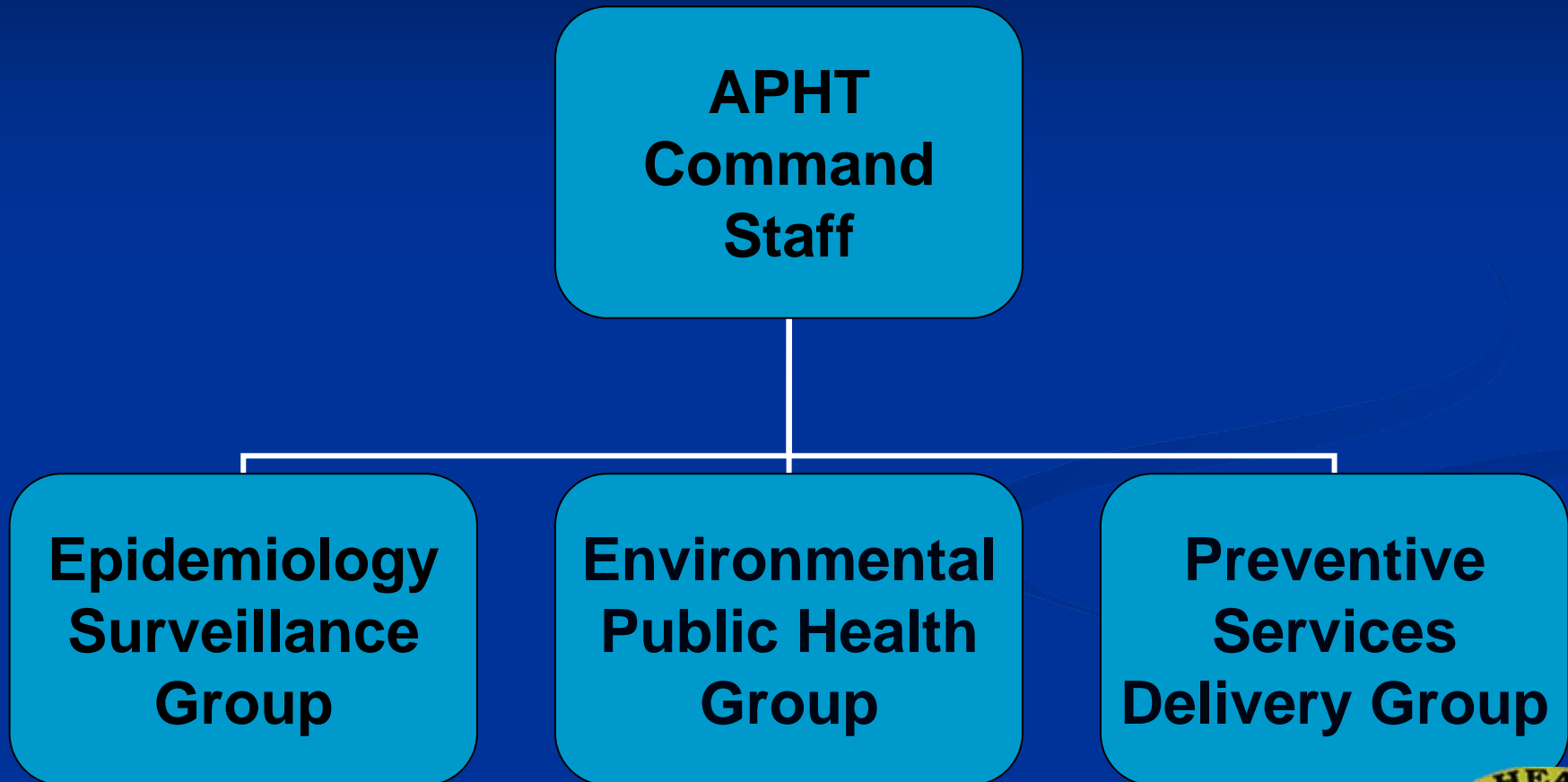
# Applied Public Health Team

“Public Health Department in a Box”

Non-Clinical Missions



# USPHS APHT Functional Structure



# APHT Role or Contribution

- **Epi and Surveillance Section Impact**
  - Data collection and/or data analysis
  - Reporting/compile community health status profile
  - Contact tracing?
- **Preventive Services Section Impact**
  - Health statistics information dissemination
  - PH or medical recommendations
  - Alerting or advise for local providers & officials
  - APHT contacts for other teams
- **Environmental Health Section Impact**
  - Adequate and safe water supply
  - Availability of safe, nutritious food
  - Access to adequate shelter and primary health care
  - Environmental & Occupational hazard assessment



# APHT Missions

2006 - 2008



# 2006 APHT Deployments

- June – Louisiana Nursing Home Survey
  - Evaluation of emergency plans, review of evacuation and transportation plan, and integrity of infrastructure to withstand storm
  - 13 Officers of mixed technical expertise
- August – Louisiana Hospital
  - Shelter in place assessments of the 56 hospitals in the 12 coastal LA parishes that are most at risk from a hurricane Survey
  - 13 Officers of mixed technical expertise



# 2008 APHT Deployments

- August/September Wisconsin Flood Recovery
  - 5 Environmental specialists to conduct house to house assessments of flood and water damage to homes
  - 2 Separate teams deployed for 2-weeks each
  - Conducted:
    - 696 home visits
    - 114 water sample collections
    - Disinfected 36 wells
    - 450 homes provided water sampling kits with instruction on correct water sampling procedures



# 2008 APHT Deployments (cont.)



# APHT Hurricane Ike Deployment

- Landfall September 13
- APHT 3 Deployed September 19
  - 1<sup>st</sup> Full APHT Deployment
  - Support and Augment Texas Department of State Health Services
  - Base of Operations at Austin Joint Field Office
  - Conducted 11 mission assignments



# APHT Hurricane Ike Deployment (cont.)

September 9, 2008



September 15, 2008



# APHT Hurricane Ike Deployment (cont.)

1	Kelly Air Force Base FMS Air Quality/Industrial Hygiene Assessment	IRCT	9/19-23/2008
2	College Station FMS Infection Control Evaluation	IRCT	9/20-22/2008
3	Epidemiological Support to TDSHS, Austin	TDSHS	9/22-27/2008
4	Food Establishment Inspections TDSHS Region VI/V South Office	TDSHS	9/22-27/2008
5	Kelly Air Force Base FMS Infection Control Evaluation	IRCT	9/21-23/2008
6	Galveston Island Medical Facility Industrial Hygiene Assessment	IRCT	9/22/2008
7	Liberty and Manville Rapid Community Public Health Needs Assessment	TDSHS	9/22-28/2008
8	Port Arthur City Health Department Staff Augmentation	TDSHS	9/22-25/2008
9	Orange County Health Department Staff Augmentation	TDSHS	9/22-25/2008
10	College Station FMS Infection Control Follow-up	IRCT	9/24/2008
11	Galveston Island Rapid Community Public Health Needs Assessment	TDSHS	9/26-10/2/2008

# APHT Hurricane Ike Deployment (cont.)

- Kelly Air Force Base FMS Air Quality/Industrial Hygiene Assessment
  - Former Kelly Air Force Base Warehouse
  - Medical Shelter Director had expressed concerns
  - Environmental Baseline Survey conducted prior to the facility being transferred to the state of Texas
  - APHT IH recommended:
    - Replace the filters on the first air conditioning unit located at the northwest portion of the building with filters used in the other units.
    - Remove obstructions from the drainage canal to ensure clear water movement away from the building.



# APHT Hurricane Ike Deployment (cont.)

- FMS Infection Control Evaluations
  - IRCT Chief Medical Officer requested
  - College Station & former Kelly Air Force Base
  - Found areas needing improvement:
    - Require care givers change and launder their uniform jackets daily
    - More showers and sinks needed
    - Human waste placed on the loading dock not picked up daily



# APHT Hurricane Ike Deployment (cont.)

- Food Establishment Inspections
  - TDSHS Region VI/V South Augmentation
  - Liberty and Walker Counties
  - 123 food establishments
    - 80 retail establishments
    - 27 schools
    - 6 day care facilities
  - The “Winner”
    - substandard electrical system; no paper towels at hand washing area; freezers filled to capacity and not at appropriate temperature; uncovered food in refrigerator; a fan mounted from ceiling with long strands of dirt and grime hanging; general sanitation unacceptable; inadequate room for food preparation in kitchen; and filthy conditions

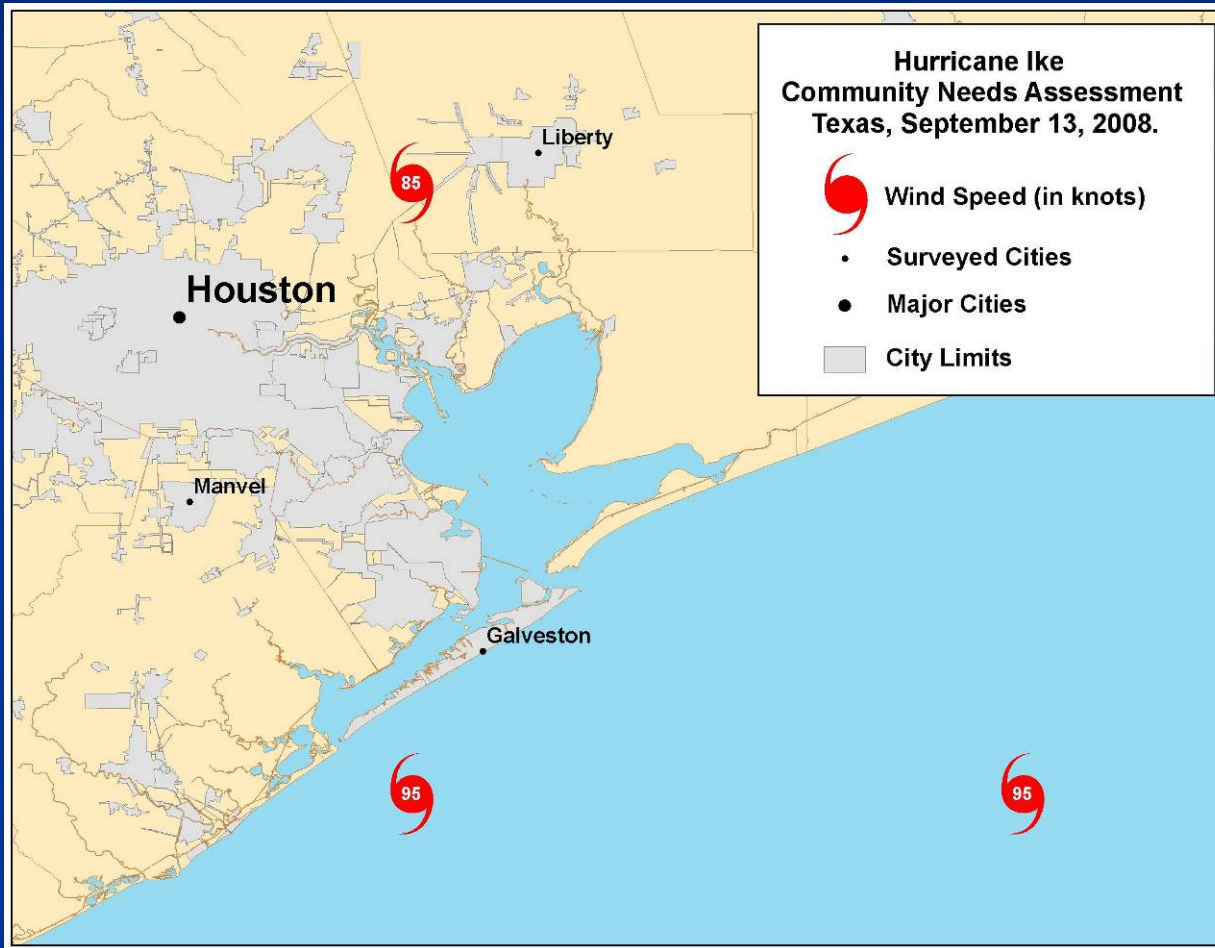


# APHT Hurricane Ike Deployment (cont.)

- **Community Assessment for Public Health Emergency and Response (CASPER)**
  - Tool that can be used to quickly obtain information on the status of a community
  - Cluster sample design using geographic information systems (GIS) to randomly select households to interview
  - Liberty, Manvel, and Galveston Island
  - 20 person – half APHT and TDSHS staff



# APHT Hurricane Ike Deployment (cont.)



# CASPER



# CASPER Results

- Indoor use of charcoal grills, more than generators, is a public health concern
- No major communicable infectious disease or injuries reported
- ~41% of the adults could be without current tetanus immunity
- TV alone is not enough to deliver public health information



# Applied Public Health Team 3



“The Health Hazard Busters”



# May the (PHS)-Force Be with You

Do good and be well...



Questions?

