Science, Technology and Security: Knowledge for the Post-9/11 World

Presentation by:

Dr. May Chu
CDC, Fort Collins
DIVISION OF VECTOR-BORNE INFECTIOUS DISEASES

- ARBOVIRUSES
  - Alphaviruses
    - VEE, WEE, EEE
  - Flaviviruses
    - YE, JE, DEN, SLE, WNV

- BACTERIAL ZOONOTIC DISEASES
  - Borreliosis
    - Lyme Disease, RF
  - Plague
  - Tularemia
DIVISION OF VECTOR-BORNE INFECTIOUS DISEASES

• Mission
  – Epidemiology
  – Ecology
  – Diagnosis/Training

• WHOCC
  – Arboviruses
  – Dengue viruses
  – Borreliosis
  – Plague
  – (Tularemia)

• Subject Matter
  Experts to CDC’s Bioterrorism Preparedness Response Program
  – Plague
  – Tularemia
  – Viral Encephalitis
    • (VEE, EEE, YF, WNV)
Local Bioterrorism Preparedness: Detection and Response

Healthcare Providers and Microbiologists

Healthcare Organizations

Public Health

CDC

SAFER • HEALTHIER • PEOPLE™
Building the LRN

Laboratory Response Network

Federal Laboratories

State & Local Public Health Laboratories

Hospital & Independent Laboratories
Clinical and Public Health Laboratories in the U.S.

- Physician Office & Rural Health Clinic Laboratories: 150,000
- Public Health Laboratories: 2,000
- Independent & Hospital Laboratories: 17,000
Current Status: LRN

Concept of Operations

Level-A Labs - Assess Risks for Aerosols and Use Biosafety Cabinet

Level B Lab
Work at BSL-2 with BT agents

Level C Lab
BSL-3

C – Molecular assays, reference capacity

Level B Lab
Work at BSL-2 with BT agents

Level D Lab
BSL-4

D - Highest level characterization (Federal)

A - Rule-out and forward organisms
Laboratory Response Network for Bioterrorism

State and Local Labs

- Level C Labs
- Level B Labs
- Level A Labs

Level D (CDC or Military) Laboratory

- Anthrax Lab
- Plague Lab
- Other Agent Specific Labs

CDC BT Core Lab: Rapid Response & Advanced Technology

*Association of Public Health Laboratories supports management of the State-level Network*
To What Degree Would the Burden be on the Public Health System if a BT Event Occurred?
Anthrax Disease Associated with Mail Paths & Intended Target Sites

- Hamilton (NJ)
- Morgan (NY)
- Brentwood (DC)

9/18 letters

- West Palm (FL)

10/9 letters

- State Dept Annex (DC)

Target site

- AMI
- NBC
- ABC
- CBS
- NY Post
- Daschle
- Leahy

Inhalational case

- Cutaneous case

Mail flow

- Bookkeeper, NJ
- Hospital worker, NY
- Retired at home, CT

AMI

NY Post

Daschle

Leahy

CDC

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Emergency Operations Center (EOC): Phone Response, 10/10/2001 to 11/4/2001 (9,488 Call Forms)
Laboratory Burden

Approximated *B. anthracis* Environmental Samples from All & Targeted Geographies by LRN Laboratories vs. Time

![Graph showing the number of environmental samples received and the sum of ENV samples from targeted areas over time.](image-url)
Lab Environmental Response to Oct-Dec Anthrax Events

DoD inclusive (25%)
30,200 environmental tests performed

+ CDC inclusive (6%)
7,500 environmental tests

PHL inclusive (69%)
+ 84,010 environmental tests

Total:
121,710 environmental tests