

Bioterrorism

An Orientation for Providers of Medical
Care
Part I

New York City Department of
Health

Bureaus of Disease Intervention

and

Medical and Professional Education and Training

What is the objective of this training in bioterrorism?

- Assist providers of medical care in
 - Early detection and reporting
 - Diagnosis, management and prevention of :
 - Anthrax
 - Smallpox
- For latest information on bioterrorist incidents in NYC, see Press Releases and Fact Sheets on NYCDOH website:
www.nyc.gov/health => Anthrax => Information for Physicians

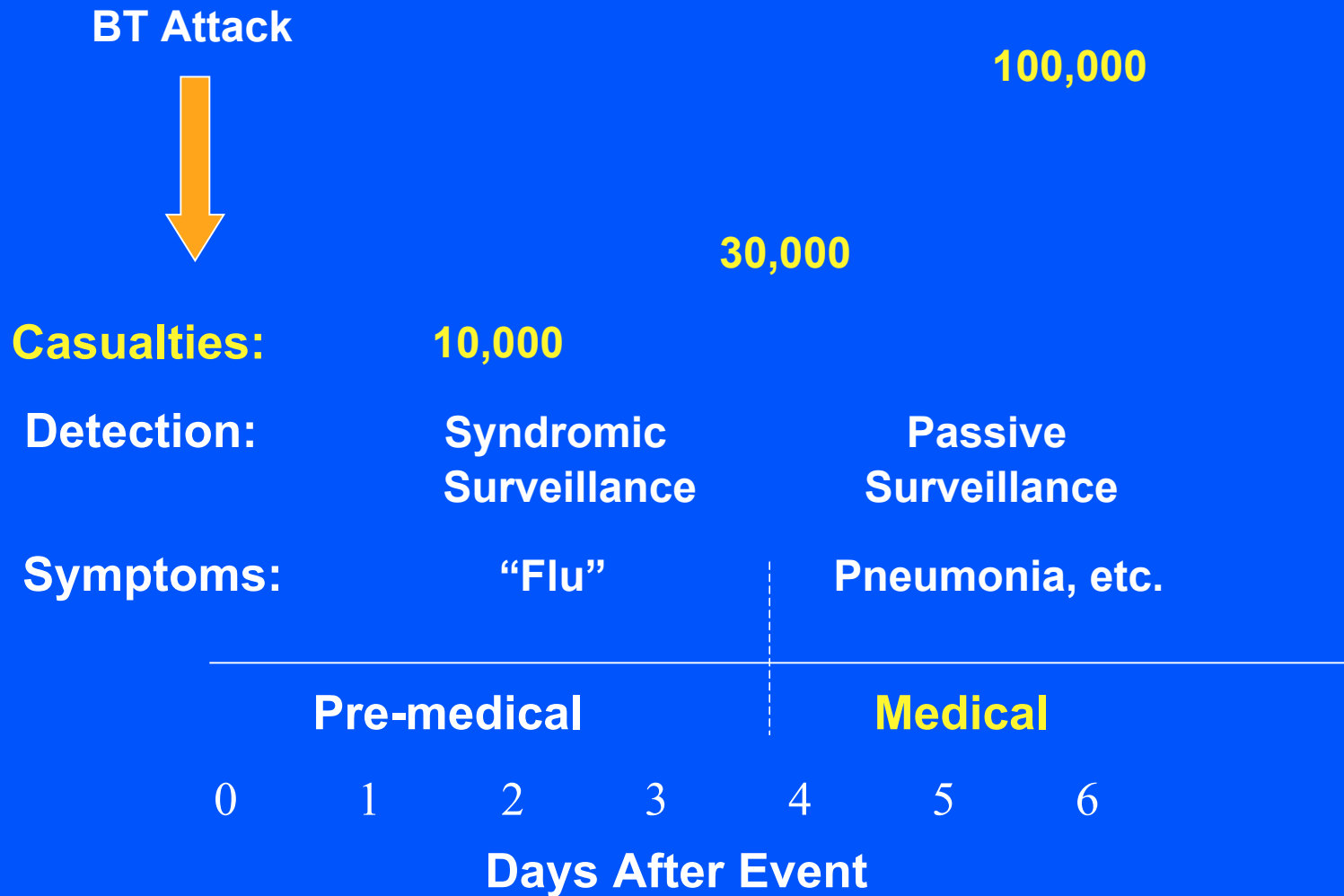
Overt vs Covert Terrorist Attacks

- *Overt* attacks (e.g., bombings, chemical terrorism) elicit immediate response from police, fire, and EMS personnel
- Attacks with biological agents are more likely to be *covert*, with a delay between exposure and illness (i.e., incubation period)

MMWR, 2000:49(RR-4)

RECOGNITION OF BIOTERRORISM EVENTS

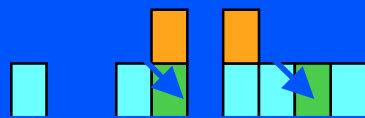
Impact of Covert Anthrax Attack by Day of Detection



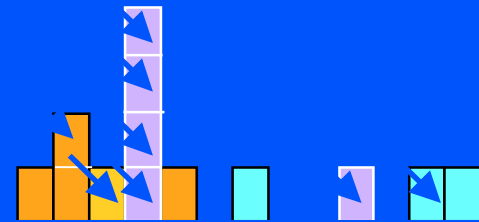
Bioterrorism-associated Anthrax: Inhalation and Cutaneous Cases



NYC
letters*



Senate
letter*



*postmarked date of known contaminated letters.

Why is a Bioterrorist Event of Public Health Importance?

- Low probability **BUT** high consequence event
- potential for catastrophic numbers of casualties
- potential exists for prevention IF recognized **EARLY**

Public Health Role in Responding to Bioterrorism

- Detect potential disease cluster
- Rapid investigation to assess clinical and epi characteristics
- Confirm diagnosis/antibiotic susceptibility
- Alert & educate medical community
- Establish active surveillance to monitor morbidity & mortality
- Coordinate epi investigation to determine site of exposure and define at-risk population
- Assist in mass medical care and prophylaxis
- Assess environmental contamination

Importance of Early Recognition

- Alert and educate medical community regarding clinical management
- Expedite epidemiologic and criminal investigations
- Mobilize antimicrobial and vaccine supplies to mitigate morbidity/mortality
- Recruit additional resources from the federal and state governments

Detection of Bioterrorist Attack: Who are 1st Responders?

- Primary Care Personnel
- Hospital ER Staff
- EMS Personnel
- Public Health Professionals
- Laboratory Personnel

They are in the best position to identify the first evidence of a covert attack with a biologic agent

Why routine public health surveillance is not enough

- Passive surveillance: Physicians and laboratories are mandated to report conditions as required in health code
 - Focuses on confirmed cases
 - Often incomplete
 - Often not timely
- Active surveillance: DOH contacts providers or laboratories after outbreak or high-profile event
 - Usually initiated after an alert has been detected
 - Labor-intensive, time-consuming

We cannot wait for a definitive diagnosis to be established before beginning our response

We must identify an increase in illness before diagnosis is established in order to maximize time left for effective interventions

Many bioterrorist agents cause an initial illness that looks like influenza.

Initial presentation of:

- Anthrax
- Plague
- Brucellosis
- Tularemia
- Q Fever
- Glanders
- Smallpox
- Viral hemorrhagic fevers

Fever

Headache

Muscle pain

Malaise

=

**“Influenza-like
illness”**

The DOH has instituted “syndromic surveillance”

- 911:
 - Are there significantly more calls for flu-like syndromes?
- Emergency rooms:
 - Are more patients than usual presenting with suggestive symptoms?

Keep a high index of suspicion and notify the health department if you see:

- Temporal or geographic illness clusters
- Unusual manifestations or clusters of illness in previously healthy individuals
- Specific syndrome clusters that suggest an outbreak (natural or intentional)
 - Influenza-like illness (in summer?)
 - Gastrointestinal illness
 - Fever and rash
 - Neuromuscular illness
 - Bleeding diatheses

Notify the health department (con't.):

- Unusual zoonotic diseases in non-endemic areas
- Unusual clinical features
 - In previously healthy persons:
 - Widened mediastinum
 - Hemorrhagic pneumonia
 - Synchronous, pustular rash on face and hands

If you see a patient or cluster of cases with an illness with a suspicious clinical pattern...

Call your local health department:

New York City Department of Health

Business Hours:

212-295-5658

212-295-5670

212-295-5665

212-295-5671

212-295-5675

Nights/weekends:

Poison Control 212-764-7667

IMMEDIATELY!

Bioterrorist Agents

Some Possible Candidates

Bacteria

Anthrax

Plague

Salmonella

E. coli O157:H7

Toxins

Botulinum

Ricin

Viruses

Smallpox

VEE *

VHF's **

* Venezuelan Equine Encephalitis

** Viral hemorrhagic fevers