

Cutaneous Anthrax in NYC: Expect the Unexpected

New York City Department of Health
and
Centers for Disease Control

September 11, 2001



NYCDOH Enhanced BT Surveillance in Response to 9/11

- Sept 12: Enhanced surveillance for any BT event
 - Active surveillance at 15 sentinel E.R.s
 - Frequent broadcast alerts to prompt reporting of unusual clusters or disease manifestations
- Oct 4: Began active surveillance for inhalational anthrax after index case in Florida reported
 - Outreach to all ICUs, micro labs, ICP and ID MDs

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ANTHRAX

THIS

**Stricken
New York
Post girl's
message
to the
terrorists**

My battle
with Anthrax:
Pages 4 & 5

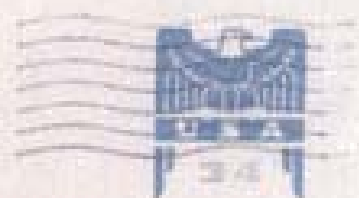




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Index Case in New York City

- 38 year old female employee at NBC
- Sept 25th: Onset ulcerative chest lesion
- Oct 1st: Seen by Infectious Disease MD
 - Contacted NYCDOH as patient recalled handling a threat letter with powder (*postmarked 9/25*)
 - This letter retrieved by FBI and tested (-) for anthrax
 - Bacterial cultures of wound (-) for *B. anthracis*
 - Primary diagnosis was infected spider bite and patient responded to oral ciprofloxacin

Index Case in NYC (continued)

- Oct 8th: Patient contacts FBI\DOH after hearing of Florida anthrax case
- Oct 9th: ID/dermatology consults; biopsy and the 9/25 letter sent to CDC
- Oct 9-11th: NYCDOH develops contingency plan with NBC's employee health
- Oct 12th
 - 12AM: (-) PCR tests on biopsy/letter
 - 3AM: CDC reports (+) IHC result
 - 12PM: On-site investigation begun
 - 11PM: 2nd letter (*dated 9/18*) found by FBI and tests (+) for anthrax

When it rains it pours....

- By the evening of October 12th, 3 additional highly suspect cutaneous cases were reported (all associated with major media outlets)
- As each case confirmed, multidisciplinary teams mobilized for on-site investigations and response:
 - NBC: Oct 12-17
 - ABC: Oct 15-19
 - CBS: Oct 18-20
 - NY Post: Oct 19-25

NYCDOH Response at Media Sites

- Epidemiologic:
 - Active surveillance (*referrals to pre-identified clinics*)
 - Interviews for suspicious letters (*conducted with PD/FBI*)
- Environmental testing: Focused on case's floor and "mail trail"
- Clinical: Decision re: NP swabs for epi purposes and antibiotic prophylaxis for those "at-risk"
- Educational outreach and mental health counseling

Media Investigations

Site	Interviews	Nasal swabs	Prophylaxis initiated	Total Cases
NBC	1283	1360	1283	2
ABC	732	757	None	1
CBS	357	352	None	1
NY Post	175	111	23	3

NYCDOH Citywide Response to Anthrax Threat

- Enhanced surveillance for additional cases
- Laboratory testing for >3000 powder events
- Rapid development of clinical guidelines
- Prioritized communication, esp. to providers:
 - Broadcast alerts
 - MD hotline
 - Speakers Bureau
 - Website
- Environmental testing/clean-up at affected sites

Enhanced Surveillance for Anthrax

- Needed to modify efforts to detect cutaneous cases
 - Purchased digital cameras to help triage cases
 - Targeted outreach to dermatologists
 - Set up formal dermatology referral system
- Continued to send frequent broadcast alerts with outbreak updates/clinical protocols
- Expanded ED syndromic system to 29 hospitals
- Employee health surveillance (USPS)
- Veterinary surveillance for animal cases



THE CITY OF NEW YORK DEPARTMENT OF HEALTH

Rudolph W. Giuliani
Mayor

Neal L. Cohen, M.D.
Commissioner

October 25, 2001

ALERT #5: Inhalational Anthrax among Postal Workers in Washington, D.C. and New Jersey

- 1 - Update on the multi-state outbreak of intentional anthrax
 - Recent cases of inhalational anthrax in 4 postal workers in Washington, D.C. and 1 postal worker in New Jersey
 - In NYC, there are now 5 cases of cutaneous anthrax; NO cases of inhalational anthrax
- 2 - Updated information on how to report a suspect case of anthrax to the NYCDOH and arrange laboratory testing (*See Appendix*)
- 3 – INTERIM GUIDELINES for medical management of milder illness among patients in NYC at higher risk for exposure to letters contaminated with anthrax spores
- 4 - Revised guidelines on prescribing prophylactic antibiotics and nasal swab testing
- 5 - The NYCDOH is now posting all medical information on anthrax on our website at <http://www.nyc.gov/html/doh/html/cd/wtc1hcp.html>
- 6 – Reminder of the importance of starting influenza vaccinations for patients at higher risk for complications

High Risk Groups for Anthrax

- Employee of high profile organization (*e.g., media, government*)
- Employee of US Postal Service
- Anyone with recent exposure to powder in a letter deemed to be a credible threat

Clinical Criteria for a Suspect Cutaneous Case

- Painless vesicular or ulcerative lesion with surrounding edema, with development of blackened eschar within 3-7 days, or
- Less suspicious lesion occurring in risk group and/or with Gram stain/culture suggesting a *Bacillus species*

Clinical Work-Up for Cutaneous Anthrax

- Culture of vesicular fluid/ulcer base
- Fresh frozen biopsy for PCR and culture
- * Formalin-fixed biopsy for immunohistochemical staining
- Acute and convalescent serology (ELISA)
- Whole blood for PCR

Case Management of Suspect Cases

- Suspicious cases reported to the NYC Medical Provider hotline (24-7 coverage)
- DOH/CDC on-call physician determined if met criteria for further testing
- Highly suspect cutaneous cases met at MD office to facilitate collection of specimens and to take digital photos
- Lab testing arranged at DOH/CDC with same day transports to Atlanta for priority cases

Varying Presentations of Cutaneous Anthrax



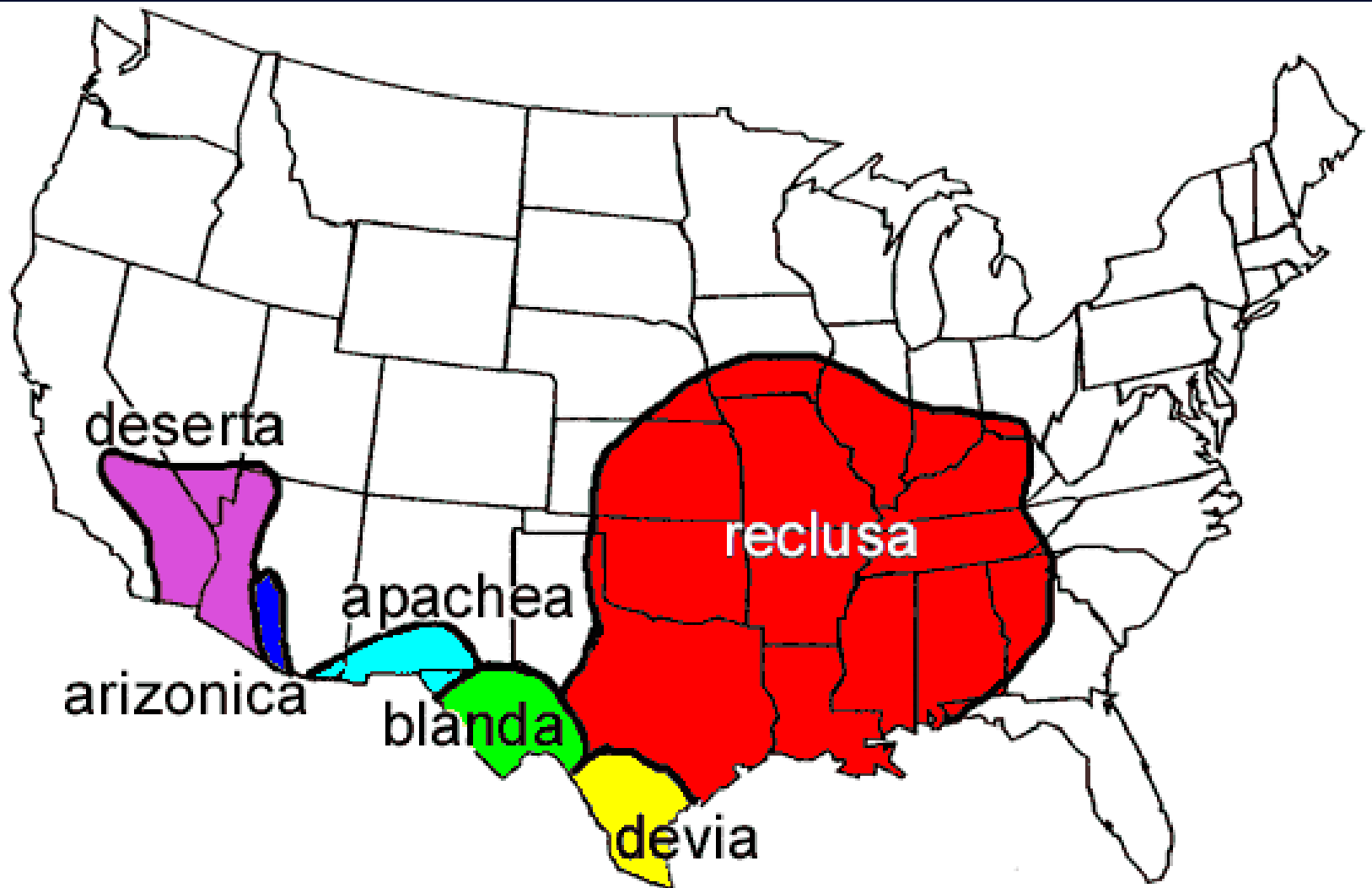
Differential Diagnosis of Eschar-Like Lesions

Rickettsialpox



Brown recluse spider





Range of recluse (genus *Loxosceles*) spiders
in the United States

Summary of Cutaneous Anthrax Investigations in NYC

- ~ 700 cases reported: ~ 100 met “suspect” criteria
- What we found:
 - 7 cutaneous cases; All linked with major media outlet
 - 6 routinely handled mail or involved in evidence collection
 - 3 of >2,500 nasal swabs positive
 - Only 2 (50%) contaminated threat letters found
 - (+) environmental contamination at all media sites
 - ~ 30 persons received longterm antibiotic prophylaxis

Cutaneous Anthrax, 2001

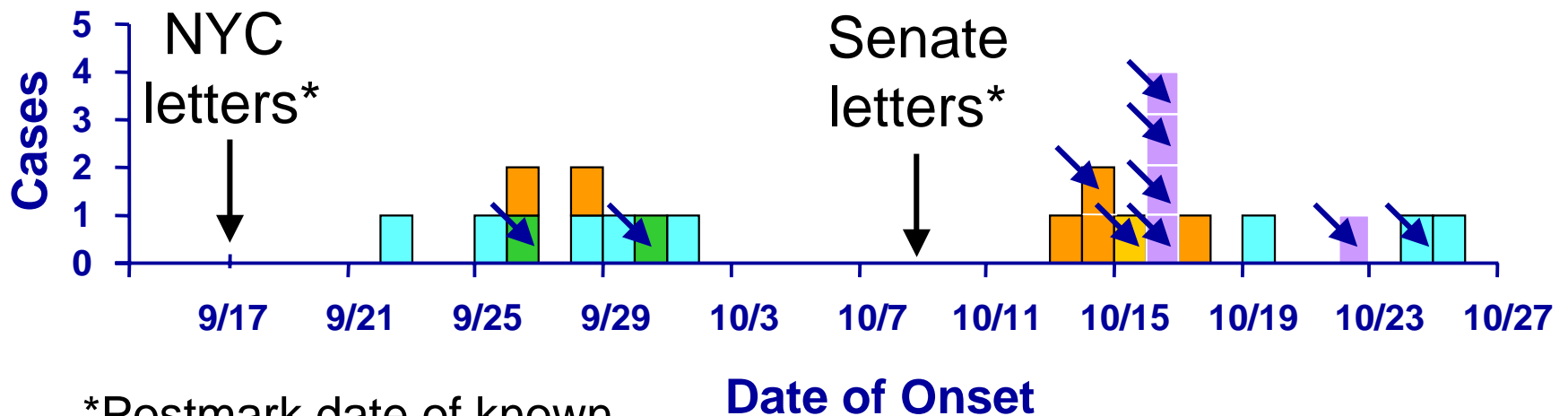
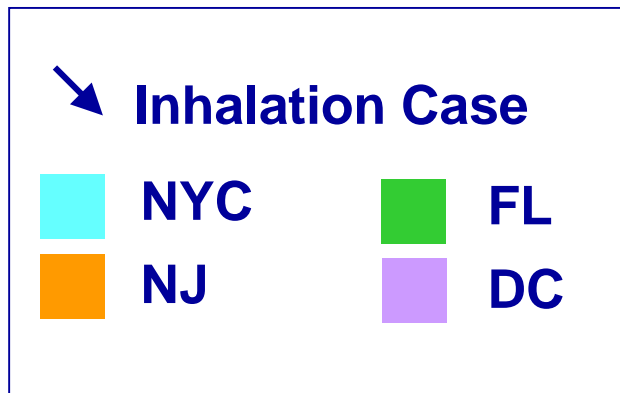
New York and New Jersey (N=11)

- Median Age 35 years (7 m – 51 yr)
- Fever 36%
- Erythema/Edema 91%
- Ulcer 55%
- **Eschar on exam 18%**
- **Multiple lesions 18%**

Cutaneous Anthrax, 2001 (N=11)

- Blood cultures 1 (+) of 4
- Wound cultures 1 (+) of 9
- Serology 67%
- IHC 80%
- Incubation period Median 6 d (1-12 d)
- Time to diagnosis Median 10 d (*before 10/12*)
- Median # MDs seen 2 (1-4)

Bioterrorism-associated Anthrax: Inhalation and Cutaneous Cases



*Postmark date of known contaminated letters

Lessons Learned: Detection and Surveillance

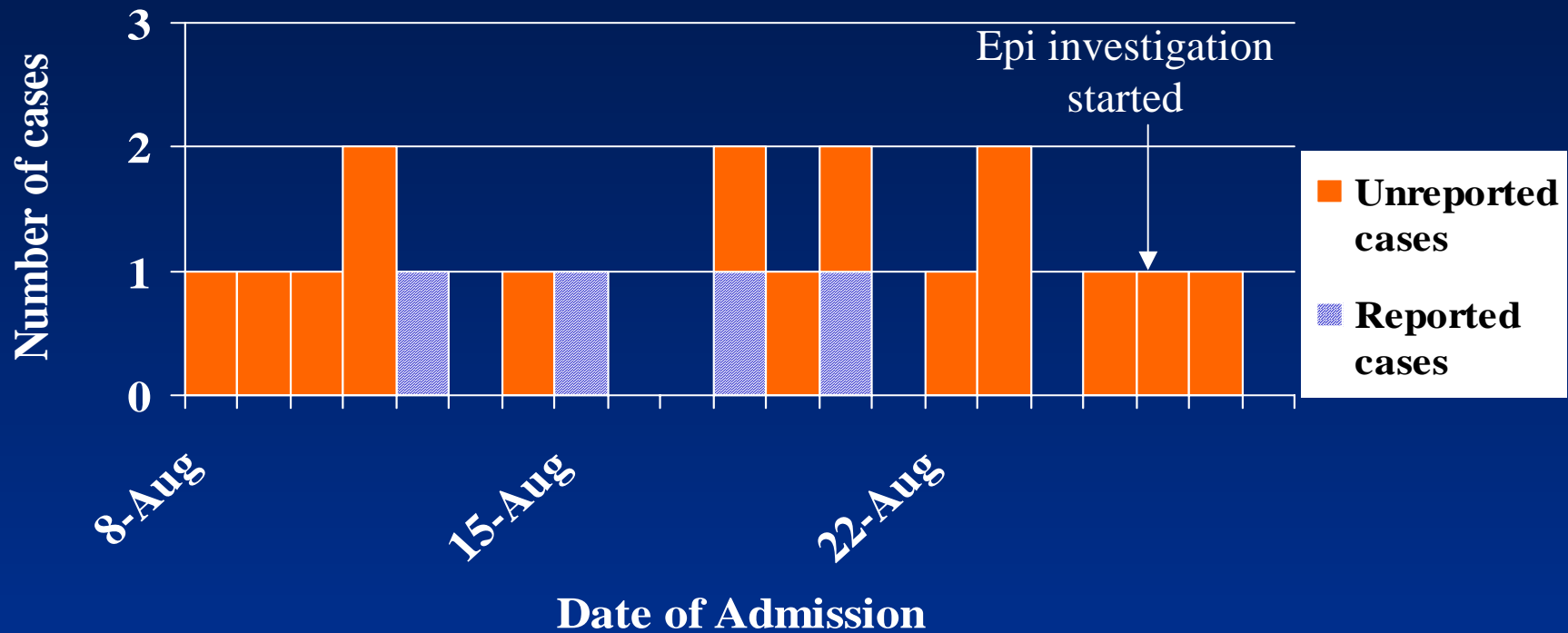
Detection: Delayed Recognition

- Most MDs did not “think” of anthrax
- Lab confirmation 1^o dependent on IHC staining

Surveillance: Need to rapidly “Ramp Up” Surveillance

- Prioritize active communication with providers
 - Detailed guidelines on what/how to report and how to test
- Surge capacity with 24-7 coverage (*staff hotlines, conduct case investigations, laboratory tracking*)
- Challenges in triaging cutaneous diseases by phone

West Nile Virus 1999: The Power of Physician Reporting of Unusual Disease Manifestations



Take Home Points

- All 2001 cutaneous cases with direct or indirect exposure to contaminated mail
- Intentional BT diseases may not always fit the textbook clinical description for natural diseases
- Need to improve surveillance for dermatologic manifestations of bioterrorist diseases
 - Active outreach to primary care providers/dermatologists
 - Value of digital cameras for triaging suspect cases
- **EXPECT THE UNEXPECTED!!**

Acknowledgements

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- National Coffee Chain "SB"

Anthrax Then and Now



Woolsorters Disease



Mailsorters Disease