

**Anthrax in Washington, DC:  
Experience and Lessons Learned in  
Pediatric Infectious Disease (PID)**

**Nalini Singh,MD,MPH, Andrew Bonwit,  
MD, Marie-Michèle Léger, MPH, PA-C,  
Hans ML Spiegel, MD,PhD, Barbara  
Jantausch,MD, Bernhard Wiedermann,  
MD, William Jarvis, MD**



# INTRODUCTION

- In October 2001, cases of anthrax were identified originating from the Brentwood Postal Facility in Washington, DC
- The radius of clinically-significant exposure was not known at first
- As the event evolved, risk to peripherally-exposed persons was in doubt
- Children's had to develop a rational and safe approach to care of children with possible exposure to anthrax spores



# View from Children's National Medical Center on 11 September 2001



# GOALS

- We reviewed the activities of PID clinicians responding to the event
- Purpose was to develop ability to respond to similar events which might occur in the future
- PID clinicians developed an algorithm to define:
  - likelihood of exposure, appropriate diagnostic work-up, and appropriate empiric antibiotic coverage of selected patients



# MATERIALS AND METHODS

- Patients presented with histories exposure to potentially contaminated spaces
  - Postal facility workspaces
  - Adjacent, non-work-spaces in postal facilities
  - Exposure to questionable materials (work-clothes of parents who were employed at Brentwood)
- Children with and without symptoms



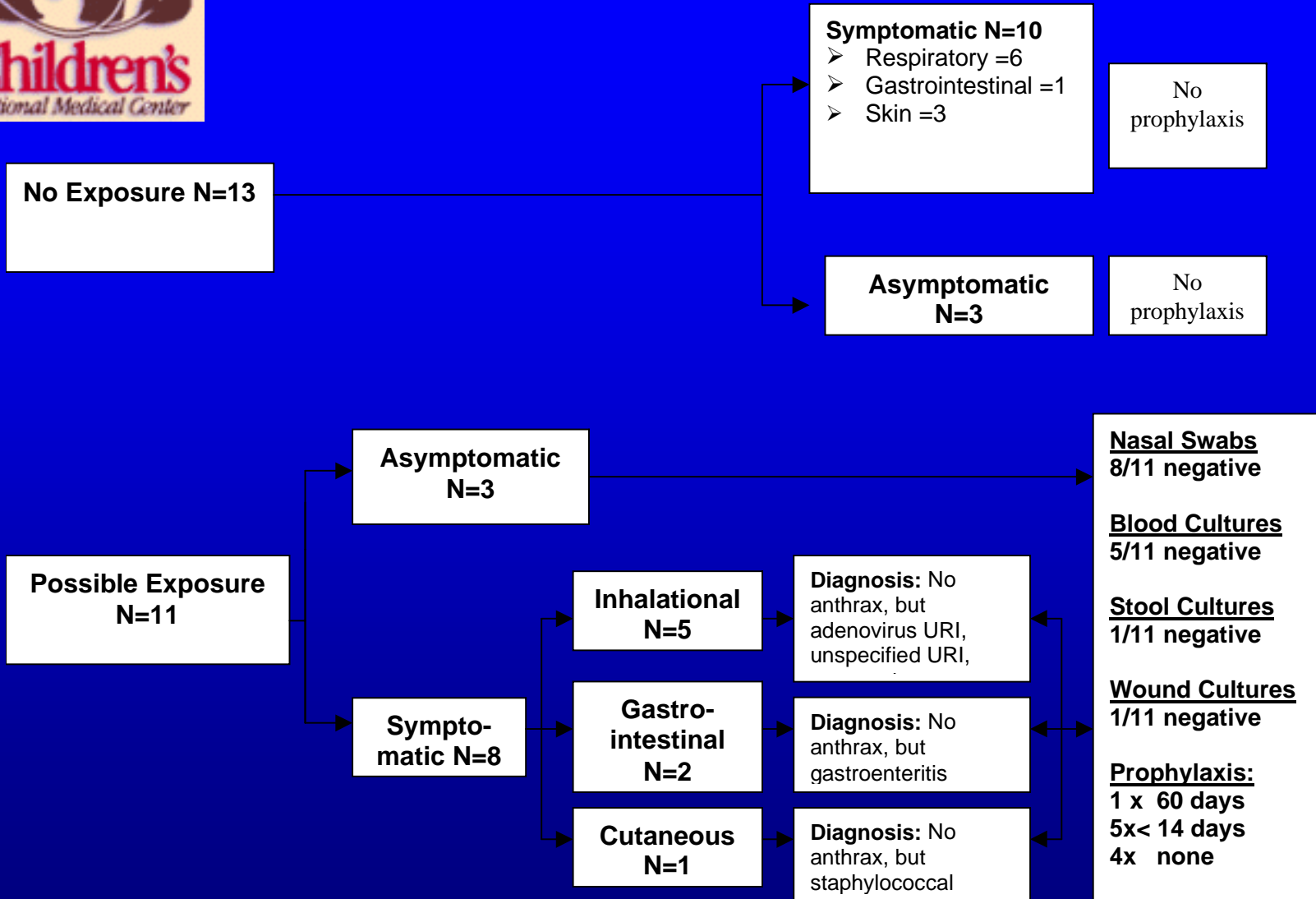
# RESULTS

- Four principal actions of PID clinicians:
  - Communication:
    - external (District of Columbia Hospital Association, CDC, and news media)
    - Internal (hospital workers)
  - Collection and assessment of available, relevant scientific information
  - Serving as liaison for informing the community
  - Evaluating children with possible anthrax exposure and illness





# CNMC Concern for Anthrax Exposure



# **Patients With Possible Anthrax Exposure (n=11)**

- **Dates of ER presentation:**
  - 22 October to 23 October, 8 patients
  - 10/26/01 and later = 3 patients
- **Age range: 14 months to 12 years**
- **Locations of possible exposure:**
  - 8 related to Brentwood Postal Office
  - 3 related indirectly to Brentwood or other facility
- **Symptomatic patients:**
  - 8 (respiratory=5, GI=2, respiratory & skin=1)



# Exposure Evaluation History

- Brentwood Post office
  - Children related to mail handler
    - children visited work area (one, prior to outbreak period)
  - Children related to workers in other areas
    - 2 children visited credit union (no shared airflow)
  - Family member cleans mail sorting machine
    - child exposed to dust on parent's work clothing
  - Child in day care; provider's spouse works at Brentwood Post Office





# Exposure Evaluation History

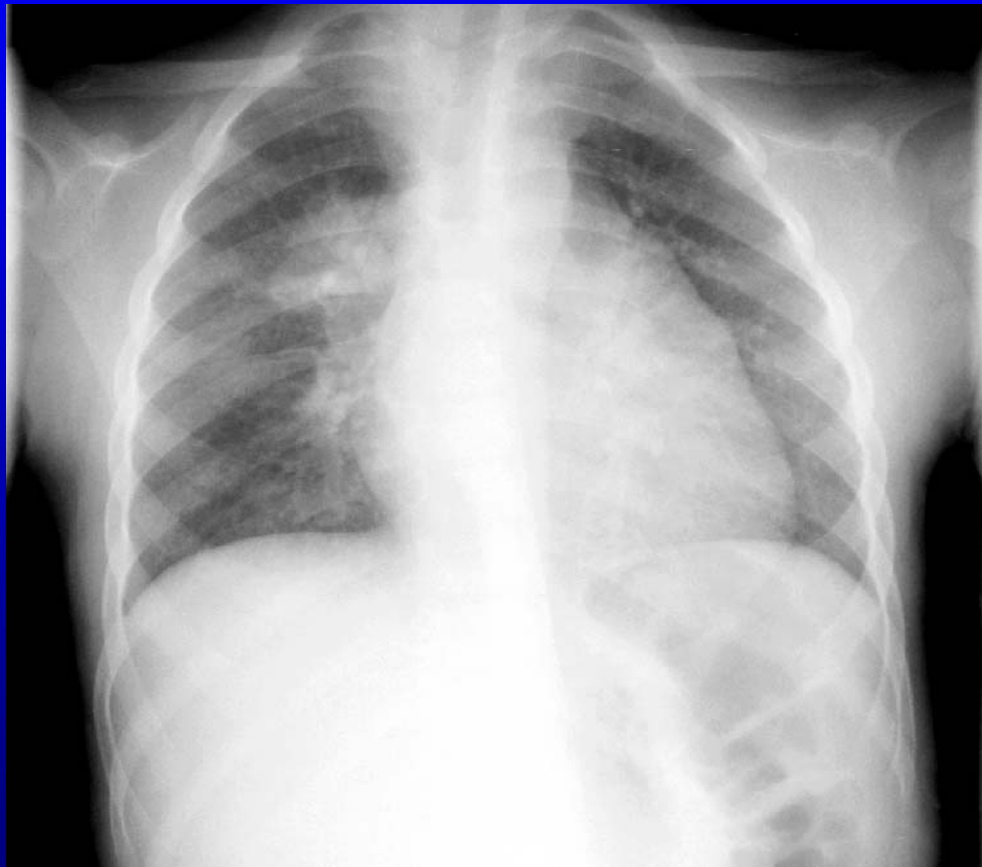
- Post office
  - Parent work at River Terrace post office
    - Child visited work area
  - 2 children in Brentwood Post Office public area
  - 1 child lives near Brentwood post office
- Hart Building (1 patient outside the facility)
- Transportation system (2 patients)

# CLINICALLY USEFUL TESTS

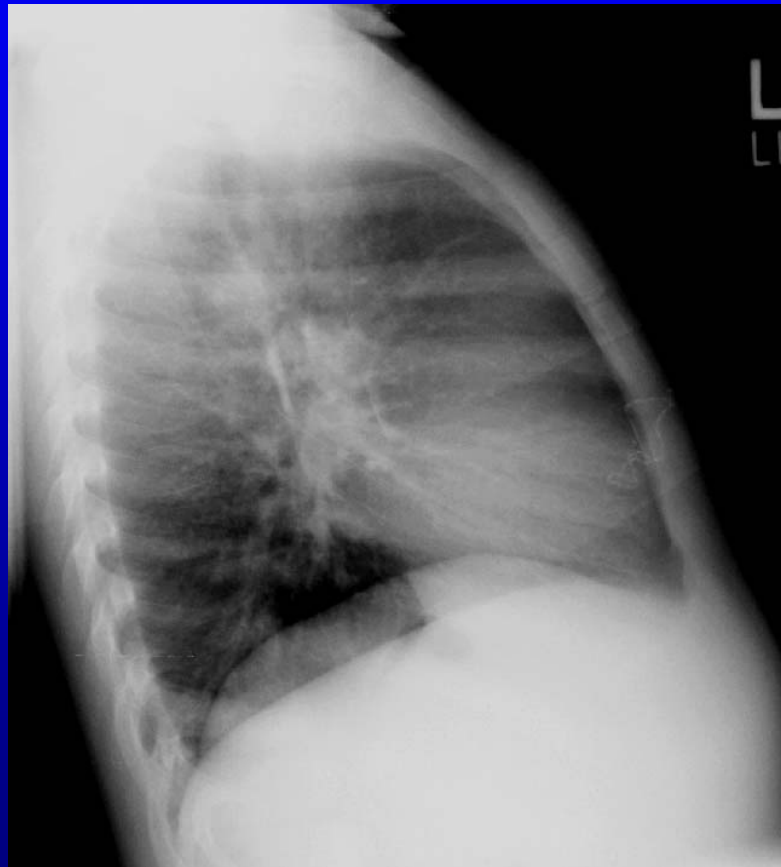
- Routine blood culture
- Chest radiograph/CT scan of chest
- CSF examination (if moderately-severely ill)
- Culture of skin lesions
- Stool culture
- Rapid resp. viral Ag panels
- Nasal swabs: epi tool only; *not* clinically useful



# Low Suspicion Inhalational



# Low Suspicion Inhalational



# Low Suspicion Inhalational



# EMPIRIC ANTIBIOTIC TREATMENT

- Multiple drug regimens (2 or 3 agents) chosen for suspected inhalational or GI cases: Pcn  $\pm$  clinda  $\pm$  cipro
- Ciprofloxacin pros/cons in children
- Early and frequent communication with CDC as clearinghouse for drug susceptibility information



# ANTIBIOTIC PROPHYLAXIS

- Ciprofloxacin: initial prophylactic drug of choice in adults
- Doxycycline: active against isolate found
- Clindamycin: active against isolate found
- Amoxicillin: concerns about inducible beta-lactamase, but clinically useful in high dose (80 mg/kg/d) as prophylaxis (asymptomatic children, pregnant women)



# CONCLUSIONS

- Continuous awareness of symptom clusters or patterns—epidemiologic surveillance
- Use of historical literature (old pathogens, little current experience, new patterns of epidemiology) and electronic publications
- Coordination with local, state, and federal public health organizations
- In-house “expertise,” liaison within & without
- Education and communication—telephone banks, consultation, news media
- Vigilance without panic