

Epidemiologic Preparedness and Response to Terrorist Events Involving the Nation's Food Supply

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Foodborne diseases: A typology of mayhem

- **Bioterror and biowarfare**
 - State-sponsored or hate group terrorism
 - A few events to date
- **Biocrime and biomisdemeanors**
 - Intent to harm for personal gain or revenge
 - A few dozen events in recent decades
- **Biomisfortune**
 - Naturally occurring foodborne disease
 - Virtually all of foodborne disease falls in this category
 - A daily concern of public health departments everywhere

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Foodborne disease due to biomisfortune

Public health burden each year

- **An estimated 76 million cases, 325,000 hospitalizations, and 5000 deaths from acute foodborne infections**
 - **1 in four Americans gets a foodborne illness each year**
 - **1 in 1000 Americans is hospitalized each year**
- **1400 foodborne outbreaks reported annually**

Detecting, investigating and preventing outbreaks of illness due to biomisfortune depends on:

- **Robust public health capacity at local, state, federal levels to detect and respond**
- **Effective surveillance for infections**
- **Rapid and systematic investigations of outbreaks.**
- **Control through prompt public health action: close a restaurant, recall a product**
- **Prevention through change in procedures, systems**

New tools for detection and investigation of foodborne outbreaks

- **Laboratory diagnosis, surveillance and subtyping networks**
- **eFORS: Electronic Foodborne Outbreak Reporting System - in all 50 states - for rapid reporting of outbreaks**
- **Web based rapid questionnaire and surveillance tools**

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Examples of Biocrime

Rich tradition of food & water poisoning using toxins

- Ex-lax in the frat house brownies
- *Shigella dysenteriae* in lab lunch-room muffins
- Arsenic in the coffee at the church in Maine

Foodborne diseases: Responding to biocrime and misdemeanors

- **Depends on existing public health infrastructure for surveillance and investigation.**
- **Epidemiology can establish when and where, and sometimes who was associated with contamination**
- **Need criminal investigation to establish intent**
- **In addition, need a good working relationship with law enforcement**

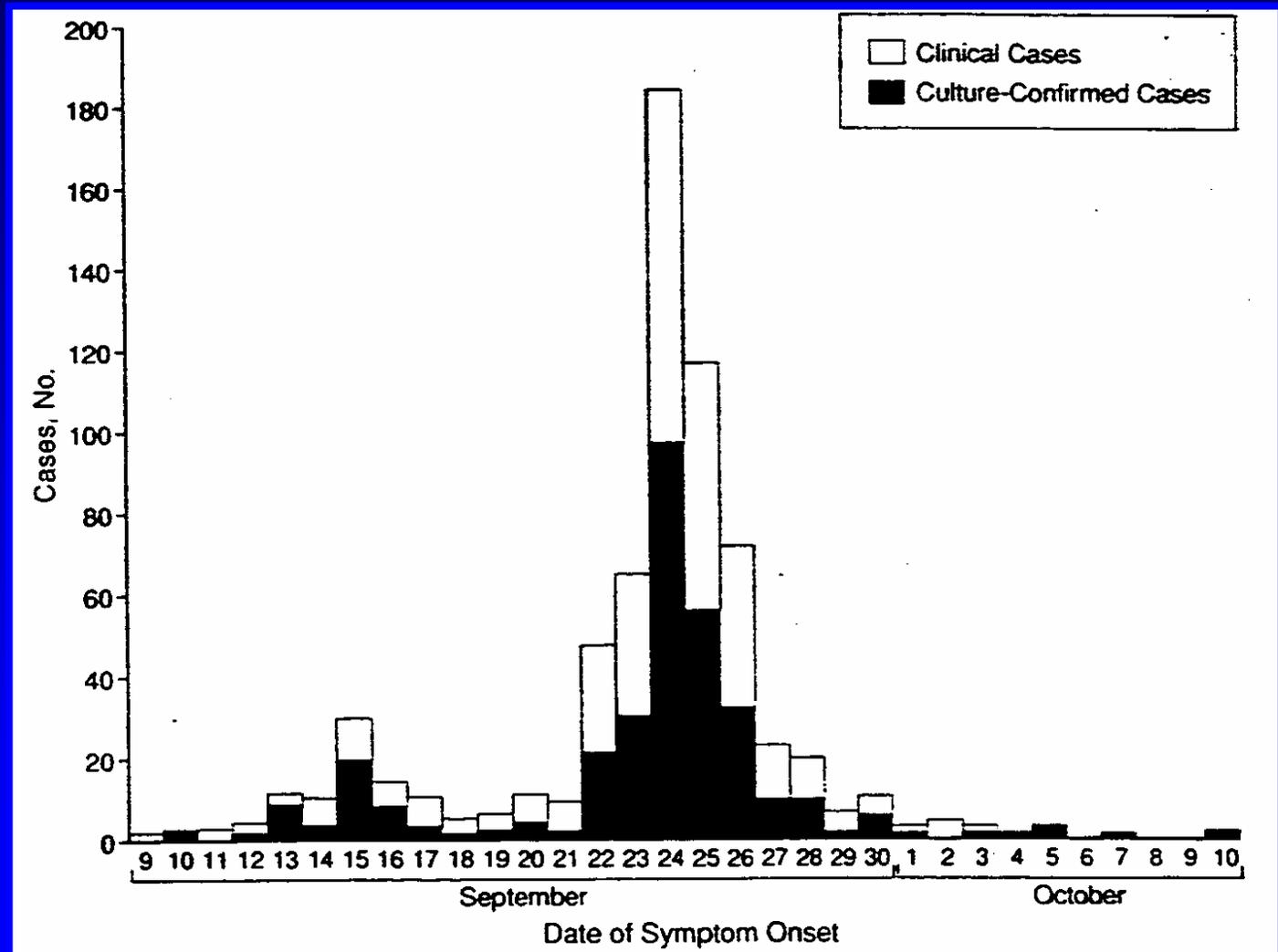
Foodborne diseases: A typology of mayhem

- **Bioterror and biowarfare**
 - **Hate-group and state sponsored terrorism**
- **Biocrime and biomisdemeanors**
 - **Intent to harm for personal gain or revenge**
- **Bioignorance and biomisfortune**
 - **Common but non-intentional**
 - **Virtually all of foodborne disease falls in this category**
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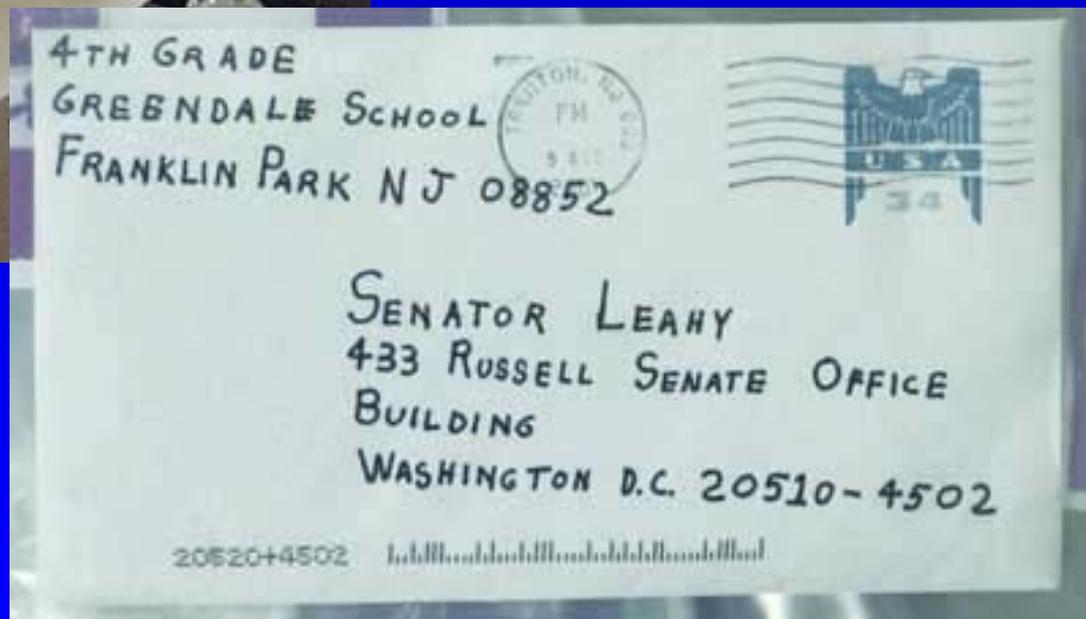
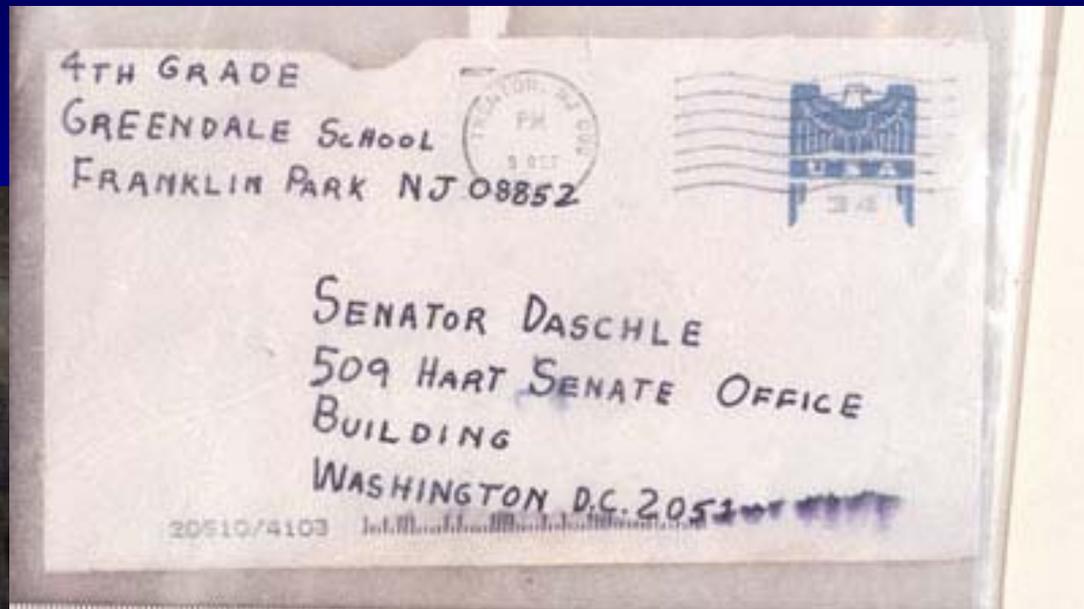
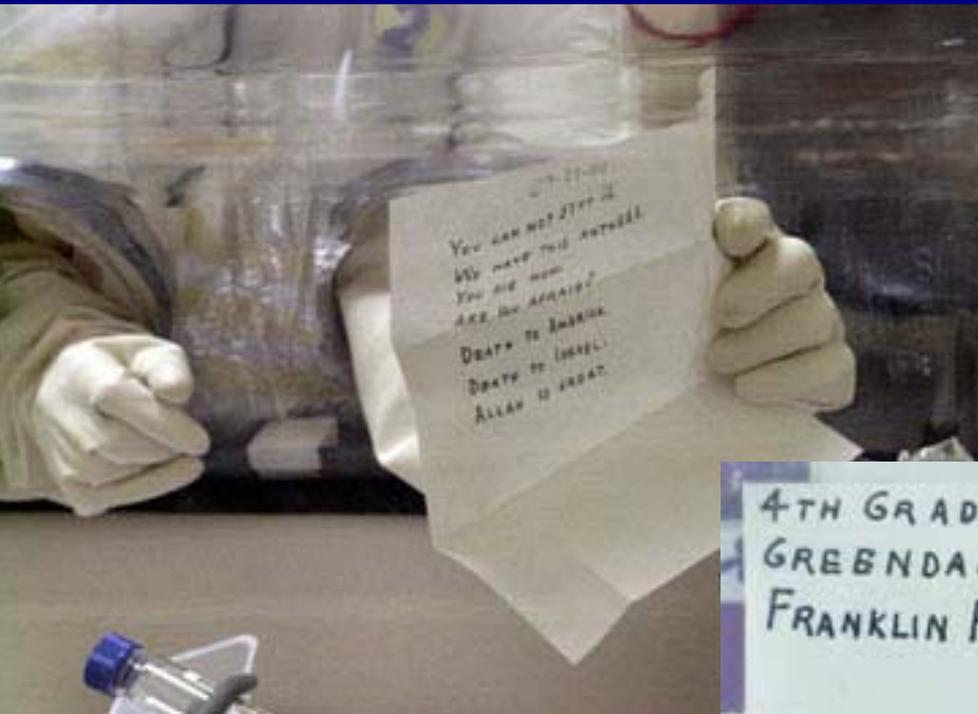
Bioterror and Biowarfare

- Common foodborne pathogens could be used
- Uncommon agents may be a bigger problem in terms of reassuring public.
- Could Affect Large Numbers of People
 - 1994: 224,000 ill, *S. Enteritidis* from ice cream
 - 1996: > 7,000 ill, *E. coli* O157:H7, Japan from radish sprouts

Salmonellosis in The Dalles, Oregon, 1984



Anthrax mailing: October 2001



Lessons learned from these bioterror events

- **A strong public health infrastructure is the conerstone**
- **Rapid action based on basic public health investigation can be effective**
- **Basic public health surveillance is critical**
- **Expect the unexpected**
- **Law enforcement partnerships are critical**
- **Potential for HUGE volume of samples and cases**

Leveraging Terrorism Cooperative Agreement

Goal 4: Improve the timeliness of information regarding threats to the public's health as reported by clinicians and through electronic early event detection in real time.

- Support and enhance the foodborne disease surveillance system at the state and local level with necessary staff, supplies, and equipment for data collection, analysis, interpretation, and reporting

Leveraging Terrorism Cooperative Agreement

Goal 4: Improve the timeliness of information regarding threats to the public's health as reported by clinicians and through electronic early event detection in real time.

- **Monitor and evaluate the timeliness and completeness of reportable disease and outbreak surveillance systems regularly**

Leveraging Terrorism Cooperative Agreement

Goal 5: Increase the number of health events reported to CDC.

- Participate in the Electronic Foodborne Outbreak Reporting System (EFORS). Enter reports of foodborne outbreak investigations in a timely fashion; monitor the completeness of reports and time from onset of illnesses to report entry, and devise means of accelerating reporting and enhancing data completeness.