Suspect Bioterrorism
and/or
Chemical Terrorism
Sample Submission

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Lecture Goals

- Understand laboratory submission procedures in suspected Bioterrorism and/or Chemical Terrorism events
- Understand chain of custody as applied to laboratory specimens
Case #1

White powder incident
BT Sample Submission

Local Health Department contacts the ODH Bureau of Infectious Disease Control (BIDC) about a potential BT threat/sample

See Algorithm
BT Sample Submission

- Samples are to be hand-delivered to the lab with the submitter paperwork completely filled out.
- Sample x-rayed (if unopened: Environmental Sample).
- Submitter needs to have a Chain-of-Custody form filled out on arrival.
Examples since 2001

- No positives
  - Calendars with corn starch
  - Blue Kool-aid
  - White powder in bag on airplane
  - Envelope with no powder
Problem Samples

“Take it to the Lab! They can handle it!”
Sample Collection

- If it is bigger than a “Bread Box”, use swabs or wipes to collect the sample

www.bt.cdc.gov/agent/anthrax/environment/index.asp

For reference to sample collection.
Environmental Samples for BT Agents

- Public Health Lab capabilities:
  - Filters
  - Wipes
  - Swabs
  - Powders
  - Liquids
Case #2

The clinical laboratory is unable to rule out a select agent.
A BT Sample Makes a Trip Through the Lab

- Sample Submitted
- Required Media
- Sample Processed
- Microscopy
- PCR
- Culture
- Results Reported
BT Services Offered by the State Public Health Laboratory

- Select Agents

  - Presumptive Testing (PCR): 4-6 hrs from time received \textit{in} ODH Laboratory
  
  - Confirmatory Testing (bacterial culturing): 48-72 hrs to 7 – 14 days depending upon the organism
Locals First

To be alerted first:
- Local law enforcement (if appropriate)
- Local health department

Decision is then made for submission to state PHL
Chemical Terrorism (CT)
Chemical Terrorism

Important Concepts/Considerations

1. How severe is the attack or incident.
2. What type of material or agent is involved?
3. Hot-Zone, Warm-Zone, Cold-Zone
4. Who is authorized and trained to collect the sample?
5. What tools, gadgets, protective gear, procedures, etc are required to collect the sample?
Chemical Terrorism

Important Concepts/Considerations cont.

- Severe Incident: Obvious victims and symptoms. There is a contaminated area, “Hot-zone”, that can be identified.
- Moderate: Criminal puts strong-acid on someone's doorknob.
- Unknown: No victims but the “warning signs” are credible.
- Unknown: Is it Paranoia, Hoax, or Trap?
Case #3

- Chemical weapon used
- Large number of victims reporting to local hospital emergency departments
Chemical Terrorism

- Victims taken to or arriving at Emergency Department
- Considerations:
  - Victim/Patient Contaminated Clothing
  - Victim/Patient Decontamination
  - Victim/Patient Samples
CT Clinical Sample Collection

Proper personal protective equipment
CT Clinical Sample Collection

- Proper collection materials
  - 25ml urine cup
  - 3 purple top 7mL blood tubes
    or 4 purple top 3mL blood tubes.
  - 1 Green or Grey top blood tube.
  - Blanks for QC

Note: Kits can be prepared in advance with the proper containers and the necessary forms.
CT Clinical Sample Collection

- Necessary labeling with proper information
  - Patient’s name
  - Identification number
  - Date collected
  - Paperwork
  - Evidence tape
Responding to a Chemical Event

Initial Screening

Incident

Hospital Emergency Department

Local Health Department

State Requests CDC Assistance

Rapid Response Team Deploys
Responding to a Chemical Event

Secondary Screening

CDC Conducts Rapid Toxic Screen and Sends Results To State

CDC Contacts LRN Members

LRN Members Perform Level-Specific Duties and Report Results Back to CDC

CDC Sends Results To State

State Sends Results to Local Health Dept
Establish a Terrorism Preparedness Response Plan

- Include in your Facility Terrorism Preparedness Response Plan:
  - Surveillance and Monitoring Program protocols
  - Communications policies
  - Chain of Custody policies
  - Security protocols
  - Specimen Collection
  - Packaging, Labeling and Shipping protocols
  - Sentinel Laboratory Procedures
  - Biosafety protocols
  - Select Agent Notification protocols
Terrorism Preparedness Response
Plan Resources

Bioterrorism Response Preparedness

- ASM Website: http://www.asm.org/Policy/
  - Sentinel Laboratory Guidelines for Suspected Agents of Bioterrorism: Clinical Laboratory Bioterrorism Readiness Plan
Chemical Terrorism Preparedness

- CDC Web Page http://www.bt.cdc.gov/chemical/ it has links to the following...
How to Reach BIDC

Any potential Terrorism Sample Submission must go through the Bureau of Infectious Disease Control (BIDC) Monday thru Friday 8 am to 4:30 pm

614-466-0265

Local Health Departments need to call for the 24/7 phone number if they do not have it
How to Reach Us

Ohio Dept. of Health Laboratory
1-888-ODHLABS  (1-888-634-5227)
How to Reach Us

ODH Website: www.odh.state.oh.us

- Go to “Alerts & Advisories” (link located in top information bar)
- Go to “Bioterrorism”
- Go to “First Responders”
Questions