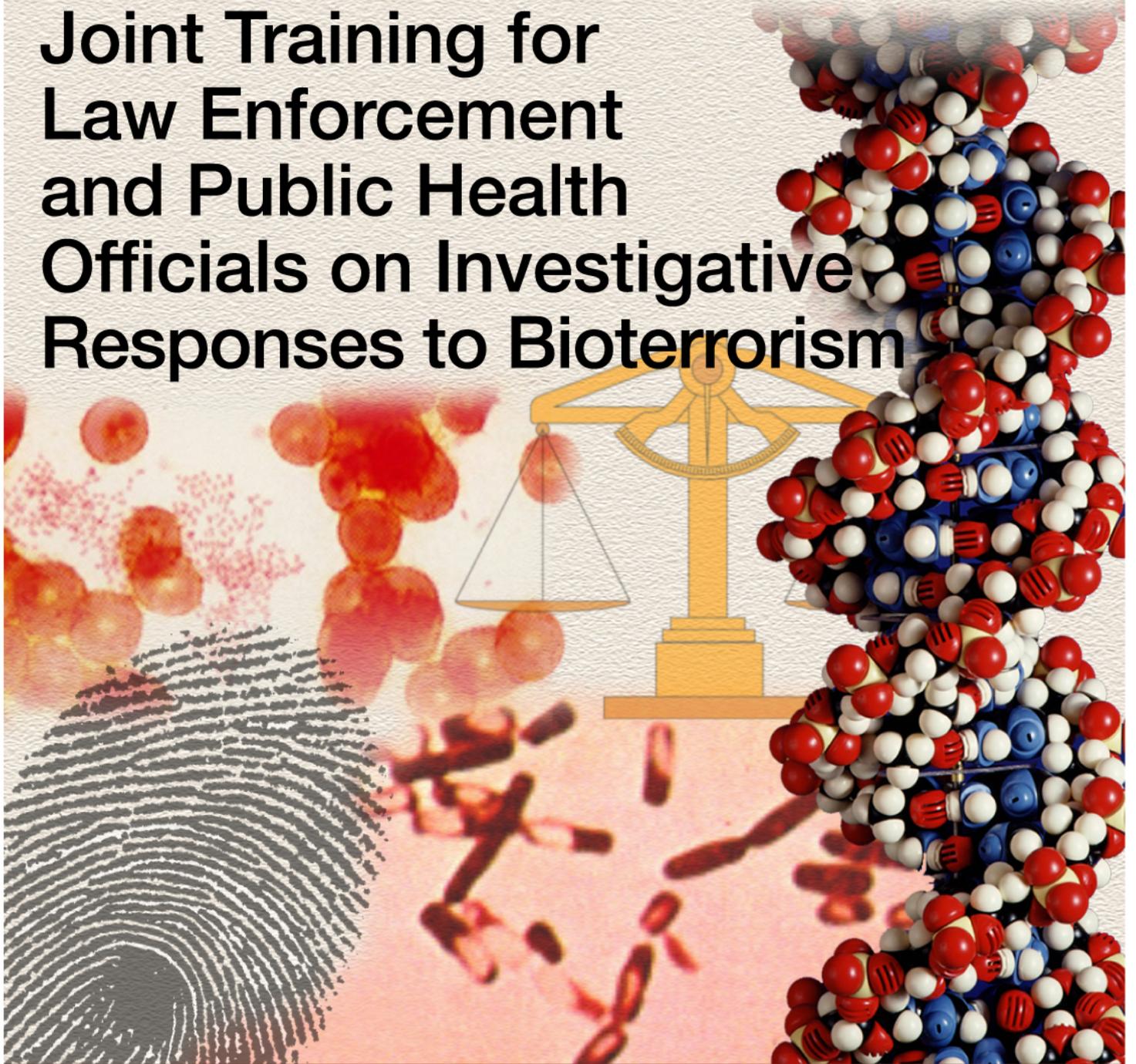


Forensic Epidemiology:

Joint Training for
Law Enforcement
and Public Health
Officials on Investigative
Responses to Bioterrorism



DEVELOPED BY:



Forensic Epidemiology: Joint Training for Law Enforcement and Public Health Officials on Investigative Responses to Bioterrorism

Background

The events of fall 2001, including the anthrax attacks and the thousands of biologic threats and hoaxes, required law enforcement, other public safety organizations, and public health agencies to work together in ways without precedent. The concurrent responses to such threats affirmed the many similarities in the goals and investigative methods used by both law enforcement and public health officials but also highlighted salient differences in the different disciplines' approaches. To foster improved understanding of the investigative goals and methods specific to each discipline and to strengthen interdisciplinary collaborative effectiveness in response to future attacks involving biological agents, in the spring of 2002 the Public Health Law Program of the U.S. Centers for Disease Control and Prevention (CDC) in partnership with other agencies and organizations undertook the development of a module for the joint training of law enforcement and public health officials.

Training goal

As noted above, a primary goal for the training module is to enhance the joint effectiveness of law enforcement and public health when both disciplines conduct concurrent investigations in response to a threat or attack involving possible biological weapons. The module addresses this goal by bringing law enforcement and public health officials together while working through fact-based case scenarios involving biological weapons attacks or threats.

Training strategies

The module's centerpiece is a set of three fact-based case scenarios worked through by small groups. The small groups, which include equal numbers of law enforcement and public health officials, address key objectives by reviewing sets of facts, and then by answering questions matched to the objectives. The objectives span a spectrum of issues, including, for example: conducting epidemiological investigations and public health responses in the setting of a crime scene; meshing criminal investigative procedures with epidemiological, laboratory, and other scientific procedures in such settings; and joint law enforcement and public health operations and communications. In addition to improving understanding of relevant laws, approaches, and procedures, the module's delivery is designed to increase participants' familiarity with their law enforcement and public health counterparts in their home jurisdictions. The module also employs a "train-the-trainers" strategy to emphasize peer teaching and to create a force-multiplier capacity for sustainable, additional training within a state or other jurisdictional level.

The CDC's goal is to develop this training module as a self-contained instructional package that can be used as an instructional template in any jurisdiction in the United States. In conjunction with state / local partners, and the CDC, the instructional module was piloted in three locations. Through these pilots, the materials were refined.

In addition to the pilot institutions, other organizations were consulted during the preparation and piloting of the materials. Each of these organizations was helpful in the compilation of the final product, but the CDC has the sole responsibility for the materials included, except for those slides that were prepared by the Federal Bureau of Investigation (FBI).

Disclaimer

Course materials are for instructional use only and are not intended as a substitute for professional legal or other advice. While every effort has been made to verify the accuracy of these materials, legal authorities and requirements may vary from jurisdiction to jurisdiction. Always seek the advice of an attorney or other qualified professional with any questions you may have regarding a legal matter. Except where otherwise indicated, course materials should not be altered.

The case studies, while in the public domain, are designed to be used without modification or editing, and should not be used with the CDC logo or name if they have been changed at all.



ACKNOWLEDGEMENTS

Organizations that were consulted, either as organizations or through contributions of individuals, in developing the materials:

- Federal Bureau of Investigation (FBI) Weapons of Mass Destruction (WMD) Bureau and regional WMD coordinators
- DeKalb County Board of Health
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- Georgia Bureau of Investigation
- United States Attorney's office – Northern District of Georgia
- United States Attorney's office – Eastern District of North Carolina
- North Carolina Division of Public Health
- North Carolina State Bureau of Investigation
- Council of State and Territorial Epidemiologists
- Florida Department of Health
- Duval County Health Department
- Maryland Department of Health and Mental Hygiene
- Baltimore City Health Department
- County of Los Angeles Department of Health Services – Public Health Bioterrorism Preparedness Program
- Oregon Public Health Division, Department of Human Resources

Organizations that participated in and assisted with pilot testing:

- North Carolina Center for Public Health Preparedness at the University of North Carolina School of Public Health
- North Carolina Governor's Crime Commission
- Numerous local health departments in North Carolina
- Numerous local law enforcement agencies in North Carolina
- Association of State and Territorial Health Officials
- Association of Public Health Laboratories
- Jacksonville Sheriff's Office
- Florida Department of Law Enforcement
- Maryland State Police
- Maryland Emergency Management Agency
- Baltimore County Health Department
- Baltimore City Police Department
- Baltimore County Police Department
- Baltimore City Fire Department
- Baltimore County Fire Department
- Pasadena and Long Beach, California, City Health Departments
- State of California Department of Health Services
- Terrorism Early Warning Group (TEW), Los Angeles County
- Numerous local public health agencies in southern California
- Numerous local law enforcement and fire agencies in southern California



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INTRODUCTION

BACKGROUND

The events of fall 2001, including the anthrax attacks and the thousands of biologic threats and hoaxes, required law enforcement, other public safety, and public health agencies to work together in ways without precedent. The concurrent responses to such threats affirmed the many similarities in the goals and investigative methods used by both law enforcement and public health officials but also highlighted salient differences in the different disciplines' approaches. To foster improved understanding of the investigative goals and methods specific to each discipline and to strengthen interdisciplinary collaborative effectiveness in response to future attacks involving biological agents, in the spring of 2002 the Public Health Law Program of the U.S. Centers for Disease Control and Prevention (CDC) in partnership with other agencies and organizations undertook the development of a module for the joint training of law enforcement and public health officials.

A primary goal for the training module is to enhance the joint effectiveness of law enforcement and public health when both disciplines conduct concurrent investigations in response to a threat or attack involving possible biological weapons. The module addresses this goal by bringing law enforcement and public health officials together while working through fact-based case scenarios involving biological weapons attacks or threats.

The module's centerpiece is a set of three fact-based case scenarios worked through by small groups; the small groups, which include equal numbers of law enforcement and public health officials, address key objectives by reviewing sets of facts, and then by answering questions matched to the objectives. The objectives span a spectrum of issues, for example: conducting epidemiological investigations and public health responses in the setting of a crime scene; meshing criminal investigative procedures with epidemiological, laboratory, and other scientific procedures in such settings; and joint law enforcement and public health operations and communications. A complete list of the course objectives can be found on the following page. In addition to improving understanding of relevant laws, approaches, and procedures, the module's delivery is designed to increase participants' familiarity with their law enforcement and public health counterparts in their home jurisdictions. The module also employs a "train-the-trainers" strategy to emphasize peer teaching and to create a force-multiplier capacity for sustainable, additional training within a state or other jurisdictional level.

COURSE OBJECTIVES

By the end of the course, participants will be able to:

Criminal and Epidemiological Investigative Methods

- Demonstrate an understanding of the similarities and differences in public health and law enforcement investigative goals and methods
- Show an understanding of crime scene procedures
- Describe specimen collection and establishment of chain of custody of evidence
- Demonstrate an understanding of environmental testing
- Understand the inclusion of “intentionality” in the epidemiologic differential diagnosis and investigation

Operations and Procedures

- Demonstrate an understanding of controlling laws and sources of authorities for actions
- Demonstrate an understanding of legal issues surrounding the issue of bioterrorism
- Determine jurisdictional lead responsibilities
- Identify additional resources to call and when to call
- Recognize when to involve the other discipline after the problem is acknowledged
- Coordinate public health and law enforcement activities during responses and investigations
- Coordinate local, state, and federal resources
- Describe on-scene control measures and interventions

Communications

- Communicate and share information between law enforcement and public health
- Differentiate between treatment of information (e.g., privacy, confidentiality, public disclosure)
- Describe media relations and risk communication

10 THINGS YOU NEED TO DO TO CONDUCT THE FORENSIC EPIDEMIOLOGY COURSE

1. Establish a local planning committee
2. Select course design
3. Select a facility
4. Choose participants
5. Select presenters
6. Elect facilitators from the participants
7. Assemble binders
8. Conduct facilitator training
9. Determine breakout groups
10. Conduct training

WHERE DOES THE FORENSIC EPIDEMIOLOGY COURSE FIT INTO YOUR ORGANIZATION'S OVERALL BIOTERRORISM TRAINING STRATEGY?

The **ideal set of participants** for the Forensic Epidemiology course would consist of people who would actually work together in case of a bioterrorism event in a city or region, plus any needed experts. This course should be used as a way to build local or regional networks and solidarity.

Consider **where in a sequence** of tabletops, field exercises, and classroom courses this course should fit. Your jurisdiction should have a preparedness plan that can incorporate this course.

The **focus of this course** should be public health and law enforcement cooperation in the investigation phase of response to a threat or attack involving possible biological weapons. Most of the teaching done in the case studies will be peer-to-peer. The course addresses this goal by bringing law enforcement and public health officials together while working through fact-based case scenarios involving biological weapons attacks or threats.

Additional outcomes of this course will be both increased participant understanding of specific public health and law enforcement facts and processes and also a list of needed actions at the local level, including protocols, agreements, and further training.

This **course was originally designed** to be one and a half days long and broken into three sections: didactic lectures, case studies, and wrap-up. The didactic lectures are designed to fit into the morning session on the first day. After lunch on the first day, course participants are broken into groups ("breakout" groups) that work through the three fact-based case studies (two cases on the first afternoon and the final case on the morning of the second day). The breakout groups are rejoined mid-morning the second day for the wrap-up, during which important information discussed during the case studies is discussed.

If time is a constraint, the course can be condensed to one day by removing one of the case studies and shortening the lectures during the morning session. If time is not a factor, the course can be extended to a full two days by adding extra lecture topics, by increasing time allotted for the case studies, or by adding a new topic for the second day afternoon agenda. Potential topics for the second day are found later in this guide.

Ideally, participants in this course would receive a course binder when the course begins. The course binder should include copies of the presentations, case study questions, and some applicable reference materials. Ideas for reference material are discussed in greater detail in later sections of this guide.

A streamlined, economical version of the course may be given. For jurisdictions that have manpower and financial restrictions, it is possible to give the training using only the three background talks, facilitators, and the answer key to the case studies and still achieve the goals of the course.

CONTENTS OF THE ACCOMPANYING CD

A CD can be found on the front inside cover of this guide. The CD contains each of the files referenced in this document, including the presentations, case studies, and an electronic version of this guide.

There are two types of documents on the CD. The first type, denoted with a .doc file extension, consists of documents that can be customized to your locale. Each of these documents can be used as a template for your course. The second type, denoted with a .pdf file extension, consists of documents that should remain the same. You will need Adobe Acrobat reader to read these documents. Adobe Acrobat reader can be found online at:

<http://www.adobe.com/products/acrobat/readstep2.html>

The following page lists the contents of the CD as well as the file names for each of the documents on the CD.

CONTENTS OF THE ACCOMPANYING CD

- Course Manager's Guide – 'CourseMgrGuide.pdf'
- Sample binder covers
 - Participant – 'cover_part.doc'
 - Observer – 'cover_obs.doc'
 - Facilitator – 'cover_fac.doc'
- Draft course agenda – 'agenda.doc'
- Notes:
 - Facilitator – 'notes_fac.doc'
 - Observer – 'notes_obs.doc'
- Sample Table of Contents
 - Participant – 'toc_part.doc'
 - Observer – 'toc_obs.doc'
 - Facilitator – 'toc_fac.doc'
- Course Objectives – 'objectives.doc'
- Assessments
 - Pre-Course – 'Pre-Course.doc'
 - Post-Course – 'Post-Course.doc'
 - Course Evaluation – 'evaluation.doc'
 - Notebook Numbers – 'nn_labels.doc'
- Small Group Report – 'sm_report.doc'
- Presentations (with notes)
 - Public Health Epidemiology for Law Enforcement Officials – 'ForEpi_PHslides.ppt'
 - Criminal Investigation for Public Health Professionals – 'ForEpi_LEslides.ppt'
 - The Role of the Laboratory – Public Health and Forensic – 'ForEpi_LABslides.ppt'
 - Basics of Incident Management Systems – 'ForEpi_IMSslides.ppt'
- Case Studies, formatted for participants (without answers)
 - Case Study I – 'caseIquestions.pdf'
 - Case Study II – 'caseIIquestions.pdf'
 - Case Study III – 'caseIIIquestions.pdf'
- Case Studies, formatted for facilitators (with answers)
 - Case Study I – 'caseIanswers.pdf'
 - Case Study II – 'caseIIanswers.pdf'
 - Case Study III – 'caseIIIanswers.pdf'
- Additional Materials:
 - Select Agent List – 'salist.pdf'
 - Criminal and Epidemiological Investigation Handbook – 'Crim_Epi_Hdbk.pdf'
 - Relevant Articles
 - Collaboration between Public Health and Law Enforcement: New Paradigms and Partnerships for Bioterrorism Planning and Response, J.C. Butler – 'Butler et al.pdf'
 - Biological Terrorism: SBCCOM Joins with the Pinellas, R.S. Stiner and M.A. Mughal – 'stiner.pdf'
 - A Large Community Outbreak of Salmonellosis Caused by Intentional Contamination of Restaurant Salad Bars, T.J. Torok, R.V. Tauxe, R.P. Wise, et al. – 'torok et al.pdf'
 - Additional Resources – 'Additional Resources.pdf'

COURSE DESIGN

GENERAL

The design of this course may vary and should be decided upon by the local planning committee. After the size and type of the course (number of participants and how many jurisdictions) is decided, the committee must next decide what materials will be covered during the course.

The course was originally broken into three sections:

1. Didactic lectures (slide presentations)

Note: These lectures are designed to fit into the morning session on the first day.

2. Case studies

- The first case study begins after lunch on the first day.
- Course participants are broken into groups (“breakout” groups) for this portion of the course.
- Two case studies are completed on the first afternoon and the final case study on the morning of the second day.

3. Wrap-up

- Breakout groups rejoin mid-morning the second day.
- Important information discussed during the case studies is summarized.

AGENDAS AND PRESENTATIONS

Sample Agendas

- **Three sample agendas** for the first morning can be found on the following pages (Example A, Example B, and Example C).
- Each of these agendas is slightly different, including varying numbers and types of presentations.
 - Example A – This is the simplest agenda, including only the three recommended presentations.
 - Example B – This schedule allows for the inclusion of the Incident Management System or Emergency Operations presentation (included in this guide).
 - Example C – This schedule includes time for an additional presentation, such as Public Health Law.
- The afternoon session of the first day and morning session of the second day should stay approximately the same.
 - The first and second case studies should be done on the first afternoon, separated by a 15-minute break.
 - The third case study should be done on the morning of the second day, followed by a group report and wrap-up session.
- The number and type of presentations included in the course are left to the discretion of the planning committee, but the timeline and schedule should be kept in mind.
 - **All** presentations should fit into the morning session on the first day
 - On average, each presentation should last no more than **50 minutes**, including time for questions and answers
 - On average, a **ten-minute break** between presentations should be allowed.

FORENSIC EPIDEMIOLOGY

Dates

Location

AGENDA

Day One – Morning Session – Example A

8:00am	Registration	
8:30am	Call to Order	Course Manager or other
	Welcome:	Person(s) to give welcome
9:00am	<i>“Public Health Epidemiology for Law Enforcement”</i>	Presenter
10:00am	BREAK	
10:15am	<i>“Criminal Investigation for Public Health Professionals”</i>	Presenter(s) – local, state, and Federal
11:15am	BREAK	
11:30am	<i>“The Role of the Laboratory – Public Health and Forensic”</i>	Presenter(s)
12:00pm	Lunch	

FORENSIC EPIDEMIOLOGY

Dates

Location

AGENDA

Day One – Morning Session – Example B

8:00am	Registration	
8:30am	Call to Order	Course Manager or other
	Welcome:	Person(s) to give welcome
9:00am	<i>“Basics of the Incident Management System”</i>	Presenter
9:15am	<i>“Criminal Investigation for Public Health Professionals”</i>	Presenter(s) – local, state, and Federal
10:30am	BREAK	
10:35am	<i>“Public Health Epidemiology for Law Enforcement”</i>	Presenter
11:25am	BREAK	
11:35am	<i>“The Role of the Laboratory – Public Health and Forensic”</i>	Presenter(s)
12:05pm	Lunch	

FORENSIC EPIDEMIOLOGY

Dates

Location

AGENDA

Day One – Morning Session – Example C

8:00am	Registration	
8:30am	Welcome:	Course Manager(s)
9:00am	<i>“Criminal Investigation for Public Health Professionals”</i>	Presenter(s) – local, state, and Federal
9:40am	<i>“Public Health Epidemiology for Law Enforcement”</i>	Presenter
10:20am	BREAK	
10:50am	<i>“The Role of the Laboratory – Public Health and Forensic”</i>	Presenter(s)
11:30am	<i>“Additional Presentation”</i>	Presenter
12:00pm	Lunch	

AGENDA

Day One – Afternoon Session

1:00pm	Small Group Instructions	Course Manager or other
1:15pm	Small Groups: Case Study I – Suspicious Letter	
3:00pm	BREAK	
3:15pm	Small Groups: Case Study II – Anthrax in Florida	
5:00pm	Adjourn	

Day Two – Morning Session

8:00am	Debrief	
8:30am	Large Group: Case Study III – Salmonellosis in Oregon	
10:15am	BREAK	
10:30am	Plenary Session: Group Reports	Wrap-up Facilitator
12:00pm	Concluding Remarks	Course Manager or other
12:15pm	Adjourn	

Recommended Presentations

- The number and type of presentations given during the course should be the first decision.
- The timeline of the course was originally designed for three presentations. The following presentations should be included in the course:
 - ***Public Health Epidemiology for Law Enforcement Officials***
 - Provides public health background information to those in law enforcement who are not familiar with public health
 - ***Criminal Investigation for Public Health Professionals***
 - Gives basic law enforcement background information to those in public health who are not familiar with law enforcement
 - Should include information about both the local and state law enforcement
 - ***The Role of the Laboratory (Public Health and Forensic)***
 - Gives background information about public health and crime laboratory procedures to those in both public health and law enforcement who are not familiar with laboratory practices
- Each of these presentations is provided with this guide and is described in greater detail in the Slide Sets section.
- Another presentation which should be included in the course is:
 - ***Bioterrorism and the Role of the FBI***
 - Is not included in the guide because it **must** be given by the FBI's WMD coordinator for your locale
 - Covers WMD authorities and statutes, FBI organization and response, threat assessment process, coordinating joint investigations, and improving the law enforcement/public health partnership.

Additional presentations

- Additional presentations may be added to your course.
- Types of presentations added should take into account the size of your locale, the number of jurisdictions attending the course, and how much knowledge that extra presentation will add for each participant.
- Additional presentations included in your course must take into account the timeline and agenda.
- Examples of optional additional presentations are:
 - Emergency Operations/Basics of Incident Management Systems
 - Is provided in this guide
 - May be customized for your locale
 - Is tailored for larger cities or jurisdictions and encompasses most of the items that would be discussed during a separate Emergency Operations presentation
 - **Note:** Smaller cities and jurisdictions may want to include a brief description of their Emergency Operations System in the law enforcement presentation.
 - Public Health Law

JURISDICTIONS INVOLVED IN THE COURSE

How many jurisdictions should be involved in the Forensic Epidemiology course?

- The design of this course may vary and should be decided upon by your local planning committee.
- The first decision to be made is determining what jurisdictions the course will cover: one jurisdiction (city), one jurisdiction (county), regional (city and county), multi-jurisdictional (more than one city and/or county), or statewide. Multi-jurisdictional and statewide courses will be far more complex and difficult to organize.
- Another decision that should be made early on in the planning process is the number of participants that will attend the course. Courses with a larger number of participants require more intensive planning and additional help, but will increase networking among those who will work together in a bioterrorist incident.

COURSE ATTENDEES

Participants

The Forensic Epidemiology Course is designed for mixed groups of law enforcement and public health participants and small-group facilitators. Additional attendance may come from HAZMAT/fire professionals, agency and prosecuting attorneys, public information specialists, and other disciplines directly relevant to public health and the criminal investigation of outbreaks or threatened outbreaks that may also be crimes. The participants will, to a large extent, teach each other about their disciplines as they work through the three case studies.

- This course is designed for mixed groups of law enforcement, public health, and affiliated professionals (fire, HAZMAT, legal, public communication, and others).
- In most successful courses, the mix will be about 40 percent public health, 40 percent law enforcement, and 20 percent other professional groups.
- Participants are chosen by the sponsoring organizations.
- Participants have an active role in group discussions during the breakout groups.
- The recommended criterion for participation in any one course is that the participants should be the people who would actually be working together on the investigation of a deliberately caused infectious disease outbreak in one jurisdiction or set of closely linked jurisdictions (e.g., a city, county, or metropolitan area).
- Persons from adjacent jurisdictions who are thinking about putting on a similar course of their own may want to attend as observers.
- An alternative approach to a course is to invite persons from an entire state or large region of a state to attend a course.

Note: The emphasis then is partly on individual participants learning facts and skills, but more on participants identifying issues that need to be identified in their home communities after they leave the course.

- For courses in which all participants are from the same or closely linked jurisdictions (e.g., a city and its surrounding county), more attention can be paid to the details of that community's protocols and interagency relationships.
- When participants come from multiple jurisdictions, a large geographic area, or even more than one state (e.g., in multistate metropolitan areas), more attention can be paid to interjurisdictional communications and cooperation rather than any one jurisdiction's internal operations.
- A list of suggested participants follows

LIST OF SUGGESTED PARTICIPANTS

Public Health

- City epidemiologists
- County epidemiologists
- State epidemiologists
- Other city public health professionals
- Other county public health professionals
- Other state public health professionals
- Public health investigators
- Public health nurses
- Public health emergency preparedness representatives
- Public health public information officers (PIOs)
- Health department attorneys
- Emergency room staff
- Infection control nurse

Law Enforcement

- City police
 - Officers
 - Detectives
 - SWAT
- County police
 - Officers
 - Detectives
- Sheriff
- State police
- United States Attorney's Office representative
- State Attorney's Office representative
- Judges
- Law enforcement public information officers (PIOs)
- FBI WMD coordinator
- FBI Crisis Management Coordinator

LIST OF SUGGESTED PARTICIPANTS (CONTINUED)

Other Health and Safety Personnel

- Emergency medical services representatives
- City fire department
- County fire department
- HAZMAT
- Public health laboratory representatives
- Forensic/crime lab representatives
- Public safety
- United States Postal Service inspectors
- Military representatives (if located near a military base)
- Food and Drug Administration
- Medical examiner's office
- Other law enforcement agencies located in nearby locations
- Trainers from law enforcement academies
- Airport police representatives
- Federal Aviation Administration (FAA) representatives
- Transportation police representatives
- Port authority police (if applicable)
- Emergency preparedness representatives

Observers

Observers are also selected by sponsoring organizations, but they have a more passive role during breakout groups. Observers play an important role during breakout groups. Although they will not read and answer questions (i.e., engage in active participation), the observers should add input if they believe the group is reaching the wrong conclusion or if they can offer unique expertise. In general, observers play a more active role if they are asked to by their facilitators or if they are concerned that their group has reached the wrong conclusion and needs their input. Observers are not required for the course. Typical observers could actually be participants if that is the desire of the planning committee.

Examples of Observers:

- Federal law enforcement officers
- Federal public health workers
- Representatives from schools of public health
- Representatives from Centers for Public Health Preparedness
- Representatives from the Department of Justice
- Federal public health lawyers
- Representatives from training programs
- Representatives from national public health organizations
- Representatives from national law enforcement agencies and organizations

Facilitators

The role of the facilitators is to draw out the expertise of the small group members and to fill in answers to the case study questions if no one else in the group can do so. Facilitators are drawn from the course participants. The facilitators will have attended a half-day facilitator training activity before the first day of the course and studied the suggested answers for the case study questions. Part of their role then is to assure that the key points made in the answer guide are brought out in their groups.

CHANGING THE LENGTH OF THE COURSE

There are several options for changing the length of the course. The first is to make the course a full two days long. To do this, your locale will need to create an afternoon session for the second day.

Several possibilities include:

- Additional case studies completed either in breakout groups or through a panel
 - Fact-based local scenario
 - Hypothetical scenario
 - Quarantine scenario
- Panel of experts to answer any questions
- Discussion about local response protocols
- Public Health Law presentation

The second option for changing the length of the course is to shorten it to one full day. To shorten the length of the course to one day you will need to remove one of the case studies and increase the timeline of the course.

Note: Shortening the course to one day is NOT recommended.

LOGISTICS

LOCAL PLANNING COMMITTEE

Who should be part of the local planning committee?

- The local planning committee should consist of a mix of law enforcement and public health professionals.
- The number of members in the planning committee will depend on the size and number of jurisdictions in which the training will be held.

Note: A multi-jurisdictional course will need more people on the planning committee to ensure that all tasks are taken care of adequately.

Planners are responsible for:

- Identifying course participants from each of their professional fields
- Securing presenters for the presentations in the didactic portion of the course
- Identifying facilitators for the case study portion of the course
- Finding a location for the course
- Deciding on the course design (see Course Design section)
- Finalizing all course details
- Making sure everything comes together in the end.

At the end of this section you will find a list of suggested local planning committee members for each type of course. In each course there should be a minimum of three planners (public health, law enforcement, and laboratory). Although it is not required, having the FBI Weapons of Mass Destruction (WMD) coordinator for your area involved in the planning is highly recommended. Each type of course listed below has several planning members in common.

All courses should have at least one planning committee member from the local public health department, one planning committee member from the local law enforcement agency, and one planning committee member from the public health laboratory that serves that jurisdiction. Other planning committee members are added as the size of the locale increases and the number of jurisdictions included in the course increases.

MEMBERS OF THE PLANNING COMMITTEE BY TYPES AND NUMBERS OF JURISDICTIONS INVOLVED

One jurisdiction – City (4 to 7 members)

- Local public health representative – 1 from city, optional 1 from state
- Local public health laboratory representative – 1 from city
Note: If there is not a city public health laboratory, try to include a representative from the public health laboratory to which the city public health department sends its specimens.
- Local law enforcement representative – 1 from city and 1 from state
- FBI WMD coordinator – 1 assigned to your region
- Local emergency operations center representative (if different from the local law enforcement representatives) – 1

One jurisdiction – County (4 to 7 members)

- Local public health representative – 1 from county, optional 1 from state
- Local public health laboratory representative – 1 from county
Note: If there is not a county public health laboratory, try to include a representative from the public health laboratory to which the county public health department sends its specimens.
- Local law enforcement representative
 - County police department or Sheriff's Office – 1
 - State police – 1
- FBI WMD coordinator – 1 assigned to your region
- Local emergency operations center representative (if different from the local law enforcement representatives) – 1

One jurisdiction – City or County with a large population (7 to 11 members)

- Local public health representative – 1-2 from city/county
- Local public health laboratory representative – 1
- Local law enforcement representative
 - City/county/Sheriff's Office – 1-2
 - City/county fire department – 1
 - Hazardous materials management (HAZMAT) (police or fire) – 1
 - State police – 1
- Local crime (forensic) laboratory representative – 1
- FBI WMD coordinator – 1 assigned to your region
- Local emergency operations center representative – 1

MEMBERS OF THE PLANNING COMMITTEE BY TYPES AND NUMBERS OF JURISDICTIONS INVOLVED (continued)

Regional – City and county (10 to 12 members)

- Local public health representatives
 - City public health department – 1
 - County public health department – 1
 - State public health department – 1
- Local public health laboratory representative – 1 from city or county
Note: If there is not a city/county public health laboratory, try to include a representative from the public health laboratory to which the city/county public health departments send their specimens.
- Local law enforcement representative
 - City police department – 1
 - County police department – 1
 - State police – 1
- Local crime (forensic) laboratory representative – 1 from city or county
Note: If there is not a city/county forensic laboratory, try to include a representative from the forensic laboratory to which the city/county police departments send their specimens.
- FBI WMD coordinator – 1 assigned to your region
- Local emergency operations center representative (if different from the local law enforcement representatives) – 1

Multi-jurisdictional – More than one city and/or county (14 to 20+ members)

- Local public health representatives
 - City public health department – 1 from each city involved
 - County public health department – 1 from each county involved
 - State public health department – 1 assigned to that region
- Local public health laboratory representative – 1 from city or county
Note: If there is not a city/county public health laboratory, try to include a representative from the public health laboratory to which the city/county public health departments send their specimens.
- Local law enforcement representative
 - City police department (either the city police department or Sheriff's Office, depending on what type of law enforcement organizations are present in your area) – 1 from each city involved
 - County police department – 1 from each county involved
 - State police – 1 from each department assigned to the region
- Local crime (forensic) laboratory representative – 1
- FBI WMD coordinator – 1 assigned to your region
- Local emergency operations center representative (if different from the local law enforcement representatives) – 1

MEMBERS OF THE PLANNING COMMITTEE BY TYPES AND NUMBERS OF JURISDICTIONS INVOLVED (continued)

Statewide (20 to 40+ members)

- Local public health representatives
 - City public health department – 1 from each city involved
 - County public health department – 1 from each county involved
 - State public health department – 1
- Local public health laboratory representative – 1
Note: If there is not a city/county public health laboratory, try to include a representative from the public health laboratory to which the city/county public health departments send their specimens.
- Local law enforcement representative
 - City police department (either the city police department or Sheriff's Office, depending on what type of law enforcement organizations are present in your area) – 1 from each city involved
 - County police department – 1 from each county involved
 - State police – 1
- Local crime (forensic) laboratory representative – 1
- FBI WMD coordinator – 1-2 assigned to your state
- Emergency operations center representative – 1

SELECTION OF FACILITIES

A typical course will consist of didactic lectures the morning of the first day, division into breakout groups in the afternoon of the first day and morning of the second day, and reassembly into the large group for the wrap-up at the end of the second day.

- The size of the facility is dependent on the number of participants who will be attending the course.
- Didactic lectures and wrap-up should be held in a main meeting space that is large enough to accommodate all participants, ideally with classroom style seating – desks as well as chairs.
- Breakout groups
 - There should be an adequate number of smaller spaces or rooms for the maximum number of breakout groups your large cohort may have. (Please see table in the “Tentative Breakout Groups and Group Size” portion of this section.)
 - Each breakout group should have approximately the same number of participants.
 - If necessary, you can use the large space for a breakout room if it can be quickly arranged into tables around which the participants can sit.
 - Ideally, breakout rooms or spaces should be separated from one other and have doors that close so that the sound of one group's work does not carry into another's area.
 - Breakout rooms or spaces should be set up with a central table large enough for all the participants and the two co-facilitators. (Each breakout group should contain two facilitators.)

Note: Any observers present can sit in a second row, back from the table.

BREAKS

Breaks

- Suggested break times are provided in the sample agendas in the preceding pages.
 - In the morning, one ten-minute break should be provided each hour or after each presentation.
Note: If your schedule does not permit this many breaks, try to provide at least one break every two hours.
 - In the afternoon, one break between Case Studies I and II should be provided.
- Breaks present the attendees with appropriate times to get or refill their morning beverages.
- If your budget allows, beverages, including coffee, and light snacks will be well received during the period when attendees first arrive in the morning and at mid-morning and mid-afternoon breaks.

Lunch

- Providing a lunch on the first day is also recommended
Note: At lunch, participants may sit at tables in self-chosen groups other than the breakout groups.
- If it is not possible to provide lunch on-site, give directions to nearby quick-lunch locations and allow at least one hour and 15 minutes for the lunch break.
- If participants have come some distance for the course and are staying over-night, give suggestions on places to have dinner that are within relevant per-diem rates

PRE-REGISTRATION

Pre-registration forms

- Forms should be given to the selected participants well in advance of the course.
Note: Having a firm list of attendees with job roles allows you to assign people to breakout groups, each of which should be as diverse as possible.
- E-mail registration forms to participants several weeks before the class is to begin.
- Set a due date (placed on the bottom of the form) of 3-5 business days before the course will start.
 - A due date will prompt the participants to enter the required information and return the form to the planning committee.
 - The due date should give the planning committee enough time to create the appropriate amount of materials.
- Provide several mechanisms (e-mail and fax) for participants to return the forms to the planning committee.
- Pre-registration forms should collect the following information:
 - Agency of employment
 - Job duties
 - Contact information, including e-mail address.

Database

- The use of a database program will facilitate collecting and using the registration form information.
- Contact information and job duties can be entered into a pre-designed database.
- This information can be exported for use in preparing the list of participants.
- Exporting the information takes far less time than reentering all contact information into the list of participants.
- Additionally, the database can be used to create nametags (discussed in the section below) or sign-in sheets in an expeditious manner.

A sample registration form and a sample sheet of nametags can be found on the following pages.

SAMPLE COURSE REGISTRATION FORM

FORENSIC EPIDEMIOLOGY

Dates
Location

COURSE REGISTRATION FORM

Last Name _____ First Name _____ Middle Init _____

Organization _____

Title/Job Function _____

Street Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____

E-mail _____

Please return to John Doe via e-mail at John.Doe@planning.com or via fax at 800-555-1111 by (day/month/year).

SAMPLE NAMETAG

JOHN DOE

Organization

Participant

SPECIAL TIPS

- **Organization is the key** to preparing this course. When the course manager is organized, the length of time required to prepare the course will be far less than if not organized. Close contact with presenters and your planning committee is important. Early identification of participants and receipt of their pre-registration forms will prevent any last minute rushing to assemble extra binders.
- One last item to take into consideration is any **help that will be needed** on the days of the course. Depending on the course size, help in the registration area will be invaluable. Additionally, having the use of runners will allow things to proceed smoothly. Runners can be used to make extra copies, take messages, ensure food arrangements are proceeding as expected, etc.

FACILITATORS AND FACILITATOR TRAINING

Small-Group Facilitators

- Each breakout group should have two facilitators, one of whom must be a law enforcement professional and the other a public health professional.
- For purposes of this course, a first-responder background in HAZMAT or emergency medical services (EMS) is not an adequate substitute for experience and responsibilities in law enforcement and criminal investigation, nor is EMS or clinical experience an adequate substitute for experience with public health investigation of outbreaks.
- Facilitators should be both expert in their respective kinds of investigations (public health or criminal) and skilled as facilitators.

Note: The latter skills should come from experience leading group processes in which the group leader's role is to draw out the participants' views more than to impart information. If you have to choose between subject matter expertise or facilitation skills in the group leaders, emphasize the latter. If this is the case, make sure that the participants in each breakout group include people with authoritative expertise relevant to each kind of investigation.

- Facilitators should be chosen several weeks ahead of the course and should know that they have been chosen and what their role will be.
- To allow enough time to study, at least two weeks before the course the facilitators should receive:
 - Copies of the full case study materials, with both the questions and the answer guide
 - Copies of the presentation outlines for the talks to be given on the first day of the course, as provided to the presenters
 - Copies of the Criminal and Epidemiological Investigation Handbook and other materials the participants will receive as part of their course manual.

Facilitator Training

Timeline

- Facilitator training should occur from 3-14 days before the course.

Note: Enough days should be left between the training and the course itself for the facilitators to study the materials, including the outlines for the lectures and the other supplemental materials, before the first day of the course.
- Training on the afternoon before the course begins is a viable option, but only if facilitators have studied the case study materials and answer guides before they come to the training.
 - This option is particularly appealing if participants and facilitators are traveling a long distance.
 - If this option is chosen, it is recommended that the course manager hold a 30-minute briefing by telephone with the facilitators a week before the course, to acquaint them with the course and their roles and responsibilities.
- Typical facilitator training should last approximately 4 hours.

Method of training

- This should be face-to-face training, facilitated by the course manager and/or a team representing both the public health and law enforcement disciplines.
 - One of the advantages of face-to-face training is that the facilitator trainers and the facilitators can experience the case study process directly during the role-play portion of the training.
 - This cannot easily be replicated in a conference call.
- Training entirely by teleconference is possible, but is not recommended.
- Videoconferencing may help some but is usually expensive and is not yet widely available.

Course Manager's Responsibility

- The course manager should brief the facilitator trainees about the:
 - Reason for and history of the course
 - Main training objectives of the course
 - Main points to be covered in the lectures the first morning
 - Process to be followed in the case studies.
- One point to be emphasized is that the focus of the course is on the public health and law enforcement investigation aspects of the response to a bioterrorist attack or similar outbreak. That response has many other components, which will be touched on during this course but which are not its major focus. For example, mass casualty management, infection control in the hospital, and preparing cases for prosecution are not covered in these exercises.

Organization of Facilitator Training

- The main point of the facilitator training is to give the facilitators practice with the facilitator role.
- This should include taking turns being the facilitator, with the remainder of the training group being the participants.
- Each trainee, in turn, should ask the person to his or her left to read and attempt to answer the next question (or set of facts and question) in a case study.
- The facilitator will lead the discussion kicked off by that answer.
- Then the next person around the table will assume the role of facilitator and repeat the process.
- In a training session of approximately 4 hours, it should be possible to start each of the three case studies.

Role of the Person(s) Running this Training Session

The person(s) conducting the training should assure that:

- All trainees get a chance to play the facilitator role
- The main points in the answer keys are addressed and explained, to the extent necessary
- The trainees get any needed coaching in facilitation skills.

Note: If the facilitator training is itself run by a pair of leaders, one from public health and one from law enforcement, they can model the co-facilitation expected of the pairs of facilitators. Given that the co-facilitator pairs will not usually have worked together before, the facilitator trainees may need to gain some confidence that this largely improvised collaboration can and usually does work well.

Notes for the Facilitators

- These notes should be provided to the facilitators during their training. An electronic copy is included in the accompanying CD.
- When breakout groups convene, have **participants sit at the table** and observers in the row behind the table. If there is room and you desire, invite observers to sit at the table.
- **Name tents and markers** will be located in each room. Have your group members put their name on their card along with any additional information you would like to see (e.g., job role or organization).
- Begin with a short introduction for each of the participants and observers. At the beginning of each scenario, ask the group to decide who will be the group recorder/reporter. Small group report forms will be given to each facilitator before the group begins. The forms are divided into **three sections**:
 1. Unresolved issues
 2. Lessons learned and information to pass on
 3. Gaps in your jurisdiction and recommendations for action
- The **group recorder** will be responsible for writing down any information that fits into one of these three areas and will speak for the group at the wrap-up on Thursday.
- During the case scenarios, if the person who reads a question feels ill equipped to **answer the question**, ask someone who has more experience with the subject matter of the question to extend the answer.
 - For example, if a lawyer receives a question about laboratory practices and does not feel comfortable answering, ask the lawyer to do the best that he or she can and then have someone who is familiar with laboratory practices answer the question.
- **Observers should not be active participants.** Generally, observers will remain quiet. If you feel that an observer would have something valuable to add to an answer, ask for his or her input. Most likely, the observer will provide the input without your request. Observers have been told that they may be called on and to feel free to speak up if they have expertise that is otherwise missing.
- If you feel that **one person is dominating** the conversation in the group, try to call on others. Furthermore, facilitators should not dominate the discussion. If there is anyone in your group who is not adding his or her input, try to draw that person out by asking for an opinion.
- At the end of each scenario, your group should go through the form to ensure that they have **captured all relevant information**.

**NUMBER OF FACILITATORS NEEDED ACCORDING TO
NUMBER OF PARTICIPANTS**

Total Trained	Number of Participants	Number of Facilitators	Number of Groups/ Rooms Needed
12 – 14	10 – 12	2	1
25 – 43	20 – 36	5 – 8	2 – 3
50 – 74	40 – 60	10 – 14	4 – 5
76 – 102	61 – 84	15 – 18	6 – 7
100 – 128	81 – 104	20 – 24	8 – 9
126 – 150	101 – 122	25 – 28	10 – 11
148 – 188	121 – 156	28 – 32	12 – 13

BINDER ASSEMBLY

Materials Included in the Binder

The materials assembled in the binder may vary from location to location but should include:

- Agenda
- Introduction
- Course Objectives
- Table of Contents
- Copies of each presentation given during the course
- Sample law enforcement chain of custody form
- Sample laboratory chain of custody form
- Case study questions.

Note: If your jurisdiction has financial or resource constraints, the bare bones approach to the course can be used. Using this approach, participants receive only the case studies. This approach will be much more economical for jurisdictions with tight training budgets.

Agendas

- Sample agendas are found in the Course Design section.
- The agenda should include detailed instructions for both days of the course.
- An electronic file of a sample agenda ('agenda.doc') is found in the accompanying CD.

Introduction

The introduction should give background information for both the course and your jurisdiction's bioterrorism training and preparedness program.

Course objectives

- The course objectives are a list of objectives that participants should be able to meet by the end of the course.
- The objectives are divided into three main topics:
 - Criminal and epidemiological investigative methods
 - Operations and procedures
 - Communication
- An electronic file of the course objectives ('objectives.doc') is found in the accompanying CD.

Presentations

- Copies of the presentations given during the course should be included in the participant binder and appear as slide sets.
- These slide sets are discussed in greater detail in the Slide Sets section of this guide.
- Electronic files of each of the presentations ('ForEpi_PHslides.ppt', 'ForEpi_LEslides', 'ForEpi_LABslides.ppt' and 'ForEpi_IMSslides.ppt') are found in the accompanying CD.

Chain of Custody Forms

- Two other files that should be included in the participant binder are law enforcement chain of custody forms and laboratory chain of custody forms.
- Law enforcement agencies in your jurisdictions should have copies of blank chain of custody forms.
- Different law enforcement agencies (local, state, and federal) will have different forms.
- It is recommended that you obtain a copy of each agency's chain of custody form for the participant binder.
- The laboratory chain of custody form should be available from someone in either the public health or crime laboratory in your jurisdiction.

Case Studies

- Each case study used in the course should be included in the participant binder.
- The case studies appear in two formats.
 - The first format has only the facts and the questions and should be used in the participant binder.
 - The second format has the answers to the questions (along with the facts and the questions) and should be given to the facilitators before the course begins. (See the Course Attendee portion of the Logistics section.)
- The case studies are discussed in further detail in the Case Studies tab of this guide.
- All of the case studies in each format are provided electronically in the accompanying CD ('caseIquestions.pdf', 'caseIIquestions.pdf', 'caseIIIquestions.pdf', 'caseIanswers.pdf', 'caseIIanswers.pdf', 'caseIIIanswers.pdf').
- The Select Agent List, used as a reference in Case Study III is also provided electronically ('salist.pdf').

Locale-Specific Material

- There are a number of other locale-specific materials that can be included.
- If your jurisdiction has any applicable laws or regulations that apply to WMD, bioterrorism, or public health that you feel should be recognized, these should be included in the binders.
- Any existing response protocols to chemical or biological incidents or literature about existing joint command systems should also be included.

Reference Materials

- Reference materials are also appropriate to include in the binder.
- A list of applicable reference materials can be found in the “Supplemental Reference Material” section of this guide.
- Reference material can include:
 - Relevant articles upon which the case studies are based
 - Articles about law enforcement and public health joint collaboration
 - Sample algorithms for handling white powder incidents
 - Sample algorithms for agency notifications
 - FBI Criminal and Epidemiological Investigation Handbook
 - List of useful documents that can be found on the Internet

Additional Material

- Pre- and post-course assessments
 - These include short ten-minute “tests” on the basics of law enforcement, public health, and the interrelationships of law enforcement and public health.
 - The pre- and post- course assessments are identical except for the last question.
 - The last question in the pre-course assessment asks what the participant hopes to learn in the course.
 - The last question in the post-course assessment asks what the participant learned in the course.
 - The pre- and post- course assessments can be used to gauge the knowledge of the participants at the beginning of the course and at the end, respectively.
 - The two assessments can be compared to each other to determine if the participant has gained any knowledge specific to the course.
 - Electronic files of the pre- and post-course objectives (‘Pre-Course.doc’ and ‘Post-Course.doc’) can be found in the accompanying CD
- Course evaluation
 - This evaluation asks specific questions about the presentations, case studies, appendices, and the course in general.
 - It should be included in the binder if you are interested in repeating the course with another group of participants or would like specific feedback on the course.
 - An electronic file of the course evaluation (‘evaluation.doc’) is found in the accompanying CD

Notebook Numbers

- These numbers are used to track the assessments and the evaluations.
- They appear in the form “LExx” or “PHxx”.
 - LE stands for law enforcement.
 - PH stands for public health.
 - xx is a 1-3 digit number.
- Notebook numbers should not be traceable back to a particular participant.
- LE or PH will indicate in which field the attendee works and can be used to determine why an attendee reacted in a particular way to a presentation.
- There is a space provided on each assessment and on the course evaluation for the Notebook Number.
- An electronic file of the notebook numbers (‘nn_labels.doc’) is found in the accompanying CD

Sample Table of Contents

- Three sample tables of contents are found on the following pages (examples A, B, and C).
- These documents differ slightly from each other.
 - Example A is from a locale that has chosen a “bare bones” approach to the course.
 - Example B reflects a locale that has chosen not to include any locale-specific material.
 - Example C is from a locale that has included numerous additional items.

FORENSIC EPIDEMIOLOGY

Dates
Location

TABLE OF CONTENTS – Example A

1. Course Agenda
2. Criminal Investigation for Public Health
 - Presentation
 - Chain of Custody Form
3. Public Health Epidemiology for Law Enforcement Presentation
4. Role of the Laboratory – Public Health and Forensic Presentation
5. Case Study I Facts and Questions
6. Case Study II Facts and Questions
7. Case Study III Facts and Questions
8. Criminal and Epidemiological Investigation Handbook

FORENSIC EPIDEMIOLOGY**Dates****Location****TABLE OF CONTENTS – Example B**

1. Course Agenda
2. Introduction, Objectives, and Pre-course Assessment
3. Criminal Investigation for Public Health Presentation
4. Public Health Investigations for Law Enforcement Presentation
5. Role of the Laboratory Presentation
6. Case Study I Facts and Questions
7. Case Study II Facts and Questions
8. Case Study III Facts and Questions
9. Post-course Assessment and Course Evaluation
10. White Powder Protocol
11. Criminal and Epidemiological Investigation Handbook
12. Collaboration between Public Health and Law Enforcement: New Paradigms and Partnerships for Bioterrorism Planning and Response, J.C. Butler

TABLE OF CONTENTS – Example C

1. Course Agenda
2. Introduction, Objectives, and Pre-course Assessment
3. Public Health Investigations for Law Enforcement
 - Public Health Epidemiology Presentation
 - Health and Safety Exposure Advisory
4. Criminal Investigations for Public Health
 - Criminal Investigation Presentation
 - Chain of Custody Form
 - Standardized Emergency Management System (SEMS) Guidelines
 - Public Health Law Presentation
 - Los Angeles County Terrorism Early Warning (TEW) Group
 - Response Protocols to Possible Chemical, Biological, Radiological, Nuclear, Explosive (CBRNE) Incidents
5. The Role of the Public Health Laboratory
 - Evidence Collection Technique Presentation
 - Laboratory Chain of Custody Form
6. Case Study I questions
7. Case Study II questions
8. Case Study III questions
9. Post-course Assessment and Course Evaluation
10. White Powder Protocol – University of South Florida College of Public Health Center for Biological Defense
11. Criminal and Epidemiological Investigation Handbook
12. Relevant Articles
 - Collaboration between Public Health and Law Enforcement: New Paradigms and Partnerships for Bioterrorism Planning and Response, J.C. Butler
 - Biological Terrorism: SBCCOM Joins with the Pinellas, R.S. Stiner and M.A. Mughal
 - Additional Resources

Types of Binders

Depending on the types of course attendees, there may be **several different types of binders** that must be assembled.

- If your planning committee decides to recognize the difference between observers and participants, there will be a total of three types of course attendees (participant, observer, and facilitator).
- If your planning committee decides to combine participants and observers, there will be a total of two types of course attendees.

Each of the three possible types of attendees has slightly **different components** that should go into the binders.

- Facilitators have the answers to the questions as well as some guidance specific to their function in the case studies.
 - The guidance or notes to the facilitator may be found in the accompanying CD ('notes_fac.doc').
- Observers do not have the answers to the questions, but they should be given some guidance on their roles during the case studies and how those roles differ from those of participants.
 - The guidance or notes to the observer may be found in the accompanying CD ('notes_obs.doc').
- Participants have neither the answers to the case studies nor separate guidance.

To **distinguish between the different types** of course attendees:

- Alter the cover and table of contents
- Add the appropriate designator (Participant, Facilitator, or Observer) to the header.

When the two or three separate types of binders are **labeled**, it is easier to distribute the binders to the appropriate attendees.

- Samples of each type of cover ('cover_obs.doc', 'cover_fac.doc', and cover_part.doc') may be found in the accompanying CD.
- Samples of each type of table of contents ('toc_obs.doc', toc_fac.doc', and 'toc_part.doc') may be found in the accompanying CD.

An additional feature of the covers is that this is where course attendees can **find their Notebook Numbers**.

- Notebook Numbers, discussed in greater detail earlier in this section, are used to track the pre- and post-course assessments and to determine if the person filling out the course evaluation has a public health or a law enforcement background.
- Notebook Numbers are not needed if pre- and post-course assessments and course evaluations are not used in your course.
- If they are used, sample Notebook Numbers may be found in the accompanying CD ('nn_labels.doc').
- Notebook Numbers should be placed on the lower left-hand corner of the cover.

SPECIAL TIPS FOR BINDER ASSEMBLY

- The **amount of materials in the binders** as well as the due date of each of these materials will dictate the length of time required to assemble each binder. Presentations are typically the most difficult materials to acquire before the pilot. A strict deadline for presentations should be instituted.
- The **copying of materials** to go in the binders can be time consuming. If it is not possible to have an outside vendor or copy service to copy the materials, it is suggested that you use pre-drilled three-hole punch paper. This will prevent you from spending any additional time punching holes in paper.
- The **assembly of course binders** can also be time consuming. Depending on the amount of material in each binder, the length of time required to assemble one binder can range from 3-6 minutes. If a large number of binders must be assembled, it is recommended that you have sufficient help and an organized manner for assembling the binders. Typically, the most efficient way is to have all information to be included in the binder copied and ready to be inserted (three-hole punched). The insertion of one file at a time (either beginning in the end or at the front) is normally the fastest way to assemble the binders.

ORDER OF CASE STUDIES

Three case studies are included in this manager's guide. Each of these case studies is fact based. The first case study discusses a frank overt white powder hoax that occurred in DeKalb County, Georgia, in the fall of 2001. This study focuses more on a law enforcement aspect. The second case study discusses the overt anthrax situation that occurred in southern Florida in the fall of 2001. This study focuses on both law enforcement and public health equally. The third case study discusses a covert act of bioterrorism that took place in The Dalles, Oregon, in 1984. The study focuses more on public health. It is recommended that the order of the scenarios remain in this frank overt to covert pattern, but it is possible to rearrange the order to best suit your locale or jurisdiction.

These case studies can be used in many different configurations, at the option of the planning committee. Your committee can determine what is best for their constituencies. Review the materials and make a decision about whether, if they had only one day, they wanted to eliminate one case study and effect a re-ordering. If you are expecting a fair number of people to not return the second day, a choice would be to use the law enforcement-heavy (Case Study I) and public health-heavy (Case Study III) case studies first and leave the mixed case study (Case Study II) for the second day, so all participants would get both extremes.

SPECIAL CHALLENGES IN YOUR LOCALE THAT NEED ATTENTION

Your locale or jurisdiction may have special challenges or special requirements that need attention. If you do have a special challenge, this may be addressed in an afternoon session of the first day, by addressing it in an existing presentation or by adding a new presentation.

THE FIRST DAY OF THE COURSE

Registration

It is recommended that the course planners begin registration 30-45 minutes before the course is scheduled to start. When course attendees arrive, the registration tables should be ready and waiting. Attendees who arrive early can use this time to meet new people and to help themselves to refreshments.

Sign-in sheets

- Sign-in sheets, with names of those pre-registered should be used.
 - A typical sign-in sheet should have a place for the course attendee to sign or initial each day the course is held.
 - People who have not pre-registered should sign in on a blank sign-in sheet or at the bottom of the existing sign-in sheet.
- If there are more than 50 course attendees, it is recommended that more than one registration table be used and that the registration be broken up alphabetically.

Nametags

- Nametags, both pre-printed with the names of those pre-registered and blank, should be available.
- A sample nametag can be found in the “Logistics” section and electronically in the accompanying CD.
- Nametags should give the name and agency in large enough type to read easily.
- Nametags should also indicate whether the person is a participant, observer, facilitator, or presenter.
- If someone who has not pre-registered arrives and plans on taking the course, have him or her fill out a blank registration form and blank nametag.
- Make sure to enter the participant's information into the database in order for it to be included in the participant list.

Binders

- Binders should be given to course attendees as they arrive.
- Attention should be paid to whether the attendee is a participant, observer, or facilitator because each type of binder is different.

Morning Session

Welcome

- At the designated start time, the course manager or designated speaker should introduce himself or herself and the course.
- There is no reason that there cannot be more than one introductory speaker.
- Typically, more than one member of the planning committee should give welcome remarks.

Pre -course Assessment

- If the planning committee decides to use the pre- and post -course assessments, the pre -course assessments should be answered after the welcome remarks and before the didactic portion begins.
- The course planner who presents the pre-course assessment to the group should give basic instructions.
- Course attendees should be given approximately 10 minutes to fill out the assessment.
- Attendees should be told to write their Notebook Number (found on the cover of the binder consisting of either "LExx" or "PHxx") on the top of the assessment.

Presentations

- After introductory remarks, the didactic portion of the course begins.
- The planning committee determines the order of the presentations given and the time allotted for each presentation.
- It is recommended that time left signs be created to let the presenter know how much time remains in his/her presentation.
- At the end of the didactic portion, the participants should be allowed to take a lunch break at least an hour in length. If lunch is not available at the course site, a longer lunch break may be necessary.

Preparation for Afternoon Session

- While the participants are listening to the lectures, the course manager or a designated person needs to be creating the breakout groups for the afternoon session.

Note: Breakout groups are discussed in greater detail in the Course Attendees portion of the Course Design section.

- Breakout group assignments should be given to participants as they break for lunch.
- The assignment sheet should list the facilitators, participants, and observers in each breakout group.
- The room number for the breakout group should also be listed on the sheet. If the rooms are not located near the main lecture room, directions to the breakout rooms should be given.

Afternoon Session

Breakout Groups

- During the afternoon portion of the first day, participants are broken into breakout groups.
- Name tents and markers should be placed in each breakout group room.
 - Name tents should be blank.
 - Each breakout room should have enough tents to provide one per participant.
 - Participants should use the markers to write both their name and their agency on the name tent along with any additional information the facilitator would like to see (e.g., job role or organization).

Case Studies I and II

- Before beginning the first case study, facilitators should begin with a short introduction of each participant and observer.
- At the beginning of each scenario, facilitators will ask the group to decide who will be the group recorder/reporter. The recorder/reporter will be responsible for writing down any information that fits into one of these three areas and will speak for the group at the wrap-up.
- Small group report forms will be given to each facilitator before the group begins.
 - Sample group report forms can be found in the accompanying CD ('sm_report.doc') and on the following pages.
 - The forms are divided into three sections:
 1. Unresolved issues
 2. Lessons learned and information to pass on
 3. Gaps in your jurisdiction and recommendations for action

Note: The groups should take a 15-minute break between the first and second case studies in order to use the facilities and obtain refreshments.

Small Group Report

Small Group # _____

Reporter Name _____

Co-Facilitators: _____ ; _____
(Public Health) (Law Enforcement)

A Reporter from each small group will be given an opportunity to summarize to all course attendees the unresolved issues, lessons learned and information you want to pass on, and gaps in your jurisdiction. Since all groups were discussing the same three scenarios, the reports should focus on overarching issues, not individual conclusions from a single case study.

Unresolved issues:

1.

2.

3.

4.

5.

Lessons learned and information you want to pass on to the other groups:

1.

2.

3.

4.

5.

Gaps in your jurisdiction (We need to ...):

1.

2.

3.

4.

5.

Course planners should float during the afternoon session to ensure that the case studies are progressing well. If problems are found with particular groups (either participants, observers, or facilitators), course planners should deal with the problems in an appropriate manner.

1st Day Debrief

- At the end of the first day, small group facilitators should meet with the course managers to discuss and summarize the main issues raised during the first two case studies.
- Common issues should be addressed at either the beginning of the second day or at the wrap-up at the end of the course.

When the groups are finished with the second case study, participants will adjourn for the day.

THE SECOND DAY OF THE COURSE

Registration

- On the second day of the course, it is recommended to bring the large group together first thing in the morning in order to determine who returned for the second day.
- Attendees should sign in on the sign-in sheets to indicate that they are in attendance on the second day.
 - Generally, attendance on the second day of a two-day training course will decrease.
 - If there is a substantial decrease in the number of attendees the second day, it may be necessary to redistribute the attendees into breakout groups.
 - This can take up to 30 minutes to redistribute the groups when late arrival (“stragglers”) is taken into consideration.
 - The process for the redistribution of groups should be the same as the original distribution into breakout groups.

Note: While the course planners are determining the breakout groups for the third case study, the course attendees can use the time to fill out the course evaluation making sure to enter their Notebook Number on the evaluation.

Case Study III

- When the breakout groups are re-divided (if this needs to be done), attendees should separate into their assigned rooms and begin Case Study III.
- At the end of the case study, attendees should break for 15 minutes then reassemble in the large room for the wrap-up portion of the course.

Wrap-Up

- The wrap-up session is used to summarize the unresolved issues, lessons learned, and gaps in your jurisdiction gathered during the course and recorded on the small group report form.
- The individual responsible for facilitating the wrap-up session should participate as an observer and float amongst the groups gathering information for this session.
 - Attending different groups on day one and day two will provide a "big picture" view of the issues that are raised by the different groups.
 - The wrap-up facilitator may not be able to attend all of the groups if there are more than six; however, observing a cross-section is still helpful.
- The wrap-up facilitator then will take the notes provided by each of the groups' recorders/reporters and synthesize a list of salient issues and action items that surfaced from each group.
- This list will also include the wrap-up facilitator's personal observations. Issues that surfaced in more than one group should be emphasized. As the facilitator presents these issues, he/she should encourage feedback/additional comments from the course participants. This additional feedback should be captured and incorporated into a final report that will be submitted to the local planning group.

Note: At the end of the second morning, distribute the answers to the case scenarios and the participant list and collect the pre- and post -course assessments and evaluations (if used).

CASE STUDIES

DESCRIPTION OF CASE STUDIES

Three case studies are included with this course manager's guide. The cases are real situations. Input from people who actually worked on each case was sought out and used in order to create a case study that was both factual and interesting. The cases progress from overt to covert. Of the two overt cases used in this course, the first turned out to be a hoax, while the second is the anthrax case of Fall 2001 that occurred at a commercial building in Florida.

Each of these cases is provided in two formats: without answers and with answers. The studies without answers are meant to be handed out to the participants and observers at the beginning of the course. Only the facilitators should have the answers to the case studies during the breakout group activities. Answers to each of the case studies should be distributed to the participants and observers at the end of the course.

Case Study I – Suspicious Letter in DeKalb County

This case study discusses one of the many white powder hoaxes that occurred in the fall of 2001. It took place in DeKalb County, Georgia. This case study consists of five sets of facts and ten questions.

Case Study II – Anthrax in Florida

This case study discusses the anthrax case that occurred in southern Florida in the fall of 2001 at a commercial building. This case study consists of five sets of facts and fourteen questions.

Case Study III – Salmonellosis in Oregon

This case study discusses a well-documented case of covert biological terrorism in the United States. This case, which began in 1984, involves the use of *Salmonella* Typhimurium and the followers of Bhagwan Shree Rajneesh. Followers of Bhagwan Shree Rajneesh purchased a large ranch in Wasco County to build a new international headquarters for the guru. Part of the commune's ranch was incorporated as the city of Rajneeshpuram, but the charter was challenged in the courts, effectively limiting new construction. Commune members believed that the outcome of the November 1984 elections for Wasco County commissioners would have an important impact on further land-use decisions. Followers of the guru used *Salmonella* Typhimurium to sicken people in the community of The Dalles, Oregon, in order to sway the vote in their direction. This case study consists of five sets of facts and twelve questions.

TEXT OF CASE STUDIES, FORMATTED FOR PARTICIPANTS

Case Study I – Suspicious Letter in DeKalb County

Objectives / Topics for Case Study I

1. Assessing threat credibility
2. Handling specimens
3. Handling, sharing, and communicating information
4. Understanding law of bioterrorism
5. Understanding chain of custody
6. Addressing interagency issues

Facts and Questions

Facts I: On October 15, 2001, one week after discovery of the first human case of systemic anthrax (i.e., anthrax bacteria in the blood) in the United States, a woman residing in DeKalb County, Georgia, received a letter with an overseas postmark. The woman had immigrated to the United States from another country, where her husband had survived attempts on his life because of his political beliefs. She opened the letter outdoors at about 7:00 p.m. and saw that the letter contained powder. She dropped the letter to the ground and immediately phoned 911.

Question 1: What government organization(s) most appropriately should respond to the woman's call to 911 and who determines if the threat is credible?

Question 2: What is meant by the term "case" – specifically, what is its meaning for medical and public health purposes, and what is its meaning for law enforcement purposes?

Facts II: Local fire department personnel and police officers responded to the call. Law enforcement and fire department personnel determined that the letter represented a credible threat.

Question 3: What are criteria and who is responsible for determining the credibility of a threat?

Question 4: How should information regarding a threat assessment be handled between law enforcement agencies and, at this stage, who needs to be informed?

Question 5: How should specimens be handled and processed?

Question 6: At this stage, what are priorities for law enforcement and other first-responder personnel?

Facts III: The DeKalb County Police Department (i.e., local law enforcement authority) now has possession of the specimen (i.e., the letter). After discussions with the FBI's Atlanta field station, the DeKalb Police deemed the threat credibility to be sufficient such that the specimen should be tested. The county police department then called the DeKalb County Board of Health (i.e., local public health authority), and a public health nurse was sent to interview and obtain information from the woman. The public health department determined that the woman had an exposure. Because of the delay in interviewing the woman and uncertainty about how quickly the laboratory would be able to process the specimen, the health department recommended she begin post-exposure antibiotic prophylaxis pending testing for the presence of *B. anthracis* in the suspect vehicle.

Question 7: How do public health authorities determine if there has been an exposure sufficient to merit a presumption of anthrax exposure (until proven otherwise) and who has been exposed?

Question 8: Are law enforcement / other 911 responders also in the category of exposed persons and, if so, who decides this?

Facts IV: Based on the determination that the threat was credible, the FBI made the decision that the specimen should be tested and then transported the specimen to a Laboratory Response Network (LRN) technician for testing. The LRN laboratory received the specimen.

Question 9: What is a “chain of custody” of evidence and, as law enforcement authorities give specimens to a laboratory technician, how is a chain of custody established and maintained (see sample form)?

Facts V: Approximately 24 hours later, the specimens tested negative for anthrax.

Question 10: How are laboratory test results communicated – to whom and by whom?

Case Study II – Anthrax in Florida

Objectives / Topics for Case Study II

1. Understanding public health investigations, including:
 - Defining exposed population(s)
 - Providing prophylaxis to exposed persons
 - Identifying the source (i.e., perpetrators / reservoir)
2. Understanding how a public health investigation differs from and is similar to a criminal investigation.
3. Addressing communication challenges, including media relations and risk communication (including public health needs vs. law enforcement restriction).
4. Addressing interagency communication.
5. Maintaining simultaneous epidemiologic and criminal investigations.
6. Defining jurisdictional issues.
7. Understanding issues related to the law surrounding entry into and sampling of homes and workplaces.

Facts and Questions

Facts I: On October 2, 2001, the Palm Beach Health Department was notified by an infectious disease physician about unusual test results using gram stain (a special dye used to identify bacteria) for a patient with meningitis (bacterial infection of the tissues covering the brain); the patient was a county resident. The State Epidemiologist was contacted and a team of local epidemiologists began an investigation. The state made arrangements for further laboratory testing in the state laboratory. On October 3, specimens were sent to the state laboratory and further information suggested that this case could be a suspect case of systemic anthrax (i.e., anthrax bacteria in the blood). The State Epidemiologist notified the CDC about this case according to established protocol. The CDC notified the FBI Headquarters in Washington D.C. of the situation in Florida, and the FBI field office in Miami dispatched personnel to assist in assessing this unfolding situation.

Question 1: What are the implications of one or more suspected or confirmed cases of anthrax in the United States?

Question 2: How is a suspected case of anthrax confirmed and where are human samples sent?

Facts II: Early on the morning of October 4, the state laboratory, part of the U.S. Laboratory Response Network (LRN), determined that the organism in the patient's specimen was anthrax bacteria – *Bacillus anthracis*, or *B. anthracis* for short. Although the tests were deemed to be conclusive, this rare finding needed independent confirmation. Arrangements were made for samples to be transported to CDC's national reference laboratory in Atlanta, which later verified the Florida results. That same morning, state and federal investigators joined the local staff to conduct an intense investigation of the possible source of the patient's infection. From the public health perspective, this single case of confirmed anthrax is considered to be an epidemic because this form of infection is so rare.

Question 3: What are the goals of this phase of a public health investigation of an epidemic?

Question 4: At this point, how should the investigators handle media relations in terms of what the public needs to know?

Facts III: Because the patient's medical condition had deteriorated such that he could not be interviewed, public health and FBI investigators interviewed his wife and daughter. Investigation of the patient's history revealed that he had traveled by car from Florida to North Carolina and back to Florida in the week prior to his admission to the hospital. The incubation period (i.e., the time interval between the initial infection and the onset of clinical features of disease) for systemic anthrax is believed to range from 1 to 60 days, but is usually from 3 to 7 days. The information collected to this point suggested that the patient's potential exposure could have occurred in either state or any point in between. This information led to environmental investigations (including outdoor activity locations, and residential and work settings) in both North Carolina and Florida in an attempt to identify the possible source of the patient's infection. In addition, because of the potential for this case to have resulted from a criminal act, by October 4, law enforcement officials in both states had been notified. In Florida, local and state law enforcement, the FBI, and public health were now joined in the investigation.

Question 5: Based on the information above, at this stage of the investigation what are the roles of public health officials and law enforcement authorities in the investigation, and under what circumstances might the respective roles of public health and law enforcement officials change?

Question 6: What is the law surrounding entry into and sampling of homes and workplaces?

Question 7: What are the requirements for training and protection of those who may be asked to enter facilities to collect environmental samples?

Facts IV: From October 5-8, public health and law enforcement officials continued the investigation, defining the patient's activities in greater detail and conducting additional environmental testing for the presence of *B. anthracis*. On October 8, the Florida Department of Health's laboratory reported the detection of *B. anthracis* from environmental samples obtained from a mailbox in the patient's workplace, the surfaces in the workplace mailroom, and the patient's computer workstation keyboard. Based on this information, mail was implicated as the potential source of the patient's infection.

Question 8: Does this investigation now become a criminal investigation and, if so, how does this change the role of public health and law enforcement investigators?

Question 9: Who is responsible for determining whether a building should be evacuated and sealed and, if so, when it can be re-entered?

Question 10: What are responsibilities of law enforcement in protecting such a crime scene for the purposes of further investigations and possible prosecution?

Question 11: What are the responsibilities of public health authorities in preventing further cases of anthrax in workers in and visitors to the original case's workplace?

Question 12: Who is in charge of the investigation at the patient's workplace and residence?

Facts V: On October 8, the Palm Beach County Health Department issued an order closing the building in which the patient worked. The building's management voluntarily closed the building when informed of the impending order. Within hours, the FBI declared the building a crime scene and took control of the building.

Based on building plan information, the building's air supply system, and the incubation period of anthrax, the decision was made to offer antibiotic prophylaxis from the National Pharmaceutical Stockpile to all employees and visitors who had been in the patient's workplace building during August 1 through October 7 (this number was approximately 1114 persons). On October 12, the New York City Department of Public Health reported a suspected case of cutaneous anthrax in an office worker at a large broadcast media outlet in New York City. The onset of illness in that worker appeared to pre-date that of the case in Florida, and the New York City patient recalled having received a letter with suspicious contents approximately 11 days prior to onset of disease. The letter was retrieved by the FBI, and its contents were confirmed to include *B. anthracis* spores.

Question 13: How does the FBI coordinate among local, state, and federal law enforcement efforts during a national investigation?

Question 14: How does public health coordinate among local, state, and federal public health efforts during a national investigation?

Case Study III – Salmonellosis in Oregon

Objectives / Topics for Case Study III

1. Understanding public health's role in investigating natural outbreaks of disease
2. Recognizing that public health expects certain patterns or findings to explain natural disease outbreaks
3. Recognizing that certain unusual or unnatural findings in a disease investigation may suggest intentional / covert action
4. Identifying procedures and mechanisms to communicate suspicions of intentionality to law enforcement officials

Facts and Questions

Background: This scenario involves the September 1984 outbreak of gastroenteritis (an illness characterized by fever, vomiting, and diarrhea) caused by a specific bacterium, *Salmonella* Typhimurium. This specific bacterium is a member of a much larger family of salmonella bacteria. The outbreak occurred among persons living in the community of The Dalles, Oregon. The Dalles (1980 population: 10,500) is the county seat of Wasco County (population: 21,000) and a region of orchards and wheat ranches. The Dalles is located off Interstate 84 and is a frequent stop for travelers. From 1980 through 1983, there had been only 16 isolates of salmonella reported by the local health department (the Wasco-Sherman Public Health Department), and of these, only 8 were *Salmonella* Typhimurium. In 1981, followers of Bhagwan Shree Rajneesh purchased a large ranch in Wasco County to build a new international headquarters for the guru. Construction of the commune was controversial because of issues involving cultural values and land use. Part of the commune's ranch was incorporated as the city of Rajneeshpuram, but the charter was challenged in the courts, effectively limiting new construction. Commune members believed that the outcome of the November 1984 elections for Wasco County commissioners would have an important impact on further land-use decisions. One measure commune members took to further their interests was to implement a national program to bus hundreds of homeless persons to the commune for the purpose of registering these persons to vote in the election.

Facts I: On September 17, 1984, a disease control expert for the Wasco-Sherman Public Health Department began to receive reports of recent cases of gastroenteritis in persons who had eaten meals in either of two local restaurants in The Dalles several days before symptom onset.

Question 1: What is a county health department's responsibility when it receives reports of cases of illness among persons in a community, and what is the threshold for beginning an investigation?

Facts II: The disease control expert collected stool samples from recently ill persons and sent those samples to the state public health laboratory to be cultured. By the end of the week, cultures of stool samples obtained from about 15 persons were reported as being positive (+) for the bacterium, *Salmonella* Typhimurium, a bacterium known to cause gastrointestinal illness of the sort reported among people in the community. The disease control expert's preliminary investigation suggested that some persons with cases of gastroenteritis had eaten at salad bars at restaurants in the community before becoming ill. One week later, on about September 24, the disease control expert learned that there were additional cases of illness in the community and that some affected persons had been hospitalized because of their illnesses. As a result, the county health department contacted the Oregon Health Division (i.e., the state health department) on September 24, and the state contacted the CDC for assistance on September 25. In addition, because of the possible link between having eaten at salad bars and becoming ill, salad bars (but not entire restaurants) were closed.

Question 2: Under what conditions should a health department begin a full formal epidemiological investigation of a health problem?

Question 3: What are the usual procedures for investigating a possible food -borne disease outbreak?

Facts III: On September 26-27, two medical epidemiologists from the CDC arrived in The Dalles to provide assistance with the investigation. This assistance included identifying additional cases, collecting patient specimens, analyzing data, and assessing the basis for and impact of the intervention of closing the salad bars. Over the next 6 weeks, a public health team – which included persons from the local and state health departments and from the CDC – continued this extensive investigation, collecting additional data and samples, conducting numerous interviews, and carrying out complex studies. Ultimately, investigators identified a total of 751 persons with cases of *Salmonella* gastroenteritis. With an outbreak this large, investigators were initially optimistic that they would be able to find a common pattern or thread that could explain the occurrence of illness in so many people.

Despite these efforts, the investigators could not identify a single food item or contamination of a single food item that could have accounted for the *Salmonella* Typhimurium gastroenteritis outbreak. In the midst of this investigation, some residents of The Dalles contacted public health officials to express concerns about the possible suspicious behavior of some restaurant employees and of some religious commune members in relation to salad bars. These concerns included general rumors and a few very specific allegations. They raised questions about the possibility of the intentional contamination of food to cause illness within the community.

- Question 4: What circumstances should cause public health officials investigating an outbreak to suspect that the outbreak is intentional?
- Question 5: What should public health personnel do when specific allegations of intentionality are raised during the course of a public health investigation?
- Question 6: What law enforcement agency(ies) should be notified (e.g., local, state, or federal)?
- Question 7: What should law enforcement do in response to such reports and under what authority?
- Question 8: What factors may guide how law enforcement communicates with public health about such reports and vice versa?
- Question 9: In a situation such as in The Dalles, long after the exposures and outbreak may have occurred, how does the FBI / law enforcement approach the matter of collecting evidence and establishing a chain of custody? In this case, what is the evidence?

Facts IV: After receiving the initial reports of suspicious activity involving certain persons, public health personnel also began to interview restaurant managers about the behavior of disgruntled employees as a means for assessing the possible occurrence of an intentional act. These queries yielded no relevant information.

Question 10: What issues arise when public health personnel ask such questions as part of a public health epidemiologic investigation?

Question 11: Under these circumstances, FBI / law enforcement officials are primarily responsible for asking what questions ?

Facts V: Public health personnel remained in the field for over 6 weeks in order to complete the public health field investigation. At the end of this extensive investigation, they concluded that: (1) the illness was associated with salad bar consumption; and (2) because cases of illness occurred in two distinct time clusters, transmission of *Salmonella* Typhimurium probably involved some sort of complex transmission mechanisms. The investigators could neither rule out nor prove intentionality. The investigators recommended that all restaurant food handlers be healthy and have negative stool cultures before being permitted to return to work.

One year later, as part of a wiretapping and immigration fraud investigation of the religious commune, the FBI and other law enforcement officials received key information from informants who were members of the religious commune. This information indicated that, beginning in August 1984, members of the commune had intentionally contaminated salad bars with *Salmonella* Typhimurium for the purpose of influencing a local election to be held in November 1984. In October 1985, FBI and other law enforcement officials visited the commune's compound. During that visit, a vial of dried *Salmonella* Typhimurium (subsequently determined to be identical to the outbreak strain) was discovered by the state health department's laboratory director. He placed the vial into a chain of custody. In March 1986, indictments of some commune members were handed down. Two commune members, a nurse and the secretary to its leader, were convicted and sentenced.

Question 12: What is the "select agent" rule and how does it apply to *Salmonella* organisms?

HHS NON-OVERLAP SELECT AGENTS AND TOXINS

- Crimean-Congo haemorrhagic fever virus
- Coccidioides posadasii*
- Ebola viruses
- Cercopithecine herpesvirus 1 (Herpes B virus)
- Lassa fever virus
- Marburg virus
- Monkeypox virus
- Rickettsia prowazekii*
- Rickettsia rickettsii*

South American haemorrhagic fever viruses

- Junin
- Machupo
- Sabia
- Flexal
- Guanarito

Tick-borne encephalitis complex (flavi) viruses

- Central European tick-borne encephalitis
- Far Eastern tick-borne encephalitis
- Russian spring and summer encephalitis
- Kyasanur forest disease
- Omsk hemorrhagic fever

- Variola major virus (Smallpox virus)
- Variola minor virus (Alastrim)
- Yersinia pestis*
- Abrin
- Conotoxins
- Diacetoxyscirpenol
- Ricin
- Saxitoxin
- Shiga-like ribosome inactivating proteins
- Tetrodotoxin

HIGH CONSEQUENCE LIVESTOCK PATHOGENS AND TOXINS/ SELECT AGENTS (OVERLAP AGENTS)

- Bacillus anthracis*
- Brucella abortus*
- Brucella melitensis*
- Brucella suis*
- Burkholderia mallei* (formerly *Pseudomonas mallei*)
- Burkholderia pseudomallei* (formerly *Pseudomonas pseudomallei*)
- Botulinum neurotoxin producing species of *Clostridium*
- Coccidioides immitis*
- Coxiella burnetii*
- Eastern equine encephalitis virus
- Hendra virus
- Francisella tularensis*
- Nipah Virus
- Rift Valley fever virus
- Venezuelan equine encephalitis virus
- Botulinum neurotoxin
- Clostridium perfringens* epsilon toxin
- Shigatoxin
- Staphylococcal enterotoxin
- T-2 toxin

USDA HIGH CONSEQUENCE LIVESTOCK PATHOGENS AND TOXINS (NON-OVERLAP AGENTS AND TOXINS)

- Akabane virus
- African swine fever virus
- African horse sickness virus
- Avian influenza virus (highly pathogenic)
- Blue tongue virus (Exotic)
- Bovine spongiform encephalopathy agent
- Camel pox virus
- Classical swine fever virus
- Cowdria ruminantium* (Heartwater)
- Foot and mouth disease virus
- Goat pox virus
- Lumpy skin disease virus
- Japanese encephalitis virus
- Malignant catarrhal fever virus (Exotic)
- Menangle virus
- Mycoplasma capricolum*/
M.F38/M. mycoides capri
- Mycoplasma mycoides mycoides*
- Newcastle disease virus (VVND)
- Peste Des Petits Ruminants virus
- Rinderpest virus
- Sheep pox virus
- Swine vesicular disease virus
- Vesicular stomatitis virus (Exotic)

LISTED PLANT PATHOGENS

- Liberobacter africanus*
- Liberobacter asiaticus*
- Peronosclerospora philippinensis*
- Phakopsora pachyrhizi*
- Plum Pox Potyvirus
- Ralstonia solanacearum* race 3, biovar 2
- Schlerophthora rayssiae* var *zeae*
- Synchytrium endobioticum*
- Xanthomonas oryzae*
- Xylella fastidiosa* (citrus variegated chlorosis strain)

TEXT OF CASE STUDIES, FORMATTED FOR FACILITATORS

Case Study I – Suspicious Letter in DeKalb County

Objectives / topics for Case Study I

1. Assessment of threat credibility
2. Specimen handling
3. Information handling, sharing, and communicating
4. Understanding law of bioterrorism
5. Understanding chain of custody
6. Addressing interagency issues

Problem and questions

Facts I: On October 15, 2001, one week after discovery of the first human case of systemic anthrax (i.e., anthrax bacteria in the blood) in the United States, a woman residing in DeKalb County, Georgia, received a letter with an overseas postmark. The woman had immigrated to the United States from another country, where her husband had survived attempts on his life because of his political beliefs. She opened the letter outdoors at about 7:00 p.m. and saw that the letter contained powder. She dropped the letter to the ground and immediately phoned 911.

Question 1: What government organization(s) most appropriately should respond to the woman's call to 911 and who determines if the threat is credible?

Answers / discussion points: A pre-existing local protocol may / should be in place. When a report of suspected bio-terror material comes in to 911, the general ordering of services which are initially dispatched and respond are: first, law enforcement; second, fire services; and third, emergency medical services. Law enforcement usually arrives first and obtains information from the complainants. If, based on this information and observations, additional assessment is needed, then fire, HAZMAT, and/or EMS might be summoned.

Ordinarily, local law enforcement would be dispatched in response to a report of a threat or an attack. The initial assessment of the threat would be performed by the first responding patrol officers or deputies and, in some instances, by a supervisor possibly called to the scene by the first responders. Fire / HAZMAT / EMS would not be dispatched unless it is believed that a hazardous material may be present. Generally, all written threat letters are treated as potentially credible and are packaged, per HAZMAT protocols, for testing by an LRN laboratory identified for use by the local FBI field office. However, in some jurisdictions existing protocols may dictate that fire / HAZMAT / EMS are dispatched at the same time as law enforcement because of their special training and equipment for addressing hazardous materials and WMD events.

This event represents a suspected act of terrorism, which is a federal crime and may be a crime in some states. The FBI is the lead federal agency for crisis

management for all suspected terrorism threats or incidents, which would include response to the scene and threat assessment. The FBI should be notified that an “anthrax letter” (i.e., a threat) has been received. Once notified, the FBI will assist state and local authorities in assessing the threat (through the use of subject matter experts within the FBI and U.S. Government agencies) as well as in collecting and transporting potential evidence for testing. All threats involving a disease-causing organism are federal crimes, regardless of whether the perpetrator actually possesses the agent(s).

In addition to threat assessment, public safety first responders should be concerned with managing the site of the incident. This process would involve isolating and protecting the suspect item / material from further disturbances, and containing the item / material to the location where it is first found. In addition, such responders might establish and enforce a perimeter around the incident area to prevent additional exposures and to provide a clear and secure area for other public safety responders to conduct their threat assessment and information collection. Law enforcement first responders would immediately establish communications with fire / HAZMAT / EMS services for the purpose of coordinating the deployment of additional resources, if deemed necessary. The on-scene commander should also make a “heads up” call to public health.

Question 2: What is meant by the term “case” – specifically, what is its meaning for medical and public health purposes, and what is its meaning for law enforcement purposes?

Answers / discussion points: In medicine and public health, the term “case” refers to one person who meets a set of criteria for a specific disease or injury condition. For example, a case of inhalational (respiratory) anthrax might be defined as a person with recent onset of compatible manifestations (e.g., fever, muscle aches, and severe respiratory impairment) that is laboratory-confirmed by the isolation of the anthrax bacterium from the blood or from other affected tissue. In the setting of an outbreak investigation, a “case definition” which incorporates such specific criteria is used to identify persons likely to have been affected in the outbreak and to set them apart from persons who were uninvolved in the outbreak. In contrast, the use of “case” in the context of law enforcement represents a formal, active criminal investigation.

Facts II: Local fire department personnel and police officers responded to the call. Law enforcement and fire department personnel determined that the letter represented a credible threat.

Question 3: What are criteria and who is responsible for determining the credibility of a threat?

Answers / discussion points: Established protocols will be implemented depending on answers to questions focused on by the assessment process. These include whether: (1) an unattributable substance is present; (2) a threat has been implied or communicated verbally or in writing; and (3) anyone is symptomatic. Other considerations may include, for example, the appearance of the item (e.g., whether unopened or opened, whether material is visible, and what markings might be present); information received from the complainant, witnesses, or other persons regarding the source and/or perpetrators; and other recent incidents that may be similar to the present incident.

The referenced threat assessment process determines the credibility of the threat. If a letter is tested by an LRN lab and determined to include a biological agent, a significant public health response is initiated to identify and treat those potentially exposed. If a letter is tested and determined to be negative, law enforcement may still investigate. Even if the threat is not credible, “hoaxes” are prosecutable offenses.

As in many other public health and safety decisions, officials must consider both the seriousness of the consequences if a true threat is ignored, and the workload imposed upon the investigators and the laboratory if most low-probability threats are fully investigated.

Question 4: How is information regarding a threat assessment handled between law enforcement agencies and, at this stage, who needs to be informed?

Answers / discussion points: Initially, information regarding the threat would be shared directly with all appropriate local public safety agencies as part of the threat assessment and response process. All relevant information should be communicated to the FBI by local and state law enforcement first responders.

If merited, the FBI will initiate an investigation with the assistance of state and local law enforcement partners. Often this is conducted through an established Joint Terrorism Task Force (JTTF). The FBI established JTTFs with representatives from federal, state, and local law enforcement agencies. JTTFs help to facilitate dissemination of terrorism-related information among agencies. In the event of a terrorism-related threat or incident, the case would be worked under the umbrella of the JTTF with other appropriate federal, state, and local agencies.

At this stage, responding agencies (law enforcement and Fire/HAZMAT) know about the situation and make the necessary calls and arrangements for public health to process the specimen. Absent a positive laboratory result, no other notifications will be made.

Question 5: How should specimens be handled and processed?

Answers / discussion points: If the threat is potentially credible, then, in accordance with the provided anthrax response protocols, the item(s) would be handled as hazardous / WMD material and as evidence. Personnel who enter facilities to collect samples should be both trained and equipped to take the necessary precautions and wear appropriate personal protective equipment (PPE) to respond to hazardous materials incidents. In most cases, this will involve the local HAZMAT team and may involve specialized evidence collection teams such as the FBI's Hazardous Materials Response Unit (HMRU) or field office Hazardous Materials Response Team (HMRT).

The collected samples should be processed through an approved LRN facility. Nationally, the LRNs allow for the rapid assessment of any suspected bioterrorism attack through appropriate testing of any clinical or environmental samples obtained from the scene.

If threatening correspondence or material is tested and found to be negative in an LRN lab, the item(s) would still be handled as evidence of a crime with all appropriate measures to preserve evidence on the item (e.g., fingerprints, handwriting / other markings, DNA, and trace evidence such as hair and fiber). Threats to use bioterror agents, regardless of whether credible, are state and federal crimes.

Question 6: At this stage, what are priorities for law enforcement and other first-responder personnel?

Answers / discussion points: In general, first response priorities are to:

- Preserve human life and minimize health risks to responders and the public
- Locate, assess, render safe, control, contain, and collect / recover items, WMD, and other contaminated material
- Rescue, decontaminate, transport and treat victims, and prevent secondary casualties
- Collect relevant information and intelligence
- Effectively release / disseminate information to public safety and public health, and to the public at large, as appropriate
- Identify, apprehend, and prosecute perpetrator(s)
- Restore essential services
- Restore site

Facts III: The DeKalb County Police Department (i.e., local law enforcement authority) now has possession of the specimen (i.e., the letter). After discussions with the FBI's Atlanta field station, the DeKalb Police deemed the threat credibility to be sufficient such that the specimen should be tested. The county police department then called the DeKalb County Board of Health (i.e., local public health authority), and a public health nurse was sent to interview and obtain information from the woman. The public health department determined that the woman had an exposure. Because of the delay in interviewing the woman and uncertainty about how quickly the laboratory would be able to process the specimen, the health department recommended she begin post-exposure antibiotic prophylaxis pending testing for the presence of *B. anthracis* in the suspect vehicle.

Question 7: How do public health authorities determine if there has been an exposure sufficient to merit a presumption of anthrax exposure (until proven otherwise) and who has been exposed?

Answers / discussion points: Local and federal public health personnel may use a variety of techniques to determine who may have been exposed following a suspected *B. anthracis* attack. The assessment will be different depending on whether the exposure was outdoors or indoors, how close the person's face was to the powdery substance, whether the powder became airborne, etc. For an indoor exposure, information will be gathered about building engineering and airflow. Assessment may include environmental sampling (air or surface).

The confirmation of the presence or absence of *B. anthracis* is the indicator for the use of post-exposure prophylaxis (PEP) and possible decontamination. If the threat is considered credible as determined by law enforcement and prior to the laboratory confirmation of the presence of *B. anthracis*, then rudimentary decontamination of those exposed can proceed with soap and water. In addition, clothing can be secured for later washing or destruction, and the names and contact information of all those individuals potentially exposed should be recorded for potential further action if subsequent laboratory analysis reveals the release of aerosolized *B. anthracis*. If (and only if) the presence of *B. anthracis* is confirmed, then anyone in the contiguous air space who may have been exposed to the powder (including law enforcement / first responders) is considered to be potentially exposed. Determining this potential breadth of exposure requires a coordinated effort between building management (engineering) and the public health bioterrorism point of contact. If there is confirmation of the presence or release of *B. anthracis* in a potentially aerosolized form, all those in the contiguous air space can initiate PEP, including vaccination and antibiotics.

Usually it is not necessary to initiate PEP prior to confirmation of a *B. anthracis* release. At times, however, there may be extenuating circumstances – such as delays in conducting the investigation or the unavailability of rapid laboratory testing – that may modify the approach followed.

Until confirmation, the area needs to be secured. If *B. anthracis* is confirmed in a powder or other matrix suggesting an aerosol release, environmental testing may

continue to attempt to narrow the number of suspected exposed personnel for PEP through a more refined evaluation of the extent of spread of *B. anthracis* spores. In addition, if it is determined that there has been an exposure, further public health measures may be needed to prevent additional exposures.

Question 8: Are law enforcement / other 911 responders also in the category of exposed persons and, if so, who decides?

Answers / discussion points: Potentially: public health officials should ultimately determine both the exposure risk and appropriate preventive / treatment measures.

Facts IV: Based on the determination that the threat was credible, the FBI made the decision that the specimen be tested and then transported the specimen to a Laboratory Response Network (LRN) technician for testing. The LRN laboratory received the specimen.

Question 9: What is a “chain of custody” of evidence and, as law enforcement authorities give specimens to a laboratory technician, how is a chain of custody established and maintained (see sample form)?

Answers / discussion points: A chain of custody is a record of the care and keeping of anything as it is transferred from one custodian to another. More specifically, for investigative and prosecutorial purposes, a chain of custody is a documented record of who had custody / control of a particular item from the time it is first collected, to the time it is introduced as evidence in a trial or other court proceeding.

Every custodian in the “chain” should record on the chain of custody form their signature and date / time they took custody or control of the item. Each custodian also should document on the form the reason he or she took custody of the item. In addition, he or she may mark the actual item or the packaging material containing the item for later identification purposes, when appropriate.

Persons who are documented as custodians of the item should be able to testify in court that the item was secure, unaltered, and uncontaminated during the time it was in their custody, and should be able to explain what procedures they used to store, examine, test, and otherwise process the item. In a trial, failure to adequately demonstrate a proper chain of custody for an evidence item could result in exclusion of that item from consideration as evidence by the court / jury and in discrediting of all results of the testing of the item.

A chain of custody is established by protocol. HAZMAT is responsible for packaging. Law enforcement is responsible for an incident report, maintaining a chain of custody, and transporting the specimen to an LRN facility. Once at the facility, the original custody form remains with the evidence throughout the process.

The chain of custody usually consists of an evidence-receipt form that documents the circumstances of the seizure, the collection of evidence / property, and the transfer of the item from one custodian to another. This form should be initiated by the lead law enforcement agency at the scene, and the original form should remain with the item as it is transported from the scene to the appropriate testing laboratory (LRN) or crime laboratory. The original form may or may not remain with the evidence / property item throughout the testing and storage process, or the laboratory may have its own internal chain of custody process.

Whenever a law enforcement agency initiates a criminal investigation, then for each collected item of property and piece of evidence there should be a form which documents accurately and in detail the item's description and information relating to its place and time of seizure and collection. In addition, the form should document the transfer of custody of the item, as well as include signatures of all custodians, dates / times custody was transferred between custodians, and reasons for changes of custody.

Facts V: Approximately 24 hours later, the specimens tested negative for anthrax.

Question 10: How are laboratory test results communicated – to whom and by whom?

Answers / discussion points: Laboratory results usually will be communicated to the law enforcement officer who submitted the specimen, as well as to others who may be designated by the officer at the time of submission. Public health should be notified even if the results are negative in order to convey that information to the letter's recipient. If laboratory testing is positive for biological or chemical agents, public health officials are notified immediately of the results. Their notification functions as the link to national health resources and a coordinated medical / public health response at local levels. Public health officials should ensure that all potentially exposed persons are notified and receive necessary medical treatment. Law enforcement and public health will coordinate messages to the public through a Joint Information Center (JIC). An FBI investigation will be initiated that draws upon the assistance of state and local law enforcement to determine the source of the material and the perpetrator(s) responsible.

Case Study II – Anthrax in Florida

Objectives / topics for Case Study II

1. Understanding public health investigations, including:
 - Defining exposed population(s)
 - Providing prophylaxis to exposed persons
 - Identifying the source (i.e., perpetrators / reservoir)
2. Understanding how a public health investigation differs from and is similar to a criminal investigation.
3. Addressing communication challenges, including media relations and risk communication (including public health needs vs. law enforcement restriction).
4. Addressing interagency communication.
5. Maintaining simultaneous epidemiologic and criminal investigations.
6. Defining jurisdictional issues.
7. Understanding of issues related to the law surrounding entry into and sampling of homes and workplaces.

Problem and questions

Facts I: On October 2, 2001, the Palm Beach Health Department was notified by an infectious disease physician about unusual test results using gram stain (a special dye used to identify bacteria) for a patient with meningitis (bacterial infection of the tissues covering the brain); the patient was a county resident. The State Epidemiologist was contacted and a team of local epidemiologists began an investigation. The state made arrangements for further laboratory testing in the state laboratory. On October 3, specimens were sent to the state laboratory and further information suggested that this case could be a suspect case of systemic anthrax (i.e., anthrax bacteria in the blood). The State Epidemiologist notified the CDC about this case according to established protocol. CDC notified the FBI Headquarters in Washington, D.C., of the situation in Florida, and the FBI field office in Miami dispatched personnel to assist in assessing this unfolding situation.

Question 1: What are the implications of one or more suspected or confirmed cases of anthrax in the United States?

Answers / discussion points: In the United States, the background level of occurrence of anthrax cases is extremely low. Therefore, suspected or confirmed cases of anthrax should raise the suspicion that this biologic agent has been used as part of a deliberate bioterrorism attack and that additional cases of anthrax and additional attacks may be possible. Cases of anthrax must be investigated to determine whether they have occurred naturally (i.e., not as the result of an intentional act) and also individually evaluated as the possible result of terrorist attacks or other criminal acts. The occurrence of a confirmed case may indicate the commission of state and federal crimes. If there is suspicion that exposure

was the result of an intentional act, the FBI would assume the lead role in responding to and investigating anthrax threats and attacks.

Question 2: How is a suspected case of anthrax confirmed and where are human samples sent?

Answers / discussion points: Materials and specimens obtained from cases or suspected cases are sent to the LRN. (This is arranged between the health-care practitioner and the public health department.) Typically, human specimens obtained in a clinical setting may be sent to a hospital or commercial laboratory. If there is suspicion regarding use of a possible bioterrorism agent, then the specimen would be forwarded to a public health laboratory which is part of the LRN network.

Facts II: Early on the morning of October 4, the state laboratory, part of the U.S. Laboratory Response Network (LRN), determined that the organism in the patient's specimen was anthrax bacteria – *Bacillus anthracis*, or *B. anthracis* for short. Although the tests were deemed to be conclusive, this rare finding needed independent confirmation. Arrangements were made for samples to be transported to CDC's national reference laboratory in Atlanta, which later verified the Florida results. That same morning, state and federal investigators joined the local staff to conduct an intense investigation of the possible source of the patient's infection. From the public health perspective, this single case of confirmed anthrax is considered to be an epidemic because this form of infection is so rare.

Question 3: What are the goals of this phase of a public health investigation of an epidemic?

Answers / discussion points: The goals involve the reinforcement of outbreak investigation principles from background lecture and other points, including:

- Verification of diagnosis
- Intensive efforts to identify and characterize additional cases
- Development and testing of hypotheses regarding potential sources / modes of spread (including, e.g., examining patient's medical and recent travel history and notifying state epidemiologists in states through which patient traveled)
- Implementation of preventive / other intervention measures.

Question 4: At this point, how should the investigators handle media relations in terms of what the public needs to know?

Answers / discussion points: First, anticipate the occurrence of both "leaks" of information and the public reporting of erroneous information. Also anticipate that the news media will demand continuous updates, including threat assessments. Anticipate that the news media will widely disseminate any details regarding an incident, some or all of which may be inaccurate or exaggerated with respect to dangers for the public.

As early as possible, public safety and public health officials should confer about and select appropriate spokesperson(s) and should make timely releases of accurate information. The establishment of a Joint Information Center (JIC) with FBI, CDC, and state and local officials will facilitate the development of coordinated messages from public health and law enforcement. Such information must assure that the public is protected from harm while at the same time minimizing any negative impact on a related criminal investigation. The spokesperson(s) should be the only source of official information.

Facts III: Because the patient's medical condition had deteriorated such that he could not be interviewed, public health and FBI investigators interviewed his wife and daughter. Investigation of the patient's history revealed that he had traveled by car from Florida to North Carolina and back to Florida in the week prior to his admission to the hospital. The incubation period (i.e., the time interval between the initial infection and the onset of clinical features of disease) for systemic anthrax is believed to range from 1 to 60 days, but is usually from 3 to 7 days. The information collected to this point suggested that the patient's potential exposure could have occurred in either state or any point in between. This information led to environmental investigations (including outdoor activity locations, and residential and work settings) in both North Carolina and Florida in an attempt to identify the possible source of the patient's infection. In addition, because of the potential for this case to have resulted from a criminal act, by October 4, law enforcement officials in both states had been notified. In Florida, local and state law enforcement, the FBI, and public health were now joined in the investigation.

Question 5: Based on the information above, at this stage of the investigation what are the roles of public health officials and law enforcement authorities in the investigation, and under what circumstances might the respective roles of public health and law enforcement officials change?

Answers / discussion points: This is not yet a full-fledged criminal investigation: public health is still in the lead while the FBI and state and local law enforcement is assisting. The FBI will coordinate its threat assessment process to determine whether the situation is the result of terrorist or nation-state actors by evaluating the known facts from public health and analyzing additional law enforcement and intelligence information. At this stage of the initial response, it is unlikely that criminal intent will be evident. This assessment process will continually evaluate the additional information derived from public health, law enforcement, and intelligence sources.

Management-level public safety and public health officials should begin coordinating as soon as possible (for example, through systems such as the Incident Command System [ICS] or Unified Command System [UCS]). Such coordination enables implementation of appropriate measures to protect and treat public safety personnel who are exposed to suspect material at the scene and elsewhere, as well as to protect and treat the public.

If circumstances warrant suspicion that the event is intentional, the FBI will focus their efforts and resources on conducting the criminal investigation. This investigation is intended to identify the extent of the threat to national security and to lead to the identification, apprehension, and prosecution of the perpetrator(s). Public health officials will focus their efforts and resources on conducting an epidemiological investigation which is aimed at identifying the source(s) and mode(s) of spread of the disease-causing agent, identifying other exposed or at-risk persons, implementing measures to prevent further exposures, and treating exposed persons.

Criminal and epidemiological investigations must be carefully coordinated to (1) avoid unnecessary exposures and duplication of efforts, (2) facilitate sharing of relevant information, and (3) otherwise complement each other. In a bioterrorism attack, the most important evidence may be the bioterrorism disease- or injury-causing biological or chemical agent itself. For investigative purposes, the evidence may include: (1) the specific agent (weapon) itself, (2) “fingerprints” (through DNA and other analyses), or (3) trail markers (i.e., the agent material could have contaminated every place it has been or used by perpetrators, including containers, vehicles, and buildings). In most instances, the public health investigators who are trained to collect environmental samples and the state public health / LRN laboratory will be needed by law enforcement authorities to positively identify the bioterrorism agent, compare that specific agent with other agents, and track the path of the agent.

If the FBI determines that the act may be the result of an intentional attack, the FBI will assume the lead role in the response and criminal investigation. A joint investigation with the CDC and state and local public health will be coordinated through the Joint Operations Center (JOC) established by the FBI. Other federal, state, and local response agencies will also be represented in both the JOC and the JIC to ensure that information is evaluated and shared within an organized response structure with connectivity to each agency’s emergency operations center.

Circumstances could evolve such that the roles of law enforcement and public health have equal priority, and their functions and roles become more closely integrated as the investigation progresses. For example, with more widespread exposure to anthrax, public health’s need to identify and treat exposed and infected persons and to contain the source of exposure would overlap with law enforcement’s need to identify, apprehend, and prosecute perpetrator(s).

Question 6: What is the law surrounding entry into and sampling of homes and workplaces?

Answers / discussion points:

In general

The law regarding entry to premises is governed by the Fourth Amendment to the Constitution of the United States. The law generally provides for entry with consent or with a search warrant. However, courts have recognized very specific situations when exigent circumstances are present as exceptions. Obtaining consent from a person with authority to provide such consent is often the easiest means to secure evidence that will not be legally suppressed.

Consultation with agency legal counsel is recommended in all access situations in the absence of consent. Law enforcement, public health, and public safety personnel may properly enter homes and workplaces without a warrant when circumstances represent a serious, credible, and immediate threat to the public. (These are exigent circumstances; for example, the U.S. Supreme Court has indicated that a burning building creates an exigency that justifies a warrantless entry by fire officials to fight a blaze). Law enforcement / public health / public safety officials may be able to take samples from within those premises if such sampling is required to determine the specific nature and extent of the threat. The authority of these officials to take samples ultimately could turn on their ability to articulate the degree of seriousness and danger posed to the public, and the immediacy of that threat. In a court challenge, a judge would consider the totality of the circumstances to determine whether to admit evidence from the intrusion and the sampling, as well as other evidence discovered as a result. For example, the U.S. Supreme Court has excluded evidence of arson seized by investigators returning to the scene without a warrant six hours after the blaze had already been extinguished and the house was in the process of being boarded up. The Court ruled that the warrant requirement applies, and that any official entry must be made pursuant to a warrant in the absence of consent or exigent circumstances.

Evidence found during a warrantless search of a location may be admissible in court if the suspect has no standing to assert that he had a reasonable expectation of privacy at the location. For example, a person who sent a letter containing anthrax to another person's workplace likely would not be able to assert a reasonable expectation of privacy at the target person's workplace. In contrast, if a person placed an envelope containing anthrax on a target co-worker's desk and a warrantless search resulted in the discovery of evidence in a locked briefcase under the perpetrator's desk located in the same office suite as the target's desk, then the perpetrator may have grounds to assert that the search violated his rights to privacy because he had a reasonable expectation of privacy for items kept in his locked briefcase under his desk. The evidence might be

ruled inadmissible if investigators did not obtain a search warrant for the search of the building and/or the briefcase.

Law Enforcement in Criminal Investigations

Ordinarily, if circumstances involving a warrantless intrusion by law enforcement personnel indicate that a criminal investigation is required and that the location should be processed as a crime scene, then law enforcement should delay both the sampling process and any additional processing until a search warrant for the location has been obtained, absent a reasonable belief that an immediate threat to public safety exists.

Public Health Working with Law Enforcement

One real dilemma occurs when law enforcement and public health investigations intersect. For example, if law enforcement determines that the location is a crime scene and begins the process of obtaining a search warrant, should law enforcement then restrict public health officials from entering the premises to obtain samples? Conventional law enforcement policies and procedures dictate that once a location has been designated as a crime scene (which might include evidence to be used in court), then, to limit the possibility of scene contamination, no one other than law enforcement personnel should enter the location.

State laws often address the authority of public health officials, in the absence of a criminal investigation, to proceed with or without an administrative warrant when they enter premises to inspect or to obtain samples during a disease outbreak investigation. The admissibility of evidence collected during such inspections may vary depending upon the circumstances of the case and the legal challenges brought by the defendant at trial. Caution suggests that once a criminal investigation is begun, all sample collection from an identified crime scene be carried out jointly between public health and law enforcement with the advice and counsel of agency attorneys.

Question 7: What are the requirements for training and protection of those who may be asked to enter facilities to collect environmental samples?

Answers / discussion points: Public health and safety personnel who enter facilities to collect samples should be both trained and equipped to respond to hazardous materials incidents. However, in a suspected bioterrorism incident, FBI and public health officials should conduct the collection of environmental samples in a coordinated manner. Any environmental samples collected at the location could have important value for both the epidemiological and criminal investigations.

Facts IV: From October 5-8, public health and law enforcement officials continued the investigation, defining the patient's activities in greater detail and conducting additional environmental testing for the presence of *B. anthracis*. On October 8, the Florida Department of Health's laboratory reported the detection of *B. anthracis* from environmental samples obtained from a mailbox in the patient's workplace, the surfaces in the workplace mailroom, and the patient's computer workstation keyboard. Based on this information, mail was implicated as the potential source of the patient's infection.

Question 8: Does this investigation now become a criminal investigation and, if so, how does this change the role of public health and law enforcement investigators?

Answers / discussion points: Yes. The discovery of evidence of an intentional delivery / release of anthrax indicates the possible commission of serious crimes under federal law. As such, the lead of the continuing joint public health/FBI investigation shifts to an FBI lead under national response authorities and plans.

The high priorities of both disciplines must be balanced, including those of law enforcement (to identify, apprehend, and prosecute the perpetrator) and public health (to protect the public by identifying the source / mode of spread, determining the extent of contamination / exposure, limiting further exposure, and treating those who have been exposed). Access to contaminated crime scenes should be coordinated to ensure that both law enforcement and public health objectives are met.

Federal (and, perhaps, state) statutes are violated when there has been an intentional threat involving a delivery / release of a bioterrorism agent (e.g., anthrax). Per established national policy and authorities, the FBI is the lead federal agency for a suspected bioterrorism incident in the United States. The FBI would proceed with the criminal investigation, drawing upon the assistance of other federal, state, and local law enforcement agencies, often through established Joint Terrorism Task Forces (JTTFs).

Question 9: Who is responsible for determining whether a building should be evacuated and sealed and, if so, when it can be re-entered?

Answers / discussion points: Although public safety officials might, as part of the initial threat assessment process, determine that a building should be evacuated, public health officials should be consulted and the decision made cooperatively, as soon as is possible. Once law enforcement officials have concluded their crime scene investigation and public health officials have conducted their epidemiological investigation of the site, then public health officials should make the ultimate determination as to if and when a building can be re-occupied.

Question 10: What are responsibilities of law enforcement in protecting such a crime scene for the purposes of further investigations and possible prosecution?

Answers / discussion points: Law enforcement officials in charge of the crime scene should be able to testify in court that, from the point at which they took control of the scene until the point they relinquished control to the owner / custodian, no persons entered the scene other than law enforcement officers and others who were specifically needed and authorized to be there. The purpose of this is to assure that no one could have added to or otherwise altered or contaminated the scene.

Under normal circumstances, evidence / property items removed from the scene must be inventoried, and a copy of that inventory must be provided to the owner / custodian. Typically, law enforcement officials would need to be able to describe the specific location where each item of evidence was found. Law enforcement officials (or technicians, expert witnesses, etc.) would need to be able to explain what processes were used at the scene, why they were used, and what the results were. Such information also would be required for items processed and analyzed in the laboratory.

Question 11: What are the responsibilities of public health authorities in preventing further cases of anthrax in workers in and visitors to the original case's workplace?

Answers / discussion points: Public health authorities will be concerned about limiting or preventing access to the location where the original patient's exposure occurred. The extent of the area of concern will depend on what is known about the locations where positive and negative environmental cultures were obtained, the usual movements of people and mail in the building, and the airflow in the building. The extent of the area may include the entire building. Further testing of environmental samples may be needed to clarify which areas are at risk.

Public health officials also will be concerned about identifying all persons with significant exposures in the building and assuring that they receive appropriate medical management, including post-exposure antibiotic treatment and, perhaps, vaccination. Interviews (jointly by law enforcement and public health officials) and nasal cultures (to detect exposure to anthrax spores) of these employees and visitors also may be used to help understand the likely mode of spread, which work areas pose a risk, and which people are at risk.

Question 12: Who is in charge of the investigation at the patient's workplace and residence?

Answers / discussion points: This could be a dynamic situation that is dependent upon the specific circumstances. When the epidemiologic investigation indicates that natural causes are not likely responsible for disease, the control of the scene would transition from public health to law enforcement officials. The scene could be secured and protected by law enforcement, and decisions about sampling and

processing could be decided through a collaborative effort between public safety and public health.

To underscore points made previously, it is important to note that chain of custody does not exist in a vacuum. To understand it and to protect its intended goals, public health and law enforcement officials should keep the following in mind. Chain of custody exists only to assure the finder of fact (i.e., the jury in a criminal trial) that the item of evidence in question is what it is purported to be. To achieve this, the government witness, typically a law enforcement officer, needs to be able to assure that the process used to gather evidence and protect the scene from contamination is trustworthy. For this purpose, law enforcement typically will appoint an “on-scene commander.” As such, the officer will be able to testify as to all relevant facts regarding the evidence-gathering process. One of the most basic needs of the on-scene commander is to know who had access to the site. Public health professionals can easily adapt their methodology by documenting who was at the scene and the locations from which all samples were taken. The on-scene commander will be able to adopt the public health report and assure the jury that the evidence is, indeed, trustworthy.

Other related discussion issues are: (1) how public health and law enforcement officials can work together to assure that each is able to collect data they need (e.g., environmental sampling); and (2) how approaches to sampling may differ between law enforcement and public health investigators.

Law enforcement authorities might utilize non-law enforcement experts (e.g., epidemiologists) for purposes of conducting specific processes and examinations of the scene or of evidence taken from the scene. However, before any such findings would be admitted in court, such experts may be required to testify in court regarding the what/why/how of the conduct of their examinations and specimen collections.

Facts V: The Palm Beach County Health Department issued an order closing the building in which the patient worked on October 8. The building’s management voluntarily closed the building when informed of the impending order. Within hours, the FBI declared the building a crime scene and took control of the building.

Based on building plan information, the building’s air supply system, and the incubation period of anthrax, the decision was made to offer antibiotic prophylaxis from the National Pharmaceutical Stockpile to all employees and visitors who had been in the patient’s workplace building during August 1 through October 7 (this number was approximately 1114 persons). On October 12, the New York City Department of Public Health reported a suspected case of cutaneous anthrax in an office worker at a large broadcast media outlet in New York City. The onset of illness in that worker appeared to pre-date that of the case in Florida, and the New York City patient recalled having received a letter with suspicious contents approximately 11 days

prior to onset of disease. The letter was retrieved by the FBI, and its contents were confirmed to include *B. anthracis* spores.

Question 13: How does the FBI coordinate among local, state, and federal law enforcement efforts during a national investigation?

Answers / discussion points: As previously noted, JTTFs help to facilitate dissemination of terrorism-related information among agencies. In the event of a bioterrorism incident, the FBI will establish a JOC and JIC to coordinate federal, state, and local law enforcement, intelligence, and public health information.

Question 14: How does public health coordinate among local, state, and federal public health efforts during a national investigation?

Answers / discussion points: The CDC has primary federal responsibility for assisting local and state authorities in outbreak investigations and in implementing control measures required to protect public health. In a jurisdiction where an outbreak is occurring, a JOC will be established to coordinate federal, state, and local efforts. The CDC has additional authority for assisting local and state health departments in a federal response to a bioterrorism event. The authority for this responsibility derives from the Federal Response Plan and the Terrorism Incident Annex. The CDC works under the direction and authority of the Department of Health and Human Services (DHHS) and its Secretary. Depending on the magnitude of the response, DHHS may provide some coordination and communication support directly. If a Federal State of Emergency is requested by a governor and/or declared by the President, the Federal Emergency Management Agency coordinates all of the other federal agencies in assisting the local and state response to a bioterrorism event.

The CDC is the primary agency of DHHS responsible for public health communication and guidance to state and local health departments regarding bioterrorism preparedness. The CDC works through several mechanisms in coordination. The CDC communication networks include a web-based system, as well as several direct list-serve communication mechanisms to health care providers, state public health departments, and other partner agencies. The representative committees for the state epidemiologists (the Council of State and Territorial Epidemiologists [CSTE]) and the Association of Public Health Laboratories (APHL) serve as primary points of contact. In addition, the CDC and APHL have worked on the development of the LRN.

Case Study III – Salmonellosis in Oregon

Objectives / topics for Case Study III

1. Understanding public health's role in investigating natural outbreaks of disease.
2. Recognizing that public health expects certain patterns or findings to explain natural disease outbreaks.
3. Recognizing that certain unusual or unnatural findings in a disease investigation may suggest intentional / covert action.
4. Identifying procedures and mechanisms to communicate suspicions of intentionality to law enforcement officials.

Problem and questions

Background: This scenario involves the September 1984 outbreak of gastroenteritis (an illness characterized by fever, vomiting, and diarrhea) caused by a specific bacterium, *Salmonella* Typhimurium (this specific bacterium is a member of a much larger family of salmonella bacteria). The outbreak occurred among persons living in the community of The Dalles, Oregon. The Dalles (1980 population: 10,500) is the county seat of Wasco County, population of 21,000 and a region of orchards and wheat ranches. The Dalles is located off Interstate 84 and is a frequent stop for travelers. From 1980 through 1983, there had been only 16 isolates of salmonella reported by the local health department (the Wasco-Sherman Public Health Department), and of these, only 8 were *Salmonella* Typhimurium. In 1981, followers of Bhagwan Shree Rajneesh purchased a large ranch in Wasco County to build a new international headquarters for the guru. Construction of the commune was controversial because of issues involving cultural values and land-use. Part of the commune's ranch was incorporated as the city of Rajneeshpuram, but the charter was challenged in the courts, effectively limiting new construction. Commune members believed that the outcome of the November 1984 elections for Wasco County commissioners would have an important impact on further land-use decisions. One measure commune members took to further their interests was to implement a national program to bus hundreds of homeless persons to the commune for the purpose of registering these persons to vote in the election.

Facts I: On September 17, 1984, a disease control expert for the Wasco-Sherman Public Health Department began to receive reports of recent cases of gastroenteritis in persons who had eaten meals in either of two local restaurants in The Dalles several days before symptom onset.

Question 1: What is a county health department's responsibility when it receives reports of cases of illness among persons in a community, and what is the threshold for beginning an investigation?

Answers / discussion points: A county / local health department has front-line responsibility for conducting public health surveillance. It is responsible for receiving and collecting information about reports of cases of specified diseases

which are “notifiable” as required by law, then determining whether the number of cases of a given disease exceed that which would be expected in that setting for a given period of time. Cases of notifiable diseases may be reported from a variety of sites (e.g., physicians’ offices, diagnostic laboratories, and hospitals). In addition, however, illness reports are often reported directly from citizens and, depending on circumstances, may trigger an investigation.

If the number of cases of a given disease exceeds the historical baseline, then the health department might conclude that an outbreak is occurring and some persons remain at continued risk of exposure. The health department might then proceed with a more extensive investigation to identify additional cases, determine the source and cause of the outbreak, and put preventive measures in place. The local health department also would notify the state health department about the problem and, if necessary, request assistance from the state. Individual cases of a disease are distinguishable from clusters of cases (i.e., a group of cases occurring among persons in a defined geographic area during a specific time, but for which there is no information regarding background levels), as well as from an outbreak situation.

Facts II: The disease control expert collected stool samples from recently ill persons and sent those samples to the state public health laboratory to be cultured. By the end of the week, cultures of stool samples obtained from about 15 persons were reported as being positive (+) for the bacterium, *Salmonella* Typhimurium, a bacterium known to cause gastrointestinal illness of the sort reported among people in the community. The disease control expert’s preliminary investigation suggested that some persons with cases of gastroenteritis had eaten at salad bars at restaurants in the community before becoming ill. One week later, on about September 24, the disease control expert learned that there were additional cases of illness in the community and that some affected persons had been hospitalized because of their illnesses. As a result, on September 24, the county health department contacted the Oregon Health Division (i.e., the state health department), and on September 25, the state contacted CDC for assistance. In addition, because of the possible link between having eaten at salad bars and becoming ill, salad bars (but not entire restaurants) were closed.

Question 2: Under what conditions should a health department begin a full formal epidemiological investigation of a health problem?

Answers / discussion points: A health department might begin a full formal investigation when there is evidence of an outbreak (i.e., the number of cases exceeds that expected for a given place and time period) in order to identify the sources and modes of spread of the disease-causing agent. The health department could then use the findings to stop the outbreak and prevent future recurrences. Other factors that might influence decisions regarding a full-scale investigation include the severity of the disease, the numbers of cases, and community and political pressures to intervene.

Question 3: What are the usual procedures for investigating a possible food borne disease outbreak?

Answers / discussion points: The basic steps and procedures are similar to those used in investigating a problem like the anthrax cluster in Florida. An exception is that investigators usually approach a food-borne disease outbreak as a “naturally-occurring” problem in the absence of evidence suggesting deliberate, intentional human efforts to cause illness in others. The investigation of such a naturally occurring illness typically focuses efforts on looking for a known pattern. Examples are an improperly handled or stored food or a breakdown in the food manufacturing process. This pattern would explain what is happening, primarily on the basis of our knowledge of how this organism typically causes illness in humans.

Facts III: On September 26-27, two medical epidemiologists from CDC arrived in The Dalles to provide assistance with the investigation, including the identification of additional cases, collecting patient specimens, analyzing data, and assessing the basis for and impact of the intervention of closing the salad bars. Over the next 6 weeks, a public health team – which included persons from the local and state health departments and from CDC – continued this extensive investigation, collecting additional data and samples, conducting numerous interviews, and carrying out complex studies. Ultimately, investigators identified a total of 751 persons with cases of *Salmonella* gastroenteritis. With an outbreak this large, investigators were initially optimistic that they would be able to find a common pattern or thread that could explain the occurrence of illness in so many people.

Despite these efforts, the investigators could not identify a single food item or contamination of a single food item that could have accounted for the *Salmonella* Typhimurium gastroenteritis outbreak. In the midst of this investigation, some residents of The Dalles contacted public health officials to express concerns about the possible suspicious behavior of some restaurant employees and of some religious commune members in relation to salad bars. These concerns included general rumors and a few very specific allegations, and raised questions about the possibility of the intentional contamination of food to cause illness within the community.

Question 4: What circumstances should cause public health officials investigating an outbreak to suspect that the outbreak is intentional?

Answers / discussion points: Suspicion that an outbreak is intentional might be triggered under the following circumstances.

- The cases are of a common disease but are out of season or are in an unusual geographic area, or the epidemiology points to a very unusual or novel mode of spread, or the disease is unusually virulent or contagious.
- The cases are a disease thought to be caused by a likely BT agent and cannot be readily explained.
- Investigators cannot solve / explain the outbreak by usual techniques.

- The outbreak could not have occurred by natural means (including human error).
- The outbreak corresponds to threats that have been received.
- A group claims credit for causing the outbreak.
- There are plausible accusations against particular persons (e.g., by fellow employees of a restaurant or by informants).

Question 5: What should public health personnel do when specific allegations of intentionality are raised during the course of a public health investigation?

Answers / discussion points: In the setting of an outbreak investigation, law enforcement officials should be notified promptly when specific allegations – such as those in The Dalles – are raised during the investigation.

Note: public health agencies may have reason to contact the law enforcement system under other circumstances. For example, a contact may be triggered when public health officials, during the course of providing routine public health services (e.g., STD contact tracing, prenatal care, or provision of other clinical services), suspect the occurrence of crimes such as child abuse or rape.

Question 6: What law enforcement agency(ies) should be notified (e.g., local, state, or federal)?

Answers / discussion points: Relevant issues are cited below.

- (1) Early notification to the FBI by state and local public health and/or the CDC is important when the circumstances of incidents of disease are unusual or may not be consistent with natural occurrences.
- (2) The use, or threatened use, of a biological agent against humans, animals, or plants is a federal crime under the Weapons of Mass Destruction Statute (Title 18, U.S.C. Section 2332[a]) and may constitute a bioterrorism attack against the U.S. affecting multiple jurisdictions.
- (3) The conduct of the FBI-led Interagency Threat Assessment process will assist the FBI, the CDC, and state and local authorities in determining the extent of the threat based upon access to all relevant law enforcement, public health, and intelligence information.
- (4) The FBI may initiate investigative activities with the assistance of State and local authorities to augment the on-going public health investigation. Often this is accomplished through established Joint Terrorism Task Forces (JTTFs) or other standing law enforcement working groups.

In some cases, local and/or state law enforcement authorities may be contacted initially by local public health officials. In each case, however, a notification should be placed to the local FBI office, who will initiate additional notifications and the Interagency Threat Assessment Process through the FBI's Weapons of Mass Destruction Operations Unit (WMDOU). Information from this assessment will assist the local FBI and state and local officials in evaluating the situation through the assistance of subject matter and technical experts. In addition, the

CDC has developed protocols to notify FBI's WMDOU in the event that a notification has not yet been placed to the local FBI field office.

If the situation is assessed as potentially an intentional use of disease-causing organisms, federal policy and authorities designate the FBI as the lead agency for crisis management operations. This includes initiating a criminal investigation to complement the public health investigation. The local FBI field office will work closely with other federal, state and local law enforcement partners to determine the possibility of criminal intent and to identify and arrest potential perpetrators.

Question 7: What does law enforcement do in response to such reports and under what authority?

Answers / discussion points: The threatened or actual delivery / release of a bioterrorism agent is a violation of federal law (and may be a violation of state law). Federal law enforcement authorities have legal jurisdiction to initiate investigations (as may state law enforcement authorities). In an actual or a suspected bioterrorism incident, the FBI would be the lead federal agency responsible for conducting the criminal investigation. The FBI would initiate a joint investigation with public health to ascertain whether there is any indication that an outbreak of disease was the result of an intentional act. If the situation expands into a full-fledged joint investigation, the FBI would establish a Joint Operations Center (JOC) and Joint Information Center (JIC) with federal, state and local public health, law enforcement, and emergency management agencies to provide strategic direction and coordination of response activities. Any information suggesting intentional acts of bioterrorism that come to the attention of public health officials should be promptly communicated to the FBI through the local FBI field office or, if established, the JOC.

To protect the integrity of the investigation and any potential evidence to be eventually submitted into court, law enforcement should check with its state's attorney before observing or participating in interviews conducted by public health. One item to cover with the state's attorney is how to inform an interviewee that law enforcement is present.

Question 8: What factors may guide how law enforcement communicates with public health about such reports and vice versa?

Answers / discussion points: In a bioterrorism incident, the traditional paradigm for the law enforcement response to criminal activity (i.e., to "protect" the findings of a criminal investigation) may not optimally serve the public's interests and safety. However, in certain instances, such as when a federal grand jury obtains documents and testimony of witnesses, federal law mandates that such information and evidence must be kept confidential. Absent any such laws or rules to the contrary, frequent and candid communications between law enforcement and public health authorities must occur in order for the objectives of

each to be achieved and to best serve their common mission of protecting the public.

Law enforcement's objective of identifying, apprehending, and prosecuting the perpetrator(s) may require that certain investigative leads be kept confidential. However, information relating to the type of agent used, the manner of delivery / release, and the probable target(s) of the attack may need to be shared with public health officials so they can identify, protect, and treat potentially exposed persons.

Public health and law enforcement must be mindful that there may be limits on the sorts of information public health authorities may share with law enforcement agencies. These limits may be in the form of express statutes, regulatory rules, or case law, and they may vary by jurisdiction.

In a suspected covert bioterrorism investigation, the FBI, state and local law enforcement, the CDC, and state and local public health – within the constraints noted above – must readily share information resulting from laboratory tests, interviews, analysis, and subject matter experts. As such, the FBI and public health's joint investigation should involve joint interviews, whenever possible, and a mechanism to funnel all relevant public health and law enforcement information into the JOC.

Question 9: In a situation such as in The Dalles, long after the exposures and outbreak may have occurred, how does the FBI / law enforcement approach the matter of collection of evidence and establishment of chain of custody? In this case, what is the evidence?

Answers / discussion points: The FBI / law enforcement will depend upon information supplied by public health officials for the initial information that indicates that the disease outbreak may not be the result of natural causes. Law enforcement also would require assistance from public health in understanding how the bioterrorism agent was created, how it was delivered / released, and what evidence might exist for identifying the perpetrator(s) and linking them to the delivery / release, and/or to the bioterrorism agent. Through joint investigative activities, the FBI will rely upon the technical assistance of public health authorities for the conduct of laboratory analysis for suspected bioterrorism agents. The FBI will also rely on public health authorities to provide the characteristics of the particular disease, surveillance data, and results of interviews with potentially exposed persons.

At the point when the FBI becomes involved in a case, public health activities will need to be closely coordinated with law enforcement to ensure that all evidence is properly handled and documented, and that no actions are taken that might inadvertently jeopardize the criminal investigation.

Law enforcement investigators would interview laboratory workers and other public health personnel regarding their activities and findings, and would obtain copies of relevant documentation regarding relevant public health activities and findings.

The investigation in The Dalles also raises as an issue how law enforcement might use epidemiologic findings and / or laboratory data in the course of pursuing a criminal prosecution. In a situation such as that in The Dalles, a criminal investigation might be carried out at a point in time distant from that of a public health investigation in which epidemiologic and laboratory studies implicated a source or mode of spread for the outbreak. In such a situation, the epidemiologic findings may be critical as evidence in a subsequent criminal prosecution that links suspected perpetrators to disease-causing agents and to illness in persons exposed to the disease-causing agents. In The Dalles, for example, the evidence also might include questionnaires that epidemiologists administered during interviews of sick and unaffected people, the analyses of those data, and the epidemiologists' final written report.

Evidence that an outbreak is due to a particular disease-causing agent spread in a particular way may depend critically on epidemiologic evidence from the pattern of cases, results of questionnaire surveys, and results of laboratory testing of specimens obtained from ill persons. This may be especially true for cases in which environmental sampling is not feasible: because the original material may no longer exist or the pathogen may be one that cannot be cultured from the environment.

Facts IV: After receiving the initial reports of suspicious activity involving certain persons, public health personnel also began to interview restaurant managers about the behavior of disgruntled employees as a means for assessing the possible occurrence of an intentional act (although these queries yielded no relevant information).

Question 10: What issues arise when public health personnel ask such questions as part of a public health epidemiologic investigation?

Answers / discussion points: Issues raised by this question include the following.

- (1) There is a need for public health officials to ask such questions as part of a public health investigation. Relatedly, there is the likely loss of privacy/confidentiality assurances when there is a question of interviewee behavior posing a risk/peril to the public's health and, therefore, an imperative for public health to promptly notify law enforcement.
- (2) There are specific procedural issues. For example, given that public health might need to ask such questions, what training do public health officials need in order to conduct such interviews, ask such questions, make a record of the interviews, and transmit relevant information to law enforcement?
- (3) There is the need for public health officials to include intentionality in the differential diagnosis of hypotheses either when they hear of specific

allegations of potentially criminal intentional behavior or when they cannot solve the outbreak as a consequence of naturally-occurring or non-criminal behavior.

Question 11: What questions are FBI / law enforcement officials primarily responsible for asking under these circumstances?

Answers / discussion points: While law enforcement may be primarily responsible, public health may be the first point of contact. Therefore, under the circumstances, public health may have the first (or even only) opportunity to obtain such information regarding the possibility of intentional acts. However, at the point when public health officials believe that the outbreak may not be the result of natural causes, the local FBI should be notified and should take the lead role in interviewing witnesses about potential criminal activities.

Law enforcement must be involved as soon as possible because of the importance of determining who should be interviewed and timing for the interviews. For example, if a witness claims to have specific knowledge about the perpetrator(s) of a bioterrorism act, law enforcement authorities might want to conduct other investigative activities (e.g., visual and electronic surveillance, execution of search warrants) before other interviews are conducted that might alert suspects that they are being investigated.

Public health officials who obtain information about possible criminal activities should be informed of the potential subsequent need for them to recount the details of such information. Because their testimony could be critical to the prosecution of a suspected perpetrator, public health officials must be apprized of the importance of careful and thorough documentation of such information.

Facts V: Public health personnel remained in the field for over 6 weeks in order to complete the public health field investigation. At the end of this extensive investigation, they concluded that: (1) illness was associated with salad bar consumption; and (2) because cases of illness occurred in two distinct time clusters, transmission of *Salmonella* Typhimurium probably involved some sort of complex transmission mechanisms. The investigators could neither rule out nor prove intentionality. The investigators recommended that all restaurant food handlers be healthy and have negative stool cultures before being permitted to return to work.

One year later, as part of a wiretapping and immigration fraud investigation of the religious commune, the FBI and other law enforcement officials received key information from informants who were members of the religious commune – that, beginning in August 1984, members of the commune had intentionally contaminated salad bars with *Salmonella* Typhimurium for the purpose of influencing a local election to be held in November 1984. In October 1985, FBI and other law enforcement officials visited the commune's compound; during that visit, a vial of dried *Salmonella* Typhimurium (subsequently determined to be identical to the outbreak strain) was discovered by the state health department's laboratory director who placed the vial into a chain of custody. In March 1986, indictments of some commune members

were handed down. Two commune members, a nurse and the secretary to its leader, were convicted and sentenced.

Question 12: What is the “select agent” rule and how does it apply to *Salmonella* organisms?

Answers / discussion points: Pursuant to the Antiterrorism and Effective Death Penalty Act of 1996, HHS promulgated regulations governing the transfer of specified biological agents and toxins ("select agents" – see list). These regulations (found at 42 CFR 72.6) require facilities that transfer or receive select agents to register with the CDC and implement agent-tracking procedures for each transfer. Violation of the regulations carries both civil and criminal penalties.

On June 12, 2002, President Bush signed the Public Health Security and Bioterrorism Preparedness Response Act of 2002, which required an expansion of the HHS select agent regulations. In addition to regulating the transfer of select agents, the new regulations (found at 42 CFR part 73) prohibit the possession of select agents except in accordance with part 73. Among other things, any individual or entity that possesses select agents must register with the CDC, undergo a risk assessment conducted by the Department of Justice, and comply with enhanced biosafety and laboratory security requirements. Beginning February 7, 2003, part 73 will be phased in. It becomes fully effective on November 12, 2003. Violation of the regulations carries both civil and criminal penalties.

Salmonella Typhimurium is not currently listed as a select agent in either section 72.6 or part 73.

HHS NON-OVERLAP SELECT AGENTS AND TOXINS

- Crimean-Congo haemorrhagic fever virus
- Coccidioides posadasii*
- Ebola viruses
- Cercopithecine herpesvirus 1 (Herpes B virus)
- Lassa fever virus
- Marburg virus
- Monkeypox virus
- Rickettsia prowazekii*
- Rickettsia rickettsii*

South American haemorrhagic fever viruses

- Junin
- Machupo
- Sabia
- Flexal
- Guanarito

Tick-borne encephalitis complex (flavi) viruses

- Central European tick-borne encephalitis
- Far Eastern tick-borne encephalitis
- Russian spring and summer encephalitis
- Kyasanur forest disease
- Omsk hemorrhagic fever

- Variola major virus (Smallpox virus)
- Variola minor virus (Alastrim)
- Yersinia pestis*
- Abrin
- Conotoxins
- Diacetoxyscirpenol
- Ricin
- Saxitoxin
- Shiga-like ribosome inactivating proteins
- Tetradotoxin

HIGH CONSEQUENCE LIVESTOCK PATHOGENS AND TOXINS/ SELECT AGENTS (OVERLAP AGENTS)

- Bacillus anthracis*
- Brucella abortus*
- Brucella melitensis*
- Brucella suis*
- Burkholderia mallei* (formerly *Pseudomonas mallei*)
- Burkholderia pseudomallei* (formerly *Pseudomonas pseudomallei*)
- Botulinum neurotoxin producing species of *Clostridium*
- Coccidioides immitis*
- Coxiella burnetii*
- Eastern equine encephalitis virus
- Hendra virus
- Francisella tularensis*
- Nipah Virus
- Rift Valley fever virus
- Venezuelan equine encephalitis virus
- Botulinum neurotoxin
- Clostridium perfringens* epsilon toxin
- Shigatoxin
- Staphylococcal enterotoxin
- T-2 toxin

USDA HIGH CONSEQUENCE LIVESTOCK PATHOGENS AND TOXINS (NON-OVERLAP AGENTS AND TOXINS)

- Akabane virus
- African swine fever virus
- African horse sickness virus
- Avian influenza virus (highly pathogenic)
- Blue tongue virus (Exotic)
- Bovine spongiform encephalopathy agent
- Camel pox virus
- Classical swine fever virus
- Cowdria ruminantium* (Heartwater)
- Foot and mouth disease virus
- Goat pox virus
- Lumpy skin disease virus
- Japanese encephalitis virus
- Malignant catarrhal fever virus (Exotic)
- Menangle virus
- Mycoplasma capricolum* M.F38/M. *mycoides capri*
- Mycoplasma mycoides mycoides*
- Newcastle disease virus (VVND)
- Peste Des Petits Ruminants virus
- Rinderpest virus
- Sheep pox virus
- Swine vesicular disease virus
- Vesicular stomatitis virus (Exotic)

LISTED PLANT PATHOGENS

- Liberobacter africanus*
- Liberobacter asiaticus*
- Peronosclerospora philippinensis*
- Phakopsora pachyrhizi*
- Plum Pox Potyvirus
- Ralstonia solanacearum* race 3, biovar 2
- Schlerophthora rayssiae* var *zeae*
- Synchytrium endobioticum*
- Xanthomonas oryzae*
- Xylella fastidiosa* (citrus variegated chlorosis strain)

SLIDE SETS FOR USE IN PRESENTATIONS

GENERAL

Several PowerPoint **slide sets are provided** as part of the course package. These slide sets include:

- Public Health Epidemiology for Law Enforcement
- Criminal Investigation for Public Health Professionals
- The Role of the Laboratory – Public Health and Forensic
- Basics of the Incident Management System

The slide presentations are **designed to be used as a basis for localized presentations** by local experts. Their content has been carefully chosen to reflect the important issues and teaching points of the course as a whole. Local customization will be particularly needed where investigation practices and contexts depend on state and local laws, practices, or policies. Certain examples given in the presentations could usefully be replaced by similar examples that are locally familiar or famous. We recommend, however, that the main points made in these slides be retained in whatever local modifications are made to the slides.

The FBI's "Bioterrorism and the Role of the FBI" presentation is not included with this guide but is **highly** recommended for inclusion in this course. The FBI slides are intended to be presented only by the appropriate local or regional FBI WMD coordinator. Every effort must be made to arrange for this person to give this presentation, including coordinating the dates of the course with this key presenter.

One-page outlines for each of the lectures are included as is each slide set with accompanying notes and explanations.

Public Health Epidemiology for Law Enforcement Officials

- This slide presentation is **designed to educate law enforcement and other non-public health staff** about public health agencies, to include:
 - How they are staffed
 - What their responsibilities are
 - What legal authorities they have
 - How that authority is exercised
 - How public health agencies learn about outbreaks
 - How they investigate the outbreaks, including interviews of ill and well persons and others associated with the outbreak
 - What features of an outbreak or its investigation would lead public health authorities to suspect that the outbreak was caused deliberately
 - How and when they involve criminal investigators in their investigations
- If available, a **senior and experienced public health epidemiologist** should give this talk. This individual could be from either the local public health agency or from the state. The presentation could be given by the local health officer if he/she has experience in this area.
- The **lecture goals** of the Public Health Epidemiology slide set are:
 - Definitions and terminology
 - Responsibilities and activities of local, state, and federal public health agencies
 - How epidemiologists find, investigate, and control outbreaks

Criminal Investigation for Public Health Professionals

- This slide presentation is **designed to educate public health and other non-law enforcement staff** about law enforcement agencies, to include:
 - How they are staffed
 - What their responsibilities are
 - What legal authorities they have
 - How that authority is exercised
 - How they learn about crimes
 - How they manage crime scenes
 - How they use the chain of custody
 - How they interview witnesses, victims, suspects, and others
 - How and when they involve public health officials in criminal investigations.
- This talk should be **given by a senior and experienced criminal investigator**, as is available, either from a local or state law enforcement agency. It may also be given by a senior police or sheriff's department official if he/she has experience in this area.
- The **lecture goals** of the Criminal Investigation slide set are:
 - Terminology
 - Roles of various law enforcement agencies
 - Criminal investigative methods
 - Law enforcement operations and procedures

The Role of the Laboratory – Public Health and Forensic

- The public health laboratory and forensic laboratory slide sets are combined to create a larger lecture.

Note: They may be separated if the presenters so choose.

- The Public Health Laboratory slide presentation is **designed to educate participants** about what public health laboratories are and what they can do, to include descriptions of:
 - How their services are drawn upon in the investigation of an infectious disease outbreak, including both clinical and environmental specimens
 - Services and location /contact information for the specific public health laboratory for this jurisdiction
 - The Laboratory Response Network
 - The usual flow of laboratory specimens among types and levels of laboratories
 - How results are returned to those with a need to know
- A **senior representative of the public health laboratory** that serves the jurisdiction in which the course is being held should give this talk.
- The Forensic laboratory slide set presentation is **designed to educate participants** about what forensic laboratories are and what they can do, to include descriptions of:
 - How their services are drawn on in criminal investigations
 - Services and location / contact information for the specific forensic laboratory for this jurisdiction
 - How specimens reach the forensic laboratory
 - How laboratory specimens flow to referral laboratories
 - How the forensic laboratory relates to the coroner's or medical examiner's office
 - How results are returned to those with a need to know
- A **senior representative of the forensic laboratory** that serves the jurisdiction where the course is being held should give this talk.
- The **lecture goals** of the Laboratory slide set are:
 - Roles of the public health and forensic (crime) laboratories
 - Laboratory procedures
 - Chain of custody as applied to laboratory specimens

Basics of the Incident Management System

- This slide presentation is **designed to educate participants** about:
 - Incident Command System (ICS)
 - Unified Command System (UCS)
 - Joint Information Center (JIC)
 - Joint Operations Center (JOC)
 - Joint Terrorism Task Force (JTTF)
 - Related structures for managing emergencies
 - Coordinating interagency deployments, activities, and resources.

- A **senior emergency services manager** in the agency that serves the jurisdiction in which the course is being held should give this talk.

- The **lecture goals** of the Incident Management System slide set are:
 - Basic concepts of Incident Command / Unified Command System organization
 - ICS terminology
 - The implementation of ICS/UCS during a bioterrorism incident

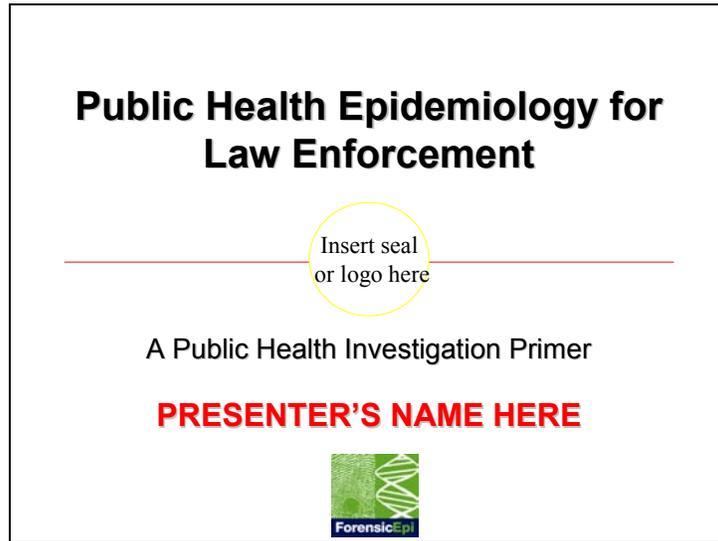
PUBLIC HEALTH EPIDEMIOLOGY FOR LAW ENFORCEMENT

Public Health Epidemiology for Law Enforcement

Lecture Outline

- I. Public Health Investigation Goals
- II. Terminology
 - A. Public health
 - B. Epidemiology and forensic epidemiology
 - C. Surveillance
 - D. Outbreak
- III. Public Health Agencies
 - A. Roles of the local, state, and federal public health agencies
 - B. State/local health department powers
 - C. Any laws/rules/statutes for state public health
 - D. Variety of local health departments in this locale
 - E. Who works in public health
 - F. Public health emergencies
- IV. Infectious Diseases
 - A. Symptoms
 - B. How they spread
 - 1. Person to person
 - 2. Common source
 - 3. Airborne
 - 4. Vector-borne
 - C. Incubation period
 - D. Treatment
 - E. Control
- V. Public Health Activities
 - A. Surveillance
 - B. Communicable disease reporting
 - C. Outbreak Investigation
 - 1. Definition of an outbreak
 - 2. Detection of outbreaks
 - 3. Steps in an outbreak investigation
 - a) Example of outbreak and how that fits in with steps
 - b) Brief coverage of sample collection and where that fits in with law enforcement
 - 4. Intervention categories
 - D. Evidence that makes an epidemiologist suspect a deliberate outbreak

Slide 1

**NOTES:**

- This set of slides is **intended as a template** for an experienced public health epidemiologist – from a local, State or Federal public health agency – to speak from in the Forensic Epidemiology course.
- The **audience** will consist of a mixture of public health, law enforcement, fire, and other first responder professionals who will not be familiar with most criminal investigation terminology or jargon. They need to know what your agency can do for them in an investigation of a bioterrorism or similar event, and how to access those services.
- As a template, these slides are **designed to be customized** to be correct for the jurisdiction(s) where the course is being held. You should go through and, as far as possible, answer the questions posed in the bullets, or customize them to local practices and organizations.
- Feel free to **create more slides**, if you need to, to cover the issues in the templates. Also feel free to add additional topics as needed for local use.
 - Experience has shown, however, that people without a public health background will benefit greatly by hearing from you about the **topics outlined on this template**.

Slide 1 Notes continued:

- You may leave the slides as they are, to prompt you to say the right things about these issues, but we strongly recommend that you **customize them**. The participants in the course should have a copy of your slides in their notebooks, and you will want to be sure that they take home the right information with them.
- Note that this presentation should last approximately **50 minutes**, including a time for questions and answers. As a result, it may be necessary to remove some of the topics covered. This should be done at the discretion of the local planning committee and the presenter.
- **Add** your own name as the presenter and your own subtitle if you like. Text that is designed to be replaced or edited is colored in RED. Other material should be edited or customized as needed.
- A space is provided in each slide for your organization's **seal or logo**. In order to access the area in which the logo will reside, you must go to the slide master.
 - To do this go to the View menu, then select Master, Slide Master.
 - Replace the "Insert seal or logo here" generic logo on the slide master with the appropriate logo for your jurisdiction's public health department. This will replace the logo on all but the title slide.
 - To change the logo on the title slide, go to the View menu, and then select Master, Title Master.
 - Replace the "Insert seal or logo here" generic logo on the title master with the appropriate logo for your jurisdiction's public health department.
- Make sure all the **text is legible** (e.g., white on blue background, not red on blue) when slides are complete.
 - To change the color of the text, highlight the text that needs to be changed, go to the Format menu, then Font, and then change the color to white.

Slide 1 Notes continued:

- Currently, the date is located in the footer.
 - To **change the date** from the generic “Date” to the date of the presentation, go to the View menu, and then select Header and Footer.
 - Under footer, replace “Date” with the appropriate date, and then select Apply to All.

- To **change the presenter’s name** and change the color of the text in the footer you must go to the slide master.
 - To do this, go to the View menu, and then select Master, Slide Master.
 - Highlight the generic “Presenter’s name”, change it to the reflect the name of the presenter, then go to the Format menu, select Font and change the color to white.
 - Highlight *<footer>*, go to the Format menu, select Font and change the color to white.

Slide 2

Insert seal
or logo here

Goals of This Lecture

- Learn common public health terminology
- Learn how public health agencies approach preventing and controlling infectious diseases
- Learn how epidemiologists approach finding, investigating, and controlling outbreaks

2Presenter's NameDate

NOTES:

The intended audience for this presentation is a mixed group of law enforcement, public health, and perhaps other public safety professionals who want to learn how to work together in investigating disease outbreaks that are or may also be crimes – bioterrorist events or other deliberately-caused outbreaks.

Slide 3

Insert seal
or logo here

Public Health

- Organized federal, state and community effort to protect, promote and improve the health of its citizens
 - Primary care: focus on individuals
 - Public health: focus on populations
- A social institution, a discipline and a practice

3Presenter's NameDate

NOTES:

You may want to add, depending on local conditions, that providing direct clinical services (like prenatal care or AIDS patient care) is only part of a local health department's mission.

Slide 4

Insert seal
or logo here

Goals of Public Health

- Goal: to reduce the amount of premature disease and disability in the population

4Presenter's NameDate

NOTES:

You may want to add, depending on local conditions, that providing direct clinical services (like prenatal care or AIDS patient care) is only part of a local health department's mission.

Slide 5

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Public Health and Law Enforcement Goals Compared

Law enforcement:	Public health:
<ul style="list-style-type: none">• Stop further crimes• Protect health and safety of public• Apprehend and convict criminals	<ul style="list-style-type: none">• Stop further cases of disease and outbreaks• Protect health and safety of public• Build science base for future prevention

5Presenter's NameDate

NOTES:

This slide compares the goals of law enforcement and public health, showing the commonalities.

Slide 6

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Terminology

- Case: the totality of an investigation or a person?
- Suspect: a person under suspicion or a person who may be a case?
- Victim vs. Case
- Evidence: criminal vs. scientific

6 Presenter's Name

Date 

NOTES:

- Terminology: Public health and law enforcement differ in their definitions
- For public health workers, the word “case” refers to an individual person who has a case of a particular disease.
 - Usually there are formal criteria for deciding medically which ill persons are “cases” of the disease under investigation.
 - An outbreak is made up of one or more, usually many, cases.
 - Most law enforcement workers would use the word “victim” to mean something close to this concept.
- For law enforcement workers, the word “case” usually refers to all the activities, interviews, evidence, etc related to one crime or set of related crimes.
 - Most public health workers would use the word “investigation” to convey this concept.

Slide 6 Notes continued:

- Public health workers may classify people who may be cases of a disease for investigative purposes into possible, probably, suspected, or confirmed cases. So they may refer to a group of 'suspects', who are people who are strongly suspected of having the disease, that is, being cases.
 - To law enforcement workers, of course, "suspect" refers to a person who is suspected of having committed or aided in committing the crime.

- Public health and law enforcement workers both collect evidence in the course of their investigations.
 - Such evidence for public health workers may include inspection reports from facilities, interviews with ill and well people possibly exposed to the disease agent, medical records of ill people, historical records of previous cases and outbreaks of this disease, etc.
 - Some but not all of this material can be tagged or secured in an evidence locker, or subject to chain of custody procedures.

Slide 7

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Epidemiology

- Originally, the study of epidemics / outbreaks

- Study of the factors that contribute to illness in individuals and communities, and how to improve health by altering those factors

7Presenter's NameDate

NOTES:

- The purpose of this slide is to define epidemiology.
- You may replace it with your preferred definition of epidemiology.

From Webster:

Epidemiology is a branch of medical science that deals with the incidence, distribution, and control of disease in a population or the sum of the factors controlling the presence or absence of a disease or pathogen.

Slide 8

Insert seal
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Epidemiology

- Examples of health problems: infectious diseases, chronic diseases, unintentional injuries, violent injuries, deaths

- Why are some people sick and not others?

8Presenter's NameDate

NOTES:

The last bullet on this slide is optional – some people like explaining the purpose of epidemiology this way: answering this question and explaining the answer is really the central activity of most epidemiologic work.

Slide 9

Insert seal
or logo here

Public Health Emergencies

- Threat and reality of bioterrorism have focused attention on public health preparedness for emergencies
- Planning for public health emergencies requires interagency agreements, training, and exercises

9Presenter's NameDate

NOTES:

- Explicitly mention the law enforcement and other public safety participants as welcome partners with public health agencies in dealing with emergencies that have health components.
- Some managers of this course may want to have a brief presentation by the local or state emergency management director as part of this course, with the goal of motivating people to get trained in the Incident Command System approach to dealing with emergencies and to organize and participate in multi-agency exercises.

SLIDE 10

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Public Health Emergencies

- Examples of public health emergencies:
 - Natural disaster: hurricanes, floods, earthquakes;
 - Outbreaks from contaminated food or water, influenza pandemics;
 - Biological, chemical, radiological and nuclear WMD

10Presenter's NameDate

NOTES:

This slide is used to discuss and provide examples of public health emergencies.

Slide 11

Insert seal
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Local-State-Federal Relationships

- Public health is constitutionally a state matter
- Local health agencies: disease surveillance, initial outbreak investigations
- State health agencies: technical assistance, policy guidance, lab support, field assistance, resources (vaccines, drugs, ...)

11Presenter's NameDate

NOTES:

You may want to modify the relative roles of local and state agencies for your jurisdiction, e.g., in a state where state provides most services directly.

Slide 12

Insert seal
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Local-State-Federal Relationships

- CDC provides resources when outbreaks exceed state capacity, are multi-state or international, or result from bioterrorism
- For events within states, CDC usually investigates only on request of state health department

12Presenter's NameDate

NOTES:

In the case of a bioterrorist (BT) event, the state would still invite CDC to participate in the epidemiologic investigation, but the FBI would also bring CDC in as a Federal resource.

Slide 13

Insert seal
or logo here

Varieties of Local Health Departments

What Do We Have Here?

- City agencies
- County agencies
- City-county agencies
- Multi-county agencies
- County or multicounty branches of state health agency
- Direct service by state health department
- Does this jurisdiction have a local board of health?

13Presenter's NameDate

NOTES:

- Use this slide to describe the structure and reporting relationships of local health departments in the jurisdiction where the course is being given.
- All items in red are meant to be customized by the local public health organization.

Slide 14

Insert seal
or logo here

Local Health Department

- Responsibility and authority to investigate all epidemics, outbreaks, and issues of public health concern
- First responder for investigating and controlling biological WMD events
- **County Health Dept Director is Public Health Officer**
- Epidemiologist – Disease Detective

14Presenter's NameDate

NOTES:

Correct the title of your local public health agency and give the name of the director of the local public health agency.

Slide 15

Insert seal
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Public Health 'Police Powers'

- Inspect or close premises
- License and discipline health professionals and facilities
- Limit the movements of people (isolation, quarantine)
- Require vaccination, testing, or treatment
- Seize, embargo, impound food and other hazardous substances, or stop their sale
- Board planes, trains, buses, and ships as part of disease control
- Review medical, hospital etc. records
- Interview whoever and whenever information is needed for investigation of a public health problem

15Presenter's NameDate

NOTES:

- Modify as needed to reflect the powers of the state(s) and localities where the course is given. In some states local health officers are issued badges to reflect their health-related police powers.
- You will probably need to use two or more slides to enumerate these powers fully.

Slide 16

Insert seal
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Public Health Agencies Also Regulate

- Most PH agencies have powers to take disciplinary actions against licensed entities (restaurants, day-care centers, health care workers, etc.)
- These are handled as administrative law issues, not crimes
- Criminal prosecutions are very rare

16Presenter's NameDate

NOTES:

The regulatory powers are distinct from the police powers.

Slide 17

Insert seal
or logo here

Who Works in Public Health?

- Many disciplines:
 - Doctors (MD, DO, DVM, PhD)
 - Nurses (RN, PHN)
 - Laboratory workers (microbiologists, technologists)
 - Social workers, health educators
 - Environmental health workers
 - Attorneys
 - Administrators
- Many have additional degrees/training in public health

17Presenter's NameDate

NOTES:

Use this slide to indicate who works in the field of public health.

Slide 18

Insert seal
or logo here

What is an Outbreak?

- An outbreak is the occurrence of more cases of a disease than expected in a population during a certain time
- One case of smallpox, anthrax, plague, botulism, or tuberculosis anywhere in the US is an outbreak requiring immediate response
- An epidemic and an outbreak mean the same thing
 - Epidemic is often applied to an outbreak of special concern

18 Presenter's Name

Date 

NOTES:

- Labeling a situation as an outbreak or epidemic implies that a public health response is required.
- Other examples of serious uncommon diseases where one case is an outbreak and requires an immediate public health response would include polio, measles, diphtheria, meningococcal meningitis, hemorrhagic fever, tuberculosis, or infectious syphilis.
 - These are diseases where the risk of mortality or serious morbidity is high, and a single case has the potential to turn into an outbreak that has many cases and is hard to control.
- In practice public health spokespeople tend to use the word outbreak when they are trying to minimize public concern and epidemic when they are trying to increase it.

Slide 19

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or logo here

How Are Outbreaks Detected?

- Recognized and reported by individual doctors or groups (e.g., an emergency dept) **Add your reporting number here!**
- Recognized and reported by those affected (e.g., coworkers, school, banquet)
- Detected by PH agency through review of individual cases reported by doctors, or review of lab reports or other health care data
- Enhanced surveillance in cooperation with state and federal public health officials

19
Presenter's Name
Date


NOTES:

- If you have local examples of how outbreaks were detected by some or all of these methods, you should mention them.
 - E.g., “We detected the outbreak of shigella gastroenteritis associated with the downtown interactive fountain last year because parents of affected children called us.”
 - or “We found the outbreak of hepatitis B associated with a dentist three years ago by reviewing our routine interviews with newly reported cases of hepatitis B.”
 - This also conveys the idea that your health department regularly recognizes and responds to outbreaks.

- Add your agency’s reporting number to the slide.

Slide 20

Insert seal
or logo here

Surveillance

- The ongoing, systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely feedback of these data to those who need to know.

In public health, 'surveillance' means tracking the occurrence of diseases of importance – not watching individuals or premises

20Presenter's NameDate

NOTES:

To many people in the law enforcement profession, surveillance means watching an individual carefully, perhaps including having the person followed or having his telephone monitored. It also means watching a location, as with surveillance cameras.

Slide 21

Insert seal
or logo here

Communicable Disease Reporting

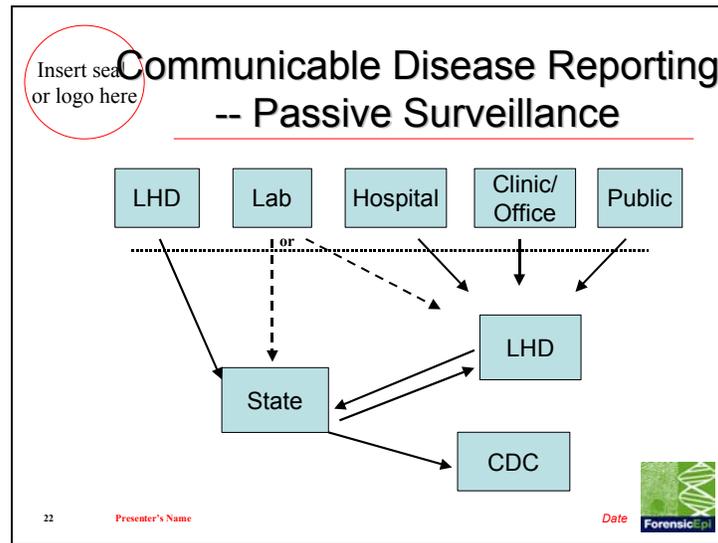
- About 60 diseases reportable in most jurisdictions
- Includes diseases linked with bioterrorism
- What mechanism does this jurisdiction use to collect case reports from physicians, hospitals, and laboratories?
- Does this jurisdiction have a way to detect outbreaks based on early symptoms or syndromes, before diagnoses are made?

21Presenter's NameDate

NOTES:

- Customize the first two bullets with the actual number of diseases reportable in this jurisdiction.
- The third and fourth bullets are a place to indicate how this jurisdiction does public health reporting and surveillance. It is important to be concise and specific:
 - E.g., “In this city, we receive reports from doctors over the telephone and by fax; we also depend heavily on infection control nurses, who are very complete about reporting every hospitalized case of a reportable disease, and hospital and clinical laboratories, who are very complete about reporting every laboratory result that indicates the presence of a case. We are also currently piloting a system to count the daily number of emergency department visits at three hospitals for several conditions of interest, and expect to have it operational within three months.”
- This information leads directly into the next slide, where you can point to the mechanisms as they work in this community.

Slide 22

**NOTES:**

LHD = Local Health Department.

- The dotted lines from the laboratory box to state and local health departments reflect the fact that this is variable among jurisdictions – in some states or areas all lab reports go to the state and are redistributed to the local health departments; in some all lab reports go directly to local health departments; and some have a mixed system.
- You could devote 10 seconds to saying which way it works in your community.
- The upper left hand box reflects the fact that local health departments may also be sites of clinical care on their own, and so may know about cases of reportable diseases (e.g., tuberculosis or STDs) internally, without having to receive reports from other providers.

Slide 23

Insert seal
or logo here

How Do Infectious Diseases Spread?

- Airborne
- Common source (food or water)
- Person-to-person
- Vector-borne

23Presenter's NameDate

NOTES:

This slide is used to briefly mention the way infectious diseases spread.

Slide 24

Insert seal
or logo here

Airborne

Aerosolized infectious agents enter lungs

- Anthrax
- Plague (pneumonic form)
- Smallpox
- Tuberculosis
- Influenza
- Measles
- Whooping cough
- Legionnaires' Disease

24 Presenter's Name

Date 

NOTES:

- This slide discusses the way infectious diseases spread in the air.
- Several of these diseases are transmitted through the air from person to person.
 - Mention that these diseases vary enormously in infectiousness.
 - For example, tuberculosis is usually spread very slowly and inefficiently, so that you have to live with someone for months to be sure of getting infected
 - Measles is highly infectious, with most susceptibles getting infected after less than an hour in the presence of a case.
- The infectiousness by the airborne route of agents being used in a bioterrorism attack can be greatly affected by how the material is prepared – particle size, surfactants etc.
- This lesson was brought home by the Hart Senate Office Building and media attacks in fall of 2001. What we know of the agent in its natural state may not be correct in a BT setting.
- In some regions of the country you might want to add coccidiomycosis (valley fever) or histoplasmosis to the list.

Slide 25

Insert seal
or logo here

Common Source

- **Food**
 - Place: restaurant, home, store
 - Item: ground beef, eggs, salad
- **Water**
 - Drinking water
 - Swimming pool, lake, hot tub, fountain

25Presenter's NameDate

NOTES:

- This slide discusses how infectious diseases spread via food and water.
- A variety of conditions can be spread from a common source via the air, and you could give examples if they are locally familiar, such as coccidiomycosis in Arizona and southern California, or legionnaires' disease from cooling towers with spread into neighborhoods.

Slide 26

Insert seal
or logo here

Person-to-Person

- **Direct contact**
 - HIV, Sexually transmitted diseases, smallpox
- **Indirect contact**
 - Fecal-oral
 - Shared towels, combs or toys
- **Face-to-face via droplets**
 - Coughing, sneezing

26Presenter's NameDate

NOTES:

- This slide discusses how infectious diseases can be spread from person-to-person.
- The phrase ‘fecal-oral’ may need some explanation.
 - You might say “People who are sick with diarrhea may transmit infection to others if they have not washed their hands thoroughly between using the toilet and fixing food for other people.”

Slide 27

Insert seal
or logo here

Vector-Borne

- West Nile Virus (mosquitoes)
- Malaria (mosquitoes)
- Lyme disease (ticks)
- Plague, typhus (fleas)
- Saint Louis Encephalitis (mosquitoes)

27Presenter's NameDate 

NOTES:

- This slide discusses vector-borne diseases.
- Vector-borne diseases are thought unlikely to be good BT agents precisely because they depend on behavior of vectors, which is hard to control.
 - The possibility that West Nile Virus might have been introduced into the United States deliberately to cause disease and disruption was seriously considered, but eventually rejected by investigators.
 - Its rapid and wide spread in North America indicates how hard it is to predict where such an agent will go.
- You may want to customize this list based on common diseases in your area of the country, especially if they have gotten publicity, e.g., hantavirus infection.

Slide 28

Insert seal
or logo here

Incubation Period

- Time interval between initial infection and onset of clinical features of disease
 - Very short: influenza, colds (12-36 h)
 - Short: salmonella (24-72 h)
 - Long: measles (10-14 d), hepatitis A (2-6 wks)
 - Very long: hepatitis B (6 w – 6 mo), TB (mos – yrs)
- Key concept in disease transmission and control
- For some diseases, people are infectious during part of the incubation period

28Presenter's NameDate

NOTES:

This slide discusses the definition of incubation period and gives incubation periods for several diseases.

TB = tuberculosis

Slide 29

Insert seal
or logo here

Steps in an Outbreak Investigation

- Detect problem by public health surveillance
- Verify diagnosis
- Confirm epidemic
- Identify / count cases
- Characterize data → time / place / person
- Take immediate control measures
- Formulate / test hypotheses
- Implement / evaluate additional control measures
- Report findings

29Presenter's NameDate

NOTES:

- The slides following this one go through each of these bullets using an actual outbreak investigation as an example.
- You should feel free to substitute an example from a locally familiar outbreak investigation for this one, which comes from Great Falls, Montana, in 1977.
 - It was chosen because it was simple and clear-cut, while illustrating each of the steps.
- No matter how interesting the local outbreak, you should not use more slides than one per step as done here, except for a small number of visuals as used here (spot map, line list, epidemic curve).

Slide 30

Insert seal
or logo here

Detect Problem

- Infection control nurse at one hospital in a city reports to the local health department that 4 people were admitted overnight with bloody diarrhea and fever

30Presenter's NameDate

NOTES:

On this slide, indicate how the problem in your area was detected (if substituting a local outbreak investigation for this one).

Slide 31

Insert seal
or logo here

Verify Diagnosis

- Health department epidemiologist contacts hospital and clinical labs and confirms diagnosis: *Shigella sonnei*

31Presenter's NameDate

NOTES:

On this slide give information on the diagnosis of the organism causing your outbreak.

Slide 32

Insert seal
or logo here

Confirm Epidemic

- Epidemiologist checks with other hospitals and labs to see if there are any additional lab-confirmed cases finds 5 more, with additional specimens cooking

32Presenter's NameDate

NOTES:

- Likely with 9 people hospitalized, there are dozens of less severe cases in the community.
- (While it may eventually be useful to find most of the cases to give a bigger sample size for analysis and to document the size of the outbreak, working initially with just the hospitalized and lab-confirmed cases may lead to solving the outbreak quickly and economically.)

Slide 33

Insert seal
or logo here

Identify and Count Cases

- **County epidemiologist investigates:**
 - Talks to cases
 - Learns of other ill people
 - Arranges for lab testing
 - Develops case definition (diarrhea plus fever >101 or positive culture)
 - Alerts primary care physicians/ emergency departments to look for and report additional shigellosis cases and recommends lab testing

33Presenter's NameDate

NOTES:

- Case definition here is stated very simply.
 - In this situation it might really be that simple.
 - The point here is to illustrate use of a case definition quickly and clearly.
 - The case definition may be modified later in the outbreak investigation.
- Looking for additional cases is important if the mode of spread is not immediately obvious.
 - The alert to physicians would contain recommendations for case and contact management.
 - This is a good place to quickly describe how your state and local health departments have implemented the Health Alert Network.
 - The local health department should now be able to notify clinicians of the nature and extent of the problem, and of what they need to do, very quickly and effectively.

Slide 34

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Characterize Data by Time / Place / Person

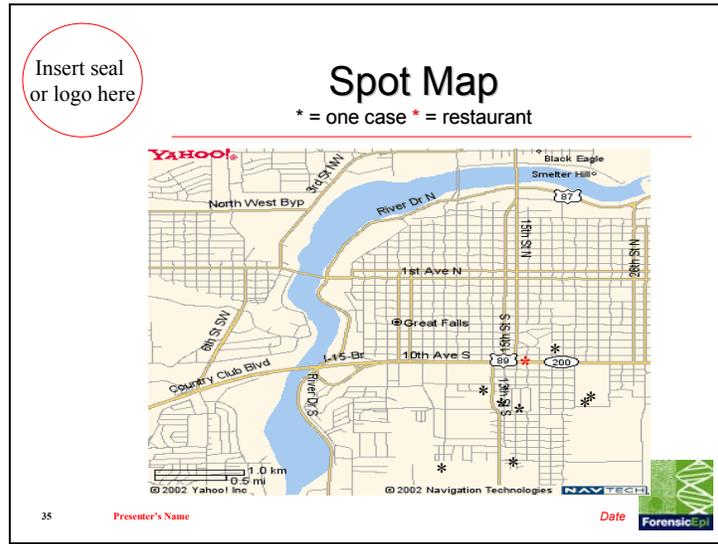
- Epidemiologist interviews cases looking for common exposures (e.g., day-care, restaurant, unusual food item)
- Most cases report eating at one Mexican-theme fast-food outlet in the southeast part of city about 2 days before onset of illness
- Makes list of cases, plots cases on city map, draws time line
- Epidemiologic tools can be used to show that an outbreak is NOT of natural origin

34Presenter's NameDate

NOTES:

Note that the usual incubation period for shigellosis is one to three days, so this incubation period makes sense.

Slide 35

**NOTES:**

- A spot map in its native form may effectively identify individuals, so maps used internally within the investigation may not be suitable for public display because of confidentiality concerns.
- A useful map may be made with stick-pins and a gas station map posted on the wall.
- Geographical information systems are of course useful but using them should not slow down the investigation.

Slide 36

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Line List

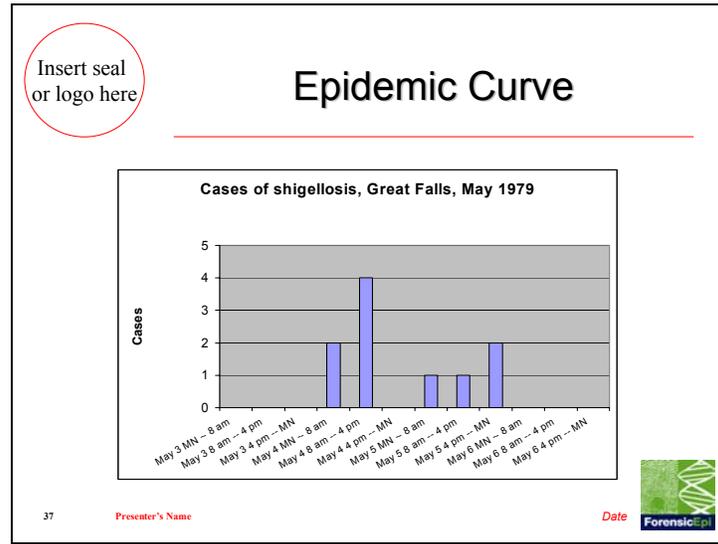
Line list of cases of probable and confirmed shigellosis						
Great Falls, MT, May, 1979						
Initials	Date of onset	Time of onset	Diarrhea	Fever	Culture	Category
RS	4	4:00 AM	Y	Y	Pos	Conf
GM	4	6:00 AM	Y	Y	Pending	Prob
AH	4	8:00 AM	Y	Y	Pos	Conf
JM	4	2:00 PM	Y	Y	Pos	Conf
TD	4	3:00 PM	Y	Y	not done	Prob
JD	4	4:00 PM	Y	Y	Pos	Conf
LR	5	6:00 AM	Y	Y	Pos	Conf
AR	5	11:00 AM	Y	Y	Pending	Prob
RG	5	7:00 PM	Y	N	Pending	Poss
TM	5	9:00 PM	Y	Y	Pos	Conf

36 Presenter's Name Date 

NOTES:

- A real line list would probably include age, sex, home address, work location, and other relevant facts about each person. Combined with initials, those data would identify individuals.
- Line lists from which individuals can be identified must be handled with the same attention to individual confidentiality as other medical and interview records.
 - Generally state law prevents health agencies from releasing the names of individuals with medical conditions, including reportable diseases.
 - Disease reporting depends on the active cooperation of physicians, hospitals, and laboratories, and would essentially vanish if names of persons reported tended to appear in the media.
- Line lists are working documents. Which category a person falls into will change as more information is acquired during an investigation.

Slide 37

**NOTES:**

- This graph indicates sudden appearance of cases and outbreak only lasting two days.
- The point to bring out here is that dates of onset can be graphed, and that the shape of the epidemic curve may tell whether the outbreak is due to a point source that only lasted a brief while or is due to a continuing source.
- This both helps solve the outbreak and helps decide whether there is a continuing problem that must be addressed immediately.
- Computers can help with making these graphs. Preliminary graphs like this one can be made in a spreadsheet program or can be drawn with pencil and graph paper.

Slide 38

Insert seal
or logo here

Prevention and Control Measures

- Visit to food outlet finds food handler who had a compatible illness on the right days. Her job was shredding lettuce.
- Health department
 - Orders this person taken off the job
 - Reinforces hand washing for all food-handlers
 - Cultures all employees

38Presenter's NameDate

NOTES:

Health department staff often has to take action based on the facts at hand, even when they are incomplete.

Slide 39

Insert seal
or logo here

Formulate / Test Hypotheses

- All cases report eating items with lettuce from one restaurant
- Only half of restaurant orders include items with lettuce
- Only the lettuce-shredder has positive culture for *Shigella sonnei*

➔ **Conclusion:** outbreak caused by contamination of lettuce by ill foodhandler

39
Presenter's Name
Date


NOTES:

- The argument here is that if all cases had eaten items with lettuce, but only half of meals served in the store had lettuce in them, then lettuce is associated with illness.
- As the outbreak can be explained by known lapses in technique and an ill foodhandler, there is no need to think of this outbreak being intentional.
 - However, the manager or other employees might tell the investigator that they suspect the worker who shredded the lettuce of having a grudge against the restaurant and of having caused the outbreak – then the investigation would also be a criminal matter.
- A survey of restaurant patrons from the time when the cases were exposed would be more definitive and may be justified depending on the scope of the outbreak and the practical ability to find such patrons. A community phone survey might also be undertaken.
- (This slide says all cases reported eating items from the restaurant, whereas an earlier slide said most cases had eaten at the restaurant. If an astute listener asks about the difference, it is because some cases on reinterview remembered eating takeout food from the restaurant.)

Slide 40

Insert seal
or logo here

Implement / Evaluate Additional Control Measures

- Restaurant manager admonished and educated
- Restaurant not closed
- No further cases

40Presenter's NameDate

NOTES:

- Food service rules generally put responsibility on managers to assure that employees wash hands appropriately and keep ill employees off of work.
- Some states now require that food handlers glove when preparing food. That regulation, if in force at this time, might have prevented this outbreak.

Slide 41

Insert seal
or logo here

Write Report

- Report written for health department director and food service licensing office
- Recommends further efforts to educate restaurant owners to not let ill persons work, and to require hand-washing by employees.

41Presenter's NameDate

NOTES:

Desired outcome is that report leads to action.

Slide 42

Insert seal
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Hypotheses -- Theories

- Epidemiologists develop and test theories about how the outbreak occurred
 - Gather information about circumstances of outbreak
 - Do lab tests of people, food, water, environment
 - Interview cases and non-cases to see how they are different
- *This is similar to how law enforcement investigators pursue a theory of the case with interviews and lab tests*

42Presenter's NameDate

NOTES:

- This slide is intended to bring out the similarities between a criminal investigation and a public health investigation.
- In both disciplines the investigators form a theory of the case or outbreak, and gather information to support or rule out their theory; and this information may include interviews with key informants and witnesses as well as laboratory testing.
- This degree of commonality suggests that joint efforts may be very productive.

Slide 43

Insert seal
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Where Did the Outbreak Start?

- Most outbreaks do not have an identifiable scene you can put a tape around:
 - Spread is from person to person; or
 - Common source is gone; or
 - Group has dispersed from site of exposure; or
 - Source material discarded or replaced

43Presenter's NameDate

NOTES:

- Law enforcement and emergency response staff is usually more familiar and comfortable with incidents that can have boundaries drawn around them – an incident scene or crime scene.
- Dealing with infectious disease outbreaks may require a somewhat different way of working.
- This is an area where tensions may arise in joint investigations.
- Conversely, public health workers are not used to working in crime or incident scenes where other people are in charge and can limit or direct their movements and activities.

Slide 44

Insert seal
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What Should Make You Suspect an Intentional Outbreak?

- Cases of an extremely rare disease (anthrax, plague, smallpox) that could be BT agent
- Ordinary disease but out of season or area or with wrong mode of spread or other unusual characteristics (i.e. antibiotic resistance, atypical symptoms or victim demographics)
- Cannot solve outbreak with usual techniques
- Threats received
- Group taking credit
- Plausible accusations

44
Presenter's Name
Date


NOTES:

- Cases of disease due to one of the likely BT agents would be suspect, particularly if they cannot be explained by natural causes – e.g., plague in a person recently traveling in New Mexico versus a person living in a non-endemic area with no travel history.
- An outbreak due to a common agent but in the wrong season or with an unprecedented or mysterious mode of spread should raise suspicion of being intentional.
- An outbreak of a disease in a novel geographic area – e.g., anthrax on the East Coast – should also raise suspicion. Threats to cause an outbreak like the one observed would be highly indicative of an intentional outbreak.
- Ditto if a group takes public credit for an attack or outbreak.
- Accusations would need to be assessed carefully. Employees at a facility where an outbreak is centered may have information suggesting an intentional attack by someone they know, for example.

Slide 45

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What Should Make You Suspect an Intentional Outbreak?

- All victims attended a common event
- All victims share a common workplace or other locale
- All victims work for the same agency
- A dissemination device is found
- **Whom should PH workers call first in this community when they receive allegations that someone has caused an outbreak deliberately?**

45Presenter's NameDate



NOTES:

- Local protocols may call for local public health to call local law enforcement; or for local public health to call state public health first, and only then contact law enforcement.
- The point is to describe here what the local practice is or is supposed to be.

Slide 46

Insert seal
or logo here

Categories of Intervention

- Efforts directed at source of infectious agent
 - Vehicle
 - Vector
- Efforts directed at people at risk

46Presenter's NameDate

NOTES:

Interventions are, whenever possible, based on an understanding of how the current outbreak happened and is being spread.

Slide 47

Insert seal
or logo here

Interventions Directed at Source

- **Eliminate / treat source**
 - Dispose of contaminated food, shock-chlorinate contaminated water
- **Isolate / treat infected persons**
 - Prevent further exposures by minimizing susceptibles' risk of exposure to infectious persons
- **Close contaminated sites / sources**
 - Protect susceptibles by minimizing risk of exposure from infected sites / sources

47Presenter's NameDate

NOTES:

If possible, use examples where such measures have been used locally that the audience will recognize.

Slide 48

Insert seal
or logo here

Interventions Directed at People at Risk

- Reduce risk of exposure in susceptible people –
e.g., by educating on how to avoid exposure
- Directly protect at-risk people
 - Vaccinate
 - Post-exposure treatment with medicines or vaccines
to prevent or lessen illness

48Presenter's NameDate

NOTES:

If possible, use examples where such measures have been used locally – or national examples that have received wide publicity -- that the audience will recognize.

Slide 49

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Goal of Epidemiologic Investigation: **Prevention**

This is the source of urgency for PH staff

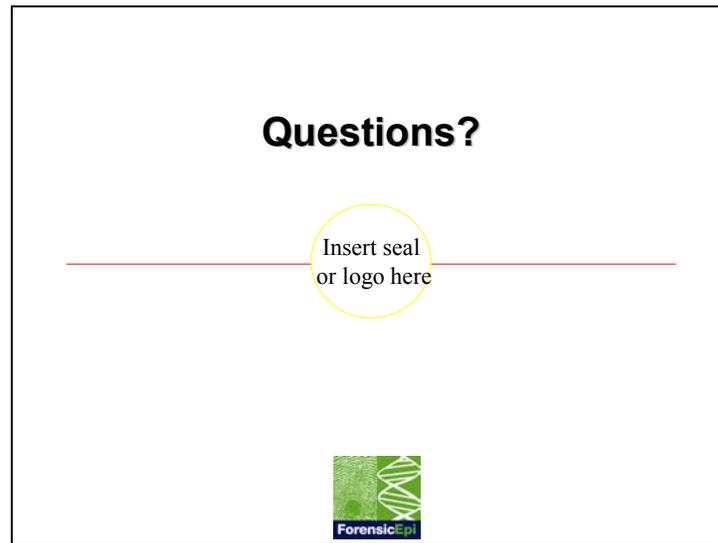
- Find and fix ongoing point source (like contaminated water supply)
- Close location until fixed
- Take food product off the market
- Find, isolate, and treat infectious people
- Find exposed people, give them prophylactic treatment or vaccine, and/or quarantine them

49Presenter's NameDate

NOTES:

Law enforcement officials may also feel a sense of urgency if a perpetrator has not been caught and may strike again – especially if evidence is accumulating of repeated episodes.

Slide 50



NOTES:

Use this slide to field questions from the audience.

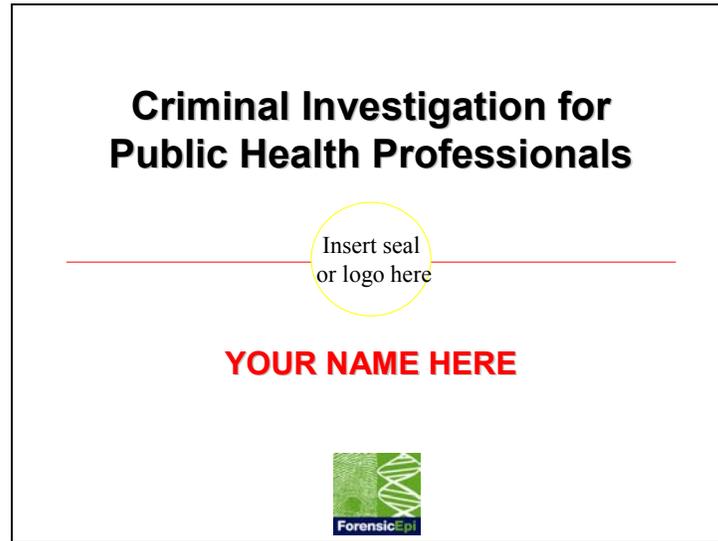
CRIMINAL INVESTIGATION FOR PUBLIC HEALTH PROFESSIONALS

Criminal Investigation for Public Health Professionals

Lecture Outline

- I. Law Enforcement Goals and How They Parallel Public Health Goals
- II. Terminology
- III. Local Police
 - A. Roles: field operations, detectives, forensic unit, bomb squad, HAZMAT team (if there is one), etc.
 - B. Organizational structure / POCs
 - C. Capabilities
 - D. Training
- IV. Sheriff's Office
 - A. Roles
 - B. Organizational structure / POCs
 - C. Capabilities
 - D. Training
- V. State Police
 - A. Roles
 - B. Organizational structure / POCs
 - C. Capabilities
 - D. Training
- VI. Federal Law Enforcement (Note: Do not include if the FBI's presentation will be used.)
 - A. Roles: WMD Coordinator, Crisis Management Coordinator
 - B. Organizational Structure / POCs
 - C. Capabilities
- VII. Criminal Investigation Process
 - A. Initiate investigation
 - a) How do police learn about crimes?
 - b) How do they decide which possible crimes to investigate?
 - B. Conduct threat assessment, to include identifying who decides that a crime has even occurred (especially if it is a covert bioterrorism event)
 - C. Attending to crime scenes / obtaining warrants
 - D. Gather evidence
 - a) Sample collection
 - b) Chain of custody
 - c) Delivery to appropriate laboratory
 - d) Documents
 - e) Witness statements
 - f) Other (cross-jurisdiction issues)
 - E. Evaluate evidence
 - F. Apprehend suspects
 - G. Render testimony
 - H. Respond to a biologic attack

Slide 1

**NOTES:**

- This set of slides is **intended as a template** for an experienced criminal investigator – from a local, state or federal law enforcement agency – to speak from in the Forensic Epidemiology course.
- The **audience** will consist of a mixture of public health, law enforcement, fire, and other first responder professionals who will not be familiar with most criminal investigation terminology or jargon. They need to know what your agency can do for them in an investigation of a bioterrorism or similar event, and how to access those services.
- As a template, these slides are **designed to be customized** to be correct for the jurisdiction(s) where the course is being held. You should go through and, as far as possible, answer the questions posed in the bullets, or customize them to local practices and organizations.
- Feel free to **create more slides**, if you need to, to cover the issues in the templates. Also feel free to add additional topics as needed for local use.
 - Experience has shown, however, that people without a law enforcement background will benefit greatly by hearing from you about the **topics outlined on this template**.

Slide 1 Notes continued:

- You may leave the slides as they are, to prompt you to say the right things about these issues, but we strongly recommend that you **customize them**. The participants in the course should have a copy of your slides in their notebooks, and you will want to be sure that they take home the right information with them.
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Slide 2

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or logo here

Lecture Goals

- Explain basic terminology
- Learn about roles of various law enforcement agencies
- Learn about criminal investigative methods
- Learn about law enforcement operations and procedures

2Presenter's NameDate 

NOTES:

The purpose of this slide is to give the lecture goals for this presentation.

Slide 3

Insert seal
or logo here

Law Enforcement Investigative Goals

- Determine how a crime occurred
- Protect public health and safety
- Identify and collect all relevant evidence
- Protect crime scene and preserve evidence for use in prosecution
- Identify, apprehend, and convict perpetrator(s) using this evidence
- Prevent further criminal acts by this perpetrator

3Presenter's NameDate 

NOTES:

The purpose of this slide is to give the goals of a law enforcement investigation.

Slide 4

Insert seal or logo here

Law Enforcement and Public Health Goals Compared

Law enforcement:	Public health:
<ul style="list-style-type: none">• Stop further crimes• Protect health and safety of public• Apprehend and convict criminals	<ul style="list-style-type: none">• Stop further cases of disease and outbreaks• Protect health and safety of public• Build science base for future prevention

4 Presenter's Name Date ForensicEpi

NOTES:

This slide compares the goals of law enforcement and public health, showing the commonalities.

Slide 5

Insert seal
or logo here

Terminology

- Case: the totality of an investigation or a person?
- Suspect: a person under suspicion or a person who may be a case?
- Victim vs. Case
- Evidence: criminal vs. scientific

5Presenter's Name

Date


NOTES:

Terminology: Public health and law enforcement differ in their definitions.

- For public health workers, the word “case” refers to an individual person who has a case of a particular disease.
 - Usually there are formal criteria for deciding medically which ill persons are “cases” of the disease under investigation.
 - An outbreak is made up of one or more, usually many, cases.
 - Most law enforcement workers would use the word “victim” to mean something close to this concept.
- For law enforcement workers, the word “case” usually refers to all the activities, interviews, evidence, etc related to one crime or set of related crimes.
 - Most public health workers would use the word “investigation” to convey this concept.

Slide 5 Notes continued:

- Public health workers may classify people who may be cases of a disease for investigative purposes into possible, probably, suspected, or confirmed cases. So they may refer to a group of 'suspects', who are people who are strongly suspected of having the disease, that is, being cases.
 - To law enforcement workers, of course, "suspect" refers to a person who is suspected of having committed or aided in committing the crime.

- Public health and law enforcement workers both collect evidence in the course of their investigations.
 - Such evidence for public health workers may include inspection reports from facilities, interviews with ill and well people possibly exposed to the disease agent, medical records of ill people, historical records of previous cases and outbreaks of this disease, etc.
 - Some but not all of this material can be tagged or secured in an evidence locker, or subject to chain of custody procedures.

Slide 6

Insert seal
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Local Police (or Sheriff's Office)

- Roles
- Field operations, detectives, forensic unit, bomb squad, HAZMAT team, etc.
- Organizational Structure
- Points of contact
- Capabilities

6 Presenter's Name

Date 

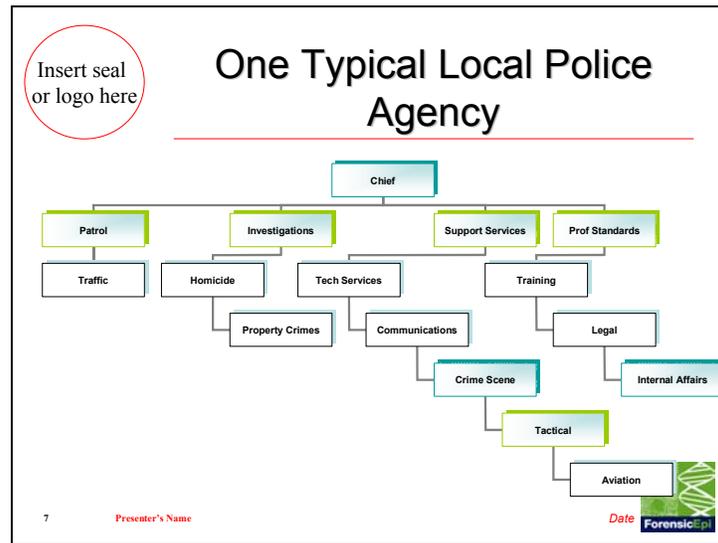
NOTES:

- Roles
 - In criminal investigations, what is role of local vs. county or state police investigators in this jurisdiction?
- Organization
 - How is this force organized – what specialized units are there, how do they relate to patrol officers, and to whom do they report?
- Points of contact
 - Provide phone numbers and other contact information for key persons or roles in the organization that public health, EMS, HAZMAT or fire might need to contact.
- Capabilities
 - Describe local capabilities in criminal investigations – e.g., capabilities of local crime lab if any, specialized crime scene unit, how coroner or medical examiner services are provided, are there officers trained in PPE and entry into dangerous settings to gather evidence, sources of backup assistance for investigative activities as needed.

Slide 6 Notes continued:

- **NOTE:** Parallel sets of slides are included for local, county and state law enforcement organizations, and for the FBI.
 - The latter are not needed if, as recommended, the appropriate regional FBI WMD coordinator makes the FBI presentation.
 - You may not need all three of the other presentations, depending on the jurisdiction.
 - If the course is being given for a multi-county area with several cities, for example, you may decide to make the city and county slides generic.
 - If the course is being given in a large city with no county police active within the city, you may decide to omit the county slides entirely.
 - In a rural area there may be no city police departments.
 - And so on.

Slide 7

**NOTES:**

- If you have one or can create one, show your top-level organization chart here.
- If there are multiple police and sheriff's jurisdictions, show a map of which force has responsibilities where.
- If two forces operate within the same jurisdiction (e.g., county sheriff's department operates within a city which has its own police, or state capitol or parks police operate within a city), make a simple table showing how they divide responsibilities within the jurisdiction (e.g., city makes traffic stops, county escorts prisoners to court).

Slide 8

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Police Training

- What baseline training in the law of criminal investigation does a police officer receive?
- What kind of training do they get in handling biological, chemical, and radiation hazards, specimens and explosives (especially improvised devices)?
- Are they trained in infection control?
- What Personal Protective Equipment are they trained on?
- Is in-service training in process or completed?

8 Presenter's Name

Date



NOTES:

Feel free to add additional slides to address answers to these questions for this law enforcement agency.

Slide 9

Insert seal
or logo here

State Police or Bureau of Investigation

- Roles
- Field operations, detectives, forensic unit, bomb squad, HAZMAT team, etc.
- Organizational structure
- Points of contact
- Capabilities

9 Presenter's Name

Date 

NOTES:

- Roles
 - In criminal investigations, what is role of local vs. county or state police or state Bureau of Investigation investigators in this jurisdiction?
- Organization
 - How is this force organized – what specialized units are there, how do they relate to local and county law enforcement agencies, and to whom do they report?
- Points of contact
 - Provide phone numbers and other contact information for key persons or roles in the organization that public health, EMS, HAZMAT or fire might need to contact.
- Capabilities
 - Describe state capabilities in criminal investigations – e.g., capabilities of state crime lab, specialized crime scene unit, how coroner or medical examiner services are provided, are there officers trained in PPE and entry into dangerous settings to gather evidence, sources of backup assistance for investigative activities as needed.

Slide 10

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State Officer Training

- What baseline training in the law of criminal investigation do officers receive?
- What kind of training do they get in handling biological, chemical, and radiation hazards, specimens and explosives (especially improvised devices)?
- Are they trained in infection control?
- What Personal Protective Equipment are they trained on?
- Is in-service training is in process or completed?

10Presenter's NameDate

NOTES:

Feel free to add additional slides to address answers to these questions for this law enforcement agency

Slide 11

Insert seal
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Federal Law Enforcement: FBI

- Roles
 - WMD Coordinator
 - Crisis Management Coordinator
- Organizational Structure
- Points of contact -- contact numbers for FBI WMD coordinator in that locale
- Capabilities

11Presenter's NameDate 

NOTES:

Do NOT use these slides if the FBI WMD coordinator will be presenting his or her own FBI presentation.

- Roles
 - In criminal investigations, what is role of local vs. county or state police or state Bureau of Investigation investigators in this jurisdiction, and how does this relate to Federal role?
- Organization
 - How is the FBI organized?
 - What specialized units are there, how do they relate to local and county law enforcement agencies?
 - How far away is your nearest FBI office and your nearest FBI WMD coordinator?
- Points of contact
 - Provide phone numbers and other contact information for key persons or roles in the FBI that local or state law enforcement, public health, EMS, HAZMAT or fire might need to contact.

Slide 11 Notes continued:

- Capabilities
 - Describe briefly FBI capabilities in criminal investigations – e.g., capabilities of FBI crime lab, specialized crime scene unit and other resources, are there locally available officers trained in PPE and entry into dangerous settings to gather evidence.

Slide 12

Insert seal
or logo here

Local Protocol for 911 Calls

- Fill in based on your local protocol
- Local protocol may route 911 call on BT threat or white powder to fire or HAZMAT first
- Are some calls assessed as to credibility before sending a response unit?

12Presenter's NameDate 

NOTES:

Customize to reflect local practice and procedures, as necessary.

Slide 13

Insert seal
or logo here

Response to 911 Call

A common process:

- 911 center receives call
- Patrol unit dispatched
- Arrival at scene – initial assessment
- Determination if credible threat?
- Advise communications
- Notify Supervisor
- May summon fire/rescue HAZMAT, EMS
- Determine if evacuation is necessary
- Is a secondary incident possible?

13Presenter's NameDate 

NOTES:

Customize to reflect local practice and procedures, as necessary.

Slide 14

Insert seal
or logo here

Response to 911 Call (continued)

- Supervisor arrives
- Determines if threat is credible
- If potential act of terrorism, this becomes a crime scene.
- Field command post established in conjunction with fire/rescue, hazmat
- Notification to local and state health, FBI
- Hot zone, warm zone, and cold zone determined
- Establishment of hot/cold lines
- Further evacuation if necessary
- Preserve crime scene

14Presenter's NameDate 

NOTES:

Customize to reflect local practice and procedures, as necessary.

Slide 15

Insert seal
or logo here

Criminal Investigation Process -- Initiation

- How do police learn about crimes?
- How do they decide which possible crimes to investigate?
- Who decides that a crime has even occurred and needs to be investigated, for example in a covert BT event?
- If an outbreak is recognized to be a likely BT event based on medical or public health suspicions, how does law enforcement get involved?

15Presenter's NameDate 

NOTES:

This slide is used to describe how criminal investigation processes are initiated.

Slide 16

Insert seal
or logo here

Crime Scene / Warrants

- How and when can police demand access to locations or information?
- When is a search permissible without a warrant?
- What are kinds of problems with searches lead to trouble in getting a conviction?
- When and why is a location declared a crime scene?
- When does a location stop being a crime scene?
- Who decides when a criminal investigation should be stopped or suspended?

16Presenter's NameDate 

NOTES:

The material to be presented in response to these questions may vary according to state and local laws and ordinances, or procedures. Feel free to use more than one slide.

Slide 17

Insert seal
or logo here

Crime Scene Management – First Officer on Scene Responsibilities

- Location treated as potential crime scene until otherwise determined
- Officer arrives and assesses - assessment includes need for PPE
- Assist victims/notify EMS?
- Preserves scene with minimal contamination and disturbance of physical evidence
- Officer uses caution, remains observant of persons, vehicles, and environmental condition

17 Presenter's Name Date 

Slide 18

Insert seal
or logo here

Crime Scene Management

(continued)

- Identify all individuals at the scene and isolate as necessary
- Exclude all non-essential personnel
- Document all persons entering and exiting scene
- Establish perimeters and boundaries
- Assess victims for medical needs
- Assess the need for victim decontamination
- Call for medical assistance

18Presenter's NameDate 

Slide 19

Insert seal
or logo here

Crime Scene Management

(continued)

- Guide medical personal to victims to avoid contamination of scene
- Point out physical evidence to medical personnel
- Document any statements or comments by victims, suspects or witnesses
- If transportation is necessary, officer accompanies to document comments and preserve evidence (utilizing PPE if required)

19Presenter's NameDate

PPE: personal protective equipment

Slide 20

Insert seal
or logo here

Crime Scene Turnover

- Scene turned over to investigators
- Turn over brief conducted
- Supervisor/investigators develop plans for notification in accordance with departmental policy - local, state and federal laws

20Presenter's NameDate 

Slide 21

Insert seal
or logo here

Crime Scene Investigation by Detectives/Crime Scene Unit

- Scene assessment
- Walk thru and initial documentation
- Determine team composition
- Contamination control
- Documentation (photos, videos, sketches, location of evidence)
- Prioritize collection of evidence
- Collect, preserve, inventory, package, transport and submit evidence

21Presenter's NameDate 

Slide 22

Insert seal
or logo here

Crime Scene Debriefing Team

- Investigators, evidence techs, first responders
- What evidence was collected
- Where it goes for forensic testing
- What decontamination requirements
- Chain of custody

22Presenter's NameDate 

Slide 23

Insert seal
or logo here

Gathering Evidence

- Kinds of evidence police may look for in solving crimes:
 - Victim interviews
 - Witness accounts
 - Fingerprints, fiber, hair, organic residues, and other lab tests including DNA testing
 - Chemical, physical, biological testing of other materials from the crime scene or obtained through authorized searches

23Presenter's NameDate 

Slide 24

Insert seal
or logo here

Gathering Evidence (continued)

- Kinds of evidence police may look for in solving crimes:
 - Autopsy results and medical records (rape kit)
 - Paper records on or off site
 - Surveillance video footage
 - Answering machine messages

24Presenter's Name

Date

Slide 25

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or logo here

Chain of Custody

Purpose of documentation is to be able to testify to:

- Identity of investigator discovering material
- Proper identification and marking of material on initial discovery – where found, nature of material, etc
- No opportunity for tampering with material while in custody of any officials (e.g., proper container, locked storage)
- Material in custody at all times as it is being passed from person to person, until it arrives in court

25Presenter's NameDate

Slide 26

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or logo here

Chain of Custody

- Failure to follow chain of custody procedures faithfully can result in evidence being excluded at trial.
- **How do agencies in this jurisdiction handle chain of custody requirements at a crime scene, and in other contexts?**
- Sample chain of custody form in binder

26Presenter's NameDate

NOTES:

If you have a story about a prosecution that failed because of chain of custody errors, especially one that got local publicity, tell the story.

Slide 27

Insert seal
or logo here

Forensic Laboratory

- Which crime lab does your agency use?
- How do you get specimens to the lab?
- What can this forensic laboratory do to support a criminal investigation?
- Where do you get backup crime lab services?

27Presenter's NameDate 

NOTES:

There should be a separate presentation about the forensic laboratory. This is a place to quickly indicate which laboratory you use and how you get specimens to it.

Slide 28

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or logo here

Interviews

- What are the general issues in interviewing victims, witnesses and suspects?
- What the issues specific to joint public health and law enforcement interviews?
- When are Miranda warnings necessary?
- What kinds of problems with interviews lead to trouble in getting a conviction?

28Presenter's NameDate 

NOTES:

- If you have a local procedure for how to handle joint public health- law enforcement interviews, blessed by your agency attorneys, this is the place to describe it. It should also be included in the participant binders.
- If you have a story about a prosecution that failed because of chain errors in handling interviews, especially one that got local publicity, tell the story.

Slide 29

Insert seal
or logo here

Interagency and Interjurisdictional Issues

- How do local police handle investigations that cross city or county lines? State lines?
- When do local police usually involve the state law enforcement agency in an investigation?
- When and how do local and state police usually involve the FBI or other federal law enforcement agencies (ATF, Customs, Immigration, Secret Service, etc.)?
- Sharing sensitive information between public health and law enforcement agencies.

29Presenter's NameDate 

NOTES:

- Re: information sharing.
- If there are local procedures and protocols describing how and under what conditions sensitive information can be shared in both directions between law enforcement and public health workers, this is the place to describe them. They should also be included in the participant binders.
- Feel free to use more than one slide if needed.

Slide 30

Insert seal
or logo here

Evaluate Evidence

- Determine if crime has been committed
- Present to appropriate prosecutorial body
- What evidence is available?
- Witnesses?
- Physical evidence?
- Chain of custody?
- To be determined — who has jurisdiction and who controls evidence?

30Presenter's NameDate 

Slide 31

Insert seal
or logo here

Apprehend Suspects

- Who decides whether to put a suspect under arrest?
- At what point does a prosecuting attorney get involved?

31Presenter's NameDate 

Slide 32

Insert seal
or logo here

Render Testimony

- Who testifies? As to what?
- How do you prepare for testimony?
- What are common procedural errors that may reduce effectiveness of testimony?

32Presenter's NameDate 

Slide 33

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or logo here

Covert BT Events

- Sometimes suspicion of a BT event comes from doctors or public health workers investigating outbreaks.
- How and when does law enforcement want to hear from public health authorities about cases or outbreaks that could be BT events?
- What protocols or MOAs are in place for initiating joint investigations in these situations?

33Presenter's NameDate 

Slide 34

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or logo here

Responding to a Biological Attack – Existing Joint Efforts

- Existing:
 - Policies for interagency cooperation
 - Procedures for interagency cooperation
 - Memoranda of understanding (MOUs)
 - Memoranda of agreements (MOAs)
 - Joint training
 - Joint exercises
 - Coordination with local DoD installation

34Presenter's Name

Date


NOTES:

- Here you should indicate the extent of joint planning and joint exercises that have already been held that involve both law enforcement and public health at the local, regional or state level.
- Summaries of existing plans and memoranda of understanding should be included in the participant binder.

DoD: Department of Defense

Slide 35

Insert seal
or logo here

Joint Operations – Roles and Organizational Trees

- Emergency Operations Center (EOC)
- Incident Command System (ICS)
- Joint Operations Center (JOC)
- Joint Information Center (JIC)
- Integrated Command System (ICS)
- Unified Command System (UCS)
- Joint Terrorism Task Force (JTTF)

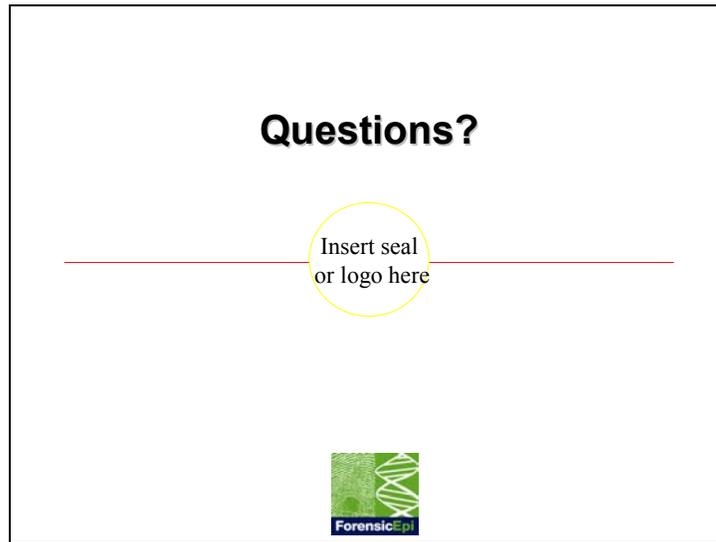
35Presenter's Name

Date

NOTES:

- You may see fit to provide a separate presentation about Joint Operations or Emergency Management Procedures in your jurisdiction.
- The point here is to indicate which of these the local law enforcement agency already participates in and/or has procedures for.
- An explanation of the differences among JTTF, JOC, and EOC would be most helpful here.

- Slide 36



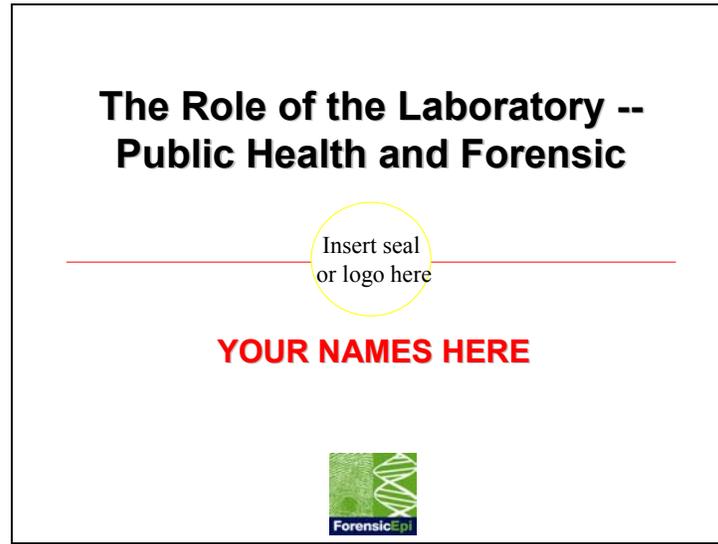
**THE ROLE OF THE LABORATORY –
PUBLIC HEALTH AND FORENSIC**

The Role of the Laboratory – Public Health and Forensic

Lecture Outline

- I. Public Health Laboratory
 - A. General/background
 - a) Reasons labs are involved
 - b) Roles and locations
 - c) Authorities and regulations under which they operate
 - d) Background and training of staff
 - B. Services usually offered by public health laboratories
 - C. Clinical laboratory testing (routine specimens from people)
 - a) Primary testing in physician's office or at lab collection point
 - b) Definitive ID of organism by commercial and hospital laboratories.
 - c) Forwarding of unusual organisms specimen to state public health lab
 - d) Definitive ID by state public health lab or forwarding to another lab in LRN or to the CDC
 - e) Emphasis that all these labs have careful ways to document specimens, who they were collected from, status of testing, etc. , but do not meet requirements of chain of custody
 - D. Environmental laboratory testing (specimens of water, food, air, dust, swabs, etc.)
 - E. Sample submission
 - a) Process performed when a suspicious substance is found
 - b) Chain of custody and differences between the types of labs
 - c) Examples of white powder hoaxes in this locale last fall
 - d) Tests performed – pictures
 - e) Contacts for state / local labs / POCs
 - F. Biological agents (optional)
 - a) Reasons they are used
 - b) Common agents and the diseases they cause
 - c) Likely scenarios
- II. Forensic (Crime) Laboratory
 - A. General/background
 - a) Reasons labs are involved
 - b) Roles and locations
 - c) Organizational locus of a forensic lab –(local? regional? contracted? state? FBI?)
 - d) How labs associated with different levels of law enforcement agencies relate to each other
 - e) Authorities and regulations under which they operate
 - f) Background and training of staff
 - B. Services usually offered by state forensic laboratories
 - C. Sample submission
 - a) Specimen collection
 - b) Process performed when a suspicious substance is found
 - c) Preservation of physical evidence and chain of custody considerations, including standards, in crime lab
 - d) Chain of custody
 - e) Common errors in specimen collection or handling that make it impossible to use forensic evidence in court
 - f) Examples of white powder hoaxes in this locale last fall
 - g) Tests performed – pictures
 - h) Contacts for state / local labs / POCs
 - D. Other
 - a) Testifying in court
 - b) Circumstances under which crime lab works with / crosses over to public health lab for bio analysis

Slide 1

**NOTES:**

- This set of slides is **intended as a template** for a pair of experienced, senior representatives of the public health and forensic laboratories to speak from in the Forensic Epidemiology course.
- The **audience** will consist of a mixture of public health, law enforcement, fire, and other first responder professionals who will not be familiar with most laboratory terminology or jargon. They need to know what your laboratory can do for them in an investigation of a bioterrorism or similar event, and how to access those services.
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 - Experience has shown, however, that people without a laboratory background will benefit greatly by hearing from you about the **topics outlined on this template**.

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 - To do this, go to the View menu, then select Master, Slide Master.
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 - Highlight *<footer>*, go to the Format menu, select Font and change the color to white.

Slide 2

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Lecture Goals

- Describe roles of the Public Health and Forensic (crime) laboratories
- Understand laboratory procedures in suspected BT events
- Understand chain of custody as applied to laboratory specimens

2Presenter's NameDate

NOTES:

The purpose of this slide is to describe the goals of the lecture.

Slide 3



NOTES:

Name of public health lab representative goes on this slide (as well as on the title slide). Here you have room to put your phone number, your picture, or other brief contact information.

Slide 4

Insert seal
or logo here

Why is the Public Health Laboratory (PHL) Involved?

- State Labs are reference labs within the state
- Mandate by Congress
- Experience with biological agents of concern and outbreak investigations
- Link between local laboratory level and CDC /federal agencies

4Presenter's NameDate

NOTES:

OPPORTUNITY TO EXPOUND.

PHL=Public health laboratory

Slide 5

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or logo here

Roles of the State PHL

- Disease identification and outbreak investigation
- Reference services (additional, definitive testing on isolates and specimens)
- Specialized testing
- Direct services
- Environmental testing

5 Presenter's Name

Date 



Slide 6

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Roles of the State PHL

(continued)

- Rapid testing
- Improvement of clinical laboratories throughout the state
- Applied research
- Support of disease surveillance and epidemiology investigations

Emergency Preparedness and Response



6Presenter's NameDate



NOTES:

"In addition to these roles, we have some unique roles that we deal with..."

- Monitoring of Community Health Status
- Assessment of Diseases of Public Health Significance
- Early Intervention in the Disease Process
- Assurance of Safe and Disease-free Communities
- Emphasize what your lab does

OPPORTUNITY TO EXPOUND.

Slide 7

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or logo here

The Laboratory Response Network

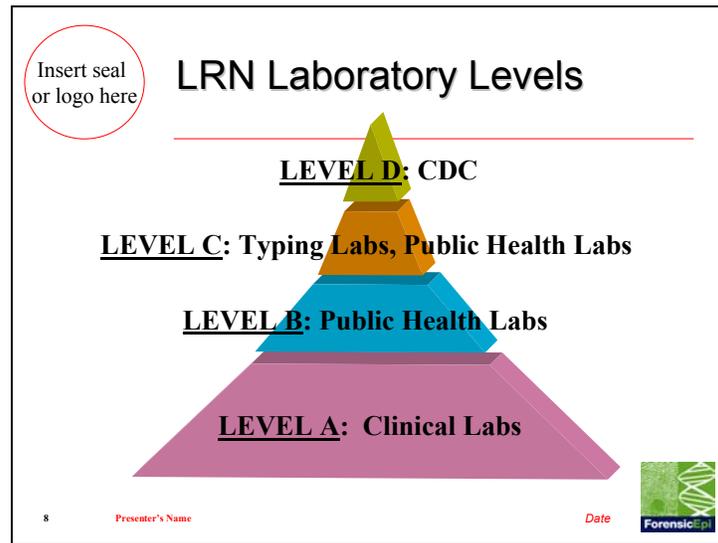
- Network supports response to all kinds of public health emergencies, but especially detection and response to BT
- Includes both public and private labs
- Labs test according to consensus protocols
- Timely and accurate testing and reporting
- Linked with local, state, and federal agencies
- Supported by CDC and FBI

7Presenter's NameDate

NOTES:

- Chemical agents work more quickly than biological agents. Typically, the disease-state is limited by the effects of the initial exposure.
- Chemical agents are frequently handled by HAZMAT.
- There will be a LRN for Chemical Terrorism, also, but not talking about that today.

Slide 8

**NOTES:**

- Other level D labs at the federal level (ex. DoD) exist, but serve as surge capacity/overflow only.
- Keep in mind that if you are clinical lab, a bioterrorist situation may occur involving you, whether or not you are officially part of this network.

Slide 9

Insert seal
or logo here

LRN Safety & Proficiency Adequate to...

Level D Labs - Work at BSL-4	<u>Confirm, Validate and Archive.</u> Perform high level characterization. Probe for universe of agents.
Level C Labs - Work at BSL-3	Rapid identification. <u>Rule-in</u> and <u>Refer</u> .
Level B Labs - BSL-3 Recommended	Perform susceptibility testing. Isolate. Identify. <u>Rule-in</u> and <u>Refer</u> .
Level A Labs - Use BSL-2	Detect early (presumptive cases). <u>Rule-out</u> or <u>Refer</u> .

9
Presenter's Name
Date

NOTES:

- Level A Labs - Enhanced medical lab protocol
- Level B Labs - Work at BSL-2 with BSL-3 Practices
- Level C: Probe, type, identify subspecies, perform toxigenicity testing, etc.

Slide 10

Insert seal
or logo here

Public Health Laboratory(ies) Serving this Community

- Use this slide to describe what public health laboratories serve this community, what agency they are part of, where they are located.
- Describe how LRN works in this community – does this PH lab support other states, or get support from other states?

10Presenter's NameDate

NOTES:

Use this slide to describe what public health laboratories serve this community, what agency they are part of, and where they are located.

Describe how LRN works in this community – does this PH lab support other states or get support from other states?

Slide 11

Insert seal
or logo here

Services Usually Offered by Public Health Laboratories

- Primary analysis of specimens from people in epidemiologic/enzootic investigations
- Primary analysis of specimens from people getting clinical services in health departments
- Referral services for hospital and clinical laboratories to help identify unusual or important organisms
- Regional referral services as part of LRN
- May do breathalyzer and blood alcohol testing under contract
- Screening of newborns for metabolic disorders
- Testing of environmental samples

11Presenter's NameDate

NOTES:

This slide describes services usually offered by the public health laboratory.

Slide 12

Insert seal
or logo here

Services Offered by this Public Health Laboratory

- Use this slide (or two) to briefly list the BT-relevant services your lab can provide.
- Rather than use technical names of tests, describe functions (see notes)

12 Presenter's Name

Date



NOTES:

Examples of how to describe services:

- “We can determine whether a bacteria grown from a skin lesion is anthrax in ___ hours.”
- “We can determine whether a skin lesion is due to smallpox in ___ hours.”
- “We do not have the technology to do X ourselves, but have an agreement with the Y laboratory to do it for us with Z turnaround time.”
- “We can tell if multiple people with an enteric infection like salmonella have the same strain in ___ hours.”
- Or another way to say this is to list the agent and then the testing/time frame. Include the technical name of the test because this does have meaning for many responders. For example:

Anthrax: Presumptive testing (PCR): 4-6 hours
 Confirmatory testing (culture): 24-48 hours

Slide 13

Insert seal
or logo here

Public Health Laboratory Authority and Regulation

- Use this slide to indicate what authority, if any, the state public health laboratory has to require submission of clinical specimens or isolates for confirmation or typing
- Also describe role, if any, of state public health laboratory in licensing of clinical laboratories and in quality assurance testing of these labs.

13Presenter's NameDate

NOTES:

Use this slide to indicate what authority, if any, the state public health laboratory has to require submission of clinical specimens or isolates for confirmation or typing.

Also describe role, if any, of state public health laboratory in licensing of clinical laboratories and in quality assurance testing of these labs.

Slide 14

Insert seal
or logo here

Background and Training of Staff

- Laboratories employ scientists with training as medical technologists and/or as microbiologists at the bachelor's, master's or doctoral level.
- Also employ support staff, managers, data system managers, trainers
- **Use this slide to mention the most highly trained members of your lab's staff and maybe some of their accomplishments. "Dr. So-and-so in our lab is the one who confirmed the anthrax diagnosis in the three patients from our state in late 2001."**

14Presenter's NameDate

NOTES:

Use this slide to talk about the skills and training of your laboratory staff.

Slide 15

Insert seal
or logo here

Clinical Laboratory Testing

- Preliminary testing occurs in physician's office, emergency department or at a lab collection point
- Commercial and hospital labs may make definitive identification of an organism
- For unusual organisms the specimen is sent on to the State PHL
- State PHL may make definitive identification or send to another lab in the LRN or to CDC

15Presenter's NameDate

Slide 16

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or logo here

Lab Record Keeping

- All these labs have careful protocols to document specimens, who they were collected from, status of testing, etc.
- But these do not meet requirements of chain of custody
- Labs need to know for which specimens chain of custody procedures need to be implemented because they may be evidence of a crime

16Presenter's NameDate

Slide 17

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or logo here

Environmental Samples for BT Agents

- Rapid field testing may be done by law enforcement, hazmat or PH workers
- CDC has not yet endorsed any of the rapid field tests for BT agents
- Specimens must always also be tested at Public Health Laboratories for definitive result
- **What environmental tests does this state public health lab perform?**

17Presenter's NameDate

NOTES:

What environmental tests does this state public health lab perform?

Slide 18

Insert seal
or logo here

Environmental Laboratory Testing

- Specimens of water, food, air, dust, swabs, etc
- If obtained in a public health investigation, will usually go to a public health lab (or Agriculture Dept lab) and then into the LRN as needed
- If obtained in a law enforcement investigation, will usually go to forensic laboratory

18Presenter's NameDate

Slide 19

Insert seal
or logo here

Sample Submission

- Use this slide to describe your agency's procedure for obtaining, logging in, and processing specimens taken when a suspicious substance is found
- Describe how you implement chain of custody requirements
- Who makes the decision about sending a specimen to the PH lab for testing? Is the lab itself in the loop on the decision-making?

19Presenter's NameDate

NOTES:

Use this slide to describe your agency's procedure for obtaining, logging in, and processing specimens taken when a suspicious substance is found.

Describe how you implement chain of custody requirements.

Who makes the decision about sending a specimen to the PH lab for testing? Is the lab itself in the loop on the decision-making?

Slide 20

Insert seal
or logo here

Lab Results

- Who gets results on specimens submitted to the public health lab?
- Who is authorized to receive results if they request them?
- How are they sent out? (phone call, written result, e-mail message, fax, file transfer?)

20Presenter's NameDate

NOTES:

This is a hot topic in some communities. You may want to take this opportunity to talk about the steps you are taking to make sure the information gets promptly to those with most need to know – e.g., the people exposed in a particular location, as well as the agency that submitted the specimens from that location.

Slide 21

Insert seal
or logo here

Local Examples

- Examples of white powder hoaxes in this locale in fall of 2001
- Tests performed – pictures of kinds of specimens submitted
- What do you want people to do in this community with unusual objects citizens are concerned about?
- What kind of training do 911 dispatchers have in handling calls from citizens concerned about white powders?

21Presenter's NameDate

NOTES:

- Provide examples of white powder hoaxes in this locale in fall of 2001
- What tests were performed – pictures of kinds of specimens submitted
- What do you want people to do in this community with unusual objects citizens are concerned about?
- What kind of training do 911 dispatchers have in handling calls from citizens concerned about white powders?

Slide 22

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or logo here

How to Reach Us

- Names and phone numbers for key public health laboratory contacts
- Include 24-hour contact number(s)
- Include cell-phone or pager numbers, e-mail addresses as appropriate
- Give web site address for more information

22Presenter's NameDate

NOTES:

List ways to reach the lab.

Slide 23



NOTES:

Name of forensic lab representative goes on this slide (as well as on the title slide). Here you have room to put your phone number, your picture, or other brief contact information.

Slide 24

Insert seal
or logo here

Forensic Labs

- Use this slide to describe which forensic laboratory serves this community – what organization is it part of?
- Describe also what services this laboratory generally provides in criminal investigations
- Describe what services this lab specifically provides that can support BT investigations
- (Use more than one slide if necessary)

24Presenter's NameDate

NOTES:

- Use this slide to describe which forensic laboratory serves this community – what organization is it part of?
- Describe also what services this laboratory generally provides in criminal investigations.
- Describe what services this lab specifically provides that can support BT investigations (Use more than one slide if necessary).

Slide 25

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or logo here

Additional Information about Forensic Labs

- Describe where you get services you need that exceed your capabilities
- How does the forensic laboratory relate to the medical examiner or coroner?
- Who does forensic chemical analysis?
- How do labs associated with different levels of law enforcement agencies relate to each other (e.g. city, state and FBI forensic labs)?

25Presenter's NameDate

NOTES:

- Describe where you get services you need that exceed your capabilities.
- How does the forensic laboratory relate to the medical examiner or coroner?
- Who does forensic chemical analysis?
- How do labs associated with different levels of law enforcement agencies relate to each other (e.g., city, state and FBI forensic labs)?

Slide 26

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or logo here

Forensic Lab Authority and Regulation

- Are health care organizations required to supply certain kinds of materials to forensic laboratories in support of criminal investigations?
- What kinds of deaths become coroner's cases requiring autopsies in this community?
- What kinds of information developed by forensic labs are a matter of public record, if any?
- Other relevant regulations or laws?

26Presenter's NameDate

NOTES:

- Are health care organizations required to supply certain kinds of materials to forensic laboratories in support of criminal investigations?
- What kinds of deaths are coroners' cases in this community, where autopsies are required?
- What kinds of information developed by forensic labs are a matter of public record, if any?
- Other relevant regulations or laws?

Slide 27

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or logo here

Background and Training of Staff

- Describe the training and background of your technicians and scientists.
- What other kinds of workers are employed in a forensic lab?
- Do lab technicians go to crime scenes to collect specimens or is there a separate unit that does this?
- Are forensic laboratory technicians trained and equipped to collect specimens in crime scenes with bacteriologic or toxic risk, or do others collect them?

27Presenter's NameDate

NOTES:

Use this slide to describe the training and background of the technicians and scientists in your forensic lab.

Slide 28

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or logo here

Services Offered by This Forensic Laboratory

Customize this list to your capabilities

- Fingerprinting and maintenance of databases
- Analysis of hair and other human materials
- Microscopic and chemical analysis of fiber, paper and other materials
- DNA testing of human specimens
- Blood types and other tissue testing
- Ballistics
 - Projectile characterization
 - Weapon analysis
 - Explosive debris analysis
- Etc??

28 Presenter's Name Date 

NOTES:

Use this slide to list your capabilities. Please add or remove capabilities as you need.

Slide 29



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or logo here

Sample Submission

- How do forensic laboratory staff obtain their specimens for testing?
- When do they go to a crime scene?
- How would an envelope containing both a threatening letter and a suspicious white powder be handled?
- Process taken when a suspicious substance is found
- Preservation of physical evidence and chain of custody considerations, including standards, in crime lab

29Presenter's NameDate

NOTES:

Envelope containing both a threatening letter and a white powder: in many jurisdictions the forensic laboratory would not want to receive the envelope and letter until the public health laboratory has examined and cultured it and either determined that there are no pathogens present or sterilized it. If the latter, the forensic laboratory may want to be involved to be sure that the features of the letter and envelope that are important for forensic examination are not disturbed.

Slide 30

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or logo here

Lab Results

- Who gets results on specimens submitted to the forensic lab?
- Who is authorized to receive results if they request them?
- How are they sent out? (phone call, written result, e-mail message, fax, file transfer?)

30Presenter's NameDate

NOTES:

- Who gets results on specimens submitted to the forensic lab?
- Who is authorized to receive results if they request them?
- How are they sent out? (phone call, written result, e-mail message, fax, file transfer?)

Slide 31

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or logo here

Chain of Custody

- Describe how your laboratory implements chain of custody.
- What are common errors in specimen collection or handling that make it impossible to use forensic evidence in court?

31Presenter's NameDate

NOTES:

- Describe how your laboratory implements chain of custody.
- What are common errors in specimen collection or handling that make it impossible to use forensic evidence in court?

SLIDE 32

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or logo here

Field Response Protocols

Chain of Custody Issues in the Field and the
Laboratory

- The need for chain of custody
 - “Everything goes to court...”
- Field vs. laboratory chains
 - Lock and Key Requirement
 - Tampering vs. Accidental interference
 - University Laboratory Example...
- The complete chain
 - He who collects, testifies...

32Presenter's NameDate

NOTES:

Use this slide to discuss chain of custody issues in the field and the laboratory. Please list or explain any examples you can think of that will illustrate the importance of chain of custody.

Slide 33

Insert seal
or logo here

Field Response Protocols

Biological Response Kits and Materials
For Field Collection and Screening

- **Overpacking Requirements**
 - Diagnostically Appropriate
 - Legally Appropriate
 - Sterile vs. Certified Clean
- **Field Screening Procedures**
 - Protecting Personnel
 - Protecting Laboratory Equipment and Capability
 - Noting the Results for Lab Personnel



33Presenter's NameDate

Slide 34

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Field Response Protocols

Forensic Laboratory Testing
vs. Diagnostic (Health) Lab Testing

Forensic and Diagnostic Labs have different goals:

- Forensic Lab Testing
 - DNA Strain Comparison
 - Chemical Analysis (Explosives)
 - Blood Evidence
 - Alcohol / Drugs
 - Trace Evidence (Packaging)
 - Fingerprint
 - DNA

34Presenter's NameDate


Forensic

Slide 35

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or logo here

Field Response Protocols

Forensic Laboratory Testing
vs. Diagnostic (Health) Lab Testing

Forensic and Diagnostic Labs have different goals:

- Diagnostic Labs
 - Analysis of blood and other body fluids for diagnostic/treatment purposes
 - Rarely requires chain of custody for handling of specimens (exceptions: drug & blood alcohol, rape kits)

35Presenter's NameDate

Slide 36

Insert seal
or logo here

Local Examples

- Examples of white powder threats or hoaxes in this locale in fall of 2001
- Tests performed – pictures

36Presenter's NameDate

NOTES:

- Examples of white powder threats or hoaxes in this locale in fall of 2001
- Tests performed – pictures

Slide 37

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or logo here

Testifying in Court

- Who testifies on behalf of forensic laboratory?
- What kinds of errors in specimen collection or handling weaken a prosecution?
- How do you prepare for testimony?

37

Presenter's Name

Date



NOTES:

- Who testifies on behalf of forensic laboratory?
- What kinds of errors in specimen collection or handling weaken a prosecution?
- How do you prepare for testimony?

Slide 38

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or logo here

Inter-lab Coordination

- Under what circumstances will crime lab work with / cross over to PH lab for microbiological or chemical analysis?
- What agreements are currently in place, if any, about who processes which kinds of specimens, or how specimens are shared? What agreements are needed, if any?
- How would an envelope containing both a threatening letter and a suspicious white powder be handled?

38Presenter's NameDate

NOTES:

Envelope containing both a threatening letter and a white powder: in many jurisdictions the forensic laboratory would not want to receive the envelope and letter until the public health laboratory has examined and cultured it and either determined that there are no pathogens present or sterilized it. If the latter, the forensic laboratory may want to be involved to be sure that the features of the letter and envelope that are important for forensic examination are not disturbed.

Slide 39

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or logo here

How to Reach Us

- Names and phone numbers for key forensic laboratory contacts
- Include 24-hour contact number(s)
- Include cell-phone or pager numbers, e-mail addresses as appropriate
- Give web site address for more information

39Presenter's NameDate

NOTES:

Use this slide to inform the audience of contact information.

Slide 40

Insert seal or logo here

Questions ?



40 Presenter's Name Date Forensic

The slide features a central photograph of a laboratory technician in a white protective suit and hood, working at a microscope. The word 'Questions' is written in a large, bold font at the top center, followed by a red question mark. A horizontal red line extends from the left side of the word 'Questions' across the slide. There are four question marks of different colors (black, red, green, and black) scattered around the central image. In the top left corner, there is a red circle containing the text 'Insert seal or logo here'. At the bottom left, the number '40' is displayed. At the bottom center, the text 'Presenter's Name' is shown. At the bottom right, the text 'Date' is shown, followed by a small logo for 'Forensic' with a DNA double helix icon.

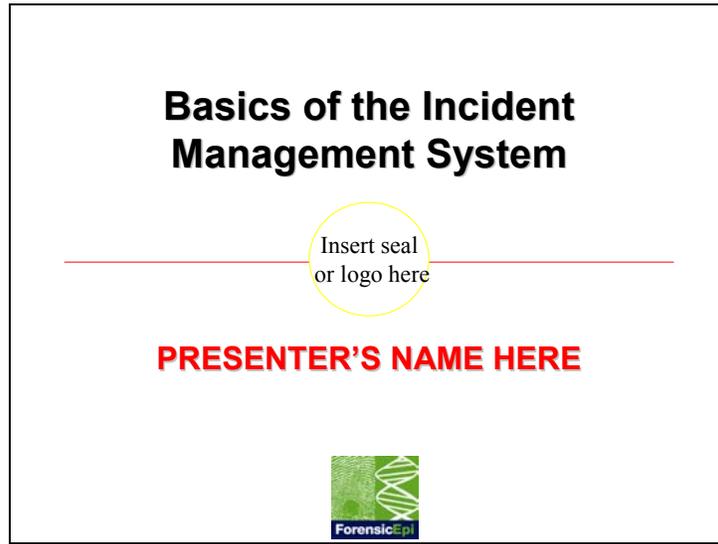
BASICS OF THE INCIDENT MANAGEMENT SYSTEM

Basics of Incident Management Systems

Lecture Outline

- I. Incident Command System
 - A. Application
 - B. Features
 - C. General Organizational Structure
 - D. Detailed Organizational Structure
 - E. Incident Commander
 - F. Command Staff
 - G. General Staff
 - H. Divisions
 - I. Facilities
 - J. Incident Action Plan
 - K. Span of Control
 - L. Responsibilities
- II. Unified Command System Structure
- III. Joint Information Center
- IV. Joint Operations Center
- V. Joint Terrorism Task Force

Slide 1

**NOTES:**

- This set of slides is **intended as a template** for an experienced emergency management officer to speak from in the Forensic Epidemiology course.
- The **audience** will consist of a mixture of public health, law enforcement, fire, and other first responder professionals who will not be familiar with most criminal investigation terminology or jargon. They need to know what your agency can do for them in an investigation of a bioterrorism or similar event, and how to access those services.
- As a template, these slides are **designed to be customized** to be correct for the jurisdiction(s) where the course is being held. You should go through and, as far as possible, answer the questions posed in the bullets, or customize them to local practices and organizations.
- Feel free to **create more slides**, if you need to, to cover the issues in the templates. Also feel free to add additional topics as needed for local use.
 - Experience has shown, however, that people without an emergency management background will benefit greatly by hearing from you about the **topics outlined on this template**.

Slide 1 Notes continued:

- You may leave the slides as they are, to prompt you to say the right things about these issues, but we strongly recommend that you **customize them**. The participants in the course should have a copy of your slides in their notebooks, and you will want to be sure that they take home the right information with them.
- Note that this presentation should last approximately **30 minutes**, including a time for questions and answers. As a result, it may be necessary to remove some of the topics covered. This should be done at the discretion of the local planning committee and the presenter.
- **Add** your own name as the presenter and your own subtitle if you like. Text that is designed to be replaced or edited is colored in RED. Other material should be edited or customized as needed.
- A space is provided in each slide for your organization's **seal or logo**. In order to access the area in which the logo will reside, you must go to the slide master.
 - To do this go to the View menu, then select Master, Slide Master.
 - Replace the "Insert seal or logo here" generic logo on the slide master with the appropriate logo for your jurisdiction's emergency management department. This will replace the logo on all but the title slide.
 - To change the logo on the title slide, go to the View menu, and then select Master, Title Master.
 - Replace the "Insert seal or logo here" generic logo on the title master with the appropriate logo for your jurisdiction's emergency management department.
- Make sure all the **text is legible** (e.g., white on blue background, not red on blue) when slides are complete.
 - To change the color of the text, highlight the text that needs to be changed, go to the Format menu, then Font, and then change the color to white.

Slide 1 Notes continued:

- Currently, the date is located in the footer.
 - To **change the date** from the generic “Date” to the date of the presentation, go to the View menu, and then select Header and Footer.
 - Under footer, replace “Date” with the appropriate date, and then select Apply to All.

- To **change the presenter’s name** and change the color of the text in the footer you must go to the slide master.
 - To do this, go to the View menu, and then select Master, Slide Master.
 - Highlight the generic “Presenter’s name”, change it to reflect the name of the presenter, then go to the Format menu, select Font and change the color to white.
 - Highlight *<footer>*, go to the Format menu, select Font and change the color to white.

Slide 2

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Goals of This Lecture

- Learn basic concepts of Incident Command / Unified Command System organization
- Understand ICS terminology
- Discuss the implementation of ICS/UCS during a bioterrorism incident

2Presenter's NameDate

NOTES:

The intended audience for this presentation is a mixed group of law enforcement, public health, and perhaps other public safety professionals who want to learn how to work together in investigating disease outbreaks that are or may also be crimes – bioterrorist events or other deliberately-caused outbreaks.

Slide 3

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or logo here

Incident Command System (ICS)

- Model tool for the command, control, and coordination of resources
- May be used for both emergent and non-emergent incidents
- Management tool consisting of procedures for organizing personnel, facilities, equipment, and communications at the scene of an emergency
- Has a flexible design that allows for many jurisdictions and many agencies

3Presenter's NameDate

Slide 4

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or logo here

Application

- Can be used for any incident:
 - Emergent: fire, HAZMAT, act of terrorism, natural disaster
 - Non-emergent: parade, sporting event, political rally
- Can be used for small and large events
- Flexible: Can expand and contract with evolution of the event

4Presenter's NameDate

Slide 5

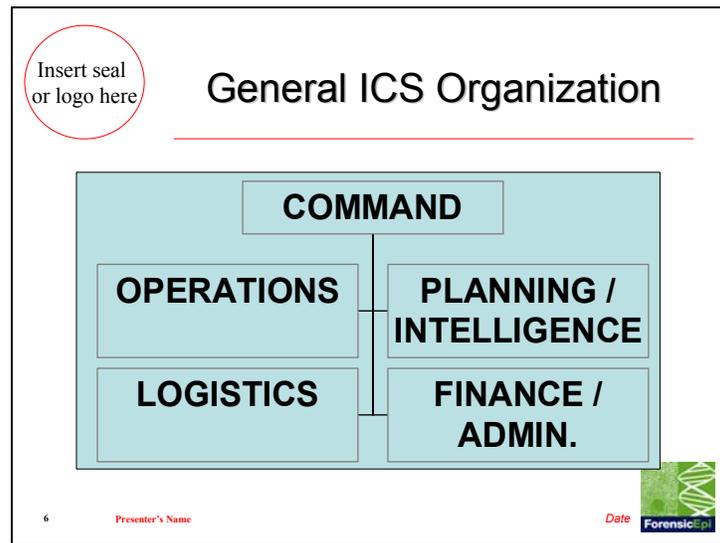
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ICS Features

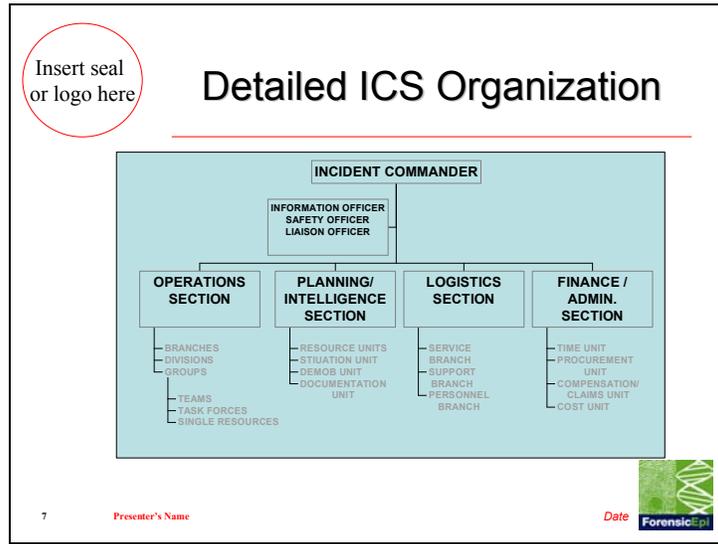
- ICS organization
- Incident facilities
- Incident action plan
- Span of control
- Common responsibilities

5Presenter's NameDate

Slide 6



Slide 7



Slide 8

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or logo here

Incident Commander

- In charge at the incident
- Assigned by responsible jurisdiction or agency
- May have one or more deputy incident commanders
- May assign personnel for command staff & general staff
 - Command staff includes Liaison Officer, Safety Officer, and Information Officer

8Presenter's NameDate

Slide 9

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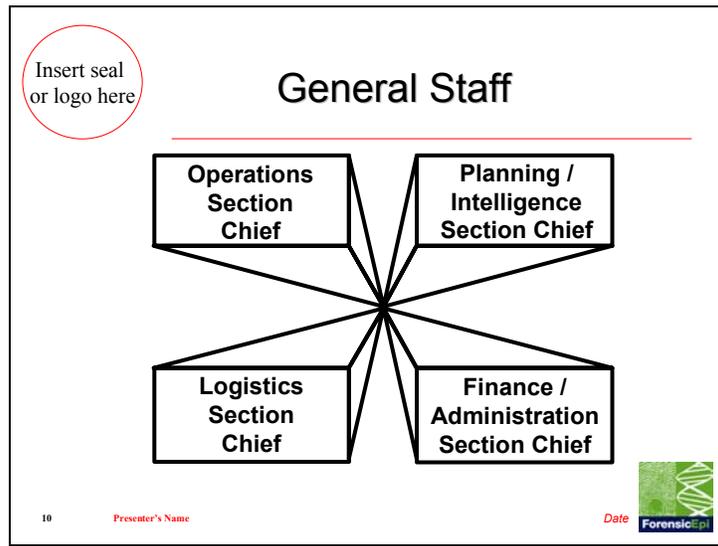
The Command Staff



Information Officer **Safety Officer** **Liaison Officer**

9 Presenter's Name Date ForensicEpi

Slide 10



Slide 11

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or logo here

Operations Section Chief

- Develop & manage the operations section
- Accomplish the incident objectives
- Only one person assigned to this role

11Presenter's NameDate

Slide 12

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or logo here

Planning Section Chief

- Collection, evaluation, dissemination, and use of information about the development of the incident and the status of resources
- Responsible for creating action plan

12 Presenter's Name Date 

Slide 13

Insert seal
or logo here

Logistics Section Chief

- Provides all support needs
- Orders all resources from off-incident locations
- Responsible to acquire
 - Facilities
 - Services
 - Personnel
 - Equipment
 - Materials

13Presenter's NameDate

Slide 14

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or logo here

Finance Section Chief

- Responsible for tracking all incident costs and evaluating the financial considerations of the incident
 - Time units
 - Procurement unit
 - Compensation/claims unit
 - Cost unit

14Presenter's NameDate

Slide 15

Insert seal or logo here

Divisions

Divide An Incident Geographically

15 Presenter's Name Date ForensicEpi

Slide 16

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Groups

- **Pool specialized resource teams**
- **Establish functional areas of operation**

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graph TD; OSC[OPERATIONS SECTION CHIEF] --- MG[MEDICAL GROUP]; OSC --- SG[SEARCH GROUP]; OSC --- SecG[SECURITY GROUP];
```

16 Presenter's Name Date 

Slide 17

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Branches

Maintain Span of Control of Groups and Divisions

There Are Two Types Of Branches

Geographic Branches

```
graph TD; OSC[OPERATIONS SECTION CHIEF] --> B1[BRANCH]; OSC --> B2[BRANCH 2]; B1 --> DA[DIVISION A]; B1 --> DB[DIVISION B]; B2 --> D1[ ]; B2 --> D2[ ]
```

Functional Branches

```
graph TD; OSC[OPERATIONS SECTION CHIEF] --> M[MEDICAL]; OSC --> S[SEARCH]; OSC --> SEC[SECURITY]
```

17 Presenter's Name Date Forensic

Slide 18

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Incident Facilities

- Incident command post
- Staging areas

18Presenter's NameDate

Slide 19

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Incident Action Plan

- Can be oral or written
- Includes measurable tactical objectives
- List of activated organizational elements
- Assignments to accomplish the objectives
- Supporting information
- Inform all incident supervisory personnel

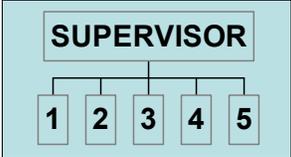
19Presenter's NameDate

Slide 20

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or logo here

Span of Control

- Adequate span of control is very important
- Optimum span of control is one to five



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20 Presenter's Name Date 

Slide 21

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Common Responsibilities for All Incident Personnel

- Receive assignment from your agency
- Bring any specialized supplies or equipment
- Follow check-in procedures
- Obtain a briefing upon arrival

21Presenter's NameDate 

Slide 22

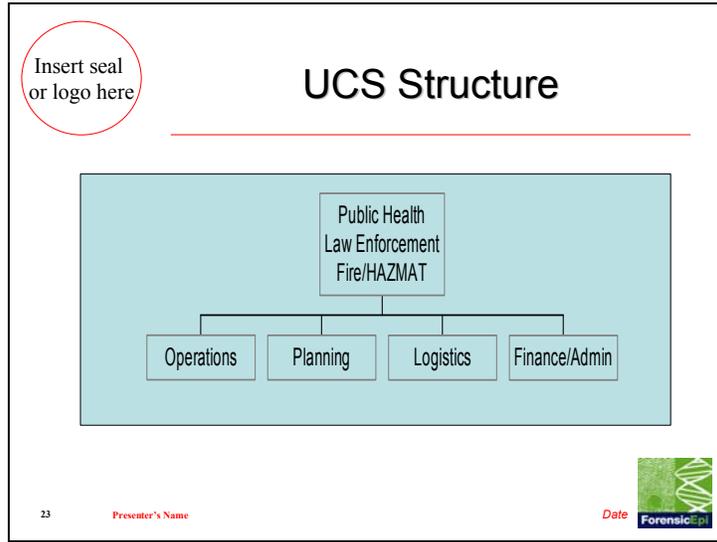
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Unified Command System (UCS)

- Multi-jurisdictional and/or multi-agency responses
- Multi-agency command post established integrating the various agencies/jurisdictions
- UCS provides the structure for the federal, state and local on-scene coordinators to work effectively and efficiently during a response

22Presenter's NameDate

Slide 23



Slide 24

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Joint Information Center (JIC)

- Established by the lead federal agency as a focal point for the coordination and provision of information to the public and media concerning the Federal response to the emergency
- It may be established in the same location as the Joint Operations Center (JOC) or located at an on-scene location in coordination with State and local agencies
- In a bioterrorism event: coordinate info from LE & PH to speak with one voice

24Presenter's NameDate

Slide 25

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Joint Information Center (JIC)

- The following elements should be represented at the JIC:
 - FBI Public Information Officer and staff
 - FEMA Public Information Officer and staff
 - Other Federal agency Public Information Officer and staff
 - State and local Public Information Officers
 - In a bioterrorism event: CDC / Local PH PIOs coordinate with LE and other agencies

25Presenter's NameDate

Slide 26

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Joint Operations Center (JOC)

- The organizational structure to implement the Federal response at the field level during a terrorist incident
- Established by the FBI under the operational control of the Federal on-scene commander
- Established to ensure inter-incident coordination and the organize multiple agencies and jurisdictions within an overall command and coordination structure

26Presenter's NameDate

Slide 27

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Joint Operations Center (JOC)

- Acts as the focal point for the strategic management and direction of on-site activities, identification of State and local requirements and priorities, and coordination of the Federal response
- Local FBI field office will activate a Crisis Management Team to establish the JOC

27 Presenter's Name Date 

Slide 28

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Joint Operations Center (JOC)

- Includes the following functional groups:
 - Command
 - Operations
 - Admin/Logistics
 - Consequence Management
- Representation within the JOC includes officials from local, state, and Federal agencies with specific roles in crisis and consequence management
- In a bioterrorism event: PH would have a significant role, coordinating with FBI and other response agencies

28Presenter's NameDate

Slide 29

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Joint Terrorism Task Force (JTTF)

- Brings together Federal as well as State and local law enforcement officers into a task force environment for the purposes of combating terrorism
- These agents and officers complement each other by bringing together special skills and knowledge about local violations to better target terrorism

29Presenter's NameDate

Slide 30

Questions?

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The slide content is enclosed in a black rectangular border. At the top center, the word "Questions?" is written in a bold, black, sans-serif font. Below this, a horizontal red line spans across the slide. In the center of this line is a yellow circle containing the text "Insert seal or logo here". At the bottom center of the slide, there is a small logo for "ForensicEpi", which features a green DNA double helix on a green background with the text "ForensicEpi" in white on a blue rectangular base.

OPTIONAL COURSE ASSESSMENTS

PRE-COURSE ASSESSMENT

Notebook Number _____

1. Epidemiology is ...
 - A. The study of measures and interventions to treat disease
 - B. The study of the distribution, determinants, and frequency of disease
 - C. The collection, analysis, and dissemination of information
 - D. A and B

2. How do you define a case?

3. What is an outbreak and how is one detected?

4. What is the Laboratory Response Network and how many levels does it have?

5. Briefly describe the Incident Command System

6. What is chain of custody?

- 7. List one similarity and one difference in public health and law enforcement investigative goals and methods

Similarity:

Difference:

- 8. Define JTTF

- 9. Of the following answers, which are goals of Public Health, which are goals of Law Enforcement, and which are common goals?

- A. To protect the public
- B. To identify, apprehend, and prosecute the perpetrators
- C. To prevent or stop the spread of disease
- D. To prevent a criminal act
- E. To identify those responsible for a threat or an attack
- F. To protect their respective employees during their response and investigations

Goals of Public Health: _____

Goals of Law Enforcement: _____

Common goals: _____

- 10. What do you think is the purpose of this course?



POST-COURSE ASSESSMENT

Notebook Number _____

1. Epidemiology is ...
 - A. The study of measures and interventions to treat disease
 - B. The study of the distribution, determinants, and frequency of disease
 - C. The collection, analysis, and dissemination of information
 - D. A and B

2. How do you define a case?

3. What is an outbreak and how is one detected?

4. What is the Laboratory Response Network and how many levels does it have?

5. Briefly describe the Incident Command System

6. What is chain of custody?

7. List one similarity and one difference in public health and law enforcement investigative goals and methods

Similarity:

Difference:

8. Define JTTF

9. Of the following answers, which are goals of Public Health, which are goals of Law Enforcement, and which are common goals?

- To protect the public
- To identify, apprehend, and prosecute the perpetrators
- To prevent or stop the spread of disease
- To prevent a criminal act
- To identify those responsible for a threat or an attack
- To protect their respective employees during their response and investigations

Goals of Public Health: _____

Goals of Law Enforcement: _____

Common goals: _____

10. What did you learn from this course?

FORENSIC EPIDEMIOLOGY

Dates
Location

COURSE EVALUATION

Notebook Number _____

Lectures

1. Was the “*Criminal Investigation for Public Health Professionals*” presentation useful?

How could it be improved? _____

What would you add to the presentation? _____

What would you remove from the presentation? _____

2. Was the “*Public Health Epidemiology for Law Enforcement*” presentation useful?

How could it be improved? _____

What would you add to the presentation? _____

What would you remove from the presentation? _____



3. Was the “*Role of the Laboratory – Public Health and Forensic*” presentation useful?

How could it be improved? _____

What would you add to the presentation? _____

What would you remove from the presentation? _____

Group Exercises

What did you like most/least about the small groups?

Most: _____

Least: _____

In your opinion, which group size was the most successful? _____

Any additional comments/suggestions? _____

Case Scenarios

Overall, were the case scenarios informative? _____

Comments for Case Study I: _____

Comments for Case Study II: _____

Comments for Case Study III: _____

Appendices

1. Did you find the Criminal and Epidemiologic Investigation Handbook informative?

Would you recommend including it in additional course pilots? _____

2. Did you find the White Powder Protocol informative?

Would you recommend including it in additional course pilots? _____

3. Did you find the additional reference material informative?

Would you recommend including it in additional course pilots? _____

Assessments

Did you find the pre and post course assessments useful?

Would you recommend including them in additional course pilots? _____

How could they be improved? _____

What would you add to them? _____

What would you remove from them? _____

General

What was the most useful part of this course?

What was the least useful part of this course?

What three things would you change about the course before it is offered to other communities in your area?

- 1.
- 2.
- 3.

What will you do differently in the next week as a result of the training? In the next three months?

What do you think other agencies will do differently in the next 3 months?

Were the right people at the training? If not, who was missing?

SUPPLEMENTAL REFERENCE MATERIAL

GENERAL

Supplemental reference material has been included in this guide. Examples of appropriate reference material include:

- Chain of custody forms (police and laboratory)
- Sample algorithms for handling white powder incidents
- List of useful documents that can be found on the Internet
- Articles about law enforcement and public health joint collaboration
- Relevant articles upon which the case studies are based
- FBI Criminal and Epidemiological Investigation Handbook

The chain of custody forms on the following pages are generic. Your jurisdiction should have customized chain of custody forms available for the course. Chain of custody forms are not available on the accompanying CD because forms included in your course should be specific to your jurisdiction.

A sample white powder protocol, specific to Florida, has been included. Your jurisdiction may have a pre-existing protocol for dealing with white powder incidents. A copy of this white powder protocol is not available on the accompanying CD because any protocols included in your course should be specific to your jurisdiction.

A list of useful resources that can be found online is included in this guide. This list includes planning guidances, reports, and decision trees that can be useful when discussing bioterrorism preparedness.

Three relevant articles are also included in this notebook and on the accompanying CD. The first and second discuss law enforcement and public health joint collaboration. The third provides greater detail for the third case study.

The last supplemental material included in the guide is the FBI Criminal and Epidemiological Investigation Handbook. This handbook is extremely useful when discussing bioterrorism preparedness. It provides background on public health, law enforcement, and joint operations.

SAMPLE CHAIN OF CUSTODY FORM – LABORATORY (continued)

**LABORATORY RESPONSE NETWORK
CHAIN OF CUSTODY**

Case ID: _____

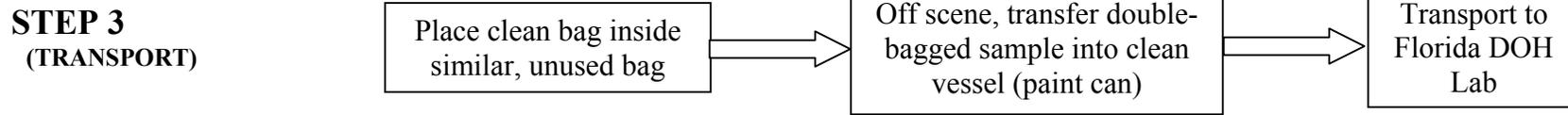
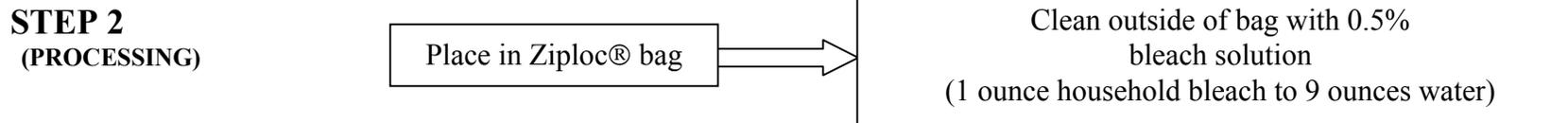
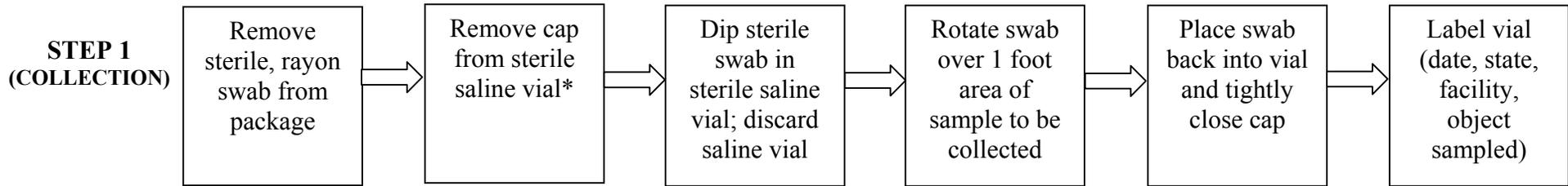
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Refer to Guidance for Proper Use of Chain of Custody Forms. Attach additional pages as required.

LRN Form: 0002



SAMPLE ALGORITHMS FOR HANDLING WHITE POWDER INCIDENTS



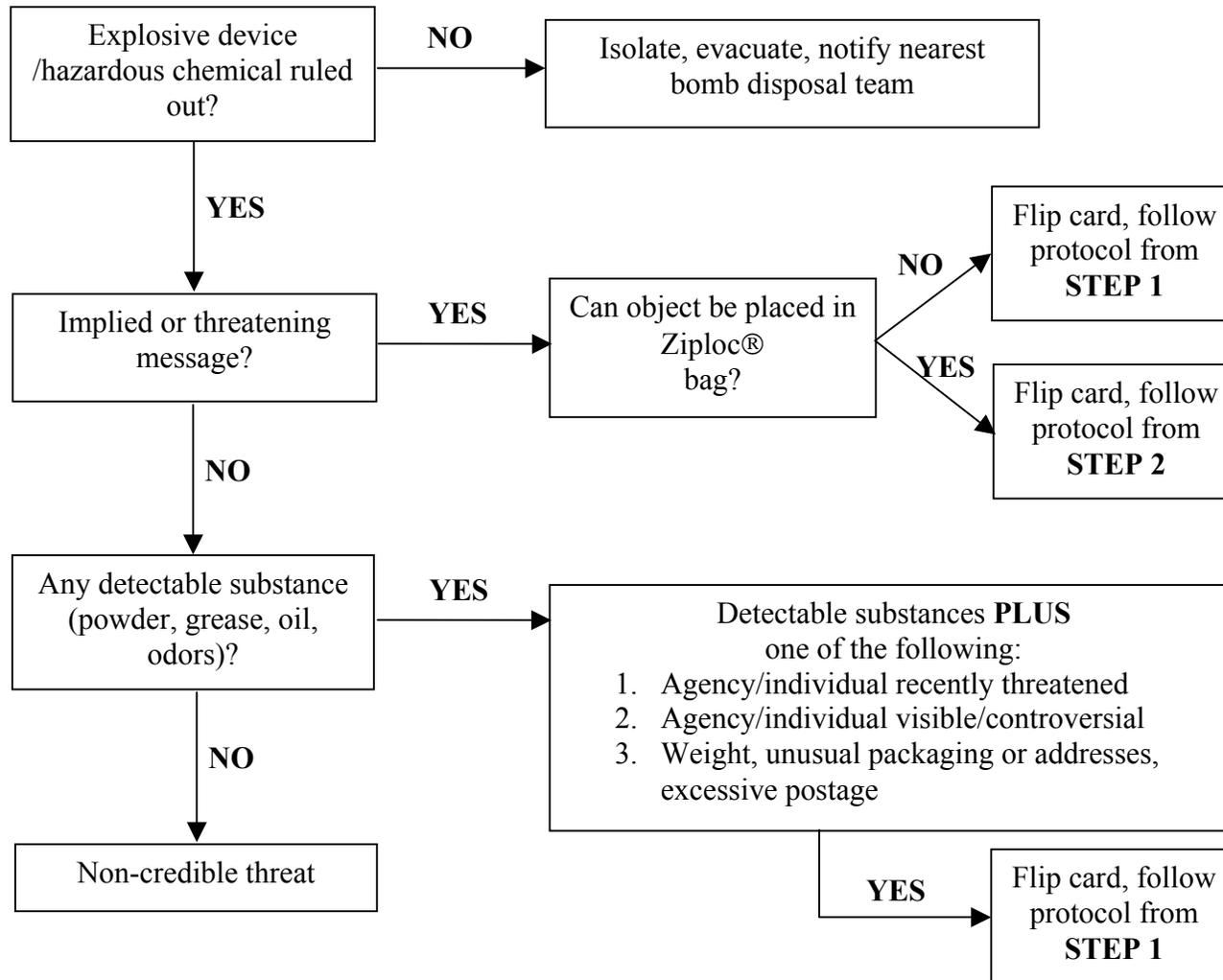
LAW ENFORCEMENT SENSITIVE

Developed by the USF Center for Biological Defense in conjunction with the Florida Department of Law Enforcement, the Tampa Police Department Bomb Squad, and the Florida Department of Health

*Use dry, sterile rayon swab if sterile saline is not available for wet sampling



Biological Agent Threat Assessment



©USF Center for Biological Defense
mwr Jun14/02 1K



LIST OF USEFUL DOCUMENTS THAT CAN BE FOUND ON THE WEB

- The general link for all of the Improved Military Response Program Products is:
<http://hld.sbcom.army.mil/ip/reports.htm#mirp>
- Biological Weapons Improved Response Program (BW IRP)
Updated BW Response Decision Tree and BW Response Template, May 2001
http://hld.sbcom.army.mil/downloads/bwirp/bwirp_updated_decision_tree_report.pdf
- Community Outreach / Mass Prophylaxis Pamphlet: A Mass Casualty Care Strategy for Biological Terrorism Incidents (June 2002)
http://hld.sbcom.army.mil/downloads/reports/comp_mass_casualty_care.pdf
- Executive Summary of Biological Warfare Improved Response Program U.S. Department of Agriculture and Department of Defense (USDA/DoD) Workshop (August 1999)
http://hld.sbcom.army.mil/downloads/bwirp/bwirp_usda_dod_workshop_executive_summary.pdf
- Interim Planning Guide: Improving Local and State Agency Response to Terrorist Incidents Involving Biological Weapons - Interim Planning Guide (September 2000)
http://hld.sbcom.army.mil/downloads/bwirp/bwirp_interim_planning_guide.pdf
- NPDO/DoD Criminal and Epidemiological Investigation Report (January 2000)
http://hld.sbcom.army.mil/downloads/bwirp/bwirp_npdo_dod_ceir.pdf
- Biological Weapons Improved Response Program (BW IRP) Response Decision Tree Workshop
http://hld.sbcom.army.mil/downloads/bwirp/bwirp_decision_tree_report.pdf

ARTICLES

- Collaboration between Public Health and Law Enforcement: New Paradigms and Partnerships for Bioterrorism Planning and Response, J.C. Butler
- Biological Terrorism: SBCCOM Joins with the Pinellas, R.S. Stiner and M.A. Mughal
- A Large Community Outbreak of Salmonellosis Caused by Intentional Contamination of Restaurant Salad Bars, T.J. Torok, R.V. Tauxe, R.P. Wise, et al.

CRIMINAL AND EPIDEMIOLOGICAL INVESTIGATION HANDBOOK

LIST OF ACRONYMS

LIST OF ACRONYMS

APHL	Association of Public Health Laboratories
BT	Bioterrorism
DoD	Department of Defense
CD	compact disk
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CSTE	Council for State and Territorial Epidemiologists
DHHS	Department of Health and Human Services
DNA	deoxyribonucleic acid
EMS	emergency medical services
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
HAZMAT	hazardous materials
HMRU	Hazardous Materials Response Unit
HMRT	Hazardous Materials Response Team
ICS	Incident Command System
JIC	Joint Information Center
JOC	Joint Operations Center
JTTF	Joint Terrorism Task Force
LE	law enforcement
LHD	local health department
LRN	Laboratory Response Network
PH	public health
PHL	Public Health Laboratory
PIO	public information officer
POC	point of contact
PPE	personal protective equipment
TEW	Terrorism Early Warning Group
UCS	Unified Command System
WMD	weapons of mass destruction
WMDOU	Weapons of Mass Destruction Operations Unit