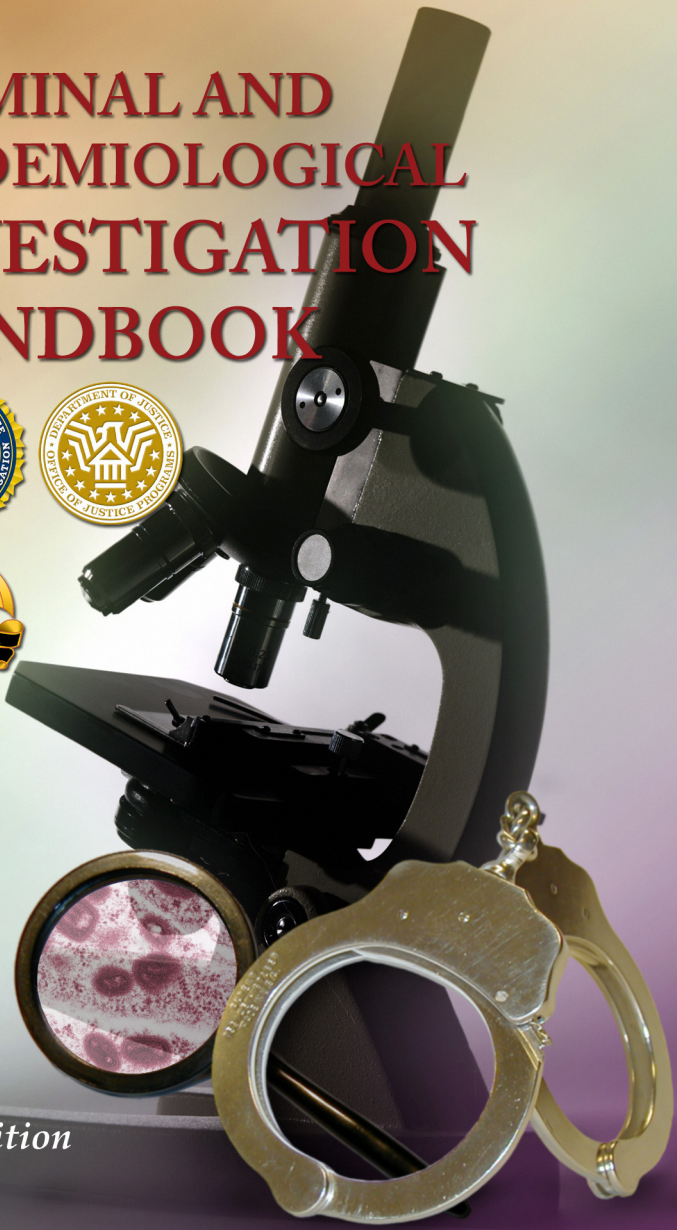
CRIMINAL AND EPIDEMIOLOGICAL INVESTIGATION HANDBOOK



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INTRODUCTION

I. INTRODUCTION

RECENT EVENTS HAVE SHOWN THAT AMERICA IS NOT IMMUNE TO ACTS OF TERRORISM INTENDED TO INFLICT DEATH, INJURY, AND FEAR ON OUR CITIZENS AND GOVERNMENT OFFICIALS. Current information indicates that, regardless of location, American assets and citizens will continue to be targets of terrorist activities. Terrorists have demonstrated their willingness to employ non-traditional weapons to achieve their ends. One such class of non-traditional weapons is biological agents. Biological agents pose new challenges to both law enforcement and public health officials in their efforts to minimize the effects of a biological attack and apprehend those responsible for the attack. In the past, it was not uncommon for law enforcement and public health officials to conduct separate and independent investigations. However, a biological attack requires a high level of cooperation between these two disciplines to achieve their respective objectives of identifying the biological agent, preventing the spread of the disease, preventing public panic, and apprehending those responsible. The lack of mutual awareness and understanding, as well as the absence of established communication procedures, could hinder the effectiveness of law enforcement's and public health's separate, but often overlapping, investigations. Due to the continued likelihood of biological attacks, the effective use of all resources during a biological incident will be critical to ensure an efficient and appropriate response.

PURPOSE

The purpose of this handbook is as follows:

- To provide an introduction to epidemiological and criminal terrorist investigations so public health and law enforcement personnel have a better understanding of each other's information requirements and investigative procedures.

- To identify potential conflicts law enforcement and public health personnel will encounter during their respective biological incident investigations and to provide potential solutions that can be adapted to meet the needs of the various jurisdictions and agencies throughout the United States.

- To enhance the appreciation and understanding of each discipline's expertise by all parties.

This handbook has been developed to maximize resources and facilitate communication and interaction among law enforcement and public health officials. Additionally, it seeks to foster a greater understanding among law enforcement and public health personnel in an effort to minimize potential barriers to communication and information sharing during an actual biological event.

Law enforcement and public health officials are encouraged to read the entire handbook and not limit their review to just their respective sections. This is critical because law enforcement and public health communities have two common concerns:

1. Early identification of the criminal event or public health emergency, and

2. The time sensitivity associated with obtaining information.

Even with common concerns, each group may be hesitant to provide specific types of information to the other because of actual or perceived information-sharing limitations. Identifying and resolving the potential barriers to a free flow of information in advance will facilitate the timely exchange of critical information when dealing with an actual event.

Prior to the development of this handbook, a group of experts from the law enforcement and public health disciplines was assembled to participate in a workshop to identify and discuss actual and perceived barriers to a free flow of information between the two communities. The working group identified ways to reduce barriers with a view toward improving communication among public health and law enforcement investigators.

POTENTIAL BARRIERS

Public Health Barriers

During the public health and law enforcement workshop, the participants identified two principal barriers to sharing patient information. The first potential barrier is that the public health community is concerned it will be held legally liable for the release of patient information without consent. Some legal issues associated with confidentiality issues are listed below.

- Public health officials will normally obtain patient information from medical practitioners. The issue of whether or not this information is confidential and legally "privileged" must be reconciled.

- Public health officials may take clinical samples from patients to identify the magnitude of the affected population. Law enforcement officials may want to have access to these clinical sample results as part of a criminal investigation. A review of the applicable state and federal statutes should be conducted to determine the actual limitations and the exceptions that may exist. The process for allowing this information to be shared with law enforcement should be researched and a procedure developed to comply with the legal requirements to share the information. The procedures may range from merely establishing that certain conditions exist which permit disclosure of the information to requiring a court order. In some jurisdictions, the public health officials take the position that the isolates (a chemical substance or microorganism in an uncombined or pure state) belong to the state and, therefore, there is no legitimate expectation of privacy or privilege.

- Law enforcement officials might want to obtain specific information from health records at hospitals, Health Maintenance Organizations (HMOs), or the Centers for Medicare and Medicaid Services. A determination should be made whether state or

federal privacy statutes prevent the disclosure of this information without a court order.

- Law enforcement officials might wish to obtain patient information from individual health care providers. A determination should be made about what information can be provided without subjecting the health care provider to professional or personal liability. It should be determined what circumstances necessitate a court order for release of the required information.

A second potential barrier to the exchange of patient information is based on issues of ethics and trust. Patients provide detailed information to the medical community with the tacit understanding that physicians and public health professionals will retain that information in confidence. The public health community has expressed concern that providing confidential patient information to the law enforcement community, regardless of reason or intent, may jeopardize their future ability to obtain data that is critical to identify and control diseases of any type. Additionally, protecting the confidentiality of information is one of the elements of the code of conduct for medical and public health professionals.

The "doctor-patient" privilege is a statutory privilege and varies from state to state. It is the privilege of the patient, not the physician, to assert that privilege. In general, the three elements listed below must be present for the privilege to exist.

- The information must be given with the expectation that it will not be disclosed and must be given in the usual context of a professional relationship.

- The purpose of the professional relationship is to maintain confidentiality.

- The possible injury to the professional relationship from the disclosure must be greater than the expected benefit to justice or the public in obtaining the information.

Disclosure of patient information in response to a subpoena will insulate physicians, hospitals, and public health officials from legal liability for the disclosure.

Law Enforcement Barriers

The law enforcement community also has two primary concerns regarding the exchange of investigative information. First, they may be reluctant to provide information that may jeopardize the safety of confidential informants or the security of classified sources. Information that law enforcement personnel obtain from informants is frequently so sensitive that, if the information were exposed, the suspects would be able to determine exactly who had provided the information to law enforcement officials. As a result, the more people who have access to the sensitive information, the greater the possibility that the information source will be exposed. While not discounting the need for closely held, informant-provided information, public health officials would like to receive an alert from law enforcement that a heightened awareness needs to be in effect. This alert may or may not require the disclosure of sensitive information but, nevertheless, it would allow public health officials to be on the lookout for unusual or unexplained illnesses, and to monitor what may otherwise initially be overlooked as a signal that there has been a biological release.

Second, the law enforcement community is concerned that the suspects may avoid detection as a result of the exchange of sensitive information. For example, should law enforcement personnel inform the public health community to look for a specific individual or group, the number of individuals who know the specifics of the case will obviously increase. As in any investigation, the more people who have access to sensitive information, the more opportunities exist for inadvertent disclosure of the information. As a result, there is a greater opportunity for the sensitive information to inadvertently leak back to the suspected perpetrators, thus giving them the advanced warning needed to facilitate the destruction of evidence and to possibly avoid detection.

Media Issues

While not intentional, the media may hinder the investigation by releasing information that may cause public panic or compromise law enforcement sources. Public health officials and law enforcement officials need to develop a working relationship with the media to help ensure timely and useful information is shared with the media to keep the public accurately informed but not overly alarmed. This can be accomplished by issuing public announcements. It is paramount that public health officials and law enforcement authorities coordinate their media information and have one lead spokesperson (from either agency) to deal with the media. The designated lead spokesperson will help to ensure the accuracy of the information being disseminated to the public; based upon the expertise of the lead spokesperson to answer technical questions specific to either medical or law enforcement issues, the lead spokesperson may also help avoid the release of sensitive information. With the public fear and the psychological impact of a biological attack, the media will aggressively seek information from the investigators. Establishing a Joint Information Center (JIC) with a lead spokesperson

will aid both the public health and law enforcement officials in dealing with the media and providing timely and accurate information.

RESPONDING TO A BIOLOGICAL ATTACK

The response to a biological attack involves federal law enforcement agencies, federal public health agencies, and other federal, state, and local agencies. In an effort to define the roles and responsibilities of the federal agencies involved in the response to terrorism incidents, two Presidential Decision Directives (PDD), PDD 39 and PDD 62, were issued.

Presidential Decision Directive 39

In June 1995, PDD 39 (the United States Policy on Counter-Terrorism) was issued. This Presidential Directive, built upon previous directives for combating terrorism, further elaborated a strategy, an interagency coordination mechanism, and a management structure to be undertaken by the federal government to combat both domestic and international terrorism in all its forms. This authority includes implementing measures to reduce our vulnerabilities, deterring terrorism through a clear public position, responding rapidly and effectively to threats or actual terrorist acts, and managing the consequences of terrorist incidents involving weapons of mass destruction (WMD). While PDD 39 discusses additional federal roles and responsibilities, it directs that the FBI has lead responsibility for the operational response to a terrorist threat or incident, which includes biological attacks. Within this role, the FBI functions as the on-scene manager for the U.S. Government. PDD 39 also identifies the Federal Emergency Management Agency (FEMA) as the lead agency to provide federal consequence management response and support to state and local governments affected by a terrorist incident.

Presidential Decision Directive 62

In May 1998, PDD 62 was issued. PDD 62 reaffirms the policy in PDD 39 and details a systematic approach to fighting terrorism by applying a program management approach to U.S. counter-terrorism efforts. PDD 62 established the office of the National Coordinator for Security, Infrastructure Protection, and Counter-Terrorism, which was charged with the responsibility to oversee a broad variety of relevant policies and programs, including areas such as counter-terrorism, protection of critical infrastructure, preparedness, and consequence management for weapons of mass destruction (WMD).

Since the issuance of PDD 39 and 62, a Concept of Operations Plan (CONPLAN) was developed and agreed to by the various federal agencies involved in the response to terrorism incidents. The CONPLAN provides overall guidance to federal, state, and local agencies concerning how the federal government will respond to potential or actual terrorist threats or incidents that occur in the United States, particularly incidents involving WMD. The CONPLAN outlines an organized and unified capability for a timely and coordinated response by federal agencies to a terrorist threat or act. It establishes conceptual guidance to assess and monitor an emerging threat; to notify appropriate federal, state, and local agencies of the nature of the threat; and to deploy the requisite advisory and technical resources to assist the Lead Federal Agency (LFA) in facilitating interagency/interdepartmental coordination of a crisis and consequence management response. Lastly, it defines the relationships between structures under which the federal government will marshal crisis and consequence management resources to respond to a threatened or actual terrorist incident.

The response to a biological incident is executed under two broad responsibilities: crisis management and consequence management.

Crisis Management

Crisis management is predominantly a law enforcement function and includes measures to identify, acquire, and plan for the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism. During a terrorist incident, a crisis management response may include traditional law enforcement missions such as intelligence, surveillance, tactical operations, negotiations, forensics, and investigations, as well as technical support missions such as agent identification, search, render safe procedures, transfer and disposal, and limited decontamination. In addition to the traditional law enforcement missions, crisis management also includes assurance of public safety and health.

The laws of the United States assign primary authority to the federal government to prevent and respond to potential or actual acts of terrorism. Based on the situation at the time, a federal crisis management response may be supported by technical operations and by consequence management activities that would operate concurrently.

Consequence Management

Consequence management is predominantly an emergency management function and includes measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism. In an actual or potential terrorist incident, the Federal Emergency Management Agency (FEMA), using structures and resources of the Federal Response Plan (FRP), will manage a consequence management response. These efforts will include support missions as described in other federal operations plans such as predictive modeling, protective action recommendations (PAR), and mass decontamination.

The laws of the United States assign primary authority to the state and local governments to respond to the consequences of terrorism; the federal government provides assistance as required. Those involved in the response to a biological threat or attack should be familiar with the CONPLAN.

Lead Federal Agency Designation (LFA)

As mandated by the authorities referenced above, the operational response to a terrorist threat will employ a coordinated interagency process organized through a LFA concept. PDD-39 reaffirms and elaborates on the U.S. Government's policy on counter-terrorism and expands the roles, responsibilities, and management structure to combat terrorism. Lead federal agency responsibility is assigned to the Department of Justice and is delegated to the FBI for threats or acts of terrorism that take place in the United States or in international waters that do not involve the flag vessel of a foreign country. Within this role, the FBI Federal On-Scene Commander (OSC) will function as the on-scene manager for the United States Government until such time as the crisis abates and the LFA authority shifts to FEMA to address ongoing consequence management activities. All federal agencies and departments, as needed, will support the Federal OSC. Threats or acts of terrorism that take place outside of the United States or its trust territories, or in international waters and involve the flag vessel of a foreign country, are outside the scope of the CONPLAN.

In addition, these authorities reaffirm that FEMA is the lead agency of the federal government for consequence management within U.S. territory. FEMA retains authority and responsibility to act as the lead agency for consequence management throughout the federal response. FEMA will use the FRP structure to coordinate all federal assistance to state and local governments for consequence management. To ensure

that there is one overall LFA, PDD-39 directs FEMA to support the Department of Justice (as delegated to the FBI) until the Attorney General transfers the LFA role to FEMA. At such time, the responsibility to function as the on-scene manager for the U.S. Government transfers from the FBI Federal OSC to the FEMA Federal Coordinating Officer (FCO).

Common Goals of Public Health and Law Enforcement

Public Health and Law Enforcement share common goals:

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

The means by which the two disciplines strive to achieve common goals, as well as other discipline-specific goals, are set forth in the following sections.

PUBLIC HEALTH

II. PUBLIC HEALTH

PUBLIC HEALTH INVESTIGATION GOALS

Public health personnel, through their epidemiological investigations, whether triggered by normal surveillance or report of an outbreak, have the following basic goals:

- ***To protect the public.*** Public health professionals utilize surveillance of health trends and medical information to establish methods to protect the public from health threats. Vaccine programs, medical studies, disease surveillance, and education all play a role in preventing serious health emergencies.

- ***To stop the spread of disease.*** One of the most basic missions of public health is the prevention of illness in the population. While physicians focus on curing the sick and promoting health in the individual, public health practitioners strive for health promotion and disease prevention in the population. Epidemiologists use survey techniques and data analysis to determine the source, mode of transmission, and population at risk for the illness under investigation to limit the spread of the outbreak.

- ***To protect public health personnel.*** One major consideration during these investigations is the protection of the public health personnel. Since epidemiologists and interviewers must routinely come in contact with potentially infectious individuals, it is important that the proper protective protocol is provided for these individuals during their investigation.

PUBLIC HEALTH EPIDEMIOLOGICAL INVESTIGATIONS

Epidemiologists use investigative techniques to determine the cause and extent of disease outbreaks. Successful investigations require the meticulous accumulation of information in the field. The field investigation of disease outbreaks is the element of public health that will most resemble law enforcement investigations because of the types of information collected and the means by which it is collected. Outbreak investigations, along with disease surveillance, are the areas that will most likely produce information of interest to law enforcement personnel.

The following is a brief synopsis of the elements of an outbreak investigation. The elements are listed sequentially, although in reality, some elements occur simultaneously or in a different order depending on the availability of personnel and the nature of the outbreak.

Detect Unusual Event

The first indication of an outbreak is often an unexpected increase in the number of patients with similar symptoms. An outbreak is defined as the occurrence of more cases of a specific illness or syndrome than expected in a certain location during a certain time period. For example, 100 cases of flu in a 24-hour period via surveillance of

physician-reporting in a large city during flu season would not be unexpected. The same number of cases outside of the flu season may be considered unusual and would probably be investigated. With some biological agents, such as smallpox, a single suspected case anywhere at any time would be considered a potential outbreak. When an unusual event emerges, public health officials must determine if the reported cases or syndromes are actually related, and if so, determine if the cases exceed the number historically seen for that location and time of year. In order to make those determinations, additional data is needed from expanded public health surveillance.

Expand Public Health Surveillance

Public health surveillance is defined as the ongoing collection, analysis, and interpretation of health data for use in the planning, implementation, and evaluation of public health practices. A surveillance system must include the capacity for collecting and analyzing data, as well as the means to disseminate the data to individuals or groups involved in disease prevention and control activities. The manner in which various public health agencies will communicate among themselves during an actual biological event should be determined before a biological attack actually occurs.

Ideally, a surveillance system will detect a rise in the incidence of a disease to provide sufficient time for the health care system to limit the impact of the disease on the public by initiating early treatment and prevention to decrease morbidity and mortality. For example, early detection of contagious diseases, such as plague or smallpox, and an aggressive vaccination program would greatly reduce the spread of the disease and the number of people affected.

In light of the current potential for a biological terrorist attack, some cities and states have set up surveillance programs that track a

variety of health care indicators. It should be noted that these newer medical surveillance systems are not guaranteed to detect an outbreak of disease. Some health care indicators found in surveillance systems may include the following:

- The number of upper respiratory disease cases seen in emergency departments
- The number of ambulance runs within an allotted period of time
- The number of antibiotics or over-the-counter drugs sold at pharmacies

The first confirmed case of an epidemic is referred to as the "index case." Once the index case is identified, there is a great need to identify new cases, unreported cases, and contacts. The search will include interviewing family members, associates, co-workers, and other possible contacts of the index case. The significance of interviewing co-workers and associates of the index case is to eliminate certain possibilities and focus on others. For example, if interviews of co-workers of the index case prove to be negative (no one else at work affected), then investigators may be able to eliminate the workplace as the source of the disease. If interviews of the associates of the index case shared an experience such as eating at the same place or attending the same organized event, and the associates have signs of the disease as well, the focus of the investigation may be placed on the common event.

Hospitals, ambulatory clinics, and possibly private health practitioners in the area affected should be contacted in order to determine if anyone with a similar illness is currently, or was recently, in the hospital or received medical treatment for a similar illness. This step

is critical since early recognition of patterns of illness by health practitioners is the most effective step in identifying and limiting an outbreak.

Confirm the Diagnosis

Diagnosing the potential disease agent begins with medical personnel obtaining medical histories and physical examinations of the affected individuals. A medical history is the notation of medical conditions during a physical examination and can include information on recent events, symptoms, travel, or any unusual circumstances that may have contributed to the illness. Based on this information, the physician or public health official may request clinically appropriate laboratory tests to aid in the diagnosis. Physicians are likely to make an initial diagnosis and initiate treatment before test results are available since early treatment increases the probability that the patient will recover from the illness.

Identify and Characterize Additional Cases

This element of the investigation has many similarities to a law enforcement investigation and is often referred to loosely as "shoe leather epidemiology" due to the time and resources necessary to conduct the interviews in order to obtain the necessary case and contact(s) information. It is at this stage in an epidemiologic investigation that a case definition is refined, sources for cases scoured, additional cases are identified, and the initial descriptive epidemiology is worked out. These interviews require extensive time and personnel. Interviewees may be contacted multiple times as investigators collect additional information. Information collected by public health investigators can include the following:

- Demographic data
- Clinical data (signs and symptoms, duration, onset, etc.)
- Exposure history (travel, meals, and significant events; all based on the type of illness suspected)
- Case contacts and knowledge of other cases

In addition to interviewing personal contacts of the index case and other cases, public health officials will attempt to identify all the cases of the disease by using a set of medical criteria. For example, public health officials may solicit media assistance to notify everyone with a certain type of skin rash and fever to report to their health practitioner for an examination.

Collect Specimens

Diseases are often initially diagnosed by clinical evidence. This process can be imprecise based on the nature of the illness and definitive diagnosis usually requires laboratory analysis of medically relevant samples.

The materials that typically are collected to support an epidemiological investigation include food, water, biological samples (tissues, blood, sputum, etc.), and environmental samples (dusts, powders, surface swabs, etc.). The collection of biological samples can be complicated, requiring specialized training and equipment. Some tests require living intact materials, necessitating transport of materials on ice and/or extremely rapid delivery. Additionally, not all laboratories can conduct the necessary analyses. Therefore, transport out of state may be required.

Reporting

The time necessary for a confirmatory diagnosis can range from hours to days depending upon the suspected organism and the types of tests necessary. All states require some reporting of specific diseases, but there is not a standardized list for all states. Reporting can be by the attending physician, the supporting infectious disease laboratory, hospitals, or public health officials. The Centers for Disease Control and Prevention (CDC) is currently publishing guidelines for reporting diseases likely to be associated with biological terrorism.

The definitive diagnostic test of a disease agent in a bioterrorist incident is often referred to as a "gold standard test" and is performed by a designated, certified laboratory. The test will vary depending on the agent. The term "gold standard test" has varying interpretations and acceptance because of reliability issues and accuracy due to the implication of it being 100% definitive. Public health officials may develop a strong hypothesis about the cause of the outbreak as they accumulate additional clinical laboratory and intelligence information. However, most senior health officials will wait for the definitive results prior to confirming the diagnosis if biological terrorism is suspected. The principal reason for waiting for confirmation is that different analytical methods have different specificities. For example, some vendors claim that their field assay tests quickly indicate the presence of a biological agent; however, the lack of reliability and accuracy of these field assay tests make the use of an approved laboratory test critical. A field assay test combined with the clinical symptoms might suggest a particular biological agent is present, but the field assay test alone cannot determine with absolute certainty that a particular biological agent is or is not present.

Lab tests vary in their ability to correctly identify agents. Cross-reactivity with other organisms, indirect measures such as antibodies,

and other factors can complicate these procedures. Until the public health officials obtain the results from the confirmatory diagnostic test, the diagnosis would be considered unconfirmed or suspected.

Develop and Implement Intervention Plans

The ultimate aim of the above procedures is to identify the disease agent and its origin and to develop and implement a plan to control the epidemic and protect the public's health. However, implementation of the intervention plan usually cannot wait for confirmation of the disease if the intervention plan is to be successful. Many illnesses, such as anthrax, can be treated successfully if antibiotics are provided early in the course of the illness. Also, steps involving quarantine or isolation, if required to control spread of disease, must be implemented early in an outbreak to be effective.

LAW ENFORCEMENT

III. LAW ENFORCEMENT

LAW ENFORCEMENT INVESTIGATION GOALS

As with the public health community, during a biological attack, the law enforcement community has a set of primary goals. These goals include the following:

- ***To protect public safety.*** The overriding goal of law enforcement is to protect the public from terrorist threats or attacks. Preventing an attack or apprehending a terrorist after an attack to prevent additional events.

- ***To prevent a criminal act.*** The role of law enforcement begins with taking steps to prevent a terrorist from successfully executing an attack. Through ongoing surveillance and intelligence gathering techniques, law enforcement personnel seek to obtain information that identifies potential terrorists, their targets, and methods of attack before an incident can be executed. It is necessary to safeguard the sources of the intelligence information and the means in which it was gathered to avoid the inadvertent disclosure of sources and collection techniques, especially during ongoing productive operations. Inadvertent release of sensitive information may compromise not only the specific

threat being investigated, but also future investigations.

- ***To identify, apprehend, and prosecute the perpetrators.*** Once a biological attack occurs, law enforcement personnel seek to obtain sufficient evidence and information to first identify and then apprehend the individual or individuals responsible for the attack. Collection of evidence includes interviewing victims and witnesses as well as obtaining and preserving physical evidence. A criminal investigation into a biological attack is not complete until there is a successful prosecution and conviction of those responsible for the attack. Law enforcement personnel must follow strict evidence collection procedures to obtain sufficient admissible evidence needed to achieve a conviction. Any abnormalities such as a break in the chain of custody in the collection or maintenance of the evidence may prevent the use of the incriminating evidence at the trial.

- ***To protect law enforcement personnel.*** Law enforcement personnel are likely to encounter situations where they may be at risk for exposure to a biological agent. Since some biological agents can be both infectious and contagious, law enforcement personnel must take precautions and wear appropriate personal protective equipment (PPE) when responding to and investigating a biological attack. Sufficient information about the suspected or known biological agent must be obtained to help

determine the safety precautions necessary to protect the investigators. Ideally, the FBI's Hazardous Materials Response Unit (HMRU) or field office Hazardous Materials Response Team (HMRT) will be involved in the collection of biological agents for evidence.

LAW ENFORCEMENT CRIMINAL INVESTIGATIONS

Averting a Biological Attack

Preventing a biological attack is the first line of defense and is the ultimate goal of law enforcement. In reality, not every biological attack can be prevented; therefore, appropriate federal, state, and local agencies must be prepared to respond to an incident after-the-fact or during an ongoing event. The first step in preventing and preparing for a biological attack is to attempt to identify potential terrorists or terrorist organizations likely and capable of executing a biological attack. This information allows law enforcement officials to identify potential targets and possible modes of attack.

Criminal Investigation Process

Individuals conducting criminal investigations must operate within the applicable laws governing the investigations and the ensuing prosecution. As information is compiled, a thorough understanding of the elements necessary to prove each offense being pursued will help guide the investigators to identify any missing or weak evidence. A brief summary of the criminal investigation process is provided below. While the steps are presented sequentially, some aspects of the investigation may occur simultaneously.

Threat Assessment — Real or Hoax

Law enforcement personnel may be confronted with a non-credible threat (hoax), threatened biological release, announcement that a release of a biological agent has occurred (overt), or an unannounced release of a biological agent (covert).

In the case involving a claim that a biological agent either has or will be released, the FBI, in consultation with recognized experts, will conduct a threat assessment to determine whether the biological threat is credible. If the threat is credible, law enforcement must take action to prevent or minimize the effect of the biological attack. If the threat is deemed not to be credible, law enforcement personnel will initiate an investigation to identify and prosecute those responsible for the threat. Under federal law (18 U.S.C. §2332a and 18 U.S.C. 175), a threat involving a disease-causing organism is a criminal act, whether or not the perpetrator actually possesses the biological agent.

In an unannounced (covert) biological attack, the medical community will diagnose the effects of the biological agent on patients seeking medical attention from their private practitioners and hospital emergency rooms. In a covert biological attack, the public health care surveillance system will be the key to identifying unexplained illnesses across the population or similar symptoms being reported by private practitioners and hospitals. As soon as the public health community suspects that there is probably no natural cause for a disease outbreak, law enforcement personnel should be contacted in order to initiate a preliminary criminal investigation. If public health officials and law enforcement have forged a working relationship prior to an unannounced biological attack, it is more likely that the public health officials will feel more comfortable contacting law enforcement early in

their epidemiologic investigation, permitting a cross-check preliminary inquiry to determine whether there is a likelihood of a biological attack.

Gather Evidence

The process of gathering evidence during the investigation of a biological incident will involve collection of physical evidence such as samples of biological agents or materials, dissemination devices, human body specimens (such as blood, secretions, hair, skin, DNA), clothing of both victims and suspects, documents, photographs, and witness statements. Law enforcement personnel must consider a variety of issues to ensure evidence they have gathered can ultimately be used in a criminal prosecution. The list below provides a summary of some of the key issues law enforcement personnel must consider.

- ***Chain of Custody.*** The process of chain of custody presents an issue of significant concern for law enforcement personnel during a criminal investigation. The chain of custody is the methodology used to track and maintain control and accountability of all evidentiary items. This includes initial collection of the evidence through the final disposition of the specimens. Both law enforcement and public health personnel must provide accountability at each stage of collecting, handling, testing, storing, transporting the evidentiary items, and reporting any test results. Failure to properly maintain the chain of custody may prevent the evidence in question from being introduced at trial.

  A distinction can be made between collecting evidence for public safety verses for criminal prosecution. In some instances, there may be an

overriding need by authorities to identify the agents or materials as soon as possible to ensure the proper response is implemented and steps can be taken to protect the responders and the public. In this instance, the need for rapid collection and testing to save lives outweighs the normal evidence collection procedures.

- ***Delivery of Biological Samples to Appropriate Laboratory.*** Not all forensic labs that process criminal evidence are equipped to test for biological agents. The FBI and the CDC have established the Laboratory Response Network (LRN) that identifies labs across the country with expertise to conduct appropriate analyses with the approved equipment, qualified personnel, and accepted practices. Only labs approved by both the FBI and the CDC should be used to test biological agents or materials. Submitting evidentiary biological samples to a non-approved lab will not only delay proper analyses, but may result in unintentional contamination of the samples.

- ***Documents.*** Original documents should be obtained when possible. Issues of authenticity and admissibility arise if copies are relied upon when original documents are available.

- ***Witness Statements.*** Witness descriptions of dissemination devices, vehicles, suspects, odors, tastes, sounds, and other specific information must be obtained as soon as possible after a biological

incident. The information a witness has to provide is "time sensitive" and the sooner the information can be obtained, evaluated, and disseminated, the more value it has to investigators. As time passes from when the witness actually heard, saw, felt, smelled, or tasted something, the potential increases for information "contamination." This can occur as witnesses hear others describe what they saw, heard, felt, smelled, or tasted. Memories fade and the influence of what others say can greatly erode the accuracy of the recollection of a witness.

Evaluate Evidence

As evidence is gathered and collected, an ongoing evaluation of the evidence must be part of the investigative process. An understanding of the types of evidence and the rules governing the admissibility of the evidence will lead to better evaluations of the evidence as the investigation progresses. While not intended to be all-inclusive, Table 1 identifies and provides a brief explanation of some of the types of evidence collected during the investigative process.

In a terrorist incident, law enforcement personnel will need the results of any analyses or tests on evidence in order for them to properly focus their investigation. In major criminal investigations, law enforcement officers are accustomed to a quick turnaround on lab results if the investigation involves a death or is a high profile crime. In a biological terrorism event, the time required to positively identify the agent may be considerably longer which may delay the progress of the investigation.

Like other investigations, during a biological event, the investigators never know what nuance or piece of information will be

Table 1. Types of Evidence Collected During an Investigative Process

TYPE OF EVIDENCE	EXPLANATION	EXAMPLE
Circumstantial Evidence	Facts, if proven, allow the fact-finder to draw conclusions. In most jurisdictions, circumstantial evidence has the same probative value as direct evidence.	Suspect was treated for cutaneous anthrax at or about the same time a release of anthrax was attempted. Suspect is found in possession of a delivery device similar to type of device believed to have been used to disseminate biological agent.
Direct Evidence	Documents, records, physical evidence, notes, computer data, videotapes, or other types of information that directly relate to the case.	Vehicle rental agreements, purchase receipts, phone records, eyewitness statements.
Trace Evidence	Minute particles of matter which can be examined microscopically, physically and/or chemically.	Biological agent or material residue.
Hearsay Evidence	Statements offered to prove the truth of the matter asserted and the declarant is unavailable for cross-examination.	A person who did not personally witness a suspect engaging in a particular manner but is reporting the observation based upon what someone else told him or her, and the person who actually made the observation is not testifying or available for the opposing party to cross-examine.
Eyewitness Testimony	Observation or sensation personally seen, smelled, heard, felt, or tasted.	Witness reporting smelling a particular odor or hearing a specific sound or seeing someone.

the crucial break needed to identify, arrest, and convict those responsible for the criminal act.

From the beginning of a criminal investigation into a biological attack until the case is submitted to a jury for a verdict, all facts collected during the investigation must be verified and inconsistencies must be resolved and submitted to the prosecutor in the format and manner desired. Documents must be carefully analyzed to ensure they have been thoroughly reviewed and the information contained in the documents is interpreted correctly. Sometimes information contained in statements or reports is subject to differing interpretations. Investigators must examine the evidence for conflicting interpretations and resolve these issues as soon as possible or be prepared to explain the contradictions.

It is equally important to develop a mechanism to submit all information, statements, lab reports, documents, photos, and other evidentiary items to the prosecutor in an organized manner to ensure all of the facts are identified well in advance of the trial. Additionally, sufficient time should be allowed to permit the prosecutor to meet with the investigators and witnesses as needed to review all reports, evidence, and anticipated testimony.

Apprehend Suspects

Once a bioterrorism threat has been prevented or a biological attack occurs and the threat to the public is either reduced or eliminated, identifying and building a prosecutable case against those responsible for the attack is the top priority for law enforcement personnel. Suspecting or even knowing who is responsible for the biological attack is different than having sufficient evidence to charge and prosecute the perpetrators. There will be tremendous pressure on law enforcement personnel following a biological attack, especially when human lives are lost, to identify, locate, and arrest the guilty person(s).

During the apprehension of a suspect or group of suspects, law enforcement personnel involved in the arrest need to take precautions against possible injury from the perpetrator(s). By the time law enforcement personnel are prepared to make an arrest, the perpetrator(s) will have already demonstrated or professed the willingness to kill or injure large numbers of innocent citizens. It is also possible that the arresting officers will be confronted with either a contaminated environment or contaminated evidence. While apprehending the suspects is a major phase of the investigative process, the safety of the arrest team and innocent bystanders is paramount. Appropriate personal protective equipment (PPE) must be utilized to prevent contamination from the presence of biological agents.

Render Testimony

Each potential government witness should be available to meet with the prosecutor prior to testifying at trial. It is important for the prosecutor to have the opportunity to evaluate how each witness may appear to the jury. Additionally, any issues, problems, discrepancies, or gaps in the evidence or testimony can be discussed and resolved. To avoid lost evidence or rulings of inadmissibility, law enforcement officers must know and have access to all sources of information and evidence so inconsistencies or discrepancies can be investigated and addressed.

JOINT OPERATIONS

IV. JOINT OPERATIONS

JOINT INVESTIGATIVE INFORMATION

The successful execution of the criminal and epidemiological investigations during a biological incident will depend upon the efficient use of all available resources. When possible, public health and law enforcement personnel should work in teams and jointly conduct interviews with victims and witnesses. Prior to the actual interview with a witness or victim, the joint investigation team should decide which person will begin the interview and the other member of the interview team should allow the lead interviewer to complete his or her interview without interruption or disruption to the flow of the questioning. It is recommended that the epidemiological interview proceed first during a joint interview; however, the order of the interviews must be decided on a case-by-case basis.

When joint interviews are not possible, the separate investigative communities should be aware of the types of information their counterpart is seeking. Public health personnel could obtain and provide information from their epidemiological investigation to law enforcement personnel that would benefit a criminal investigation. Conversely, the law enforcement community could provide data to public health personnel that would benefit an epidemiological investigation. The objective of the joint investigation and joint interviews of victims and witnesses is to maximize the efficiency of both public health and law enforcement investigators through the exchange of real-time information.

In order to facilitate the joint investigation process, an initial list of information has been developed to assist law enforcement and public health personnel in understanding and asking appropriate questions.

EFFECTIVE INFORMATION EXCHANGE

One of the goals of this handbook is to encourage public health officials and law enforcement officials to notify and involve each other early in an investigation even if it turns out to be a non-criminal event. It is essential to establish key pre-incident communication mechanisms between the law enforcement and the public health communities. The communication mechanisms are especially important for the expeditious exchange of information in an actual biological incident. This exchange of information requires law enforcement and public health personnel to be familiar with one another, and to know which people in each agency need and should receive the information.

WMD Roles and Responsibilities

To facilitate the sharing of information between law enforcement and public health officials, a process and structure similar to an Emergency Operations Center (EOC) or Joint Operations Center (JOC) that brings together all the elements necessary to respond to a WMD incident could be used as a model. It is essential to involve the appropriate agencies to fully benefit from personal interaction and ongoing dialogues with those who will be responding to an actual biological attack.

The concept of an EOC or JOC model provides a framework to structure and foster a communication capability that bridges the two communities. One way to maximize this framework is to form a WMD Working Group from the agencies that are part of the EOC or JOC. The critical value of the WMD Working Group is that ongoing

Table 2. Information Important to Public Health Personnel During an Investigation Into a Biological Attack

PERSONAL/FAMILY HEALTH INFORMATION

- What does the victim think made him or her ill?
- When (date/time of onset) did the victim start feeling sick?
- Does the victim know of anyone else who has become ill or died (e.g., family, coworkers, etc.)?
- Has the victim had any medical treatment in the last month? What is the name of the healthcare provider? Where was the victim treated?
- Does the victim have any allergies to medications?

ACTIVITIES INFORMATION

- Where does the victim live and work/go to school?
- Did the victim attend a public event (i.e., sporting event, social function, visit a restaurant, etc.)?
- Has the victim or the victim's family members traveled more than 50 miles in the last 30 days?
- Has the victim or the victim's family members had any contact with individuals who had been in another country in the last 30 days?

AGENT DISSEMINATION INFORMATION

- Has the victim detected any unusual odors or tastes?
- Has the victim noticed any sick or dead animals?

MEDICAL INFORMATION

- Is the victim's disease contagious?
- When did the victim first seek treatment for the illness?
- What are the laboratory results?
- Who collected, tested, analyzed, and had access to the samples?

PERSONNEL SAFETY INFORMATION

- What precautions should criminal investigators take?
- What physical protection from the disease/agent is needed?
- Is the agent communicable by person-to-person exposure? How is the disease spread?

EPIDEMIOLOGICAL INVESTIGATION INFORMATION

- Who is the point of contact in the public health community?
- Where should the sick be referred?
- What makes this case suspect?
- What is the spectrum of illness the law enforcement community could be seeing (case definition)?

Table 3. Information Important to Law Enforcement Personnel During an Investigation Into a Biological Attack

PERSONAL INFORMATION

- Victim's name
- Victim's age/date of birth
- Victim's sex
- Victim's address
- Victim's social security number
- Victim's driver's license number
- Victim's occupation/employer
- Victim's religious affiliation
- Victim's level of education
- Victim's ethnicity/nationality
- Record any personal property (bag & tag)
- Common denominators among victims/patients (i.e., race, socio-economic status, socio-political groups and associations, locations, events, travel, religion, etc.)

TRAVEL INFORMATION

- Whether the person has traveled outside of the United States in the last 30 days
- Whether the person traveled away from home in the last 30 days
- The person's normal mode of transportation and route to and from work everyday
- The person's activities for the last 30 days

INCIDENT INFORMATION

- Whether interviewee heard any unusual statements (i.e., threatening statements, information about biological agents)
- Did the victim see an unusual device or anyone spraying something?
- Were there any potential dispersal devices/laboratory equipment/ suspicious activities?
- Identification of the biological agent; is the agent's identity suspected, presumed, or confirmed?
- The victim's account of what happened or how he/she might have gotten sick
- The time/date of exposure. Is the time/date suspected, presumed, or confirmed?
- The number of victims. Is the number suspected, presumed, or confirmed?
- Whether there is a cluster of casualties. Is the cluster suspected, presumed, or confirmed?
- The potential methods of exposure (e.g., ingested, inhaled, skin contact)
- The exact location of the incident. Is this location suspected, presumed, or confirmed?
- Whether the biological event is a single incident or involves multiple releases. Is this suspected, presumed, or confirmed?
- The case distribution. What are the names, dates of birth, and addresses of the cases?
- The types of physical evidence that should be sought
- Any witnesses to a suspicious incident. What are their names, dates of birth, and addresses?

Table 3 (Continued)

SAFETY INFORMATION
■ What makes this case suspect?
■ The presence of any information that would indicate a suspicious event
■ Any safety or security issues for the public health personnel
CRIMINAL INVESTIGATION INFORMATION
■ Who is the point of contact in the law enforcement community?
■ To whom should potential witnesses be referred?
■ Any chain of custody needs

relationships are developed and fostered between the public health community and the law enforcement community before a biological incident occurs.

Additionally, the WMD Working Group enables the various jurisdictions to identify what information will be exchanged, when it will be exchanged, and to whom it will be provided, based on individual and departmental needs. Ideally, the WMD Working Group would conduct regularly scheduled meetings to maintain a working relationship and a productive comfort level with one another.

Planning, training, and exercising prior to an actual biological attack can foster the public health officials' comfort level of involving law enforcement early on in their epidemiological investigation. Without an established working relationship, it is possible that the public health officials may be reluctant to involve law enforcement until they are certain that an incident is an actual biological attack. However, determining criminal intent (i.e., bioterrorism) requires a joint FBI/Public Health assessment.

Two scenarios have been provided to help response officials understand the function and processes of the WMD Working Group.

- **Scenario 1** describes the recommended information flow if the law enforcement community is the first to identify a potential biological incident.

- **Scenario 2** provides guidance in the event the public health community is the first to suspect a biological incident. The process provided was designed to allow maximum flexibility for the affected jurisdictions. It should be noted that regardless of where the information enters the system, the information flow moves up the information chain. Additionally, each group identified in Figures 1 and 2 should be a conduit for information to the group immediately above and below it.

Scenario 1: Law Enforcement Community Has Intelligence of Threat to Release Biological Agent (Figure 1)

The local FBI office develops information of a possible biological threat and notifies FBI Headquarters. FBI Headquarters conducts a threat assessment based on the information provided from the preliminary information from the field. (In a suspected biological incident the FBI Threat Assessment will consist of conference calls between FBI Headquarters, the local field office, the relevant state or local public health officials, the FBI Hazardous Materials Response Unit [HMRU], and other federal agency experts such as CDC, the U.S. Department of Agriculture [USDA], or the Food and Drug Administration [FDA].) During the FBI Threat Assessment, a consensus is reached which indicates the likelihood that an intentional biological release has occurred, or will occur. FBI Headquarters returns a credible threat assessment to the local FBI office and provides guidance to the local FBI office for conducting further investigations to validate the intelligence.

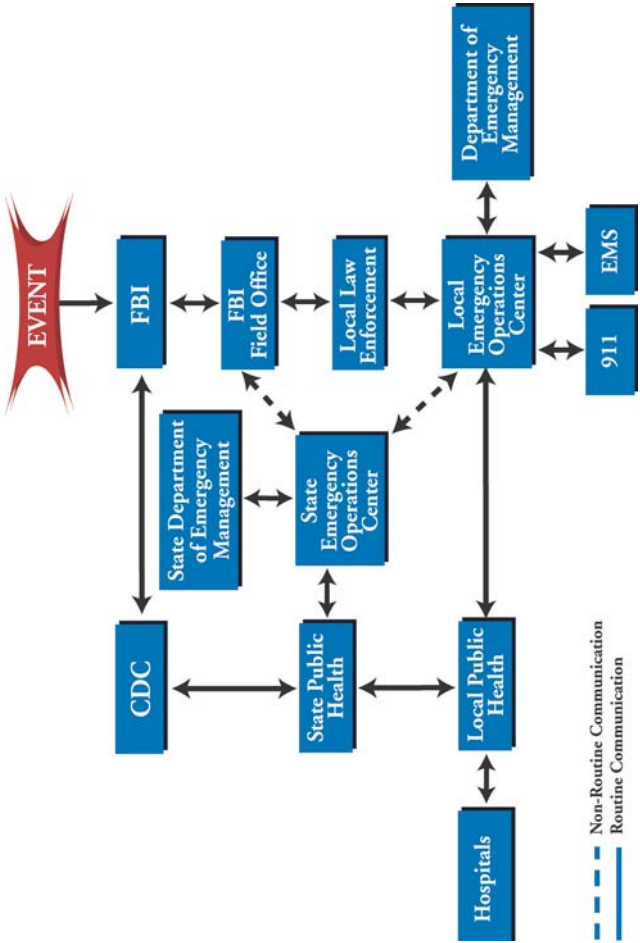

Figure 1. Law Enforcement Community Identifies Biological Incident

Once a credible threat has been established through the FBI Threat Assessment process, the CDC will pass that information to the state health departments. Again, depending on the quality and sensitivity, certain information may be retained within agencies that currently possess it. At this point, the local FBI office would coordinate with the state or local emergency management agency to convene the WMD Working Group and begin to exchange pertinent information. Depending on the extent and quality of the intelligence or investigative results, the information may be held at this level (i.e., not disseminated to local health care providers), pending further investigation.

Scenario 2: Disease Emerges and is Identified Through the Public Health Community (Figure 2)

Local hospitals/practitioners observe unusual symptoms in their patients. Based on a preliminary diagnosis, physicians begin to treat the patients. Once the public health officials receive and analyze the patient medical data, they can determine if there are any triggers suggestive of a potential biological incident. When local health officials observe these triggers that indicate a potential biological attack, they should coordinate with the emergency management agency and the state health department to activate the WMD Working Group, which includes the FBI WMD Coordinator for that geographical jurisdiction.

Once the Working Group has been assembled (virtually or in person), information will be exchanged concerning the potential threat or the unusual phenomenon observed in the health system. Based on the information provided to law enforcement through the WMD Working Group, a decision will be made regarding whether or not a criminal investigation is warranted. In most cases, an epidemiological investigation will be initiated to determine the source of the unusual circumstance observed in the health system. The benefit of conducting

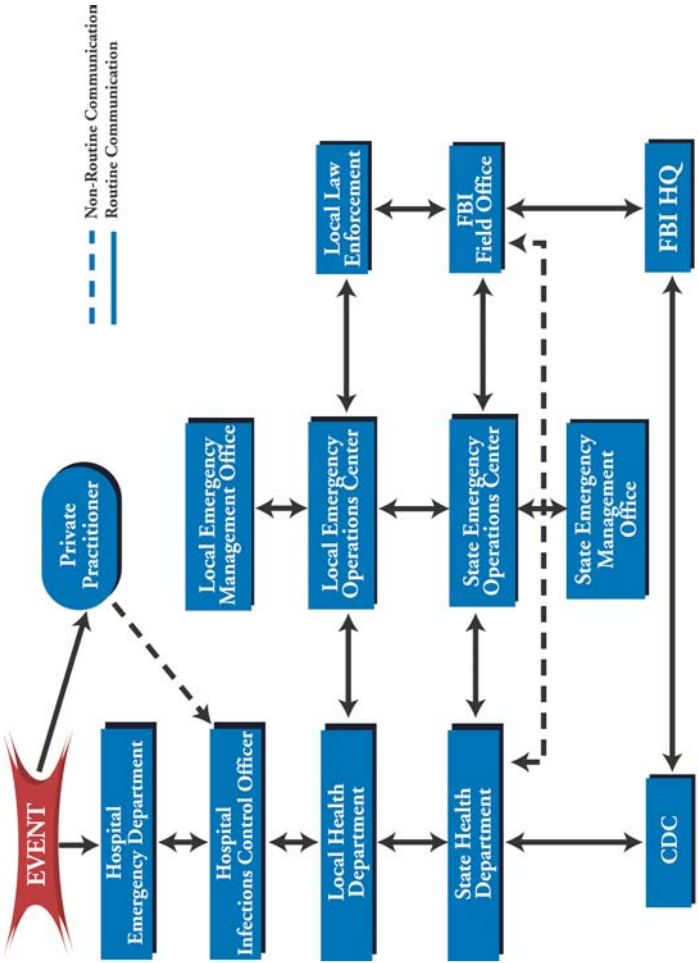

Figure 2. Medical / Public Health Community Identifies Biological Incident

joint interviews should be considered at this point; however, the known facts of the situation at the time will drive this decision.

Information Exchange Triggers

During an incident, certain information, or a specific event should trigger the exchange of information between the law enforcement and the public health communities. For example, the law enforcement community conducts criminal investigations every day. In recent years, there have been numerous biological hoaxes. What should prompt the law enforcement community to contact the public health community and involve them in the investigation of such an event? Similarly, epidemiological investigations take place routinely. Most epidemiological investigations have nothing to do with terrorism per se. At what point in an investigation should the public health community be prompted to contact law enforcement? Both communities are legitimately concerned about overreacting and further stretching their already over-burdened infrastructure and resources.

Many factors could lend clues to a potential use of biological weapons. The difficulty of trying to use definitive criteria is that almost all biological agents mimic other diseases in their early presentation. Furthermore, many classic bioterrorism agents are rare, non-endemic, or eradicated diseases; general practitioners may not recognize the disease until it has progressed to the more serious and unique symptoms associated with it. In some cases, there may be a reluctance to report this "unknown" illness until a diagnosis is made. The following tables provide a preliminary list of factors that could trigger public health (Table 4) or law enforcement (Table 5) communities to exchange information. These tables are not intended to be all-inclusive for the potential triggers. Each jurisdiction may want to mutually add or remove triggers to suit their individual needs. These lists are intended to provide a starting point to tailor or improve individual jurisdictional

Table 4. Public Health Triggers

- Any specimen samples submitted to public health for analysis that tests positive for a potential bioterrorism-related organism
- Large numbers of patients with similar symptoms or disease
- Large numbers of unexplained symptoms, diseases, or deaths
- Higher than expected morbidity and mortality associated with a common disease and/or failure of patients to respond to traditional therapy
- Single case of disease caused by an uncommon agent (i.e., *Burkholderia mallei* or *B. pseudomallei*, smallpox, viral hemorrhagic fever, anthrax)
- Multiple unusual or unexplained disease entities in the same patient
- Disease with an unusual geographic or seasonal distribution (i.e., tularemia in a non-endemic area or influenza in the summer)
- Unusual "typical patient" distribution (i.e., several adults with an unexplained rash)
- Unusual disease presentation (i.e., inhalational vs. cutaneous anthrax)
- Similar genetic type among agents from temporally or spatially distinct sources
- Unusual, atypical, genetically engineered, or antiquated strain of a biological agent
- Endemic disease with unexplained increase in incidence (i.e., tularemia, plague)
- Simultaneous clusters of similar illness in non-contiguous areas, domestic or foreign
- Disease agents transmitted through aerosol, food, or water; suggestive of sabotage
- Ill persons presenting near the same time; point source with compressed epidemic curve
- No illness in persons not exposed to common ventilation systems (have separate closed ventilation systems) where illness is seen in those persons in close proximity
- Death or illness among animals that may be unexplained or attributed to a biological agent that precedes or accompanies illness or death in humans

needs and wishes. The most important aspect of this information is to overcome the hesitation or reluctance to share information before all of the facts are known (an event that would definitely trigger the notification). The early notification will be seen as providing an early warning and will not be viewed negatively.

Table 5. Law Enforcement Triggers
■ Any intelligence or indication that any individual or group is unlawfully in possession of any biological agents ■ Seizure of any bio-processing equipment from any individual, group, or organization ■ Seizure of any potential dissemination devices from any individual, group, or organization ■ Identification or seizure of literature pertaining to the development or dissemination of biological agents ■ Any assessments that indicate a credible biological threat in an area ■ A HAZMAT response which involves the presence of biological agents

SHARING SENSITIVE INFORMATION

Information Matrices

The timely exchange of information is critical to an effective response to a biological incident. Yet, there are concerns within law enforcement and public health communities about the types of information that each group will freely exchange. Both communities feel that there are circumstances that may necessitate withholding certain types of information from each other.

In order to help lower barriers to the free exchange of information, the following set of matrices (Table 6 and Table 7) were developed to assist members of the public health and law enforcement communities to understand the types of information each seeks and potential means to obtain that information. Each of the categories in the matrices is defined below.

- ***Known Information.*** Information that each group has during the specific phase of the biological incident.

Table 6. Public Health and Medical (Hospital / EMS) Information

PHASE	KNOWN INFORMATION	NEEDED INFORMATION	ACTIONS
Pre-Suspicion of a Biological Incident **(Routine Public Health Care Surveillance)**	■ Surveillance data regarding reportable diseases ■ Aggregate information about the individual cases; nursing home aggregate data ■ Medical findings (unusual symptoms) ■ All personal information/ patient health data ■ Potential recognition of suspect bioterrorism agents	■ Potential biological agents being cultured in the area ■ Potential disease agents; list of suspect bioterrorism agents ■ National Alert list of groups and agents ■ Agreement about what information can be released	■ Can freely provide aggregate data (numbers and types) ■ Can freely provide assessments and analyses without personal information ■ Medical examiner provides data on fatalities to prosecutor; no subpoena necessary ■ Prosecutor can request post-mortem data; no subpoena necessary ■ No specific case data released ■ Hospital/EMS does not report to law directly; immediately report up the chain to public health ■ Follow state laws for reporting diseases
Suspicion of a Biological Incident	■ SAME AS ABOVE ■ Analysis of the incident ■ Aggregate patient data; state public health lab results ■ Medical examiner findings ■ Clinical data/confirmation and data on disease ■ Contact information on other potential cases via interviews	■ Medical community information ■ Threat assessments ■ Agent dissemination method ■ Specific case data (i.e., potential targets, agent characteristics) ■ Any information on the biological agent	■ Analyses freely provided to all response groups ■ Public health will take steps to ensure release of information ■ A subpoena ensures the release of information and legally protects public health from liability ■ Prosecutors can obtain medical examiner information ■ Information is reported to CDC ■ Report to local health department ■ Require patient permission for additional lab testing
Incident Management	■ SAME AS ABOVE	■ SAME AS ABOVE ■ Authority to quarantine ■ Extent and nature of outbreak	■ SAME AS ABOVE
Recovery from the Biological Incident	■ SAME AS ABOVE	■ SAME AS ABOVE ■ Update on the outbreak	■ SAME AS ABOVE

Table 7. Law Enforcement Information

PHASE	KNOWN INFORMATION	NEEDED INFORMATION	ACTIONS
Pre-Suspicion of a Biological Incident	■ General information (white noise) ■ Data concerning potential terrorist groups ■ Data concerning potential biological agents	■ Information regarding a "normal day" in the medical community (i.e., number of ED patients, number of EMS runs, etc.) ■ Information about any unusual diseases ■ Patient information	■ Law enforcement will openly reveal general information ■ No specific case information will be revealed
Suspicion of a Biological Incident	■ Specific case data ■ Suspect name(s), location(s) ■ Group names(s), capabilities ■ Sources of threat· Methods of attack	■ Patients are potential victims of a biological incident ■ Personal information (i.e., name, address, social security number of victim/ patient) ■ Agent type and strain ■ Agent symptomology	■ SAME AS ABOVE ■ The FBI WMD Interagency Threat Assessment will notify the public health community; this information will be For Official Use Only (FOUO) and will not be released to the public unless specified by FBI
Incident Management	■ Specific case data with more detailed information ■ Investigation methods and source data ■ Potentially have suspect in custody	■ SAME AS ABOVE ■ Location of victims ■ Medical threat assessment ■ Special and routine lab information for prosecution ■ Epidemiological data (contact lists)	■ Law enforcement will alert public health officials and the WMD working group and share known information to minimize the public health risk
Recovery from the Biological Incident	■ SAME AS ABOVE	■ All potential suspects ■ Ongoing victim report, list of victims, patient information, regular release of information ■ Any information on any criminal activity, regardless of time frame	■ Provide threat information after CDC review

- ***Needed Information.*** Information that each group needs to obtain to effectively conduct its investigation during the specific phase of the biological incident. It is the information that the public health community would need from the law enforcement community or the law enforcement community would need from the public health community.

- ***Actions.*** Steps that should be taken by each community to obtain the information or to identify what information can be readily obtained (i.e., public health to obtain law enforcement information). In the stated example, the law enforcement community identifies requirements for the public health community to obtain the information from the criminal investigation.

In the workshop where public health and law enforcement experts were assembled to identify potential barriers to the exchange of information, the law enforcement and public health personnel were asked to identify the information they would either possess or need according to the four different phases listed below.

- ***Pre-Suspicion.*** Both communities may be receiving unusual information, but there is nothing to raise suspicion of a criminal act or a disease outbreak.

- ***Suspicion.*** The law enforcement community has information that leads it to believe a criminal act may be committed or has been committed, or the public health community suspects an outbreak of a

biological agent. Law enforcement personnel would initiate measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a biological attack.

- ***Incident Management.*** Measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism.

- ***Recovery.*** Gradual return to normal operations.

In general, law enforcement and public health communities appear to be more hesitant to share information in the early stages (Pre-Suspicion and Suspicion) of the incident than they are in the latter stages (Incident Management and Recovery). In most instances, each community is reluctant to exchange sensitive information based solely on the incomplete criminal or epidemiological investigative information it would have in the first two phases. Because of this, there appears to be two general phases:

1. Pre-confirmation of a criminal act or diagnosis of a bioterrorist incident, and

2. Confirmation of a criminal act or diagnosis of a bioterrorist incident.

Once the public health community has made a diagnosis or the law enforcement community has confirmed a criminal act, both groups appear to be more willing to exchange information. The underlying goal throughout this handbook is to foster early notification of the law

enforcement community by the public health community and vice versa. Actual biological attack investigations have demonstrated that the sharing of information can and does occur willingly when the threat is real and not an abstract concept.

Public Information Release

The media will have a significant impact on the response and the public reaction to a biological incident. As a result, each community should use a single point of contact (spokesperson), to be identified by each jurisdiction, to coordinate and disseminate the response to queries, which will help ensure that the appropriate information, especially sensitive information, is released to the media at the proper time. The matrix in Table 8 below provides general guidance concerning a jurisdiction's interaction with the media.

Recommendations to Improve the Information Exchange

As noted above, the law enforcement and public health communities are more willing to exchange information once they have confirmed the existence of a criminal act or a biological agent. However, an exchange of available information in the early stages of a biological incident is critical to effectively apprehend the perpetrators and contain the outbreak. The matrices (Tables 6-7) provide some guidance on how to obtain sensitive information. However, the steps required to obtain the information may cause both communities to lose valuable time in their investigations. The table below (Table 9) provides some guidance on how individual jurisdictions can improve information sharing. The recommendations in Table 9 are intended to be general so that any jurisdiction can tailor the recommendations based on local needs.

Table 8. Release of Information to the Media / Public

PHASE	INFORMATION FOR THE MEDIA	WHO RELEASES THE INFORMATION
Pre-Suspicion of a Biological Incident	NA	NA
Suspicion of a Biological Incident	▪ Confirm something unusual ▪ Need to provide rumor control ▪ Prepare to respond to inquiries ▪ Do not release any threat assessments	▪ Designate a single point of contact for law enforcement and for the public health agencies to coordinate between them ▪ Points of contact work together on any response to query ▪ Develop agreed-upon rules of public release
Incident Management	▪ Alert media to the communicability of the biological agent (if known or suspected) ▪ Confirm and announce any protective actions ▪ Provide rumor control ▪ Use risk/crisis communication to address the psychological issues of biological terrorism	▪ SAME AS ABOVE ▪ FBI and public health agencies coordinate response; develop a joint public health and a law enforcement press release
Recovery from the Biological Incident	▪ Focus on closure issues ▪ Media/public needs reassurance things are back to "normal"	▪ Emphasis on local law enforcement and public health actions in support of the community ▪ Focus on the federal investigation and prosecution

Table 9. Informeation Exchange Recommendations

1. **Establish Information Exchange Group** — This group can be created from an existing group, such as the WMD Working Group, and consists of all the potential players that may be involved in a response to a biological incident. This forum permits each response group to identify who can provide what information to them and to whom they should provide information. Moreover, this group helps foster personal ties between response officials, facilitating less formal information-exchange relationships.

2. **Develop Close Personal Relationships** — Strong personal ties between the law enforcement personnel and the public health personnel tend to foster more information exchange. Law enforcement and public health personnel have indicated that they would be more likely to provide information to their counterparts early in process if they have worked, talked, or met with them on a regular basis and trusted them.

3. **Include an Epidemiologist in the Criminal Investigation** — This individual could be a member of the law enforcement staff or someone detailed to the law enforcement staff on a part-time basis. Law enforcement and public health personnel indicate that this liaison could help identify criminal information needed by the public health community and provide the necessary information to the law enforcement community.

4. **Enhance the Biological Incident Awareness of the Emergency Response Community** — This can be done through training courses or professional associations. Building this awareness helps to heighten the community awareness of the potential triggers that would prompt the exchange of information early in an incident.

5. **Pre-Establish Agreements on Sensitive Information** — Establishing agreements that identify the rules for the exchange and release of information could alleviate some of the concerns raised by both communities. These agreements should identify what information will be shared and how it will be restricted to limit unintentional release to unauthorized personnel.

6. **Pre-Establish Lab Test Agreements** — These agreements provide guidance as to how the public health community should conduct lab testing for the prosecution of the suspects. These agreements would establish what circumstances would necessitate specific lab tests for criminal investigations. The FBI and CDC have established the Laboratory Response Network (LRN), which identifies labs across the country with expertise to conduct the appropriate analyses with the approved equipment and accepted processes.

7. **Conduct Chain of Custody Training** — This training should be designed to inform the public health community to identify when they need to initiate the chain of custody for evidence in a biological incident. This information helps to ensure evidence has been handled properly for the eventual prosecution of the criminal case.

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SUMMARY

V. SUMMARY

This handbook provides recommendations and is intended to increase the reader's awareness of issues surrounding the effective coordination of criminal and epidemiological investigations. Individual jurisdictions should modify this guidance to accommodate their individual needs and the special characteristics of their emergency response procedures. The recommendations stated in this handbook should not be viewed as policy directives from the federal government for immediate implementation.

The primary goal of this handbook is to promote the sharing of information and to encourage law enforcement and public health personnel to establish effective information exchange procedures to improve their criminal and epidemiological investigations by being better prepared to save lives, avoid panic, and work together for successful prosecutions and convictions of the terrorists responsible for waging biological attacks on the citizens of the United States.

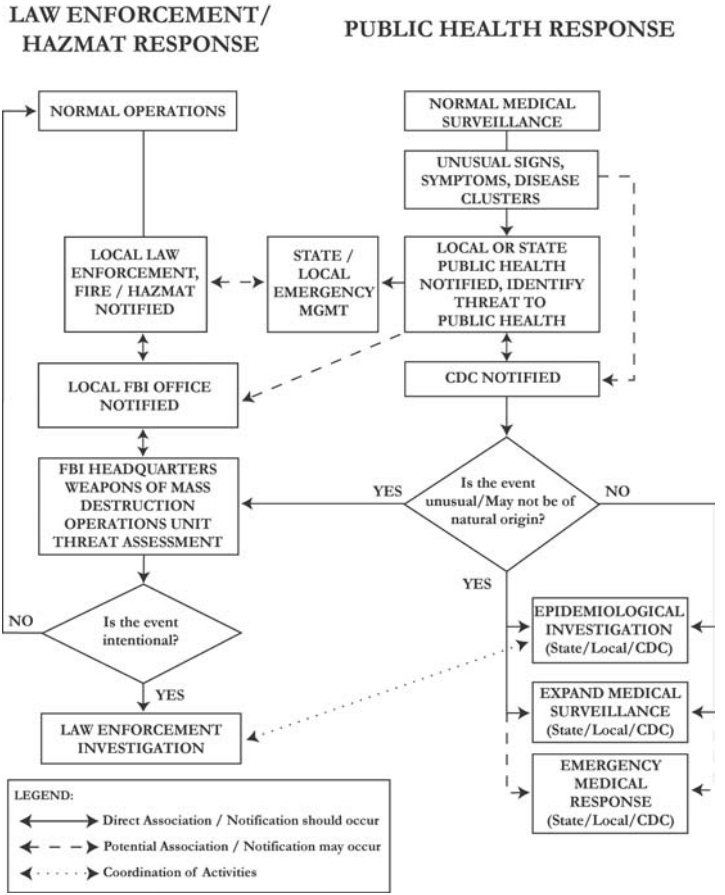
APPENDICES

Appendix A — Decision Trees

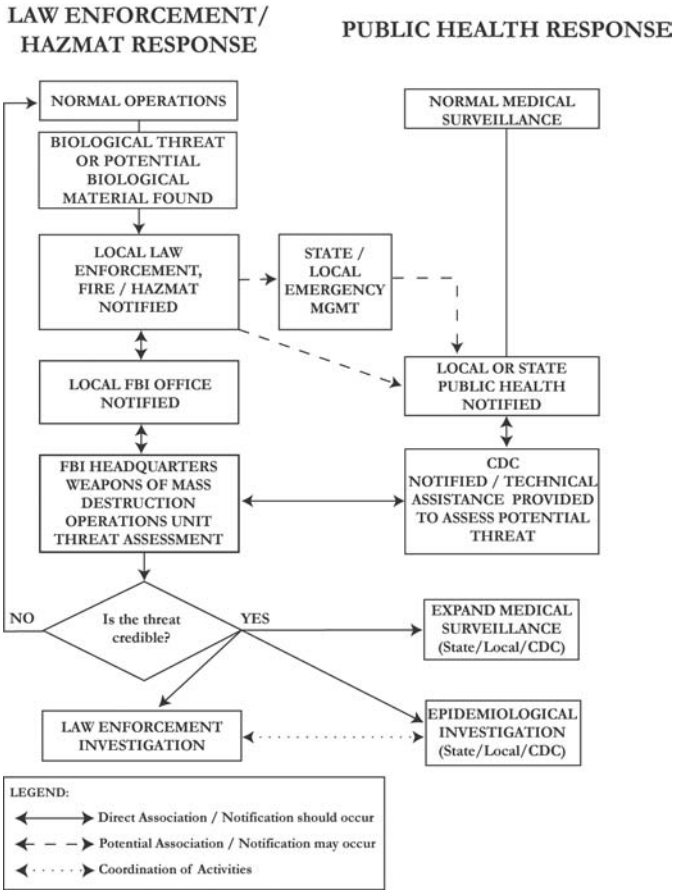
Each jurisdiction's response capabilities differ; hence, responses to a biological incident will vary. However, there are common key decisions that each jurisdiction is likely to make when confronted with an actual biological attack. The decision points that have been identified are general and are intended to assist law enforcement and public health personnel in responding to a biological incident in a consistent manner. The decision trees that follow help ensure that critical decisions, actions, or steps are not omitted in a jurisdiction's response. Additionally, the decision trees help direct where and when the law enforcement and public health communities should integrate their investigations.

The following two decision trees (covert and overt biological terrorism flow charts) reflect how law enforcement and public health officials would respond to either a covert (unannounced) biological terrorism incident or an overt (announced) biological terrorism incident. The public health community would be the likely entity to identify and trigger investigations during an unannounced (covert) incident. Once the public health community triggers the investigations, activities would be the same or similar to those that would occur during an announced (overt) incident. Many of the steps in the decision trees would occur simultaneously.

COVERT BIOTERRORISM FLOW CHART



OVERT BIOTERRORISM FLOW CHART



Appendix B — Statutes and Directives

While not intended to be all-inclusive, the following table of federal terrorism and WMD statutes is provided to give the investigator a starting point in finding the applicable laws governing acts of terrorism.

10 USC §382	Emergency situations involving chemical or biological weapons of mass destruction
18 USC §32	Destruction of aircraft or aircraft facilities
18 USC §37	Violence at international airports
18 USC §81	Arson within special maritime and territorial jurisdictions
18 USC §113C	Torture
18 USC §175-178	Biological Weapons Anti-Terrorism Statute of 1989 (BWAT)
18 USC §175(b)	Exemption for development, production, transfer, retention, or possession of biological agent, toxin, or delivery system for prophylactic, protective, or other peaceful purposes
18 USC §229	Chemical Weapons Convention Implementation Act of 1998
18 USC §229F	Definition - Chemical Weapons
18 USC §351	Congressional, Cabinet, and Supreme Court assassination, kidnapping, and assault

18 USC §831	Prohibited transactions involving nuclear materials
18 USC §842(i)(4)(l)(m)(1)& (n)(1)	Explosives without detection agents
18 USC §842(p)	Teaching WMD
18 USC §844 (e), (f), (i)	Penalties for threats or use of explosives to damage or destroy U.S. property
18 USC §871-879	Extortion and threats
18 USC §921	Destructive device
18 USC §930(c)	Possession of firearms and dangerous weapons in federal facilities
18 USC §956	Conspiracy to kill, maim, injure, or damage per sons or property in a foreign country
18 USC §1111	Murder (includes use of poison)
18 USC §1112	Manslaughter (lesser included offense of §1111)
18 USC §1114	Protection of officers and employees of the United States
18 USC §1116	Murder or manslaughter of foreign officials, official guests, or internationally protected persons
18 USC §1203	Hostage taking
18 USC §1361	Government property or contracts
18 USC §1362	Communication lines, stations, or systems
18 USC §1363	Buildings or property within special maritime and territorial jurisdictions

18 USC §1365(g)(3)	Tampering with consumer products
18 USC §1366	Destruction of an energy facility
18 USC §1751	Presidential and Presidential staff assassination, kidnapping, and assault penalties
18 USC §1956	Laundering of monetary instruments
18 USC §1958	Use of interstate commerce in the commission of murder-for-hire
18 USC §1992	Wrecking trains
18 USC §2151-2156	Sabotage
18 USC §2152	Fortifications, harbor defenses, or defensive sea areas
18 USC §2155	Destruction of national-defense materials, nation al-defense premises, or national-defense utilities
18 USC §2156	Production of defective national-defense material, national-defense premises, or national-defense utilities
18 USC §2280	Violence against maritime navigation
18 USC §2281	Violence against fixed platform
18 USC §2284	Sabotage of nuclear facilities or fuel
18 USC §2331-2339B	Terrorism (Chapter 113B)
18 USC §2332a	Use of Weapons of Mass Destruction Statute
42 USC §2011-2284	Atomic Energy Act of 1954
49 USC §46502	Aircraft piracy

49 USC §60123	Criminal penalties for pipeline destruction or damage
50 USC §2301-2367	Defense Against Weapons of Mass Destruction

Appendix C — Acronyms

The following list of acronyms is provided to help the investigator become familiar with some of the acronyms that may be encountered during an investigation involving WMD agents. Not all of these acronyms appear in this handbook.

AAR	After Action Review/Report
ACH	Acetylcholine
AHF	Argentine Hemorrhagic Fever (Arenaviridae)
AST	Aspartate Aminotransferase (liver enzyme)
BIDS	Biological Integrated Detection System
BNICE	Biological Nuclear Incendiary Chemical Explosive
BOLO	Be On The Lookout
BW	Biological Warfare or Biological Weapon
BWAT	Biological Weapons Anti-Terrorism
CBIRF	Chemical Biological Incident Response Force (U.S. Marines and Sailors)
CCHF	Congo-Crimean Hemorrhagic Fever
CDC	Centers for Disease Control and Prevention
CI	Confidential Informant
CMS	Centers for Medicare and Medicaid Services
CNS	Central Nervous System
COM	Communication
CONPLAN	Concept of Operations Plan (Federal)
CSF	Cerebrospinal Fluid
CST	Civil Support Team (National Guard)
DHHS	U.S. Department of Health and Human Services
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Response Team
DMSO	Dimethyl Sulfoxide

DNA	Deoxyribonucleic acid
DoD	Department of Defense
DOJ	Department of Justice
DOS	Department of State
DOT	Department of Transportation
DOT-ERG	DOT Emergency Response Guide
DPH	Department of Public Health
ED	Emergency Department
EHF	Ebola Hemorrhagic Fever (Filoviridae)
EI	Epidemiological Investigation
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ER	Emergency Room
FCO	Federal Coordinating Officer
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FOUO	For Official Use Only
FRP	Federal Response Plan
HAZMAT	Hazardous Materials
HAZMIT	Hazard Mitigation
HCFA	Health Care Financing Administration (renamed to Centers for Medicare and Medicaid Services)
HEPA	High Efficiency Particle Arrestor
HFRS	Hemorrhagic Fever with Renal Syndrome; aka Korean Hemorrhagic Fever or Epidemic Hemorrhagic Fever
HMO	Health Maintenance Organization
HMRT	FBI Hazardous Materials Response Team
HMRU	FBI Hazardous Materials Response Unit
HPS	Hantavirus Pulmonary Syndrome
HQ	Headquarters
HVAC	Heating, Ventilating, and Air Conditioning
ICS	Incident Command System
JIC	Joint Information Center
JOC	Joint Operations Center
LD_{50}	Lethal Dosage needed to kill at least 50% of the persons within the target area

LFA	Lead Federal Agency
LRBSDS	Long Range Biological Standoff Detection System
LRN	Laboratory Response Network
MMRS	Metropolitan Medical Response System
MO	Modus Operandi (Method of Operation)
NAERG	North American Emergency Response Guide
NBC	Nuclear Biological Chemical
NMRT	National Medical Response Team
OSC	On-Scene Commander
PAR	Protective Action Recommendation
PCR	Polymerase Chain Reaction
PDD	Presidential Decision Directive
PIO	Public Information Officer
POC	Point of Contact
ppb	Parts Per Billion
PPE	Personal Protective Equipment
ppm	Parts Per Million
PSA	Patient Staging Area
PT/pt	Patient
RVF	Rift Valley Fever
SBCCOM	(U.S. Army) Soldier and Biological Chemical Command
SCBA	Self-Contained Breathing Apparatus
SEB	Staphylococcal Enterotoxin B
SEMA	State Emergency Management Agency
SEMO	State Emergency Management Office
SEOC	State Emergency Operations Center
SITREP	Situation Report
SLUDGEM	Salivation, Lacrimation, Urination, Defecation, Gastric Distress, Emesis, and Miosis
SRA	Safe Refuge Area
SRBSDS	Short Range Biological Standoff Detection System
TDS	Time, Distance, and Shielding
TEU	Technical Escort Unit (U.S. Army)
UC	Unified Command
USAMRIID	U.S. Army Medical Research Institute of Infectious Diseases
USC	United States Code

USDA	U.S. Department of Agriculture
VEE	Venezuelan Equine Encephalitis
VHF	Viral Hemorrhagic Fever
WHO	World Health Organization
WMD	Weapons of Mass Destruction

Appendix D — Glossary

The following glossary is provided to help the investigator become familiar with some of the terms that may be encountered during an investigation involving WMD agents. Not all of these terms appear in this handbook.

Acetylcholine (ACH)	Neurotransmitter substance
Active immunization	Act of artificially stimulating the body to produce antibodies against infectious diseases
Adenopathy	Swelling of the lymph nodes
Anthrax [Bacteria]*	Caused by the bacteria *Bacillus anthracis*
Antitoxin	Antibody formed in response to and capable of neutralizing a biological poison
Asthenia	Weakness or debility
Ataxia	Inability to coordinate muscle activity during voluntary movement; incoordination of the gait
Blood agar	Mixture of blood and nutrient agar, used for the cultivation of many medically important microorganisms

* These terms refer to the causative agent (i.e., bacteria, virus, toxin, or rickettsia) for the specified disease.

Botulinum Toxin [Toxin]*	Toxin produced by *Clostridium botulinum* (found in non-acidic meat samples, vegetable cans, and in soil)
Brachycardia	Slow heart beat
Brucellosis (Undulant Fever) [Bacteria]*	Caused by infection with number of *Brucella* bacteria, notably *Brucella suis*, *Brucella abortus*, and *Brucella melitensis*
Chikungunya Virus [Virus]*	Virus communicated to humans from the bite of the *Aedes aegypti* mosquito. It can also cause infection in primates by being aerosolized. Chikungunya is Swahili for "that which bends up" describing the stooped posture of those afflicted with the severe joint pain associated with the disease
Cholera [Bacteria]*	Caused by infection of the bacteria *Vibrio cholera*
Coagulopathy	Disease affecting the coagulability of the blood
Coccobacillus	A short, thick bacterial rod of the shape of an oval or slightly elongated coccus
Congo-Crimean Hemorrhagic Fever Virus (CCHF)	Tick-borne disease (viral hemorrhagic fever) found in the Crimea and parts of Africa, Europe, and Asia. Contact with infected animals and in some healthcare settings can transmit disease to humans (Bunyaviridae)

Cutaneous	Relating to the skin
Cyanosis	A dark bluish or purplish coloration of the skin and mucous membrane due to deficient oxygenation of the blood
Distal	Situated away from the center of the body, or from the point of origin; specifically applied to the extremity or distant part of a limb or organ
Dysarthria	A disturbance of speech and language due to emotional stress, to brain injury, or to paralysis, incoordination, or spasticity of the muscles used for speaking
Dysphagia, dysphagy	Difficulty in swallowing
Dyspnea	Shortness of breath/difficulty breathing
Edema	An accumulation of an excessive amount of watery fluid in cells, tissues, or cavities
Encephalitis	Inflammation of the brain
Endotoxemia	Presence of endotoxins in the blood
Epistaxsis	Bleeding from the nose
Erythema	Redness of the skin caused by capillary dilation
Exanthema	Skin eruption occurring as symptom of acute viral or coccal disease

Fomite	Items such as articles of clothing or eating utensils that may harbor a disease and are capable of transmitting the disease
Glanders [Bacteria]*	An infection caused by the bacteria *Burkholderia mallei* (formerly known as *Pseudomonas mallei*)
Hantavirus [Virus]*	Viral disease (Hantavirus Pulmonary Syndrome) transmitted to humans by the inhalation of dust contaminated with rodent excreta (Bunyaviridae)
Hematemesis	Vomiting blood
Hematuria	Blood or red blood cells in the urine
Hemoptysis	Spitting blood from the lungs or bronchial tubes because of pulmonary or bronchial hemorrhage
Hypotension	Low blood pressure
Hypothermia	Low body temperature
Meiosis	Constriction of the pupil
Melioidosis [Bacteria]*	Caused by infection with the bacteria *Burkholderia pseudomallei*
Monkeypox [Virus]*	Naturally occurring relative of variola (smallpox) virus and is found in Africa
Myalgia	Muscular pain
Mydriasis	Dilation of the pupil

Plague (Black Death) [Bacteria]*	Caused by infection with the bacteria *Yersinia pestis* (formerly known as *Pasturella pestis);* bubonic plague is spread by rats to humans by bite of infected flea; pneumonic plague results from inhalation of the organism
Polymerase Chain Reaction (PCR)	Technique for the amplification of DNA; used in diagnostic procedures to identify biological agents.
Prostration	Marked loss of strength; extreme weakness
Pruritus	Itching
Pulmonary Edema	Fluid in the lungs
Pyrogenic	Causing fever
Rhinorrhea	Watery discharge from the nose
Ricin [Toxin]*	Toxin made from the mash remaining after processing Castor beans
Rickettsia (Q fever) [Rickettsia]*	Caused by the rickettsia *Coxiella burnetii*
Rickettsia (Typhus — endemic or epidemic) [Rickettsia]*	Epidemic typhus (acute onset) is caused by *Rickettsia typhi*. Endemic typhus (slower onset and milder) is caused by *Rickettsia prowazekii*
Saxitoxin [Toxin]*	Toxin produced by marine dinoflagellates
Smallpox [Virus]*	Caused by the Orthopox virus (variola major and variola minor)

Staphylococcus Enterotoxin B (SEB) [Toxin]*	One of the toxins and most likely BW weapon of those produced by *Staphylococcus aureus*
Tachycardia	Rapid heart beat
Trichothecene Mycotoxins [Toxin]*	Toxin produced by filamentous fungi (molds) of the genera *Fusarium*, *Myrotecium*, *Trichoderma*, *Stachybotrys*, and others; mycotoxins have been referred to as "yellow rain"
Tularemia (rabbit fever or deerfly fever) [Bacteria]*	Caused by the bacteria *Francisella tularensis*
Typhoid Fever [Bacteria]*	Caused by infection with the bacteria *Salmonella typhi*
Variola [Virus]*	Synonym for smallpox
Venezuelan Equine Encephalitis (VEE) [Virus]*	Virus is communicated to humans by mosquitoes
Viremia	Presence of virus in the blood
Zoonosis	Disease of humans acquired from animal source

Appendix E — Acknowledgements

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