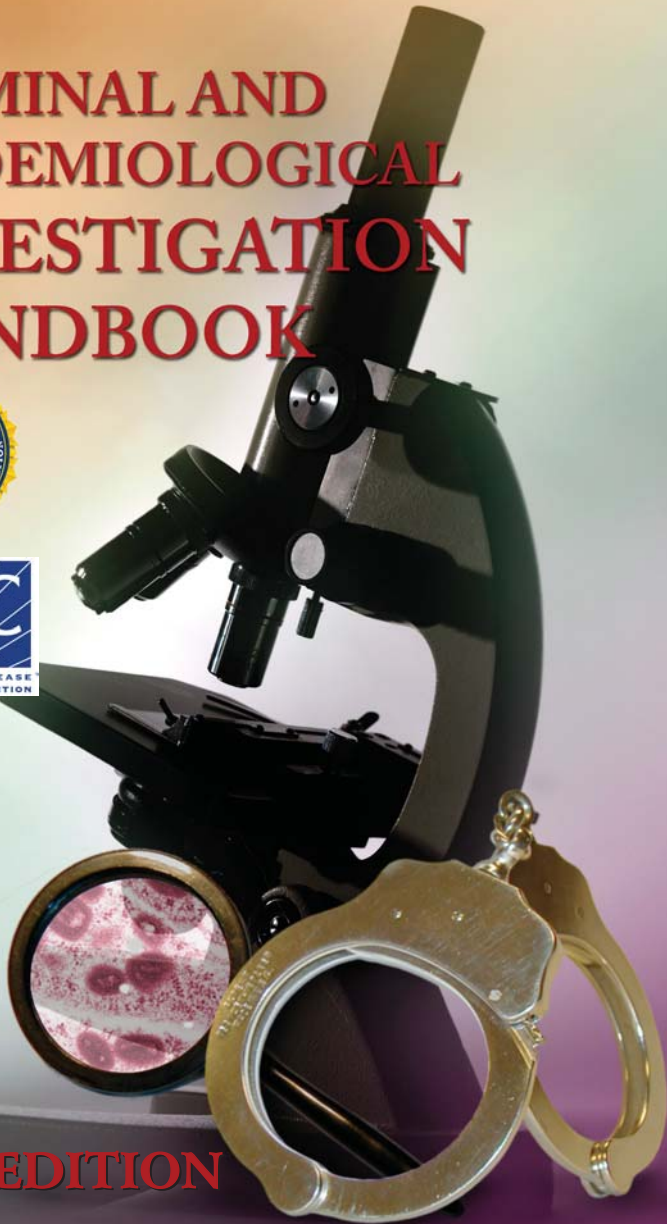


# CRIMINAL AND EPIDEMIOLOGICAL INVESTIGATION HANDBOOK



2006 EDITION

This handbook represents a joint effort of the Federal Bureau of Investigation, the Centers for Disease Control and Prevention, the US Department of Justice, and the US Army Soldier Biological Chemical Command.

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**R**ECENT 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. This 2006 edition has been edited to include current policy and reflects modifications made based upon experiences gained since the original handbook was written.

## **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 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 aid in their epidemiological investigation, suggest the most effective treatment, and assist in assessing the potential impact on public safety. 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.

## *Introduction*

- 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 spokesman will help to ensure the accuracy of the information being disseminated to the public and should have adequate expertise to respond to 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.

### **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.



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## **NATIONAL RESPONSE PLAN**

The National Response Plan (NRP) establishes a unified and standardized approach within the United States for protecting citizens and managing homeland security incidents. All federal departments and agencies that may be required to assist or support during a national incident whether from threats or acts of terrorism, major natural disasters, or manmade emergencies, will use the NRP. The NRP standardizes federal incident response actions by integrating existing processes. The NRP uses the National Incident Management System (NIMS) to establish standardized training, organization, and communications procedures for multi-jurisdictional interaction and clearly identifies authority and leadership responsibilities. The NRP also provides a comprehensive framework for private and non-profit institutions to plan and integrate their own preparedness and response activities, nationally and within their own communities.

The NRP fulfills a requirement in HSPD-5 and provides a core operational plan for all national incident management. The NRP supersedes the Initial National Response Plan (INRP), the Federal Response Plan (FRP), the U.S. Government Interagency Domestic Terrorism Concept of Operations Plan (CONPLAN), and the Federal Radiological Emergency Response Plan (FRERP).

The NRP and the supporting NIMS establish incident management processes to:

- Improve coordination and integration between federal, state, local, tribal, regional, private sector, and non-governmental organization partners;
- Integrate the federal response to catastrophic events;
- Improve incident management communications and increase cross-jurisdictional coordination and situational awareness;



- Improve federal to federal interaction and emergency support;
- Maximize use and employment of incident management resources; and
- Facilitate emergency mutual aid and federal emergency support to state, local, and tribal governments.

### **The National Response Plan Organization**

The five components of the NRP are described below. Note that the Incident Annexes that describe how each particular incident is to be managed may be augmented by supplemental material.

- The **Base Plan** describes the structure and processes comprising a national approach to domestic incident management designed to integrate the efforts and resources of federal, state, local, tribal, private-sector, and nongovernmental organizations. The Base Plan includes planning assumptions, roles and responsibilities, concept of operations, incident management actions, and plan maintenance instructions.
- The **Appendices** provide other relevant, more detailed supporting information including a glossary, acronyms, authorities, and a compendium of national interagency plans.
- The **Emergency Support Function (ESF) Annexes** detail the missions, policies, structures, and responsibilities of federal agencies for coordinating resource and programmatic support to states, tribes, and other federal agencies or other jurisdictions and entities during Incidents of National Significance.
- The **Support Annexes** provide guidance and describe the functional processes and administrative requirements

necessary to ensure efficient and effective implementation of NRP incident management objectives.

- The **Incident Annexes** address contingency or hazard situations requiring specialized application of the NRP. The Incident Annexes describe the missions, policies, responsibilities, and coordination processes that govern the interaction of public and private entities engaged in incident management and emergency response operations across a spectrum of potential hazards. These annexes are typically augmented by a variety of supporting plans and operational supplements.

### **National Response Plan Incident Management Priorities**

- Save lives and protect the health and safety of the public, responders, and recovery workers.
- Ensure security of the homeland.
- Prevent an imminent incident, including acts of terrorism, from occurring.
- Protect and restore critical infrastructure and key resources.
- Conduct law enforcement investigations to resolve the incident, apprehend the perpetrators, and collect and preserve evidence for prosecution and/or attribution.
- Protect property and mitigate damages and impacts to individuals, communities, and the environment.
- Facilitate recovery of individuals, families, businesses, governments, and the environment.

**Emphasis on Local Response and  
Multi-Agency Coordination Structure**

- The NRP identifies police, fire, public health and medical, emergency management, and other personnel as responsible for incident management at the local level.
- The NRP enables incident response to be handled at the lowest possible organizational and jurisdictional level.
- The NRP ensures the seamless integration of the federal government when an incident exceeds local or state capabilities.
- Timely federal response to catastrophic incidents.
- The NRP identifies catastrophic incidents as high-impact, low-probability incidents, including natural disasters and terrorist attacks that result in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions.
- The NRP provides the means to swiftly deliver federal support in response to catastrophic incidents.

**Coordination Features in the National Response Plan**

**Strategic Information and Operations Center (SIOC):** The FBI's SIOC continues to serve as the primary operations center for law enforcement, investigations, and intelligence for terrorist threats or incidents.

**Homeland Security Operations Center (HSOC):** The HSOC serves as the primary national level multi-agency hub for domestic situational awareness and operational coordination. The HSOC also includes DHS components, such as the National Infrastructure Coordinating Center (NICC), which has primary responsibility for coordinating communications with the Nation's critical infrastructure during an incident.

**National Response Coordination Center (NRCC):** The NRCC, a functional component of the HSOC, is a multi-agency center that provides overall federal response coordination.

**Regional Response Coordination Center (RRCC):** At the regional level, the RRCC coordinates regional response efforts and implements local federal program support until a Joint Field Office (JFO) is established.

**Interagency Incident Management Group (IIMG):** A select group of senior federal interagency experts who provide strategic advice to the Secretary of Homeland Security during an actual or potential Incident of National Significance.

**Joint Field Office (JFO):** A temporary federal facility established locally to provide a central point to coordinate resources in support of state, local, and tribal authorities.

**Principal Federal Official (PFO):** A PFO may be designated by the Secretary of Homeland Security during a potential or actual Incident of National Significance. While individual federal officials retain their authority pertaining to specific aspects of incident management, the PFO works in conjunction with these officials to coordinate overall federal incident management efforts.

### **Maintaining the National Response Plan**

- The Department of Homeland Security/Emergency Preparedness and Response (EP&R)/Federal Emergency Management Agency (FEMA) [DHS/EPR/FEMA], in close coordination with the DHS Office of the Secretary, will maintain the NRP.
- The NRP will be updated to incorporate new Presidential Directives, legislative changes, and procedural changes based on lessons learned from exercises and actual events.

The NRP is available online at [www.dhs.gov/nationalresponseplan](http://www.dhs.gov/nationalresponseplan).

## **ROLE OF THE U.S. ATTORNEY GENERAL AND THE FBI**

The language below is taken directly out of the NRP and identifies the role of the U.S. Attorney General and the FBI during criminal investigations of terrorist acts or threats. The Attorney General is the chief law enforcement officer in the United States. In accordance with HSPD-5 and other relevant statutes and directives, the Attorney General has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at U.S. citizens or institutions abroad, where such acts are within the federal criminal jurisdiction of the United States, as well as for related intelligence-collection activities within the United States, subject to applicable laws, Executive orders, directives, and procedures. Generally acting through the FBI, the Attorney General, in cooperation with other federal departments and agencies engaged in activities to protect national security, coordinates the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. This includes actions to prevent, preempt, and disrupt specific terrorist threats or actual incidents that are based upon specific intelligence or law enforcement information.

Nothing in the NRP derogates the Attorney General's status or responsibilities. Following a terrorist threat or an actual incident that falls within the criminal jurisdiction of the United States, the full capabilities of the United States will be dedicated to assisting the Attorney General to identify the perpetrators and bring them to justice, consistent with U.S. law and with authorities of other federal departments and agencies to protect national security. Prevention actions related to terrorism threats and incidents include law enforcement activities and protective activities. All federal law enforcement activities are coordinated by the Attorney General, generally acting through the FBI. Initial prevention efforts include, but are not limited to, actions to:

- Collect, analyze, and apply intelligence and other information;

- Conduct investigations to determine the full nature and source of the threat;
- Implement countermeasures such as surveillance and counterintelligence;
- Conduct security operations, including vulnerability assessments, site security, and infrastructure protection;
- Conduct tactical operations to prevent, interdict, preempt, or disrupt illegal activity;
- Conduct attribution investigations, including an assessment of the potential for future related incidents; and
- Conduct activities to prevent terrorists, terrorist weapons, and associated materials from entering or moving within the United States.

Notwithstanding any other provision of the NRP, when a terrorist threat or actual incident falls within the criminal jurisdiction of the United States, any incident management activity by any other federal department or agency that could adversely affect the Attorney General's ability to prevent, preempt, disrupt, and respond to such a threat or incident must be coordinated with the Attorney General through the senior federal law enforcement official (SFLEO) for example, the FBI Special Agent in-Charge (SAC).

The SFLEO is the senior law enforcement official from the agency with primary jurisdictional responsibility as directed by statute, Presidential Directive, existing federal policies, and/or the Attorney General. The SFLEO directs intelligence/investigative law enforcement operations related to the incident and supports the law enforcement component of the Unified Command on-scene. In the event of a terrorist incident, this official will normally be the FBI SAC.

Presidential Decision Directive 62 (PDD-62) formalized and delineated the roles and responsibilities of federal agencies in the development of security plans for National Special Security Events (NSSEs). HSPD-7 established the new process for designating events of national and international significance as NSSEs. For NSSEs, the Department of Homeland Security (DHS)/

United States Secret Service (USSS) has primary responsibility for security design, planning, and implementation; FBI has primary responsibility for law enforcement, intelligence, hostage rescue, counterterrorism, and criminal investigation; and DHS/EPR/FEMA has primary responsibility for emergency response and recovery planning and coordination.

The FBI SIOC is the focal point and operational control center for all federal intelligence, law enforcement, and investigative law enforcement activities related to domestic terrorist incidents or credible threats, including leading attribution investigations. The SIOC serves as an information clearinghouse to help collect, process, vet, and disseminate information relevant to law enforcement and criminal investigation efforts in a timely manner. The SIOC maintains direct connectivity with the HSOC and IIMG. The SIOC supports the FBI's mission in leading efforts of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States.

Upon determination that a terrorist threat is credible or that an act of terrorism has occurred, FBI Headquarters initiates liaison with other federal agencies to activate their operations centers and provide liaison officers to the SIOC. In addition, FBI Headquarters initiates communications with the SAC of the responsible Field Office, apprising him/her of possible courses of action and discussing possible deployment of the Domestic Emergency Support Team (DEST). The FBI SAC establishes initial operational priorities based upon the specific circumstances of the threat or incident. This information is then forwarded to FBI Headquarters to coordinate identification and deployment of appropriate resources. The SIOC will notify the HSOC immediately upon confirmation of a credible threat or terrorist nexus.

The FBI, National Counterterrorism Center (NCTC), Terrorist Threat Integration Center (TTIC), and the DHS Information Analysis and Infrastructure Protection (IAIP) evaluate intelligence relating to terrorist threats and other potential incidents. All federal, state, local, and tribal departments and agencies must notify their local or regional FBI Joint Terrorism Task Force (JTTF) regarding information associated with a threat of terrorism or an actual terrorist incident. Additionally, the HSOC is notified immediately in the case of an actual incident, whether a terrorist nexus is apparent or not. In

the case of a threat, the local FBI JTTF notifies the National Joint Terrorism Task Force (NJTTF). Upon receipt of a threat of terrorism, the FBI conducts a formal threat credibility assessment, which may include assistance from select interagency experts. If a threat is deemed credible, the FBI SIOC notifies the HSOC immediately to enable subsequent NRP actions.

The PFO and a small staff component may deploy with the DEST to facilitate their timely arrival and enhance initial situational awareness. The PFO and supporting staff conform to the deployment timelines and other guidelines established in DEST procedures including, but not limited to, those outlined in the MOU between DHS and the FBI regarding the DEST program. Nothing in the NRP alters the existing DEST concept of operation or affects the mission of the DEST to support the FBI SAC at the scene of a WMD threat or incident.

The DEST may be deployed to provide technical support for management of potential or actual terrorist incidents. Based upon a credible threat assessment, the Attorney General, in consultation with the Secretary of Homeland Security, may request authorization through the White House to deploy the DEST. Upon arrival at the JFO or critical incident location, the DEST may act as a stand-alone advisory team to the FBI SAC providing required technical assistance or recommended operational courses of action.

## **ROLE OF THE FBI**

Generally acting through the FBI, the Attorney General, in cooperation with other federal departments and agencies engaged in activities to protect national security, coordinates the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. This includes actions to prevent, preempt, and disrupt specific terrorist threats or actual incidents that are based upon specific intelligence or law enforcement information.

As affirmed by the NRP, the FBI is the lead agency for criminal investigations of terrorist acts or terrorist threats and intelligence collection



activities with the United States. All federal, state, local, and tribal departments and agencies must notify their local or regional JTTF regarding information associated with the threat of terrorism or an actual terrorist incident. The FBI JTTF consists of representatives from federal, state, and local law enforcement/response agencies (e.g., Secret Service, Immigration and Customs Enforcement, state/local law enforcement). At least one JTTF is operational in every FBI field division. The institution of the JTTFs improves real-time information sharing, analysis, and investigations/prevention activities. In many cases, the FBI WMD Coordinator is a member of the field division JTTF. WMD Coordinators are located in each of the 56 field offices of the FBI. Their purpose is to act as a conduit to FBIHQ and the federal government for technical information, advice, and assistance. The WMD Coordinator is contacted by state and local emergency responders in the event of a threat or incident potentially involving WMD. In addition, the WMD Coordinators liaise with federal regional counterparts such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the Drug Enforcement Administration (DEA), as well as state, county, and local emergency responders. In the event of a threat or an incident potentially involving WMD, the local WMD Coordinator contacts FBIHQ for operational response direction. The two primary units at FBIHQ related to the WMD Coordinator are the WMD Operations Unit (WMDOU) and the WMD Countermeasures Unit (WMDCU).

The FBI WMDOU provides oversight to WMD-related criminal investigations. The unit coordinates WMD threat assessments with federal partner agencies and FBI Subject Matter Experts (SMEs). WMDOU manages the crisis response to WMD incidents within the United States and provides the Director with ongoing operational and situational updates during investigations.

The FBI WMDCU manages programs for chemical, biological, agricultural, radiological/nuclear, training, and policy for WMD issues within the FBI. WMDCU liaises with other federal partners for WMD response issues including EPA, FDA, DoD, DHS, HHS/CDC, NRC, DOT, and DOE. In addition, WMDCU liaises with academic institutions, research facilities, and the private sector.

The FBI has multiple response capabilities to provide assistance in the event of a terrorist attack including the Hazardous Materials Response Unit (HMRU), Hazardous Materials Response Teams (HMRT), and Evidence Response Teams (ERT). Each team provides additional assets during the course of threat assessments and investigations. All threat assessments and investigations follow a similar format. Upon notification of a terrorist threat or incident, the WMD Coordinator in the local FBI field office contacts WMDOU to initiate a threat assessment. The threat assessment process consists of evaluating the credibility of the threat based on three major factors—behavioral analysis, operational analysis, and technical analysis. During the course of the threat analysis, WMDOU may contact various federal partners and SMEs to determine the credibility of the threat. In the event the threat is deemed credible, the FBI SIOC notifies the DHS HSOC immediately to enable subsequent actions.

For additional information on joint law enforcement and public health operations during a potential or actual bioterrorism incident please see the following sections of the NRP.

*Terrorism Incident Law Enforcement and Investigation Annex.* The purpose of this annex is to facilitate an effective Federal law enforcement and investigative response to all threats or acts of terrorism within the United States, regardless of whether they are deemed credible and/or whether they escalate to an Incident of National Significance. To accomplish this, the annex establishes a structure for a systematic, coordinated, unified, timely, and effective national law enforcement and investigative response to threats or acts of terrorism within the United States. This annex is coordinated by the Federal Bureau of Investigation (FBI).

*Emergency Support Function #8 – Public Health and Medical Services Annex.* Emergency Support Function (ESF) #8 – Public Health and Medical Services provides the mechanism for coordinated Federal assistance to supplement State, local, and tribal resources in response to public health and medical care needs (to include veterinary and/or animal health issues when appropriate) for potential or actual Incidents of National Significance and/or during a developing potential health and medical situation. ESF #8 is coordinated by the Secretary of the Department of Health and Human Services (HHS) principally through the Assistant Secretary for Public Health Emergency Preparedness (ASPHEP).

**Biological Incident Annex**

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**Coordinating Agency:**

Department of Health and Human Services

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**Cooperating Agencies:**

Department of Agriculture  
Department of Commerce  
Department of Defense  
Department of Energy  
Department of Homeland Security  
Department of the Interior  
Department of Justice  
Department of Labor  
Department of State  
Department of Transportation  
Department of Veterans Affairs  
Environmental Protection Agency  
General Services Administration  
U.S. Agency for International Development  
U.S. Postal Service  
American Red Cross

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**Introduction****Purpose**

The purpose of the Biological Incident Annex is to outline the actions, roles, and responsibilities associated with response to a disease outbreak of known or unknown origin requiring Federal assistance. Actions described in this annex take place with or without a Presidential Stafford Act declaration or a public health emergency declaration by the Secretary of Health and Human Services (HHS). This annex applies only to potential or actual incidents of National Significance. This annex outlines biological incident response actions including threat assessment notification procedures, laboratory testing, joint investigative/response procedures, and activities related to recovery.

**Scope**

The broad objectives of the Federal Government's response to a biological terrorism event, pandemic influenza, emerging infectious disease, or novel pathogen outbreak are to:

- Detect the event through disease surveillance and environmental monitoring;
- Identify and protect the population(s) at risk;
- Determine the source of the outbreak;
- Quickly frame the public health and law enforcement implications;
- Control and contain any possible epidemic (including providing guidance to State and local public health authorities);
- Augment and surge public health and medical services;
- Track and defeat any potential resurgence or additional outbreaks; and
- Assess the extent of residual biological contamination and decontaminate as necessary.

The unique attributes of this response require separate planning considerations that are tailored to specific health concerns and effects of the disease (e.g., terrorism versus natural outbreaks; communicable versus noncommunicable, etc.).

Specific operational guidelines, developed by respective organizations to address the unique aspects of a particular disease or planning consideration, will supplement this annex and are intended as guidance to assist Federal, State, local, and tribal public health and medical planners.

## Special Considerations

Detection of a bioterrorism act against the civilian population may occur in several different ways and involve several different modalities:

- An attack may be surreptitious, in which case the first evidence of dissemination of an agent may be the presentation of disease in humans or animals. This could manifest either in clinical case reports to domestic or international public health authorities or in unusual patterns of symptoms or encounters within domestic or international health surveillance systems.
- A terrorist-induced infectious disease outbreak initially may be indistinguishable from a naturally occurring outbreak; moreover, depending upon the particular agent and associated symptoms, several days could pass before public health and medical authorities even suspect that terrorism may be the cause. In such a case, criminal intent may not be apparent until some time after illnesses are recognized.
- Environmental surveillance systems, such as the BioWatch system, may detect the presence of a biological agent in the environment and trigger directed environmental sampling and intensified clinical surveillance to rule out or confirm an incident. If a case is confirmed, then these systems may allow for mobilization of a public health, medical, and law enforcement response in advance of the appearance of the first clinical cases or quick response after the first clinical cases are identified.

- The U.S. Postal Service may detect certain biological agents within the U.S. postal system. Detection of a biological agent in the mail stream triggers specific response protocols outlined in agency-specific standard operating procedures.

## Policies

- This annex supports policies and procedures outlined in the ESF #8 – Public Health and Medical Services Annex, the ESF #10 – Oil and Hazardous Materials Response Annex, and the Terrorism Incident Law Enforcement and Investigation Annex.

- HHS serves as the Federal Government's primary agency for the public health and medical preparation and planning for and response to a biological terrorism attack or naturally occurring outbreak that results from either a known or novel pathogen, including an emerging infectious disease.

- State, local, and tribal governments are primarily responsible for detecting and responding to disease outbreaks and implementing measures to minimize the health, social, and economic consequences of such an outbreak.

- If any agency becomes aware of an overt threat involving biological agents or indications that instances of disease may not be the result of natural causes, the Department of Justice must be notified through the Federal Bureau of Investigation (FBI)'s Weapons of Mass Destruction Operations Unit (WMDOU). The FBI, in turn, immediately notifies the Department of Homeland Security (DHS) Homeland Security Operations Center (HSOC) and the National Counterterrorism Center (NCTC). The Laboratory Response Network (LRN) is used to test samples for the presence of biological threat agents. Decisions on where to perform additional tests on samples are made by the FBI, in coordination with HHS. (See the Terrorism Incident Law Enforcement and Investigation Annex for additional information on the FBI's roles and responsibilities.)

- Once notified of a credible threat or natural disease outbreak, HHS convenes a meeting of ESF #8 partners to assess the situation and determine appropriate public health and medical actions. DHS coordinates overall nonmedical support and response actions across all Federal departments and agencies. HHS coordinates overall public health and medical emergency response efforts across all Federal departments and agencies.
- Consistent with ESF #8, DHS closely coordinates the National Disaster Medical System (NDMS) medical response with HHS. The FBI coordinates the investigation of criminal activities if such activities are suspected.
- HHS provides guidance to State and local authorities and collaborates closely with the FBI in the proper handling of any materials that may have evidentiary implications (e.g., LRN samples, etc.) associated with disease outbreaks suspected of being terrorist or criminal in nature.
- Other Federal departments and agencies may be called upon to support HHS during the various stages of a disease outbreak response in the preparation, planning, and/or response processes.
- If there is potential for environmental contamination, HHS collaborates with the Environmental Protection Agency (EPA) in developing sampling strategies and sharing results.
- Given the dynamic nature of a disease outbreak, HHS, in collaboration with other departments and agencies, determines the thresholds for a comprehensive Federal Government public health and medical response. These thresholds are based on specific event information rather than predetermined risk levels.
- Any Federal public announcement, statement, or press release related to a threat or actual bioterrorism event must be coordinated with the DHS Public Affairs Office.

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### Planning Assumptions

- In a large disease outbreak, Federal, State, local, and tribal officials require a highly coordinated response to public health and medical emergencies. The outbreak also may affect other countries and therefore involve extensive coordination with the Department of State (DOS).
- Disease transmission can occur via an environmental contact such as atmospheric dispersion, person-to-person contact, animal-to-person contact, insect vector-to-person contact, or by way of contaminated food or water.
- A biological incident may be distributed across multiple jurisdictions simultaneously, requiring a nontraditional incident management approach. This approach could require the simultaneous management of multiple “incident sites” from national and regional headquarters locations in coordination with multiple State and local jurisdictions.
- A response to noncontagious public health emergencies may require different planning assumptions or factors.
- The introduction of biological agents, both natural and deliberate, are often first detected through clinical or hospital presentation. However, there are other methods of detection, including environmental surveillance technologies such as BioWatch and syndromic surveillance.
- No single entity possesses the authority, expertise, and resources to act unilaterally on the many complex issues that may arise in response to a disease outbreak and loss of containment affecting a multijurisdictional area. The national response requires close coordination between numerous agencies at all levels of government and with the private sector.

- The Federal Government supports affected State, local, and tribal health jurisdictions as requested or required. The response by HHS and other Federal agencies is flexible and adapts as necessary as the outbreak evolves.
- The LRN provides for rapid public health assessment of the potential for human illness associated with exposure and the scope of this kind of risk. The LRN also addresses the need for law enforcement notification necessary to initiate threat assessment for criminal intent, and chain of custody procedures. Early HHS, FBI, and DHS coordination enhances the likelihood of successful preventative and investigative activities necessary to neutralize threats and attribute the source of the outbreak.
- Response to disease outbreaks suspected of being deliberate in origin requires consideration of special law enforcement and homeland security requirements.
- Test results from non-LRN facilities are considered a “first pass” or “screening” test (with the exception of the Legislative Branch, which has a separate lab system that is equivalent to LRN facilities).
- Any agency or organization that identifies an unusual or suspicious test result should contact the FBI to ensure coordination of appropriate testing at an HHS-certified LRN laboratory.
- HHS has identified specific Department of Defense laboratories that meet the standards and requirements for LRN membership.
- All threat and public health assessments are provided to the HSOC.

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## Concept of Operations

### Biological Agent Response

The key elements of an effective biological response include (in nonsequential order):

- Rapid detection of the outbreak;
- Swift agent identification and confirmation;
- Identification of the population at risk;
- Determination of how the agent is transmitted, including an assessment of the efficiency of transmission;
- Determination of susceptibility of the pathogen to treatment;
- Definition of the public health, medical, and mental health implications;
- Control and containment of the epidemic;
- Decontamination of individuals, if necessary;
- Identification of the law enforcement implications/assessment of the threat;

- Augmentation and surging of local health and medical resources;
- Protection of the population through appropriate public health and medical actions;
- Dissemination of information to enlist public support;
- Assessment of environmental contamination and cleanup/decontamination of bioagents that persist in the environment; and
- Tracking and preventing secondary or additional disease outbreak.

Primary Federal functions include supporting State, local, and tribal public health and medical capacities according to the policies and procedures detailed in the NRP Base Plan and the ESF #8 Annex.

### Suspicious Substances

Since there is no definitive/reliable field test for biological agents, all potential bioterrorism samples are transported to an LRN laboratory, where expert analysis is conducted using established HHS/Centers

for Disease Control and Prevention (CDC) protocols/reagents. A major component of this process is to establish and maintain the law enforcement chain of custody and arrange for transport.

The following actions occur if a positive result is obtained by an LRN on an environmental sample submitted by the FBI or other designated law enforcement personnel:

- The LRN immediately notifies the local FBI of the positive test result;
- The FBI Field Office makes local notifications and contacts the FBI Headquarters WMD/OU;
- FBI Headquarters convenes an initial conference call with the local FBI and HHS to review the results, assess the preliminary information and test results, and arrange for additional testing;
- FBI Headquarters immediately notifies DHS of the situation;
- Original samples may be sent to HHS/CDC for confirmation of LRN analyses;
- HHS provides guidance on protective measures such as prophylactic treatment and continued facility operation; and
- HHS and cooperating agencies support the determination of the contaminated area, decisions on whether to shelter in place or evacuate, and decontamination of people, facilities, and outdoor areas.

### **Outbreak Detection**

#### **Determination of a Disease Outbreak**

The initial indication of a major disease outbreak, intentional or naturally occurring, may be the recognition by public health and medical authorities that a significantly increased number of people are becoming ill and presenting to local healthcare providers. Therefore, the most critical decisionmaking support requires surveillance information, identification of the causative biological agent, a determination of whether the observations are related to a naturally occurring

outbreak, and the identification of the population(s) at risk.

#### **Laboratory Confirmation**

During the evaluation of a suspected disease outbreak, laboratory samples are distributed to appropriate laboratories. During a suspected terrorist incident, sample information is provided to the FBI for investigative use and to public health and emergency response authorities for epidemiological use and agent characterization to facilitate and ensure timely public health and medical interventions. If the incident begins as an epidemic of unknown origin detected through Federal, State, local, or tribal health surveillance systems or networks, laboratory analysis is initiated through the routine public health laboratory network.

#### **Identification (Analysis and Confirmation)**

The samples collected and the analyses conducted must be sufficient to characterize the cause of the outbreak. LRN laboratories fulfill the Federal responsibility for rapid analysis of biological agents. In a suspected terrorism incident, sample collection activities and testing are coordinated with FBI and LRN member(s).

#### **Notification**

Any disease outbreak suspected or identified by an agency within HHS or through another Federal public health partner is brought to the immediate attention of the HHS Assistant Secretary for Public Health Emergency Preparedness as detailed in the ESF #8 Annex or internal HHS policy documents, in addition to the notification requirements contained in the NRP Base Plan.

Following these initial notifications, the procedures detailed in the ESF #8 Annex are followed. Instances of disease that raise the "index of suspicion" of terrorist or criminal involvement, as determined by HHS, are reported to FBI Headquarters. In these instances, FBI Headquarters, in conjunction with HHS, examines available law enforcement and intelligence information, as well as the technical characteristics and epidemiology of the disease, to determine if there is a possibility of criminal intent. If the FBI, in conjunction with HHS, determines that the information represents a

potential credible terrorist threat, the FBI communicates the situation immediately to the HSOC, which notifies the White House, as appropriate. If warranted, the FBI, HHS, and State, local, and tribal health officials conduct a joint law enforcement and epidemiological investigation to determine the cause of the disease outbreak, the extent of the threat to public health and public safety, and the individual(s) responsible.

## Activation

Once notified of a threat or disease outbreak that requires or potentially requires significant Federal public health and/or medical assistance, HHS convenes a meeting of the ESF #8 organizations and HHS Operating Divisions (e.g., CDC, the Food and Drug Administration, etc.) to assess the situation and determine the appropriate public health and medical actions. DHS coordinates all nonmedical support, discussions, and response actions.

The immediate task following any notification is to identify the population affected and at risk and the geographic scope of the incident. The initial public health and medical response includes some or all of the following actions:

- Targeted epidemiological investigation (e.g., contact tracing);
- Intensified surveillance within healthcare settings for patients with certain clinical signs and symptoms;
- Intensified collection and review of potentially related information (e.g., contacts with nurse call lines, laboratory test orders, school absences, and over-the-counter pharmacy sales); and
- Organization of Federal public health and medical response assets (in conjunction with State, local, and tribal officials) to include personnel, medical supplies, and materiel (e.g., the Strategic National Stockpile (SNS)).

## Actions

### Controlling the Epidemic

The following steps are required to contain and control an epidemic affecting large populations:

- HHS assists State, local, and tribal public health and medical authorities with epidemic surveillance and coordination.
- HHS assesses the need for increased surveillance in States or localities not initially involved in the outbreak and notifies the appropriate State and local public health officials with surveillance recommendations should increased surveillance in these localities be needed.
- DHS coordinates with HHS and State, local, and tribal officials on the messages released to the public to ensure that communications are consistent and accurate. Messages should address anxieties, alleviate any unwarranted concerns or distress, and enlist cooperation with necessary control measures. Public health and medical messages to the public should be communicated by a recognized health authority (e.g., the Surgeon General). (See the Public Affairs Support Annex.)
- If the outbreak first arises within the United States, HHS, in coordination with DOS, immediately notifies and coordinates with appropriate international health agencies such as the World Health Organization (WHO) and Pan American Health Organization as necessary. Given the nature of many disease outbreaks, this notification and coordination may have occurred earlier in the process according to internal operating procedures. HHS advises the HSOC when notifications are made to international health agencies.
- The public health system, starting at the local level, is required to initiate appropriate protective and responsive measures for the affected population, including first responders and other workers engaged in incident-related activities. These measures include mass vaccination or prophylaxis for populations at risk and populations not already exposed, but



who are at risk of exposure from secondary transmission or the environment. An overarching goal is to develop, as early as possible in the management of a biological incident, a dynamic, prioritized list of treatment recommendations based on epidemiologic risk assessment and the biology of the disease/ microorganism in question, linked to the deployment of the SNS and communicated to the general public.

- HHS evaluates the incident with its partner organizations and makes recommendations to the appropriate public health and medical authorities regarding the need for quarantine, shelter-in-place, or isolation to prevent the spread of disease. HHS coordinates closely with DHS regarding recommendations for medical needs that are met by NDMS and the U.S. Public Health Service Commissioned Corps.
- The Governor of an affected State implements isolation and/or social-distancing requirements using State/local legal authorities. In order to prevent the interstate spread of disease, HHS may take appropriate Federal actions using the authorities granted by U.S.C. title 42, 42 CFR parts 70 and 71, and 21 CFR 1240. State, local, and tribal assistance with the implementation and enforcement of isolation and/or quarantine actions is utilized if Federal authorities are invoked.
- Where the source of the epidemic has been identified as originating outside the United States, whether the result of terrorism or a natural outbreak, HHS works in a coordinated effort with DHS/Border and Transportation Security/Customs and Border Protection (DHS/BTS/CBP) to identify and isolate persons, cargo, mail, or conveyances entering the United States that may be contaminated. HHS provides information and training, as appropriate, to DHS/BTS/CBP personnel on identifying the biological hazard and employing "first responder" isolation protocols.
- The scope of the outbreak may require mass isolation or quarantine of affected or potentially affected persons. Depending on the type of event, food, animals, and other agricultural products may need to be quarantined to prevent

further spread of disease. In this instance HHS and, as appropriate, the Department of Agriculture work with State, local, and tribal health and legal authorities to recommend the most feasible, effective, and legally enforceable methods of isolation and quarantine.

## Decontamination

For certain types of biological incidents (e.g., anthrax), it may be necessary to assess the extent of contamination and decontaminate victims, responders, animals, equipment, buildings, critical infrastructure (e.g., subways, water utilities), and large outdoor areas. Such decontamination and related activities take place consistent with the roles and responsibilities, resources and capabilities, and procedures contained in the ESF #8 and ESF #10 Annexes, the Terrorism Incident Law Enforcement and Investigation Annex, and the Catastrophic Incident Annex. (Note: Currently no decontamination chemicals are registered (under the Federal Insecticide, Fungicide, and Rodenticide Act) for use on biological agents, and responders must request an emergency exemption from the EPA before chemicals can be used for biological decontamination.)

## Special Issues

### International Notification

A biological incident may involve internationally prescribed reportable diseases. In addition to case reporting, epidemics of disease with global public health significance must also be reported to international public health authorities.

Once a positive determination is made of an epidemic involving a contagious biological agent, HHS notifies DOS and DHS. HHS, in coordination with DOS, notifies the WHO and other international health agencies as appropriate.

### Allocation and Rationing

If critical resources for protecting human life are insufficient to meet all domestic needs, the Secretary of HHS makes recommendations to the Secretary of Homeland Security regarding the allocation of scarce Federal public health and medical resources.

## **Responsibilities**

The procedures in this annex are built on the core coordinating structures of the NRP. The specific responsibilities of each department and agency are described in the respective ESFs and Incident Annexes.

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## PUBLIC HEALTH INVESTIGATION GOALS

The public health community routinely conducts epidemiological investigations. Whether these investigations are triggered by normal surveillance or the report of an outbreak, public health investigations 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 public health surveillance systems, commonly known as syndromic surveillance, 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 receiving 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 the 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 are 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.), environmental samples (dusts, powders, surface swabs, etc.) and specimens collected by air samplers such as Biowatch and the Postal Service's Bio Detection System (BDS). 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. Through its bioterrorism grant, CDC requires state health departments to obtain legal authority to require health-care providers report any suspect cases, potential terrorist events, and unusual illness or injury.

The definitive diagnostic test of a disease agent in a bioterrorist incident is often referred to as a confirmatory test, for example cell culture, and is performed by a designated, certified laboratory that is a member of the Laboratory Response Network. The test will vary

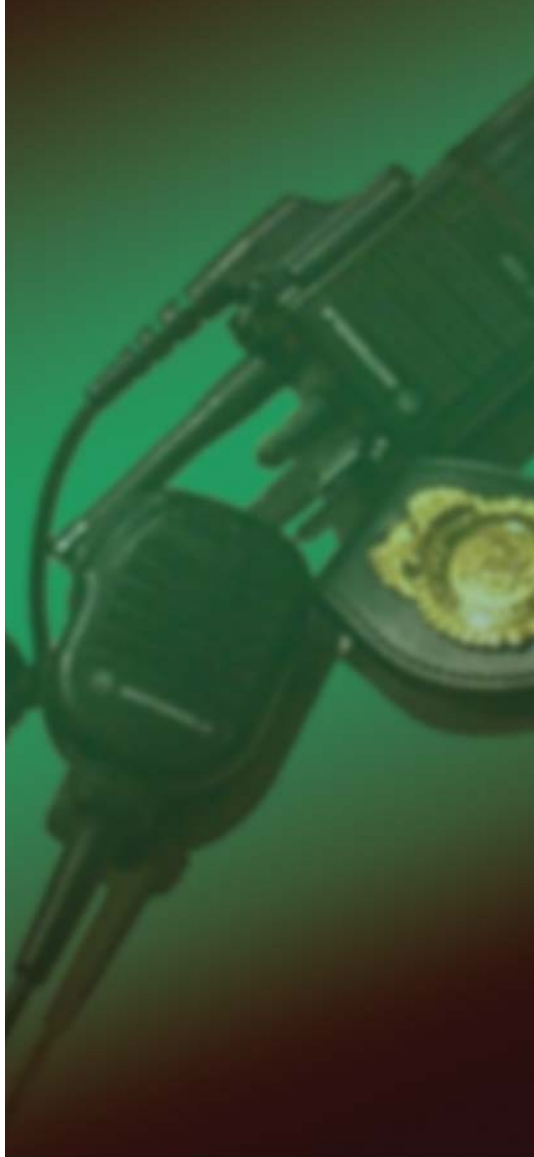
depending on the agent. Public health officials may develop a strong hypothesis about the cause of an outbreak as they accumulate additional clinical laboratory results and receive intelligence information from their law enforcement partners. Senior officials may wait for the results of the confirmatory tests prior to confirming the diagnosis if biological terrorism is suspected; however, implementation of the intervention plan may require action prior to this confirmation based on the available information. 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, reliability of the test's measurement method, 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.

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### LAW ENFORCEMENT INVESTIGATION GOALS

As with the public health community, the law enforcement community has a set of primary goals during a biological attack. 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. This goal includes ideally preventing an attack or alternatively 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 to identify potential terrorists, their targets, and methods of attack before a criminal act can be executed. It is necessary to safeguard against disclosure of the intelligence information and the means by which it was gathered, 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.* Law enforcement personnel seek to obtain sufficient evidence and information to first identify and then apprehend the individual or individuals responsible for the attack. A criminal investigation into a

biological attack is not complete until there is a successful prosecution and conviction of those responsible for the attack. Collection of evidence includes interviewing victims and witnesses as well as obtaining and preserving physical evidence. 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 potentially incriminating evidence at the trial.

- ***To protect law enforcement personnel.*** Law enforcement personnel are likely to encounter situations where they may be at risk of 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. 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. 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. Detecting a potential terrorist during planning, procurement, or development of a biological agent is a second investigative avenue that law enforcement must explore to prevent a biological 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).

When a claim that a biological agent either has or will be released is received, the FBI, in consultation with recognized experts, will conduct a threat assessment to determine whether the threat is credible. If the threat is credible, law enforcement in conjunction with public health must take action to prevent or minimize the effect of the biological attack. Whether the threat is deemed to be credible or not, 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 or covert biological attack, the medical community will first see 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 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 a disease outbreak may be the result of an intentional act, 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 a biological attack, it is more likely that the public health officials will feel more comfortable contacting law enforcement early in their epidemiologic investigation, which allows for the initiation of the threat assessment process.

### **Gather Evidence**

The process of gathering evidence during the investigation of a biological incident involves 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, and documents as well as photographs and witness statements. Law enforcement personnel must consider a variety of issues to ensure that the evidence they gather 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 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 samples for public safety versus collecting evidence 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 of samples to save lives outweighs the normal evidence collection procedures.

- ***Delivery of Biological Samples to Appropriate Laboratory.*** Forensic labs that process traditional criminal evidence are not equipped to test for the presence of biological agents. The FBI and the CDC have established the



Laboratory Response Network (LRN), a network of 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 by law enforcement when possible. Issues of authenticity and admissibility arise if copies are relied upon when original documents are available. Potentially contaminated documents should be stored and examined utilizing procedures which protect both the individuals handling the evidence and the evidence itself.
- **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 their experiences. The accuracy of a witness's recollection can be greatly eroded by the influence of what others say and by fading memories.

### **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.

It should be noted that evidence collected in a potentially contaminated environment must be assumed to be contaminated. This will significantly complicate the evidence review and evaluation process. The evidence can be tested to rule out contamination, reviewed in a facility designated to handle biological agents, photographed to allow review of the contents in a safe environment, or sometimes may be decontaminated prior to review.

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 a high profile crime. In a biological terrorism event, the time required to positively identify the agent may be considerably longer.

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

Table 1. Types of Evidence Collected During an Investigative Process

TYPE OF EVIDENCE	EXPLANATION	EXAMPLE
<b>Circumstantial Evidence</b>	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.
<b>Direct Evidence</b>	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.
<b>Trace Evidence</b>	Minute particles of matter which can be examined microscopically, physically and/or chemically.	Biological agent or material residue.
<b>Hearsay Evidence</b>	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.
<b>Eyewitness Testimony</b>	Observation or sensation personally seen, smelled, heard, felt, or tasted.	Witness reporting smelling a particular odor or hearing a specific sound or seeing someone.

collected during the investigation must be verified and inconsistencies must be resolved and submitted to the prosecutor. 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.



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## **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 lead the interview and how they will work together during the interview. 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 to 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 who will be responding to an actual biological attack in order to fully benefit from the improved interactions and ongoing dialogue.

The concept of an EOC or JOC model provides a structure to foster a communication capability that bridges the two communities. One way to maximize this structure is to form a WMD Working Group from the agencies that are part of the EOC or JOC. One critical benefit of the WMD Working Group is that ongoing relationships are developed and fostered between the public health community and the law enforcement community before a biological incident occurs. Ideally, the WMD Working Group would conduct regularly scheduled meetings

**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?
- What is the victim's age and sex?

### 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

to maintain a working relationship and a productive comfort level with one another.

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.

Planning, training, and exercising prior to an actual biological attack can build 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.

### **Overt and Covert Bioterrorism Scenarios**

Public health and law enforcement agencies may become involved in the investigation of a possible bioterrorism event under different circumstances. Such events fall into one of two categories: overt and covert.

*Overt*

In the overt event, the perpetrator announces responsibility (for example, release of an agent or a threatening communication), or the origin is based on credible intelligence. A potential bioterrorism threat may also arise as a result of on-going criminal investigation. In the overt scenario, typically law enforcement first detects the event, leads the initial response, and notifies public health officials (Figure 1). An interagency WMD threat assessment process, led by the FBI's Weapons of Mass Destruction Operations Unit (WMDOU) will assist the relevant jurisdiction in examining the credibility of a bioterrorism threat based on behavioral, operational, and technical criteria. It will also bring in relevant public health officials to assist in technical assessment and to identify potential public health considerations. If persons are ill, or preventive health services are indicated, public health will also become involved in the emergency response.

The overt event is clearly a criminal violation, and if there is an incident site, that location is a crime scene. As a result, access to the area may be restricted so that evidence can be collected pursuant to the criminal investigation. Under federal statute (Title 18, U.S.C. Section 2332[a]), any threatened use of a disease causing organism directed at humans, animals, or plants is a crime, regardless of whether the perpetrator actually possesses a disease causing agent. In addition, as a result of a change in the Bioterrorism Weapons Anti Terrorism Act contained in the USA PATRIOT Act of 2001 and codified in Title 18 USC Section 175(b), knowingly possessing a biological agent, toxin, or delivery system which cannot be "justified by a prophylactic, protective, bona fide research, or other peaceful purpose" can result in arrest, prosecution, and fines and/or imprisonment for up to 10 years. This provision shifts the burden of proof onto the person or persons who are in possession of dangerous biological agents to prove they have the material for legitimate purposes.



*Covert*

In contrast, the covert event is characterized by an unannounced or unrecognized release in which the presence of ill persons may be the first sign of an attack. In the covert attack, criminal intent may not be apparent until some time after illnesses are recognized. The covert event may not be initially recognized as an attack, and public health generally first recognizes the problem and leads the initial inquiry (Figure 2). The early response will focus on diagnosis, medical care, and epidemiologic investigation. The intentional and criminal nature of the event may not be immediately evident, but public health officials should consider whether the relevant facts raise the index of suspicion that an event may not be characteristic of a natural outbreak or source of exposure. Early notification to the FBI and law enforcement officials of unusual characteristics (signs, symptoms, disease clusters) will aid in connecting potential criminal and intelligence information to assist in identifying potential threats. The determination of bioterrorism must involve both law enforcement and public health. In this case, the focus of the FBI led interagency WMD threat assessment process is to determine whether instances of disease may be the result of an intentional (criminal) act.

A 1985 outbreak of gastroenteritis in Oregon that was caused by a religious cult contaminating multiple salad bars with salmonella was initially thought to be a natural event. The crime was only recognized after the cult's leader accused other cult members of the attack and publicly called for an investigation. The subsequent criminal investigation confirmed the role of cult members in the outbreak. Microbiologic factors may also provide the first clue of the criminal intent of a disease outbreak. In 1996, an outbreak of gastroenteritis among staff in the laboratory of a large medical center was caused by *Shigella dysenteriae* type 2, a pathogen that is unusual in the United States. An epidemiologic investigation linked infection with eating pastries that had been placed in the laboratory break room.





*S. dysenteriae* type 2 matching the laboratory's stock strain by pulsed field gel electrophoresis was recovered from ill laboratory workers and from an uneaten pastry. A portion of the laboratory's stock strains was missing, and subsequent criminal investigation identified a disgruntled former laboratory employee as the perpetrator.

The anthrax attacks in September and October 2001 provide examples of both overt and covert events, and highlight the different ways that public health and law enforcement agencies become involved in investigating bioterrorist attacks. The first case that was recognized in Florida in early October could have represented a natural event and was initially investigated as a public health issue. However, the FBI and law enforcement officials were notified and involved in the initial investigation because of the rarity of inhalational anthrax in the United States, because *B. anthracis* has known potential as a biological weapon, and because of increased vigilance for a possible bioterrorist attack after the events of September 11. As the intentional nature of the event was made more evident by a lack information suggestive of a natural disease source, law enforcement involvement in the joint investigation increased. The receipt of an envelope containing a threatening letter and *B. anthracis* at the Hart Senate Office Building on October 15, 2001, required that the site be handled as a crime scene, and the initial role of public health was primarily consequence management and technical assistance to the Federal Bureau of Investigation (FBI) and other law enforcement officials.

### **Joint Interviews**

Collaboration between law enforcement and public health officials has not always been recognized as beneficial. There are concerns that the presence of law enforcement officers would compromise the collection by public health of sensitive medical information (e.g., illegal drug use). Indeed, some degree of separation from law enforcement

may be advantageous for obtaining complete and accurate data during public health investigations. Public health services are vitally needed by medically underserved communities, where suspicion of law enforcement agencies may be a factor. However, law enforcement investigation of potential bioterrorism incidents requires interviewing all potential witnesses and victims. Separate questioning by law enforcement and public health investigators may lead to conflicting statements by the interviewee, jeopardizing the admissibility of those statements in subsequent judicial proceedings.

A process should be established whereby joint interviews by public health and law enforcement officials are conducted, with opportunity for confidential communications with public health officials regarding specific health related issues that the interviewee may be unwilling to share with law enforcement personnel present. Both law enforcement and public health must recognize that the sharing of information can be crucial for identifying persons who have been exposed to dangerous agents and may be in need of prevention services such as chemoprophylaxis or vaccination. Conducting joint interviews affords the opportunity to examine relevant facts based on the unique perspectives of both epidemiological and criminal investigators. It also underscores that the goal of both law enforcement and public health is protecting life and safety.

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. Special consideration should be made to protect the identifying information of interviewees, both to preserve victim privacy as well as the integrity of a criminal investigation.

The work of CDC and FBI during the anthrax investigation highlights the opportunity for collaboration between public health and law enforcement. During several of the anthrax field investigations in 2001, investigators from FBI or local law enforcement were paired with an epidemiologist during interviews of possible case patients and exposed persons, which allowed a multidisciplinary approach to collecting, collecting, processing, and sharing pertinent information. Because of different training backgrounds and professional experiences, law enforcement and public health interviewers may recognize and note different information or clues that could aid in identifying the source of the infection and its perpetrator(s). Additionally, the concurrent interviews reduced the number of times persons had to be questioned.

### **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, and 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 needs. The most important aspect of this information is to overcome the hesitation or reluctance to share information before all of the facts are known. The early notification will be seen as providing an early warning and will not be viewed negatively.

## **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

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

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.

*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

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

**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)	<ul style="list-style-type: none"> <li>■ Surveillance data regarding reportable diseases</li> <li>■ Aggregate information about the individual cases; nursing home aggregate data</li> <li>■ Medical findings (unusual symptoms)</li> <li>■ All personal information/patient health data</li> <li>■ Potential recognition of suspect bioterrorism agents</li> </ul>	<ul style="list-style-type: none"> <li>■ Potential biological agents being cultured in the area</li> <li>■ Potential disease agents; list of suspect bioterrorism agents</li> <li>■ National Alert list of groups and agents</li> <li>■ Agreement about what information can be released</li> </ul>	<ul style="list-style-type: none"> <li>■ Can freely provide aggregate data (numbers and types)</li> <li>■ Can freely provide assessments and analyses without personal information</li> <li>■ Medical examiner provides data on fatalities to prosecutor; no subpoena necessary</li> <li>■ Prosecutor can request post-mortem data; no subpoena necessary</li> <li>■ No specific case data released</li> <li>■ Hospital/EMS does not report to law directly; immediately report up the chain to public health</li> <li>■ Follow state laws for reporting diseases</li> </ul>
Suspicion of a Biological Incident	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> <li>■ Analysis of the incident</li> <li>■ Aggregate patient data; state public health lab results</li> <li>■ Medical examiner findings</li> <li>■ Clinical data/confirmation and data on disease</li> <li>■ Contact information on other potential cases via interviews</li> </ul>	<ul style="list-style-type: none"> <li>■ Medical community information</li> <li>■ Threat assessments</li> <li>■ Agent dissemination method</li> <li>■ Specific case data (i.e., potential targets, agent characteristics)</li> <li>■ Any information on the biological agent</li> </ul>	<ul style="list-style-type: none"> <li>■ Analyses freely provided to all response groups</li> <li>■ Public health will take steps to ensure release of information</li> <li>■ A subpoena ensures the release of information and legally protects public health from liability</li> <li>■ Prosecutors can obtain medical examiner information</li> <li>■ Information is reported to CDC</li> <li>■ Report to local health department</li> <li>■ Require patient permission for additional lab testing</li> </ul>
Incident Management	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> </ul>	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> <li>■ Authority to quarantine</li> <li>■ Extent and nature of outbreak</li> </ul>	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> </ul>
Recovery from the Biological Incident	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> </ul>	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> <li>■ Update on the outbreak</li> </ul>	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> </ul>

**Table 7. Law Enforcement Information**

PHASE	KNOWN INFORMATION	NEEDED INFORMATION	ACTIONS
Pre-Suspicion of a Biological Incident	<ul style="list-style-type: none"> <li>General information (white noise)</li> <li>Data concerning potential terrorist groups</li> <li>Data concerning potential biological agents</li> </ul>	<ul style="list-style-type: none"> <li>Information regarding a "normal day" in the medical community (i.e., number of ED patients, number of EMS runs, etc.)</li> <li>Information about any unusual diseases</li> <li>Patient information</li> </ul>	<ul style="list-style-type: none"> <li>Law enforcement will openly reveal general information</li> <li>No specific case information will be revealed</li> </ul>
Suspicion of a Biological Incident	<ul style="list-style-type: none"> <li>Specific case data</li> <li>Suspect name(s), location(s)</li> <li>Group name(s), capabilities</li> <li>Sources of threat.</li> <li>Methods of attack</li> </ul>	<ul style="list-style-type: none"> <li>Patients are potential victims of a biological incident</li> <li>Personal information (i.e., name, address, social security number of victim/ patient)</li> <li>Agent type and strain</li> <li>Agent symptomatology</li> </ul>	<ul style="list-style-type: none"> <li>SAME AS ABOVE</li> <li>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</li> </ul>
Incident Management	<ul style="list-style-type: none"> <li>Specific case data with more detailed information</li> <li>Investigation methods and source data</li> <li>Potentially have suspect in custody</li> </ul>	<ul style="list-style-type: none"> <li>SAME AS ABOVE</li> <li>Location of victims</li> <li>Medical threat assessment</li> <li>Special and routine lab information for prosecution</li> <li>Epidemiological data (contact lists)</li> </ul>	<ul style="list-style-type: none"> <li>Law enforcement will alert public health officials and the WMD working group and share known information to minimize the public health risk</li> </ul>
Recovery from the Biological Incident	<ul style="list-style-type: none"> <li>SAME AS ABOVE</li> </ul>	<ul style="list-style-type: none"> <li>All potential suspects</li> <li>Ongoing victim report, list of victims, patient information, regular release of information</li> <li>Any information on any criminal activity, regardless of time frame</li> </ul>	<ul style="list-style-type: none"> <li>Provide threat information after CDC review</li> </ul>



- ***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 unnatural 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) due to concerns over compliance with the Health Insurance Portability and Accountability Act (HIPAA) privacy rules. 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. 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. Therefore, two primary phases exist:

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

### **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	<ul style="list-style-type: none"> <li>■ Confirm something unusual</li> <li>■ Need to provide rumor control</li> <li>■ Prepare to respond to inquiries</li> <li>■ Do not release any threat assessments</li> </ul>	<ul style="list-style-type: none"> <li>■ Designate a single point of contact for law enforcement and for the public health agencies to coordinate between them</li> <li>■ Points of contact work together on any response to query</li> <li>■ Develop agreed-upon rules of public release</li> </ul>
Incident Management	<ul style="list-style-type: none"> <li>■ Alert media to the communicability of the biological agent (if known or suspected)</li> <li>■ Confirm and announce any protective actions</li> <li>■ Provide rumor control</li> <li>■ Use risk/crisis communication to address the psychological issues of biological terrorism</li> </ul>	<ul style="list-style-type: none"> <li>■ SAME AS ABOVE</li> <li>■ FBI and public health agencies coordinate response; develop a joint public health and a law enforcement press release</li> </ul>
Recovery from the Biological Incident	<ul style="list-style-type: none"> <li>■ Focus on closure issues</li> <li>■ Media/public needs reassurance things are back to "normal"</li> </ul>	<ul style="list-style-type: none"> <li>■ Emphasis on local law enforcement and public health actions in support of the community</li> <li>■ Focus on the federal investigation and prosecution</li> </ul>

*Table 9. Information 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. **Include a law enforcement representative in the Public Health Operations Center** — 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.

*Table 9. Continued.*

5. **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.
6. **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.
7. **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. CDC manages 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.
8. **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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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. Both communities benefit from being better prepared to save lives, avoid panic, and work together. This cooperation should lead to better measures to prevent a bioterrorist attack, help minimize the impact of an attack, and ensure the successful prosecutions and convictions of the terrorists responsible for waging biological attacks on the citizens of the United States.



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## Appendix A — Applicable Federal WMD Statutes Regarding the Criminal Use of Biological Agents

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WMD Statute, Title 18 USC Section 2332a\*

- Illegal to *use, threaten or conspire to use a weapon of mass destruction*, including any biological agent, toxin, or vector as defined in Title 18 USC Section 178 against a national of the U.S. or within the U.S.
- Term WMD includes “any weapon involving a disease organism”
- Does not require the actual use of a biological agent. A threat or conspiracy to use biological agents is all that is required.
- Does not require that the biological agent be a “Select Agent,” only that that agent is capable of causing biological malfunction, disease, or death in a living organism (Title 18 USC Section 178).
- The USG must demonstrate evidence that a biological agent was used, or would be used, *or* that a person(s) threatened or conspired to do so.
- Carries the penalty of years or for life, and, if death results, the penalty may also include death.
- 8 Year statute of limitation for non-capital cases (requires interstate element).
- No state of mind requirement.
- Requires Interstate Commerce Element.

## Appendix A — Applicable Statutes

### Prohibitions with Respect to Biological Weapons, Title 18 USC Section 175 (a)\*

- Illegal to *knowingly* develop, produce, stockpile, transfer, acquire, retain, or possess any biological agent, toxin, or delivery system for use as a weapon, or knowingly assist a foreign state or organization to do so.
- Illegal to *attempt, threaten, or conspire* to do the same.
- Does not require that the biological agent be a “Select Agent,” only that that agent is capable of causing biological malfunction, disease, or death in a living organism (Title 18 USC Section 178).
- *For use as a weapon* is further defined as: the development, production, transfer, acquisition, retention, or possession of any biological agent, toxin, or delivery system *for other than prophylactic, protective, bona fide research, or other peaceful purposes.*
- “Knowingly” state of mind requirement. “For use as a weapon” requirement.
- Carries the penalty of fines, a term of years up to life in prison, or both.
- 8 Year statute of limitation for non-capital cases.
- No Interstate Commerce element necessary.

### Prohibitions with Respect to Biological Weapons, “Additional Offense” Title 18 USC Section 175 (b)\*

- Illegal to *knowingly* possess any biological agent, toxin, or delivery system of a type or in a quantity that, under the circumstances, is not reasonably justified by prophylactic, protective, bona fide research or other peaceful purposes
- Does not require that the biological agent be a “Select Agent,” only that that agent is capable of causing biological

## *Appendix A — Applicable Statutes*

malfunction, disease, or death in a living organism (Title 18 USC Section 178).

- “Knowingly” “Possess” state of mind requirement.
- Carries the penalty of fines, imprisonment up to 10 years, or both.
- 8 Year statute of limitation for non-capital cases (no interstate element necessary).

### Possession by Restricted Persons, Title 18 USC Section 175b\*

- No restricted person shall ship or transport interstate or foreign commerce, or possess in or affecting commerce, any biological agent, toxin, or receive any biological agent or toxin that has been shipped or transported in interstate or foreign commerce, if the biological agent or toxin is listed as a select agent in subsection (j) of section 72.6 of Title 42, CFR.
- The term “Select Agent” does not include any biological agent or toxin that is in its naturally-occurring environment, if the biological agent or toxin has not been cultivated, collected, or otherwise extracted from its natural source.
- “Restricted person” includes an individual who:
  - is under indictment for a crime punishable by imprisonment for a term exceeding 1 year;
  - has been convicted in any court of a crime punishable by imprisonment for a term exceeding 1 year;
  - is a fugitive from justice;
  - is an unlawful user of any controlled substance (as defined in section 102 of the Controlled Substances Act (21 USC 802));
  - is an alien illegally or unlawfully in the U.S.;
  - has been adjudicated as a mental defective or has been committed to any mental institution;

## *Appendix A — Applicable Statutes*

- is an alien (other than an alien lawfully admitted for permanent residence) who is a national of a country that the Secretary of State has identified as having provided support to terrorism;
  - has received a dishonorable discharged from the Armed Services of the U.S.
- Carries a penalty of imprisonment up to 10 years, fines, or both.
  - 8 Year statute of limitation for non-capital cases (no interstate element necessary)

\* Note the term “biological agent,” “toxin,” “delivery system,” and “vector” are defined for all references in the Chapter 10 Biological Weapons (Section 175-178) provisions as:

**Biological agent:** any microorganism, virus, infectious substance, or biological product that may be engineered as a result of biotechnology, or any naturally occurring or bioengineered component of any such microorganism, virus, infectious substance, or biological product, capable of causing:

- Death, disease, or other biological malfunction in a human, an animal, a plant, or another living organism;
- Deterioration of food, water, equipment, supplies, or material of any kind; or
- Deleterious alteration of the environment.

**Toxin:** the toxic material of plants, animals, microorganisms, viruses, fungi, or infectious substances, or a recombinant molecule whatever its origin or method of production, including:

- Any poisonous substance or biological product that may be engineered as a result of biotechnology produced by a living organism; or
- Any poisonous isomer or biological product, homolog, or derivative of such a substance.

**Delivery System:** Any apparatus, equipment, device, or means of delivery specifically designed to deliver or disseminate a biological agent, toxin, or vector.

**Vector:** a living organism, or molecule, including recombinant molecule, or biological product that may be engineered as a result of biotechnology, capable of carrying a biological agent or toxin or a host.

## HHS AND USDA SELECT AGENTS AND TOXINS 7 CFR Part 331, 9 CFR Part 121, and 42 CFR Part 73

### HHS SELECT AGENTS AND TOXINS

Abrin  
Cercopithecine herpesvirus 1 (Herpes B virus)  
*Coccidioides posadasii*  
Conotoxins  
Crimean-Congo haemorrhagic fever virus  
Diacetoxyscirpenol  
Ebola virus  
Lassa fever virus  
Marburg virus  
Monkeypox virus  
Reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments (Reconstructed 1918 Influenza virus)

Ricin  
*Rickettsia prowazekii*  
*Rickettsia rickettsii*  
Saxitoxin  
Shiga-like ribosome inactivating proteins  
South American Haemorrhagic Fever viruses  
Flexal Junin Sabia  
Guanarito Machupo  
Tetrodotoxin  
Tick-borne encephalitis complex (flavi) viruses  
Central European Tick-borne encephalitis  
Far Eastern Tick-borne encephalitis  
Kyasanur Forest disease  
Omsk Hemorrhagic Fever  
Russian Spring and Summer encephalitis  
Variola major virus (Smallpox virus) and Variola minor virus (Alastrim)  
*Yersinia pestis*

## Appendix A — Applicable Statutes

### OVERLAP SELECT AGENTS AND TOXINS

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

### USDA SELECT AGENTS AND TOXINS

African horse sickness virus  
African swine fever virus  
Akabane virus  
Avian influenza virus (highly pathogenic)  
Bluetongue virus (Exotic)  
Bovine spongiform encephalopathy agent

Camel pox virus  
Classical swine fever virus  
*Cowdria ruminantium* (Heartwater)  
Foot-and-mouth disease virus  
Goat pox virus  
Japanese encephalitis virus  
Lumpy skin disease virus  
Malignant catarrhal fever virus (Alcelaphine herpesvirus type 1)  
Menangle virus  
*Mycoplasma capricolum*/ M.F38/M. *mycoides Capri* (contagious caprine pleuropneumonia)  
*Mycoplasma mycoides mycoides* (contagious bovine pleuropneumonia)  
Newcastle disease virus (velogenic)  
Peste des petits ruminants virus  
Rinderpest virus  
Sheep pox virus  
Swine vesicular disease virus  
Vesicular stomatitis virus (Exotic)

### USDA PLANT PROTECTION AND QUARANTINE (PPQ) SELECT AGENTS AND TOXINS

*Candidatus Liberobacter africanus*  
*Candidatus Liberobacter asiaticus*  
*Peronosclerospora philippinensis*  
*Ralstonia solanacearum* race 3, biovar 2  
*Schlerophthora rayssiae* var *zeae*  
*Synchytrium endobioticum*  
*Xanthomonas oryzae* pv. *Oryzicola*  
*Xylella fastidiosa* (citrus variegated chlorosis strain)

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## Appendix B — Acronyms

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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

## *Appendix B — Acronyms*

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 <sub>50</sub>	Lethal Dosage needed to kill at least 50% of the persons within the target area



## *Appendix B — Acronyms*

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

## *Appendix B — Acronyms*

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

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## Appendix C — Glossary

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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.

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

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

## Appendix C — Glossary

Botulinum Toxin [Toxin]*	Toxin produced by <i>Clostridium botulinum</i> (found in non-acidic meat samples, vegetable cans, and in soil)
Brachycardia	Slow heart beat
Brucellosis (Undulant Fever) [Bacteria]*	Caused by infection with a number of <i>Brucella</i> bacteria, notably <i>Brucella suis</i> , <i>Brucella abortus</i> , and <i>Brucella melitensis</i>
Chikungunya Virus [Virus]*	Virus communicated to humans from the bite of the <i>Aedes aegypti</i> 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 <i>Vibrio cholera</i>
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

## *Appendix C — Glossary*

<b>Cyanosis</b>	A dark bluish or purplish coloration of the skin and mucous membrane due to deficient oxygenation of the blood
<b>Distal</b>	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
<b>Dysarthria</b>	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
<b>Dysphagia, dysphagy</b>	Difficulty in swallowing
<b>Dyspnea</b>	Shortness of breath/difficulty breathing
<b>Edema</b>	An accumulation of an excessive amount of watery fluid in cells, tissues, or cavities
<b>Encephalitis</b>	Inflammation of the brain
<b>Endotoxemia</b>	Presence of endotoxins in the blood
<b>Epistaxis</b>	Bleeding from the nose
<b>Erythema</b>	Redness of the skin caused by capillary dilation
<b>Exanthema</b>	Skin eruption occurring as symptom of acute viral or coccal disease
<b>Fomite</b>	Items such as articles of clothing or eating utensils that may harbor a disease and are capable of transmitting the disease

## Appendix C — Glossary

Glanders [Bacteria]*	An infection caused by the bacteria <i>Burkholderia mallei</i> (formerly known as <i>Pseudomonas mallei</i> )
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 <i>Burkholderia pseudomallei</i>
Monkeypox [Virus]*	Naturally occurring relative of variola (smallpox) virus found in Africa
Myalgia	Muscular pain
Mydriasis	Dilation of the pupil
Plague (Black Death) [Bacteria]*	Caused by infection with the bacteria <i>Yersinia pestis</i> (formerly known as <i>Pasturella pestis</i> ); bubonic plague is spread from rodents to humans by bite of infected flea; pneumonic plague results from inhalation of the organism

## Appendix C — Glossary

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 <i>Coxiella burnetii</i>
Rickettsia (Typhus — endemic or epidemic) [Rickettsia]*	Epidemic typhus (acute onset) is caused by <i>Rickettsia typhi</i> . Endemic typhus (slower onset and milder) is caused by <i>Rickettsia prowazekii</i>
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 <i>Staphylococcus aureus</i>
Tachycardia	Rapid heart beat

## Appendix C — Glossary

Trichothecene Mycotoxins [Toxin]*	Toxin produced by filamentous fungi (molds) of the genera <i>Fusarium</i> , <i>Myrothecium</i> , <i>Trichoderma</i> , <i>Stachybotrys</i> , and others; mycotoxins have been referred to as "yellow rain"
Tularemia (rabbit fever or deerfly fever) [Bacteria]*	Caused by the bacteria <i>Francisella tularensis</i>
Typhoid Fever [Bacteria]*	Caused by infection with the bacteria <i>Salmonella typhi</i>
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



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## Appendix D — Acknowledgements

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