

Coordinating Agency

Madison County Department of Health

Primary Agencies

Madison County Department of Health
Merit Health of Madison

State Coordinating Agency

Mississippi State Department of Health

State Primary Agencies

Mississippi State Department of Health
University of Mississippi Medical Center

State Supporting Agencies

47th Civil Support Team
Mississippi Board of Animal Health
Mississippi Department of Agriculture and
Commerce
Mississippi Department of Environmental
Quality
Mississippi Department of Public Safety
Mississippi Emergency Management
Agency
Mississippi State University
Mississippi Office of Homeland Security
Mississippi State Fire Academy

Non-Governmental Supporting Agency

American Red Cross

Introduction

Purpose

The purpose of the Biological Incident Annex is to outline the actions, roles, and responsibilities associated with response to a human disease outbreak of known or unknown origin requiring county emergency actions. This annex outlines biological incident response actions including threat assessment notification procedures, laboratory testing, joint investigative/response procedures, and activities related to recovery.

Biological outbreak incidents involving animals, food, and agriculture will be addressed as outlined in Emergency Support Function (ESF) #11: Animals and Agriculture and the Food and Agriculture Incident Annex.

Scope

The broad objectives of Madison County’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.

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- Control and contain any possible epidemic (including providing guidance to county and municipal public health authorities).
- Augment and surge public health and medical services.
- Track and defeat any potential resurgence or additional outbreaks.
- Coordinate the assessment of the extent of residual biological contamination and coordinate decontamination procedures as necessary. In some cases, local-level resources might be inadequate.

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 non-communicable).

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 county and municipal public health and medical emergency managers.

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 state or 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 sometime after illnesses are recognized.
- Environmental surveillance systems 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 United States Postal Service (USPS) 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 Emergency Support Function (ESF) #8, Public Health and Medical Services Annex, ESF #10, Oil and Hazardous Materials Response Annex, and the Terrorism Incident Annex.
- County and state agencies 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. Mississippi State Department of Health coordinates outbreak investigations from the Office of Epidemiology in Jackson.
- 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 local office of the Federal Bureau of Investigation (FBI) is to be notified. The FBI, in turn, immediately notifies the U.S. Department of Homeland Security, Homeland Security Operations Center, and the National Counterterrorism Center. (See the Terrorism Incident Annex for additional information on the FBI's roles and responsibilities.)
- 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 the MSDH's Office of Epidemiology and U.S. Department of Health and Human Services.
- Once notified of a credible threat or natural disease outbreak, the MSDH activates the Public Health Command/Coordination Center to assess the situation and determine appropriate public health and medical actions. Mississippi Office of Homeland Security (MOHS) coordinates overall nonmedical support and response actions across all federal departments and agencies. MSDH coordinates overall public health and medical emergency response efforts across all state departments and agencies.
- MSDH provides guidance to county and municipal authorities on proper handling of any biological materials.
- Other state and regional departments and agencies may be called upon to support MSDH during the various stages of a disease outbreak response in the preparation, planning, and/or response processes.
- If there is potential for environmental contamination, MSDH collaborates with the Mississippi Department of Environmental Quality (MDEQ) in developing sampling strategies and sharing results.
- Given the dynamic nature of a disease outbreak, Mississippi State Department of Health (MSDH), in collaboration with other departments and agencies, determines the thresholds for a comprehensive state public health and medical response. These thresholds are based on specific event information rather than predetermined risk levels.

Planning Assumptions

- In a large disease outbreak, county and municipal officials require a highly coordinated response to public health and medical emergencies. The outbreak also may affect other states/regions and therefore involve extensive coordination with MOHS.

- 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 State Emergency Operations Center in coordination with multiple county and municipal jurisdictions.
- A response to noncontagious public health emergencies may require different planning assumptions or factors.
- The introduction of biological agents, both natural and deliberate, is 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 state response requires close coordination between numerous agencies at all levels of government and with the private sector.
- State government supports affected local health jurisdictions as requested or required. The response by MSDH and other state agencies is flexible and adapts as necessary as the outbreak evolves.

Concept of Operations

Biological Agent Response

The key elements of an effective biological response include (in non-sequential order):

- Rapid detection of the outbreak
- Swift agent identification and confirmation
- Alert notification of appropriate agencies involved
- 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
- Identify public health, medical, and mental health implications
- Control and containment of the epidemic

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- 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 bio-agents that persist in the environment
- Tracking and preventing secondary or additional disease outbreak

Primary state functions include supporting local public health and medical capacities according to the policies and procedures detailed in the Madison County Comprehensive Emergency Management Plan Base Plan and the Emergency Support Function (ESF) #8 Annex.

Suspicious Substances

Field tests for biological, chemical, and/or radiological agent may be performed. All suspected bioterrorism samples are transported to a Laboratory Response Network (LRN) laboratory, where expert analysis is conducted using established U.S. Department of Health and Human Services/Centers for Disease Control and Prevention protocols/reagents. A major component of this process is to establish and maintain the law enforcement chain of custody and arrange for transport.

- Notify Mississippi Emergency Management Agency communications to request the 47th CST for field testing of suspicious substances.
- Mississippi State Department of Health will provide the resources to transport biological samples to LRN laboratory.

The following actions occur if a positive result is obtained by LRN on an environmental sample submitted by the state or other designated agencies:

- The LRN immediately notifies the local FBI of the positive test result.
- The FBI Field Office makes local notifications and contacts the FBI Headquarters Weapons of Mass Destruction Operations Unit.

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 decision-making 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 state law enforcement 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 local 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.

Notification

Any disease outbreak suspected or identified by Mississippi State Department of Health (MSDH) or through another public health partner is brought to the immediate attention of the State Health Officer or designee as detailed in the Emergency Support Function #8 Annex or internal MSDH policy documents, in addition to the notification requirements contained in the Comprehensive Emergency Management Plan Base Plan.

Activation

Once notified of a threat or disease outbreak that requires, or potentially requires significant public health and/or medical assistance, MSDH activates the Public Health Command/Coordination Center to assess the situation and determine the appropriate public health and medical actions. The Mississippi Office of Homeland Security 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)
- Organization of state public health and medical response assets (in conjunction with local officials) to include personnel, medical supplies, and materials

Actions

Controlling the Epidemic

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

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- Madison County Department of Health will assist local emergency services and medical authorities with epidemic surveillance and coordination.
- Madison County EMA and Madison County Sheriff's Department assesses the need for increased surveillance involved in the outbreak and notifies the appropriate public health officials with recommendations should increase surveillance in these localities be needed.
- Mississippi Office of Homeland Security (MOHS) and Mississippi Emergency Management Agency coordinates with MSDH and local 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.
- 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 Strategic National Stockpile and communicated to the general public.
- The State Health Officer may use U.S. Department of Health and Human Services to activate the National Disaster Medical System and the U.S. Public Health Service Commissioned Corps.
- The Governor of Mississippi implements isolation and/or social-distancing requirements using state/local legal authorities. In order to prevent the interstate spread of disease, MSDH may take appropriate state 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, Madison County Health Department and MSDH works in a coordinated effort with MOHS, U.S. Department of Homeland Security, Border and Transportation Security, Customs and Border Protection to identify and isolate persons, cargo, mail, or conveyances entering the state of Mississippi that may be contaminated. MSDH provides information and training, as appropriate, to Mississippi Office of Homeland Security, U.S. Department of Homeland Security, Border and Transportation Security, Customs and Border Protection 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 Mississippi State Department of Health and, as appropriate, the Mississippi Board of Animal Health, work with local 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, capabilities, and procedures contained in the Emergency Support Function (ESF) #8, ESF #10, and ESF #11 Annexes, the Terrorism Incident Law Enforcement and Investigation Annex, the Food and Agriculture Annex, and the Catastrophic Incident Annex.

Responsibilities

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

ESF Review and Maintenance

As a minimum, the ESF #8 Coordinator will coordinate a biennial review of this annex with all support agencies. Additional reviews may be conducted if experience with a significant incident or regulatory changes indicate a need. Recommended changes will be submitted to the Madison County Board of Supervisors for publication and distribution.