

NON-PANDEMIC DISEASE OUTBREAK

Essential Elements of Information – (EEI)

EEI contain Situational Awareness information on People, Systems, and Services Providers that is critical to acquire in the first and perhaps second operational periods. Specific elements stated here may not apply in every event. Additional elements must be generated as the event evolves through Recovery.

Impact of Event or Scenario

A disease outbreak could be naturally-occurring or result from bioterrorism. Bioterrorism is a crime. The criminal investigation is the responsibility of ESF 16 -- Law Enforcement. The epidemiology investigation, outbreak containment, and treatment are the responsibility of ESF 8.

Microorganisms that cause disease include viruses, bacteria, and protozoan parasites. Viruses are generally the most difficult to treat. Some protozoan parasites respond to antibiotics. Some bacteria are resistant to a range of antibiotics.

Some diseases may result in physical damage to major organs and long-lasting chronic and debilitating conditions.

A disease outbreak may or may not be contagious. Some non-contagious diseases are spread by vectors – mostly insects that transmit disease through their bite. Examples are malaria, West Nile Virus, and Eastern Equine Encephalitis. The basic tool to contain these diseases is vector control.

Enteric pathogens in food, water, and ice can cause severe gastro-intestinal symptoms that may affect thousands of persons and may be fatal to some. Enteric diseases are often spread by poor sanitation or indirect contamination from vomit or fecal matter. The containment priority is locating, isolating, removing, and/or treating the source. Examples of enteric disease pathogens include *Campylobacter*, *Cryptosporidium*, *Escherichia coli*, and *Salmonella*.

Some bacteria create spores resistant to environmental conditions that rapidly degrade the infection capability in most viruses and other bacteria. Most notable as a spore former is *Bacillus anthracis* which causes the disease anthrax. These spores present a difficult and long-lasting contamination problem which must be addressed in the containment strategy.

Contagious diseases that are transmitted through the respiratory tract generally pose the greatest concern. They are self-propagating and very difficult to contain. Some may cause secondary pneumonia infections. They may be

spread indirectly on fomites -- inanimate objects or substances capable of carrying infectious organisms. Examples of contagious diseases include measles, cold viruses, influenza, and plague. Containment strategies may include isolation, quarantine, vaccination, and treatment.

A bioterrorism release of a disease agent may result in a downwind drift of an aerosol cloud that will cover great distances. A bioterrorism attack could be announced or covert. The announcement could cite the name of the agent used, although this could be deliberately misleading. A covert release of a disease agent could significantly increase investigation assets and time requirements while delaying containment and treatment implementation.

The EEI listed below will be needed by the ESF 8 Situation Unit to determine current situation and forecast response strategies during the **immediate response phase** and **chronic condition surveillance phase**. Situation Awareness will require an evaluation of the impact of the event or scenario on People, Systems, and Service Providers.

Not all EEI listed in Table 1 and 2 will be needed depending on the disease agent identified, method of dissemination, and progress of the outbreak.

People

People include vulnerable populations and the general population. Vulnerable populations may be classified as static or transitory. *Static populations* consist of people who have medically complex conditions, those who are functionally disabled, frail elderly, and children who are two years old and younger. *Transitory populations* are those who have chronic medical conditions, seniors in high-rise buildings, and children older than two years old. Populations in both categories that are vulnerable to infectious disease because of age or an immune compromised condition will be most affected by a naturally occurring disease outbreak. A bioterrorism attack with a concentrated agent may quickly overwhelm immunity even among the general population. Behavioral health issues may also require monitoring and treatment over time.

Systems

Systems include healthcare, medical care, infrastructure, transportation, and communications. A few disease agents, e.g., anthrax spores, may require decontamination before systems can be returned to general use. Most disease agents will not leave a contamination residue. Although systems may not be physically affected by a biological agent, service providers and those who operate and maintain these systems may be affected causing degradation and shutdown.

Service Providers

Service providers are those who provide health and medical care and support services. Any disease outbreak that affects the general population will degrade service provider operations.

Immediate Response

People Information

- Pathogen identification and characteristics.
- Number of confirmed cases reported and locations.
- Number of suspected cases reported and locations.
- Number of cases in isolation
- Number of cases in quarantine
- Behavior health issues related to bioterrorism or disease spread.

Systems Information

- Locations of quarantine facilities.
- Availability of treatment medications.
- Request and status of Vendor Managed Inventory of medications.
- Request for Strategic National Stockpile medications status.
- Pod locations and activity.
- Availability of vaccines.
- Locations of vaccination clinics.
- Vector control measures – supplies on hand and resupply needs
- Locations of decontamination stations and number of persons processed.
- Need for temporary clothing replacement and blankets for persons who are decontaminated.
- Numbers and locations for deployed Voluntary Health Professionals.
- Disease prevention education materials available for public distribution.
- Need for resupply of educational materials.
- Locations of decontamination stations and number of persons processed.
- Need for temporary clothing replacement and blankets for persons who are decontaminated.
- Numbers and locations for deployed Voluntary Health Professionals.
- Disease prevention education materials available for public distribution.
- Need for resupply of educational materials.
- Rumors being spread by disease symptoms, transmission rates, fatalities or bioterrorism announcements – coordination with ESF 14.
- Information on coping/stress reduction/psychological first aid

Service Providers

- Epidemiology Strike Teams deployed – number and location.
- Environmental Strike Teams deployed – number and location.
- Regional Disaster Behavioral Health Assessment Teams deployed – number and location
- Laboratory confirmation.
- Number of hospital admissions for confirmed and suspected cases.
- Case treatment strategy.
- Numbers and locations for deployed Voluntary Health Professionals.

Chronic Condition Surveillance

People Information

- Numbers and locations of persons with chronic conditions resulting from contracting the disease.
- Types of conditions being seen.
- Trends in morbidity and mortality
- Numbers of persons with lingering behavioral health issues.

Systems Information

- Resupply of medications and vaccines if needed.
- Rumors being spread among and about persons with the chronic effects – coordination with ESF 14

Service Providers

- Health and medical support being given.
- Shortfalls in medical support that need to be addressed.