Biological Weapons Response Template and Decision Tree

Dr. Mohamed Mughal

Homeland Defense Business Unit
U.S. Army Soldier and Biological Chemical Command
Department of Defense

Telephone: 410-436-4921
Email: mohamed.mughal@sbcctm.apgea.army.mil
<table>
<thead>
<tr>
<th>Report Date</th>
<th>Report Type</th>
<th>Dates Covered (from... to)</th>
<th>Contract Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>30Apr2001</td>
<td>N/A</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title and Subtitle</th>
<th>Grant Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Weapons Response Template and Decision Tree</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Program Element Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mughal, Mohamed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performing Organization Name(s) and Address(es)</th>
<th>Project Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Army Soldier and Biological Chemical Command Department of Defense</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performing Organization Report Number</th>
<th>Task Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsoring/Monitoring Agency Name(s) and Address(es)</th>
<th>Work Unit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDIA (National Defense Industrial Association) 211 Wilson Blvd, STE. 400 Arlington, VA 22201-3061</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsor/Monitor's Acronym(s)</th>
<th>Sponsor/Monitor's Report Number(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distribution/Availability Statement</th>
<th>Classification of this page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved for public release, distribution unlimited</td>
<td>unclassified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplementary Notes</th>
<th>Classification of Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceedings from the Weapons of Mass Destruction (WMD) Terrorism Preparedness &amp; Response Conference &amp; Exhibition, 30 April - 2 May 2001 Sponsored by NDIA</td>
<td>unclassified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abstract</th>
<th>Limitation of Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report Classification</th>
<th>Classification of Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>unclassified</td>
<td>unclassified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
</tr>
</tbody>
</table>
• The Bioresponse Template is an integrated, full-spectrum response strategy designed to mitigate the consequences of a bioterrorist attack aimed at a civilian population.

• The template can be used by any community or government as a starting point to formulate its own bioresponse plans.
Continuous Surveillance

Key Decision
Decide if an unusual public health event has occurred.

Initiate Active Investigation
Medical surveillance improves the chances of quickly detecting unusual medical events:

- Medical staff should be trained to be alert to unusual clusters of disease symptoms indicative of bioterrorist activity
- Initiates the four *active investigation* components
Active Investigation

- Expanded Surveillance
- Medical Diagnosis
- Epidemiological Investigation
- Criminal Investigation

Decide if a major public health event is occurring.

Make Key Decisions

Results
• Local officials should have established procedures for confirmation and definitive diagnosis of suspected BW agents

• Undertake clinical lab tests

• Obtain presumptive diagnosis and preliminary lab ID

• Ship samples to CDC/USAMRIID and to USDA

• Obtain confirmed diagnosis and agent ID
• Integrate epi and criminal data gathering and sharing
• Conduct information and contact-tracing efforts
• Establish case definition and update with new findings
• Analyze distribution of cases, places, and time
• Define population at risk
• Recommend measures for containment, prevention, treatment, and protection
CRIMINAL INVESTIGATION

- Activate investigation task force
- Conduct interviews with hospital staff, patients, and others
- Establish tip-line
- Collect evidence, such as unexplained powder residue
- Interface with epi investigation and share information
Results from the Active Investigation

Key Decisions

- Decide on a potential cause and the population at risk.
- Decide on the appropriate medical prophylaxis, treatment, and isolation measures.
- Decide on appropriate activation of response functions and strategies.

Activate Emergency Response
BW RESPONSE COMPONENTS & KEY DECISIONS

Emergency Response

- Command & Control
  - L S F
- Hazard Assessment Mitigation & Control
- Prophylaxis & Immunization
- Care of Casualties
- Control of Affected Area & Population
- Resource & Logistic Support
- Continuity of Infrastructure
- Fatality Management
- Family Support Services
COMMAND AND CONTROL

- Activate EOC
- Implement Emergency Operations Plans
- Deploy all relevant assets
- Provide representatives to JOC and ROC
- Declare emergency/disaster
HAZARD ASSESSMENT, MITIGATION, & CONTROL

- Conduct environmental sampling (air, water, soil, surfaces, animals, insects, plants, as applicable)
- Conduct control and decontamination measures
- Perform vector and animal control
- Control food sources
- Support sampling and decontamination teams
• Mass prophylaxis involves the distribution and medical application of appropriate antibiotics, vaccines, or other medications in order to prevent disease and death in exposed victims

• The timeliness with which medical prophylaxis can be implemented effectively is critical to its success

• Local officials should address the issue of providing priority prophylaxis for use by “essential” emergency personnel
CARE OF CASUALTIES

- Provide care to initial patients in existing hospitals
- Activate Modular Emergency Medical System
- Establish medical command centers in community hospitals
- Provide medical regulation on “level of treatment”
- Establish casualty collection sites (e.g. NEHC, POD)
- Establish ancillary acute care facilities (e.g. ACC)
- Establish community outreach (particularly for contagious disease)
CONTROL OF AFFECTED AREA & POPULATION

• Physical control:
  – Provide security at medical sites and vital installations
  – Limit gatherings
  – Provide ingress/egress routes for responders

• Public information control:
  – Operate local incident help-line
  – Post incident and self-help information
  – Conduct senior officials’ press conferences
Establish mobilization centers and distribution points

Establish centralized reception center for support personnel

Provide housing and feeding to emergency responders and home-bound victims

Coordinate transportation and delivery of supplies
CONTINUITY OF INFRASTRUCTURE

- Activate continuity of operations and staffing plans
- Close business offices to minimize contact with public
- Activate alternate operating facilities
- Identify essential personnel and request priority treatment and protective measures
- Activate mutual aid among industry
Fatality management:
- Rapid central processing of remains
- Long-term storage facilities
- Determination of final disposition

Activation of a planned, centralized command system must occur to manage the response.
FAMILY SUPPORT SERVICES

• Provide non-medical victim assistance
• Conduct notification of next-of-kin
• Provide crisis counseling
• Implement state and federal assistance programs
• Implement central coordination of volunteer service organizations
Timing of response is the key:
• Surveillance to detect attack
• Make response decisions quickly
• Implement pre-existing response plans
• Distribute prophylaxis (if applicable) quickly
• Keep up with flow of sick and worried well
• Establish system to receive and rapidly utilize outside help

Early and continuous coordination among the law enforcement, medical, emergency management, and public health communities is fundamental
CONCLUSIONS (Cont.)

- A BW terrorist event would primarily represent a public health *catastrophic medical emergency*

- The most crucial aspect of an effective total response system will be the medical response - need medical community buy-in and participation
Timely and effective medical response to a large number of BW casualties would require the rapid establishment of the Modular Emergency Medical System (MEMS):

- Neighborhood Emergency Help Centers (NEHC) to receive casualties and worried well, provide triage, and dispense pharmaceuticals and instructions
- Acute Care Centers (ACC) to provide definitive and supportive care to the critically ill
- Sector outreach to provide instructions, pharmaceuticals, and mobilization of citizen self-help for the critically ill that stay at home

Pamphlets forthcoming for MEMS, NEHC, and ACC
CONCLUSIONS (Cont.)

- BW response must be led by local community
- City officials will need to make difficult decisions on a presumptive basis
- Need regional, state, and federal assets for BW incident
- Need to consider long-term effects, distributed attacks, and agricultural targets
Dr. Mohamed Mughal
410-436-4921
www2.sbccom.army.mil/hld/bwirp/