PUBLIC HEALTH CRISIS MANAGEMENT: THE MALAYSIAN SCENARIO

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NSC Directive No.20

A serious disruption of community function causing widespread human, material or environmental losses which exceed the ability of the affected community to cope using its own resource.

Any actual threat to public safety and or public health where local government and emergency services are unable to meet the immediate needs of the community.

National Security Council Directive No. 20: “an incident that occurs unexpectedly, complex in nature, resulting in the loss of lives and damage to properties and the environment as well as interfering in the daily activities of the local community. The incident requires the management which involves resources, equipment, frequency and extensive manpower from various agencies as well as effective coordination and the possibility of taking complex actions over a long period of time”
### PREVIOUS INCIDENTS - Malaysia

Malaysia has been spared from major natural disasters. However, there is a history of several crisis of public health concern caused by biological, industrial and environmental hazard situations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Incident Description</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>Fireworks factory explosion and fire - Sg. Buloh</td>
<td>22 deaths; 1647 injured</td>
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<tr>
<td>1992</td>
<td>Ship explosion and fire - Klang Port</td>
<td>10 deaths</td>
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<tr>
<td>1993</td>
<td>Highland Towers condominium collapse</td>
<td>48 deaths</td>
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<tr>
<td>1995</td>
<td>Landslide entrance road - Genting Highlands</td>
<td>20 deaths; 22 injured</td>
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<tr>
<td>1996</td>
<td>MVA (bus plunging into ravine) - Genting Highlands&lt;br&gt;Mud flood at aboriginal settlement - Perak&lt;br&gt;Tropical storm “Greg” - coastal Sabah&lt;br&gt;Cholera outbreak - Penang</td>
<td>17 deaths&lt;br&gt;44 deaths / 30 homes&lt;br&gt;230 deaths / 4925 homes&lt;br&gt;1,182 cases</td>
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<td>1997</td>
<td>Enterovirus outbreak - Sarawak&lt;br&gt;Smoke haze</td>
<td>42 deaths&lt;br&gt;Economic losses</td>
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<tr>
<td>1998/99</td>
<td>Nipah virus/ viral encephalitis outbreak&lt;br&gt;Food contamination by Dioxin in Belgium/ EU</td>
<td>283 cases / 109 deaths&lt;br&gt;Economic losses</td>
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<tr>
<td>2001</td>
<td>Anthrax threat related scare</td>
<td>103 reported incidents</td>
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<tr>
<td>2003</td>
<td>SARS</td>
<td>5 probable cases</td>
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<tr>
<td>2004</td>
<td>Avian Influenza&lt;br&gt;Tsunami</td>
<td>No human cases&lt;br&gt;68 deaths; 767 injured</td>
</tr>
<tr>
<td>2009/10</td>
<td>Pandemic H1N1 2009 (till 03 June 2010)</td>
<td>14,912 cases / 88 deaths</td>
</tr>
</tbody>
</table>
Real Risk of importation

- Malaysia and region at risk of importation of exotic and novel biological agents:-

- Wild poliovirus infection in 1992
- Visceral Leishmaniasis (Kala Azar) in 1993
- Chikungunya viral infection in 1998
- Nipah viral encephalitis in 1998/99
- Menangle/Tioman Virus in 2000
- Cholera 0139 in 2002
- SARS in 2003 (SEARO & WPRO)
- Avian influenza (H5N1) in 2004 (SEARO & WPRO)
- Pandemic H1N1 2009
- ??? future importations (select biological agents)
MOH PERSPECTIVE

- PREPARATORY PHASE
- EMERGENCY RESPONSE PHASE
- RECOVERY & REHABILITATION PHASE

  - Main aim:
    - Save lives
    - Minimize injury & illness
    - Prevent escalation or spread
    - Prevent secondary hazards / complication
    - Assistance to public & family members, volunteers, rescuers, media
CRISIS PREPAREDNESS AND RESPONSE CENTRE (CPRC)

- Central command and coordination for all outbreak response activities
- Compile and monitor all information on outbreak response activities
- Coordinate inter and intra agencies co-operation
- Determining additional resources needed and coordinates its mobilization
- Updating and analyzing information / data
- Provide on formation to the public
- Preparation and dissemination of daily report
- Preparation of press release / statement
- Preparation of information for the outbreak Task Force

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Pre-Crisis Mode:
Conducting hazards & vulnerability analyses of the population
Modeling/simulating crisis scenarios
Conducting simulations
Designing emergency protocols
Assessing level of emergency preparedness
Assessing flexibility of surveillance systems
Training health and safety personnel
Epidemiologic Methods in Disasters

Crisis mode:
Conducting crisis damage assessment
Conducting rapid field investigations
Identifying urgent needs & matching resources
Prioritizing relief efforts
Conducting crisis surveillance
Conducting epidemic investigations
Rapid Needs Assessment

- To determine the magnitude of the emergency.
- To define the specific health needs of the affected population.
- To establish priorities and objectives for action.
- To identify existing and potential public health problems.
- To evaluate the capacity of the local response including resources and logistics.
- To determine external resource needs for priority actions.
- To set up the basis for a health information system.
ALERT MECHANISMS

Outbreak

Surveillance System
- Mandatory ID Notification
- Syndromic Notification
- Lab-based Notification
- Community-based
- Clinical-based
- With other agencies
  - Animal surveillance
  - Foreign workers ID

District Health Office

State Health Office

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Outbreak / Crisis / Disaster

CRISES PREPAREDNESS AND RESPONSE CENTRE (CPRC)

Rapid Assessment Team (RAT)

RRT (N)

RRT (S)

RRT (D)

Hospitals & Laboratories

Public Health Laboratory

PUBLIC HEALTH RESPONSE

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RESPONSE

INFORMATION & SUPPORT REQUEST

National Level

State Level

District Level

International bodies (WHO)

Neighbouring countries

Other states directors
Reference Hospitals
Reference Labs

Neighbouring State Directors
State Hospital

Neighbouring District MOH
District Hospital

GOARN

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POST CRISIS

- “Stand down” on Medical Emergencies Operation to be declared
- Post trauma rehabilitation of victims
- Debriefing to assess human resources, logistics, and implementation of protocols/procedures. Revise plans if needed
- Continue monitoring and surveillance of activities
- Documentation
- Feedback to community and other agencies
CBRN linked Incidents
Challenges to Health and Security

Intentional Misuse of Biological Agent

Public Health

Security

100 nm

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Why This is Hot?

- Emerging infectious diseases
- Laboratory Acquired infections
- Biotechnology
  - Dual use biological research
  - Biological weapons
- Bioterrorism
- Biosafety
- Biosecurity
- International Health Security
- International Health Regulations
- Biological & Toxins Weapon Convention

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Action Chart for the Management of Suspected Anthrax Exposure at Site of Contamination and in Hospital - Malaysia

- Decontaminate exposed individual (HAZMAT Team)
  - Double sealing of contaminated clothing
  - Exposed Person: Change of attire
    - Medical Management by Emergency Physician
      - Home
        - Follow up with Hosp Med Unit
          - Package / Environmental samples
            - Police Dept
              - Veterinary Research Institute
                - LAB RESULTS
                  - MOH Operations Centre
                    - Counseling
                    - Post exposure chemoprophylaxis
                    - Follow-up details provided
                      - ve result: Stop Rx
                        +ve result: continue for 60 days

1/52 FU Interval
2/52
2/52 Intervals -until lab result known

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POTENTIAL IMPACTS ON NON HEALTH SECTORS

- Decreased Supply
  - Reduced production
  - Disrupted transportation
  - International trade of commodities
  - Trans-company dependencies

- Decreased Demand
  - Retail Trade
  - Transportation
  - Leisure Travel
  - Restaurant

- Breakdown of services
  - Economic and Social Disruption
    - Lack of maintenance
    - Disrupted supply chain
    - Etc.

- Changed Demand
  - Military (support for logistics, etc.)
  - Mortuary & burial services
  - Refuse Collection
  - Water & Sanitation
  - Telecommunication (Phone and Internet)
  - Cleaning Supplies
  - Cash Withdrawal
  - Protection against insecurity
  - Electricity/Power supply
  - Food Distribution
  - Emergency Services

Death
Illness
Absenteeism
Care
Fear

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WAY FORWARD

Efficient response depends on:
• Preparedness which include infrastructure, trained personnel and adequate funding
• Efficient integrated surveillance system and early alerts
• Co-ordination of various parties involved with well defined responsibilities and functions
• Clear line of communication and chain of command
• Application of lessons learnt during previous experience
• Preparing for the element of surprise and for the worst case scenario
Acknowledgement and Appreciation

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Gracias / Thank You