Surveillance, early warning, alert and response: Communicable and vector-borne diseases

Department of Disease Control
Ministry of Public Health
Thailand

WHO Conference on
THE HEALTH ASPECTS OF THE TSUNAMI DISASTER IN ASIA
Phuket, Thailand, 4 - 6 May 2005
Lessons learned

• Rapid assessment on surveillance system.
• Epidemiological surge capacity
• Epidemic prone diseases
• Active surveillance
• Interventions to prevent epidemic prone diseases
• Sharing of surveillance information for alert
• Further action
Rapid Epidemiological Assessment after disaster

Deaths \(\rightarrow\) Identification
Injured \(\rightarrow\) Rescue
Affected population \(\rightarrow\) Prevent disease /dead /disability

1. Number and demographic of displaced persons
2. Where are they?
3. Accessibility to
   - Clean water
   - Safe Food
   - Cloth
   - Safe shelter
   - Sanitation
   - Primary medical care

4. Epidemic prone disease and response capacity
I. Rapid assessment of surveillance system

Factors effected regular surveillance system

- Damaged to hospitals or health centers +
- Loss of health personnel +
- Communication means breakdown +
- Local staff was mobilized to other emergency relieve activities + → +++
Surveillance

Surveillance function

• Reporting of epidemic prone disease
• Analysis of data
• Detection and verification of abnormal events
• Dissemination of information for action

“Human capacity”
II. Epidemic prone diseases
Under active surveillance in Tsunami affected area

<table>
<thead>
<tr>
<th>Syndromes</th>
<th>Diseases (19 → 23)</th>
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<tbody>
<tr>
<td>Diarrheal</td>
<td>Ac. Diarrhea, Cholera, Dysentery, Food poisoning</td>
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<tr>
<td>Respiratory</td>
<td>Influenza, Pneumonia (include aspirated), Measles</td>
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<tr>
<td>Febrile</td>
<td>Malaria, Dengue, Typhoid, Pyrexia of unknown origin</td>
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<tr>
<td>Neurological</td>
<td>Meningococcal, Encephalitis</td>
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<td>Jaundice</td>
<td>Hepatitis</td>
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<td>Injuries</td>
<td>Wound, electrical</td>
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<tr>
<td>Others</td>
<td>Conjunctivitis, fever with rash, Unknown dead</td>
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**Daily summary of diseases under surveillance.**

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<td><strong>Neurological disease</strong></td>
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Population under active surveillance

1. Displaced population in affected area
2. Non-displaced population in affected district
3. Volunteers from other provinces
III. Epidemiological surge capacity

- Post SARS and Avian Influenza 
  Surveillance and Rapid Response Team (SRRT)
- Mobilize regional and central Team (members)
to 6 provinces
  - Epidemiologist
  - Disease control staff
  - Vector control staff
  - Laboratory
- Phasing
  - Acute (1-4 weeks)
  - Recovery (4th – 6th)
  - Development (after 6th week)
IV. Active surveillance activities

- Daily visit and review patient diagnosis in
  - 22 hospitals and health centers
  - 4 private hospitals
  - 14 temporary camps
  - 2 forensic identification centers
- verify and investigate abnormal events
- daily meeting and summary report
V. Interventions

Food and water-borne
- Bottle water
- Inspect cooking centers
- Fly control

Vector-borne
- Insecticide spraying
- bed net
Vaccine preventable

- **Measles** for children under six years in 14 temporary camps.
- DPT for special island group (Morgan village)
VI. Outbreaks and interesting events detected

Food and water-borne (affected area)
  • food poisoning (7 events in volunteer)

Vector borne (non affected village)
  • Dengue (1 province)
  • Malaria (2 events)

Vaccine preventable diseases (affected area)
  • Mumps in one temporary camp
DHF cases from Phuket Province
27 Dec 2004 – 11 Jan 2005

Onset in January
VII. Information sharing and alert

Local
- Provincial disaster operating room
- Tsunami operating center in Phuket

National
- Ministry operating center in Bangkok
- Media

International
- Daily update to WHO and CDC
- Correction of travelling advice.
VII. Further plan

- Surveillance as one function of mobile medical team
- Strengthen local, regional, and central SRRT
  - core member
  - cross-province activities
  - co-ordination
- Standard operating procedure
A friend in need – A friend indeed

- Provincial Health Office of 6 Tsunami affected area
- SRRT members from the southern provinces
- Regional Disease Control Centers
- Department of Medical Science
- Police department, Army

- WHO staff in Thailand, SEARO
- US CDC staff in Thailand
- International organization
- All government around the world