Disease Surveillance Post-Tsunami: The Experience in Aceh

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World Health Organization
Nanggroe Aceh Darussalam

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- 128,575 deaths
- 93,063 missing
Post-tsunami Infrastructure

- 14 of 21 districts affected
- 1.1 million people adversely impacted
  - >500,000 displaced
- Health personnel
  - 250 dead
  - 441 missing
Post-tsunami Infrastructure

• 53 of 244 health facilities incapacitated
• Severe damage to:
  – Provincial Health Office
  – Provincial Public Health Laboratory
  – Several District Health offices
Risk of Communicable Disease Outbreaks

• Large numbers of displaced persons
• Crowded conditions, flooding, poor sanitation
• Increased risk of communicable diseases: cholera, typhoid, meningitis, vector-borne diseases
Immediate Objectives

- Strengthen surveillance for epidemic-prone diseases and injuries
- Develop a surveillance/early warning and response (EWARN) for epidemic-prone diseases
- Investigate alerts, initiate control measures
- Prepare for outbreaks
Additional Objectives

• Support program activity
  – Immunization program
  – TB program
  – Vector-borne disease program

• Build capacity to improve routine surveillance
Early Warning and Response Network (EWARN)

- Implemented by the Provincial Health Office in close collaboration with WHO
- Surveillance System participants
  - NGOs, Health centers, other UN agencies
  - Hospitals, Laboratories
  - Militaries
Post-tsunami Disease Surveillance
EWARN

- Weekly outpatient reporting
- Weekly hospital-based inpatient reporting
- Daily laboratory-based reporting
- Immediate SMS/phone notification
WHO Technical Input

• Field Team support
  – WHO/GOARN
  – WHO Regional Office

• Tsunami-specific Technical guidelines created
  – Communicable Diseases Toolkit
  – Risk assessment tools
  – Fact sheets and protocols
Tsunami Affected-Area Resources

COMMUNICABLE DISEASE TOOLKIT FOR TSUNAMI AFFECTED AREAS

EARLY WARNING SYSTEM

World Health Organization

COMMUNICABLE DISEASE PROFILE FOR TSUNAMI AFFECTED AREAS

INDONESIA

World Health Organization

World Health Organization
Immediate Phone/SMS Notifications

- Acute watery diarrhoea, cholera
- Bloody diarrhoea, dysentery
- Suspected measles
- Increase in malaria
- Typhoid fever
- Hepatitis
- Dengue fever
- Meningitis
- Tetanus

- Encourage early reporting
- Joint PHO/WHO response
Weekly Reporting

- Nine reportable conditions
  - Acute watery diarrhea
  - Bloody diarrhea
  - Suspected measles
  - Malaria
  - Jaundice syndrome
  - Pregnancy-related death
  - Acute Lower Respiratory Infection
  - Tetanus
  - Meningitis
  - Neonatal death
  - Other fever (>38.5°)

- Outpatients from fixed and mobile clinics
- Inpatients from five hospitals
Laboratory Surveillance

• Daily reporting of all laboratory results
• Followup with submitters as appropriate based on results
  – Review treatment guidelines
  – Facilitate intervention as needed
Weekly Reporting Form

- Inpatient and outpatient
- Bilingual
- Case definitions on reverse
Software/Mapping

• Electronic database for data entry/analysis/mapping
  – Technical assistance
  – Laptops
  – PCs
  – Training
Acute Respiratory Infections
Kasus Infeksi Pernapasan bagian bawah akut

- 0-4yrs
- > 5yrs

Week 1 2 3 4 5 6 7 8 9 10 11 12 13 14
0 500 1000 1500 2000 2500 3000 3500 4000 4500

Map showing the number of reported acute respiratory infections across different regions.

Number of Reported Acute Respiratory Infections:
- 0 - 27
- 28 - 75
- 76 - 188
- 189 - 499
- 500 - 1,888
- > 1,888
Feedback

Epidemiologic Bulletin

- Produced weekly
- Bilingual
- Summary of case counts
- Alert information
Challenges

• Only tsunami-affected districts covered
• Only epidemic-prone diseases included
• Focus primarily on displaced population
• No denominators, numerators only
  – Unable to calculate rates
Flow of Surveillance Information
Emergency Phase

MOH

Provincial Health Office

District Health Office

Puskesmas/Health Center

NGOs

WHO

World Health Organization
Flow of Surveillance Information
Rehabilitation Phase

MOH

WHO/Provincial Health Office

District Health Office

NGOs

Puskesmas/Health Center

World Health Organization

Tsunami Health Conference
Capacity Building

• Strengthening surveillance at Provincial and District levels
  – Training conferences for districts
  – Material support (computers, printers, etc)
  – Placement of Indonesian staff in WHO surveillance unit
  – Day-to-day interaction with Provincial surveillance staff
Capacity Building

- Provincial Public Health Laboratory
  - Laboratory support critical for effective surveillance and response
  - Surge capacity for outbreaks
  - Long-term commitment to rehabilitation needed
Areas of Strength

- Early partnerships between key stakeholders
  - Pre-existing links between WHO-Indonesia and MOH facilitated implementation
  - WHO staff began arriving 3 January
  - EWARN fully established by mid-January
Areas of Strength

• Agreement between WHO and Provincial Health Office on key issues
  – The importance of strengthening communicable disease surveillance
  – The need for rapid response to alerts
  – Mutual agreement regarding short, medium, and long-term goals
Areas of Strength

• Ongoing, consistent communication between Provincial Health Office and WHO
  – Daily contact
  – Mutual trust
  – Shared goals
  – Teamwork
Areas of Strength

• Active, enthusiastic NGO participation
  – Wide recognition of importance of communicable disease surveillance
  – Willingness to report despite significant logistic difficulties
Areas of Strength

• Feedback to stakeholders
  – Frequent presentation of results (up to three times per week)
    • Detailed summary at Health Coordination meetings
    • Printed bulletin for distribution
    • All presentations bilingual
    • Response to individual data requests, queries
Areas of Strength

• Swift transition from WHO to Provincial Health Office
  – Presentations by Provincial Health Office staff
  – Active engagement of Provincial Surveillance staff in analysis and preparation
  – Computers for Provincial Health Office; next step - relocation of WHO staff to Provincial Health Office
No Large Outbreaks

• Frequent sporadic cases of epidemic-prone diseases
• Occasional small clusters
Areas for Improvement

• Frequent international staff turnover
  – Disruptive to process of building trust, relationships
  – Momentum and continuity are lost
  – Creates delay in attainment of shared goals
Areas for Improvement

• International donors should work within the existing public health structure
  – Duplication of services disruptive and unsustainable
  – Efforts should be coordinated and channeled through organizational framework
Issues To Be Addressed

• Focus must remain on long-term rehabilitation of CD surveillance
  – Maintain momentum
  – Effectively transition to routine surveillance as NGOs depart
  – Emphasize training, capacity building, outbreak preparedness
Next Steps

• Opportunity to strengthen surveillance and response activities nationally
  – Additional training for Surveillance staff
  – Expand Field Epidemiology training
  – Strengthen national laboratory capacity to support surveillance and response
Thank You!

ACEH BARAT DAYA DHO
ACEH BARAT DHO
ACEH BESAR DHO
ACEH UTARA DHO
ANZAC FIELD HOSPITAL
ASSOC OF MED DR OF ASIA
BIDDOKES POLDA ACEH
CARE INTERNATIONAL
CHINA MEDICAL TEAM
CATHOLIC RELIEF SERVICE
CHINA INTS & RESCUE TEAM
DANISH EMERG MOB HOSP
EGV BERLIN OFFSHORE
ESTONIAN MEDICAL TEAM
FOOD FOR THE HUNGRY INTL
GERAKAN IBU PEDULI ACEH
GLOBAL CARE BANDA ACEH
GERMAN ARMED FORCES
GJAF JAPAN LAMARA CLINIC
GLOBAL RELIEF
HOLLAND HORIZON
HUMANITARIAN FIRST
INT OFFICE OF MIGRATION
INDO PLANNED PARENTHOOD

INDO DISASTER MED RESC C
INDONESIAN NATIONAL ARMY
INT COMMITTEE OF THE RC
INTERNATIONAL MED. CORPS
INTL COMITTEE RED CROSS
INT FED RED CROSS
ISLAMIC FOUND OF TORONTO
IRC NAGAN RAYA
IRC/CARDI
JESUITE REFUGEE SERVICE
JAPAN RESCUE TEAM
KOREAN EMERGENCY ASSOC
LHOKSEUMAWE DHO
MALAYSIAN RED CR SOCIETY
MALTESER GERMANY
MEDECINS DU MONDE FRANCE
MEDICOS DEL MUNDO SPAIN
MER-C INDONESIA
MERCY RELIEF SINGAPORE
MERCY RELIEF SINGAPORE OP
MERLIN
MITRA PEDULI
MSF BELGIUM
MSF FRANCE
MSF HOLLAND

MERCY MALAYSIA
MEXICAN GOVERNMENT
NORTH WEST MED TEAM
NORTHWEST MEDICAL ACT
OBOR BERKAT INDO A.BARAT
OPEN HAND
OUTP AND MOBILE CLINIC
PAN ECO SWISS MED TEAM
PANECO/YEC MEDICAL TEAM
PERDHAKI
PKBI
INDONESIAN RED CROSS SOC
PHILIPPINES MED TEAM
PORTUGUESE HOSPITAL
PROJECT CONCERN
INTERNATI
PROVINCIAL HEALTH OFFICE
PUB HEALTH KUTA BARO
PAN ECO SWISS MED TEAM
SPANISH COOPERATION
SAVE THE CHILDREN
SHEEP
TEAM ALBANIA
TDH ITALY
WALHI ACEH BARAT
YAKKUM EMERGENCY UNIT
YAYASAN SOSIAL KREASI
ZAINOEL ABIDIN GNRL HSPTL
## WHO Communicable Diseases response during Tsunami

### WHO Country Office/ MOH/ PHO

**CD Field teams**

### I – CD risk assessments, technical guidelines & tools

- Field manual on CD control in emergencies, WHO/CDS/2005.27
- Flooding and CDs fact sheet
- CD risks and interventions for Tsunami-affected areas
- CD epidemiological profile Indonesia 2005
- Communicable Disease Toolkit for Tsunami-affected areas
- Surveillance/EWARN guidelines – later adapted at country level
  - Health Assessment Forms
  - Outbreak Management and Supplies
  - Collection of Laboratory Specimens
- Dengue risk assessment for Indonesia
- Malaria risk assessment for Tsunami-affected countries
- CD data management and software
- CD mapping (for burden, trends, logistics and infrastructure)
- Disease-specific fact sheets, case management protocols

### II – Field Operations with GOARN

- Rapid assessments
- CD plan of action
- Implementation of surveillance/early warning and response systems.
- CD prevention and control activities

### Partnerships

- GOARN
- NGOs
- UN agencies

### WHO/HQ Communicable Diseases Working Group on Emergencies (CD-WGE)

Cross cluster technical working group on communicable diseases control in emergencies based in Geneva; coordinated by Programme on Communicable Diseases in Emergencies

### WHO/SEARO Tsunami Technical Group

Multidisciplinary technical working group based in New Delhi.
Alerts to Date

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of Alerts</th>
<th>Number of cases</th>
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<tbody>
<tr>
<td>AJS (Jaundice)</td>
<td>13</td>
<td>16</td>
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<tr>
<td>Acute Watery Diarrhea</td>
<td>3</td>
<td>17</td>
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<tr>
<td>Bloody Diarrhea</td>
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<td>129</td>
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<tr>
<td>DHF</td>
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<td>14</td>
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<tr>
<td>Malaria</td>
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<td>8</td>
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<tr>
<td>Meningitis</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Suspected Measles</td>
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<td>124</td>
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<tr>
<td>Tetanus</td>
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<td>1</td>
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<tr>
<td>Typhoid</td>
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<td>5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>77</strong></td>
<td><strong>319</strong></td>
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