

図10 疾患サーベイランスの基本事項

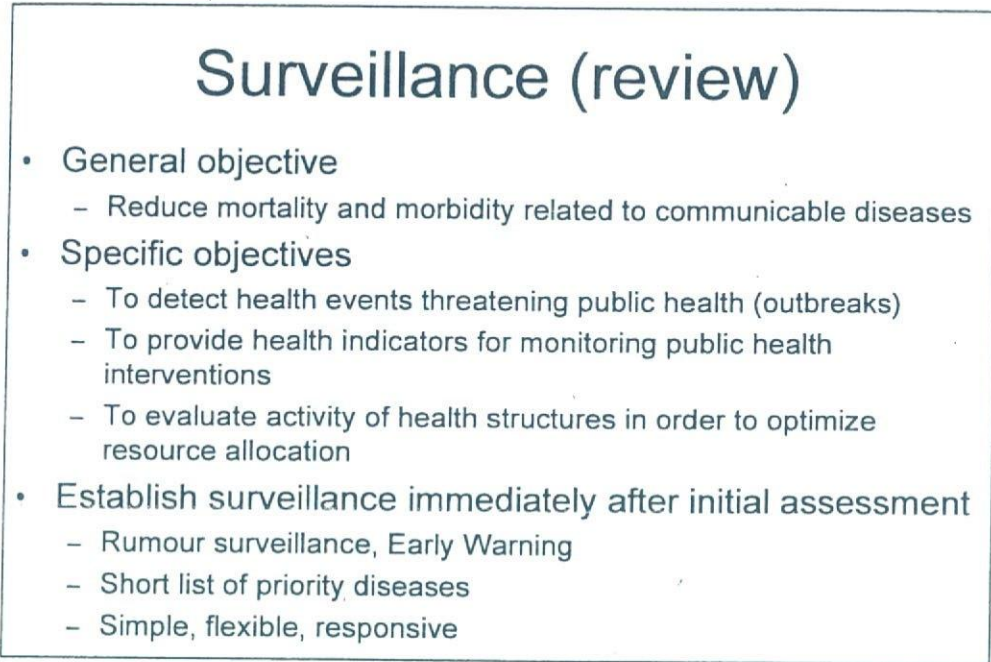


図11 サーベイランスの要素

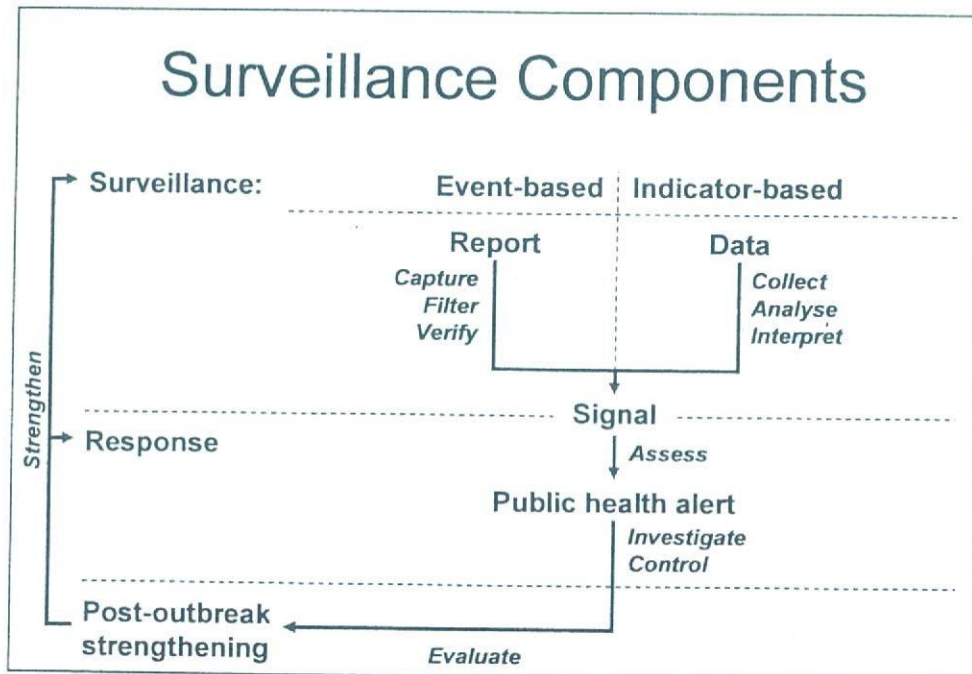


図12 サーベイランス実施ステップ

## Surveillance

- Set surveillance priorities
  - No action – leave it
- Identify responsible persons / tasks
  - Understand how system functioned before and build on it
- Agree on
  - Case definitions
  - Indicators, minimum data
  - Type (active, passive)
  - Reporting mechanisms
  - Reporting forms
- Training, sensitisation, support
- Analyse, Feedback, RESPOND!

図 1 3 報告様式 (例)

**A. Outpatient WEEKLY Surveillance Reporting Form**  
**Morbidity (disease) and Mortality (death)**  
**BRING TO WHO OFFICE OR PUT IN WHO BOX AT UNOCHA EVERY MONDAY**

Aceh Province District:  
 Town/Village/Settlement/Camp: .....  
 Health Facility: ..... Supporting agency: .....  
 Name and telephone number of reporting officer: .....

Week from Monday: \_\_\_\_/\_\_\_\_/2005 to Sunday \_\_\_\_/\_\_\_\_/2005

	Report the number of CASES	MORBIDITY (cases)		MORTALITY (deaths)	
		<5 years	≥5 years	<5 years	≥5 years
A	TOTAL CONSULTATIONS				
B	TOTAL DEATHS				
C	Pregnancy related death				
D	Neonatal deaths (<28 days)				
E	Acute watery diarrhoea				
F	Bloody diarrhoea				
G	Malaria conf by rapid test				
H	Other Fever >38.5°				
J	Suspected Measles				
K	Acute respiratory infection				
L	Acute jaundice syndrome				
M	Meningitis				

- Write 0 (zero) if you had no case or death during the week for one of the syndrome listed in the form.
- Deaths might have occurred in the health facility or might have been reported from the community.
- Be careful to report only the deaths that occurred during the week.
- Deaths should be reported only in the mortality section, NOT in the morbidity section.

図14 死亡サーベイランス

## Mortality Surveillance

- Active surveillance
- Weekly home visitors
  - 1 officer for 200 households or 1,000 people
  - Allows to collect of additional indicators and continue health education
- Grave yard surveillance, coffins...
- Retrospective mortality surveys
- Importance of cultural environment

図15 対応

## Response

- Preparation
  - Health co-ordination team, training, laboratory support, stockpiles
- Detection
  - Surveillance system, early warning, rumour follow-up
- Investigate, confirm
  - Outbreak Control Team
  - Investigation and specimen collection
- Control
  - Stockpiling of essential equipment and drugs

資料 I : 災害等突発的健康危機における実地疫学の役割 (ワークショップ) 日程

ワークショップスケジュール

	11月28日(月)	11月29日(火)
9:00 -10:00	29日午後ワークショップ準備(29日午後参加者の一部のみ) 於: 感染研第一会議室	
10:00 -12:00	(FETP 講義: 「Outbreak preparedness and response at the international setting (仮題)」) By Dr. Thomas Grein (WHO, Geneva) 於: 感染研第一会議室	(FETP 講義: 「Outbreak preparedness and response at the international setting (仮題)」) By Dr. Thomas Grein (WHO) 於: 感染研第一会議室
12:00 -13:30	昼食	昼食
13:30 - 17:30	セミナー 「災害等における健康ニーズの迅速評価と疾病発生の積極的サーベイランス」 於: 感染研共用第一会議室	ワークショップ: 日本の災害対策における健康ニーズの迅速評価と疾病発生の積極的サーベイランスの仮題と提言(報告書ドラフティンググループ) 於: 感染研第一会議室
18:00 - 18:30	(実地疫学研究会設立準備会) 於: 感染研第一会議室	
19:00 - 20:30	情報交換会	

Program

セミナー「災害等における健康ニーズの迅速評価と疾病発生の積極的サーベイランス」

日時： 2005年11月28日 13:30-17:30

場所： 国立感染症研究所、感染研共用第一会議室

(以下予定：演題は仮題)

13:30-14:30

1) Public health surveillance in natural disasters. -Lessons from Banda Aceh, Indonesia-- Dr. Thomas Grein 講演 (WHO 本部)

14:30-14:55

2) スリランカ津波災害緊急医療支援の中での疫学調査活動, 島田靖医師 (FETP 4 期、日本医大)

15:00-15:25

3) Response to Hurricane Katrina, Dr. John Kobayashi (FETP コンサルタント, USA)

15:25-15:45 休憩

15:45-16:10

4) 自然災害時の評価とサーベイランスー阪神淡路大震災時とその後ー、中瀬克己 (FETP1 期, 岡山市保健所)

16:15-16:40

5) 台風 14 号 (2003) とトライアスロン医療救護部, (高江洲均宮古保健所長)

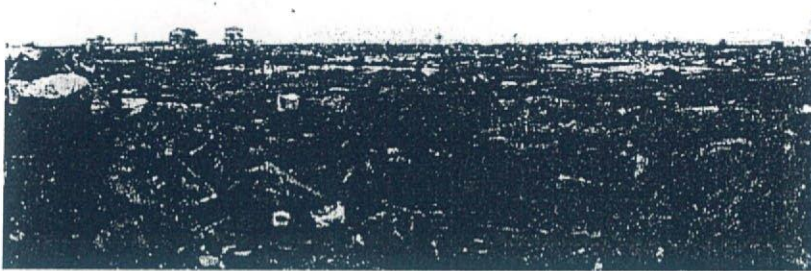
16:45-17:30

6) 研究協力者からのコメントと総合ディスカッション

- ・ 日本の現状について
- ・ 災害時の健康ニーズの迅速評価と疾病発生のサーベイランスの必要性について
- ・ 日本への提言、など

## Public health surveillance in natural disasters

### Lessons from Banda Aceh, Indonesia



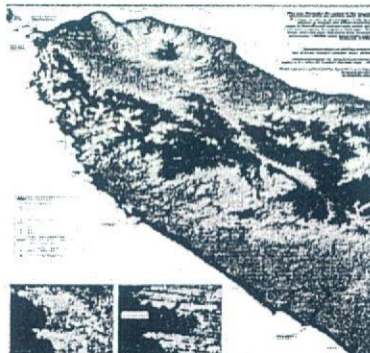
□ Denis Coulombier, INVS  
□ Dominique Legros, WHO  
□ Michelle Gayer, WHO  
□ Tom Grein, WHO

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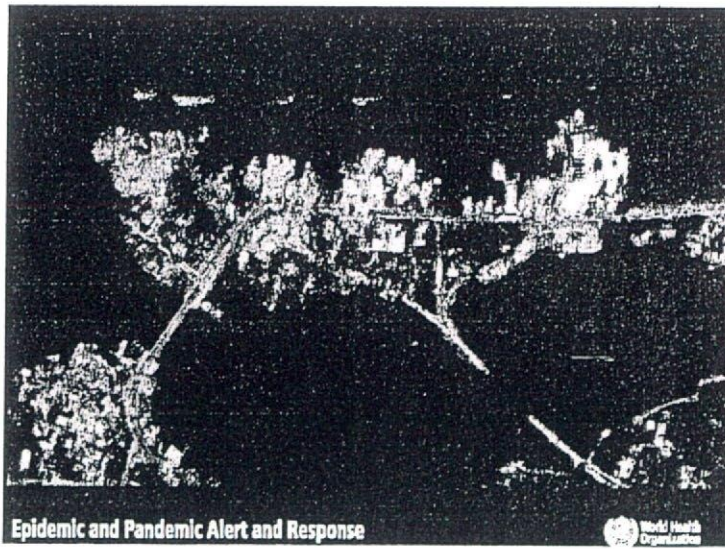
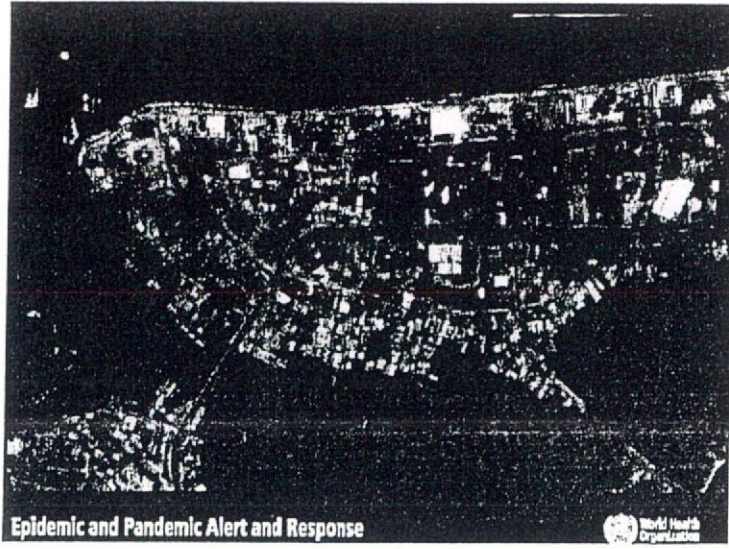
### 26 December 2004

- Population affected: 1.1 million
  - 130,000 dead
  - 93,000 missing
  - > 500,000 displaced
- 14 of 21 districts in Aceh Province affected
- Destroyed or incapacitated:
  - Provincial Health Office
  - Provincial PH laboratory
  - 53 of 244 health posts
- Health personnel
  - 250 dead (10%)
  - 441 missing

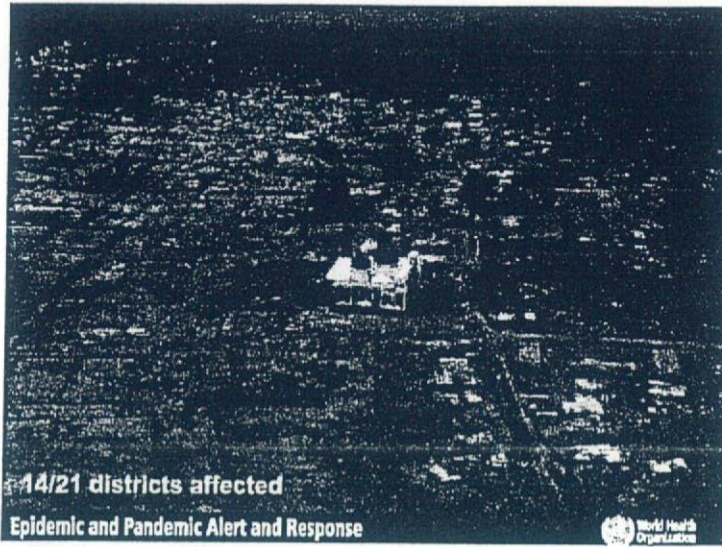


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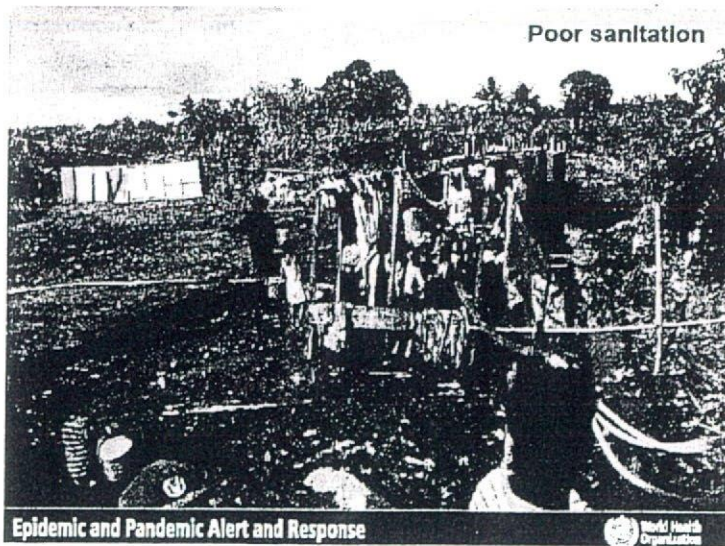
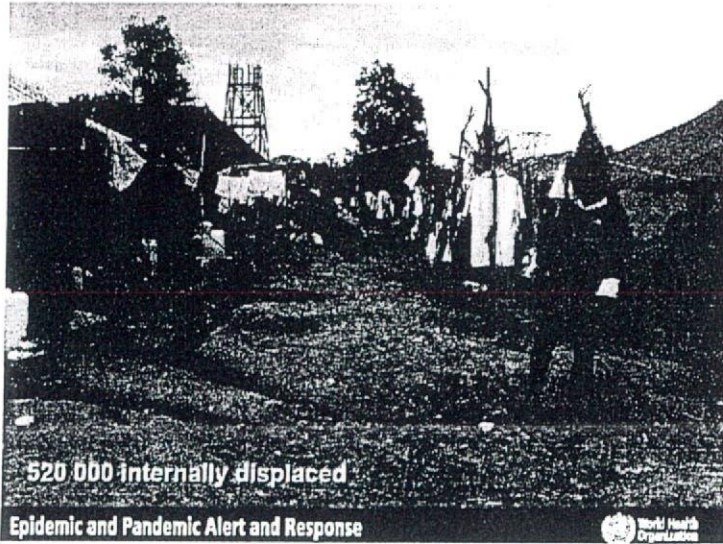
14/21 districts affected  
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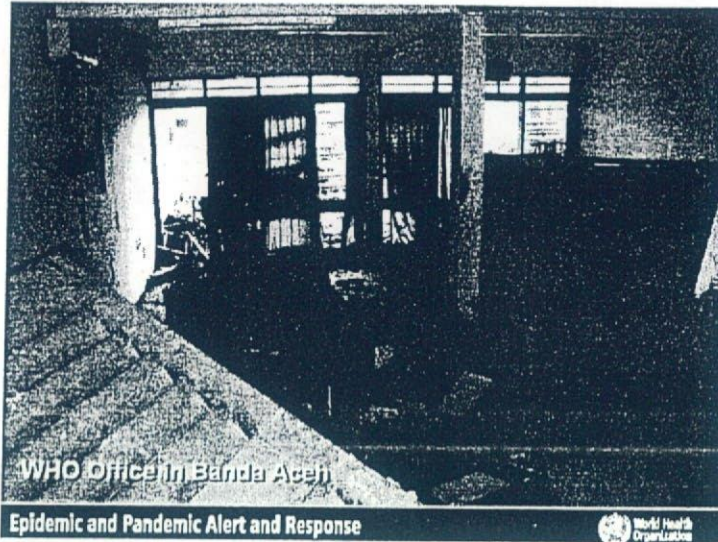


Poor sanitation

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### The 10 Deadliest Natural Disasters

Rank	Type	Location	Year	# Deaths (million)
1.	Flood	Huang He River, China	1931	0.85-4
2.	Flood	China	1959	2
3.	Flood	Huang He River, China	1887	0.9-2
4.	Hurricane	Ganges Delta, Bangla Desh	1970	0.5-1
5.	Earthquake	Shaanxi, China	1556	0.83
6.	Flood	North China	1939	0.50
7.	Tsunami	Indian Ocean	2004	0.25-0.31
8.	Hurricane	Haiphong, Vietnam	1881	0.30
9.	Flood	Henan, China	1642	0.30
10.	Earthquake	Tangshan, China	1976	0.24

## The 8 Natural Disaster Myths

- Any kind of medical volunteer needed
- Any kind of international assistance needed – now
- Disasters bring out the worst in human behaviour
- Affected populations too shocked to help themselves
- Disasters are random killers
- Disaster victims are best off in temporary shelters
- Things are back to normal within a few weeks
- Epidemics are inevitable

Source: PAHO

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Home - World News - Industry DESTINATIONS CNN CHANNELS

**Tsunami death toll exceeds 125,000 amidst epidemic fears**  
 Powered by CYBER DIVER News Network by TOMI SOETJIRTO and DEAN YATES

**BANDA ACEH, Indonesia (30 Dec 2004)** - Asia's tsunami death toll soared above 125,000 and aid agencies warned many more people – particularly children – could die in epidemics, ushering in a somber New Year's Eve for the world.

While authorities rushed to identify and bury the dead, they're reduced to sifting through debris after days in tropical heat, a U.N. masterminded relief operation rapidly frays, more on Thursday: on getting food and clean water to millions of survivors.

This is an unprecedented, global catastrophe and it requires an unprecedented, global response, U.N. Secretary General Kofi Annan (news - web sites) told reporters on Thursday as U.N. officials said

An injured Acehese girl, with lost her entire family when a tsunami hit the region last week, sobs her face as she takes a rest at a hospital in Banda Aceh, Aceh province, Indonesia.

**TOP 100 HEADLINE NEWS**

- **HONDURAS** - President's political rival reveals his 1991 Uvers
- **THAILAND** - Tourism rebounding despite terrorism, bird flu
- **ARUBA** - National Coalition of Victims in Aruba supports Aruba boycott
- **MORE CNN HEADLINE NEWS**

**BRIEF NEWS**

- **CALIFORNIA** - Another week, another Jack's diving fatality in San Diego
- **MASSACHUSETTS** - Octo probe diver drowns in Cape Cod Bay
- **BELIZE** - Advanced Diving loses license, never permanently banned
- **MORE CNN SAFETY NEWS**

**Expedition Vessel: Thorfinn**

## **Epidemics are not of Primary Concern in Natural Disasters**

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- Floods, Djibouti, 1993-1994
  - Cholera
- Floods, Kenya, Somalia, 1997
  - Rift Valley Fever
  - Malaria
- Hurricane Mitch Nicaragua 1998
  - Leptospirosis
- Cyclone in Orissa, 1999
  - Leptospirosis
- Tsunami; Katrina, Kashmir ...



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## **Variables for Development of an Epidemic After a Disaster**

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- Endemic organisms
- Environmental considerations
- Population characteristics
- Pre-event structure and public health
- Type and magnitude of the disaster
  - Interruption of public health services
  - Interruption of public services



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### **3 Emergency Phases**

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- Initial phase (Impact phase)
- Emergency phase
- Consolidation phase (Post-emergency phase)

### **Public Health Interventions during the 3 Emergency Phases**

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- Initial phase: Rapid assessment
  - Risk assessment
  - Priorities
- Emergency phase
  - Simple and reactive surveillance system
  - Targeting emergency priorities
- Consolidation phase
  - Integration in existing system

## Risk Assessment

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- Aim
  - Identify public health needs
  - Plan intervention priorities
  - Assess existing resources and need for external resources
- Time frame
  - ASAP (within first week!)
- Methods
  - Checklists & systematic observations
  - Key informants
  - Health facilities registers
  - Agency reports
  - Surveys

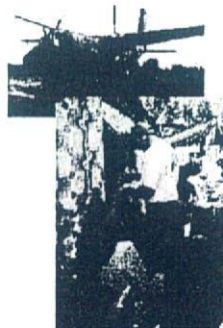
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## Rapid Assessment

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- Multitude of rapid assessments by multitude of NGOs and militaries
- Classic needs identified by all
  - Food, water, shelter
  - Health care (Injuries >> diseases)
- Synthesis of all assessment reports and needs proved difficult
- No immediate communicable disease threats identified
  - Some rise in watery diarrhoea
  - Tetanus cases observed



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## Pre-existing communicable disease risks in Sumatra

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- |  |   |
|--|---|
| <input type="checkbox"/> Cholera       | <input type="checkbox"/> Syphilis         |
| <input type="checkbox"/> Diarrhoea     | <input type="checkbox"/> Gonorrhoea       |
| <input type="checkbox"/> Typhoid fever | <input type="checkbox"/> Pneumonia        |
| <input type="checkbox"/> Leprosy       | <input type="checkbox"/> Neonatal tetanus |
| <input type="checkbox"/> Tetanus       | <input type="checkbox"/> Tuberculosis     |
| <input type="checkbox"/> Dengue fever  | <input type="checkbox"/> Aids             |
| <input type="checkbox"/> Diphtheria    | <input type="checkbox"/> Viral hepatitis  |
| <input type="checkbox"/> Measles       | <input type="checkbox"/> Influenza        |
| <input type="checkbox"/> AFP           | <input type="checkbox"/> Meningitis       |
| <input type="checkbox"/> Filariasis    | <input type="checkbox"/> Malaria          |

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## CD risk prioritisation

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- |  |   |
|--|---|
| <input type="checkbox"/> Cholera       | <input type="checkbox"/> Syphilis         |
| <input type="checkbox"/> Diarrhoea     | <input type="checkbox"/> Gonorrhoea       |
| <input type="checkbox"/> Typhoid fever | <input type="checkbox"/> Pneumonia        |
| <input type="checkbox"/> Leprosy       | <input type="checkbox"/> Neonatal tetanus |
| <input type="checkbox"/> Tetanus       | <input type="checkbox"/> Tuberculosis     |
| <input type="checkbox"/> Dengue fever  | <input type="checkbox"/> Aids             |
| <input type="checkbox"/> Diphtheria    | <input type="checkbox"/> Viral hepatitis  |
| <input type="checkbox"/> Measles       | <input type="checkbox"/> Influenza        |
| <input type="checkbox"/> AFP           | <input type="checkbox"/> Meningitis       |
| <input type="checkbox"/> Filariasis    | <input type="checkbox"/> Malaria          |

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## Post-tsunami Disease Surveillance

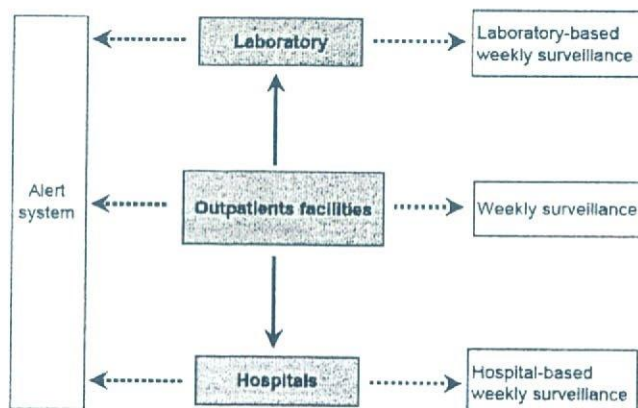
### □ Challenges

- Highly mobile population
- Many displaced persons living with local community
- Temporary shelters often created / abandoned over days
- Health infrastructure destroyed
- Mobile clinics not allocated to defined populations
- No vital registration
- No registration / record keeping in hospitals (Initially)

□ No denominators, no mortality figures

□ Number of consultations, proportional morbidity, trends

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## Weekly Outpatient Surveillance

- Outpatient consultations
  - All medical NGOs
  - All local health posts, health centres, hospitals
- No differentiation between displaced and non-displaced persons
- 10 priority diseases / events
- Standardised case definitions
- Aggregated data
  - < 5, ≥ 5 years of age
  - Morbidity, mortality

**Epidemic and Pandemic Alert and Response**



Indonesian & English forms

**A. OUTPATIENT WEEKLY SURVEILLANCE REPORTING FORM**  
Morbidity (disease) and Mortality (death)  
**BRING TO WHO OFFICE OR PUT IN WHO BOX AT UNOCHA EVERY MONDAY**

Acch: Province \_\_\_\_\_ District \_\_\_\_\_  
 Town/Village/Settlement/Camp: \_\_\_\_\_  
 Health Facility: \_\_\_\_\_ Supporting agency: \_\_\_\_\_  
 Name and telephone number of reporting officer: \_\_\_\_\_

Week from Monday: \_\_\_\_/\_\_\_\_/2005 to Sunday: \_\_\_\_/\_\_\_\_/2005

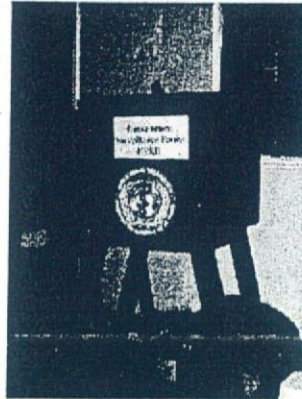
	Report by number of CASES	MORBIDITY (cases)		MORTALITY (cases)	
		< 5 years	≥ 5 years	< 5 years	≥ 5 years
A	TOTAL CONSULTATIONS				
B	TOTAL DEATHS				
C	Reported in this camp				
D	Non-camp deaths (NOT in C)				
E	Acute watery diarrhoea				
F	Bloody diarrhoea				
G	Meningitis by recultant				
H	Cholera (Vibrio)				
I	Unspecified fevers				
K	Acute respiratory infection				
L	Acute jaundice syndrome				
M	Meningitis				

None (0 cases): If you had no case or death during the week for one of the symptoms listed in the form.  
 Deaths reported & occurred in the health facility: Deaths that have been reported from the community.  
 Be careful to report only the deaths that occurred during the week.  
 Deaths should be reported only in the morbidity section (NOT in the mortality section).

## Reporting

- Reporting period
  - Monday-Sunday
- Report by following Monday to

Provincial Health Office  
or  
WHO Office  
or  
[outbreak@who.or.id](mailto:outbreak@who.or.id)



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## Early Warning / Alert System

- Acute watery diarrhoea, cholera
  - Bloody diarrhoea, dysentery
  - Suspected measles
  - Increase in malaria
  - Typhoid fever
  - Hepatitis
  - Dengue fever
  - Meningitis
  - Tetanus
- Reporting on same day
    - Call 24 hour hotline (English, Indonesian)
    - Email to [outbreak](mailto:outbreak@who.or.id)
    - SMS messages

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Week from Monday: \_\_\_/\_\_\_/2005 to Sunday \_\_\_/\_\_\_/2005

Report the number of CASES	MORBIDITY (cases)		MORTALITY (deaths)	
	<5 years	≥5 years	<5 years	≥5 years
A TOTAL ADMISSIONS				
B TOTAL DEATHS				
C Pregnancy related death				
D Neonatal deaths (<28 days)				
E Acute watery diarrhoea				
F Bloody diarrhoea				
G Malaria not by rapid test				
H Other Fever >38.5°				
J Suspected Measles				
K Acute respiratory infection				
L Acute jaundice syndrome				
M Meningitis				
N Injury/trauma				
O Tetanus				

- Please include only those cases that were admitted during the surveillance week. Each case should be counted only once.
- Write "0" (zero) if you had ~~no cases~~ ~~no deaths~~ ~~no cases of the syndrome~~ listed in the form.
- Be careful ~~to report~~ ~~only~~ the deaths that occurred during the week.
- Deaths should be reported only in the mortality section, NOT in the morbidity section.
- Case definitions for surveillance are presented on the back.

**B. OUTBREAK ALERT**

At any time YOU SUSPECT any of the following diseases, you should alert the Surveillance Coordinator by sending an SMS or phone to 0613 1716 7865 or 0613 1049 6754, with maximum information on time, place and number of cases and deaths.

Cholera	Bloody diarrhoea	Measles	Increase in malaria
Typhoid	Tetanus	Hepatitis	Dengue fever
			Meningitis

