Surveillance in Thailand

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Surveillance System

• The Epidemiology Bureau, Disease Control Department, Ministry of Public Health
• Operates 24 hours/ 7 day a week
• Combination of indicator-based and event-based surveillances
• Community-based surveillance
• Surveillance Rapid Response Teams (SRRT) and network
The surveillance system is
– flexible
– strong networks
– clear structure and designated manpower
– regular supervision and feedback by experience medical supervisors and national experts
– Field Epidemiology Training Program and SRRT Training courses enhance the system
• Disease group-specific systems
• Major:
  – Communicable Disease Notification
  – HIV/ AIDS
  – Non-communicable diseases
  – Environmental and Occupational disease*
  – Injury
  – Injury from toxic jellyfish

* developed from Occupational disease surveillance system in 2000*
Objectives

- To monitor trends of diseases / illness
- To detect outbreak of diseases/ illness
- To describe epidemiological information and risk factors of health problems
- To recommend effective prevention and control measures
I Communicable Disease Notification

• 1913  First time of starting surveillance in Thailand
• 1934  Establishment Communicable Diseases Laws
• 1970  Establishment Epidemiological Surveillance for reporting 14 infectious diseases
  – Over 80 diseases and reduce to 59 diseases in 2012
  – 506 and 507 (update) reports from hospitals
  – manual to computer
  – all provinces
• Diseases
  – Acute Flaccid Paralysis
  – Severe diarrhea
  – Dengue
  – Immigrant/foreign labor
  – Adverse Events Following Immunization
  – Rabies
  – Urgent report (e.g. mump, leptospirosis, encephalitis)
  – Emerging Infectious Diseases
  – SARS
How to do the epidemiological practices
Review other outbreaks and other source of information

TIME
PLACE
PERSON

TABLE
GRAPH
CHART

INVESTIGATION

EPIDEMIOLOGICAL STUDY

RECOMMENDATION & ACTION

NORMAL

ANALYSIS & INTERPRETATION

ABNORMAL

KNOWLEDGE
# Morbidity Notification Card

**Form 506**

Epidemiological Surveillance Network, Division of Epidemiology
Ministry of Public Health, Tel. 5918578, 5918582

**Disease under surveillance and notification**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Code</th>
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<tbody>
<tr>
<td>Cholera</td>
<td>01</td>
</tr>
<tr>
<td>Typhoid fever</td>
<td>02</td>
</tr>
<tr>
<td>Food poisoning</td>
<td>03</td>
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<tr>
<td>Gastroenteritis, unspecified</td>
<td>04</td>
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<tr>
<td>Cholera, Houts</td>
<td>05</td>
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<tr>
<td>Mumps</td>
<td>06</td>
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<tr>
<td>Tetanus</td>
<td>07</td>
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<tr>
<td>Tetanus, unspecified</td>
<td>08</td>
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<tr>
<td>Dysentery, unspecified</td>
<td>09</td>
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<tr>
<td>Pertussis</td>
<td>10</td>
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<tr>
<td>Influenza</td>
<td>11</td>
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<tr>
<td>Gonorrhea</td>
<td>12</td>
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<tr>
<td>Non A, Non B</td>
<td>13</td>
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<tr>
<td>Haemorrhagic fever</td>
<td>14</td>
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<td>Rabies</td>
<td>15</td>
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<td>Rubella</td>
<td>16</td>
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<tr>
<td>Chickenpox</td>
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<td>P.I.O</td>
<td>18</td>
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<td>Meningococcal meningitis</td>
<td>19</td>
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<tr>
<td>Poliomyelitis</td>
<td>20</td>
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<tr>
<td>Measles</td>
<td>21</td>
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<tr>
<td>Measles with complication</td>
<td>22</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>23</td>
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<tr>
<td>Whooping cough</td>
<td>24</td>
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<tr>
<td>Tetanus, unspecified</td>
<td>25</td>
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<tr>
<td>Tetanus meningitis</td>
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<tr>
<td>Tetanus, unspecified</td>
<td>27</td>
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<tr>
<td>Pertussis</td>
<td>28</td>
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<tr>
<td>Pertussis, unspecified</td>
<td>29</td>
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<tr>
<td>Typhoid fever</td>
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<tr>
<td>Typhoid, unspecified</td>
<td>31</td>
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<tr>
<td>Malaria</td>
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<td>Malaria, unspecified</td>
<td>33</td>
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<tr>
<td>Poliomyelitis</td>
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<tr>
<td>Poliomyelitis, unspecified</td>
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<tr>
<td>Marburg</td>
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<td>Marburg, unspecified</td>
<td>37</td>
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<td>Biliary syndrome</td>
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<td>Measles</td>
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<td>Measles, unspecified</td>
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<tr>
<td>Lymphogranuloma</td>
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<tr>
<td>Lymphogranuloma, unspecified</td>
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<tr>
<td>Others</td>
<td>44</td>
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<tr>
<td>Others, unspecified</td>
<td>45</td>
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<tr>
<td>Occupational diseases</td>
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<td>Insecticide</td>
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<td>Lead poisoning, unspecified</td>
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<td>Arsenic poisoning</td>
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<td>Petroleum poisoning</td>
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<tr>
<td>Nitrogen gas</td>
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<tr>
<td>Disease of physical disability</td>
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<tr>
<td>Disease of physical disability,</td>
<td></td>
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<tr>
<td>Mumps</td>
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<tr>
<td>Others</td>
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<tr>
<td>Others, unspecified</td>
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</tr>
</tbody>
</table>

**Patient's name**

**Hospital number**

**Name of patient's parents (for under 15 years old child)**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Marital status</th>
<th>Nationality</th>
<th>Type of work</th>
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<tbody>
<tr>
<td>male</td>
<td></td>
<td>single</td>
<td></td>
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<tr>
<td>female</td>
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<td>married</td>
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<td></td>
<td>divorce</td>
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<td></td>
<td></td>
<td>widowed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Address while became ill**

<table>
<thead>
<tr>
<th>Home no./road</th>
<th>Village no.</th>
<th>Sub district</th>
<th>district</th>
<th>Province</th>
<th>Inside municipality</th>
<th>Inside</th>
<th>Outside</th>
<th>sanitary area</th>
</tr>
</thead>
</table>

**Date of onset**

<table>
<thead>
<tr>
<th>Date (yy-mm-dd)</th>
<th>Date of treatment (yy-mm-dd)</th>
<th>Hospitalization</th>
<th>Patient's type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regional hosp.</td>
<td>Out patient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General hosp.</td>
<td>In patient</td>
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<tr>
<td></td>
<td></td>
<td>Community hosp.</td>
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<td></td>
<td></td>
<td>Public clinic</td>
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<td></td>
<td></td>
<td>Private hosp.</td>
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<tr>
<td></td>
<td></td>
<td>Home</td>
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</tr>
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</table>

**Patient's condition**

<table>
<thead>
<tr>
<th>Cured</th>
<th>dead</th>
<th>survive</th>
<th>being cured</th>
</tr>
</thead>
</table>

**Date of death**

<table>
<thead>
<tr>
<th>Date (yy-mm-dd)</th>
<th>Date of death (yy-mm-dd)</th>
<th>Reporter's name</th>
<th>Office</th>
<th>Province</th>
<th>Date of report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Date of report received at District Health Office**

Date of report received at Provincial Health Office

Date of report received at Division of Epidemiology

...
Notification Changing Card
Form 507
Epidemiological Surveillance Network, Division of Epidemiology
Ministry of Public Health, Tel.: 5918578, 5918582

Direction:
1. This form is used for changing the data previously reported by form 506.
2. Please mark X in the □ where it is appropriate.
3. Please fill complete data in the blank provided.
4. Please submit this form to provincial chief medical office as soon as possible.
5. This form can be obtained through the Provincial Chief Medical Offices, Regional Epidemiology Centers, and Division of Epidemiology, Ministry of Public Health, Nonthaburi 11000

Former Dx is .................................................................
Change to .................................................................
Lab finding ...................................................................

Patient’s name ..............................................................
Name of patient’s parents (for under 15 years old child) ..................
Hospital number ...........................................................

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Marital status</th>
<th>Nationality</th>
<th>Type of work</th>
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<tbody>
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<td></td>
<td>□ single</td>
<td>□ Thai</td>
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<td>□ divorce</td>
<td>□ Others</td>
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<td>□ widow</td>
<td>(specify....)</td>
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</tbody>
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Address while became ill
Home no./road ................................................................
Village no. ....................................................................
Sub district ...................................................................
district ...........................................................................
Province □ inside municipality □ inside □ outside
sanitary area ...............................................................

Nearby place ....................................................................

Date of onset
Date .......(□□□) Month .......(□□□) Year .......(□□□)

Date of treatment
Date .......(□□□) Month .......(□□□) Year .......(□□□)

Hospitalization
Regional hosp. □ General hosp. □ Community hosp. □ Public clinic
Health center □ Public Hospital in Bangkok □ Private hosp. □ Home

Patient’s type □ Out patient □ In patient

Patient’s condition
□ Cured □ unknown □ dead □ survive □ being cured

Date of death
Date .......(□□□) Month .......(□□□) Year .......(□□□)

Reporters name .........................................................
Office ...........................................................................
Province ......................................................................
Date of report ............................................................

Date of report received at District Health Office
..............................................................................

Date of report received at Provincial Health Office
..............................................................................

Date of report received at Division of Epidemiology
..............................................................................

Mode of the data adjust
1. Adjust former data as marked below
□ correction □ adding
2. The data is adjusted as below
□ disease □ patient’s address
□ date of onset / date of admission □ age □ laboratory finding
□ patient’s condition □ other : sex, nationality, marital status
occupation, hospitalization, etc.
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</tbody>
</table>
**Epidemiological Surveillance Report**, Week No. ...................... /Year......................, Office...........................................

From Sunday,......................Month......................to Saturday,......................Month......................Year......................

<table>
<thead>
<tr>
<th>District</th>
<th>Cholera</th>
<th>Diarrhea</th>
<th>Enteric</th>
<th>Dysentery</th>
<th>Food Poisoning</th>
<th>Hepatitis</th>
<th>Polio Myelitis</th>
<th>Rubella</th>
</tr>
</thead>
</table>

Total, this province

Other province

Grand total

Cumulative total

Same week of previous year

Notice ________________________________

______________________________
Types of Feedback in Diseases Surveillance

- Urgent weekly report (by week)
- Monthly report
- Annual report
- Special request
Priority diseases*

1. Atypical pneumonia suspected SARS
2. Cholera
3. Encephalitis
4. Meningococcal meningitis
5. Acute severely ill or death of unknown infection.
6. Food poisoning outbreak
7. Cluster of diseases with unknown etiology
8. Polio - AFP
9. Anthrax
10. Severe AEFI
11. Tetanus Neonatorum
12. Diphtheria
13. Rabies
14. DHF
15. Measles
16. Pertussis
17. Hand foot mouth
18. Leptospirosis
19. Dysentery
20. Admitted pneumonia
21. Influenza

* Influenza / Pneumonia suspected of Avian flu

* Source: BOE, MOPH; 2004
II HIV/ AIDS

1984: 1st case

Three categories

1. HIV and AIDS cases
2. HIV Serosentinel Surveillance
3. Behavior Surveillance
1. HIV / AIDS cases

- Modified existing system: flexibility
- 1991: report only symptomatic HIV and AIDS cases
- 506/1 and 507/1(update): Diagnosis, OI
- Voluntary
- Private and government health providers
2. HIV Serosentinel Surveillance

- 1989: sentinel sites
- Started from 14 to all provinces
- High risk groups, ANC, and blood donors
- Seroprevalence: 1-2 /year
3. Behavior Surveillance

• 1995: started from 5 sentinel sites
• 6 target groups
• Risk behaviors and Condom usage
• Confidential Self-Administered Questionnaire
• Once a year
1992:
- Cover Injuries and deaths at ER
- Difference:
  - local
  - quality of health service
- Start from 5 to 20 Regional/provincial hospitals
- Use complicated computer programme
  - probability of survival
IV Environmental and Occupational disease

Previous occupational disease surveillance

- selected province
- Cover
  - Heath Effect Surveillance
    - health of employees
  - Hazards Surveillance
    - environment and working conditions
Env & Occ (cont.)

The environmental and occupational disease system:

developed from previous occupational surveillance system

Pilot study:

conducted in 4 provinces since 2000

System testing:

finished in Dec, 2001
Env & Occ (cont.)

- 506/2 report: 11 disease groups
  - respiratory
  - physic
  - dermatome
  - skeleton and muscular
  - animal envenomation
  - plant related poisoning
  - metal and gas poisoning
  - chemical poisoning
  - occupational related disease
V Injury / dead related to Toxic Jellyfish Surveillance
– **Paper mode**

Facsimile the form to Provincial Heath Office and then to Bureau of Epidemiology.

– **Internet mode**

Enter data via surveillance website. Can attach picture.
Summary of Thai Surveillance System

- **Starting period: 1959**
  - establishment

- **Expansion period: 1968**
  - Increasing reported diseases
  - Network coverage
  - From data collection to data analysis

- **Changing period: 1982**
  - Non-communicable diseases and injury
  - Computer and software development
  - System improvement

- **Changing period: 2011**
  - Reducing reported diseases
System Attributes of Surveillance

- Sensitivity
- **Timeliness**
- Representativeness
- Predictive value positive
- Acceptability
- Flexibility
- Simplicity
- Cost/benefit
- Dissemination of results
- Appropriate action taken
Buehler's balance of systems attributes

- Sensitivity
- Representativeness
- PPV

- Timeliness
- Acceptability
- Flexibility
- Simplicity
- Cost
Sources of Information

• More Info:
  – Non-communicable diseases
  – Environmental and Occupational disease
  – Others

• Please download from:
  http://www.med.cmu.ac.th/dept/commed/lakkana.htm
  http://www.oknation.net/blog/lakthai
  http://www.oknation.net/blog/peeguay