

How Pandemic Influenza Influenced Surveillance System

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Pandemic effect (1)

- **Problem**
 - Huge of population at risk
 - Number of case
 - Number of death?
 - Health-psycho-social problem
 - Budget expense to response and containment
 - Workload

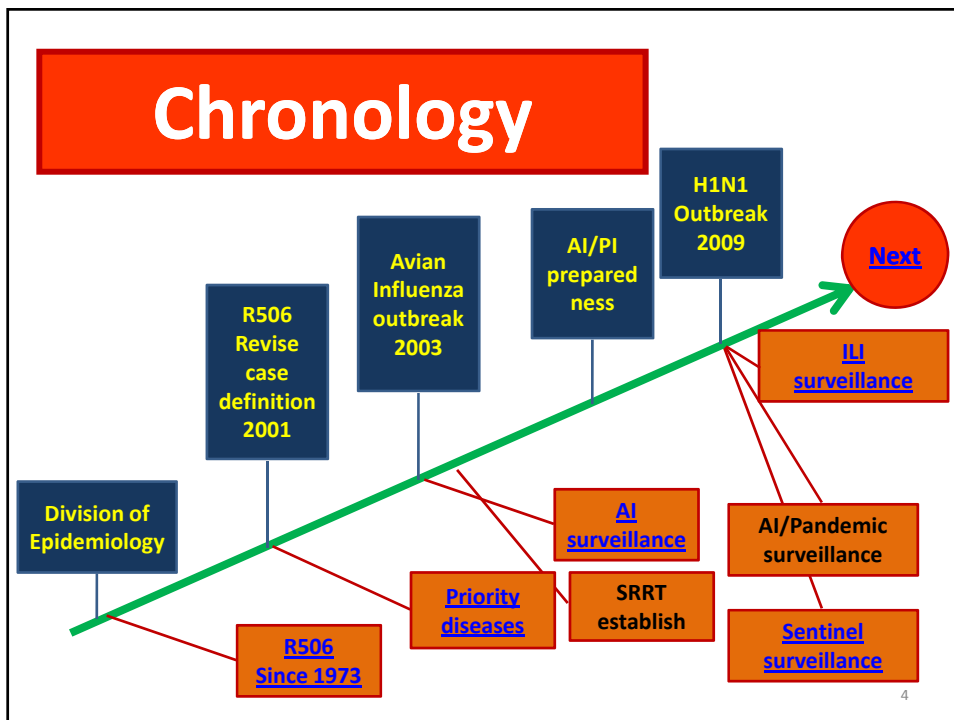
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Pandemic effect (2)

- **Effect to population**
 - Panic > individual health and social problem
 - Economic loss
- **Effect to officers**
 - Workload to response and containment
 - Reporting system
 - Investigation
 - Prevention and control
 - Management and administration
 - Budget expense

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National surveillance (Report506)

- **Since 1973**
- **Nation wide**
- **Most public hospital and health care unit**
- **Passive type**
- **Both epidemiological and clinical data**
- **Weekly and daily report**

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Report506 (2)

Develop of program

- **Paper base**
- **HCIS in health care unit and
EPIDEM in hospital**
- **R506 on windows operating system**

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R506 (3); influenza definition

Code 15 on R506 system

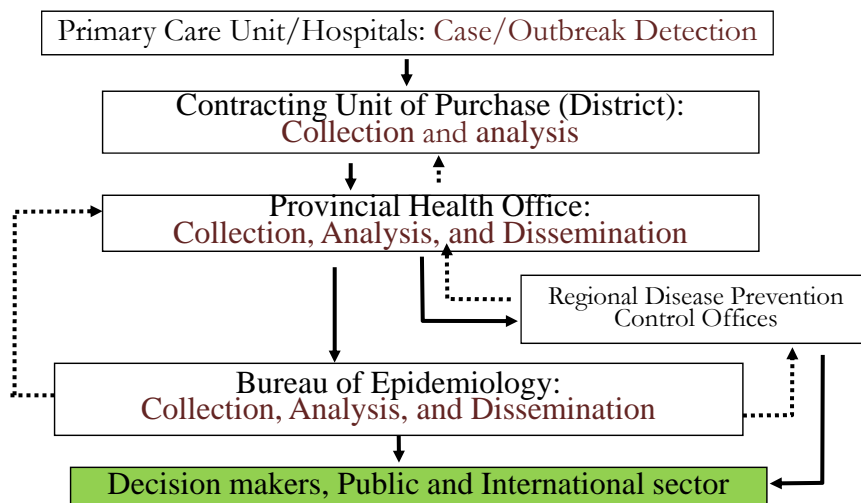
Case definition

- Fever $\geq 38^{\circ}\text{C}$ with myalgia and at least 1 of following; cough, sore throat, rhinorrhea, headache, conjunctivitis, and/or fatigueness

ICD10 code: J09-11

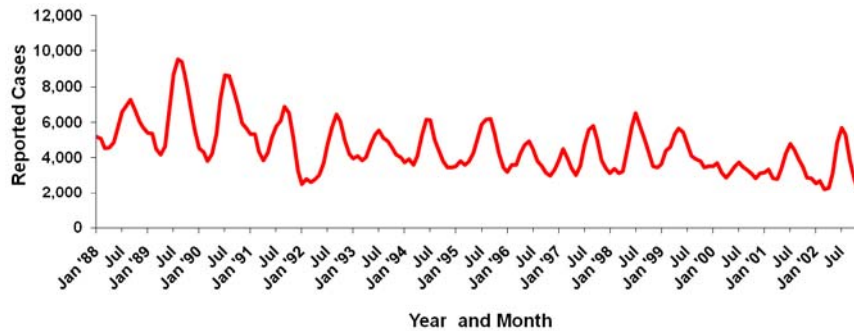
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R506 (4); data flow



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Seasonal Distribution of Clinically Diagnosed Influenza in Thailand, 1988-2002



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Priority diseases

- | | | |
|--|------------------------|---------------|
| 1. Atypical pneumonia suspected SARS | 9. Anthrax | 24 hr. |
| 2. Cholera | 10. Severe AEFI | |
| 3. Encephalitis | 11. Tetanus Neonatorum | weekly |
| 4. Meningococcal meningitis | 12. Diphtheria | |
| 5. Acute severely ill or death of unknown infection. | 13. Rabies | |
| 6. Food poisoning outbreak | 14. DHF | |
| 7. Cluster of diseases with unknown etiology | 15. Measles | |
| 8. Polio - AFP | 16. Pertussis | |
| | 17. Hand foot mouth | |
| | 18. Leptospirosis | |
| | 19. Dysentery | |
| | 20. Admitted pneumonia | |
| | 21. Influenza | |

Influenza / Pneumonia suspected of Avian flu 24 hr notification₁₀

R506 and Priority diseases

Strengthen

- High coverage of public hospital
- R506 support for descriptive epidemiology
- Low cost to maintenances

Weakness

- Delay report
- Duplicate with priority disease

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Avian Influenza (1)

- **Since 2003**
- **Pneumonia & ILI with exposure history**
- **SRRTs > report and investigation**
- **Lab. Confirmed at NIH and RMSC**
- **Country-wide coverage**
- **Daily monitoring and update of situation In April 2009 > swine flu was include to system**

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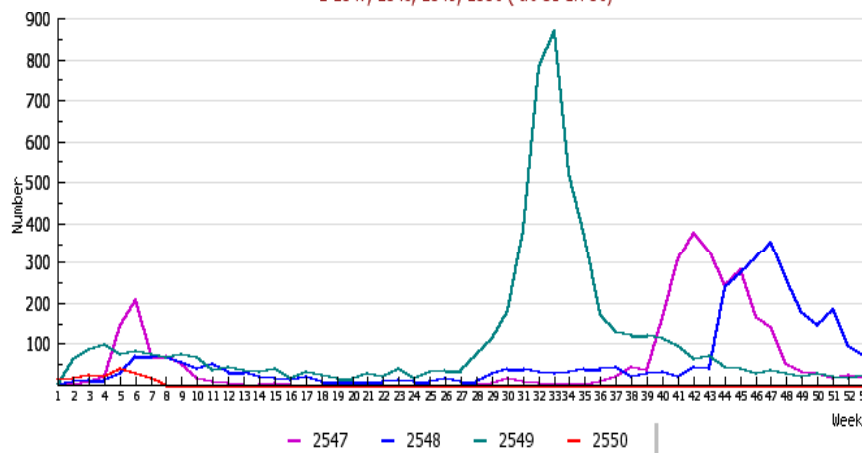
Avian Influenza (2)

- Early detection for AI case
- Rapid response
- Workload at local?
- Sense to new influenza strain detection?

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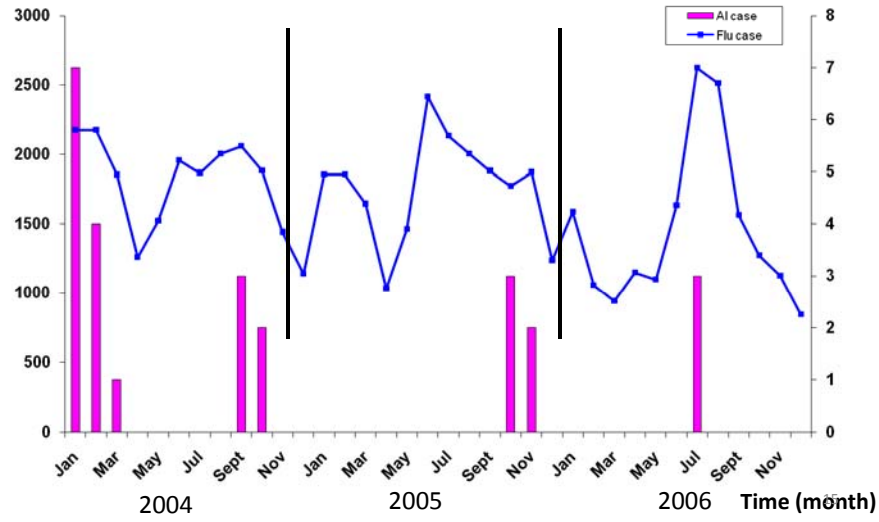
Suspected AI case by week, 2004-2007 THAILAND

จำนวนผู้ป่วยรับแจ้งรายสัปดาห์
ปี 2547, 2548, 2549, 2550 (ถึง 31 ธค 50)

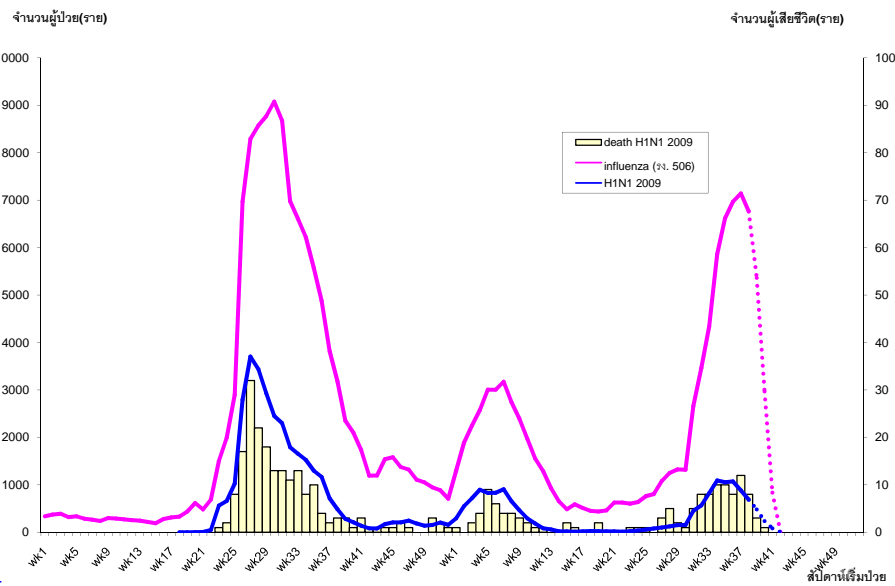


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Number of Influenza cases from R506 and Number of AI case, 2004-2006, THAILAND



จำนวนผู้ป่วยและผู้เสียชีวิตที่ยืนยันการติดเชื้อไข้หวัดใหญ่ชนิด A (pdm H1N1) เทียบกับจำนวนผู้ป่วยไข้หวัดใหญ่ที่ได้รับรายงาน 506 จำนวนตามสัปดาห์ที่เริ่มป่วย, ก.ค. 2552 - 23 ต.ค. 2553



BOE

Severe pneumonia/pneumonia death

Strengthen

- More detail of case
- Real time
- Friendly use

Weakness

- High cost
- Down when the outbreak or pandemic gone

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Influenza Like Illness (1)

- All provinces > 900 hospitals
- No. of ILI from May to Dec. 09
- ILI proportion from 12 Jan. 10
- Monitor ILI proportion at local
- SMS or web base report (GeoChat)
- 2 way communication

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Influenza Like Illness (2)

- ILI definition for surveillance:

Fever $\geq 38^{\circ}\text{C}$ or **history of fever** with cough and/or sore throat within **5 days before visit** to hospital

or select from ICD10 code:

- J00 Acute nasopharyngitis (common cold)
- J029 Acute pharyngitis
- J069 Acute upper respiratory infection
- **J09 Influenza due to identified avian influenza virus**
- J10 Influenza
- J11 Influenza virus not identified

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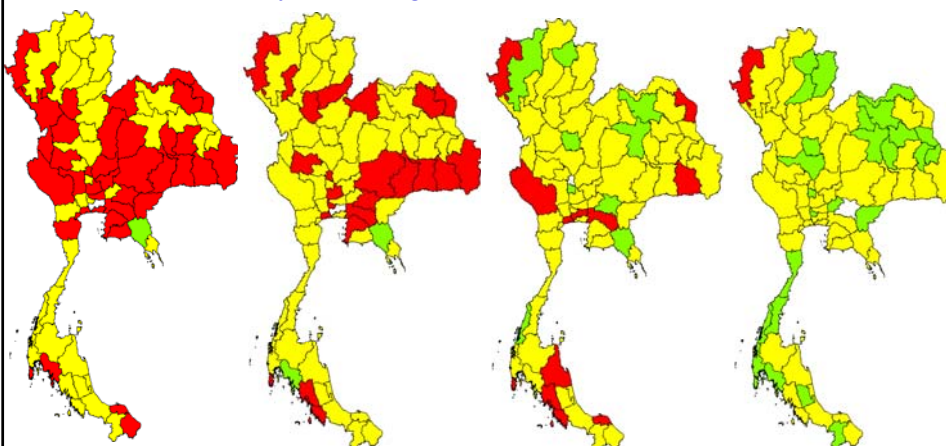
สัดส่วน (%) ผู้ป่วยอาการคล้ายไข้หวัดใหญ่ ต่อจำนวนผู้ป่วยนอกทั้งหมดที่รับบริการ ในโรงพยาบาลเครือข่ายเฝ้าระวัง เป็นรายสัปดาห์ ประเทศไทย พ.ศ.2553

สัปดาห์ที่ 39

สัปดาห์ที่ 40

สัปดาห์ที่ 41

สัปดาห์ที่ 42



- สัดส่วน ILI > 10% ของผู้ป่วยนอก
- สัดส่วน ILI 5 - 10% ของผู้ป่วยนอก
- สัดส่วน ILI < 5 % ของผู้ป่วยนอก

รายงานทันเวลา 808 แห่ง
จากทั้งหมด 959 แห่ง
คิดเป็นร้อยละ 84.3²⁰

Influenza Like Illness

Strengthen

- More coverage
- Simplicity
- High proportion of timeliness

Weakness

- Aggregate data

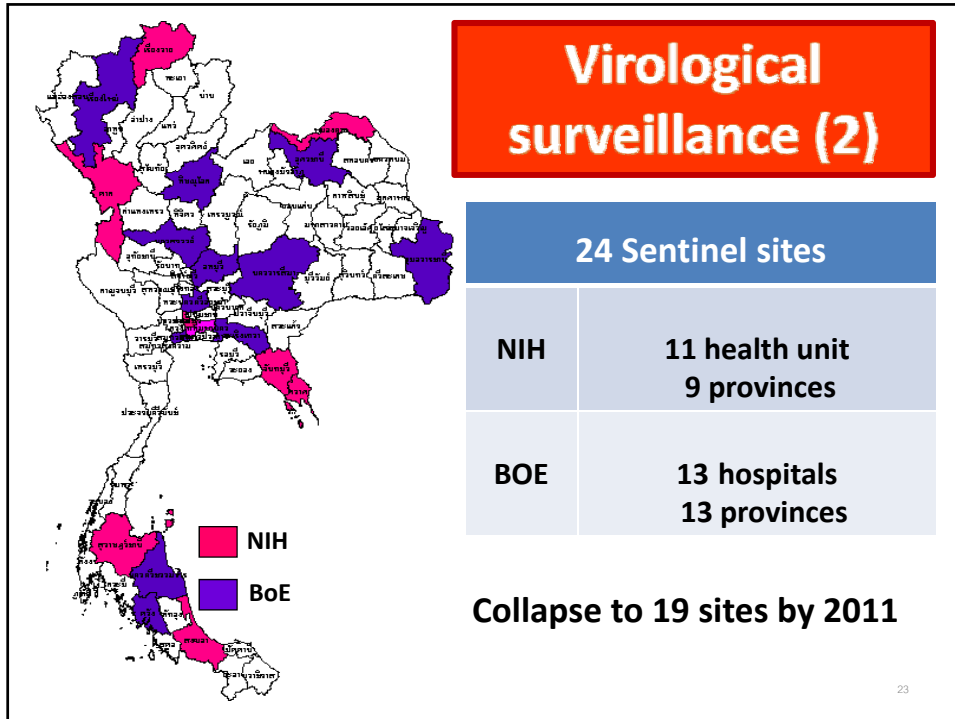
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Sentinel Surveillance (1)

- 2005, Thai NIH at 4 EID hospitals
 - Collect specimen from ILI patients
 - 2008 extend to 11 hospitals in 9 provinces
 - Border and tourism area
- 2009, Thai DDC at 13 hospitals
 - Collect specimen from ILI and pneumonia patients
 - Represent to local Thais
 - Laboratory test at RMSC.

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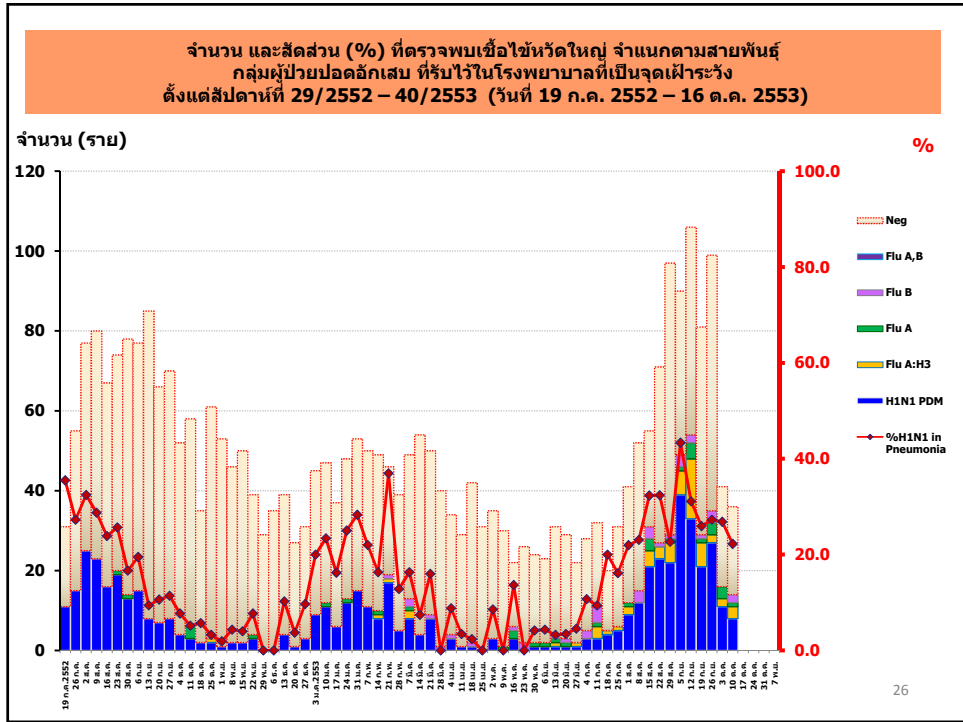
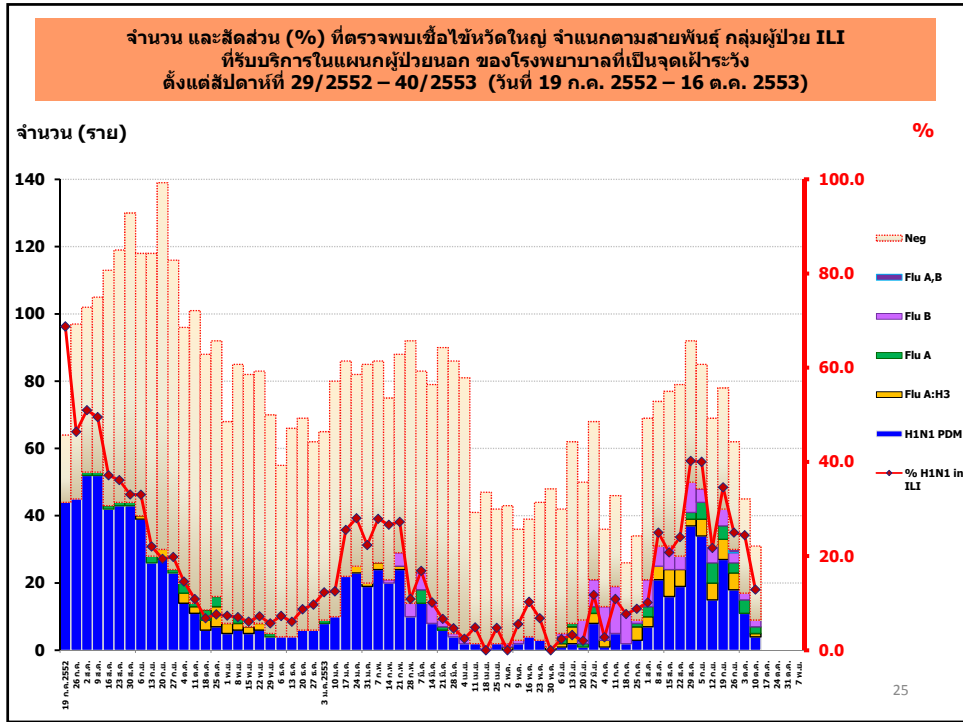


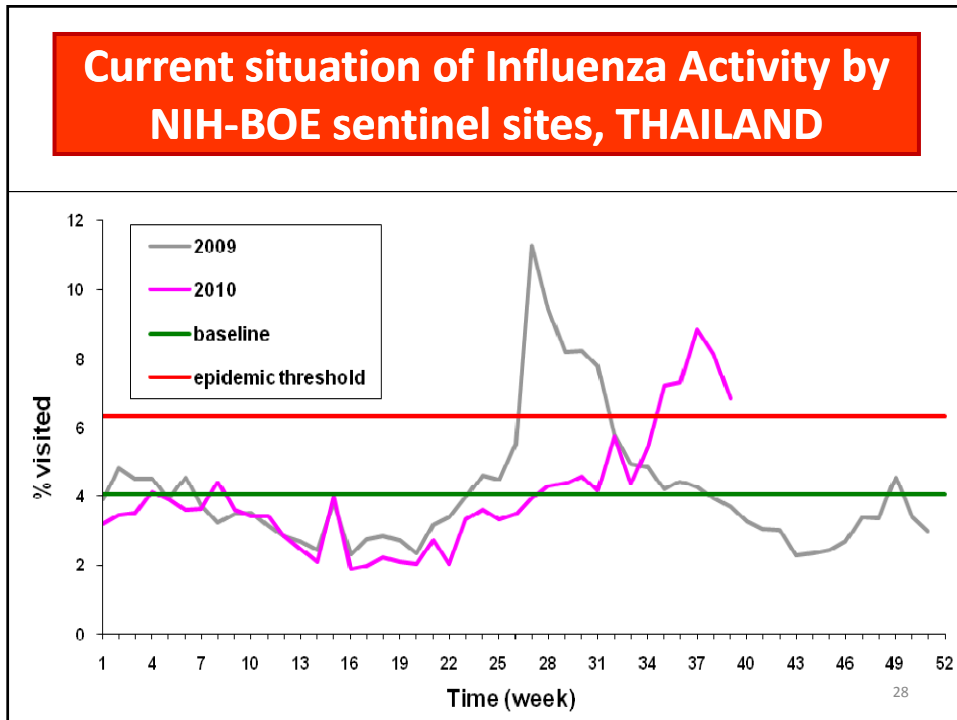
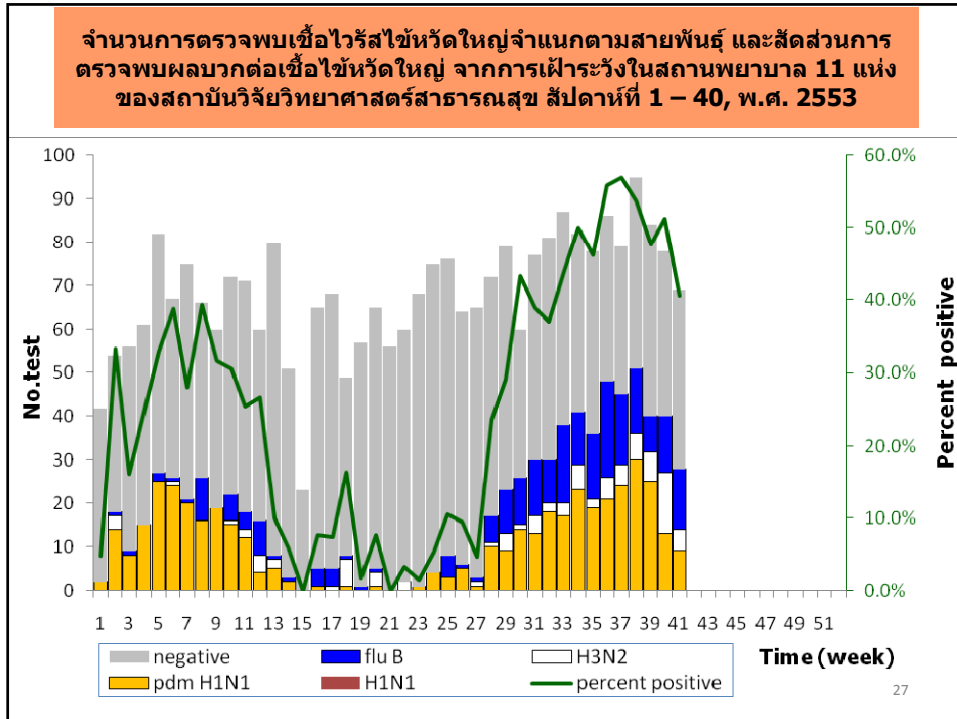
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**สัดส่วนเชื้อไวรัสไข้หวัดใหญ่จำแนกตามสายพันธุ์ที่ตรวจพบ
รายภาค สัปดาห์ที่ 40, 10 - 16 ตุลาคม 2010**

ภาค	สัดส่วนสายพันธุ์ที่ตรวจพบในผู้ป่วย ILI (%)				สัดส่วนสายพันธุ์ที่ตรวจพบในผู้ป่วย pneumonia (%)			
	pdmH1	A unsub type	H3	B	pdmH1	A unsub type	H3	B
กลาง	16.22	0	8.11	21.62	0	0	20.00	0
เหนือ	11.76	5.88	2.94	17.65	16.67	0	0	11.11
ตอ.น.	10.00	0	5.00	5.00	38.46	7.69	0	0
ใต้	11.11	0	11.11	11.11	NA	NA	NA	NA
ทั้งหมด	12.00	2.00	5.00	15.00	22.22	2.78	2.78	5.56

Resource : surveillance database of BOE





Sentinel

Strengthen

- Know the circulation strain
- Help to select the vaccine for next season

Weakness

- Sustainability
- High cost
- Small number of specimens > representativeness?

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Reporting system

- Delay report → alert → timeliness
- More coverage : include more private hospitals and clinics
- New system and software to strengthening the system
- Budget pooled
- Test the system for next pandemic or PHEIC
- AEFI was included
- Collaboration and co-operation?

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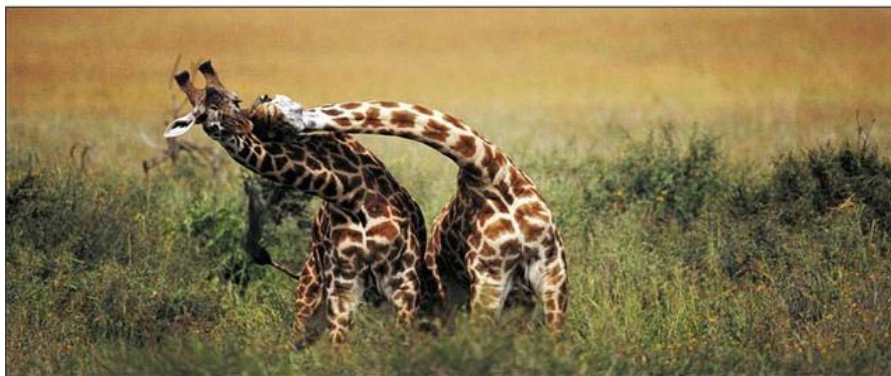
Way forward

- Improve sentinel surveillance to sustainable , term of budget and plan
- Strengthening the severe pneumonia/ pneumonia death system for early detection of AI or any unknown/new pathogen
- Reduce duplication and workload of ILI reporting from R506

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Thank you for your attention

ขอบคุณครับ



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