

21 August 2009  
Beijing, China

# Pandemic surveillance in Japan

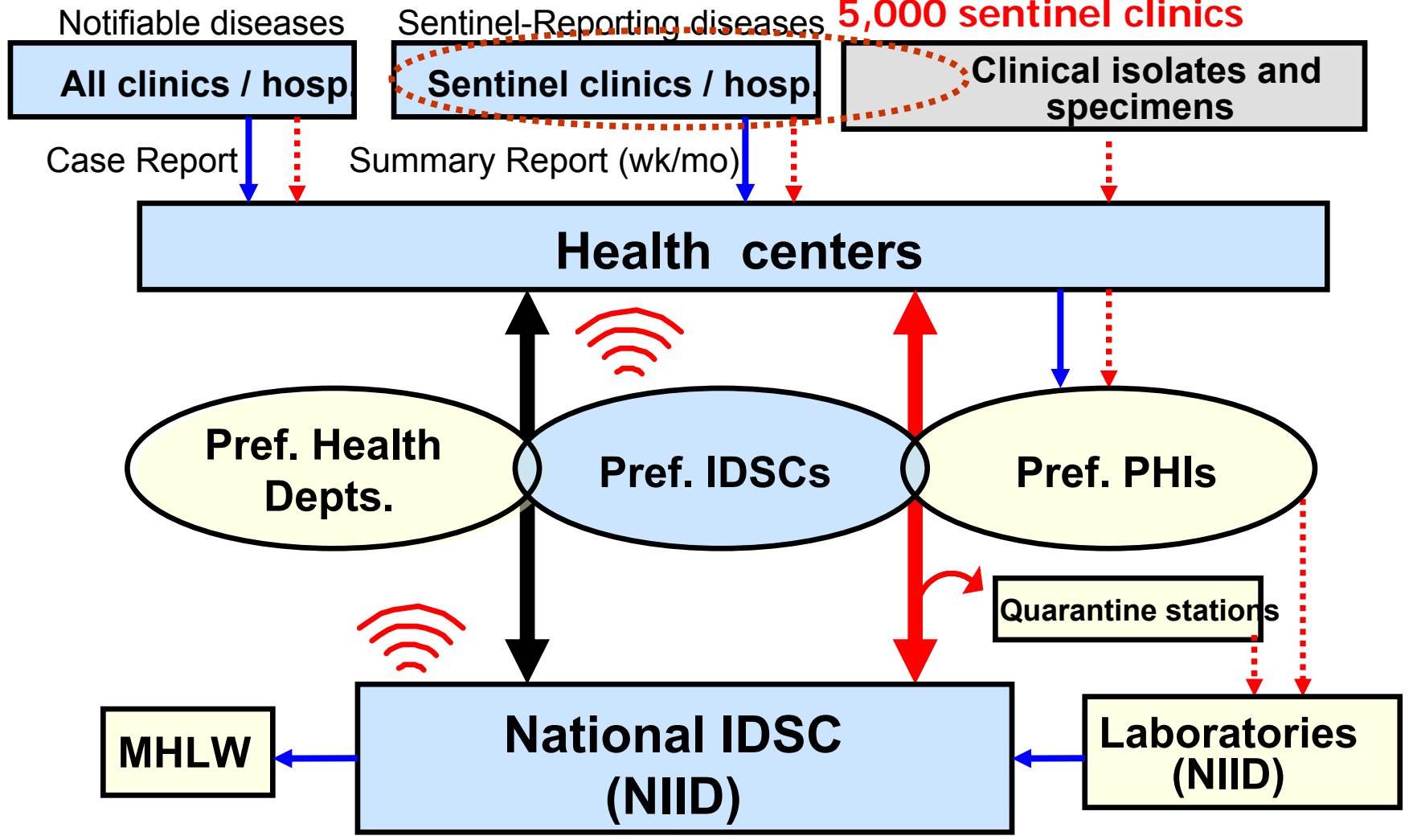
Tomimasa Sunagawa  
[sunatomi@nih.go.jp](mailto:sunatomi@nih.go.jp)

On behalf of  
Infectious Disease Surveillance Center/ FETP-Japan  
National Institute of Infectious Diseases, Japan

# Surveillance System in Japan - general concept -

Seasonal Influenza included

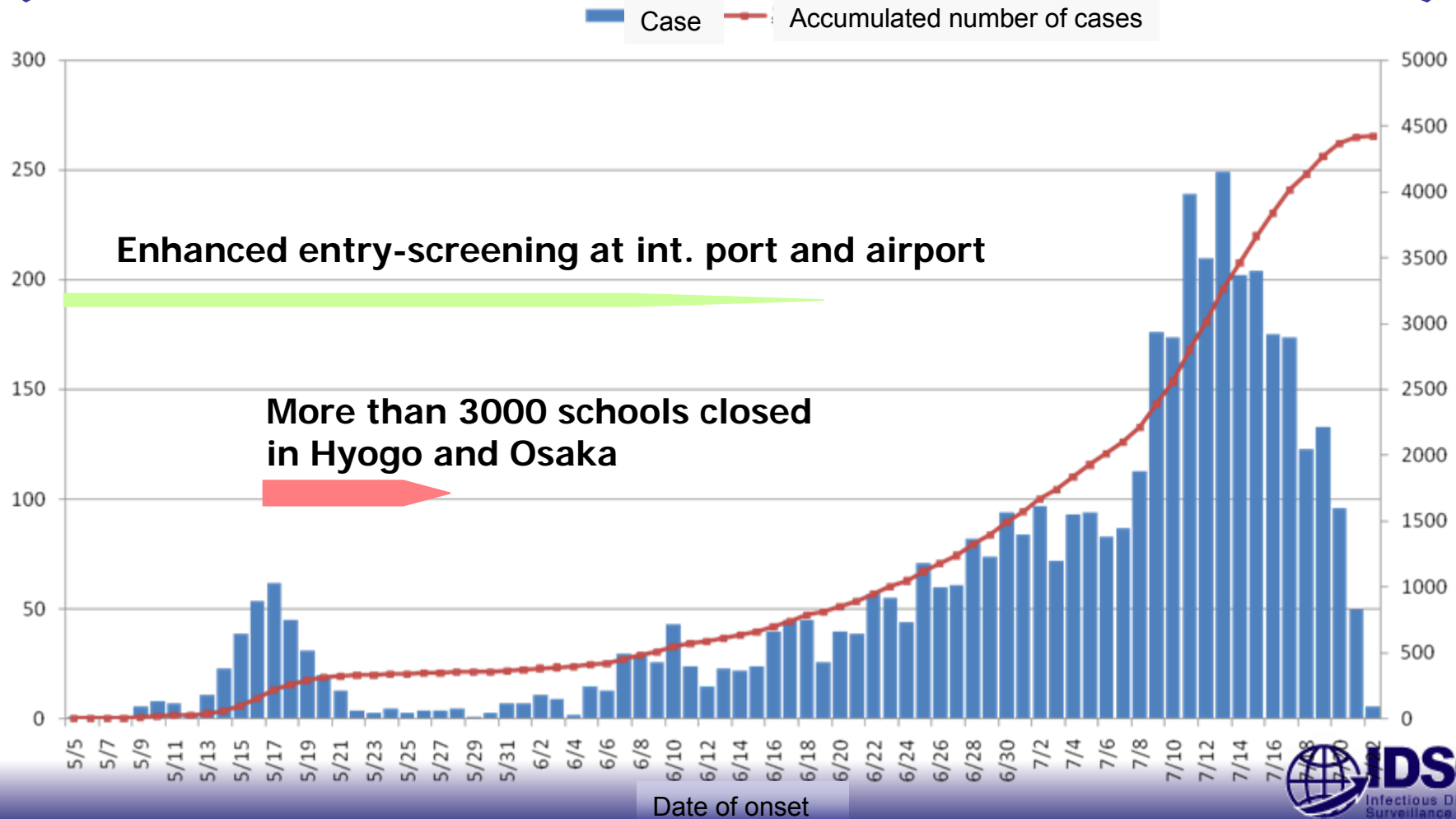
5,000 sentinel clinics



→ Reports  
→ Specimens  
↔ Computer network  
↔ Patient (data entry by HCs)  
↔ Infectious agent (data entry by PHIs)

Information dissemination  
**NIID**  
 Infectious Disease Surveillance Center

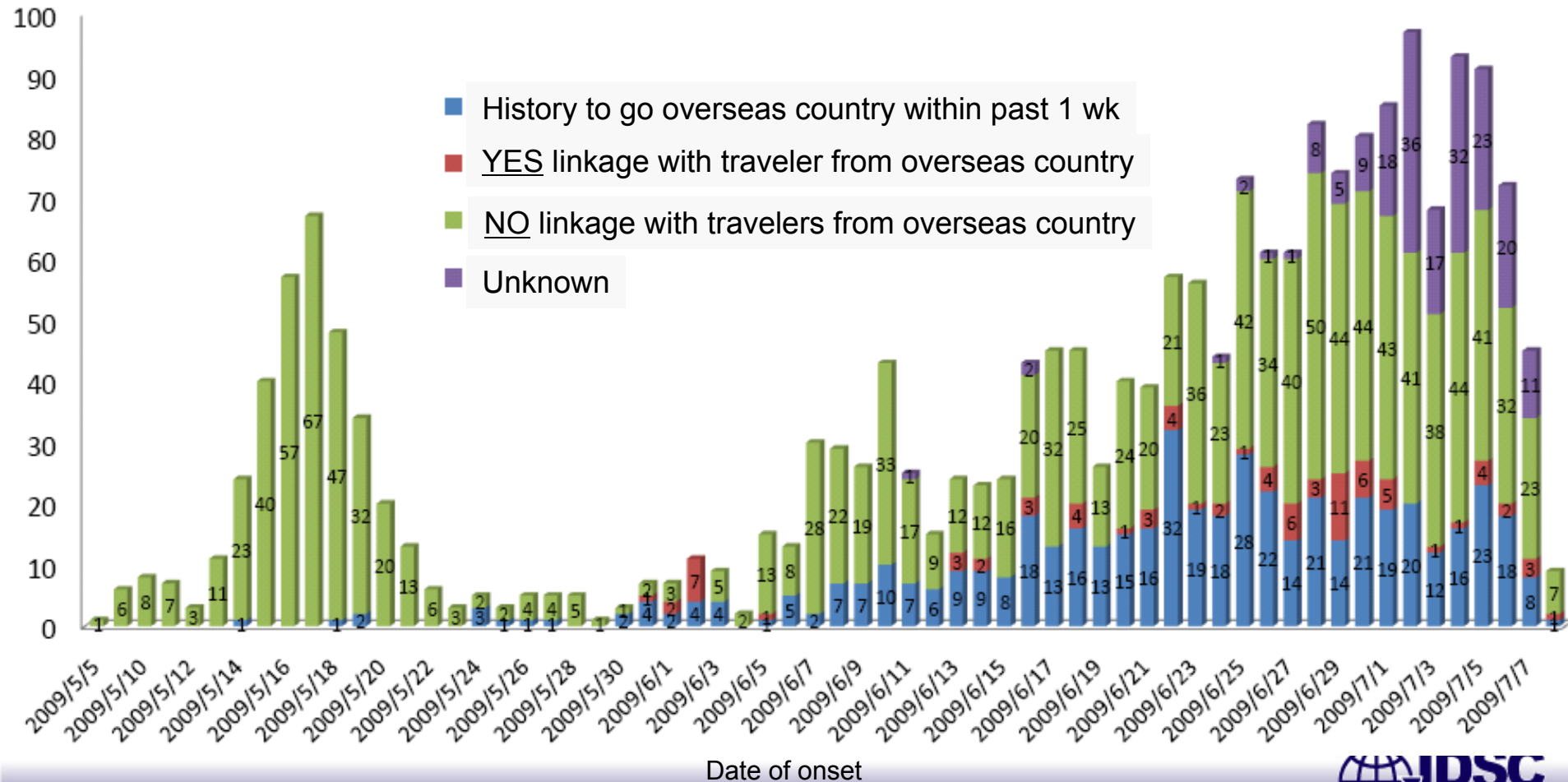
# Case-based surveillance as of 23 July 2009 $n=4,496^*$ (\*case with information of date of onset)



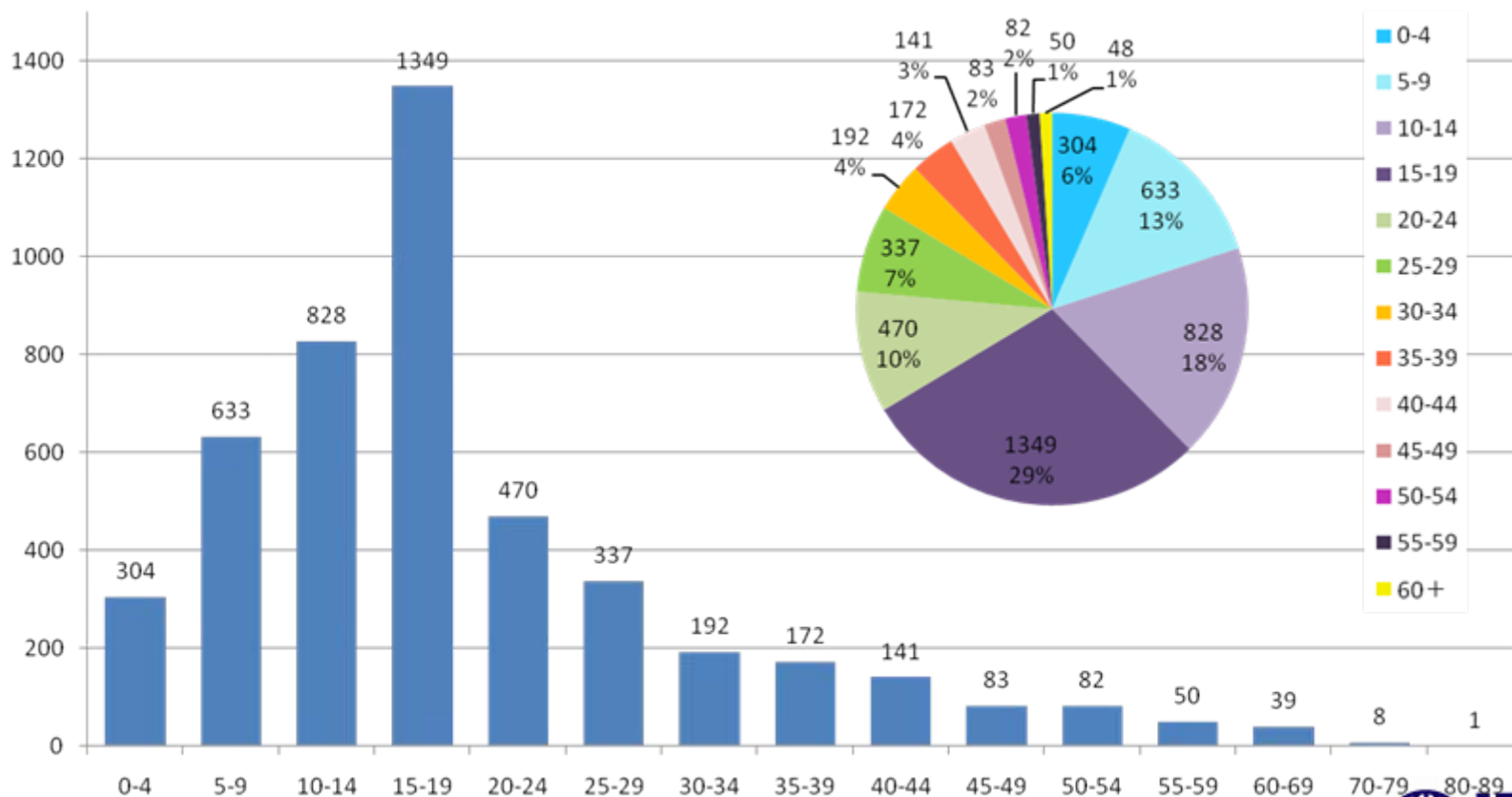
# Case-based surveillance as of 10 July 2009 $n=2,064^*$

(\* case with information of date of onset)

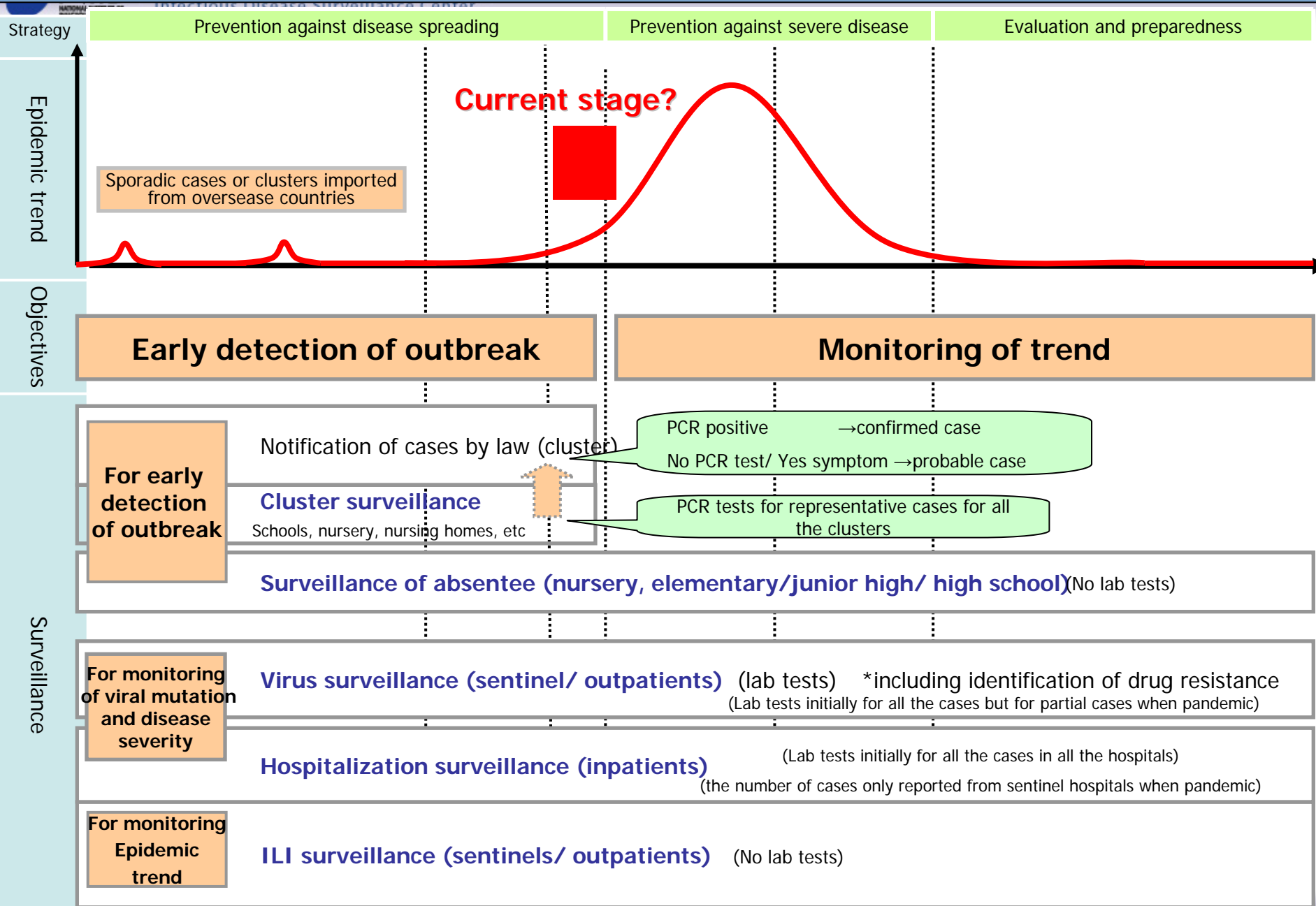
(人)



# Age distribution of novel influenza as of 23 July 2009 (A/H1pdm) (n=4,689) Median: 16 years (0-89)



**On 23 July 2009, case-based surveillance for novel influenza (A/N1pdm) ended.**



# Surveillance for novel influenza (A/H1pdm) and seasonal influenza in Japan since 24 July 2009

For early detection of outbreak:

1. **Cluster surveillance**
2. **Surveillance of facility absentee (partially pre-existing system for seasonal flu)**

For monitoring of viral mutation and disease severity:

3. **Virus surveillance (pre-existing)**
4. **Hospitalization surveillance**

For monitoring of epidemic trends:

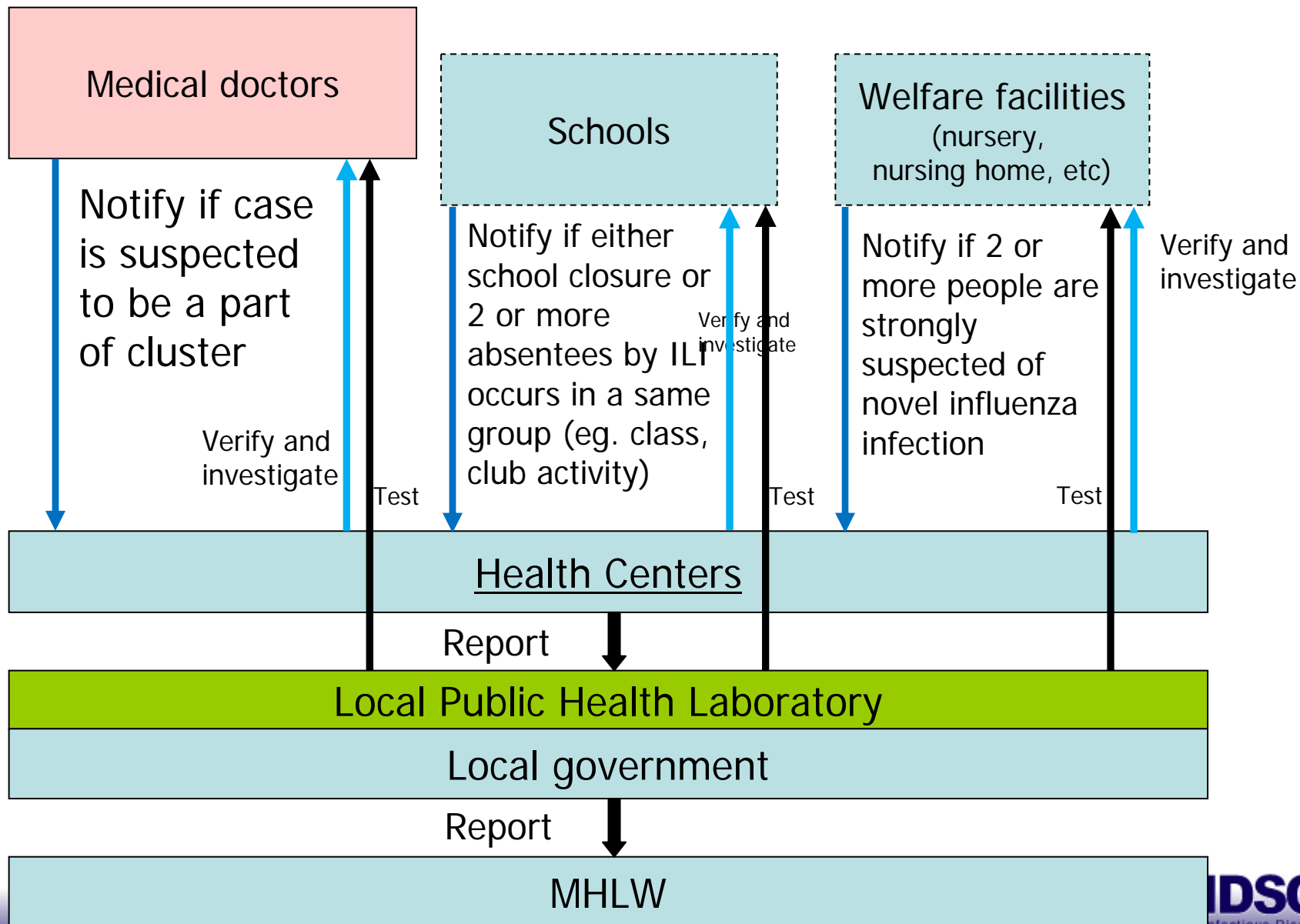
5. **ILI surveillance (pre-existing)**

Will continue  
during Pandemic  
Period

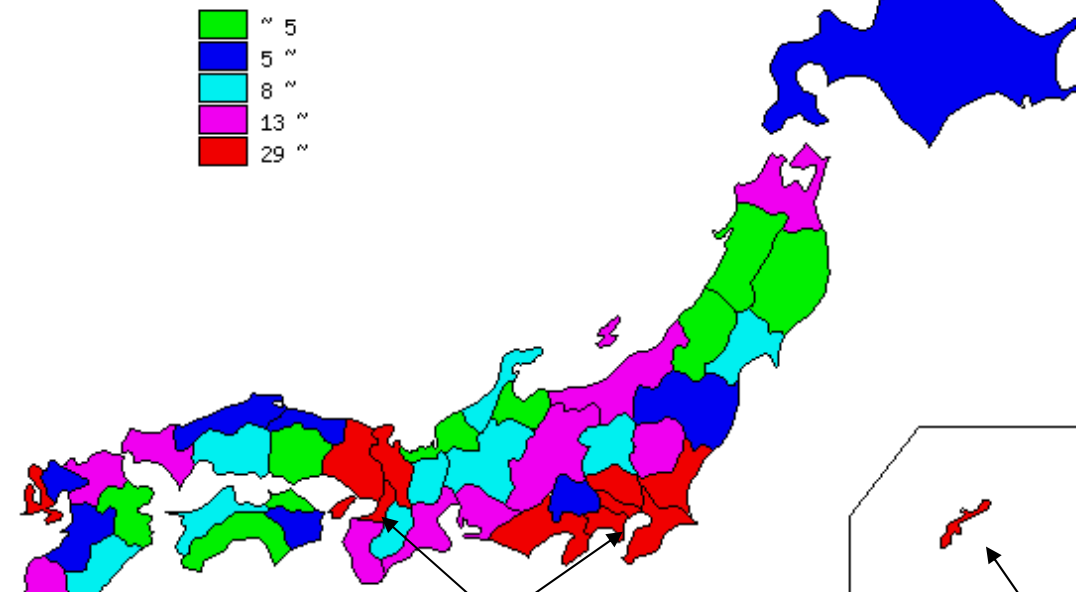
# Special events of special concern

- Large cluster
- Outbreak occurred in health care facilities or nursery or nursing home
- Severe or fatal case
- Virus mutation suspected
- Other situation of special public health measures to be needed

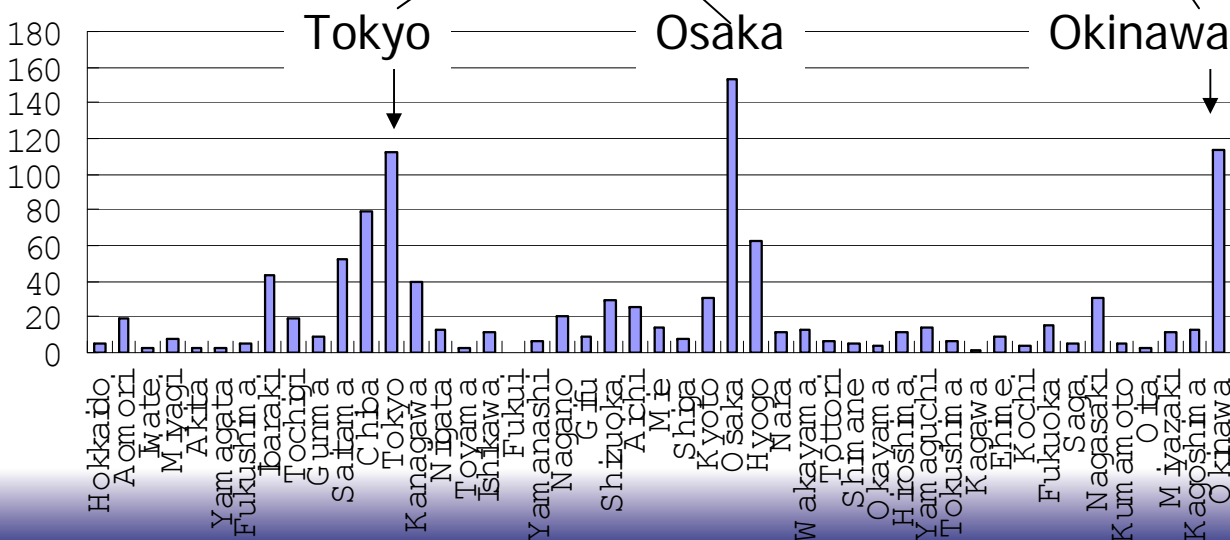
# 1. Cluster surveillance



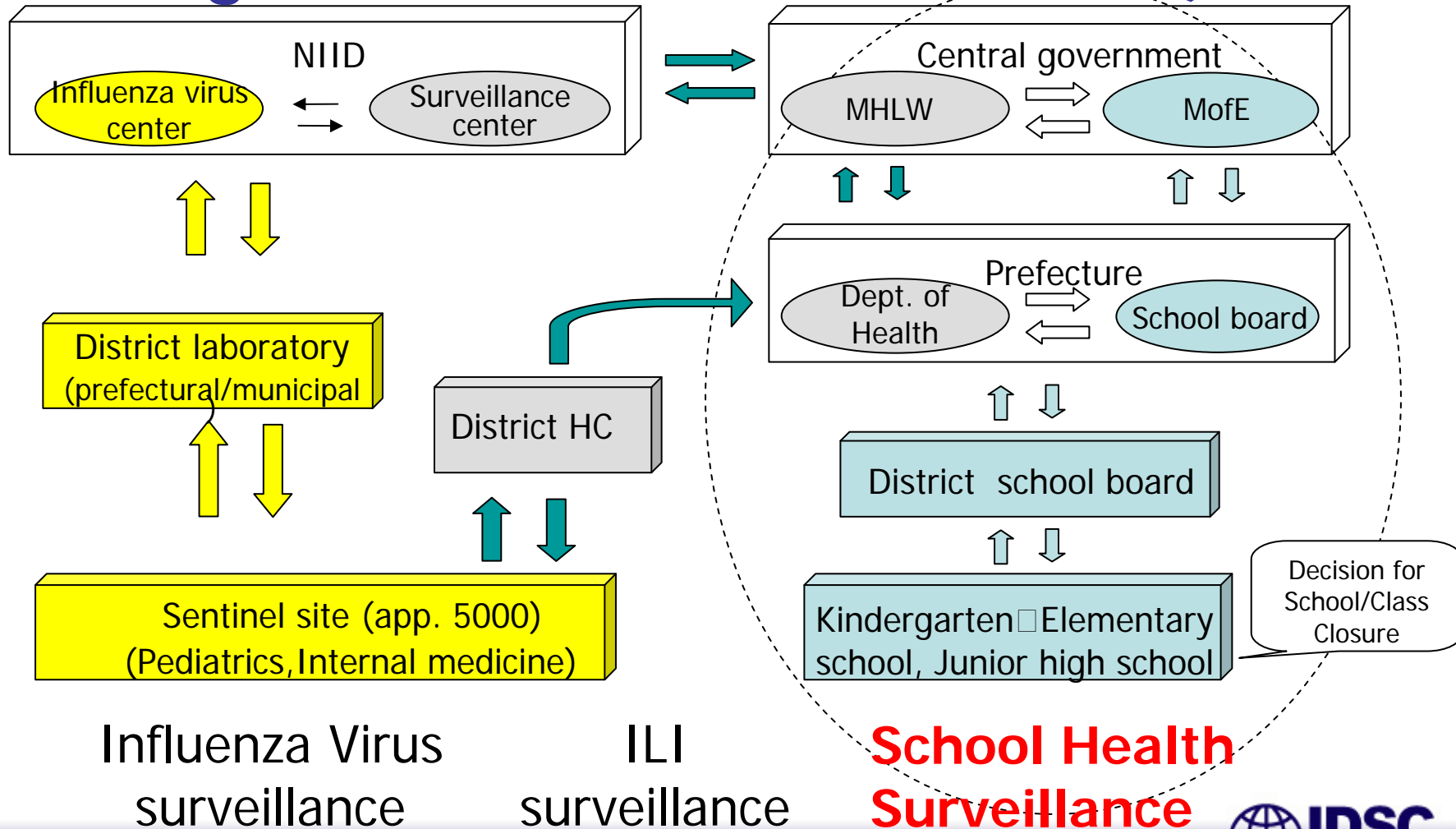
# Result of cluster surveillance from 29 July to 9 August 2009 (n=1,066)



Number of reported clusters of novel influenza (A/H1pdm), from 29 July to 9 August 2009



# 2. Surveillance of facility absenteee (partially pre-existing system for seasonal flu. E.g., School Health Surveillance)



# 3. Influenza virus surveillance (pre-existing)

## Objectives:

1. To identify virus mutation, drug sensitivity and etc
2. To monitor the trend of type of flu virus

## Methods:

1. To test specimen collected by **laboratory sentinels** in accordance with the plan by local government
2. Tests to identify and to investigate virus
  - Virus isolation
  - PCR
  - HI anti-serum test
    - A(+), H1(-), H3(-), B(-) → “A not subtyped” → PCR test
3. Report to MHLW; positive results immediately by local lab (NESID\*), summary with epidemiological information weekly by local government (iNESID)

(\*National Epidemiological Surveillance for Infectious Diseases)

# NESID registration form

**ウイルス**

インフルエンザウイルス

[ボタン](#)

【インフルエンザウイルス】

[ボタン](#)

- Influenza virus A - not subtyped
- Influenza virus A H1 N2
- Influenza virus A H2 N2
- Influenza virus A H3 N2
- Influenza virus A H4 N6
- Influenza virus A H5 N2
- Influenza virus A H5 N9
- Influenza virus A H6 N8
- Influenza virus A H7 N3
- Influenza virus A H8 N4
- Influenza virus A H10 N unknown
- Influenza virus A H11 N3
- Influenza virus A H13 N unknown
- Influenza virus A H16 N unknown
- Influenza virus A H1 N1 unknown
- Influenza virus A H1pdm
- Influenza virus A H3 N unknown
- Influenza virus A H5 N unknown
- Influenza virus A H6 N unknown
- Influenza virus A H7 N unknown
- Influenza virus A H7 N7
- Influenza virus A H9 N unknown
- Influenza virus A H10 N7
- Influenza virus A H11 N6
- Influenza virus A H14 N unknown
- Influenza virus A H new type
- Influenza virus C

**病原体検出情報システム** 2009/06/26 21:57:27 BKU1103  
ログインユーザ山下 和子

病原体個票 新規登録/編集

報告機関  地衛研/感染症研究所  検疫所

報告種別  定点の種類  登録年月日 2009年06月25日

病原体種別  検体提供者番号 20090001 検体採取年月日 2009年06月20日

検出病原体

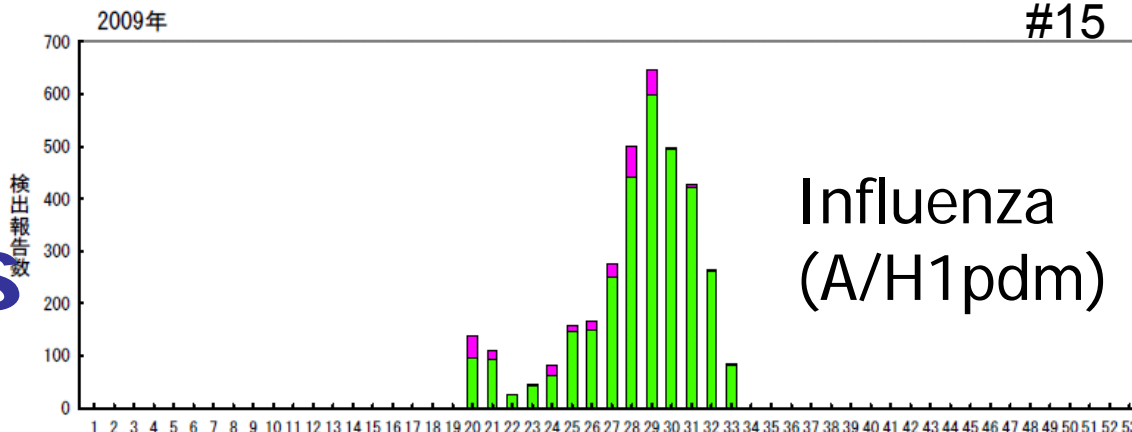
分離インフルエンザウイルスに関する情報

インフルエンザ情報の取込込み

株名  血球の種類  血球の濃度(%)

登録番号	採血法	HI値	採血法値	検出方法	
1	AH1pdm /A/Narita/1/2009pdm	≥ 20480	≥ 20480	培養細胞1	クリア
2					クリア
3					クリア
4					クリア
5					クリア
6					クリア

# Result of influenza virus surveillance



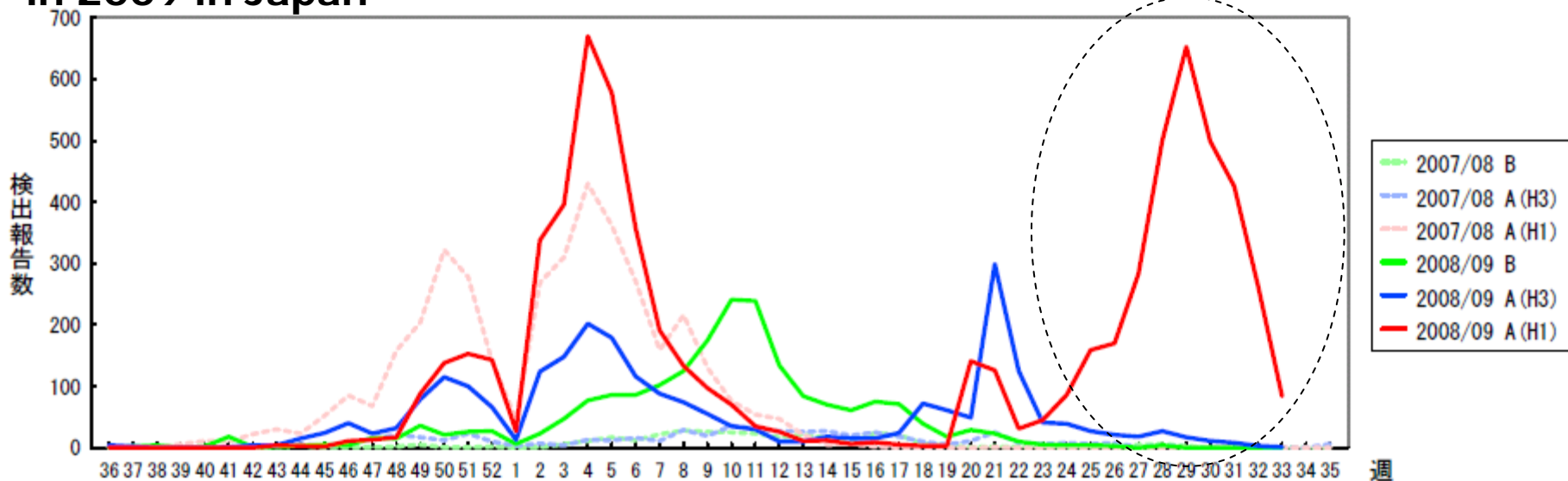
週別型別インフルエンザウイルス分離・検出報告数の推移、2007/08 & 2008/09シーズン  
(病原微生物検出情報：2009年8月15日 作成)

\* 各都道府県市の地方衛生研究所からの分離/検出報告を図に示した

IASR

Infectious Agents Surveillance Report

## Number of detection of Influenza virus from 36<sup>th</sup> wk in 2008 to 33<sup>rd</sup> wk in 2009 in Japan



Source: IDSC/NIID

# 4. Hospital surveillance as of 11 August 2009 – result (1)

Admitted # of cases from 5 to 11 August

Accumulated # of cases as of 11 August

<b>Number of admission</b>	<b>48</b>	<b>119</b>
<b>Age distribution</b>		
< 5 (y.o.)	7	20
<b>5-19</b>	<b>30</b>	<b>77</b>
20-39	4	9
40-59	0	3
60 and <	7	10
<b>Sex</b>		
<b>Male</b>	<b>29</b>	<b>73</b>
Female	19	46



# Hospital surveillance as of 11 August 2009 – result (2)

Admitted # of cases from 5 to 11 August

Accumulated # of admitted cases as of 11 August

Underlying diseases (partially overlapped)

(Total)  
18

(Total)  
50

Pregnancy
<b>COPD (e.g., asthma)</b>
CHD
Metabolic diseases
Renal disease
Immune deficiency (e.g., steroid use)
Others

0
<b>12</b>
1
1
1
1
4

1
<b>31</b>
2
2
2
3
13

# Hospital surveillance as of 11 August 2009 – result (3)

## Severe cases (partially overlapped)

**Acute encephalopathy due to influenza**

**Mechanical ventilation**

**Admitted number of cases from 5 to 11 August**

**Accumulated number of cases as of 11 August**

**1**

**3**

**1**

**4**

## Condition of patients as of 11 August

In hospital, with mechanical ventilation

1

2

In hospital, with no mechanical ventilation

**Fatal cases reported on 15, 18 and 19 August (total: 3)**

27

Discharged

87

Died

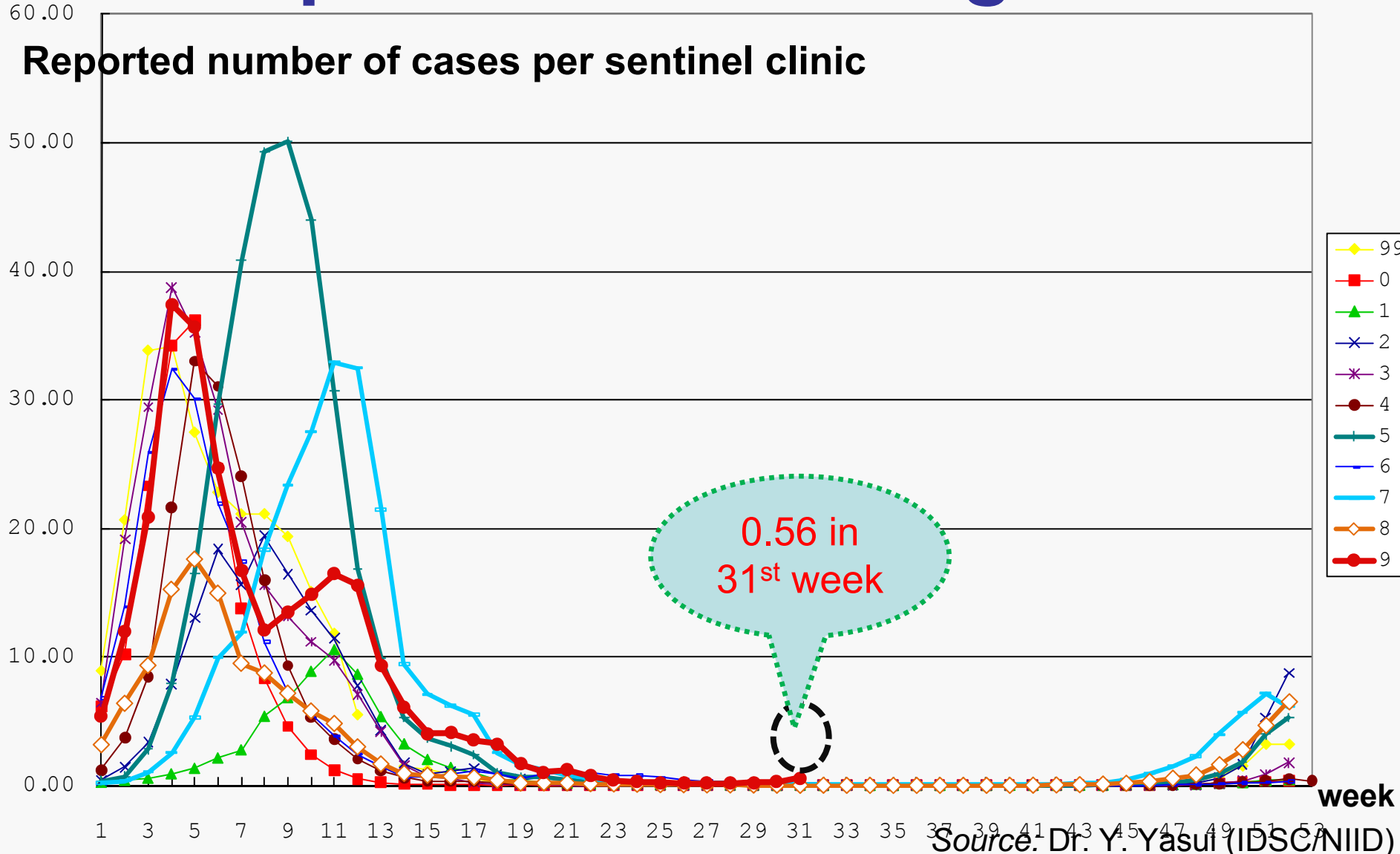
0

0

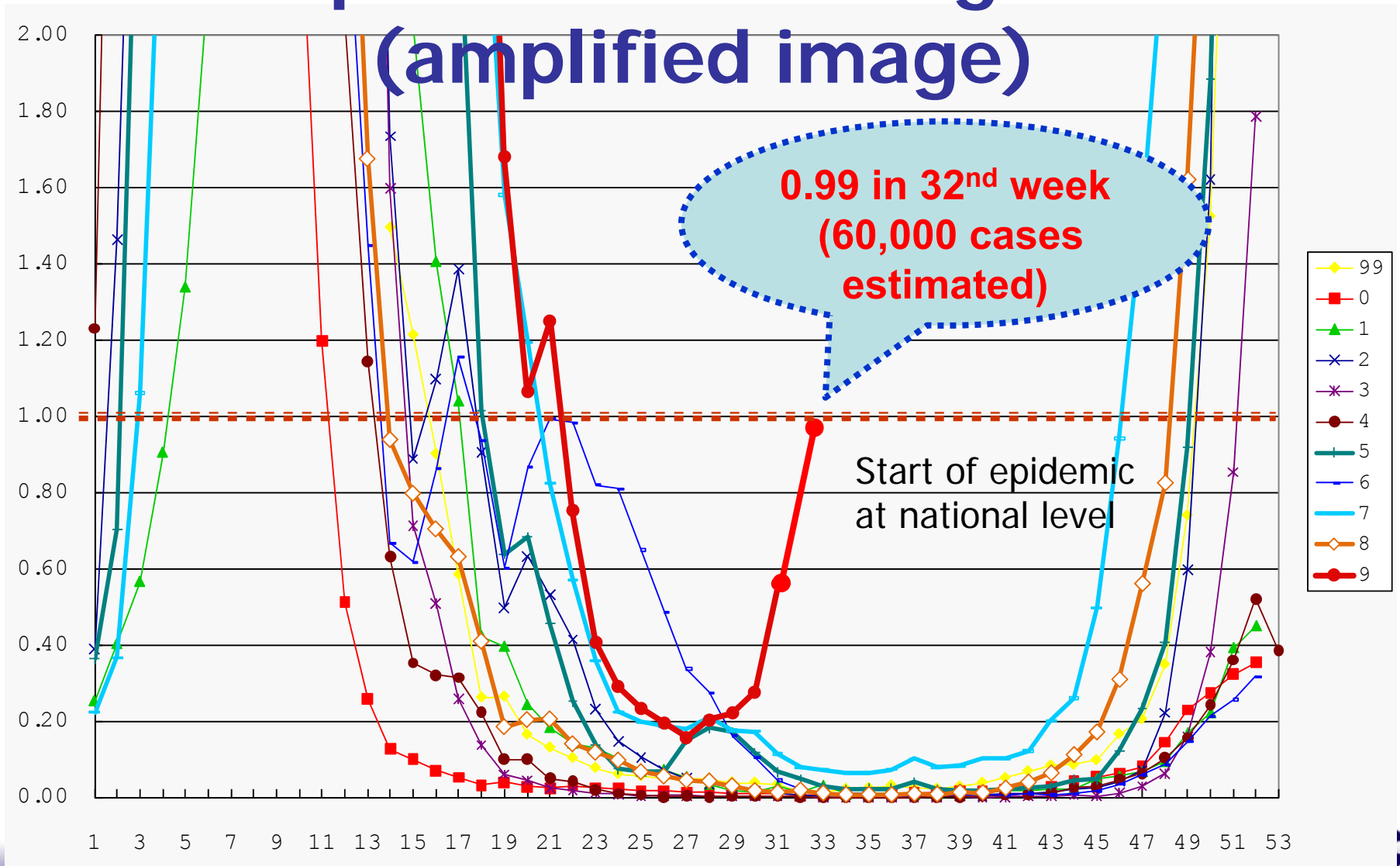
No detailed information

1

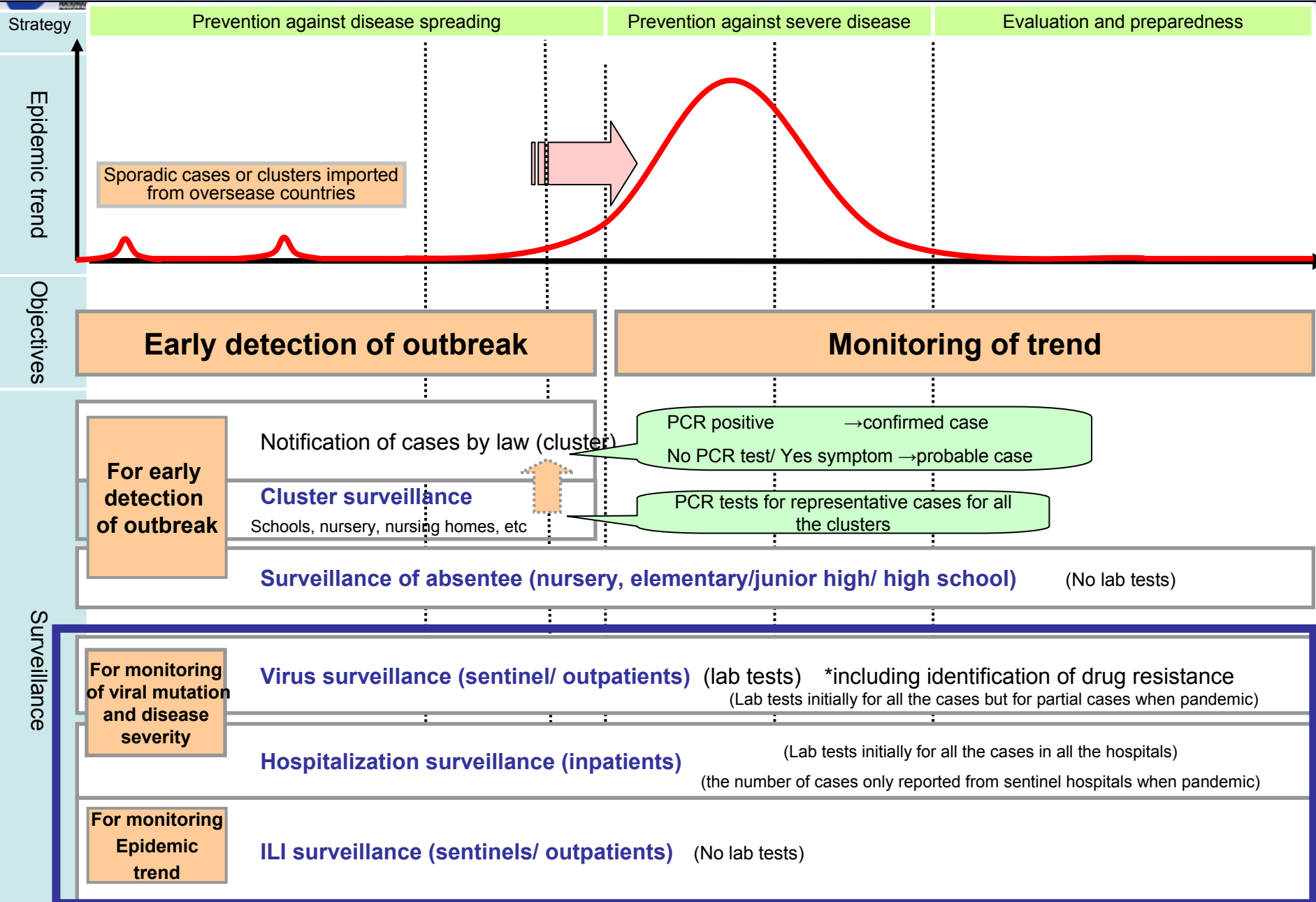
# 5. ILI surveillance in Japan, from April 1999 to 2 August 2009



# ILI surveillance in Japan, from April 1999 to 9 August 2009



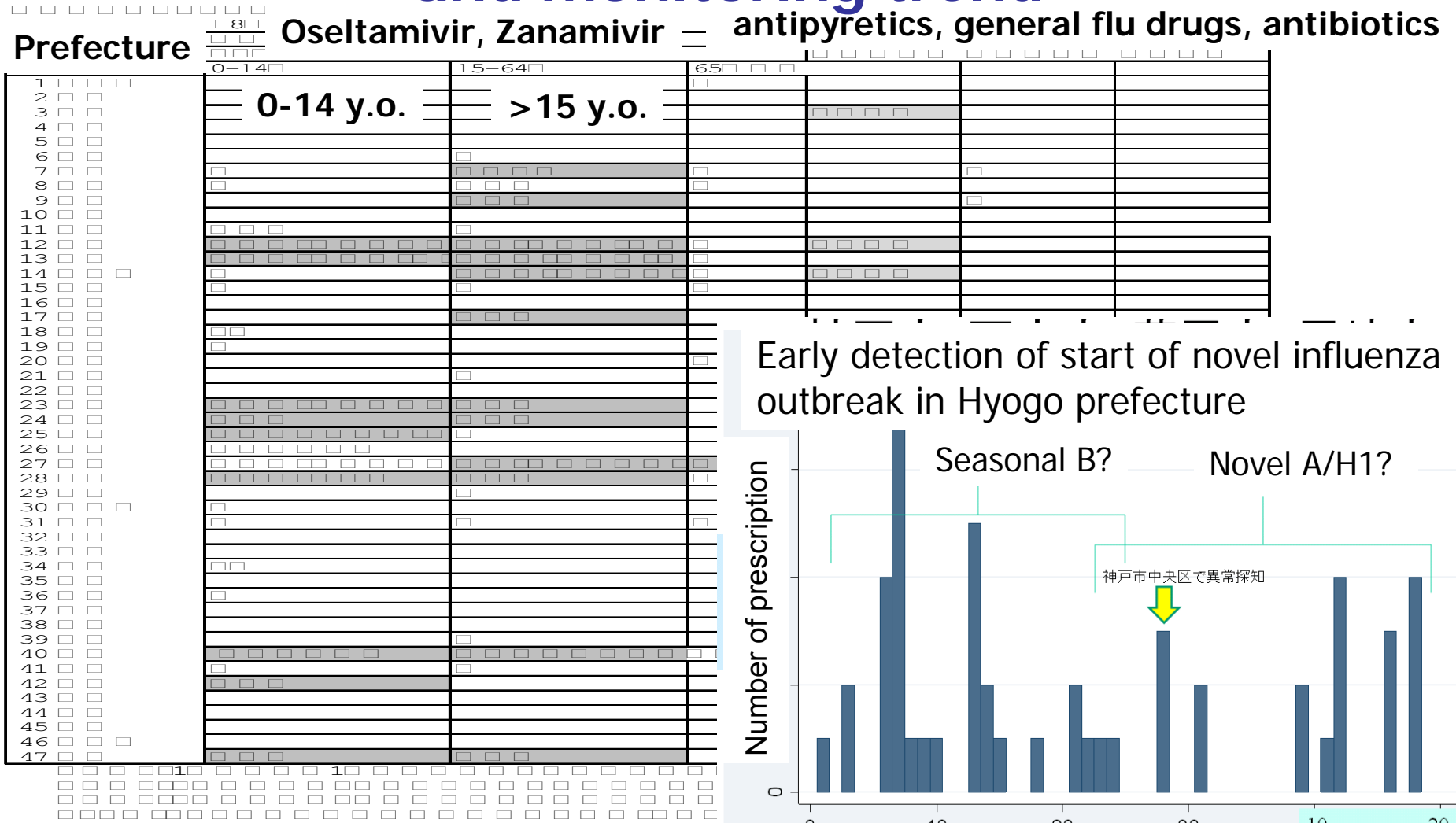




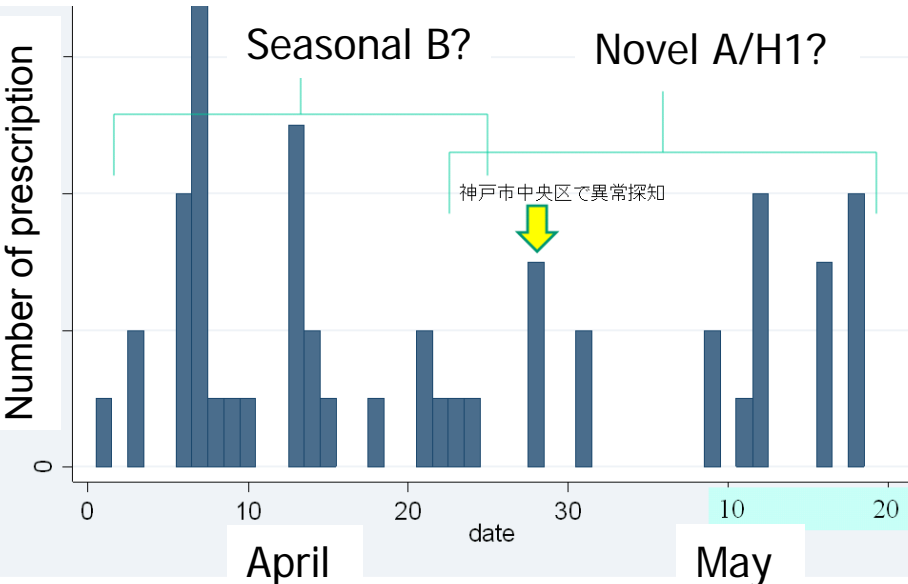
# Other assisting surveillance (1)

## – Pharmacy surveillance for early detection and monitoring trend-

Oseltamivir, Zanamivir = antipyretics, general flu drugs, antibiotics



Early detection of start of novel influenza outbreak in Hyogo prefecture



Source: Dr. Y. Ohkusa (IDSC/NIID)



# Summary as of 19 August (1)

- Novel influenza (A/H1N1pdm) is spreading nationwide in Japan in spite of summer season
  - More than 1000 outbreaks in the past 2 weeks as of 15 August
    - 60,000 cases estimated in 32<sup>nd</sup> epi week
    - Median age: still in teenagers?
  - Severe cases are increasing
    - Approximately 100 hospitalizations; 3 acute encephalopathy (<10 y.o.) and 4 mechanical ventilations (probably more)
    - Three deaths reported (>50 y.o., +underlying disease) as of 19 August

# Summary as of 19 August (2)

- Most places in Japan, surveillance for novel influenza (A/H1pdm) is targeted for early detection of outbreak.
  - Cluster surveillance, surveillance for absentee
- As pandemic proceeds, surveillances to monitor the trend will continue.
  - Virus surveillance, hospitalization surveillance and pre-existing ILI surveillance
- Some assisting surveillance may help to monitor the trend.
- Based on surveillance information, strategic intervention should rapidly and flexibly conducted for more severe situation in Japan.

# Acknowledgments

- Local public health departments
- Ministry of Health, Labour and Welfare
- Okinawa prefectural government
- Dr. Naruo Saito (Saito pediatric clinic)
- Pandemic flu team in Infectious Disease Surveillance Center, National Institute of Infectious Diseases, Japan