Surveillance and Rapid Response

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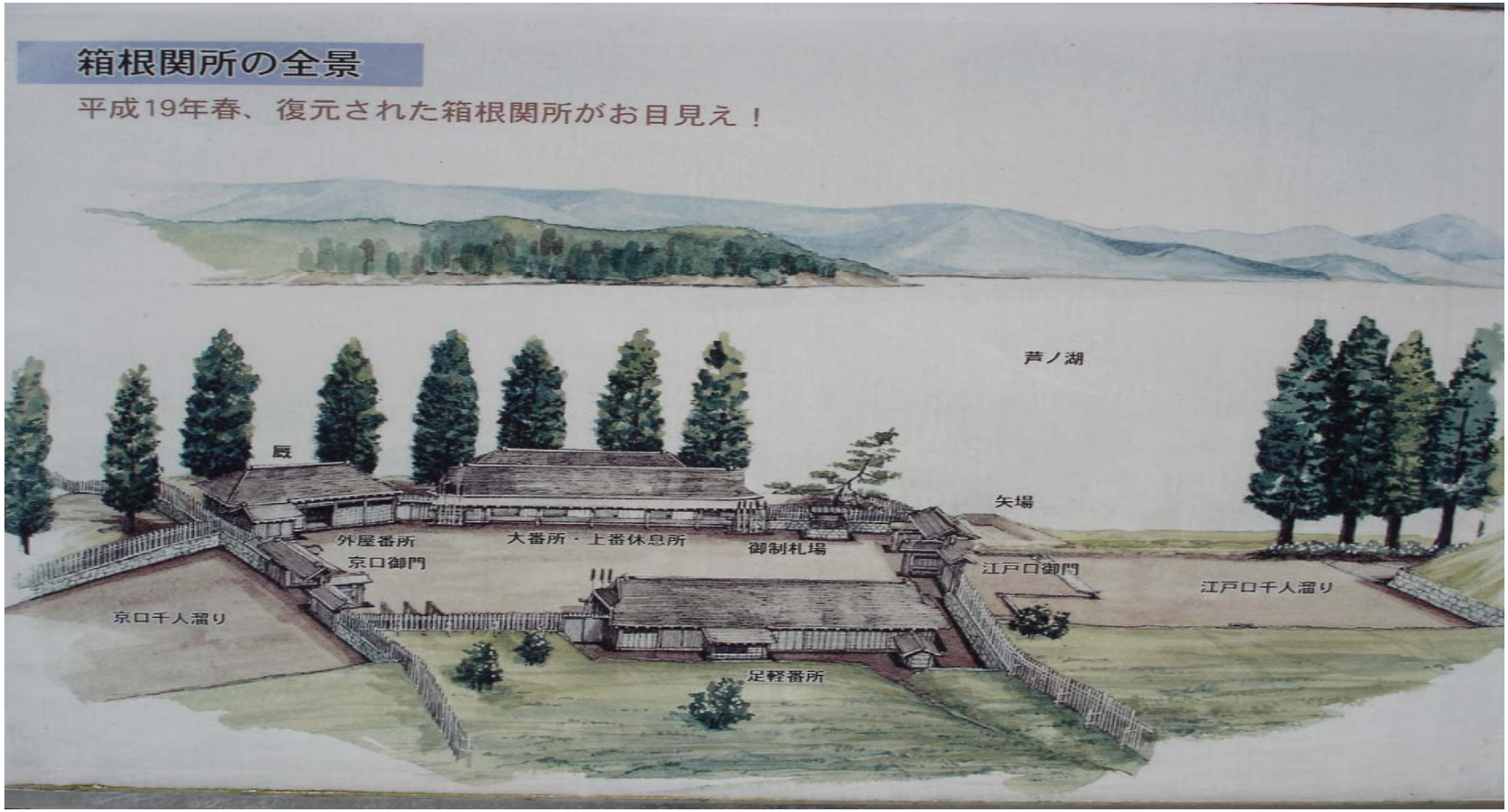
Outlines

- Surveillance
- Surveillance and rapid response team
- Epidemiology in action

I. Surveillance

Hakone’s Check point



How Surveillance work?

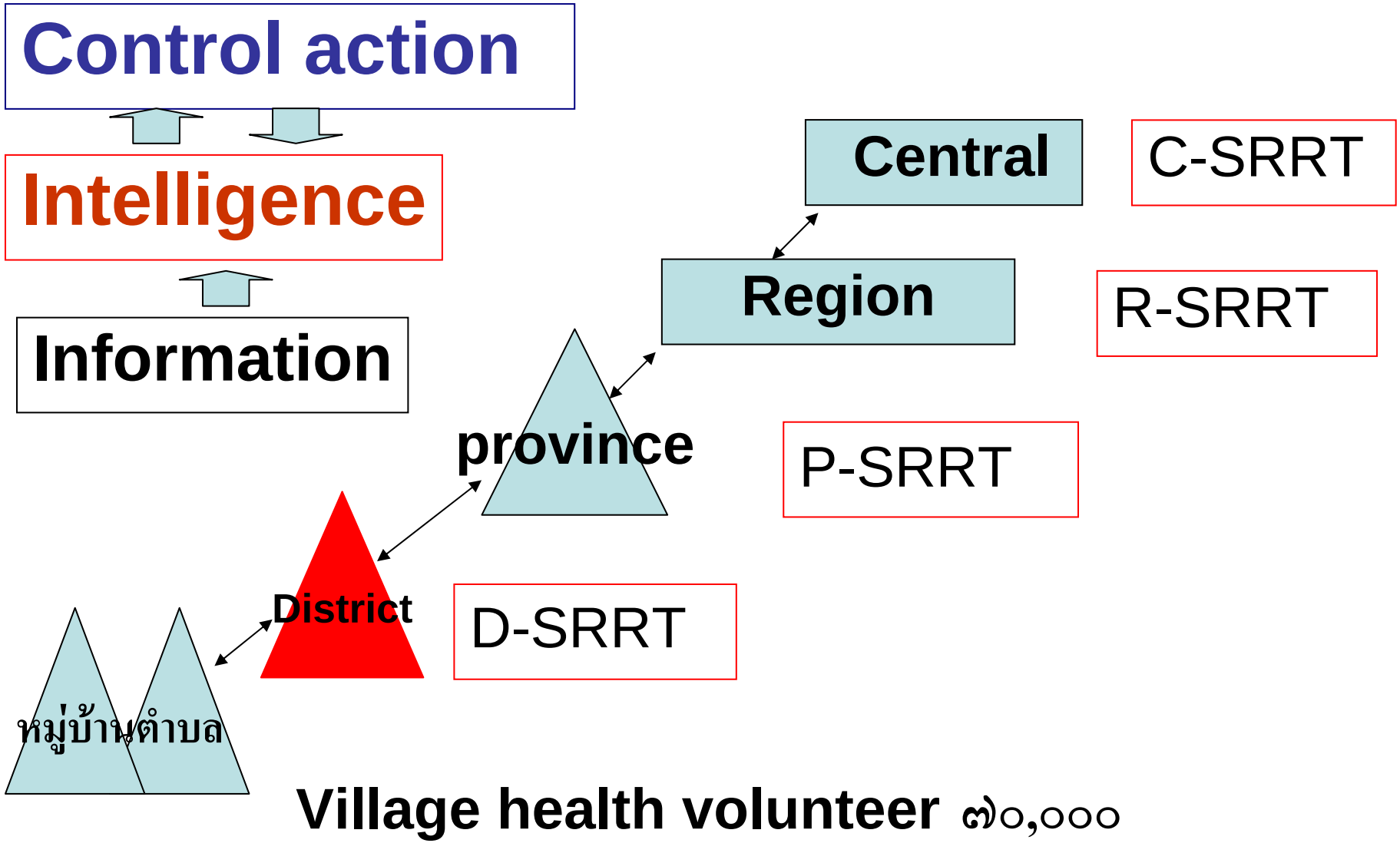
๑. Observe and record

๒. Describe the observe

๓. Analysis
Normal VS abnormal

๔. Propose action to authority

II. Surveillance and Rapid Response Team in Thailand



Epidemiological Surveillance network

Hospital

Veterinarian

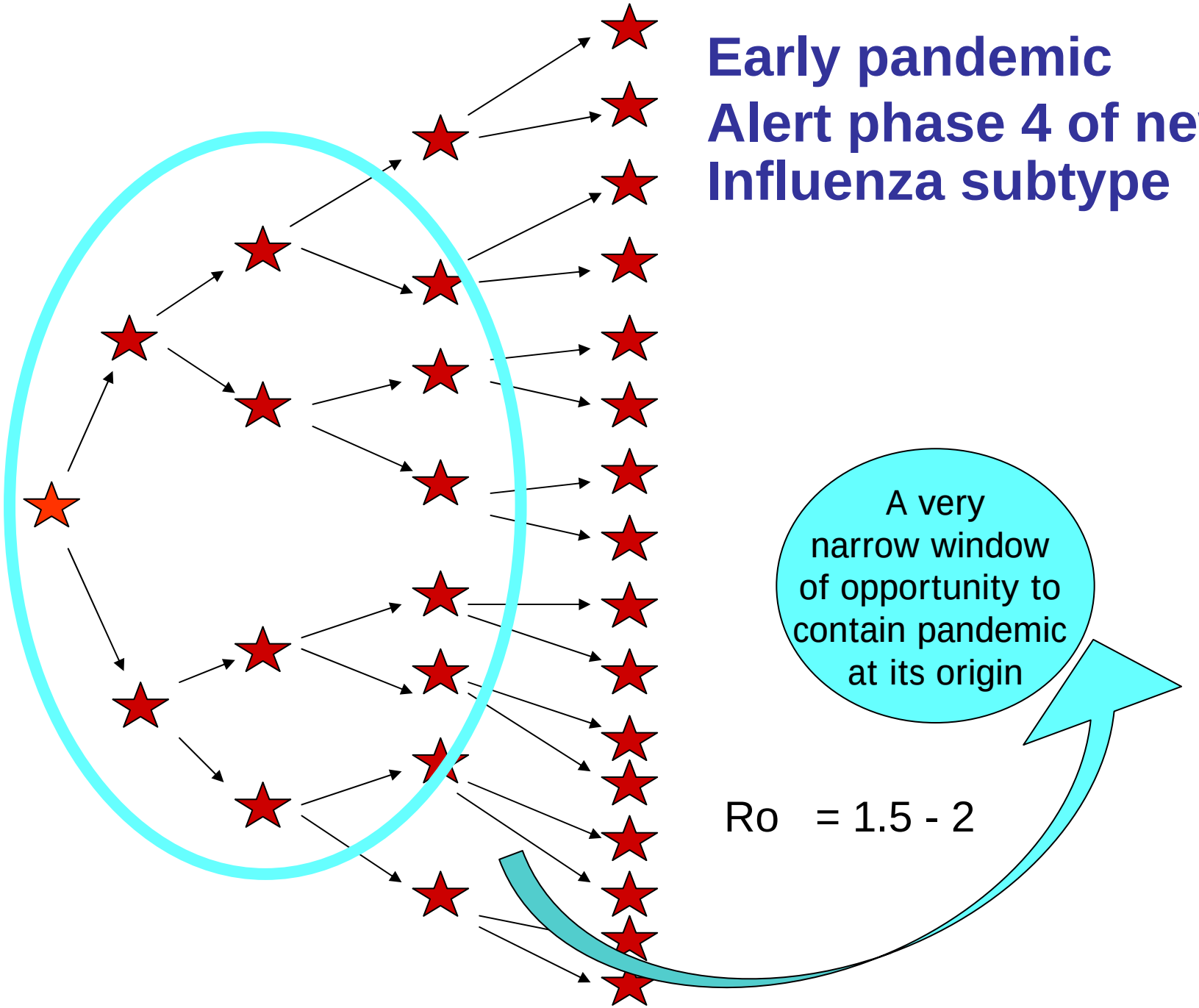
Laboratory

Pathologists

(SRRT)

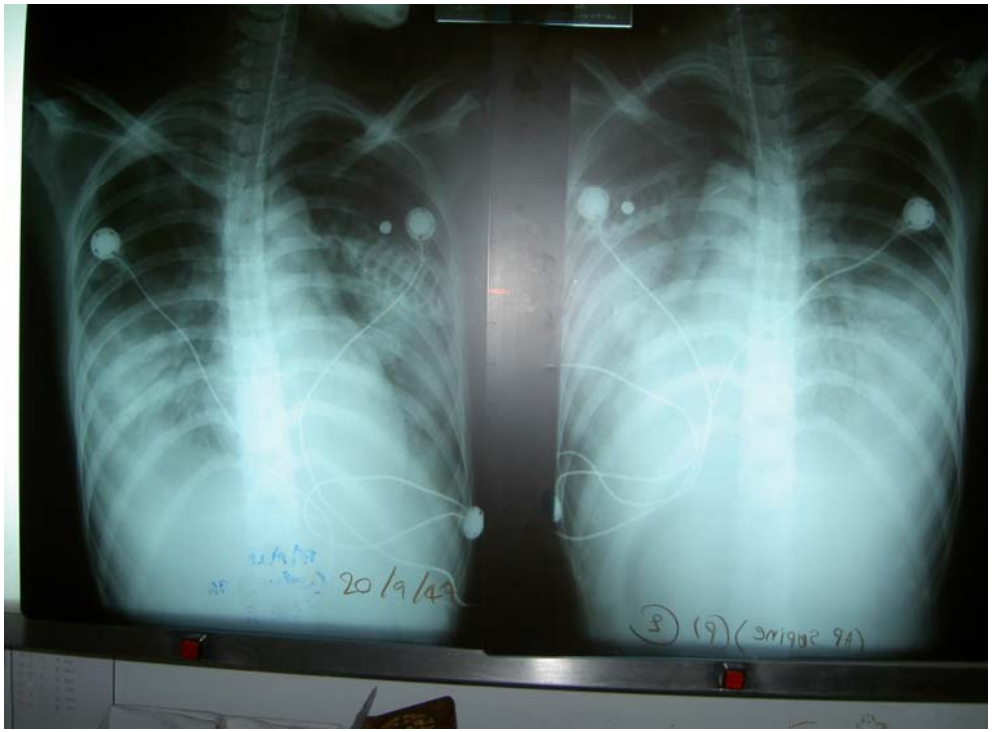
- Screening of history of exposure
- Confirm clinical finding
- Testing of respiratory specimens
- Survey of village and identify exposure
- Active case finding and Surveillance of all household member for 10 days
- Antiviral prophylaxis for family member of confirm H5 cases
- Culling of affected poultry
- Educated villagers to avoid risk

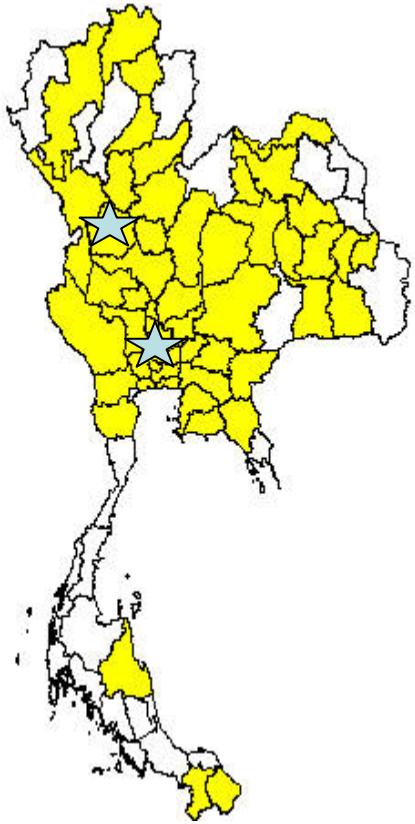
Early pandemic Alert phase 4 of new Influenza subtype



1st. Patient “ The Mother”

- Female 26- year- old
- Onset 10th Sept. Died at 20th. of September
- Body was on religious rites at a temple.
- History of visiting her daughter in Kampangphet
- Her daughter died on 8th. of September suspect of Dengue
- Cluster of death need thorough investigation

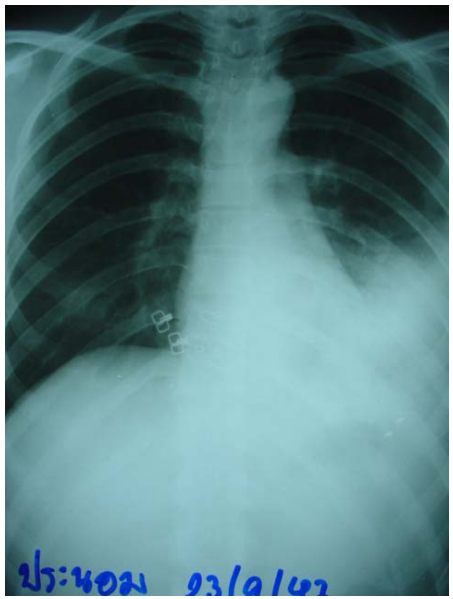




Day 1st : Investigate the mother

- Her sister also ill and could not joined the religious rites
- Lung aspiration fail to detect PCR of Influenza
- Ask for last minute Autopsy of the mother at 21.00 pm on the following day.

Day 2nd. Investigate the aunt



2nd. Patient

- 32-year-old female
- elder sister of the 1st patient

- Refer to provincial hospital
- Isolation
- Oseltamivir 75 mg x 2 for 10 days
- Daily examination of all 5 family members
- Survey the village

23 5:08 PM

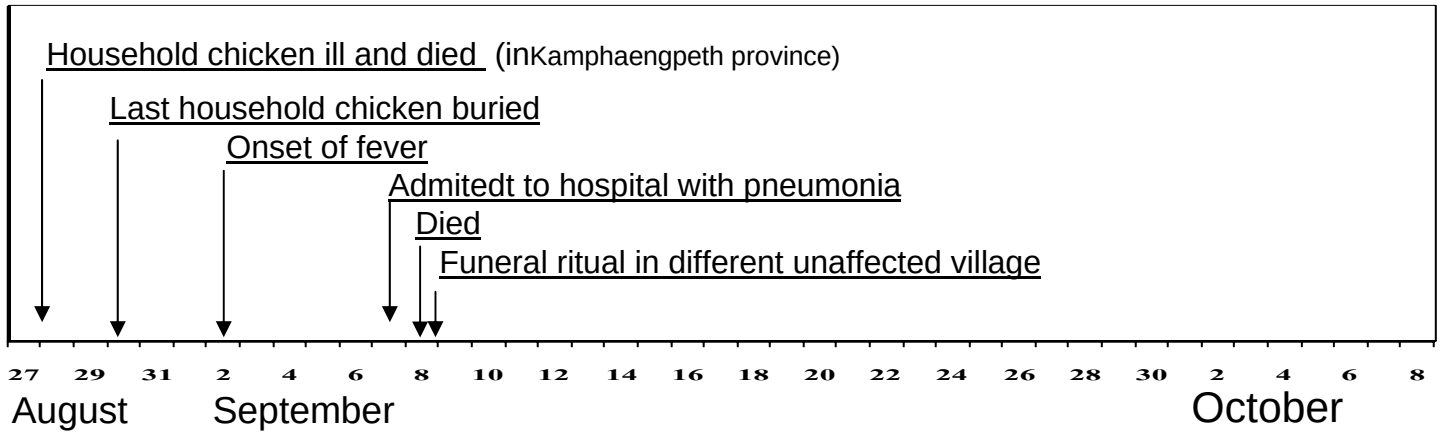
23 5:15 PM

23 5:22 PM

Index case “ The daughter ”

- 11-year-old girl

Index case



Laboratory investigation

Day 4 of investigation (25 September)

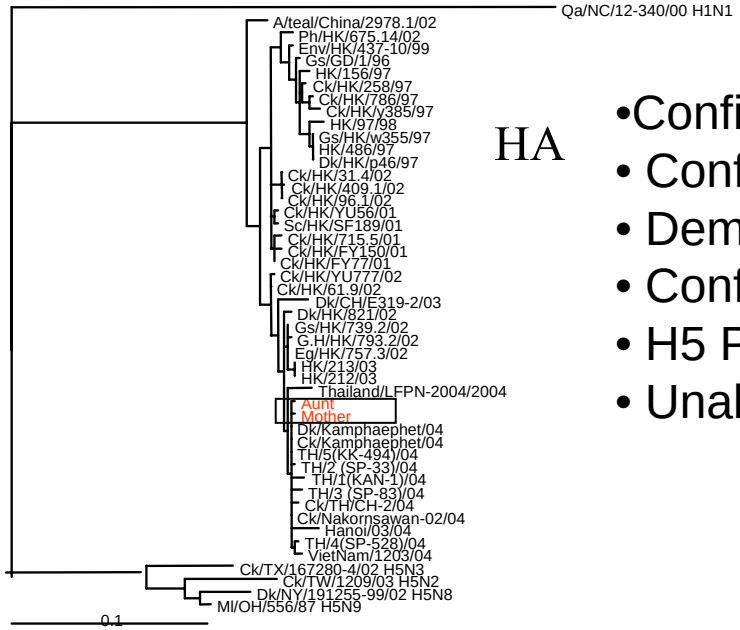
- Specimen of the mother was tested simultaneously at
  - Department of medical science (DMS)
  - Siriraj Medical School
  - US CDC at Atlanta

Day 5th of investigation (26 September)

- H5 confirmed in Aunt respiratory specimens by DMS

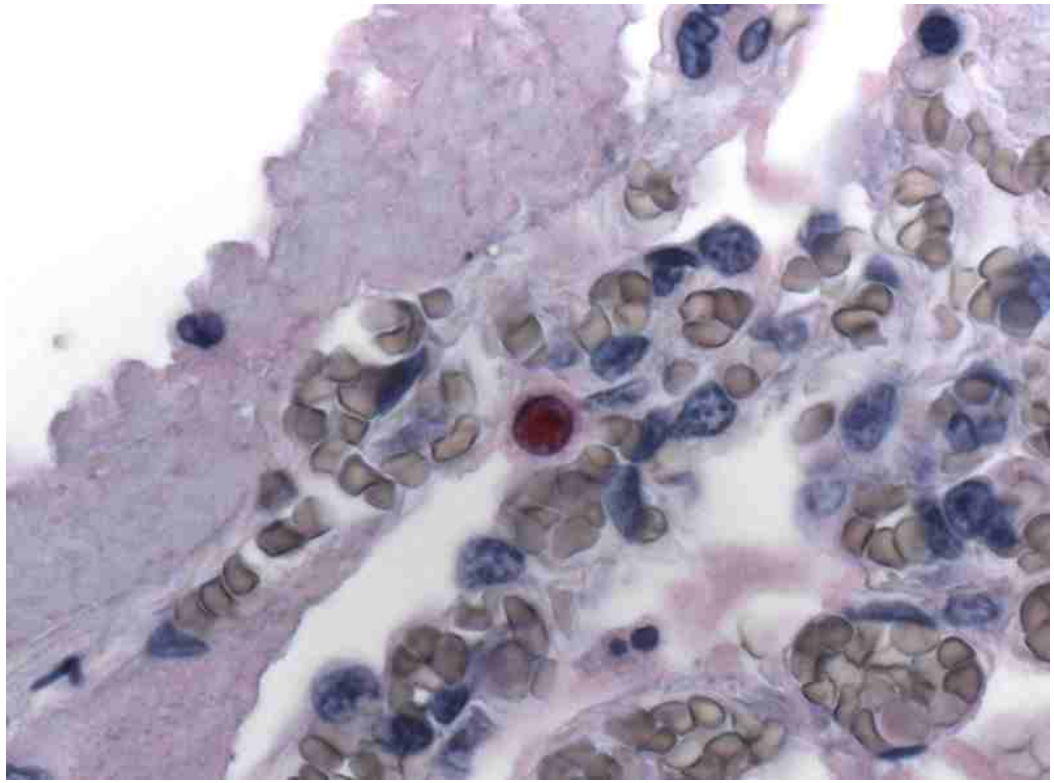
Day 6th of investigation (27 September)

- Siriraj confirm H5 in Mother lung tissues
- Expert committee conclude “Probable Human to Human”



HA

- Confirmed H5 in poultry die-off in near by village
- Confirmed H5 by PCR from lung of “The mother”
- Demonstrated influenza A in lung tissue
- Confirmed H5 from swab of “The aunt”
- H5 Phylogenic tree of mother and aunt are closed
- Unable to confirm H5 in daughter



Risk Communication

Day 6th. (27 September)

- Expert committee conclude “probable person-to-person”
- Briefing the Minister of Health at 4.00 pm
- Brief the Priminister at 9.00 pm
- Get permission to release information

Day 7th (28 September)

- Press release

Policy Implication

Day 8th (29 September)

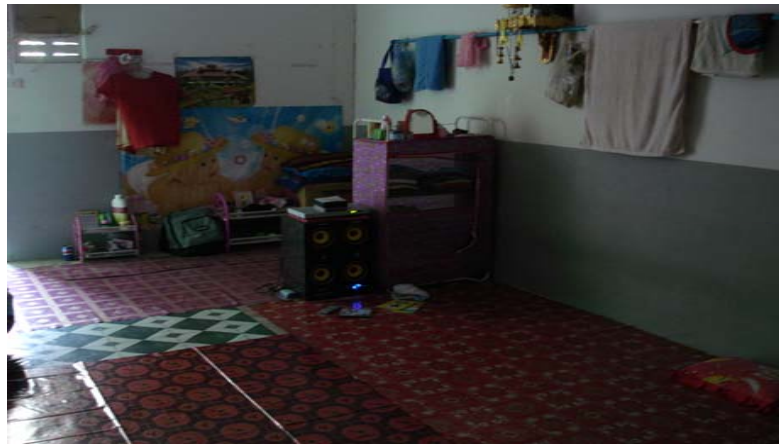
- Priminister meet with all governors ,provincial veterinarian and chief medical officer
- Take Avian Influenza as national agenda
  "Declare war on Avian Flu"
- Integrated and joint operation between Human and Animal Health under governor
- Mobilize village health volunteer to
  "X-ray all household" of dead poultry
  Educate villagers and bring suspect case to health unit

4 months after

- National strategic plan to control avian influenza and Influenza pandemic preparedness (105 million US dollars)

Influenza A (H1) Samutsakorn ๒๐๐๖

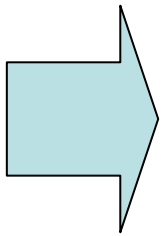
- **Total Factory worker 1700**
- **Influenza like symptom 180**
- **Stop work**
- **Isolation**
- **Daily temperature monitoring**



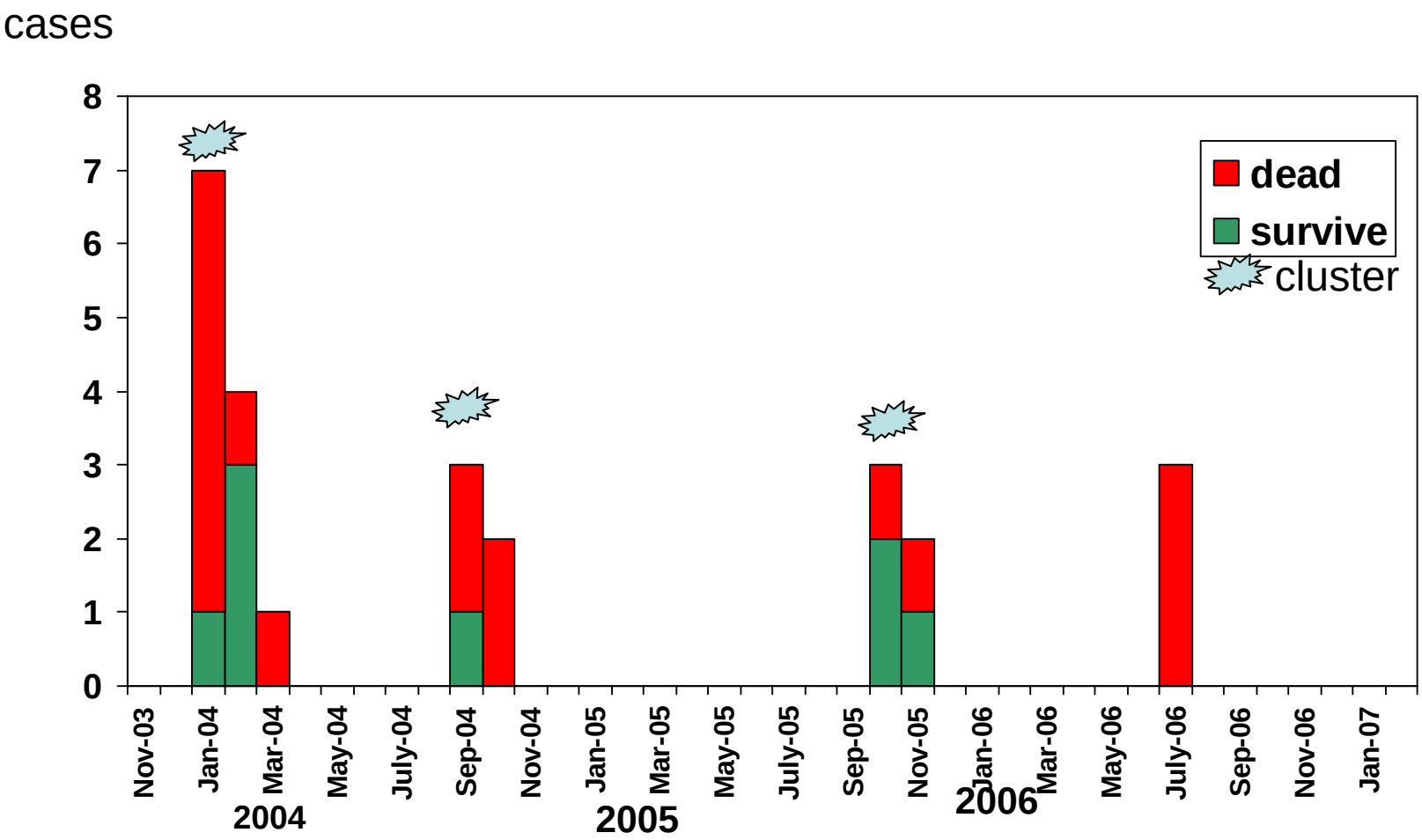
2006 Massive outbreak of Botulism from home canned bamboo shoot.

- 209 cases
- 134 hospitalized
- 43 on ventilation,
- 93 doses of antitoxin were mobilized from US, UK, Japan through WHO and US CDC
- No dead

Conclusion



1. Epidemic curve of confirm H5 human cases in Thailand from 2004 to present. (25 cases with 17 dead in 4 waves)



Remark: 3097 Notification and investigation in 2004
3244 Notification and investigation in 2005
5479 Notification and investigation up to 23 November 2006

Conclusion

- Complacency causes repeated outbreaks
- Institute lay report at village level and national AI surveillance
- Intensive investigate human case especially clusterings
- Inefficient human-to-human ⟹ sustainable human-to-human
- Initiate pre-emptive measures
- International joint effort for containment

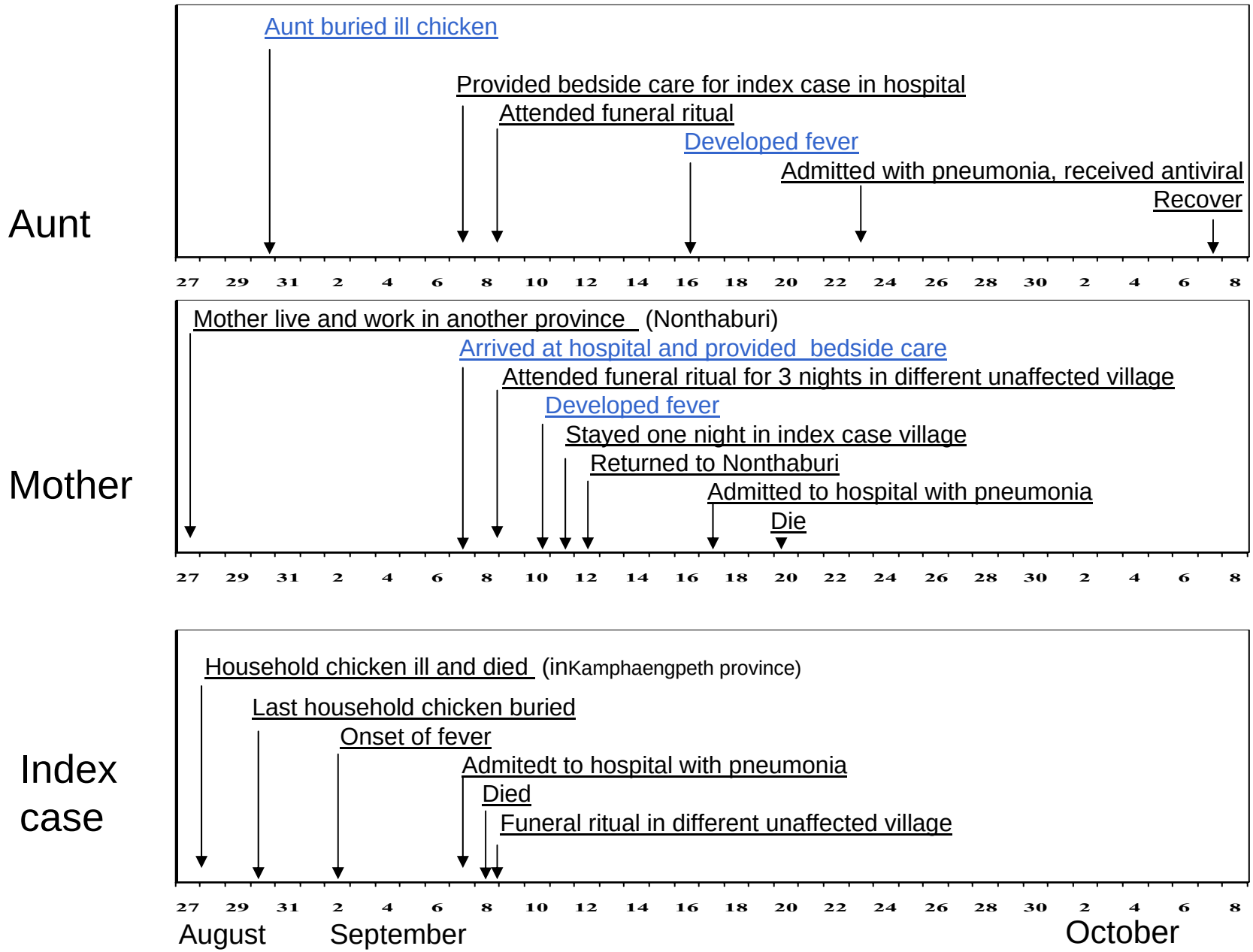


Figure 2 Chronology of exposure and onset of the index case, her mother and aunt.