CHIKUNGUNYA OUTBREAK IN THAILAND 2008-2009

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- Before Nov 2008; Chikungunya was not a notify disease.
- Data of Chikungunya cases was not available before 2008 except outbreaks.

HISTORY OF CHIKUNGUNYA IN THAILAND

- **1960:**

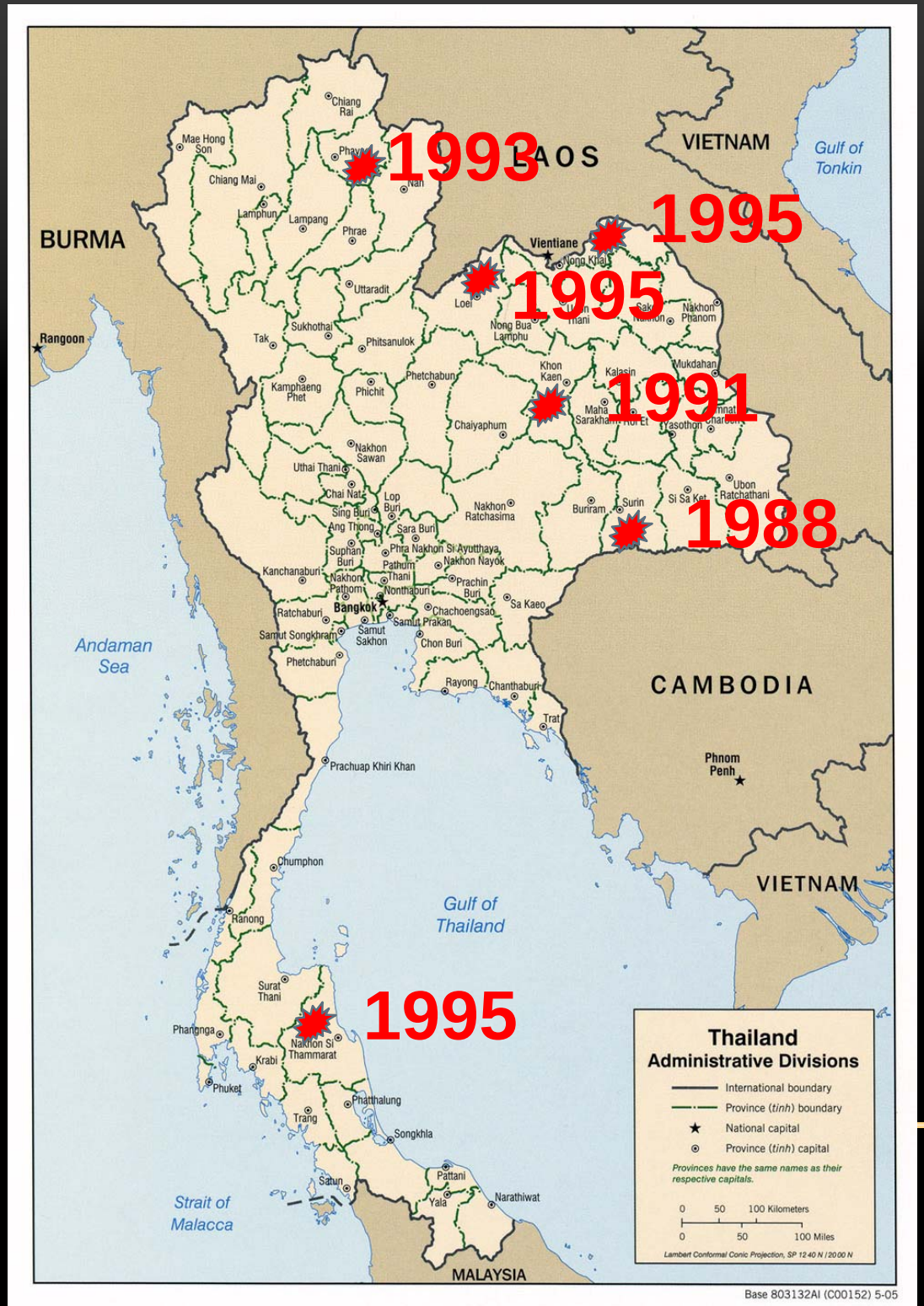
  The first report of serology confirmed case of chikungunya (case found in 1958)

- **1988, 1991, 1993 and 1995 :**

  The country has experienced of outbreak

- **1996-September 2008:**

  No report case of chikungunya



Results of outbreak investigations in 1991 and 1995

1991 Khonkaen

- Case criteria: fever + (arthralgia or rash or enlarged lymphnode)
- Incidence rate 8-58%
- Serology positive (IgG) 38-55%

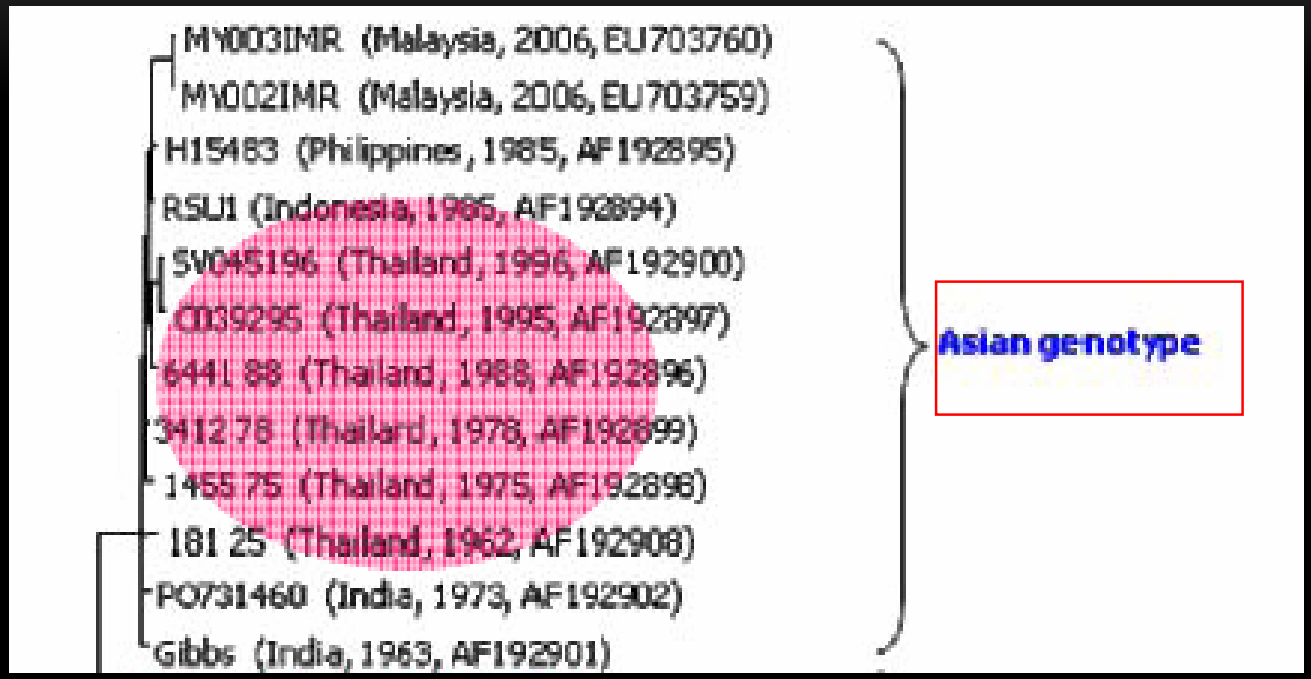
1995 Nongkhai

- Case criteria: at least 2 symptoms (fever , arthralgia, rash)
- Serology positive (IgM) 33-45%
  after 1 M 88%

1995 Nakhonsrithammarat

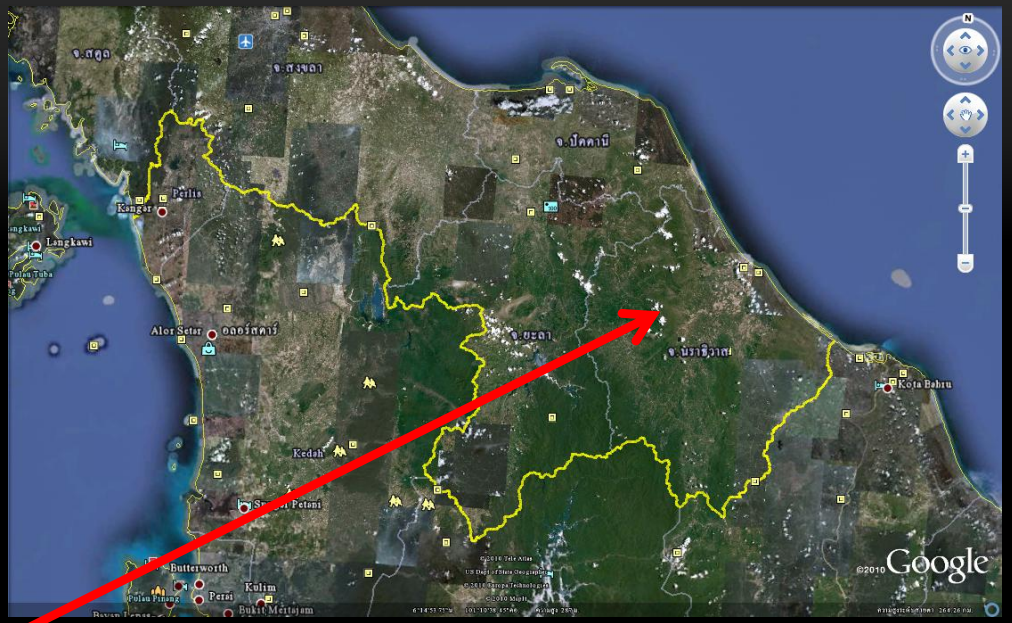
- Case criteria: at least 2 symptoms (fever , arthralgia, rash)
- Serology positive(IgM) 67%
  (Hi titer positive) 89%

Molecular Sequencing of Chikungunya virus in Thailand during 1962-1996

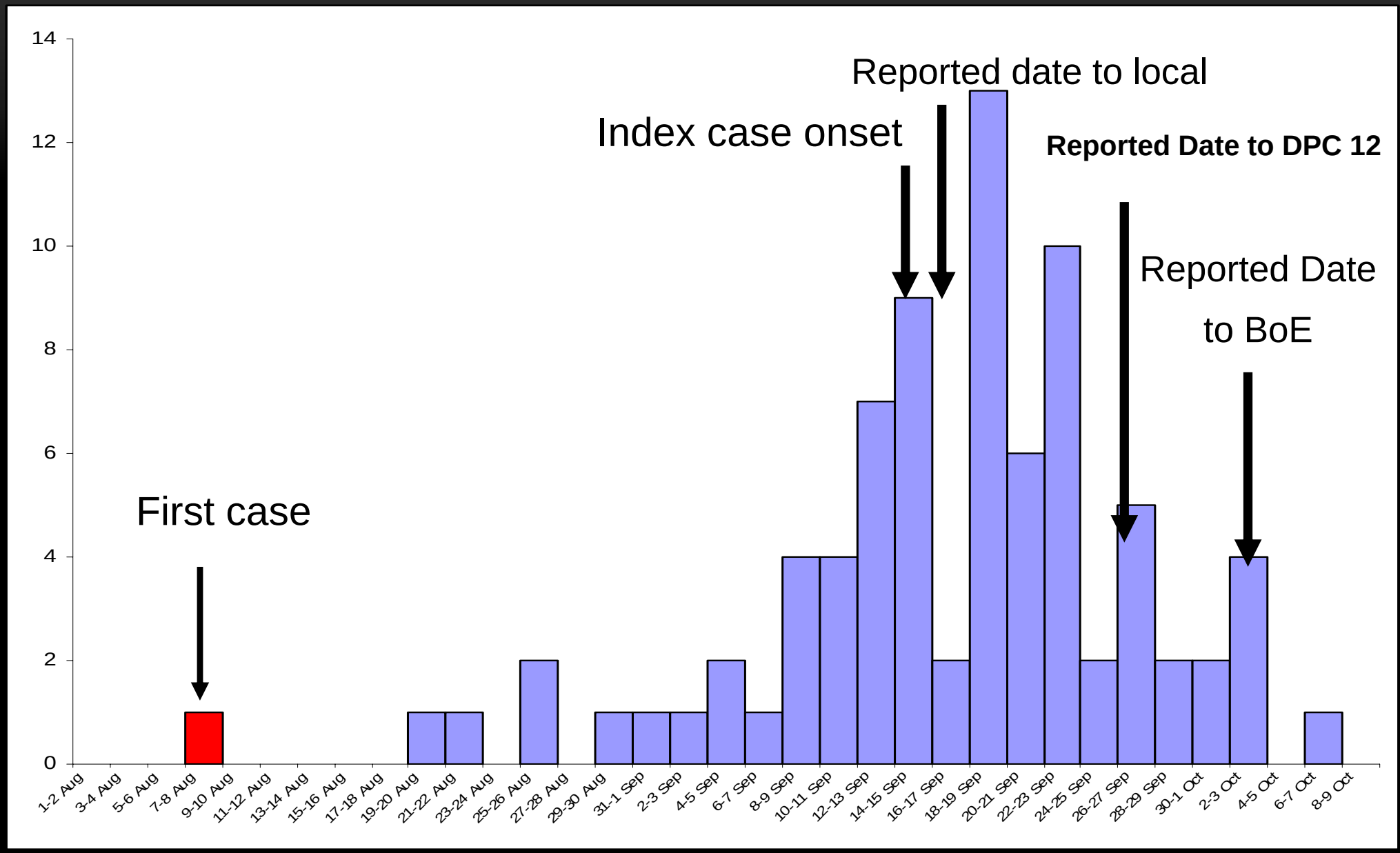


OUTBREAK OF CHIKUNGUNYA IN 2008-2009


LAOS
VIETNAM
Gulf of Tonkin
BURMA
Rangoon
Vientiane
Andaman Sea
CAMBODIA
Phnom Penh
Bangkok
Gulf of Thailand
VIETNAM
Strait of Malacca
MALAYSIA
Thailand
Administrative Divisions
International boundary
Province (tinh) boundary
National capital
Province (tinh) capital
Provinces have the same names as their respective capitals.
0 50 100 Kilometers
0 50 100 Miles
Lambert Conformal Conic Projection, SP 12 40 N / 20 00 N
Base 803132AI (C00152) 5-05

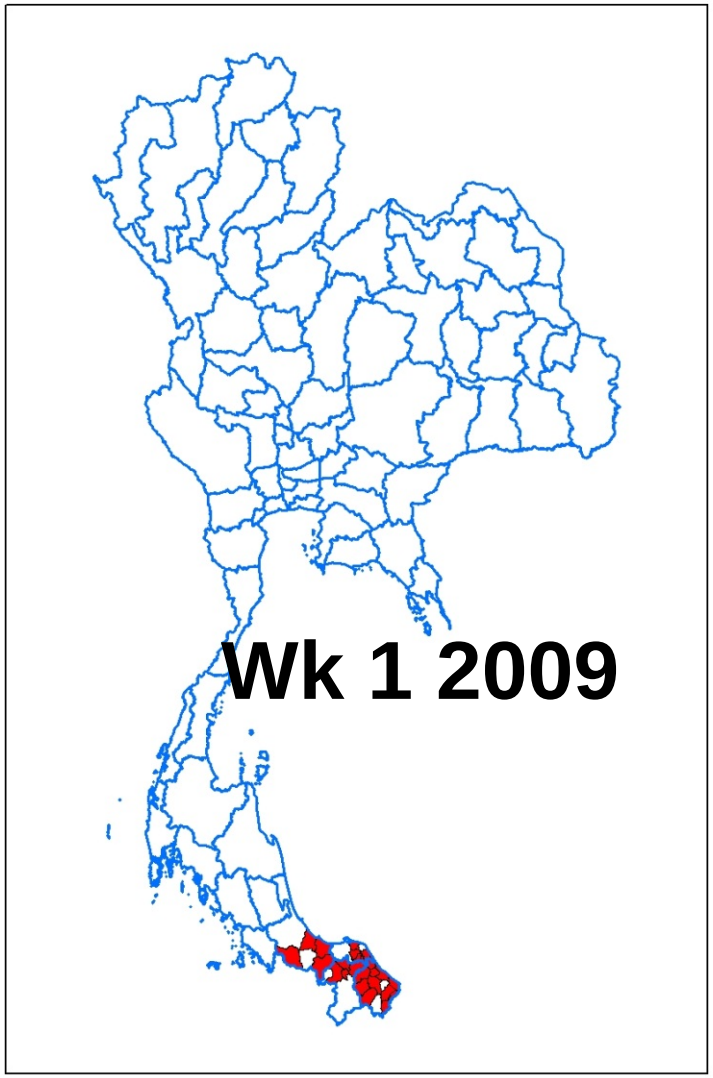

Perlis
Kangar
Langkawi
Alor Setar
Kedah
Butterworth
Kulim
Kota Bahru
©2010 Google

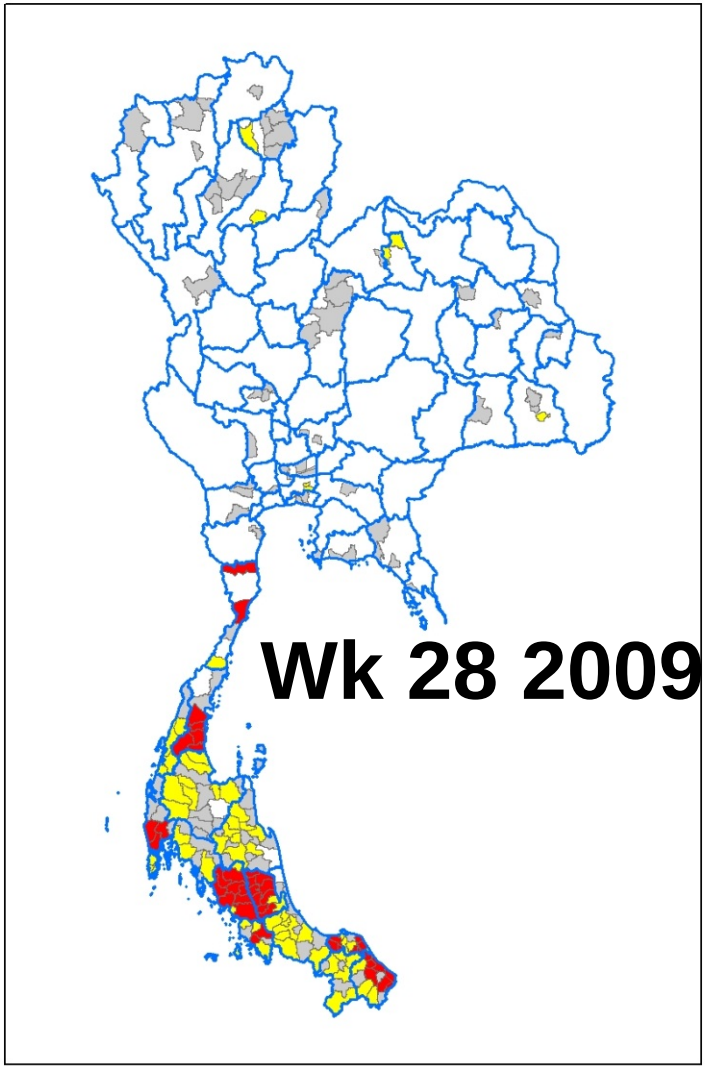
EPIDEMIC CURVE OF CHIKUNGUNYA OUTBREAK NARATHIWAS 2008

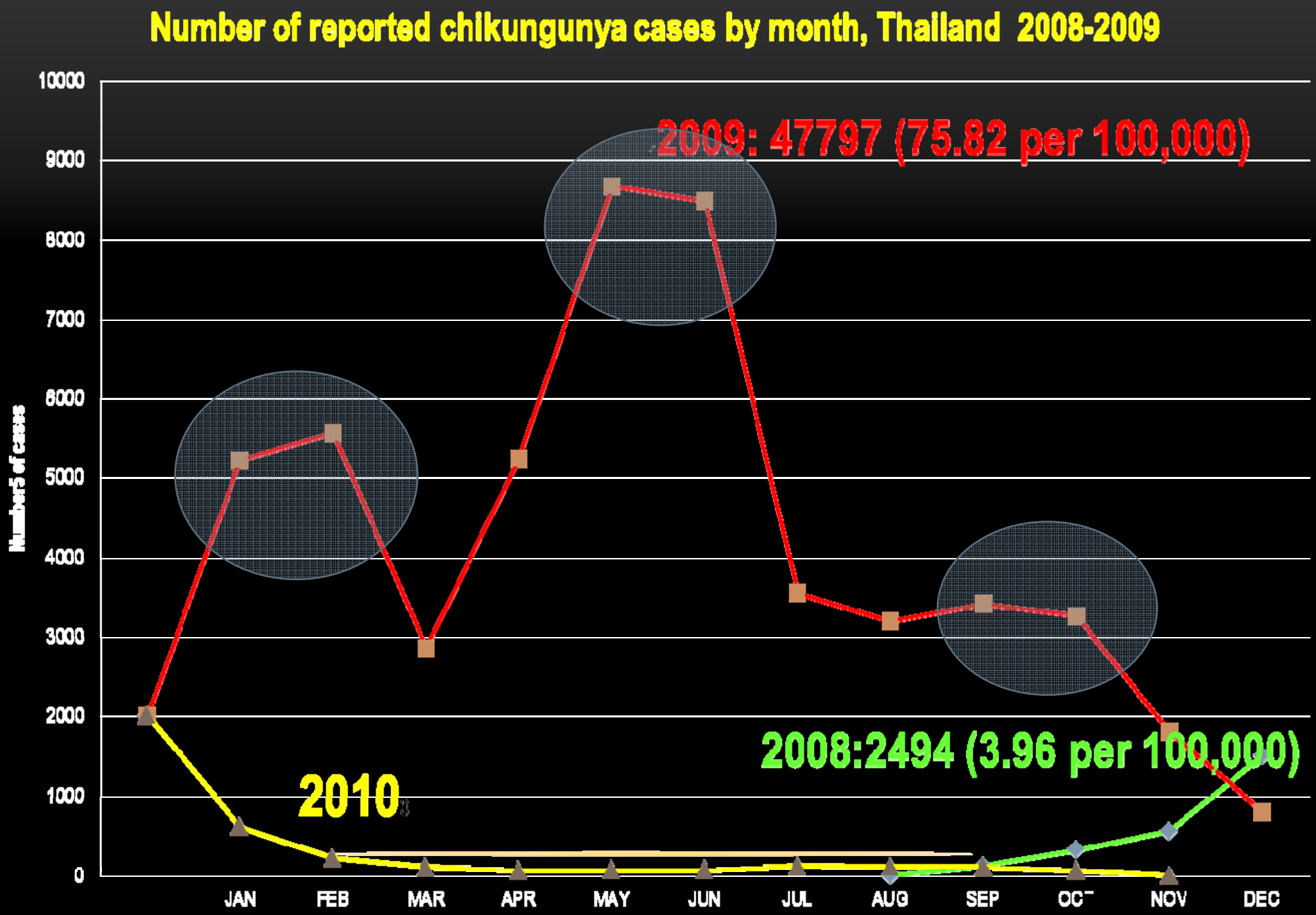


/----------August----------/ /----------September----------/ /----October->

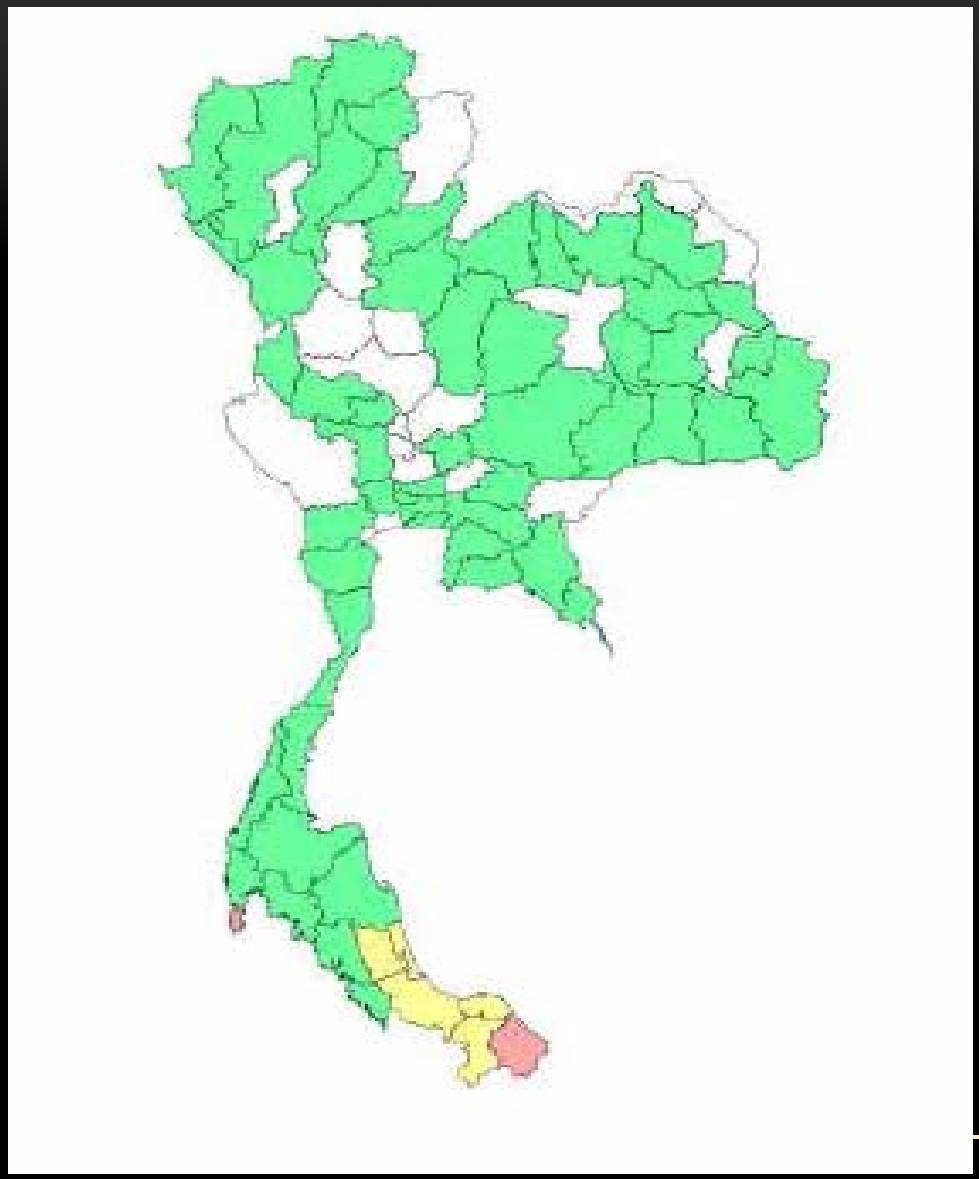
Distribution of chikungunya in Thailand 2009





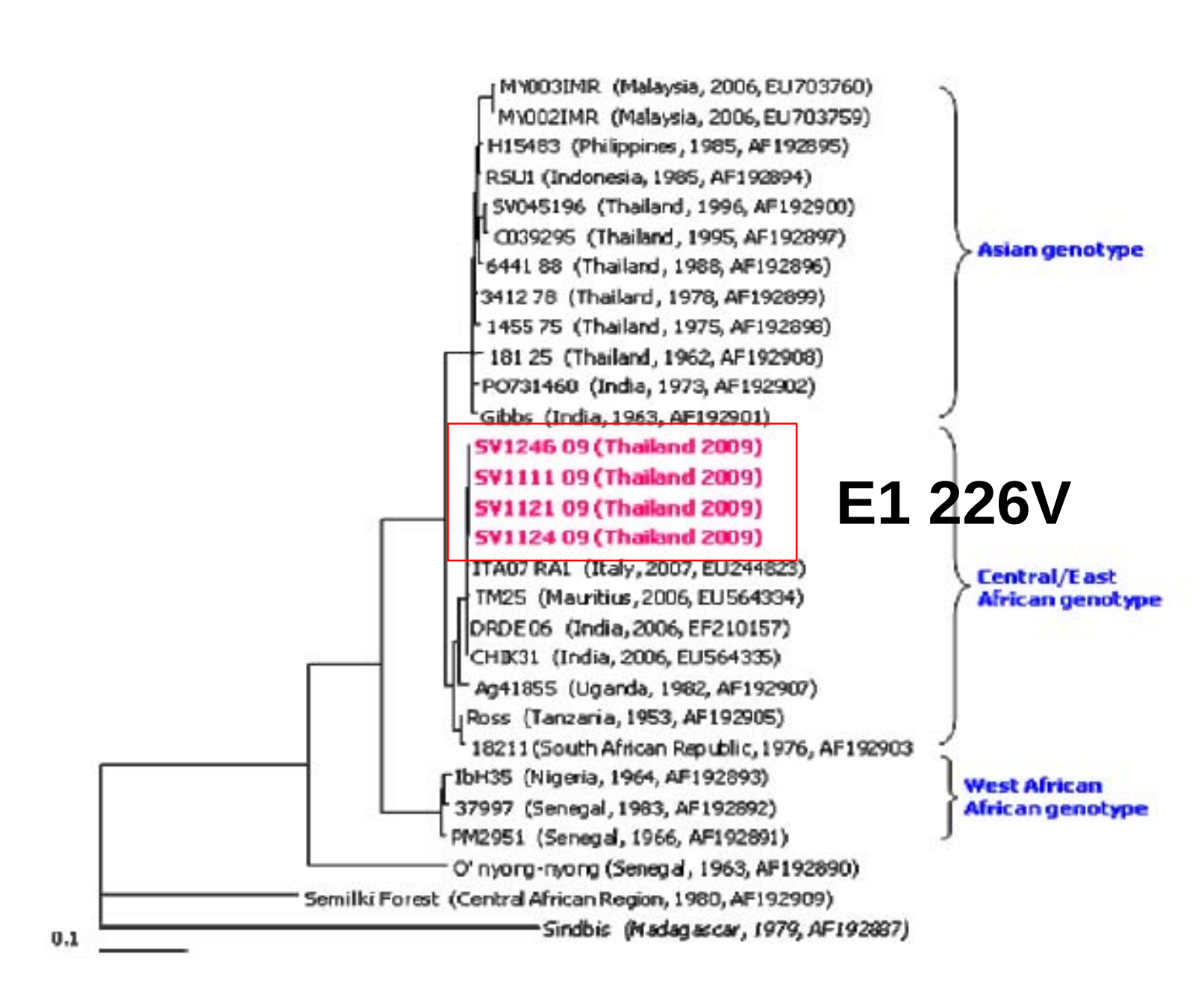

Number of reported chikungunya cases by month, Thailand 2008-2009
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2009: 47797 (75.82 per 100,000)
2008:2494 (3.96 per 100,000)
2010
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

Distribution of chikungunya in 2009

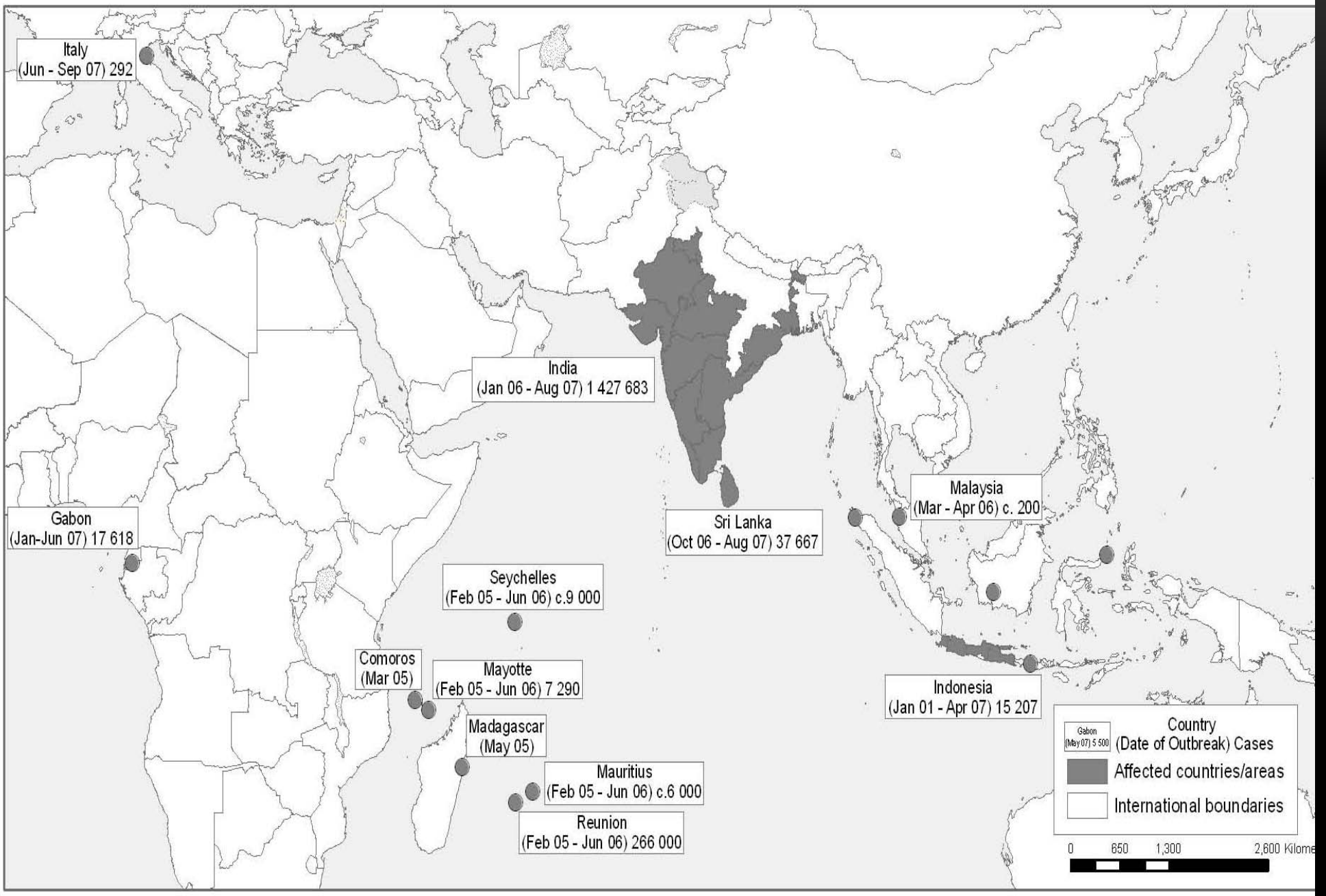


CHARACTERISTICS OF PRESENT OUTBREAK

Molecular Sequencing of Chikungunya virus in Thailand during outbreak in 2008



Chikungunya Outbreak reported countries, as of October 2007



CHARACTERISTICS OF PRESENT OUTBREAK

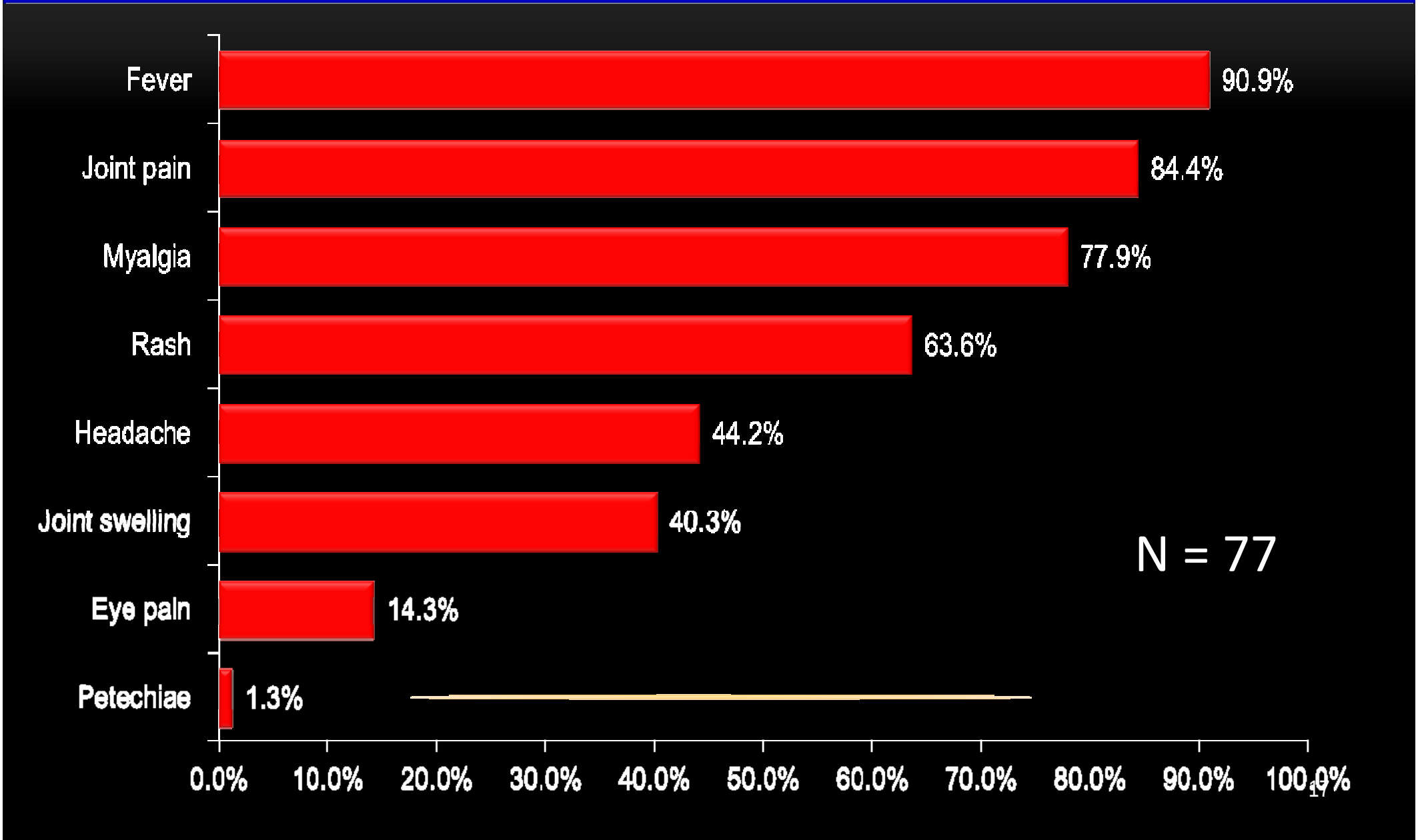
- The vectors are both *Aedes aegypti and Aedes albopictus*, but *Aedes albopictus* is more infected.
- Both male and female mosquitoes are found infected but male is more infected.
- Larvae of both species are found infected

Possible of transovarial transmission

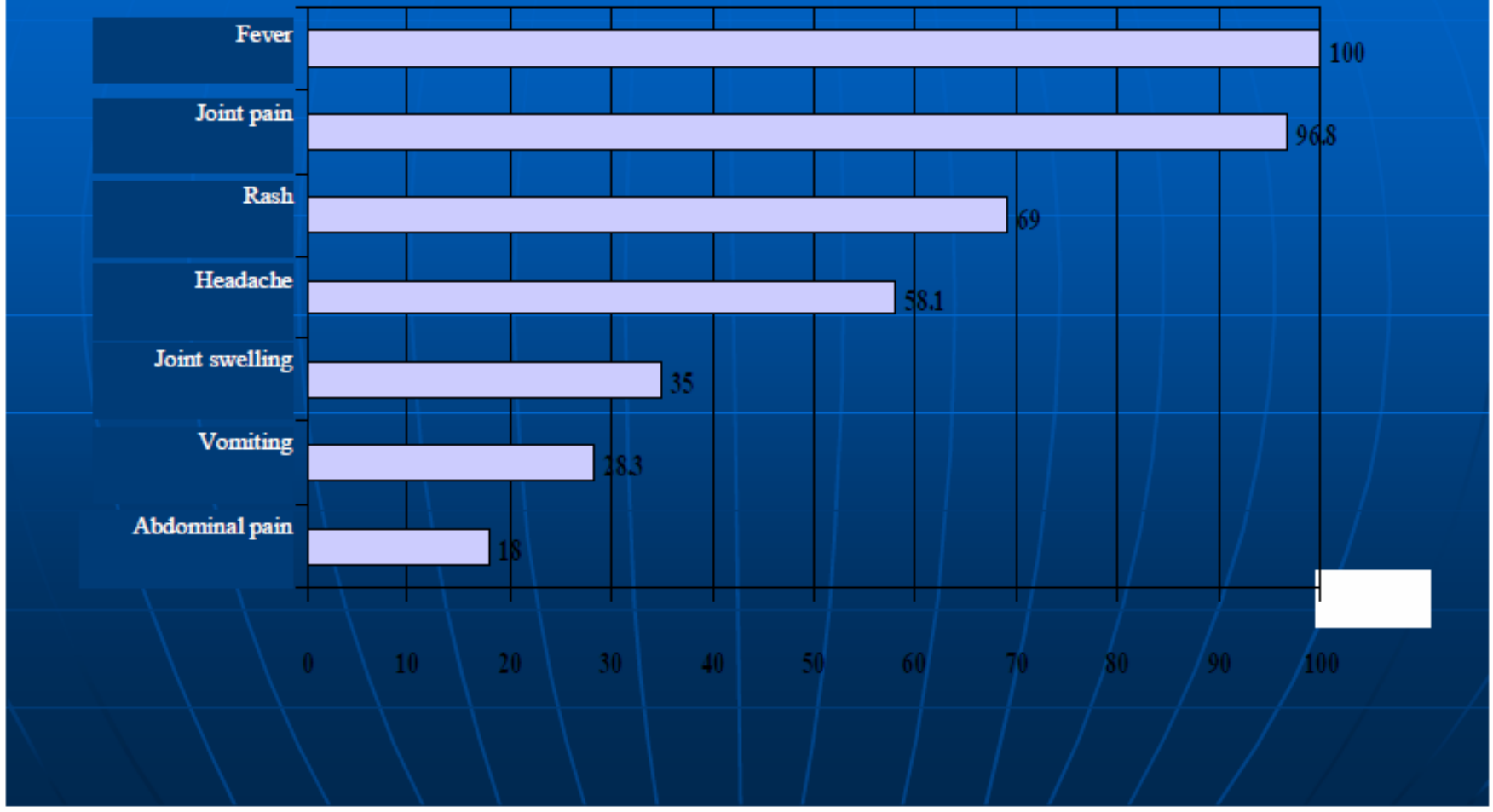
OTHERS MOSQUITOES THAT ARE FOUND INFECTED

- *Culex quinquefastiatus* *adult/larva*
- *Culex vishnui* *adult*
- *Mansonia uniformis* *adult*
- *Armigres subalbatus* *adult*
- *Culex brevipalpis* *larva*
- *Coquillettidia crassipes* *adult*
- *Tripteroides sp.* *larva*

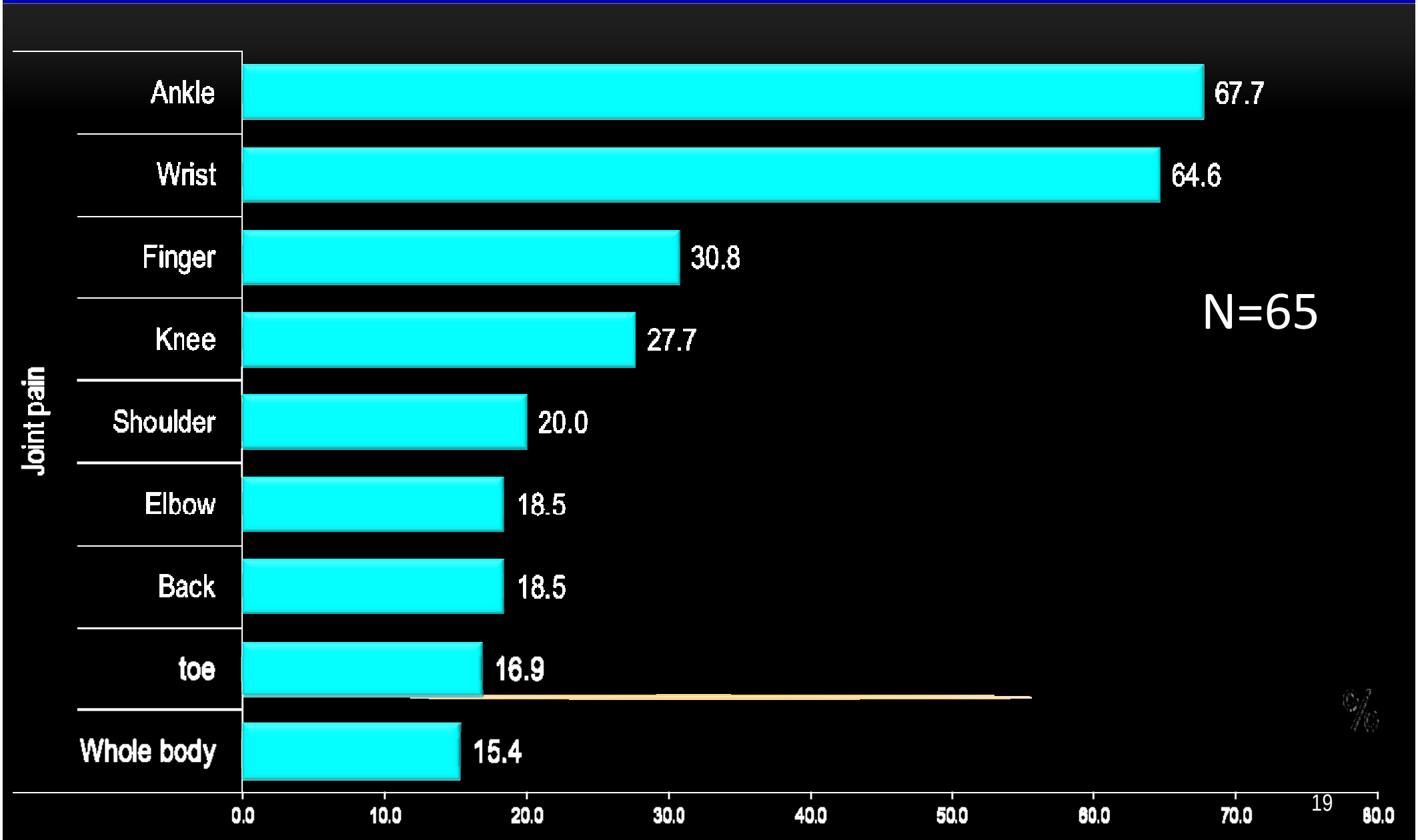
Clinical presentation of symptomatic infected chikungunya person



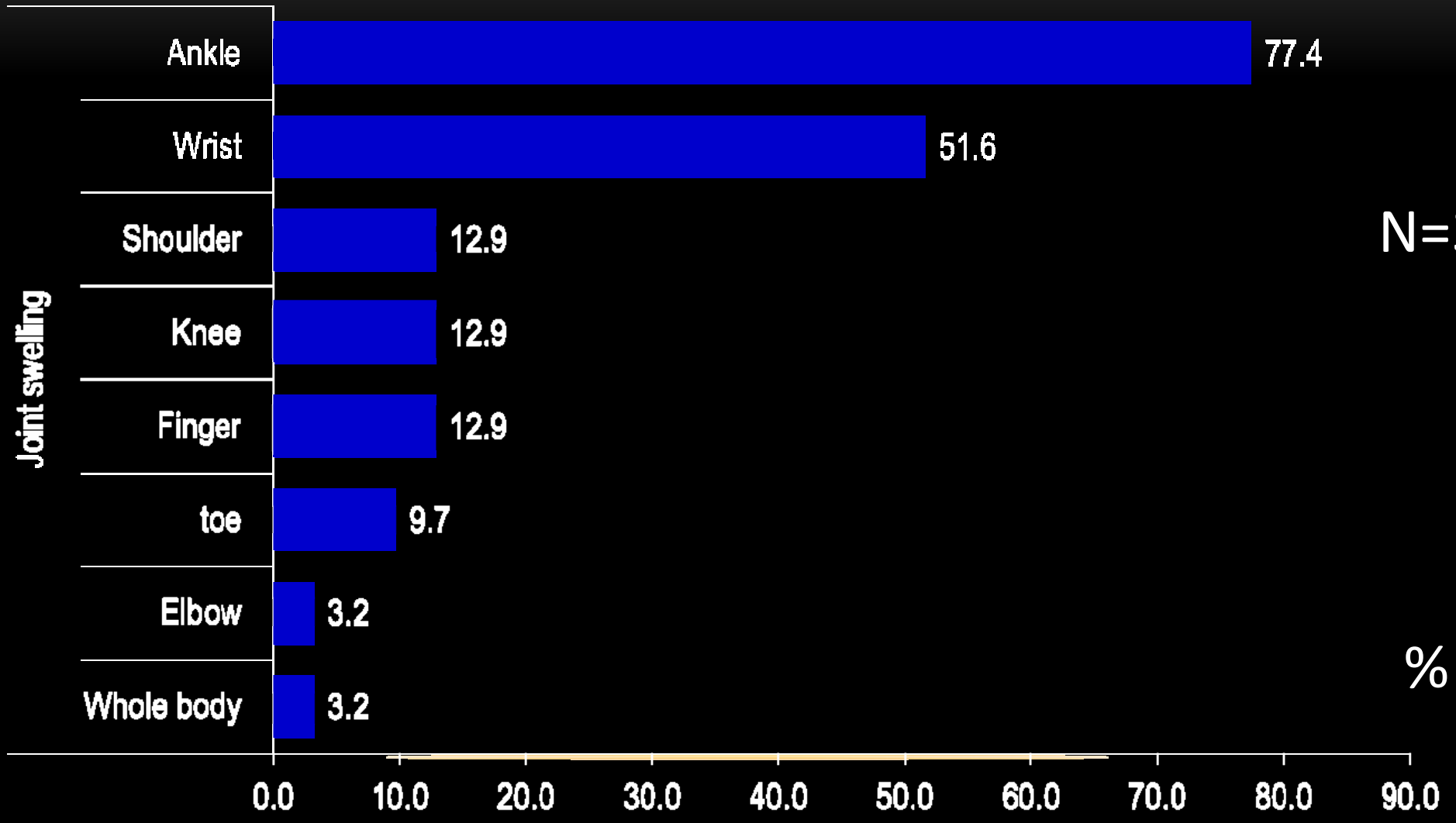
Clinical presentation of chikungunya outbreak in Nongkhai 1995



Clinical presentation of symptomatic infected person: joint pain



CLINICAL PRESENTATION OF SYMPTOMATIC INFECTED PERSON: JOINT SWELLING



CASE DEFINITIONS

- **Suspected Case:**

  Fever with at least two of the following symptoms

  1. Arthralgia/Arthritis/Joint swelling
  2. Rash
  3. Myalgia
  4. Headache
  5. Retro-orbital pain

- **Probable Case:** suspected case with

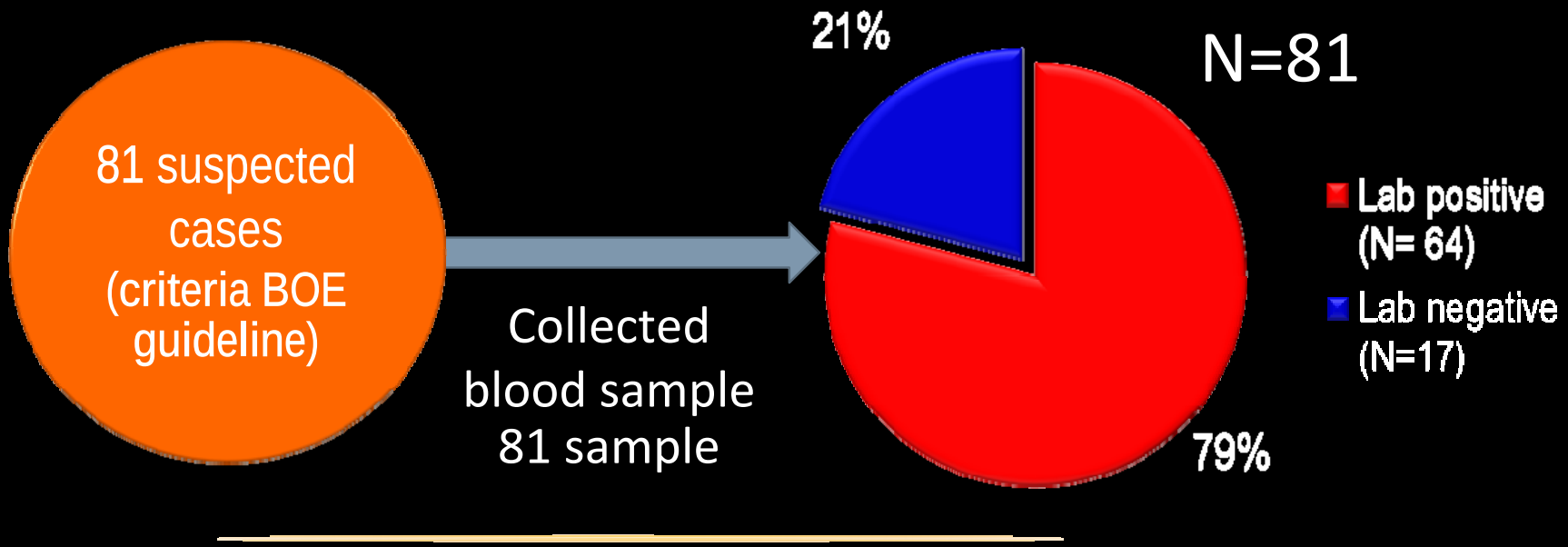
  1) PLT normal and WBC < 5000 or

  2) Epi-linkage with confirmed case

- **Confirmed Case:** suspected case with CHIKV laboratory confirmed by PCR, HI a/o IgM

Clinical case definition compare to laboratory confirmed chikungunya infection

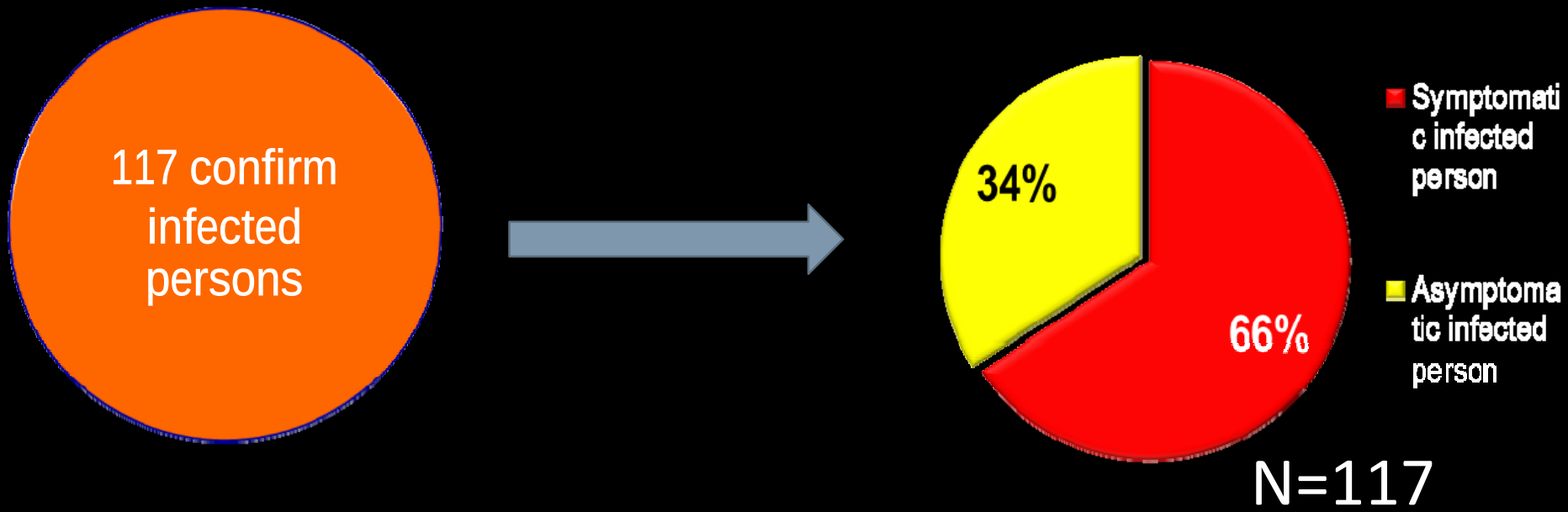
From 81 suspected case
(definition due to BOE guideline: fever + 2 symptoms)



CHARACTERISTIC OF SYMPTOMATIC OR ASYMPTOMATIC IN INFECTED CHIKUNGUNYA PERSON

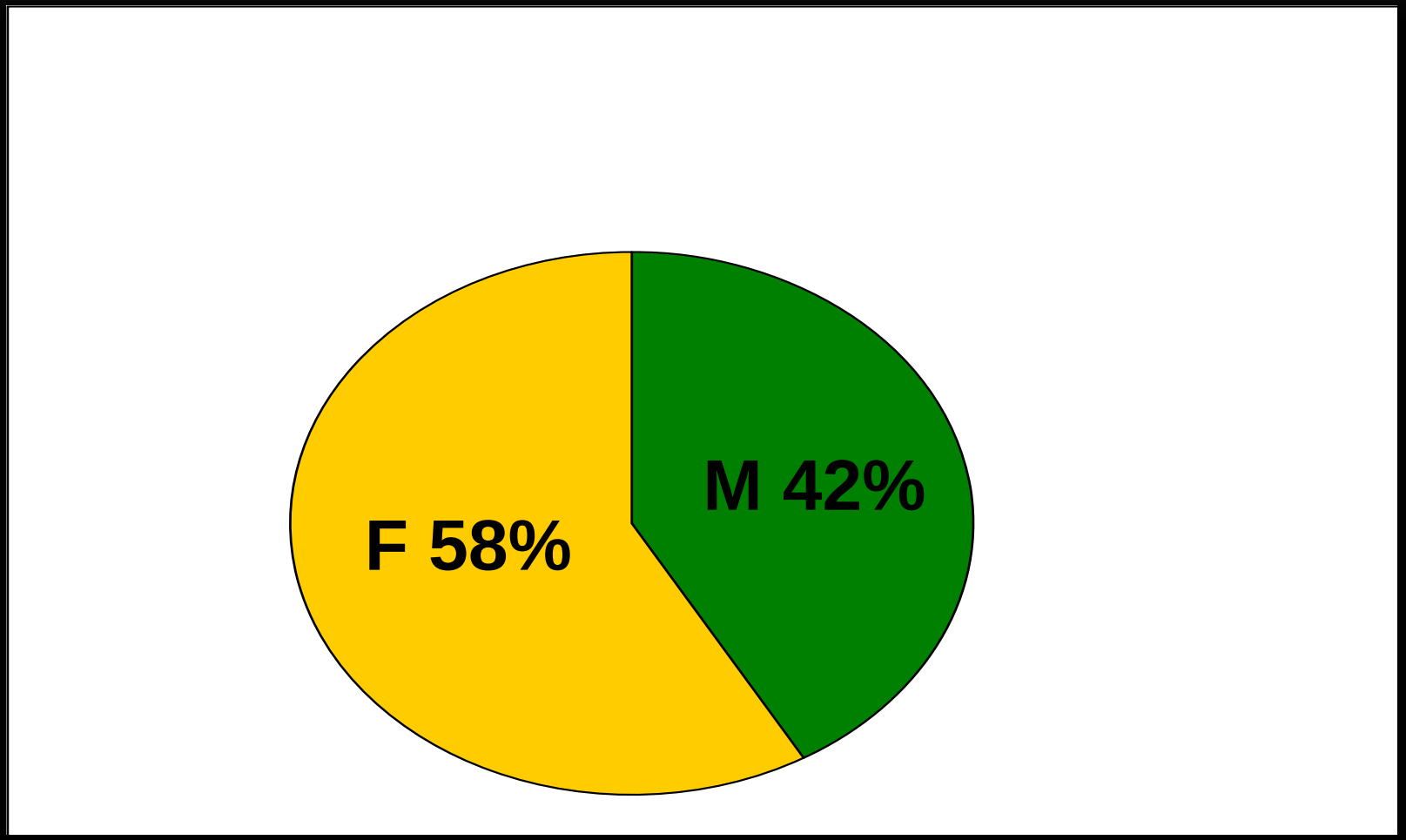
Totally 117 confirm infected chikunkunya persons

- Symptomatic infected persons = 77
- Asymptomatic infected persons = 40

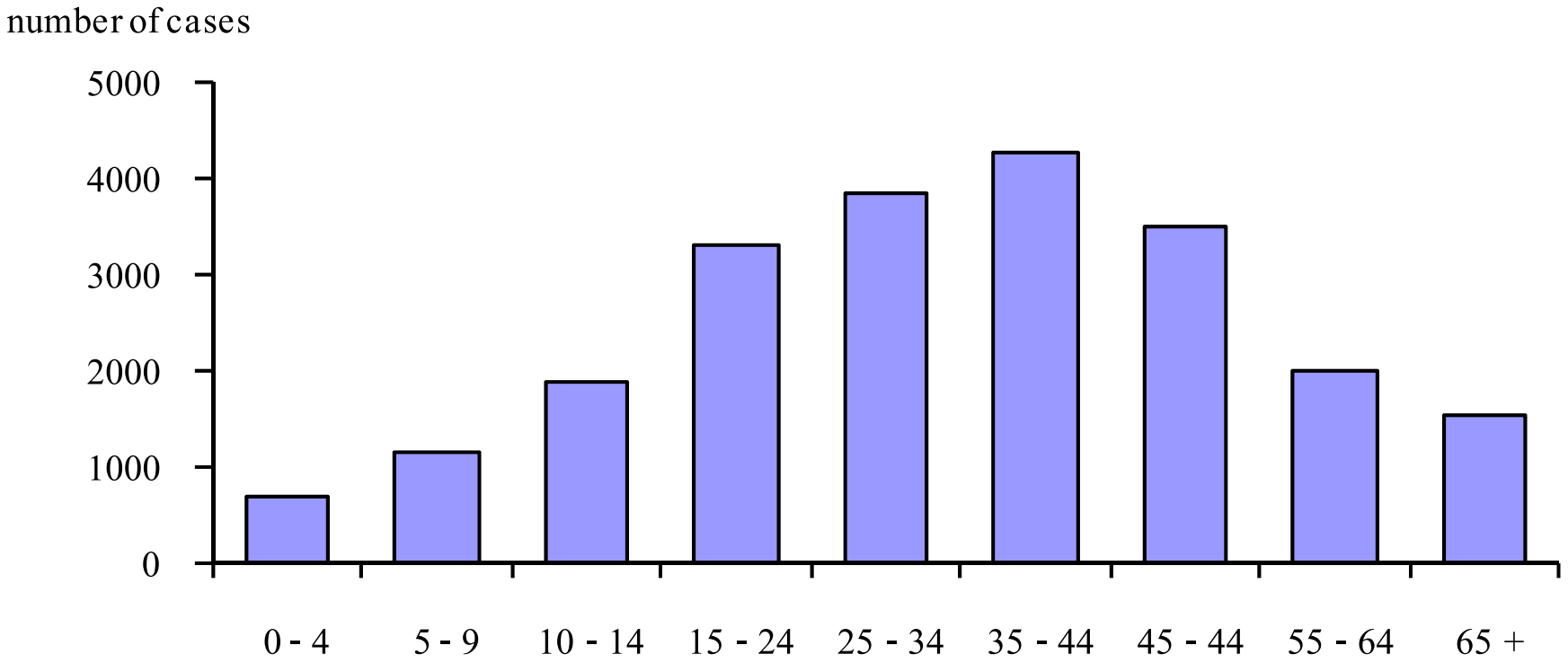


Symptomatic : a person who had at least 1 of fever, myalgia, joint pain, joint swelling, eye pain, petechiae

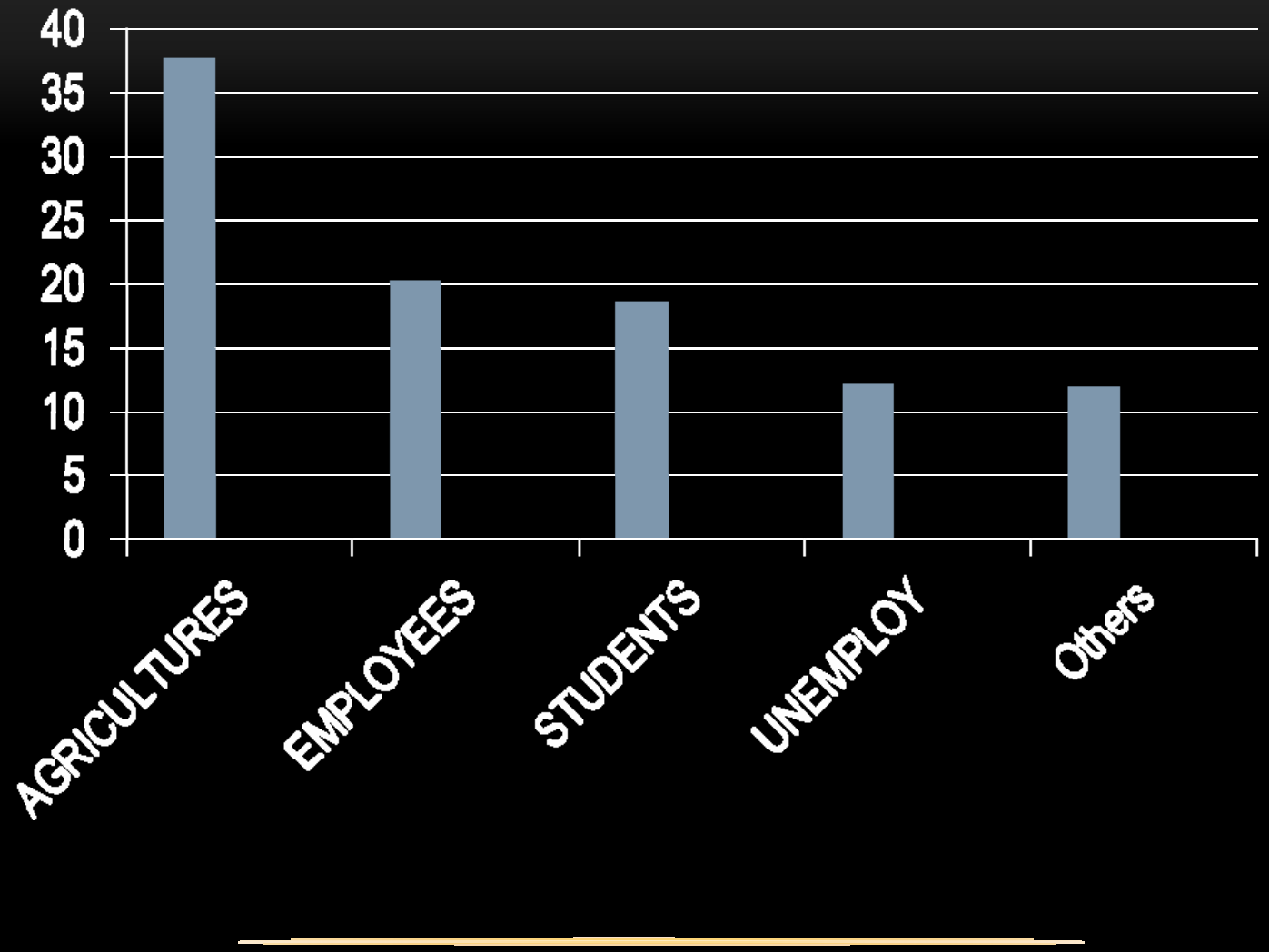
Percentages of chikungunya cases by sex during january – may 2009



Distribution of chikungunya cases by age during january -may 2009



Percentages of chikungunya cases by occupation in 2009



Control Strategies

Main Strategies

Prevention

- National campaign for mosquito larva control
- Reduce man-mosquito contact in endemic areas and adjacent areas

Early Detection and prevent transmission

- Early case detection
- Protect patients by using repellent or bed net at least 5 days

Control

- Investigation and Vector control within 24 hrs, after cases have been notified

Supplement Strategies

- Collaboration within the health sectors and other sectors in community
- Risk Communication
- Advocacy, social mobilization and legislation

CONCLUSION

- **The outbreak of Chikungunya is confirmed after the 13years of absence.**
- **New genotype of virus is the cause of outbreak**
- **The outbreak mainly confines in the southern part of Thailand**
- **Major vector are *Aedes albopictus* follow by *Aedes aegypti* and possible other species**
- **Major clinical symptoms are fever and joint pain**
- **Main Control strategys are the same as Dengue control plus prevention of transmission from infected cases by using repellent and bed-net.**

ACKNOWLEDGE

- Department of Disease Control
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- Offices of Permanent Secretary
- Medical Schools/Universities
- AFRIMS