

Cholera in Thailand: Epidemiology and Responses

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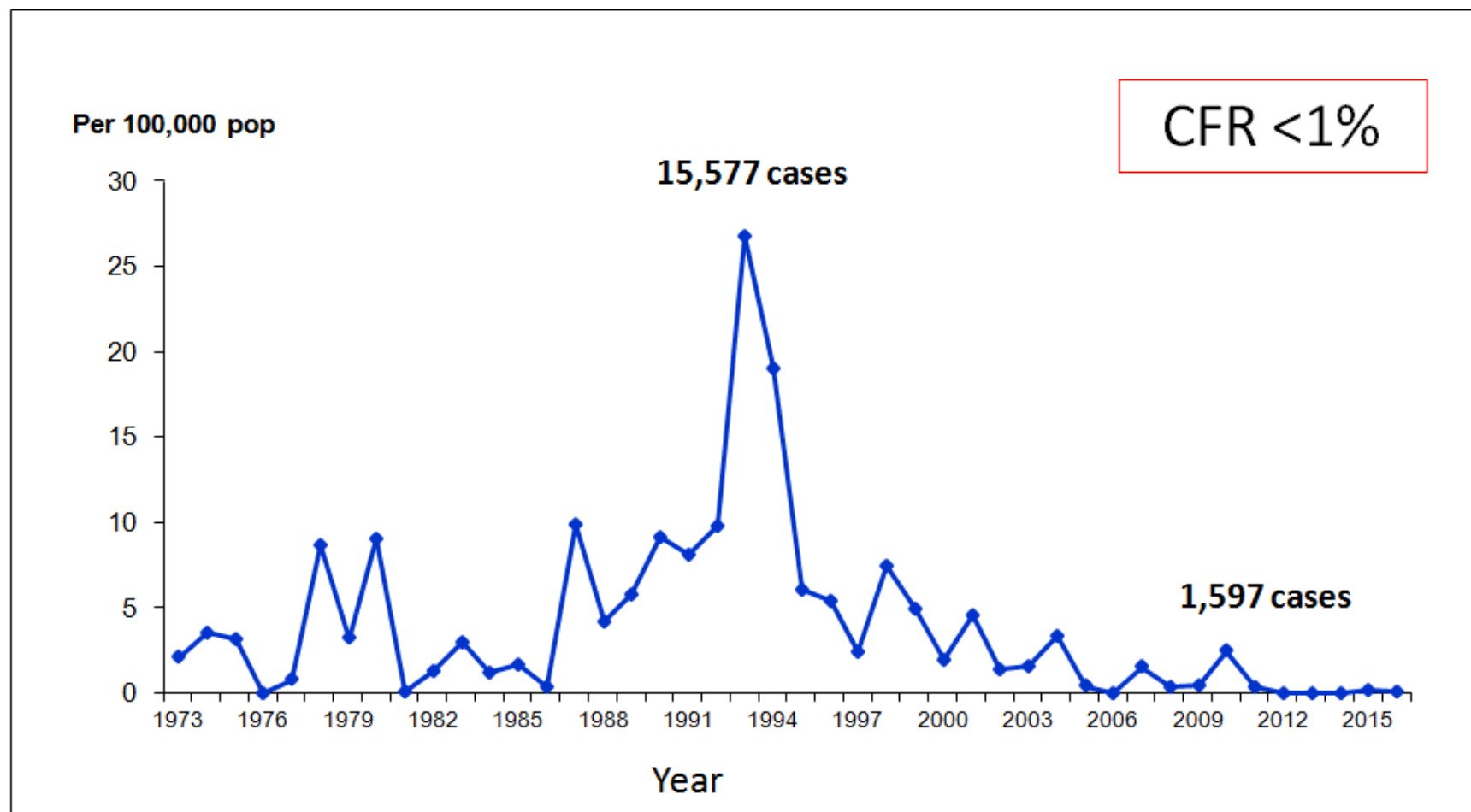
**Thailand Ministry of Public Health – U.S. CDC
Collaboration**

7th March 2017

Outlie of Presentation

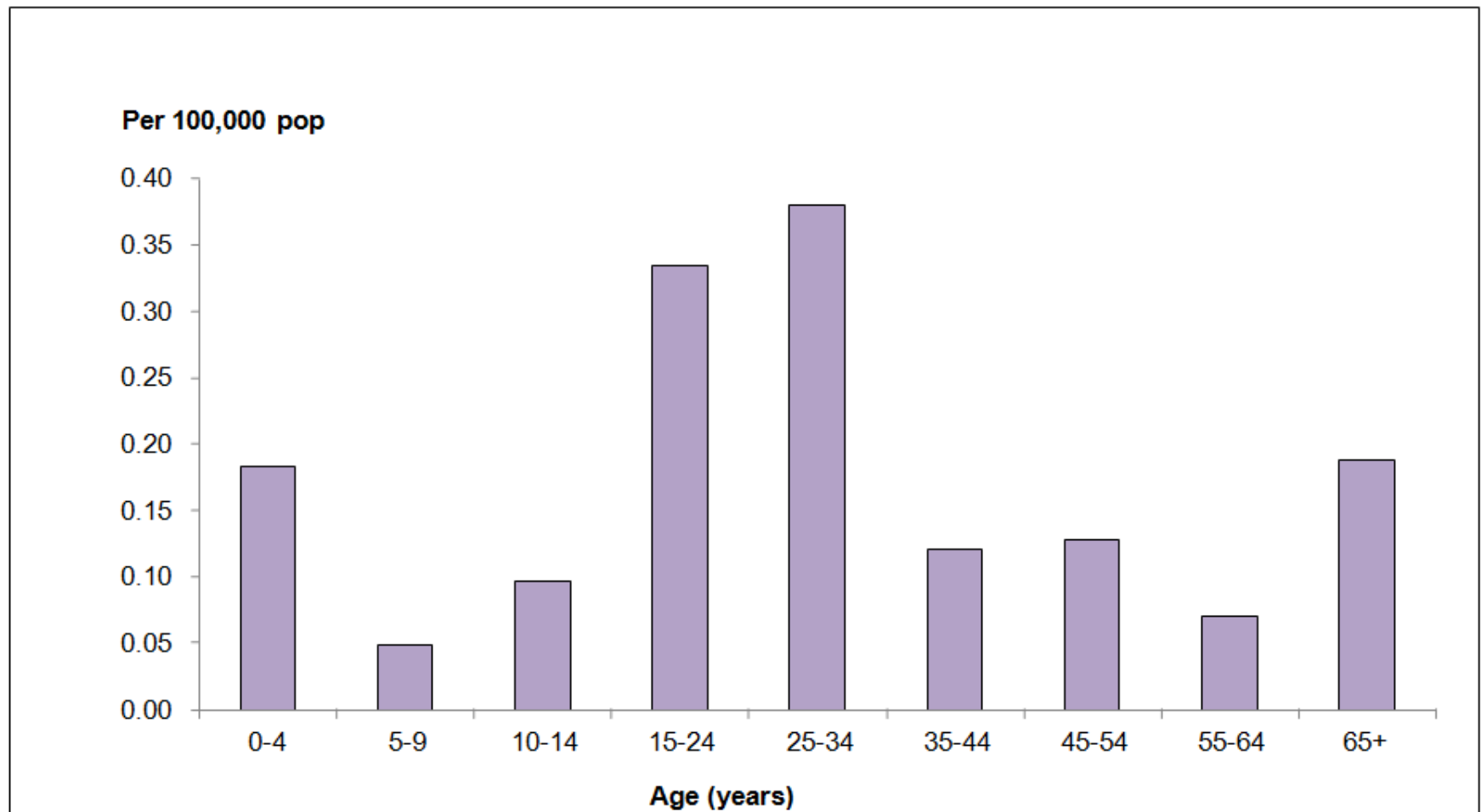
- Cholera epidemiology update
- Prevention and control strategies
- Mapping country capacities

Reported Cases of Cholera per 100,000 pop, Thailand, 1973 – 2016



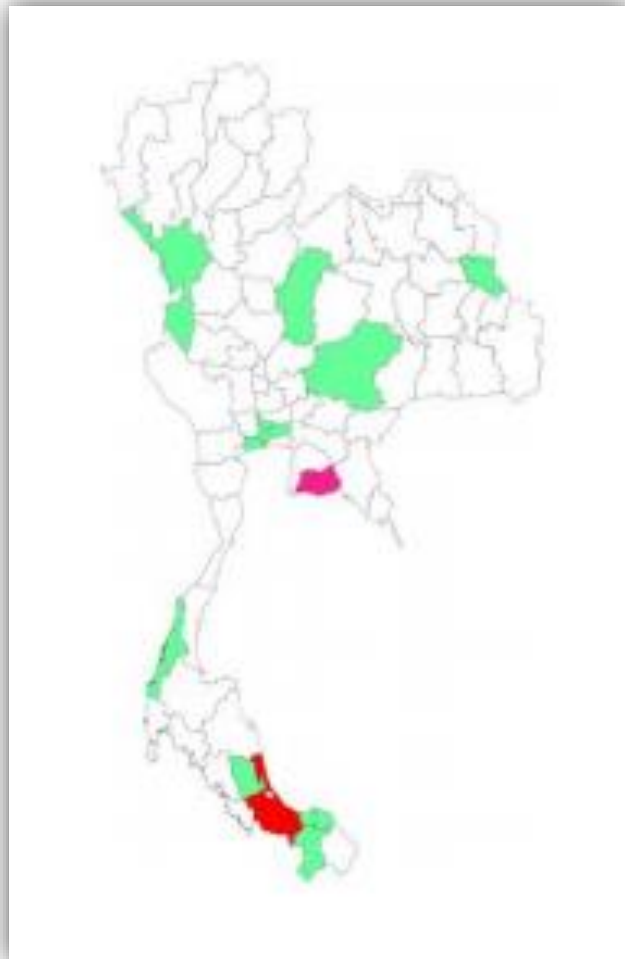
Source: Bureau of Epidemiology, Ministry of Public Health, Thailand

Incidence of Cholera by Age-group, Thailand, 2015



Source: Bureau of Epidemiology, Ministry of Public Health, Thailand

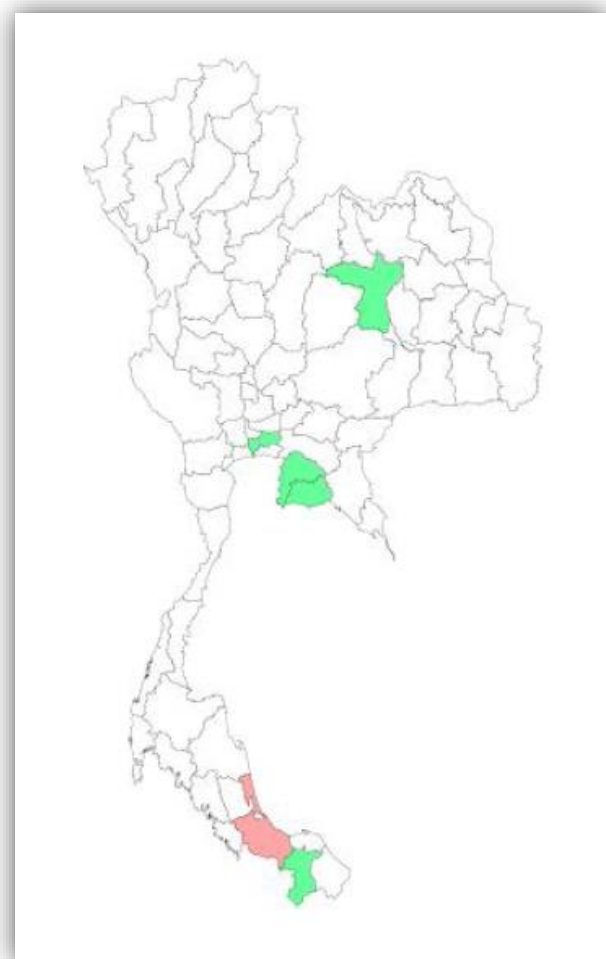
Distribution of Cholera Cases by Provinces, Thailand, 2015-2016



65 million pop
in 77 provinces

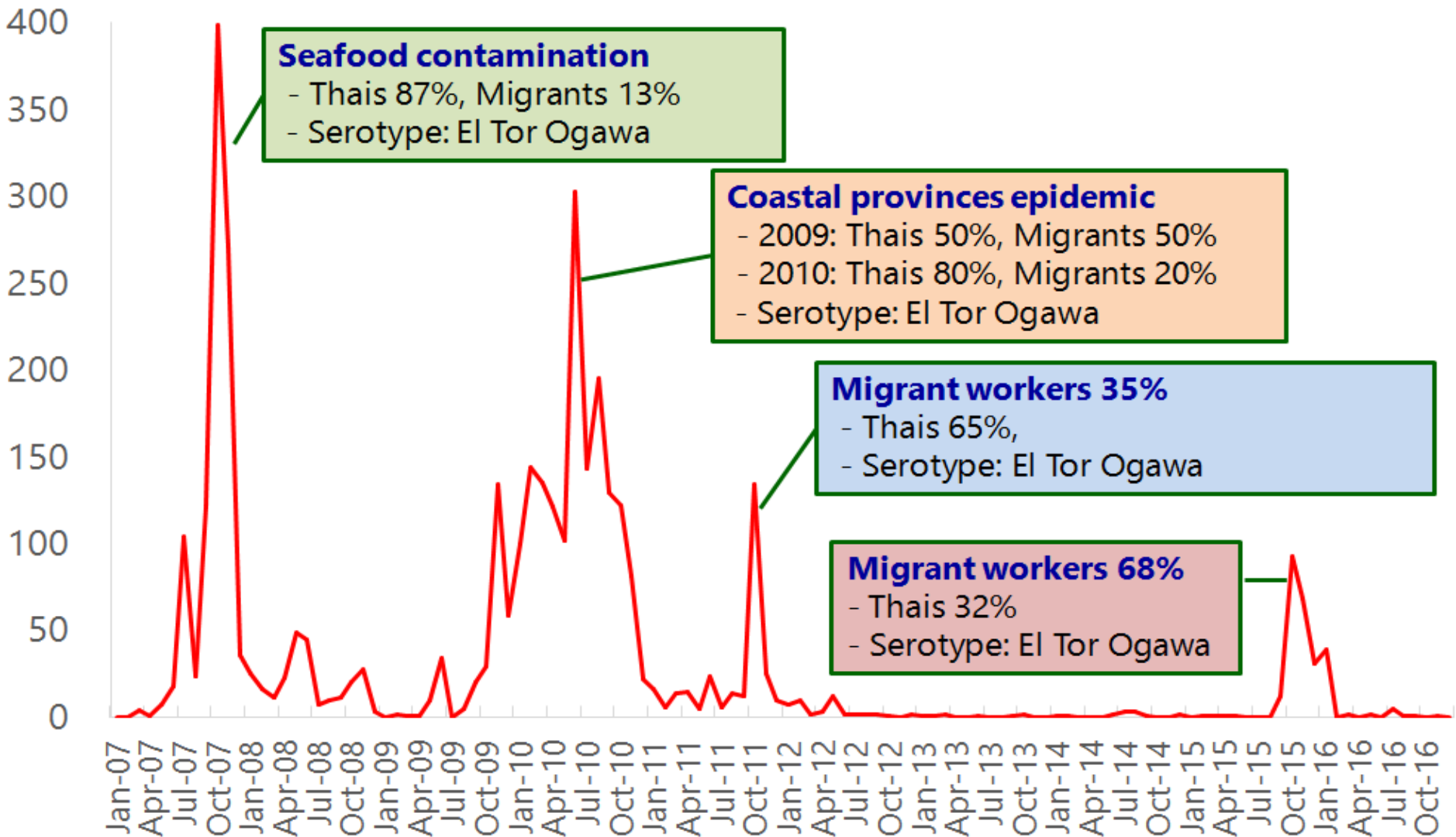
Rate per 100,000 pop

□ 0	■ 0.1-1	■ 1.01-2
■ 2.01-3	■ 3.01-4	■ 4.01-5



Major Outbreaks of Cholera in Thailand, 2007-2016

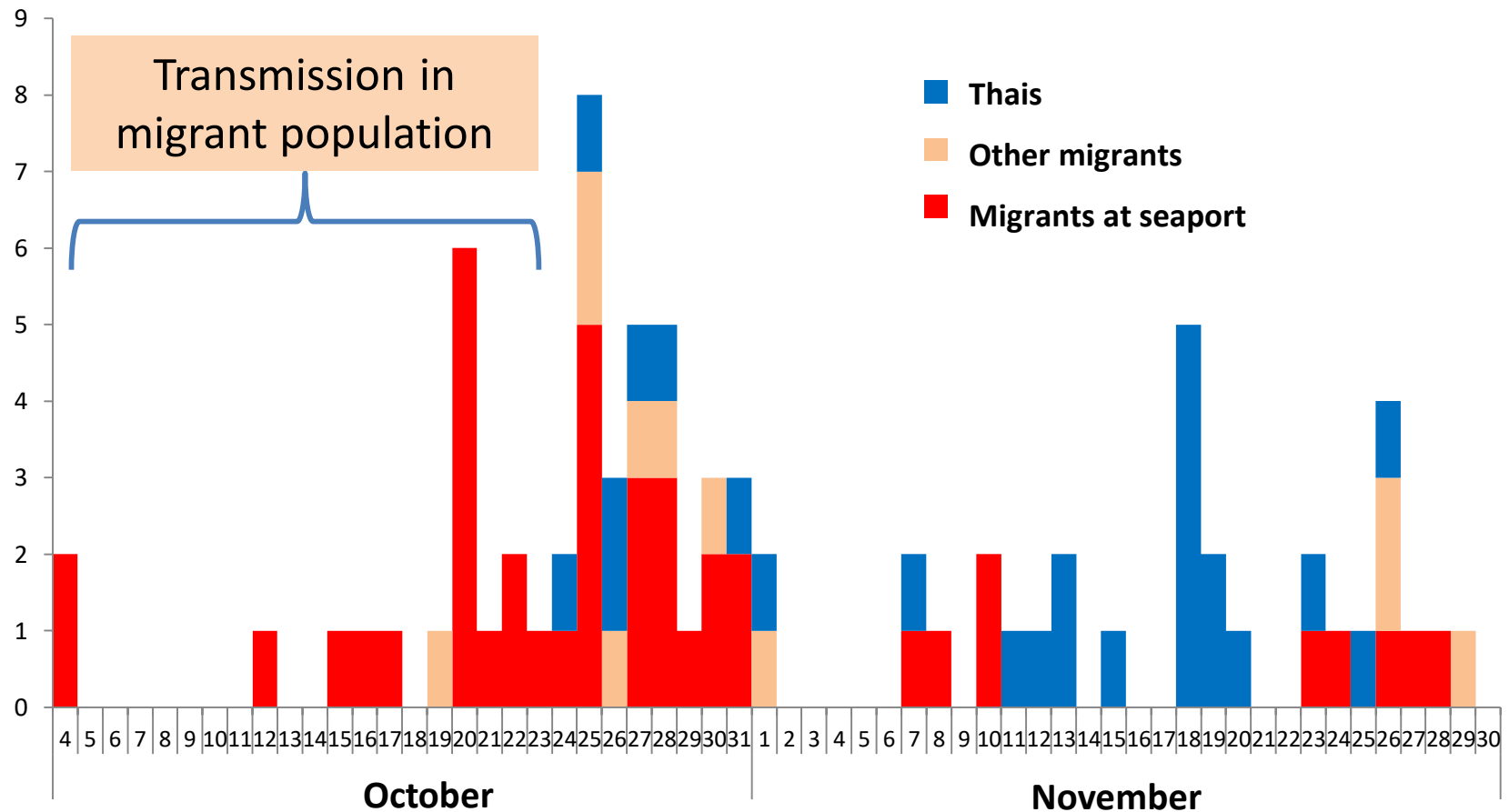
No. of cases/month



Source: Bureau of Epidemiology, Ministry of Public Health, Thailand

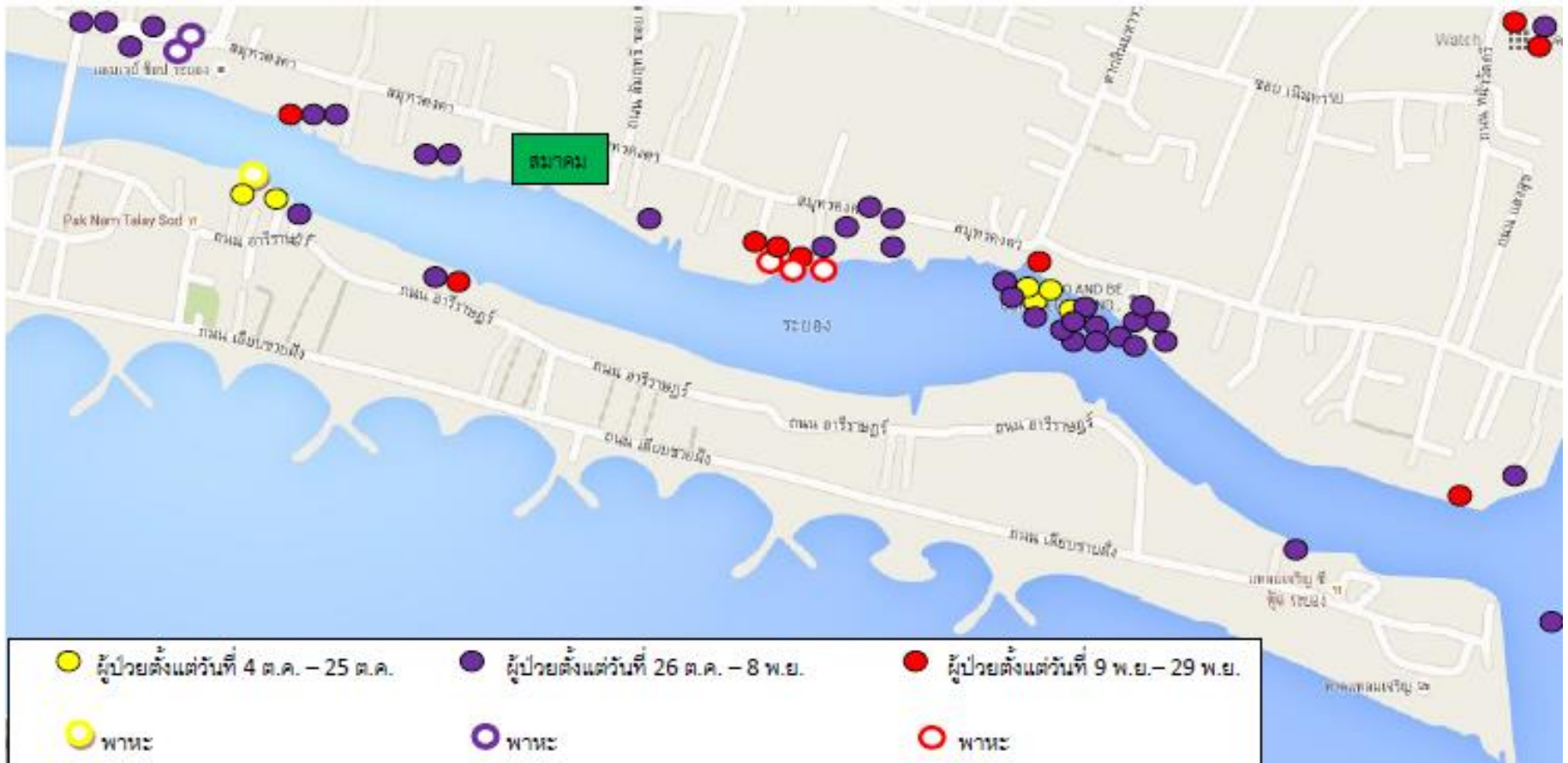
Epidemic Curve of Cholera Cases by Date of Onset, a Coastal Province, October-November 2015

No. of cases



Source: Bureau of Epidemiology, Ministry of Public Health, Thailand

Map of Cholera Cases along the Coast Line



Source: Bureau of Epidemiology, Ministry of Public Health, Thailand

Fishermen and Migrant Workers at Seaport



Employees of the seafood industry: a start of cholera outbreak

Prevention and Control Strategies

Prevention and Control Strategies

- Hospital-based surveillance system
 - Early detection of suspected cholera cases
 - Laboratory confirmation
- Timely and proper management of patients
- Prompt investigation and control by the trained Surveillance and Rapid Response Teams (SRRTs)
- Improving sanitation and safe water supply
 - 100% toilets at all houses
 - Sewage management
 - Chlorinated tap water and/or access to bottled water

Hospital-based Disease Surveillance

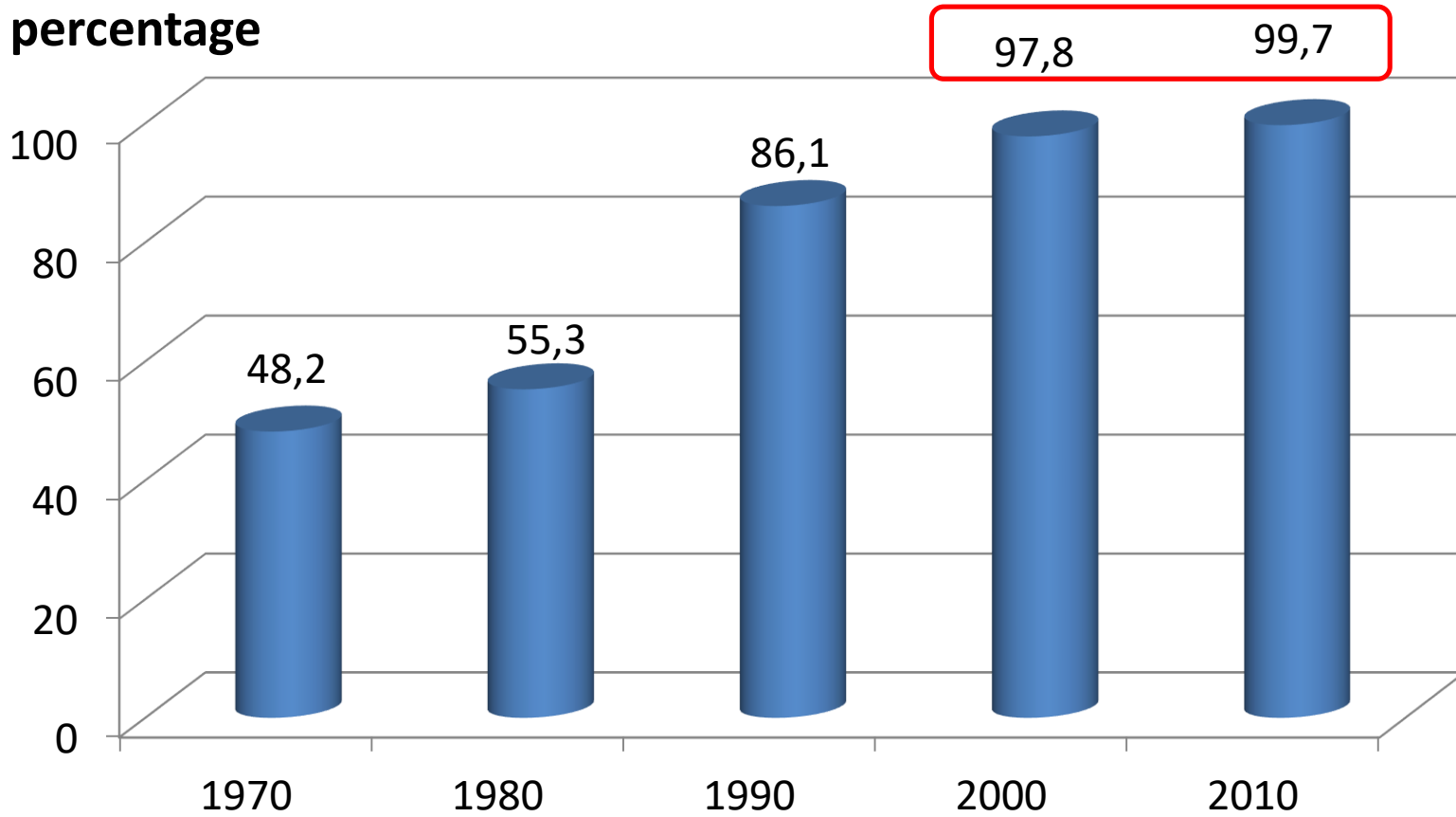
780 District Hospitals



116 General Hospitals



Percentage of Households with Sanitary Toilet, Thailand, 1970-2010



Source: National Statistical Office, Thailand

Cholera Outbreak in a Migrant Worker Community



Improving Sanitation and Chlorination of Water Supply

Improving Sanitation in a Migrant Worker Community



Use of Oral Cholera Vaccine in a Special Setting



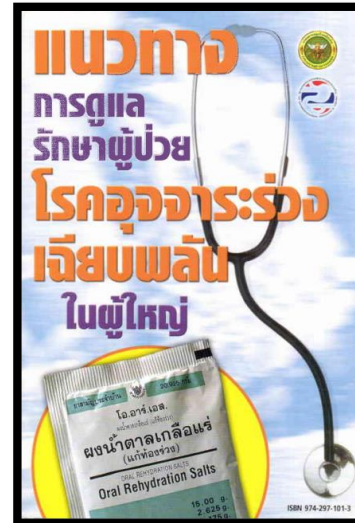
In 2013, a refugee camp at Thai-Myanmar Border, 2-dose OCV given to 43,000 residents: No cholera cases reported

Mapping Thailand's Capacity

Bamrasnaradura Infectious Diseases Institute, Department of Disease Control



The hospital was built in 1960 as
a special cholera treatment center



Clinical Practice
Guidelines (CPGs)

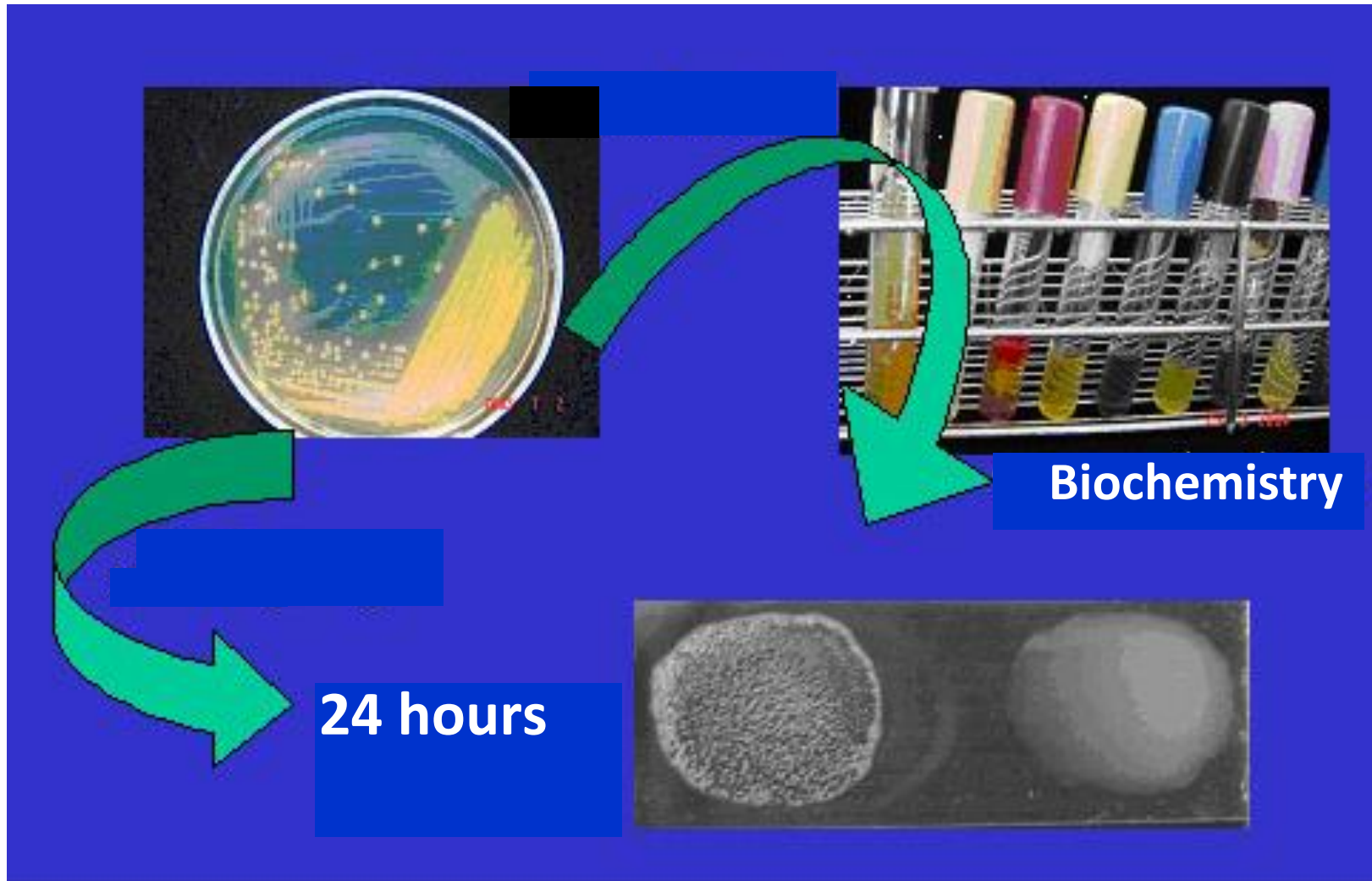


A patient was treated by
re-hydration fluid to prevent shock

12 Regional Laboratory Centers of Department of Medical Sciences



Cholera Culture and Drug Sensitivity Test



Surveillance and Rapid Response Team



1,030 teams
nationwide

Central
C-SRRT

Region
R-SRRT

Province
P-SRRT

District
D-SRRT

Sub-
district

Village

1.6 millions of health volunteers

Investigation and Control of Cholera Outbreaks



Blood cockles



Disinfection of the contaminated toilet at patient's house

Summary

- Incidence of cholera in Thailand has significantly decreased in the past decades while outbreaks occasionally occurred.
- Migrant population played a critical role in cholera transmission.
- Disease surveillance, early detection, prompt investigation and response are important to successful control of cholera outbreak.
- Continuing improvement of sanitation and safe water supply remains necessary.

Acknowledgement

- Department of Medical Sciences, Ministry of Public Health, Thailand
- Bureau of Epidemiology, Ministry of Public Health, Thailand
- Thailand Field Epidemiology Training Program (FETP)
- Institute for Urban Disease Control and Prevention, Thailand
- National Statistical Office, Thailand

Thank you for your attention

Supply Bottled Water During Flooding



No cholera outbreaks reported post-flood in the recent years