



# AMR in Thailand : situation and surveillance system

Apichai Mongkol

Department of Medical Sciences,  
Ministry of Public Health, Thailand

# National steering committee for AMR

National Re-Emerging  
Infectious Diseases  
Committee

National Drug System  
Development  
Committee

National Surveillance and  
Control of Antimicrobial  
Resistance Committee

National Drug  
Committee



Sub-committee for  
prevention, control and  
resolving of antimicrobial  
resistance

Sub-committee for  
national drug list  
development

Working group for AMR data  
collection and analysis

Sub-committee  
for study on  
antibiotics  
reclassification

Sub-committee for  
system development of  
AMR prevention and  
control

Sub-committee for  
rational drug use  
encouragement

**Establishment of  
national laboratory-based surveillance  
of antimicrobial resistance**



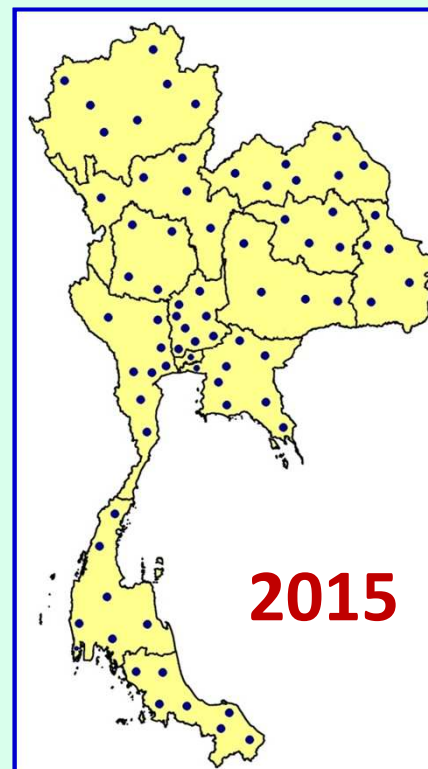
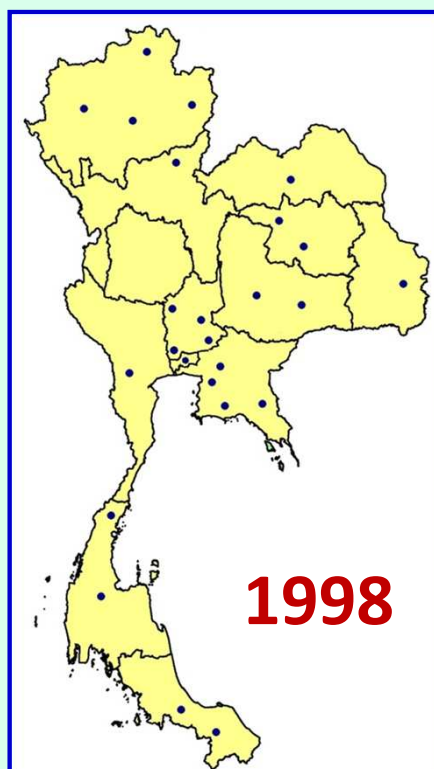
## Laboratory-based surveillance

1. Select organisms that are included in surveillance (MRSA, VRE, VRSA, ESBL, CRE)
2. Select organisms that should not be monitored (*Streptococcus viridans* gr., *Bacillus*)
3. Finalize antimicrobial agents to be used for each isolate
4. Use standardize protocol for AST (CLSI, EUCAST)
5. Establish quality system to assure the quality of data (IQC, EQA)
6. Establish information system (WHONET data fields)

# Antimicrobial Resistant Surveillance

## National Antimicrobial Resistant Surveillance, Thailand (NARST)

- Established since 1998: 28 MoPH and private hospitals
- Designated as WHO CC for AMR Surveillance and Training, 2005
- Expand: 83 hospitals through 12 public health regions



# Antimicrobial Resistant Surveillance

## National Antimicrobial Resistant Surveillance, Thailand (NARST)

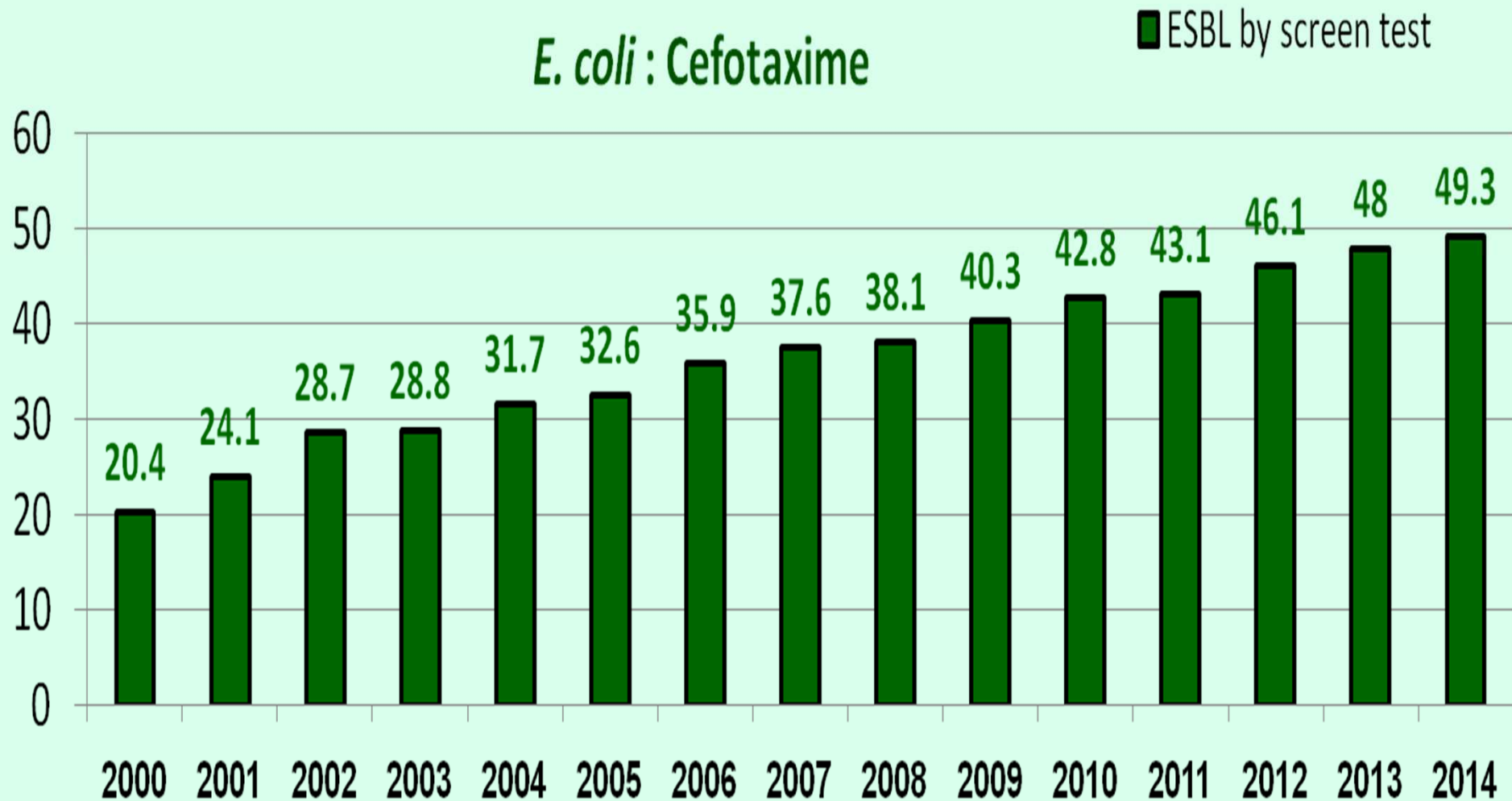
- Monitor magnitude & trend of AMR bacteria in human
  - : annual database of > 450,000 isolates
  - : potential MDROs detection eg. NDM-1
- Analyze and disseminate national AMR data
  - : <http://narst.dmsc.moph.go.th>
  - : quarterly report of antibiogram, trend of AMR

# Antimicrobial Resistant Surveillance

## National Antimicrobial Resistant Surveillance, Thailand (NARST)

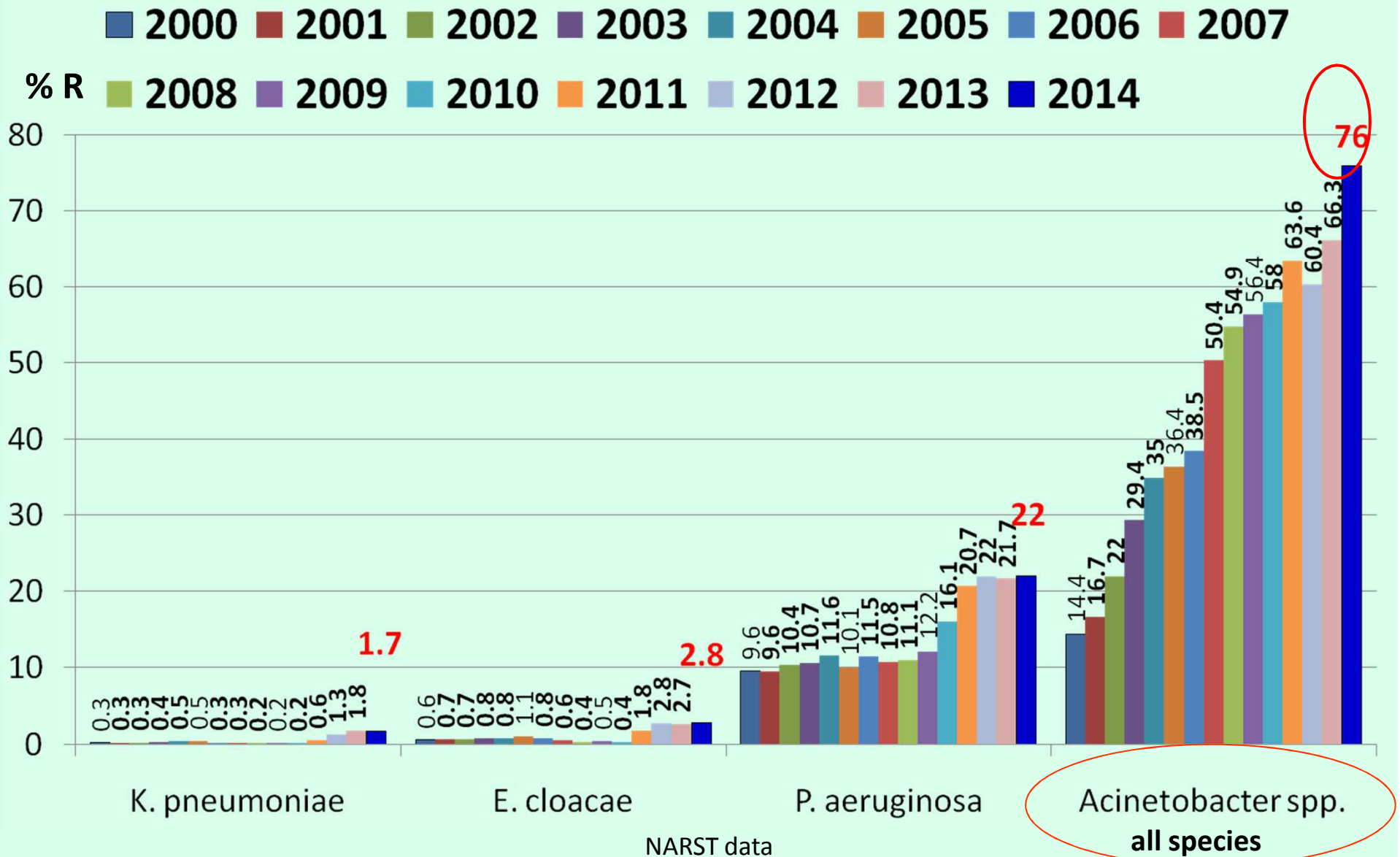
- Standardize and strengthen capacity of lab network
  - : Laboratory guideline for AMR
  - : training (annually)
  - : National External Quality Assurance Schemes (EQAs twice a year)
- Assist WHO to encourage member states on establishment of National AMR surveillance system

# Trend of Extended-spectrum beta-lactamase producing (ESBL) Enterobacteriaceae





# Trend of Imipenem Resistant bacteria (2000-2014)





# NDM-1 producing bacteria, 2012-2013

**CRE : 237/1358 (17.5%)**

**NDM: 205/237 (86.5%)**

**North 4 Hosp.**

**CRE 52 (3.8%)**

**NDM 47 (19.8%)**

**Northeast 6 Hosp.**

**CRE 65 (4.8%)**

**NDM 61 (25.7%)**

**Central 9 Hosp.**

**CRE 58 (4.3%)**

**NDM 47 (19.8%)**

**East 2 Hosp.**

**CRE 15 (1.1%)**

**NDM 13 (5.5%)**

**South 3 Hosp.**

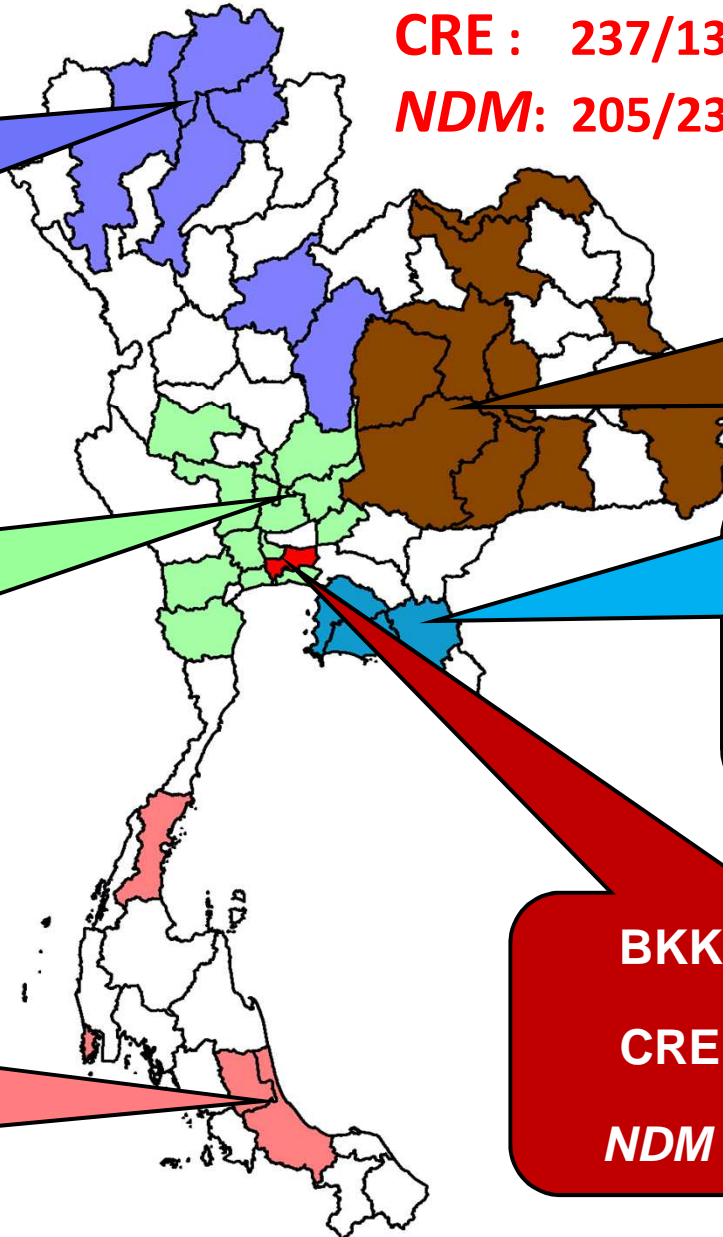
**CRE 25 (1.8%)**

**NDM 23 (9.7%)**

**BKK 5 Hosp.**

**CRE 22 (1.6%)**

**NDM 14 (5.9%)**



# Challenges

- **Epidemiological linkage for rapid prevention and control**
- **Real-time system for AMR Data sharing among all stakeholders**  
eg. Hospital – NARST–Epidemiologist- National Administrative board
- **Engagement of all multi-sectors on AMR awareness**  
eg. Public – Private healthcare sector- animal sector

# Way forward

- **To institute a regional AMR surveillance system**
  - Strengthen laboratory capacity
  - Initiate international External Quality Assurance scheme
  - Enhance Capacity to recognize and report new, emerging, spreading AMR
  - Contribute in initial implementation on Surveillance of AMR for local and Global action (GHSA, Sweden)

# COMBAT DRUG RESISTANCE



**No action today,  
no cure tomorrow**

7 APRIL 2011 **WORLD HEALTH DAY**

