Antimicrobial resistance control in Thailand

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Magnitude of AMR burden

- **Population** ~ 64 millions

- **Health burden** (based on data in 2010)
  - AMR infections ~ 88,000 cases
  - Mortality due to AMR infections ~ 38,000 cases

- **Economic burden**
  - Antibiotic use for AMR treatment ~ 200 million USD
  - Indirect costs due to AMR > 1 billion USD

Important resistant bacteria

- Extended-spectrum beta-lactamase (ESBL)-producing Enterobacteriaceae e.g., *K. pneumoniae* & *E. coli*

- *Acinetobacter* spp., and *Pseudomonas aeruginosa* in hospital settings especially ICU

- Multi-drug resistance Staphylococcus เช่น Methicillin-resistant *S. aureus* (MRSA) and Methicillin-resistant *S. coagulase-negative staphylococci* (MRCoNS)

- Carbapenem resistant Enterobacteriaceae (CRE) e.g., NDM-1

- Vancomycin-resistant enterococci (VRE)

- MDR-TB, XDR-TB etc.
Rate of Imipenem Resistant *Acinetobacter* spp. 
(28 hospitals, 2000-2014)

Source: National Antimicrobial Resistance Surveillance Center, Thailand

Note: Data from 9 hospitals with fewer than 500 beds and 19 hospitals with 500 beds or more.
Thailand commitment on combating AMR

**Global level**
- Global health: WHO/OIE/FAO (WHA67.25)
- Global Health Security Agenda (GHSA)
- Foreign Policy and Global Health (FPGH): Oslo Ministerial Declaration

**Regional level**
- SEAR:
  - Jaipur Declaration 2011
- ASEAN: ASEAN Post-2015 Health Development Agenda
National level – At a Glance (1)

National policies relating to AMR (2011 - present)
• National drug policy & strategies 2011 regarding rational drug use & AMR
• National strategies on EID 2013 – 2016

Human side
• Surveillance of AMR
  • National AMR surveillance Center, Thailand (NARST) (1997 - present) & WHO collaborating center
  • National Infection Control Program
  • EID & International Health Regulation 2005
Human side (Cont.)

- Use of antibiotics
  - Reclassification of critically important antibiotics from non-prescription drugs to prescription drugs
  - Prohibition of direct-to-consumer advertising of antimicrobials
- Policies to promote rational use of antibiotics and improve infection control
- Activities by civil society organizations
  - Bottom-up projects to promote rational use of antibiotics and to eliminate dangerous drugs from communities (2010- present)
  - Antibiotics Awareness Day campaign (2013-present)
National level – At a Glance (3)

Animal side
• Prohibition of antibiotic use for growth promoter
• Standard farms
• Surveillance of antibiotic residue in animal products

Health professional education (including veterinary side)
• Revising undergraduate curriculum
• Training prescribers and pharmacists

Examples of projects & programs
• Antibiotics Smart Use (ASU) (2007-present)
• Antibiotics Smart Use for Children (ASU-Kids) (2012-present)
• AMR Containment & Prevention Program & An Ecohealth Approach to Develop a Strategy for the Prudent Use of Antimicrobials to Control Antimicrobial Resistance in Human, Animal, and Environmental Health in Asia’ (2012-2015)
ASU from pilot project toward sustainability

Phase 3: Toward sustainability via policy advocacy, network strengthening and development of new social norms (2010-present)

Phase 2: Test feasibility of scaling up program in 44 hospitals and 627 health centers in 3 provinces (large, medium and small) and 2 hospital networks (public and private) (2008-9)

Phase 1: Test the effectiveness of interventions modifying prescribing behavior in 10 district hospitals and 87 health centers in Saraburi province. (2007-8)

Intervention
- **Multifaceted**: 4 facets (i.e., education, incentive, management & policy/regulation)
- **Multilevel**: 5 levels (i.e., individual, organization, network, policy and society)

Evaluation
- Prescription behavior change (Antibiotic prescription rate)
- Patient health outcome and satisfaction
- Number of health facilities adopting ASU & spreading of ASU practice
Key findings

• Antibiotic prescription rate in 892 hospitals (2012-2014)\(^1\)
  – Target: Antibiotic prescription rate in URI and acute diarrhea is ≤ 20%.
  – URI: prescription rate reduces from 50-60% to 40-50%
  – Acute diarrhea: prescription rate reduces from 50% to 30-40%

• Health outcome of patients who did not receive antibiotics in URI, acute diarrhea and simple wound
  – Public hospitals: 97% of 1,200 patients recovered or felt better.\(^2\)
  – Private hospitals: 99% of 917 patients recovered or felt better.\(^3\)
  – Pharmacies: 92% of 998 patients recovered or felt better.\(^4\)

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\(^1\) National Health Security Office (2014)
\(^3\) Anuwong K & Poomthong S. Evaluation of Antibiotics Smart Use Project Phase II. (2009)
\(^4\) Journal of Health System Research 2013 7(2):261-7
An integrated framework on AMR, Thailand

1. Infection & disease control in human
2. Infection & disease control in animals & animal products
3. Antimicrobial use in human
4. Antimicrobial use in animals
5. Consciousness in - disease prevention & health promotion - antimicrobial resistance - antimicrobial use
6. Creation of relevant knowledge (including AMR/Antimicrobials surveillance data)
7. Social movement
8. Political involvement

Source: Ministry of Public Health, Thailand (2014)
Strengths and challenges

Strengths

• Number and diversity of stakeholders, agencies, programs & projects at the different levels and settings
• Availability of laws, regulations and policies
• Availability of international & domestic evidence

Challenges

• Need for an integration approach to synchronize actions and plans among stakeholders
• Unawareness of AMR problems
• Inconsistency in policy support and advocacy
Conclusions

• Thailand has some good starts that need to maintain. In the meantime, challenges need to be addressed, for example,
  – Surveillance on AMR in community and agriculture
  – Surveillance on antimicrobial use in human and animals
  – National coordinating body/mechanisms among stakeholders

• Next step: strengthen political support & social movement

• Global and international collaboration could catalyze social movement and political involvement.