WHO Perspectives on Integrated AMR Surveillance – South-East Asia

Sirenda Vong, MD, PhD
Program Area Manager, AMR Focal Point
Health Emergency Information and Risk Assessment Unit
Department of Health Emergencies
World Health Organization Regional Office for South-East Asia (WHO SEARO)
vongs@who.int
Outline

• Why do we need integrated surveillance?
• Where are we?
• What’s next for the WHO South-East Asia Region?

1.9 billion people

India, Indonesia and Bangladesh: 90%
Only 2 upper Middle Income Countries: THA and MAL
Why Integrated Surveillance matters?

Importance of AMR in food animal reservoirs on human health is unclear
No data on burden of AMR in humans
No data on burden of AMR in humans caused by animal related AMR

AMU in HUMANS

AMU in ANIMALS

AMR in HUMANS

AMR in ANIMALS

Evidence from Europe
But no data from the Tropics

Some evidence from Salmonella/Campylobacter then from MRSA and C.difficile
But extent is unknown
Why Integrated Surveillance matters?

- Limited evidence for inducing behavioral changes in animal sector as reducing antibiotic use may compromise livestock health and production.

- Need for **Integrated surveillance of AMR & AMU to** understand how resistance develops and spreads including how resistance circulated within and between humans, animals (thru food), water and the *environment*.

- Associated with burden of disease studies and effects of interventions at national level.
Global Action Plan - AMR

- WHO’s strategic Milestone since 2015
- An obligation or major drive to developing NAPs
- GAP implementation:
  - Five strategic objectives
  - Guiding principles
Global Action Plan - AMR

• **Five strategic objectives**
  – Improve awareness and understanding
  – Strengthen **knowledge thru surveillance** and research
  – Reduce incidence of infection
  – Optimize the **use of antimicrobials**
  – Ensure sustained investment

• **Guiding principles re surveillance**
  – Work Stream approach: 10 including GLASS and One-health
  – Partnership with OIE and FAO
  – Accounting for different capacities of member States
WHO Strategy for Integrated Surveillance

- **AGISAR** since 2008: WHO Advisory Group for Integrated Surveillance of AMR (36 experts)
- Goal is to support countries to minimize the impact of AMR associated with antibiotic use in food animals thru food chain
- Objectives and TORs for 2015-19
  - Contain AMR in food chain
  - Build integrated surveillance and monitor use of antimicrobials
  - Establish list of antibiotics critical for human medicine
  - Tripartite partnership activities and Codex for AMR
- Demonstration projects
- Training and workshops
AGISAR/GFN Main Activities

- Training Workshops
- External Quality Assurance System (EQAS)
- Mentoring
- Reference Service - Lab protocols
- Focused Research Projects and Country Pilot Projects
- Fostering communication and cross sectoral collaboration
  - > 1500 GFN Members
  - > 700 Institutions
  - > 180 Member States
  - > 20 AGISAR projects
WHO–AMR One Health Approach

◆ WHO Global Workshop on Strengthening Integrated Surveillance of Foodborne Diseases and Antimicrobial Resistance through the Whole Genome Sequencing

◆ AGISAR Thematic Working Groups Meetings

Venue: Faculty of Public Health, Thammusat University, Rangsit Campus, Pathumthani Province, Thailand
In South-East Asia Region

- AGISAR-driven project in Bangladesh, Sri Lanka and Indonesia: ESBL Ec Tricycle
- One-Health Secretariat among Tripartite Partners
- AMR surveillance in humans:
  - Building national surveillance data for AMR
  - Integrating AMU surveillance at a second stage
  - Laboratory strengthening
- Participate in GLASS
Surveillance Data Flow Chart

HAI & AMR in HCS
AMR in community

Sentinel labs (private/public Labs)
National Reference Lab
Research Institutions

Central National Surveillance Data Center

GLASS - HQ

Surveillance of ATB use in Humans

In hospitals
In Community

AMR Control Program

One - Health
Data Harmonization:
- Standards
- Comparisons
- Interpretations

World Health Organization
HEALTH EMERGENCIES programme
Framework regarding Surveillance Data Flow

Collect manually

Collect automatically

Standardize
Validate
Anonymize

Store

Transmit

Integrate and warehouse

Report Analyze Alert

Disseminate

Local

Central

World Health Organization
Support Countries to Centralize National Data

• Generate national surveillance data
• Reinforce global surveillance by allowing participation of the SEAR member states into WHO’s GLASS initiative

• Focus on system building using IT as a **first step:**
  – Lab & clinical data validated
  – Data management process to central level validated
• Limited focus on comprehensiveness and representativeness of surveillance data
Country Pilot Projects - AGISAR

- To fill the knowledge gap at the national level
- To inform policy
- Towards the establishment of a national program on integrated surveillance of antimicrobial resistance
Recent WHO guidance (issued in June 2017)

- Surveillance of resistance in animals, food, humans
- Surveillance of use in animals, humans
- Combined analysis and reporting

Integrated Surveillance of Antimicrobial Resistance in Foodborne Bacteria

Surveillance of Antimicrobial Resistance

Surveillance of Antimicrobial Use

Combined Analysis and Reporting

World Health Organization
ESBL *E. coli* Tricycle as Demonstration Project

- A global protocol to implement a simplified, integrated trans-sectoral surveillance
- Focus on a single key indicator, the frequency of extended-spectrum beta-lactamase (ESBL) producing *E. coli*, measured yearly in strictly identical and controlled conditions in humans, in the food-chain and in the environment
- Patterns of transmission of resistance between sectors and cluster analysis – rather quantitative analysis of AMR rates between sectors
- Results will be analyzed globally, by region, and by country. Subsets of ESBL-*E. coli* isolates will be archived for in-depth molecular analysis to characterize genetic properties and changes over time.
- Strength: standardized/comparable, simplified, training in lab, country ownership to adopt integrated surveillance and global interest