INDONESIA EXPERIENCE ON IMPLEMENTATION OF SURVEILLANCE PROGRAM IN FOODBORNE AMR
AMR STRATEGIC

MINISTRY OF HEALTH
a. Surveillance in Human Sector

MINISTRY OF AGRICULTURE
a. Surveillance in Live Animal Sector (AMU)
b. Surveillance in Animal Product (AMR)
Introduction, background;

1. Strategic plan of AMU and AMR Controlling Program in human sector has been established since 2005 and launched by ARCC Ministry of Health

2. Ministry of Health has Programs to Controlling AMU and AMR in hospitals, primary health care and community is being implemented

3. Ministry of Agriculture has regulated AMU and AMR control, such as banning on antibiotics growth promoter, and bacteria sentinel resistance path monitoring in animal products

4. MoH and MoA basically have been established strategic programs, surveilance programe, sharing data, but the implementation has not optimally integrated

5. Collaboration between MoH and MoA has been initiated
INDONESIA

34 Provinces, 262 Million People
I. AMR STRATEGIC
5 STRATEGIC OBJECTIVES

1. Raising awareness and understanding of antimicrobial resistance through effective communication, education and training.

2. Strengthen the knowledge and evidence base through surveillance and research.

3. Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.

4. Optimize the use of antimicrobial medicines in human and animal health.

5. Develop the economic case for sustainable investment and to increase investment in new medicines, diagnostic tools, vaccines and other interventions.
The AMR surveillance system is designed as a tool that can help the efforts of Government of Indonesia to understand the AMR problems.
a. Surveillance in Human Sector
SURVEILLANCE in HUMAN SECTOR

1. AMR and AMU Surveillance 2016
   The results of 8 selected hospitals study showed a significant increase in the prevalence of E.coli and K.pneumonia (ESBL +) by 60% (45% -89%)

2. 20% increase over 3 years indicates a more serious AMR problematic
PREVALENSI ESBL producing *E coli & K pneumoniae* 2000-2016
ANTIBIOTICS SENSITIVITY PATTERN OF AMR IN INDONESIA - 2016

ESBL

MRSA

![Graphs showing the sensitivity pattern of ESBL and MRSA antibiotics in Indonesia.](Image)
III. MINISTRY OF AGRICULTURE

a. Surveillance in Live Animals Sector (AMU)
b. Surveillance in Animal Products (AMR)
Overview of the AMR surveillance concept

- **Live Animals**
  - Surveillance in general population → Farm/slaughterhouse (AMU)

- **Animal Products**
  - Surveillance in general population → slaughterhouse to retails (AMR)
  - Surveillance residues
III. MINISTRY OF AGRICULTURE

a. Surveillance in Live Animals Sector (AMU) in 3 Provinces
III. MINISTRY OF AGRICULTURE

b. Surveillance in Animal Products (AMR)
The existing laboratory for AMR surveillance

Eight Regional Labs
BBVET/BVET (DIC)
• Isolation & identification

BPMSPH (NAPACL)
• Susceptibility Test (phenotype)

BBPMSOH (NVDAL)
• Identification (genotypic)

BBALITVET (IRCVS)
• Sequencing

Legend
1. DIC Medan
2. DIC Bukittingi
3. DIC Lampung
4. DIC Subang
5. DIC Wates
6. DIC Denpasar
7. DIC Maros
8. DIC Banjarbaru
9. BPMSPH (NAPACL)
10. BBPMSOH (NVDAL)
11. BBALITVET (IRCVS)
• Information on supply chain of food and agriculture system + antibiotic use (AMU) along the chains
The objectives of AMR Surveillance in DGLAHS-MOA in 2017 - 2019

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<thead>
<tr>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tr>
<td>- To determine the level of AMR of <em>recovery isolate</em> bacteria from live animal</td>
<td>- To identify the level of AMR prevalence in live animal and animal products</td>
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<td>- To determine the level of AMR of <em>recovery isolate</em> bacteria from animal product</td>
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<td>- To Identify the risk of AMR in animal and human</td>
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<td>- Assess the prevalence of antimicrobial resistance of broiler chickens in pilot area with the proper sampling strategy</td>
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<td>- To identify Antibiotic Residues level in animal Product *</td>
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<td>Year</td>
<td>Target animal</td>
<td>Target Bacteria</td>
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<tr>
<td>2019</td>
<td>Poultry (broiler and layer) and ruminant (dairy cattle)</td>
<td><em>Salmonella</em> spp, <em>E. Coli</em> and <em>Staphylococcus aureus</em></td>
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AMR Policy Challenges

• Indonesia consist of many islands
• To establish regulation of AMR
• to receive antimicrobials in human medical sector and animal health sector under medical/veterinary prescriptions
• To promote awarness of antimicrobial stewardship and prudent use of antimicrobials
• To control antimicrobials as the growth promoter
• To develop national data collection systems
Future Plan For
Strategic and Implementation of NAP

1. Establishing inter ministrial comittee on the implementation of Indonesia NAP on AMR to ensure a systematic and comprehensive one health approach.
2. Implementing the Global Antimicrobial Surveillance System (GLASS) on Surveillance of AMR in a one Health Approach
3. Promoting public awareness and community empowerment on AMR through Human and Animan Health Care Providers on local level.
4. Research related to AMR in community, primary health care and hospitals, animal products (poultry meat), and animal feed
5. Multi sectoral budgeting
Thank you