Singapore’s One Health Approach to Antimicrobial Resistance

A/Prof Vernon Lee
Communicable Diseases Division
Ministry of Health

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Global Call for Action

- WHO Global Action Plan on AMR
  “To ensure, for as long as possible, continuity of the ability to treat and prevent infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them.”

Five strategic objectives:
1. Improve awareness & understanding
2. Strengthen knowledge through surveillance & research
3. Reduce incidence of infection
4. Optimise use of antimicrobials
5. Sustainable investment in new medicines, diagnostics & vaccines
Singapore: Multi-sectoral AMR action plan approved that reflects Global Action Plan objectives, with an operational plan and monitoring arrangements.
Legislations that Support Our Measures

- **Infection control programmes** – Private Hospitals and Medical Clinics Act, under MOH
- **Immunisation policies** – Infectious Diseases Act, under MOH
- **Registration, prescription & retail of antimicrobials** – Health Products Act, under HSA
- **Prohibited antimicrobials in food animals & feed** – Animals & Birds Act, Feeding Stuffs Act, under AVA
- **Environmental hygiene & control** – Environmental Public Health Act under NEA, Sewerage and Drainage Act under PUB

MOH: Ministry of Health  HSA: Health Sciences Authority  AVA: Agri-Food and Veterinary Authority  NEA: National Environment Agency  PUB: Singapore's National Water Agency
# Existing Local Measures in Place

## Prevention of Infections & Regulated Antimicrobial Use

- **Antimicrobial stewardship programmes** in all public hospitals
- **Infection control programmes** in hospitals by legislation
- **Registration, prescription & retail of antimicrobials** by legislation
- **Immunisation policies** for children, travellers and healthcare workers
- **Good animal husbandry & aquaculture guidelines** and regional collaborations
- **Prohibition of certain antimicrobials** in animal feeds and livestock
- **Food safety & hygiene regulations** to prevent foodborne diseases
- **Environmental hygiene & waste disposal regulations** to prevent disease and acquisition of resistance

## Detection, Response & Research

- **Laboratory capability** for detection
- **Surveillance** of AMR infections; antimicrobial utilization
- **Outbreak control** with healthcare epidemiology teams
- **Monitoring of livestock** for pathogens and AMR profiles
- **Food testing** for pathogens and antibiotic residues
- **AMR-related research** in human, animal, food and environment domains
Singapore’s National Strategic Action Plan on AMR
One Health Approach
Singapore’s Key Areas of Focus

In line with the WHO Global Action Plan on AMR:

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<td></td>
<td>National <strong>One Health</strong> strategy to improve national awareness of AMR</td>
<td>Expand AMR and AMU surveillance coverage</td>
<td>Coordinate and dedicate funding for <strong>One Health</strong> research</td>
<td>Increase vaccination</td>
<td>Strengthen prudent use across sectors</td>
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<td>Continuing professional education</td>
<td><strong>One Health</strong> surveillance across sectors</td>
<td><strong>AMR</strong> transmission</td>
<td>Enhance infection prevention &amp; control in human and animal sectors</td>
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<td>Reinforce good practices among industry and stakeholders</td>
<td>Risk assessment to guide policies</td>
<td>Surveillance methods</td>
<td>Enhance outbreak response</td>
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<td>Knowledge, attitudes, practices</td>
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<td>Socioeconomic impacts</td>
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<td>Innovative interventions</td>
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Singapore’s National Strategic Action Plan on AMR

- Identified key strategic thrusts and initiatives
- Launched 1 Nov 2017

- Work in Progress implementation, monitoring and evaluation
Implementation of National Strategic Action Plan

2017 PUBLIC EDUCATION CAMPAIGN – GP Clinics, Polyclinics & Retail Pharmacies

**DO NOT LET A COMMON BUG TURN INTO A DRUG-RESISTANT BUG.**

Misuse of antibiotics can lead to the development of drug-resistant bugs which are harder to treat. A drug-resistant bug’s ability to resist the effect of drugs is also termed as antimicrobial resistance (AMR).

Antibiotics only treat illnesses caused by bacteria. They do not work against viruses.

Common misuse of antibiotics includes using them for common illnesses caused by viruses e.g. flu.

**1. HOW DOES THIS AFFECT YOU?**

- Antibiotics become less effective against drug-resistant bugs.
- Illnesses caused by drug-resistant bugs are harder or impossible to treat, and can lead to disability and death.
- Drug-resistant bugs can cause complications that make recovery from medical procedures like surgery and chemotherapy difficult.

**2. WHAT CAN YOU DO?**

**DOs**
1. Talk to your doctor about whether you need antibiotics for your illness.
2. If prescribed, take the antibiotics as advised by your doctor.

**DON'Ts**
1. Do not take leftover antibiotics.
2. Do not share antibiotics with others.

Complications caused by drug-resistant bugs can increase the length of hospital stay and costs of medical care.

Drug-resistant bugs can spread to others in your family and the community.
Implementation of National Strategic Action Plan

2018 PUBLIC EDUCATION CAMPAIGN – Expanded reach across media platforms

Use Antibiotics Right
Antibiotics are powerful medicines that can prevent or treat bacterial infections when used appropriately. However, there is a growing concern worldwide that antibiotics are not used for the right purposes, such as using it to treat infections caused by viruses. Using antibiotics inappropriately may cause bacteria to develop resistance and threaten their ability to treat common bacterial infections.

CONTRIBUTED BY
Health Promotion Board

Antibiotics like me, we knock out bacteria. Not the flu virus. This is not my battle.

Antibiotics work against bacteria
Antibiotics, such as Penicillin, Doxycycline and Amoxicillin, are medicines used to prevent and treat bacterial infections. They work by destroying or slowing down bacteria. Examples: Infections like Tuberculosis.

Antibiotics do not work against viruses
Antibiotics cannot kill viruses because they have different structures and reproduce in a different way than bacteria. Antibiotics have no effect on viral infections.

When antibiotics are overused and misused, it decreases their effectiveness. It is more difficult to treat bacterial infections if the antibiotics used become ineffective.

Always talk to your doctor for the treatment you need.
Without urgent action, we are heading for a post-antibiotic era, in which common infections and minor injuries will become deadly once more. Let’s prevent antibiotic resistance together.
Implementation of National Strategic Action Plan

Saw Swee Hock School of Public Health – Educational Initiatives for Children and Students

- WAAW Library Event for Kids
- AMR Essay and Video Contest for secondary, junior college and polytechnic students

WAAW World Antibiotic Awareness Week

Protect Antibiotics
Don’t abuse
Don’t resist
Antibiotics
WASH your hands
Get Healthy
Wash your hands, save your friends
Reduce, don’t abuse

Vaccinate, don’t procrastinate
Implementation of National Strategic Action Plan

### NATIONAL ADULT IMMUNISATION SCHEDULE

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<tr>
<th>Vaccine</th>
<th>18-26 years</th>
<th>27-64 years</th>
<th>≥ 65 years</th>
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<tbody>
<tr>
<td>Influenza*</td>
<td>1 dose annually</td>
<td>1 dose annually</td>
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<tr>
<td>Pneumococcal*†</td>
<td>1 or 2 doses†</td>
<td>1 dose each†</td>
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<tr>
<td>Human papillomavirus (HPV)*</td>
<td>3 doses</td>
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<tr>
<td>Tetanus, diphtheria and pertussis (Tdap)*†</td>
<td>1 dose for each pregnancy</td>
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<tr>
<td>Measles, mumps and rubella (MMR)*†</td>
<td>2 doses</td>
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<tr>
<td>Hepatitis B†</td>
<td>3 doses</td>
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<tr>
<td>Varicella</td>
<td>2 doses</td>
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Complements:
- Existing National Childhood Immunisation Schedule
- National Strategic Action Plan on AMR by preventing infections and reducing the need for and use of antimicrobials
Implementation of National Strategic Action Plan

NATIONAL CENTRE FOR INFECTIOUS DISEASES

Houses national facilities and programmes to support the prevention and control of infectious diseases of public health importance, including the AMR Coordinating Office.

Central role in implementing the National Strategic Action Plan on AMR and coordinating initiatives between One Health sectors:
- Surveillance
- Research
- Education & Training
Thank you!