

# How Antimicrobial Resistance will impact your future and your community

## AMR

- Antimicrobial resistance (AMR) occurs when an antibacterial agent loses its ability to control or kill bacteria.
- It is important to distinguish between antibiotic resistance and antimicrobial resistance.
- While antibiotic resistance refers specifically to the resistance from bacteria to antibiotics, antimicrobial resistance covers resistance from other microbes to drugs used to treat them.

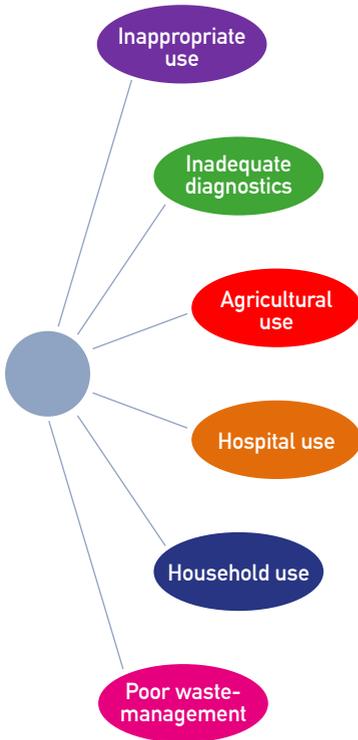
## Problem

- Antibiotics are an invaluable tool, and their introduction revolutionized the treatment of infectious diseases.
- However, their abuse, misuse, over use and inappropriate use has resulted in resistant strains of both harmful and harmless bacteria which are replacing antibiotic susceptible bacteria.
- With the development of superbugs we are faced with the danger of returning to the pre-antibiotic era when bacterial infections killed with no cure.

## Action

- The AMR phenomenon is occurring in an ecosystem, and all players in that ecosystem have to be involved.
- AMR is a multi-faceted challenge that demands the efforts of multiple stakeholders and a whole-of-society engagement including a one-health approach to tackle it.
- You can take action on AMR!

Our contribution to AMR



Course of antibiotics not fully completed, wrong prescription, low-quality medicines and poor infection prevention and control all lead to development of resistance.

Sometimes, a doctor will diagnose an infection without all the necessary information which leads to antibiotics being prescribed "just in case," or broad-spectrum antibiotics being prescribed when a specific drug would be more appropriate.

Use of antibiotics in feed for farm animals can promote drug resistance

Critically ill patients are often given much higher doses of antibiotics. The combination of more frequent utilization and close contact among sick patients creates an environment that is ideal for the spread of resistant bacteria.

Household use of antibacterial in soaps and other products.

Poor disposal of waste from pharmaceutical industries increases the amount of antibiotics in the environments surrounding these industries. Many animals while sick are given antibiotics and when they don't improve they are slaughtered. All the waste at the slaughter houses from these animals is washed into public water systems exposing the bacteria in the water to the antibiotics in the waste causing them to develop resistance mechanisms.

Impact of AMR

AMR - Kills	Infections caused by resistant micro-organisms often fail to respond to the standard treatment, resulting in prolonged illness and a greater risk of death.
AMR - Hampers the control of infectious diseases	It reduces the effectiveness of treatment; thus patients remain infectious for a longer time, increasing the risk of spreading resistant microorganisms to others.
AMR - Increases health care costs	When infections become resistant to first-line drugs, more expensive therapies must be used. A longer duration of illness and treatment, often in hospitals, increases health care costs as well as the economic burden on families and societies.
AMR - Puts the achievements of modern medicine at risk	Without effective antimicrobials for prevention and treatment of infections, the success of organ transplantation, cancer chemotherapy and major surgery would be compromised.

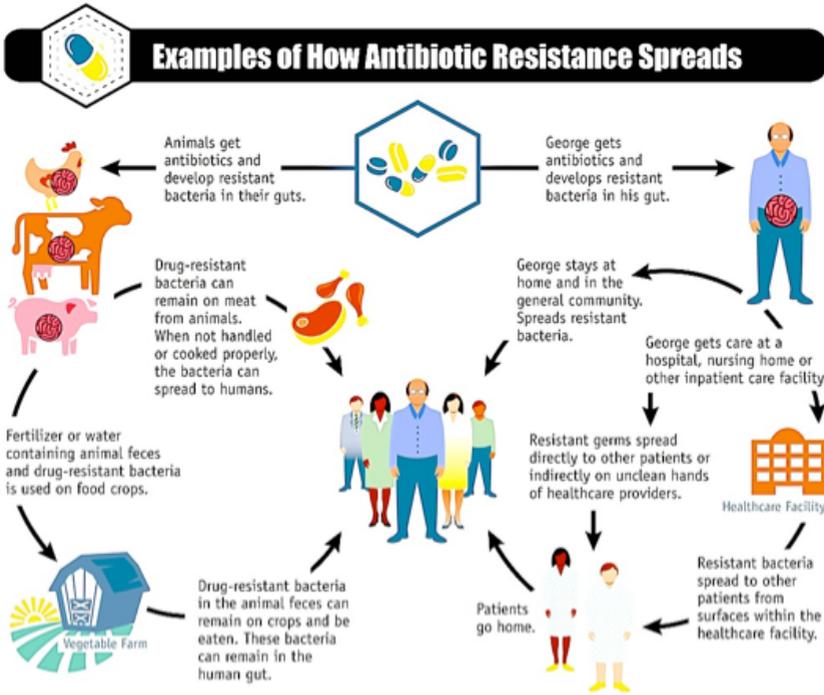
Bacteria form an important part of the natural ecosystem and are found everywhere including on our skin, in our digestive tract, the air, soil, and on almost all the things we touch every day. Bacteria have found uses in the food industry, in agriculture and in the pharmaceutical industry.

These problems are exacerbated where antibiotic use is unregulated and widespread both in human and animal production

Resistant bacteria in one environment may not be confined to that specific environment, but can be carried thousands of miles away by wind, water, animals or people.

Antibiotics in the excreta of treated individuals and livestock contaminate water and soil which creates a reservoir for resistance.

Resistant bacteria can be passed to humans through the food chain by fruit, vegetables, dairy and meat.



**COMPLEX PROBLEM**

AMR is a complex problem driven by many interconnected factors. As such, single, isolated interventions have little impact. Coordinated action is required to minimize emergence and spread of antimicrobial resistance.

**TEAMWORK**

Engagement of a wide range of stakeholders including farmers, veterinarians, food safety professionals, medical practitioners, environment and wildlife experts as well as law enforcement in monitoring and control activities is necessary.

**LAWS**

Reducing AMR needs the political will to adopt new policies, including controlling the use of antimicrobial medicines in humans, animals and food. And laws need to be enforced to ensure that medicines are of assured quality, safe, effective and accessible to those who need them.

# What can we do?

## You and Your community

- Prevent transmission: Wash hands, avoid direct contact with sick people, use condoms to prevent yourself against sexually-transmitted infections.
- Get vaccinated and keep vaccinations up to date.
- Ensure proper use of antimicrobial drugs:
  - Only when they are prescribed by a certified health professional.
  - Do not pressurize doctors into prescribing antimicrobials.
  - Complete the full treatment course, even if you feel better.
  - Do not share antimicrobial drugs and never use leftover prescriptions.

## Health workers and pharmacists

- Enhance infection prevention and control in hospitals and clinics.
- Prescribe and dispense the right antimicrobial drugs only when necessary.

## Policy makers

- Improve, strengthen and support:
  - Monitoring and research
  - Appropriate use and restricted use
  - Innovations and development
  - Infection control and prevention
  - Valuable interventions



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