GLOBAL LEADERS GROUP
ON ANTIMICROBIAL RESISTANCE

Integrated surveillance of antimicrobial resistance (AMR) and use (AMU)

A POCKET GUIDE FOR POLITICAL DECISION-MAKERS

This guide has been developed by the Global Leaders Group on AMR

This guide is directed to political decision-makers to show the need for and identify actions to support integrated surveillance of AMR[1] and AMU[2] across sectors.

1. Antimicrobial resistance (AMR) surveillance collects data to show frequency and extent of antimicrobial resistance among microorganisms, providing valuable insights into the effectiveness of antimicrobials.
2. Antimicrobial use (AMU) surveillance focuses on investigating the types and quantities of antimicrobials used in human, animal and agri-food systems.

WHY IS ANTIMICROBIAL RESISTANCE A ONE HEALTH CHALLENGE?

AMR occurs when bacteria, viruses, fungi and parasites no longer respond to antimicrobial agents. As a result of this resistance, antibiotics and other antimicrobial agents become ineffective and infections become difficult or impossible to treat. This increases the risk of disease spread, severe illness and death, and impacts food security and economic development.

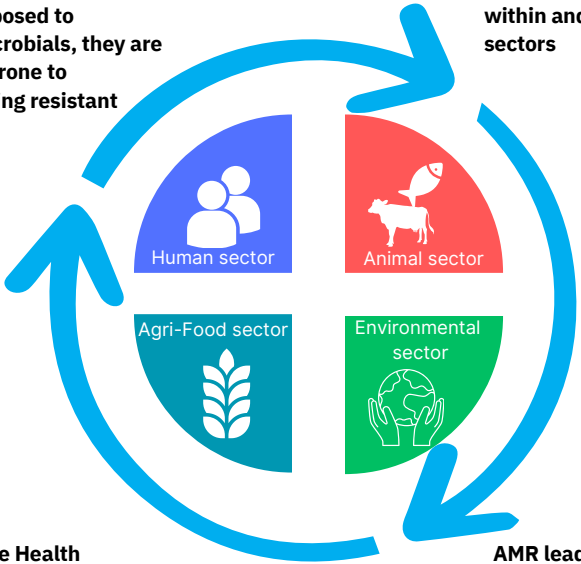
One Health means that the health of humans, animals, plants and the environment are connected and interdependent. Tackling a problem in a One Health context simply means that one deals with the problem within and across sectors.

Just like microorganisms, AMR spreads without boundaries. AMR is a challenge for the human, animal, environment and agri-food sectors and can spread between these. The use of antimicrobials is a key driver of AMR and responsible and sustainable use is therefore crucial in every sector.

WHY IS ANTIMICROBIAL RESISTANCE A ONE HEALTH CHALLENGE?

When microorganisms are exposed to antimicrobials, they are more prone to becoming resistant

AMR can transmit within and across sectors



The One Health approach tackles the problem of AMR across all relevant sectors

AMR leads to more severe, untreatable illnesses and deaths

WHY DO WE NEED AN INTEGRATED APPROACH TO AMR AND AMU SURVEILLANCE?

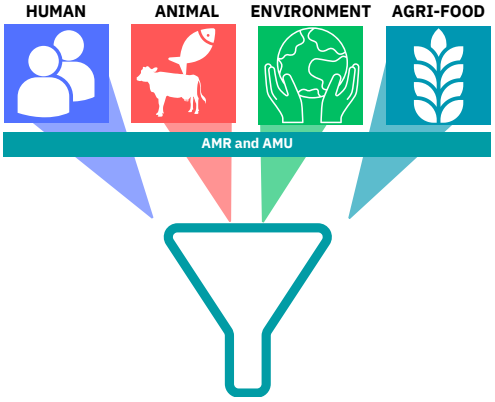
AMR and AMU surveillance data are often fragmented and not representative. Sometimes data are lacking entirely or, if available, they are not comparable across or even within sectors. Therefore, without harmonization, these data cannot be jointly analysed and used to inform the development of policies and interventions to tackle AMR.

Surveillance data needs to be aligned with global and national systems and plans in response to AMR. For this, relevant AMR and AMU data must be collected and integrated better at the local, national and global levels. Plans and efforts need to be adapted to local contexts in a stepwise manner. Firstly, to strengthen sector-specific surveillance and diagnostics, then identify common criteria for harmonisation for One Health integrated surveillance of AMR and AMU. Data transparency and data sharing across sectors should be encouraged.

Implementing successful interventions depends on representative, quality and reliable integrated AMR and AMU surveillance data.

WHICH SURVEILLANCE DATA NEED TO BE INTEGRATED?

Surveillance essentially requires data on AMR to determine changes in resistance patterns over time; and data on AMU to determine the amount of antimicrobials used, which in turn helps to assess the risk of AMR resulting from exposure to antimicrobials.



WHAT ARE GLOBAL RESOURCES TO SUPPORT SECTOR-SPECIFIC NATIONAL SURVEILLANCE?

Here are existing and upcoming[1] sector-specific surveillance systems:

Human Health

The World Health Organization' s (WHO) Global AMR and AMU Surveillance System (GLASS) enables harmonized global reporting of national AMR and antimicrobial consumption data. The GLASS priority pathogens list and methodologies can be helpful in guiding national surveillance data collection. WHO also offers country support, for example in conducting national AMR Prevalence Surveys. These provide a reliable, direct measurement of the prevalence AMR countries that do not yet have national AMR surveillance systems of high quality and coverage.

National AMR Prevalence Surveys involves periodic, strategic sampling of a population subset to improve quality, completeness and representativeness of AMR data originating from routine clinical practice in resource-scarce settings.

1. The International Pathogen Surveillance Network and CODEX Guidelines on integrated monitoring and surveillance of foodborne AMR

Animal Health

WOAH's ANIMUSE Global Database (ANImal antiMicrobial USE) is an interactive and automated database that allows countries to have ownership of their AMU data to report, consult, analyse and communicate to national stakeholders on AMU data while having confidential access to the centralized IT system. Animal AMU data trends can be used to assess adoption of WOAH international standards for responsible and prudent use, for risk analysis purposes and to monitor effectiveness of interventions to curb AMR.

Environment

The United Nations Environment Programme (UNEP) will provide tools and guidelines to countries for strengthening their capacities on technical monitoring methods for AMR and for harmonization of data collection, analyses and sharing.

Agri-food systems

The Food and Agriculture Organization of the United Nations (FAO) is finalizing the development of the International FAO Antimicrobial Resistance Monitoring (InFARM) IT platform and system to enable harmonized global reporting of national AMR and AMU data in agri-food systems. FAO supports countries in establishing and strengthening their surveillance systems to generate and use AMR evidence in agri-food systems through assessment of capacities, trainings and provision of guidance materials.

HOW CAN INTEGRATED AMR AND AMU SURVEILLANCE DATA BE USED?

Determine status quo and needs[1]

- Which microorganisms are resistant and where?
- Where, how and which antimicrobials are used? Is use high and unnecessary, low, or absent?

Analyze data for meaningful action

- Set national priorities.
- Develop targeted policies and interventions that address country specific problems.

Evaluate what works

- Which measures were a success?
- Which measures need to be adjusted or replaced?

1. Identify common AMR and AMU indicators, as well as opportunities for the harmonisation of protocols for AMR and AMU data collection, processing, and analyses within and across sectors

WHAT ARE THE BENEFITS OF INTEGRATED SURVEILLANCE OF AMR AND AMU?

1. Good quality AMR and AMU surveillance data help identify and address outbreaks and spread of disease early.

2. Targeted evidence-based interventions can reduce the burden of AMR and help prevent suffering and save lives.

3. It is more cost-effective to invest in good surveillance systems to prevent AMR spread than bearing the costs of treating infections with resistant microorganisms and controlling outbreaks.

4. Transparent data shows accountability to the public and builds trust.

5. Better understanding of AMR transmission and risk across sectors.

WHAT CAN YOU DO NOW TO ADVANCE INTEGRATED AMR AND AMU SURVEILLANCE DATA FOR ACTION?

1. Advocate to put AMR and AMU surveillance on the political agenda and make it a priority in your AMR national action plan.

2. Talk to surveillance experts at public and veterinary health institutes in each sector in your country to come up with a plan for next steps which may include establishing surveillance systems.

3. Establish a multi-sectoral group to foster coordination and data sharing between sectors.

4. Help secure long-term allocation of government budget; this is the key bottleneck for a sustainable surveillance system.

5. Identify AMR and AMU surveillance focal points from each sector who are responsible for implementation of surveillance tasks. This will establish accountability and can accelerate progress.

HOW CAN INTEGRATED SURVEILLANCE OF AMR AND AMU BE SUPPORTED?

1. Strengthen legislation and regulations, for example to:
   - make AMR and AMU notifiable
   - monitor antimicrobial consumption
   - allow data sharing across sectors

2. Strengthen laboratory and epidemiological capacity. Tools and trainings from international partners are available.

3. Strengthen data transparency and data sharing across sectors. Establish a platform where data from all sectors is consolidated.

4. Ensure engagement of all sectors through multi-sectoral coordination and build upon existing systems within these sectors.

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A pocket guide for political-decision makers

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The Quadripartite, consisting of the Food and Agriculture Organization of the UN, the UN Environment Programme, the World Health Organization and the World Organisation for Animal Health provides secretariat support to the Global Leaders Group on AMR.