

# Information session: Introduction to integrated surveillance of antimicrobial resistance and use (AMR/U) across sectors and using data for action

## Summary Report

June 14, 2024, 11:30 -13:00

### Background

This [session](#), facilitated by Global Leaders Group (GLG) member Professor Lothar Wieler, provided participants with information about integrated surveillance of antimicrobial resistance and use (AMR/U) across sectors, including an overview of the pocket guide on integrated surveillance of AMR/U developed by the GLG. A series of lightning talks by invited speakers provided examples of best practices on integrated surveillance of AMR/U in countries, and a panel discussion explored key issues arising in the session. The session was held virtually and was open to the public.

### 1. Introduction

Dr Jean-Pierre Nyemazi, acting director of the Quadripartite Joint Secretariat, noted that the scale-up of integrated surveillance is among the GLG's urgent priorities for a more robust response to AMR, and thanked Professor Lothar Wieler for facilitating the session.

Professor Wieler, GLG member and facilitator of the GLG Task Force on Integrated Surveillance, noted that surveillance is a critical gap in the response to AMR, with many countries lacking data on AMR/U, and data are often not reaching or being optimally used by decision-makers to inform and support implementation of national AMR action plans. Additionally, most AMR/U surveillance systems do not currently include data drawn from humans, animals, the environment and the agri-food sector, and available data are frequently fragmented and unrepresentative. Professor Wieler noted that the GLG [pocket guide](#) on integrated surveillance for political decision-makers is intended to demonstrate the need for integrated surveillance across sectors and describe what political leaders can do to set up and expand their AMR/U surveillance systems in their countries. The guide complements the Quadripartite guide on One Health integrated surveillance of AMR/U.

### 2. Lightning talks on country and regional examples of integrated surveillance

Speakers provided national and regional examples of best practices in integrated surveillance in a five-minute "lightning" format, to model concise communication with policymakers.

**Chinyere Okoro** from WHO and the Quadripartite Joint Secretariat gave an overview of the Quadripartite guide on one health integrated surveillance, a product of the Quadripartite technical group on integrated surveillance. The three components of the guide include 1) A definition of integrated surveillance and the purposes for which integrated surveillance systems can be designed; 2) Priority microbial targets, metrics, and indicators which can be used to measure and collect data across sectors; and 3) Requirements for establishing the underlying systems for data collection across One Health sectors. These are accompanied by considerations for implementation and operationalization of One Health integrated surveillance of AMR/U, recognizing that different countries are at different stages of implementation of integrated surveillance approaches. Dr Okoro emphasized that designing integrated surveillance systems requires a stepwise approach that builds on strengthening AMR/U surveillance in each sector, based on existing protocols and systems, followed by integration of efforts at appropriate entry points depending on the national context.

**Pieter-Jan Ceysen**, Unit Head of Antibiotics and Resistance for Sciensano, shared the experience in Belgium of creating an integrated AMR/U surveillance platform. He noted that surveys in antibiotic resistance can measure either antibiotic sales volumes in human or animal health, or bacterial resistance. A mapping of relevant surveillance systems in Belgium identified 26 different owners of data on consumption of antibiotics and resistance patterns, leading to a collaboration that produced the BELMAP report, allowing comparison of AMR/U data across sectors. The data are now openly available in an online portal that is managed by a cross-sectoral editorial group of data owners; the data are informing Belgium's new national action plan on AMR. Belgium's experience illustrates low-cost, organic, unifying collaboration among different surveillance systems.

**Luc Samison**, Director of the Centre d'Infectiologie Charles Mérieux and Professor at the University of Antananarivo, presented on the experience with the Tricycle protocol in Madagascar, which measured the prevalence of ESBL *E. coli* bacteria in the human, animal, and environment sectors over three years. In years 1-3, prevalence in pregnant women was 32.8%, 35.5% and 28.8% (the third-year result was likely impacted by the COVID-19 pandemic). In the animal sector (market chickens), prevalence increased from 56.6% in year 1 to 71.1% in year 3. In the environmental sector, water samples downstream and from a slaughterhouse showed a 0.2 logCFU/100m prevalence increase in the three-year reporting period. Genetic sequencing showed both intra-sectoral and inter-sectoral circulation of strains of ESBL *E. coli*. The Tricycle results show that leadership by and collaboration between research centres, public laboratories and ministries, together with the existence of a national laboratory network, contributed to the strengthening of integrated surveillance approaches in Madagascar.

**Carolee Carson**, Surveillance Manager and Analysis and Communication Lead of the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) at the Canadian Public Health Agency, presented on the Canadian experience of translating AMR data to policy. She noted that in Canada, AMR/U surveillance is undertaken in humans and at several points in the food chain from multiple different animal species. Data are also collected on antimicrobial use or sales in plants and animals. Data collection has inspired voluntary changes in antimicrobial use and antimicrobial product label changes. The data are used in pre- and post-approval monitoring of antimicrobial drugs. Ms Carson provided an example of how data collection on resistance to antibiotics for *Salmonella* Heidelberg in chickens and people in two provinces led to better understanding of antibiotic use practices in poultry farms and a voluntary cessation by the poultry industry of use of antibiotics in this class.

**Rungtip Chuanchuen**, Professor in the Department of Veterinary Public Health in the Faculty of Veterinary Science at Chulalongkorn University in Bangkok, Thailand, presented a perspective on developing and implementing surveillance of AMR/U in the Southeast Asia region. She noted that 10 years ago, there was no national AMR/U surveillance in any country in the region. While national AMU surveillance is still limited, many countries have begun to implement One Health AMR action plans, data are improving, and at least two countries in the region are implementing integrated AMR/U surveillance. Adequate funding and human and animal health service infrastructure and capacity for sample collection and microbiological examination, including qualified laboratories and trained staff, is key to implementing surveillance. Dr Chuanchuen highlighted five key lessons from Thailand's experience of implementing AMR/U surveillance since 2016: 1) Elevating AMR to high-level visibility, including establishing a national governance mechanism to ensure multisectoral collaboration; 2) Ensuring buy-in, trust and respect among all stakeholders; 3) Strengthening skills and capacity and harmonizing and standardizing methodologies across sectors, building on existing programs or activities; 4) Building a monitoring and evaluation system in parallel with implementation; and 5) Securing sufficient, sustainable funding for long-term implementation.

### 3. Panel discussion and Q&A session

The invited panelists **Muna Abu Sin**, Ambassador on Antimicrobial Resistance of the Federal Ministry of Health, Germany; **Lisa Indar**, Director of Surveillance, Disease Prevention & Control Division, Caribbean Public Health Agency (CARPHA); **Joakim Larsson**, Professor of Environmental Pharmacology at the Department of Infectious Disease and Director of the Centre for Antibiotic Resistance Research, University of Gothenburg, Sweden; and **Jaap Wagenaar**, Professor at the Faculty of Veterinary Medicine at Utrecht University in the Netherlands and Co-chair of the Quadripartite Technical Group on Integrated Surveillance discussed the following issues:

- The important role of public health institutes and their networks in communicating with politicians and policymakers and in coordinating and undertaking responses to AMR/U, including surveillance. PHIs also have a key role in interacting with the private sector, such as agri-food producers.
- Focusing on “people and systems” in discussions with policymakers, rather than pathogens and drug combinations.
- The need for better understanding of environmental transmission of AMR, and the potential to use environmental indicators to measure AMR in human and animal populations.
- Supporting decision making by doctors and veterinarians, including through the applied use of surveillance data and rapid diagnostics.
- Systematic data sharing as the basis for trust, cooperation and coordination in integrated surveillance on AMR/U. This may require incentives, such as legal frameworks and agreements, and attention to compatibility of methodologies, technologies and systems.
- AMR response and surveillance approaches must be tailored according to local systems and contexts.
- The importance of sustained, rather than *ad hoc*, investments in building surveillance systems.
- The need for actionable data, which requires understanding and communicating data strengths and limitations, and for data to accurately and clearly reflect its purpose.

Professor Wieler closed the information session by thanking all the speakers and participants.