



Food and Agriculture Organization
of the United Nations

Consultation Summary Report

Stakeholder Consultation on an FAO Database for Antimicrobial Resistance (AMR) in Food and Agriculture

FAO Headquarters
Rome, Italy, 6-7 May 2019

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Overall comments

The global AMR data platform for the food and agriculture sectors was strongly supported as having the potential towards an extremely valuable contribution to global surveillance of AMR. It was noted that ongoing stakeholder buy-in and input are needed for success due to the sensitivities highlighted below. Reporting should not have trade-related implications. Database plans are in line with monitoring and evaluation of progress towards the Global Action Plan on AMR.

Resource Needs and Piloting

- It was agreed that developing the database is a resource-intensive and costly endeavor, and maintenance will be as well.
- Achieving the collection of high-quality global surveillance data is expected to be an iterative process. Early versions of the platform could be piloted in selected countries towards this end.
- Country focal points would be ideal.

Flexibility and Prioritization

- Initial priorities are likely to be focused on prevalence of resistance to select antimicrobial classes in food and livestock/aquaculture sectors in indicator bacterial species (e.g., commensal *E. coli* and *Enterococcus*) and isolates of selected pathogens (e.g., *Salmonella*) in healthy animals (active surveillance data) with the flexibility to include animal pathogens (passive surveillance data) of national/regional concern.
- There is a strong need to include crop/plant/environmental data in the scope of the database, however, prioritization is critical, and this data is not routinely collected by the majority of member states.
- While individual data and metadata would be ideal, initial collection of aggregate data by country may be an option.
- A plan for staged scoping should be developed in line with a One Health approach. For example, design could account for potential future inclusion of whole genome sequencing (WGS) data.

Participation and Reporting

- Analysis and visualization tools included in the platform and country-level trainings would support member-state participation by providing user benefit and return on investment.
- Data accessibility and sensitivity will need to be addressed.
- Standardized, validated susceptibility testing methods and data validation at the country level to assure quality, representativeness, accuracy, and comparability will be critical. Tripartite tools can assist in determination of data quality scoring (e.g., FAO-AMR-Progressive Management Pathway, FAO-Assessment Tool for Laboratories and AMR Surveillance Systems, World Organization for Animal Health (OIE)-Performance of Veterinary Services Pathway).
- Further input is needed on specific metadata to be collected, balancing the needs for achievability and planned analyses.
- Initial reporting is likely to be modeled on OIE's approach (results reported globally and by region). Reporting regions will need to be adjusted to address differing approaches by FAO, OIE, and the World Health Organization of the United Nations (WHO).

Scope and Sustainability

- Further discussions are needed to assure that scope does not result in multiple reporting efforts from member states to Tripartite focal points, and that database design is compatible with member state, FAO, and Tripartite Integrated Surveillance System for AMR/Antimicrobial Use (AMU) (TISSA) needs.
- For usability/sustainability, the platform is planned to be compatible with/make use of WHONET and Laboratory Information Management System (LIMS) software and other Tripartite tools, which will also assist in harmonizing reporting.
- Capturing WGS data presents a challenge from both resource and sensitivity perspectives; Tripartite collaboration will assure a coordinated approach.
- Rolling expiration for resistance data utilized by the platform may be one way to minimize data storage needs and sensitivity concerns.
- Further discussion is needed around evaluation of risk associated with the detection of resistance genes.
- FAOStat and Aquastat approaches are examples of successful platforms with extensive histories.

Summary of Private Sector perspectives (Nestle, Mars, Health for Animals)

- Multiple stakeholders are engaged with responsible AMU and monitoring of AMR, including research, quality and safety, regulatory aspects, agriculture, and communication.
- There are data-sharing challenges in association with WGS, including data interpretation/metadata and ownership/source tracking and communication.
- There are intellectual property issues related to data generated for regulatory purposes.
- There are resource-related challenges for data analysis (in particular for WGS).
- Data quality and representativeness represent challenges as well.
- Question: how is international data different than national data?

Summary of National Perspectives (Ghana, Thailand, Canada, Russia)

- Resources for data collection, analysis and interpretation are needed; this will require infrastructure, staff, and training.
- There may be a reluctance to share data; data is not currently harmonized or representative (including lack of uniform protocols for antimicrobial susceptibility testing (AST)).
- Resources required for development and maintenance of the database are substantial.

Summary of Global Perspectives (Infectious Diseases Data Observatory, OIE)

- It is important to be able to capture data gaps.
- Collection, validation, and reporting of data is an iterative process that requires substantial resources.
- Additional data sources could be considered, (e.g., academia, industry, WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance [WHO AGISAR] guidelines, Clinical and Laboratory Standards Institute (CLSI) VET05, regional FAO guidelines [FAO Regional Office for Asia and the Pacific]).
- The OIE international standards for terrestrial and aquatic animals will be considered, favoring harmonization of methodologies.

Discussion

- In the context of AMR, would data be damaging for trade?
- How would AMR data be meaningfully shared?

- FAO system should build upon approaches taken before; no need to re-invent (e.g., Aquastat, FAOstat, WHO's Global Antimicrobial Resistance Surveillance System (GLASS), OIE data collection, flexible deadlines for reporting).
- FAO system can build upon regional experiences where surveillance frameworks have already been established.

Day 2, Breakout Session Key Points

- It is important to capture baseline estimates to identify trends over time, regionally and globally.
- Data is critical in awareness-raising and behavioral change.
- Identifying risk factors associated with resistance is a long-term key goal (metadata needed); early warning could be another (GLASS does not currently have these capabilities as data is reported in an aggregated form).
- Analysis tools for participating member states could support interest and sustainability.
- The development of the database can serve to provide expertise and direction for collection of plant and environmental AMU and AMR data, moving forward.
- A platform supports collaboration within and between countries, as well as supporting targeted capacity development.
- FAOSTAT is a good model; data should be validated by countries.

Potential Next Steps

- Develop zero-stage table shells for output data (suggest regional reporting with focus on poultry [e.g., live poultry, poultry meat, cecal samples, drag swabs from poultry environment]), WHO Reserve, WHO CIA, and OIE veterinary critically important antimicrobial classes, *E. coli* & *Salmonella*; AST method and interpretation according to CSLI or European Committee on Antimicrobial Susceptibility Testing (EUCAST).
- Circulate for internal and external feedback, revise accordingly.
- Collaborate with FAO's Information Technology Division/FAOSTAT for front end design and pilot with selected analysis tools for participating member states (e.g., WHONET, LIMS).
- Collaborate with Tripartite organizations to learn from their experience.
- Based on baseline input, develop costed medium and long-range plans.
- Seek additional stakeholder buy-in and input (potentially to be included in resolution of Member States).