Antimicrobial resistance

OHRECA
One Health Centre in Africa

Problem statement

Effective antimicrobials remain the cornerstone of modern-day life but antimicrobial resistance (AMR) threatens effective prevention and treatment of infections caused by bacteria, parasites, viruses and fungi. Seventy-three per cent of the global use of antimicrobials is in livestock production and is projected to increase by 67% by 2030, largely due to intensification of livestock and fish production in low- and middle-income countries. Increased levels of AMR in animals have a negative impact on livestock production, either by reducing farm productivity or by higher costs of disease treatment, and the additional public health risks associated with the zoonotic transmission of AMR from animals to humans. Therefore, it is imperative to understand the emergence and spread of AMR to find ways to prevent and control infections.

How we are addressing the problem

Through the CGIAR Antimicrobial Resistance Hub, hosted and led by the International Livestock Research Institute (ILRI) together with key CGIAR centres and research partners, activities are framed around five critical areas aimed at reducing AMR:

- Quantify antimicrobial use (AMU) and understand drivers for use in the different agricultural sectors.
- Elucidate AMR transmission dynamics at the human-animal-environment interface, and the role of formal and informal markets to identify critical points to target to break transmission.
- Design and evaluate interventions and incentives that are locally relevant to reduce or more effectively use antimicrobials.
- Support evidence-based policy dialogue for AMU and AMR surveillance, and AMR reducing strategies.
- Develop capacity and guide scaling of solutions.

Role of One Health

AMR is found in people, animals, food and the environment. Hence a holistic, One Health approach is needed to mitigate AMR risks through multi-sectorial transdisciplinary partnerships to ensure antimicrobial resistance is not a threat to humans, animals, food and nutritional security and livelihoods.

Expected outputs

- Generate evidence on knowledge, attitude, practices and incentives for AMU in agriculture (livestock, aquaculture and crop production), map drug value chains, and categorize types and quality of antimicrobials available. These outputs will help identify evidence gaps and strategic areas for interventions.

- Conduct research on the prevalence and transmission dynamics at the interfaces in different agricultural systems to better understand the relative contribution of agriculturally associated AMR to public health, and the risk of drug-resistant infections in different contexts.

- Design and evaluate context relevant interventions to reduce AMU and AMR in agriculture in low- and middle-income countries, inclulding evaluating the social and economic consequences of potential interventions.

- Support multi-disciplinary, evidence-based policy dialogue for AMR and AMU surveillance and AMR reducing strategies by developing syntheses of evidence on AMU and AMR in both human and animal health. These syntheses will be used to influence public policy and the development of credible, enforceable regulations that reduce AMU. It is important to engage policymakers in agriculture and health to encourage integrated one health policy approaches supported by evidence.

One Health Centre in Africa

The International Livestock Research Institute (ILRI) has established a One Health Research, Education and Outreach Centre in Africa (OHRECA) with support from the German Federal Ministry for Economic Cooperation and Development (BMZ). The centre's primary goal will be to enhance human, animal and ecosystem health by developing capacity in One Health, supporting One Health network initiatives, and developing pathways from evidence to policy and practice.

The centre's research and development activities are implemented under four themes, each having its own defined technical (scientific), capacity and policy outputs and outcomes. The four themes are:

- preventing emerging infectious diseases;
- controlling neglected zoonoses;
- ensuring safe food; and
- reducing antimicrobial resistance.

Contact

Arshnee Moodley, Theme leader
a.moodley@cgiar.org
ILRI, Kenya
amr.cgiar.org
ilri.org/research/facilities/one-health-centre

Bernard Bett, One Health Centre lead
b.bett@cgiar.org
ILRI, Kenya

CGIAR

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

CGIAR ANTIMICROBIAL RESISTANCE Hub

Federal Ministry for Economic Cooperation and Development

October 2020

ILRI CGIAR