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Ministry of Agriculture
Animal Industry and Fisheries

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ANTI MICROBIAL RESISTANCE

The Response of the Agricultural Sector

TACKLING AMR IN ANIMAL HEALTH

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HEPS-Uganda Trains Stakeholders in Gulu District

National One Health Coordinator Musa Sekamatte explaining contents of the AMR National Action Plan during to health sector stakeholders in Gulu during the training.

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MESSAGE FROM

HEPS-Uganda

Dear Partners and Stakeholders, welcome to this edition of the AMR One Health Bulletin. It is the second in a series published jointly with lead sector partners. The first edition focused on human health. This edition focuses on animal health, published in parnership with Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The next edition will focus on environment, and will be published in partnership with Ministry of Water and Environment.

In 2022, HEPS-Uganda has prioritized global health security, which is under threat from antimicrobial resistance (AMR), one of the top 10 global public health threats facing humanity. We may not eliminate AMR but if everyone plays their part and we use the One Health Approach, we can minimize its effects.

This publication hightlights the main AMR issues facing the animal health sector, efforts of MAAIF and other stakeholders to address the challenge, and the pending gaps.

We are grateful to Infectious Diseases Institute (IDI) with support from Mott MacDonald for funding our community interventions against AMR in the districts as we contribute to the AMR National Action Plan. We are stronger together!

Kenneth Mwehonge,
Executive Director.

HEPS FOR HEALTH RIGHTS

IDI INFECTIOUS DISEASES INSTITUTE

The Fleming Fund Country Grants

MOTT MACDONALD

HEPS TRAINS GULU DISTRICT ONE HEALTH TEAM

Gulu AMR training participants

Gulu district in July became the latest area to benefit from Antimicrobial Resistance (AMR) for the district One Health stakeholders.

The training is part of the activities by HEPS-Uganda under the Fleming Fund Country Grant Two, aimed at averting the health and economic burden of AMR in Uganda. The Project is funded by Mott MacDonald through the Infectious Diseases Institute.

From the training, the Gulu district One Health stakeholders committed to strengthen collaboration in the fight against AMR, sustain AMR surveillance and scale up AMR public awareness.

The committee comprises experts in human and veterinary health, Water and Environment Experts, Community development experts among others.

The HEPS project aims to strengthen governance of AMR surveillance with a One Health Approach, sustaining the existing support to AMR and Antimicrobial Use (AMU) surveillance in human health and expand to additional sites, sustain existing support to AMR and AMU/C surveillance in terrestrial animals as well as expand AMR surveillance to include the Environment sector.

It is estimated that at least 10 million people will die due to AMR globally by 2050 if the current trend continues, with the developing world shouldering the greater burden.

The Gulu district stakeholders made a number of recommendations which among others include; need to enforce regulations on prescription first before one buys and accesses antimicrobials, rather than the current practice where everyone with money can access medicines from anywhere, the need to increase public sensitization on AMR through the mass media (Radios, TVs and Newspapers). They also recommended increased funding of the One Health Platform and One Health AMR activities in the country by government.

Increase Awareness on Access, Use and Disposal of Antimicrobials –Study

There is a need to increase awareness among the population on proper access, use and disposal of antimicrobials for both humans and animals – a 2021 study conducted in Wakiso recommends.

The qualitative study on Access, use and disposal of antimicrobials among humans and animals, by David Musoke, Carol Namata and 11 others (https://rdcu.be/cEk7v), published by Journal of Pharmaceutical Policy and Practice) also reveals that development of a drug disposal system at community level would facilitate improved waste management of antimicrobials, adding that together, these measures would help prevent the rate of progression of AMR in communities.

According to the study, Antimicrobials for humans in the study area were accessed from the public sector including health centres, and private health facilities such as drug shops and clinics, while for animals, antimicrobials were predominantly obtained from veterinary practitioners and drug shops (for both veterinary and humans).

"Inappropriate use of antimicrobials in both humans and animals was reported such as sharing antibiotics among household members, and giving human-prescribed antimicrobials to food-producing animals as growth promoters," findings of the study indicate.

The study also established that antimicrobials were most commonly disposed of by households with general waste including dumping in rubbish pits.

It recommends an increase in awareness among the population on proper access, use and disposal of antimicrobials in both humans and animals to help prevent the further development of AMR in communities. "In addition, development of a drug disposal system for use in communities is important to facilitate improved waste management of antimicrobials," the study further recommends.

Reference

Musoke, D., Namata, C., Lubega, G.B. et al. Access, use and disposal of antimicrobials among humans and animals in Wakiso district, Uganda: a qualitative study. *Journal of Pharmaceutical Policy and Practice,* 14, 69 (2021). https://doi.org/10.1186/s40545-021-00361-4

ANTIMICROBIAL RESISTANCE THREATENS FOOD AND INCOME SECURITY IN UGANDA - SAYS FAO

FAO Study Urges Actions to Tackle AMR

The Food and Agriculture Organization of the United Nations (FAO) has warned that the reduced effectiveness of antimicrobials such as antibiotics, which is spreading worldwide, faster every day, if not addressed, could force millions of people into extreme poverty, hunger and malnutrition.

Antimicrobials such as antibiotics, antifungal, antiparasitic, antiviral and pesticide agents, have saved millions of lives, substantially reduced the burden of diseases in people and animals, improved quality of life, contributed to improved food production and safety and helped increase life expectancy.

However, Antimicrobial Resistance (AMR) has become one of the major serious health threats in the world today. In Uganda, in both humans and animals, infections from resistant bacteria are increasing and some disease-causing germs (pathogens) such as bacteria, viruses, fungi and parasites have become resistant to multiple types or classes of antimicrobials and medicines- including antibiotics.

A Community Animal Health Worker vaccinating a goat in Moroto district, Karamoja Region. AMR resistance in livestock is affecting income and food security of pastoralists and the general population

The loss of effective antimicrobials is a threat to the country's economic activities, undermines the country's ability to ensure food security and fight infectious and zoonotic diseases in the growing population. The latter, such as Anthrax, affect both animals and humans.

According to Priya Gujadhur, FAO Uganda Deputy Representative, antimicrobial resistance is spreading further and faster every day. If left unaddressed, "AMR may force tens of millions more people into extreme poverty, hunger and malnutrition".

"Within the next 10 years, antimicrobial use for livestock alone is projected to nearly double to keep pace with the demands of our growing human population. In just ten years' time, 24 million more people – the equivalent of the entire population of Australia – may be forced into extreme poverty as a result of AMR" she added.

Gujadhur emphasizes the importance of using antimicrobials more responsibly and developing strategies to contain antimicrobial resistance, especially at every stage of the food chain as this would slow the spread of AMR.

Source: FAO Uganda: https://www.fao.org/uganda/news/detail-events/fr/c/1410483/

AMR - risks to human, animal health and welfare, agriculture and food security

The findings of the Global Research on Antimicrobial Resistance (AMR) study show that drug-resistant bacterial infections contributed to almost five millions human deaths in 2019, making AMR a leading cause of death globally.

If action is not taken, according to the study's projections, the cumulative rise of AMR may result in USD 3.4 trillion loss in the world's annual gross domestic income in the next 10 years.

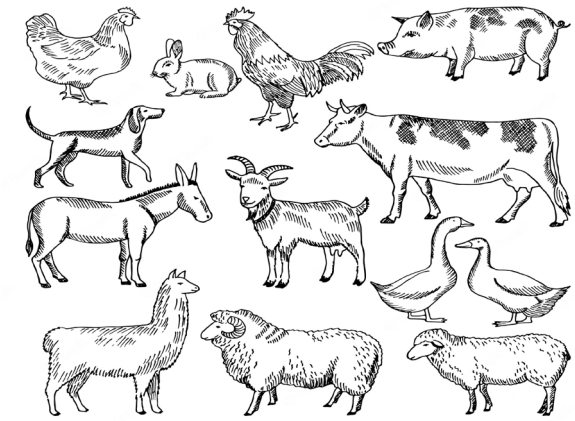
AMR in food and agriculture poses risks to food systems, livelihoods and economies, the study says. Beside their direct negative impact on animals, animal diseases can also affect significantly food production, food security and farmer livelihoods. AMR increases these risks.

The use of antimicrobials in agriculture contributes to the spread of AMR and undermines the effectiveness of veterinary medicines. Making sure these treatments remain effective and available to the agriculture sector is critical,the study advises.

Additionally, drug-resistant infections in humans have also been tracked to foodborne or animal sources. Beyond more direct implications for food production and food safety, AMR threatens the livelihoods of millions who raise animals for subsistence.

TACKLING ANTIMICROBIAL RESISTANCE

The Ministry of Agriculture, Animal Industry and Fisheries' Journey so Far



Introduction

Agriculture is an important sector in Uganda, employing about 68% of the population and contributing about 24% of the national GDP[1]. The livestock sub-sector contributes about 17% of agricultural GDP and about 4% of the National GDP[2]. Uganda currently has an estimated 14.8 million cattle, 17 million goats, 4.6 million sheep, 4.4 million pigs, 43 million poultry1[3].

The livestock industry faces a major challenge of diverse diseases that significantly reduce animal productivity as well as disrupt livestock trade and market access. In order to minimize livestock diseases and their negative effect on livestock productivity and trade, livestock producers tend to rely so much on the use of medicines particularly antimicrobials, a practice which also presents a serious problem of antimicrobial resistance development.

Antimicrobials are medicines that are manufactured to kill microorganisms that infect plants, humans and animals, causing disease. Antimicrobial medicines are therefore critical in saving the lives of crops, humans and animals. However, overuse and/or improper use of antimicrobials are responsible for the emergence of Antimicrobial Resistance (AMR). Overuse and misuse of antimicrobials, therefore, must be avoided.

AMR occurs when microorganisms change over time and are no longer killed by antimicrobial medicines that used to kill them, meaning that infections caused by such microorganisms are harder to treat, increasing the risk of disease spread, severe illness and death.

Livestock diseases caused by resistant microorganisms are not treatable, thus leading to reduced livestock productivity and reduced household incomes, increasing treatment costs, leading to livestock deaths, and negatively affecting the livelihoods of livestock keepers.

Actions taken against AMR

In 2018, Uganda developed a 5-year AMR National Action Plan (AMR-NAP) whose goal is to prevent, slow down and control the spread of resistant microorganisms, while ensuring the continuous availability of safe, effective, efficacious and quality assured antimicrobials and their optimal use. The AMR-NAP proposes several interventions including creation of awareness about AMR and its effects, infection prevention and control, surveillance of both AMR and Antimicrobial Consumption and Use (AMCU) as well as conducting AMR research.

Efforts have been initiated to establish surveillance systems for AMR in the animal, environment and human health sectors, from which some data on AMR in the country has been obtained. Antimicrobial resistant organisms have been identified in the country through surveillance, but the problem has not yet been adequately quantified.

In animal health, steps are being taken to strengthen the AMR surveillance system to support data gathering and quantification of the AMR problem. The following aspects have been strengthened: laboratory capacity to detect AMR; surveillance plans and protocols for AMR and AMCU have been developed; and the AMR information management system is being established.

The data generated so far in the animal sub-sector is already pointing to the occurrence of AMR and some inappropriate use of antimicrobials in animals, prompting the ministry to initiate key interventions to strengthen the regulation of veterinary medicines, particularly antimicrobials, and promote their prudent use in animal health.

Some of the interventions so far include:

(i) Review of the national veterinary medicines policy
(ii) Establishment of the veterinary medicines desk to coordinate with the regulatory body (National Drug Authority),

1 UBOS Annual Agriculture Survey report, 2019
2 UBOS Annual Gross Domestic Product 2020/2021
3 UBOS https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ubos.org%2Fwp-content%2Fuploads%2Fstatistics%2FLivestock_numbers_(thousand_animals)%2C_2013_%25E2%2580%2593_2019.xlsx&wdOrigin=BROWSELINK

(iii) Stopping the importation of animal feeds and feed additives that contain antimicrobials, and
(iv) Drafting of the Animal Feeds Bill.

In line with the AMR-NAP, the ministry is implementing several other interventions in order to prevent or slow down and control the development and spread of AMR, these include;

(i) Development and dissemination of AMR awareness messages for the various categories of stakeholders
(ii) Development and dissemination of guidelines for infection prevention and appropriate use of antimicrobials on farms
(iii) Promotion of farm practices that prevent the entry and spread of disease causing pathogens (farm biosecurity),
(iv) Conducting livestock vaccination campaigns to prevent infections,
(v) Development of the agriculture sector Infection Prevention and Control (IPC) plan,
(vi) Establishment of an AMR technical working committee within the ministry to analyze and discuss AMR data and guide on AMR policy actions,
(vii) Establishment of an AMR coordination center to coordinate AMR activities and information sharing.

Required interventions

The following interventions have been identified as necessary in addressing AMR in the animal sub-sector:

1. Continuous creation of awareness,
2. Supervision and monitoring of the implementation of guidelines to prevent and control AMR,
3. Conducting surveillance of veterinary antimicrobial use on farms,
4. Finalization of the Sector IPC plan,
5. Development and dissemination of veterinary treatment guidelines,
6. Development and dissemination of farm and veterinary facility waste management guidelines,
7. Development and dissemination of farm and veterinary facility infection control manual,
8. Assessment and quantification of the national veterinary antimicrobial needs to guide importation and manufacture

Conclusion and recommendations

1. A system for continuous AMR and AMCU monitoring, data analysis and information dissemination has been established however it still faces the challenge of inadequate supplies and logistics which once addressed, a better national AMR and AMCU picture will be ascertained.
2. The critical interventions that are required, moving forward, to address AMR in the animal sub-sector have been identified and stakeholders are called upon to support the implementation of these activities. It is important that this be done in a well-coordinated and harmonized approach.

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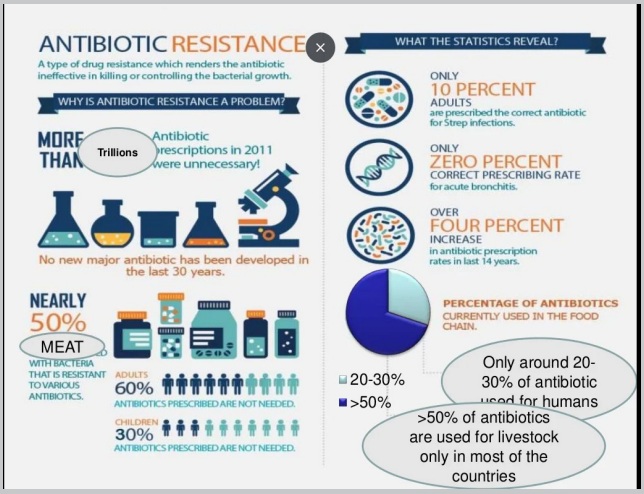
WHAT IS ANTIMICROBIAL RESISTANCE?



Antimicrobial resistance (AMR) is the ability of micro-organisms to persist or grow in the presence of drugs designed to inhibit or kill them. These drugs, called anti-microbials, are used to treat infectious diseases caused by microorganisms such as bacteria, fungi, viruses and protozoan parasites.

When microorganisms become resistant to antimicrobials, standard treatments are often ineffective, and in some cases, no drugs provide effective therapy. Consequently, treatments fail. This increases illness and mortality in humans, animals and plants.

In agriculture, this causes production losses, damages livelihoods and jeopardizes food security. AMR can spread among different hosts and the environment, and antimicrobial resistant microorganisms can contaminate the food chain.

Every time we use antimicrobials in people, animals and plants, germs have a chance to acquire the ability to tolerate the treatments by becoming resistant, making the drugs less effective over time.

The cost of AMR to national economies and their health systems is significant as it affects the productivity of patients or their caretakers through prolonged hospital stays and the need for more expensive and intensive care.

The main drivers of AMR include;

- Misuse and overuse of antimicrobials.
- Lack of access to clean water, sanitation, and hygiene (WASH) for both humans and animals.
- Poor infection and disease prevention and control in health-care facilities and farms.
- Poor access to quality, affordable medicines, vaccines, and diagnostics.
- Lack of awareness and knowledge about AMR.
- Lack of enforcement of legislation.

Voices from the COMMUNITY

“Farmers are one of the most AMR affected groups. Unfortunately, they are among the top AMR drivers due to inappropriate and over use of antimicrobials. State and non state actors must scale up sensitization of farmers on rational use of drugs to avert the AMR problem. It is possible, and it must be done immediately and sustainably,”

-Dr. Dick Kamuganga
President, Uganda National Farmers Federation

“We must start enforcing guidelines on prescription first before procuring medicines. This is key in eliminating the habit of self medication which leads to misuse of antimicrobials,”

- Egwar Daphne Cristine
Gulu City

“Selling of veterinary drugs from any place must be regulated so that farmers buy from qualified veterinary personnel who are able to guide on proper use of drugs. Over use and misuse of veterinary drugs among farmers is mainly due to inadequate guidance,”

- Mwaka Samuel Baker
Farmer, Gulu City

“Public sensitization on the right use of antimicrobials is key. This should be a deliberate and sustainable practice. The public has the power to exacerbate AMR problem or to lessen it. With an information empowered public, we can combat AMR and avert animal and human death and other AMR related problems,”

- Sr. Josephine Oyella
Pharmacist
St. Mary’s Hospital Lacor

VETERINARY MEDICINES HANDLING AND USE

What Every Farmer Must know

Obtaining veterinary medicines

- Seek professional advice if you are in doubt.
- Do not give medicines for injection, medicines for infusion into the udder, or medicines added to feed or water unless they are absolutely necessary and have been prescribed by the veterinary practitioner
- Only use prescribed medicines to treat the specific animals for which they were prescribed.
- Ensure that the end of medication for in-feed or in-water is clearly defined by cleaning all equipment used thoroughly including pipes, bins, header tank etc.
- Make and keep a record of the animal treated, product used, dose, duration of treatment, and withdrawal period.
- Obtain clear instructions regarding diagnosis, and the prescription from the veterinary practitioner.
- Do not use medicines without instructions.
- Give animals the full course of treatment at the correct dosage for the defined period.
- Do not give two or more antimicrobials at the same time unless your veterinary practitioner has advised you to do so.

Storage of veterinary medicines

- Store medicines as indicated on the medicine label.
- Store most medicines in a clean, cool, dry area such as a farm office or utility room.
- Store medicines away from direct sunlight, dust, animals and insects.
- Store medicines that should be refrigerated at temperatures between 2° C and 8° C.
- Keep medicines locked away from the reach of children and unauthorized persons.

Disposal of unused or expired medicines

Return unused medicines to the prescribing veterinary practitioner or supplier for disposal.

Dispose of unused, out-of-date medicines, containers and application equipment (including needles) when the treatment for which they were intended is completed. Follow manufacturer’s advice as written on medicine label. Do not reuse medicine containers; wash them and dispose of them in a pit.

Withdrawal period

A withdrawal period is the minimum time required between the last treatment and the collection of meat or milk for human consumption. The withdrawal period ensures that the food produced from treated animals does not contain harmful residues.

Identify treated animals like cattle to ensure that withdrawal times are observed. Observe the minimum withdrawal period for milk and meat as instructed by the drug manufacturer. Observe a minimum withdrawal period for meat as instructed by the manufacturer.

TIPS FOR FARMERS ON DIAGNOSIS OF COMMON ANIMAL CONDITIONS

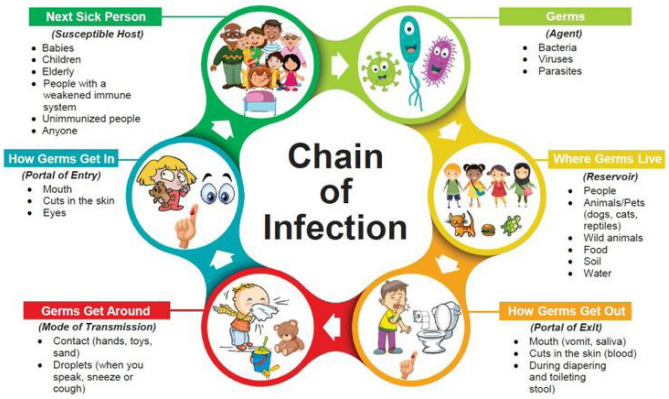
A Community Animal Health Worker vaccinating a goat in Moroto district, Karamoja Region (FAO Uganda)

In all animal species, prevention is better than cure. However, sometimes animals become sick regardless of good prevention strategies and proper care. When this happens, early recognition and proper treatment is essential to protect animal welfare and promote responsible use of medicines.

In this, experts are tipping farmers to take caution and play a leading role in proper diagnosis through;

- Isolate sick animals so as to slow the spread of disease to healthy ones and allow increased care for the sick.
- Animals with different diseases should be kept in different groups.
- Protect isolation pens/paddocks from extreme weather to aid in animal recovery.
- Check the signs that the animal is displaying that are different from the normal to identify the disease.
- Consult a veterinary practitioner to accurately diagnose the disease.
- Give accurate information to the veterinary practitioner to aide in making a correct diagnosis.
- In case the veterinary practitioner wants to take samples from the animals, allow him/her to do so to make an accurate diagnosis.

Source: MAAIF



Four Guiding Principles on Infection Control in Cattle Farming

Rule 1:
Review biosecurity of new cattle introduced into a herd; Diseases spread around and between farms by contact with other cattle. Remember contact can occur even indirectly by a needle, surgical instrument, manure, or people. Secure your farm with a fence, isolate and quarantine new animals brought to the farm, and disinfect farm equipment routinely.

Rule 2:
Stress is a killer. Avoid or minimize the levels of stress the cattle are exposed to. Stressed animals are far more likely to become diseased. This includes not only obvious physical stress factors, such as overcrowding or management procedures, but also exposure to microorganisms, which can cause major stress to the immune system. Think if a procedure (e.g., castration or introduction of heifers to the dairy herd) causes the cattle to become stressed, ask "Can this be done in a less stressful manner?"

Rule 3:
Good management and hygiene; There is no substitute for good management, hygiene and biosecurity measures. Cleaning buildings and equipment, paired with good hygiene, will make a difference. Don't spread disease by poor management and hygiene.

Rule 4:
Good nutrition; Sufficient intake of colostrum provides essential antibodies to protect calves as their immune system is developing. Balanced diets with adequate levels of trace elements, vitamins, and antioxidants are essential if the immune system of cattle is to work properly in tackling disease.

Source: MAAIF

UPCOMING AMR-RELATED EVENTS

Global Handwashing day

October 15th is Global Handwashing Day, dedicated to increasing awareness and understanding about the importance of handwashing with soap as an effective and affordable way to prevent diseases and save lives. With proper handwashing, people will not get sick, meaning the need for antimicrobials which are misused and over used leading to AMR will be minimal.

One Health Day

HEPS- Uganda will take part in this year's One Health Day celebrations. November 3, 2022, marks the fifth annual One Health Day, a global campaign that celebrates and brings attention to the need for a One Health approach to address shared health threats at the human-animal-environment interface.

World Antimicrobial Awareness Week: 18-24 November, 2022

The World Antimicrobial Resistance Awareness Week (WAAW) aims at increasing awareness of global antimicrobial resistance. During WAAW, the general public, health workers and policy makers are encouraged to apply best practices that avoid further emergence and spread of drug resistant infections.

ABOUT HEPS-UGANDA

Coalition for Health Promotion and Social Development (HEPS-Uganda) is a non-governmental organization (NGO) that promotes the health and socioeconomic rights of vulnerable people.

We work in 30 districts across all regions of Uganda; at community, district and national levels.

Our secretariat is in Kampala, and regional offices in Lira, Mbarara and Kamuli.

VISION
A society where health and socioeconomic rights are realized.

MISSION
To promote access to health and socio-economic resources through research, capacity-building, advocacy and collaboration.

GOAL
Improved health and socioeconomic outcomes.

VALUES
- Diversity, equity and inclusion
- Integrity
- Innovation
- Partnership & collaboration

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