

Antibiotics are widely used in healthy food-producing animals to promote growth and prevent disease. This practice favours the emergence and spread of resistant bacteria in both animal and human populations.

### 1. Why is addressing the use of antimicrobials in food-producing animals essential for combating antimicrobial resistance?

The routine use of antimicrobials in vast numbers of healthy animals is likely to result in the emergence and spread of antimicrobial-resistant bacteria, and cause resistant infections in animals and humans.

Resistant microorganisms carried by food-producing animals can spread to humans through consumption of contaminated food, from direct contact with animals, or by environmental spread, for example in contaminated water.

The genes coding for antimicrobial resistance can be transferred from microbes carried by animals to microbes that cause disease in humans.

Food animals and foods of animal origin are traded worldwide; as a result, antimicrobial resistance (AMR) affecting the food supply of one country becomes a potential problem for other countries.

The use of a glycopeptide (avoparcin) as a growth promoter in food animals in Europe resulted in the development of vancomycin-resistant Enterococci (VRE) in the commensal flora of food animals, on meat from these animals and in the commensal flora of healthy humans, despite the limited use of glycopeptides such as vancomycin only in hospitalized patients. A subsequent ban on the use of avoparcin in food animals in the European Union reduced the occurrence of VRE in animals and its carriage by the general population.

The use of fluoroquinolones (e.g. enrofloxacin) in food-producing animals has resulted in the development of ciprofloxacin-resistant Salmonella, Campylobacter and Escherichia coli, which have caused human infections that proved difficult to treat. In several instances, such bacteria have spread worldwide through travel and food trade.

### 2. Challenges to overcome

**Lack of information:** Data on the occurrence of resistance and on antimicrobial use in animals are essential for risk analysis and to assess the effectiveness of control measures. However, few countries have systems to monitor antimicrobial resistance and even fewer have systems to monitor the use of antimicrobials in animals.

**Lack of standardized data collection:** The data collected are often difficult to interpret and compare because the methods used to obtain them are not standardized.

**Lack of intersectoral collaboration:** Without coordinated AMR surveillance in bacteria from humans, food and animals it is difficult to assess the public health impact of antimicrobial use in food-producing animals and to take corrective measures.

**Inadequate training:** lack of training on appropriate use of antimicrobial agents in food-producing animals, and insufficient understanding of their potential contribution to AMR in humans, are common among farmers, veterinary prescribers and dispensers.

**Perverse incentives:** The unnecessary use of antimicrobials is often encouraged by financial incentives, such as achieving sales profits by veterinarians, or perceived benefits, such as promoting the growth of food-producing animals.

**Gaps in legal and regulatory controls:** Insufficient legislation and regulation to restrict the approved use of licensed antimicrobials, and to control the supply of antimicrobials, facilitates the excessive use of antibiotics.□

### 3. Core actions

(A)□ Provide national leadership and promote intersectoral collaboration

Establish a formal mechanism of interaction between the Ministry of Health and other relevant ministries and authorities to address the issue of AMR in the agricultural sector.

Include agricultural and veterinary authorities in the national intersectoral steering committee on AMR.

(B)□ Create and enforce an enabling regulatory framework

Establish a regulatory framework for authorization and control of the quality of veterinary medicines.

Introduce pre-licensing safety evaluation of antimicrobials for veterinary use, with consideration of potential resistance to drugs used in human medicine.

Terminate non-therapeutic use of antimicrobials, such as the use of antimicrobials as growth promoters.

Restrict or eliminate the use in food-producing animals of antimicrobials identified as critically important in human medicine, especially the use of fluoroquinolones, and third- and fourth-generation cephalosporins.

Require obligatory prescriptions for all antimicrobials used for disease control in food-producing animals.

**(C) Strengthen surveillance and monitoring**

Create national systems to monitor antimicrobial usage in food-producing animals.

Develop national integrated surveillance programmes to monitor current and emerging AMR patterns (including quantitative susceptibility data for zoonotic pathogens and indicator bacteria). Surveillance should involve close collaboration between public health, veterinary and food laboratories.

Set up a multidisciplinary task force involving authorities in public health, veterinary medicine and food safety to act on the surveillance data for identification of trends, assessment of risks and timely implementation of focused interventions.

Engage in the development and adoption of standardized protocols to facilitate global harmonization in surveillance of antimicrobial usage in humans and animals, and of antimicrobial resistance.

**(D) Promote education and training on antimicrobial use in food-producing animals**

Develop and implement national guidelines on prudent use of antimicrobials in food-producing animals, with multidisciplinary involvement, taking into consideration antimicrobials categorized as critically important for human medicine.

Provide training for veterinarians and farmers on the use of these guidelines; and implement auditing and feedback to veterinarians and agricultural producers to improve compliance.

Develop and implement education strategies that emphasize the importance and benefits of prudent use principles, and provide relevant information on AMR to producers, stakeholders and the public.

**Facilitate implementation of the Codex Alimentarius and OIE (World Organization for Animal Health) guidelines related to antimicrobial resistance.**

**(E)  Reduce the need for antimicrobials through better animal husbandry**

**Introduce measures to improve animal health, and reduce the need for antimicrobial treatment, including application of effective vaccines.**

**Improve health management for food animal production by ensuring good hygiene practices and compliance with good farming practices.**

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