

What the veterinary world does to fight antimicrobial resistance

Introduction

This document presents an overview of how the veterinary sector plays an active role in fighting anti-microbial resistance. It does so in multiple ways including policy tools, veterinary and animal health practices and educational outreach. Antibiotics play a vital role in animal health and welfare. It is important to achieve the appropriate balance between protection of public health and the environment and the need to treat sick animals.

International organisations

The World Animal Health Organization (OIE) is the global organisation that sets standards in animal health - the animal equivalent of the World Health Organization (WHO). The OIE has worked for many years on antimicrobial policies and to preserve the efficacy of, and prolonged usage of antibiotics in veterinary medicine. In this area, OIE is the global leader as part of the Tripartite Action Plan among OIE, FAO and WHO.

- Global list of antimicrobial agents of veterinary importance. In 2003/04 OIE organized workshops on scientific assessment and management options leading to the development of the list. The 2013 OIE Global “*Conference on Antimicrobial Resistance*” focused actions on a range of issues - especially prudent use.
- Monitoring and surveillance. Since the early 2000s, the OIE has developed intergovernmental standards on antimicrobial resistance and on the monitoring of quantities of antimicrobial agents used. The OIE is now developing the global surveillance mechanism regarding antimicrobial veterinary use.
- Global standards. OIE has developed global standards to address the risk of emergence or spread of resistant bacteria in food-producing animals, which are included in policy and other documents - most notably the “*Terrestrial Animal Health Code*”, “*The OIE Intergovernmental standards for Aquatic Animals*” and the “*Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*”.
- Training, education and research. OIE trains and educates veterinary health authorities around the world and has included AMR for many years in its curricula. OIE has been active in encouraging the development of alternatives for a number of years and is organising a global conference on the issue in December 2016.

The Codex Alimentarius established “*Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance*” and a “*Code of Practice to Minimize and Contain Antimicrobial Resistance*”, and the WHO established the “*Antimicrobial Action Plan*” with significant OIE and FAO input.

National Authorities

National authorities have acted in four main areas: action plans to counter AMR, surveillance, R&D and usage. The activities listed are examples from 6 large markets. Many other countries also undertake similar activities.

Action plans to counter AMR

- In the **U.S.** the “*National Action Plan for Combating Antibiotic-Resistant Bacteria Action Plan*” and the “*Presidential Advisory Council on Combatting Antimicrobial Resistance*” were established in 2015.
- In **Europe** the European Commission issued “*Prudent Use Guidelines*” in 2015 and the EU developed an “*Action Plan on Antimicrobial Resistance*” in 2011. Many EU countries are implementing national plans.
- In **Canada** the “*Federal Action Plan on Antimicrobial Resistance and Use*” was established in 2015.
- In **India** the Ministry of Health with the Ministry of Agriculture (GOI) released advisories for judicious use.
- In **Japan** the “*Prudent Use Guideline*” has been in effect since 2013. The Ministry of Agriculture will launch an AMR plan
- In **China** the Ministry of Agriculture issued the “*National 5-Year Action Plan for Comprehensive Control of Antibacterials*” in 2015, with zero use of banned medicines and 97% of qualification rate as the target for 2019.

Surveillance of AMR

- In **Europe** the “*European Surveillance of Veterinary Antimicrobial Consumption*” (ESVAC) started collecting usage data in 2005.
- In the **U.S.** FDA has collected antimicrobial sales data since 2008, and FDA/USDA/CDC collects AMR data since 1996.
- The **Canadian** CIPARS programme monitors trends in antimicrobial use and antimicrobial resistance in selected bacteria, and the industry association CAHI reports the kg of active distributed annually to CIPARS.
- In **Japan** the “*Japan Veterinary Antimicrobial Resistance Monitoring System*” collects antimicrobial use resistance data.
- In **China** the Ministry of Agriculture is increasing the number/scope of veterinary antibacterial residue inspections for livestock/aquaculture products, and strengthening the control/monitoring of production/sales of veterinary antibacterials.
- There are many national surveillance/resistance monitoring programmes (NARMS, DANMAP, RESAPATH, GERMVET).

Research of new antibiotics and alternatives

- In the **U.S.** authorities (USDA and others) have funded research into alternatives to antibiotics.
- In the **EU**, EFFORT (Ecology from Farm to Fork Of microbial drug Resistance and Transmission) started in 2014.
- **Canada's** Federal Action Plan includes alternatives to antimicrobials.
- In **India** prevention of microbial diseases and use of alternative medicines is being emphasised by the Department of Biotechnology and other Ministries, and the first is funding indigenous vaccines and alternative medicines projects.

- In **China** the government has called for local authorities to provide more technological support to industry and encourage investment into R&D for alternatives to antibiotics.
- The **global** Star-IDAZ International Research Consortium has included AMR in its programme.

Responsible/judicious use coalitions

- In the **U.S.** there is a judicious use coalition of pioneer and generic animal medicines companies working with the FDA on eliminating growth promotion uses of medically important antimicrobials.
- In **Europe** the “*European Platform for the Responsible Use of Medicines in Animals*” (EPRUMA) is a platform of 10 organisations from farm to fork advocating guidance of responsible use since 2005. There are also equivalent national responsible use platforms (e.g. RUMA (UK), Vetresponsable (Spain), AMCRA (Belgium), etc.)
- In **Canada** the National Farm Animal Health and Welfare Council has developed a white paper reflecting on initiatives to ensure appropriate use of antimicrobials.
- In **Japan** the government, veterinary and animal health industry association (JVPA) collaborate on the “*Prudent Use Guideline*”.

Veterinarians

The governmental veterinary community is brought together under the auspices of the OIE (see page 1). The private sector is represented by the World Veterinary Association (WVA) and its member associations representing over 500,000 private veterinarians across six continents. These organisations strongly support the responsible use of antimicrobials.

- Usage. The global veterinary profession has issued guidance via its policy statement on *Responsible Use of Antimicrobials* to hundreds of thousands of veterinarians worldwide.
- Education. The WVA supports the OIE recommended Day 1 Core Competencies for veterinary medical education which includes the need to “understand common mechanisms leading to development of antimicrobial resistance in common pathogens” and the OIE recommended model core veterinary curriculum to include Pharmacology/Toxicology which incorporates “mechanisms of drug resistance”. The WVA emphasises pharmaceutical stewardship as a priority issue for the global veterinary profession and provides continuing education in all its conferences on responsible use and disposal of antimicrobials to decrease risk of antimicrobial resistance or any effects that could affect public health through food products of animal origin.
- Events. The 2011 Global Summit on Antimicrobials made a number of recommendations for responsible and prudent use. Future events include the 2015 & 2016 Global Conferences on One Health and the 2017 World Veterinary Congress with educational sections on Antimicrobials.
- Responsible/judicious use coalitions. The WVA joins the OIE and WHO in support of protecting animal and human health through the worldwide effort to decrease antimicrobial resistance. Many national veterinary groups are involved in responsible use through their national responsible use platforms and provide educational materials for their members and for their members’ clients.

Animal medicine producers

Animal medicines producers and their national, regional and global associations have been active contributors to judicious/responsible use for over two decades. Significant thought and resource have been devoted to use, control and application of antimicrobials that has resulted in numerous actions toward better control of the issue.

- Regulatory review. All antibiotics proposed by animal health companies undergo thorough review by authorities, which includes an assessment of resistance risk. This encompasses not only resistance of bacteria in animals but also in food-borne bacteria, as well as risk management of any potential change of the human gut flora. As regulated companies, they strictly apply good manufacturing practice ensuring that the medicines comply with all quality requirements.
- Monitoring, surveillance and usage studies. The industry has a longstanding commitment to monitoring and surveillance resistance since 1998. It supports the CEESA programme - a unique pan-European programme of monitoring resistance in foodborne and veterinary pathogens. To date, no other such programme exists. Industry has contributed to usage studies conducted by others, including the FDA (US), ESVAC (EU) and OIE (global). In each case, companies have contributed to programme’s quality and have voluntarily submitted data.
- Responsible/prudent use standards. Animal medicines companies and associations have contributed proactively to the development of responsible use guidelines in Codex, OIE, WHO, as well as in many countries. Industry has a long commitment dating back to first prudent use guidelines, developed together with the WVA and the global farmers’ organisation. Industry has contributed in time, commitment and finance to numerous platforms, like the British platform RUMA or its European equivalent EPRUMA or global GPRUMA.
- Labelling and practices. In the US all companies voluntarily contributed to the FDA plan of removing efficiency claims from medically important antibiotics from growth promotion. Companies follow requirements in terms of marketing and distribution, as prudent use guidelines are increasingly being included in labels.
- Research and development. The industry also contributes via R&D by bringing new solutions to infectious diseases, such as vaccines, immunostimulants, or other anti-infective solutions.
- Communicating appropriate use. Industry has communicated with users for many years regarding responsible/judicious use. Core has been that antibiotics should always be handled in such a way that limits their potential for stimulating the development of resistant bacterial strains. They should be “*used as little as possible, but as much as necessary*”. Antibiotics help fulfil the moral obligation we have to animals in our care. They help prevent suffering, waste and losses caused by disease.