

Department of Health: Technical Engagement on the New UK Five-year Antimicrobial Resistance Strategy and Action Plan

1. The following response is made on behalf of the Royal College of Veterinary Surgeons (RCVS). The RCVS is the regulatory body for veterinary surgeons in the UK. The role of the RCVS is to safeguard the health and welfare of animals committed to veterinary care through the regulation of the educational, ethical and clinical standards of veterinary surgeons and nurses, thereby protecting the interests of those dependent on animals, and assuring public health. It also acts as an impartial source of informed opinion on relevant veterinary matters.
2. The RCVS strongly commends the efforts of the Department of Health in developing a five-year strategy and action plan to address the issue of antimicrobial resistance. Antimicrobial resistance is one of the biggest threats facing both human and veterinary medicine. The RCVS considers that it is imperative that an effective strategy is adopted to ensure the efficacy of current antimicrobial drugs is maintained and that new products can be brought to the market. Such a strategy must be evidence based and take a 'one health' approach whereby the human and veterinary medicine professions work together to address this shared problem.
3. The RCVS lends its support to the seven strategic aims laid out in the document and welcomes the prominence that animal health is given within these. The RCVS applauds the recognition that the strategy gives to antimicrobial drugs being essential for ensuring the health and welfare of food-producing and companion animals, and considers that this should inform further debate on the use of antimicrobial drugs in animals.
4. The RCVS is largely supportive of the strategic outcome measures, but considers that they may need some adapting to apply to animal health.
5. The RCVS also has concerns relating to strategic outcome 3 and the proposed aim of 'reducing veterinary sales of antibiotics by 5% through improvements in usage and antibiotic stewardship to be reflected in a reduction in [the] amount of active ingredient sold for each Kg of meat produced'. The responsible and prudent use of antimicrobial drugs does not necessarily equate to the reduction in use of antimicrobial drugs. This is because targets for reduction in usage can lead to irresponsible or inappropriate usage of antimicrobial drugs such as using shorter courses or lower doses specifically for the purpose of meeting such targets. Consequently, measuring outcomes in terms of reduced sales in isolation, may not always be the most appropriate way to assess the effectiveness of a strategy to tackle resistance.
6. In addition, the RCVS notes that strategic outcomes 3 and 4 only apply to farm animals and do not address antimicrobial resistance in companion and other non-production animals, which should also be considered.

General Points

7. The role of 'pets' in 'Figure 1', which shows the connections in the ecosystem and how the use of antimicrobial drugs in one area can impact upon others, is unclear. The RCVS considers that

'Companion Animals' would be a more appropriate term as it would cover the wide range of non-sporting and non-production animals. The risk of two-way zoonotic transfer is unknown but companion animals and humans have been shown to exchange pathogenic and commensal organisms. Thus, for example, some studies have shown that humans and dogs share staphylococci in 20-75% of households, canine and feline MRSA isolates are usually the most prevalent isolates in the human population, and although equine and farm animal MRSA isolates are uncommon in the general human population they are more common in humans that are in contact with these species.

8. The RCVS agrees with the emphasis placed on production animals and the food chain, but notes that the small, but real, risk caused by other animal-human interactions in the development of antimicrobial resistance may not be adequately addressed.
9. The RCVS strongly supports the statement made by the authors of the Department of Health commissioned study into the burden of antimicrobial resistance that "we need to pursue a path that does not place undue emphasis on the current burden and cost but reflects the importance of stewardship for the future".

Best practice and preventing infection

10. The RCVS applauds efforts to promote best practice in terms of strengthening infection prevention and control measures in a healthcare setting. Antimicrobial drug use is not and should not be an acceptable substitute for using appropriate infection control measures or good animal husbandry.
11. The RCVS has undertaken considerable work to promote best practice in other forms of veterinary practice and to implement effective systems of infection control. One particularly effective way that the RCVS seeks to promote best practice in veterinary surgeries and to ensure that infection control systems are implemented is through the Practice Standards Scheme (PSS), which is a voluntary initiative to accredit veterinary practices in the UK. The Scheme aims to promote and maintain the highest standards of veterinary care, by setting standards and carrying out regular inspections of accredited veterinary practices.
12. Responsible use of antibiotics can also be improved by providing doctors and veterinary surgeons with rapid bedside/penside diagnostics that can distinguish viral and bacterial infections (and, among the latter, gram-positive and gram-negative bacteria). The RCVS supports policies that promote the transfer of knowledge between research laboratories and clinical practice, and that can contribute to a future where molecular and microbiological data are commonly used to inform therapeutic choices.
13. The RCVS would also propose that the determination of the dose schedule of antimicrobial drugs, at least for novel agents, should be based on the application of sound scientific principles, involving the application of data linking pharmacokinetic and pharmacodynamic properties using PK/PD integration and PK/PD modelling approaches.

Awareness raising and education:

14. The College is strongly supportive of the high priority that the strategy and action plan place on education, and raising awareness amongst the healthcare professions and the public, in relation to the problems posed by antimicrobial resistance.
15. The RCVS is concerned, however, that the strategy document understates the important role that the internal staff at the UK veterinary schools play in educating students about the responsible and prudent use of antimicrobial drugs.
16. The RCVS has a statutory duty to set and monitor the standards of veterinary degrees for registration purposes, and runs the statutory examination for membership for overseas veterinarians wishing to practise in the UK. Through the regulation of veterinary degrees and the registration of overseas veterinary surgeons the RCVS ensures that veterinary surgeons practising in the UK understand the importance of the responsible use and prescription of antimicrobial drugs.
17. In addition to setting the standards of veterinary education, the RCVS is also responsible for regulating the professional conduct of veterinary surgeons. In order to assist in maintaining the efficacy of antimicrobial drugs and to ensure their appropriate use and prescription, the supporting guidance to the RCVS *Code of Professional Conduct for Veterinary Surgeons* stipulates:

'The development and spread of antimicrobial resistance is a global public health problem that is affected by use of these medicinal products in both humans and animals. Veterinary surgeons must be seen to ensure that when using antimicrobials they do so responsibly, and be accountable for the choices made in such use. Resistance to anthelmintics in grazing animals is serious and on the increase; veterinary surgeons must use these products responsibly to minimise resistance development.'

18. The veterinary profession is engaged in a number of projects to educate the public and profession about antimicrobial resistance and the strategy document should recognise the contribution of this work. The RCVS strongly supports the work for the Responsible Use of Medicines in Agriculture (RUMA) Alliance and the European Platform for the Responsible Use of Medicines in Animals (EPRUMA) which aim to promote co-ordinated and integrated approaches to best practice in the use of medicines. The RCVS also supports, and where possible promotes, the valuable work of the British Veterinary Association (BVA) and the Federation of Veterinarians of Europe (FVE) and others to encourage the responsible prescription and use of antimicrobial drugs and to educate the public and the profession about the risks associated with antimicrobial resistance.
19. The RCVS also gives its backing to the aims of the European Antibiotic Awareness Day (EAAD) which helps to educate animal owners about the importance of responsible antimicrobial drug use.

Evidence base and surveillance

20. There is a lack of data on antimicrobial drug use in companion animals in the UK and the data that does exist is based on tonnage and sales as opposed to use. Furthermore, there is currently no effective national system for reporting antimicrobial resistance trends in companion animals. For

some time, therefore, the RCVS has supported the introduction of a system whereby prescribing veterinary surgeons are provided with information from pharmacies that allows them to make checks to ensure that the animals under their care are provided with the correct drugs and that all prescriptions which they write are being properly fulfilled and collected. Such a system would serve to improve the collection of data on the use of veterinary prescription and adverse reactions, as checks could be made on the precise drugs that were issued to the client, the quantity of medicine issued and whether the prescription was collected and by whom.

21. The Small Animal Veterinary Surveillance Network (SAVSNET), for example, has been set up by the University of Liverpool supported by British Small Animal Veterinary Association (BSAVA) as a means to “monitor the current (and future) disease status of the small animal population in the United Kingdom”. In 2011 a study on antibacterial prescribing patterns, using data collected through SAVSNET, was published (Radford et al, 2011, *Veterinary Record* 169.310). The RCVS considers that monitoring projects such as SAVSNET should be widened to take account of antimicrobial drug use and thus to improve the evidence base in this field. The introduction of a system that allowed veterinary surgeons to make checks on whether prescriptions have been fulfilled and collected would improve the data that such monitoring schemes could gather.
22. The RCVS would also strongly encourage research funding bodies to make reducing antimicrobial resistance a key strategic aim in veterinary research programmes.

Development of new drugs

23. The RCVS commends the strategic aim of facilitating the development of new drugs, vaccines and immunotherapeutic agents. Ensuring that there is an active antibiotic drug development pipeline is also an area of major concern.
24. In addition to the proposals to encourage research and to explore the use of a regulatory fast-track, the RCVS suggests that regulatory incentives such as prolonging patent life could also be considered to encourage pharmaceutical companies to develop new antibiotics, especially those with new modes of action.
25. The RCVS also notes that antibiotics are rarely specifically developed for veterinary use. This means that veterinary medicine must inherit medical products, making it potentially vulnerable to the human medicine development pipeline.

Collaboration and data sharing

26. The College supports efforts to improve international and inter-professional data sharing and collaboration to tackle antimicrobial resistance.
27. In order to promote effective collaboration between the healthcare professions and to position antimicrobial resistance as a ‘one-health’, the RCVS instigated a joint symposium, involving the Royal College of Physicians and the Royal College of Pathologists, in conjunction with the Health Protection Agency, entitled ‘Antimicrobial resistance in human and veterinary medicine – one health, one problem?’. This event was held on 2 October 2012 and sought to provide an evidence base for a rational debate on the topic of antimicrobial resistance. A joint communiqué from the organisers of the symposium is due to be published shortly.

28. Regarding the consideration that the European Commission is giving to potential restrictions on the regular or cascade (off-label) prescription of certain new critically important human antibiotics in the veterinary sector, the College notes that there is a lack of specific, licensed products for many species due to their relatively small markets. Off-label 'cascade' use is therefore essential to deliver healthcare and to ensure the welfare of many minor species.. The off-label use of antimicrobial drugs in animals, however, is a complex issue and strict adherence to the prescribing cascade can lead to anomalies in veterinary practice. The prime aim of the cascade is to protect the food chain by ensuring that drugs used in farmed species are correctly licensed with appropriate withdrawal times. In certain circumstances, however, following the cascade can conflict with good antimicrobial practice by promoting the use of 2nd or 3rd line drugs over 1st line or topical drugs. It could be argued that following good antimicrobial prescribing practice gives clinical justification for going 'off-cascade', but anomalies should be studied and good practice should inform the cascade in non-food producing species. Moreover, the College considers that the off-label use of antibiotics that are critically important in human health should not be condoned.
29. Regarding the advertising of antimicrobials, the College welcomes the proposed revision to the Veterinary Medicines Regulations that will prohibit the advertising of antimicrobial products to professional keepers of animals. The College considers that this represents a useful step towards promoting the responsible use of antimicrobials and should reduce the pressure that clients can put on veterinary surgeons to prescribe newer antimicrobial drugs or existing but inappropriate antimicrobial drugs. More generally, the College considers that the advertising and promotion of antimicrobial drugs should be strictly regulated to ensure that it complies with guidelines for responsible use.

Omissions

30. The College notes that one major omission from the strategy would appear to be recognition that major risks exist as a result of irresponsible and inappropriate use of antimicrobials outwith the EU, and the importation of resistant bacteria as a result of human travel. The RCVS considers that the strategy should recognise these risks and propose proactive steps to help to minimise them.
31. A further omission relates to anecdotal evidence that it is easy to obtain a wide variety of antimicrobials from overseas internet pharmacies without a prescription. The strategy and action plan should also consider what proactive measures could be taken to address such a trade.