

Developing a national antimicrobial resistance strategy for Australia



Commentary on the discussion paper from the Australian Veterinary Association Ltd

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Introduction

The Australian Veterinary Association (AVA) is the national organisation representing veterinarians in Australia. Our 8500 members come from all fields within the veterinary profession. Clinical practitioners work with companion animals, horses, farm animals, such as cattle and sheep, and wildlife. Government veterinarians work with our animal health, public health and quarantine systems while other members work in industry for pharmaceutical and other commercial enterprises. We have members who work in research and teaching in a range of scientific disciplines. Veterinary students are also members of the Association.

'Fighting antimicrobial resistance' is one of the AVA's [five strategic priorities](#). Our program commenced in July 2013 and we intend that it will continue for several years. [The program](#) includes communication with veterinarians, the public and human health professionals about resistance and antibiotic use in animals. Several major projects are also underway to improve antimicrobial stewardship by the veterinary profession, and these are detailed in the relevant sections below.

Section 2 – Goal and objectives

AVA is supportive of the proposed goal and objectives as covering the areas of action required. Broadly speaking, the animal health sector is accurately represented and AVA is committed to remaining involved in planning and implementation of the national strategy.

Section 4 – Infection prevention and control

Nationally consistent standard operating procedures would indeed be valuable and the AVA would be the ideal organisation to develop these. A large amount of detailed preparation went into the first and second editions of the AVA's *Guidelines for veterinary personal biosecurity*. These guidelines included some simplified resources of the key messages and procedures that would be an excellent starting point. The guidelines and associated resources can be found at <http://www.ava.com.au/biosecurity-guidelines>.

Importantly, progress in the implementation of standard operating procedures would be difficult without the research suggested in action 1.9. Further research is definitely needed to understand the attitudes and practice of infection control in veterinary practices. Some veterinary researchers have published initial research into this topic, particularly in Queensland where Hendra virus emerged as a major work health and safety threat to veterinary personnel. Findings so far indicate that there is significant room for improvement in infection control in veterinary practices. There are veterinary researchers attached to each of Australia's seven veterinary schools, CSIRO and state departments of agriculture, so research funding is the only current barrier to filling this identified gap.

Both veterinarians and industry organisations provide information to farmers, producers and workers about disease prevention and control. It is likely that there is a reasonable level of consistency of key messages across information provided by these diverse groups, but no doubt existing information could be improved and promoted more widely.

Section 5 – Surveillance

Establishing surveillance systems for antimicrobial resistance and usage in animals should remain one of the top priorities for any national strategy to tackle this problem. There are currently very large gaps in information to help us understand the risks and implications of antibiotic use in animals.

AVA has been involved in the development of the report *“Surveillance and Reporting of Antimicrobial Resistance and Antibiotic Usage in Animals and Agriculture in Australia”*. The preparation of this report was very thorough and undertaken with appropriate stakeholder consultation. It addresses levers, incentives and mechanisms to maximise participation in the surveillance programs. The final surveillance systems will need to be compatible with surveillance systems in human health to help identify any links or trends across all species.

To complete the surveillance picture it is important to include surveillance along the food chain, especially post-harvest. This area has not yet been the subject of review and recommendation.

Section 6 – Stewardship

There is a high level of confidence across the veterinary profession in the registration of antibiotics for animals by APVMA. The evaluation process is firmly based in scientific evidence, taking into account safety, efficacy and quality as well as potential effects on human health. The fact that no fluoroquinolones have been registered for use in food-producing animals and the limited registration of third and fourth generation cephalosporins has contributed significantly to Australia having lower resistance problems in animals than many other countries with less stringent regulatory approaches.

As the discussion paper points out, each jurisdiction has its own regulations for off-label prescription. AVA strongly supports a harmonised approach. The continued ability for veterinarians to appropriately prescribe off-label would be an important component of any harmonised approach.

There is currently significant work underway by the AVA in the area of antimicrobial stewardship and infection prevention and control, and additional support for these initiatives is important if we are to achieve successful outcomes.

Preparatory work has begun on a joint venture between AVA and Therapeutic Guidelines Limited to develop national antibiotic prescribing guidelines (similar to those for human health) for the seven main animal species treated in Australia – cats, dogs, horses, cattle, sheep, pigs and poultry. AVA will bear significant costs to fund the development of these guidelines, and this may be a barrier to successful completion of the project. There should be specific sections in these guidelines in relation to off-label prescribing of antibiotics. Antibiotics critically important to human health should not be used in livestock or companion animals unless there is demonstrated resistance to other less critical antibiotics or other antimicrobials are unsuitable or unavailable. These sections of the guidelines should address the selection of use of antibacterial agents of high or critical importance in specific circumstances. Judicious and infrequent use of these agents should ensure that the likelihood of transfer or resistance determinants from animals to humans is low.

With the exception of tylosin, antimicrobials with growth promotant claims (the ionophores, avilamycin, and flavophospholipol) do not belong to classes of antimicrobials considered important in human health. These agents prevent diseases including serious disorders in poultry (coccidial disease) and cattle (bloat, ketosis, coccidiosis). If there is evidence of harm from this type of use, then the risks should be managed. If management is not effective, then use of these agents should be phased out if the risks outweigh the benefits. While the removal of such agents in the European Union resulted in less weight of antibiotics being used overall, use of therapeutic antibiotics did increase.

Prophylactic antibiotic use (by prescription) is sometimes needed to reduce transmission of disease to in-contact animals or prevent disease outbreaks. The period of use needs to be minimised and reflect the true period of risk. Alternate methods of management should be established in all production systems to reduce prophylactic use.

AVA will shortly begin a pilot trial of antimicrobial stewardship programs in veterinary practices. The trial will build on experiences with these programs both in veterinary practices overseas and in human health in the Australian context. It is likely that significant resources will be required for the next phase of the project where programs are established in veterinary practices nationwide. There are no national systems to encourage or enforce uptake of these types of programs in the veterinary world. Stewardship programs will be entirely voluntary and resources will be needed to effect change in veterinary practices. The AVA is the key organisation providing leadership in these types of cultural changes in the veterinary profession.

In addition to the AVA's *Guidelines for prescribing, authorising and dispensing veterinary medicines* noted in the discussion paper, new information resources have been created and promoted to the profession through the 'Fighting antimicrobial resistance' strategic priority program. These include:

- [Prescribing veterinary antibiotics](#) fact sheet
- [Safe handling of animals being treated with antibiotics](#) fact sheet

We will shortly finalise a fact sheet on veterinary use of antibiotics critical to human health. This initiative will emphasise that use of antibiotics important in human health by veterinarians should be managed. Critically important antibiotics should be used only in circumstances when effective alternatives are not available and that there is good evidence that these will be effective in the condition being treated.

The strategic priority program has allowed AVA the opportunity to use Antibiotic Awareness Week to communicate stewardship messages to the veterinary profession. In addition, as an ongoing program, news and information is shared throughout the year on relevant antimicrobial resistance topics.

Section 7 – Communication and education

AVA is very supportive of the idea of a central resource for veterinary and agricultural sectors to share information and resources, and also raise awareness.

However, a larger impact would be made by creating a more cohesive national education approach for veterinarians on the topic of antimicrobial resistance and responsible prescribing. AVA is currently in the very early stages of developing education modules on antimicrobial resistance and prescribing for veterinarians at key stages of learning. The project seeks to increase awareness and skill levels in three key veterinary audiences – pre-clinical veterinary students, final year veterinary students, and practising clinicians. The education modules for these three key audiences will be designed to be flexible enough to be delivered across different universities and continuing professional development methods such as seminars and online learning.

The expertise is freely available to develop these education modules, and AVA has the capacity and expertise to manage this project. However those with the necessary expertise are currently working only on a voluntary basis. Additional resourcing would speed up the development and execution of these modules significantly.

The best way to entrench changes to veterinary practice is through face to face continuing professional development at conferences. These have and will continue to be an important component of dissemination of information about antimicrobial resistance and best-practice veterinary prescribing. AVA has been active in providing this continuing professional development at its conferences for many years.

AVA believes there are many opportunities for collaboration of veterinary and medical professions in the areas of education and communication. Combined messages in communications by NPS MedicineWise, Australian Prescriber and others would be a useful way of demonstrating the role of all professions and the community in helping fight antimicrobial resistance.

Section 8 – International engagement

The AVA strongly supports Australia's engagement with countries leading the way on testing and monitoring for resistance as well as reducing antibiotic use in animals. In addition, there should be avenues for Australia's expertise to be shared with countries in the region. The AVA has connections with veterinary associations in Indonesia,

Singapore, China and other regional countries. These relationships may provide an opportunity to share news about our work within the 'Fighting antimicrobial resistance' strategic priority program as well as the broader national One Health policy agenda.

Section 9 – Research and development

There are myriad needs for research into antimicrobial resistance topics in the veterinary and agriculture sectors. AVA is of the view that the most critically important priority must be the national resistance and antibiotic use surveillance programs currently under consideration.

Other important research topics include:

- Antibiotic alternatives – vaccines, bacteriophages, better husbandry and infection control
- Links between antibiotic use in animals and resistance in people, and risk management strategies
- Effectiveness of risk management interventions to reduce antimicrobial resistance
- Benefits of culture and sensitivity testing in animals – if there's a demonstrated public good, some cost subsidisation may be warranted
- Better, cheaper, mobile, point-of-care diagnostics to guide treatment decision-making.

Section 10 – Governance

The work of AVA and its potential contribution to the agenda of a national strategy is detailed in the preceding sections of this submission.

There are few voluntary restrictions on antibiotic use in food-producing animals currently in place. "Voluntary" restrictions are imposed on production systems by market assurance programs such as certification programs by organic farming, animal welfare and industry organisations. However, evidence that these programs have a beneficial effect in limiting antimicrobial resistance should be investigated (see Section 9).

Veterinarians have a sound understanding of the principles of responsible prescribing, particularly in relation to food-producing animals. However there is some research evidence that there is considerable room for improvement in antimicrobial stewardship, particularly among companion animal veterinarians.¹

¹ Holloway, S. AIDAP - Antibiotic prescribing habits of vets in Australia, *Proceedings of the Australian Veterinary Association (AVA) Annual Conferences*, AVA Annual Conference, Canberra, May 2012.