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Survey of veterinary prescribing for poultry disease

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Background To enable better antimicrobial stewardship, it is important to know what the patterns of prescribing behaviour are and what diseases or reasons antibiotics are being prescribed. A prescribing guideline (i.e. recommended best practice for writing prescriptions) developed by the Australian poultry veterinarians exists. However, it is not a prescribing guideline detailing treatments for the commonly observed bacterial diseases in commercial poultry.

Methods An online survey was deployed to all registered veterinarians and members of the Australian Veterinary Poultry Association to identify prescribing behaviours for the most frequently observed bacterial diseases of poultry.

Results A total of 39 survey responses were received. Most surveys were started but not completed; 13 (33%) were completed with 18 (46%) containing some information on

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prescribing. The most frequent treatment responses were for *Escherichia coli* in both layers and broilers, chronic respiratory disease (CRD), fowl cholera and spotty liver in layers and necrotic enteritis in broilers. Treatments described were for products registered for poultry use, within the recommended label dose and duration of treatment (Tables 1, 2).

Unsurprisingly, tetracyclines and amoxicillin, followed by lincomycin and trimethoprim sulfonamide products were the most frequently reported treatment options. Inappropriate treatments were reported for salmonellosis and one veterinarian recommended the use of enrofloxacin for the treatment of fowl cholera.

Conclusion Information provided by respondents will enable the initial development of prescribing guidelines for both commercial and small poultry flocks. Importantly, it identified less than optimal prescribing behaviour for some diseases, a reliance on one class of antibiotic more than others and a failure to utilise all antimicrobial classes potentially available for treatment. Critically, the survey identified a lack of treatment options for bacterial disease in poultry. The most important bacterial diseases of poultry remain the same; effective alternatives for antibiotic treatment are required and old diseases, thought once gone, are reinventing themselves as problems for the future. Surveys of prescribing behaviours are essential for identifying diseases of high priority, changes in treatments and response to treatment and to identify areas for targeted antimicrobial stewardship, and research needs.

Table 1. Defined daily dose (mg/kg) for the treatment of bacterial diseases of broilers

	Chlortetracycline	Amoxicillin	Trimethoprim-sulfonamide	Lincomycin	Zinc bacitracin
<i>E. coli</i>	11–200	10–20	–	–	–
<i>S. aureus</i>	–	10–20	62.5	–	–
CRD	60	–	–	–	–
Fowl cholera	50–100	–	–	–	–
Spotty liver	50–60	–	–	20	–
Femoral head necrosis	–	11	62.5	–	–
Necrotic enteritis	–	–	–	–	50–70

Table 2. Defined daily dose (mg/kg) for the treatment of bacterial diseases of layers

	Chlortetracycline	Amoxycillin	Lincomycin	Tylosin
<i>E. coli</i>	60		–	–
Coryza	60		–	–
CRD	60	–	20	500
Fowl cholera	50–220	–	20–30	–
Spotty liver	40–60	10–20		–