

# Investigation of Prescribing Practices by Irish Veterinary Practitioners

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## Background:

The rise of antimicrobial resistance has resulted in scrutiny of Veterinary antimicrobial use and led to the implementation of new stringent EU regulations in January 2022.

The purpose of the study was to investigate prescribing patterns of Irish small-animal veterinary practitioners. An anonymous online survey was sent to registered veterinary surgeons to collate demographic and prescribing data. Five hypothetical case scenarios were presented to explore antimicrobial use in situations where clinicians may vary in their approach to prescribing: Case 1. a dog with pyoderma, Case 2. a dog with diarrhoea, Case 3. a cat with respiratory disease, Case 4a. a dog with haematuria and Case 4b. a dog with a positive urine culture.

Of 140 clinicians who participated in the survey, 58.5% completed all sections. Only 13.6% of respondents reported that their practice had a policy for antimicrobial use. Duration qualified was not associated with the decision to prescribe antimicrobials ( $p=0.89$ ). Few practitioners (12%) indicated that they would use antimicrobials in case 2 whereas almost all (94%) stated they would use antimicrobials for treatment of case 3. Opinion was divided for



the other 3 scenarios with 57%, 46% and 39% indicating that they would prescribe antimicrobials in Cases 1, 4a and 4b, respectively. The most common reasons reported as influencing the decision to prescribe antimicrobials were as follows in descending order of frequency: clinical signs, presumptive diagnosis, culture and susceptibility results, ease of administration, cytology results, financial constraints, and client expectations. Amoxicillin-clavulanate (AMC), a European Medicines Agency Class C antimicrobial, was the most routinely prescribed antimicrobial in 36% of all prescriptions. Doses ranged from 1.25 to 40 mg/kg with the correct dose range between 12.5 and 25 mg/kg. Most practitioners (79%) stated that they always weighed animals before prescribing, but AMC was underdosed in 19.8% of prescriptions.

This suggests that failure to weigh the animal may be one of the reasons for underdosing. This is an important finding as underdosing increases the possibility of resistance development. The EMA categorises antimicrobials for responsible use in animals into 4 categories, A to D, based on the risk to public health from resistance development. C (Caution) is an intermediate category that should only be used when suitable D antimicrobials are unavailable.

This study demonstrated that antimicrobial use is not influenced by the number of years in practice but by several clinical and owner-dependent factors.