Use Of Vetcompass Data To Estimate Weight For Antimicrobial Stewardship

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Evaluation of the appropriateness of antimicrobial use requires multiple datapoints including indication, duration and dose, including total milligrams and animal weight. Dog weight is frequently missing from the electronic medical records from the VetCompass Australia (VCA) database (1).

Electronic clinical records were extracted from VCA for the top 10 breeds of dogs in the database where weight, age and sex were recorded (n=72,089). The mean weight for age, sex and neuter status was calculated for each breed. In a second cohort, animals aged greater than 1 year that had weight recorded and were prescribed an antimicrobial were extracted (n=69,683). Total milligrams of antimicrobial administered were extracted using previously described tools (2). The true weight and the breed/sex/neuter status/age proxy were then used to assess the appropriateness of antimicrobial doses. Antimicrobial doses were compared to those recommended in the Australian Veterinary Prescribing Guidelines from the University of Melbourne (3).

There were 41,768 appropriate doses of antimicrobials in cohort 2 (66% appropriateness). The true positive rate using VCA proxy weight was 82%. The true negative rate using VCA proxy weight was 78%.

Using proxy weight is a reasonably accurate method of determining the appropriateness of antimicrobial dose for population level studies.

References

1. Hur B, Hardefeldt LY, Verspoor KM, Baldwin T, Gilkerson JR. Evaluating the dose, indication and agreement with guidelines of antimicrobial use in companion animal practice with natural language processing. JAC Antimicrob Resist. 2022;4(1):dlab194.

2. Hur B, Hardefeldt LY, Verspoor K, Baldwin T, Gilkerson JR. Using natural language processing and VetCompass to understand antimicrobial usage patterns in Australia. Aust Vet J. 2019;97(8):298-300.

3. Asia Pacific Centre for Animal Health, National Centre for Antimicrobial Stewardship. Australian Veterinary Prescribing Guidelines www.science.unimelb.edu.au/vetantibiotics2017