

# Assessing the challenges and factors influencing Illinois small animal veterinarians' antimicrobial use practices

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## OBJECTIVE:

Appropriate antimicrobial use is essential to preserve the availability and effectiveness of antimicrobials to treat bacterial infections. Several guidelines exist to promote prudent antimicrobials use in small animal practice. However, companion animal veterinarians face several challenges when prescribing antimicrobials that can impact their decisions. By evaluating these issues, we aim to provide insights into the challenges and factors influencing their decision when prescribing antimicrobials to dogs and cats to promote judicious antimicrobial use.

## METHODS:

We conducted an online survey to assess the challenges encountered by companion animal veterinarians in Illinois when prescribing antimicrobials. A descriptive analysis evaluated factors influencing companion animal veterinarians' antimicrobial use practices. Text analysis examined their responses given to an open-ended question regarding their challenges when prescribing antimicrobials. The frequency and a correlation network among the words based on a pairwise correlation test were assessed at the text analysis step by using "tidyverse", "tidytext", and "widyrr" libraries in R.

## RESULTS:

A total of 95 responses were received from the survey, and 77 responders completed the questions about factors influencing the companion animal veterinarians' decision when prescribing antimicrobials. At the same time, 66 responders completed the open-ended question and were included in the text analysis. Companion animal veterinarians considered the severity of clinical signs (46.2% extremely influential, and 44.9% very influential), culture and antimicrobial susceptibility test results (73.1% extremely influential, and 14.1% very influential); and patients' medical and previous antibiotic use history (28.6% extremely influential, and 45.5% very influential) as influential to their decision when prescribing antimicrobials. The text analysis indicated that owner (n=32), compliance (n=20), antimicrobials (n=19), cost (n=15), culture (n=14), and administration (n=11) were the most common words mentioned by the responders. Meanwhile, the network illustrated correlation of the words "owner" and

"compliance"; "administration" and "route"; and "cost" and "culture" were among the most correlated words.

#### CONCLUSIONS:

Understanding factors and challenges impacting Illinois companion animal veterinarians' antimicrobial prescription choices will support the development of effective antimicrobial stewardship programs to mitigate the emergence of antimicrobial resistance.