



COMPLETED GRANT SYNOPSIS

Pharmacists' Knowledge of Veterinary Pharmacotherapy and the Impact of an Educational Intervention

*Natalie W. Young, PharmD¹, Kenneth D. Royal, PhD, MSED², Mina Park, PharmD Candidate³
and Gigi S. Davidson, RPh, BSPH²*

¹Realo Drugs | New Bern, NC, ²North Carolina State College of Veterinary Medicine, ³University of North Carolina at Chapel Hill

Objectives

The overarching goal of this research project was to assess pharmacists' baseline knowledge of veterinary pharmacotherapy, as relevant to their professional responsibilities, and assess the impact of a piloted educational program. The following specific aims are supported by this goal:

- To improve the level of care provided to veterinary patients by community pharmacists through the creation of an effective educational training program.
- To develop a training program that will help community pharmacists establish working relationships with veterinarians as part of an interprofessional care team.

Methods

Design	<ul style="list-style-type: none"> • Two studies were conducted. The first study involved a large statewide assessment of pharmacists'; the second study involved a pilot study involving a convenience sample of pharmacists also located within the state. Participants in the pilot study participated in an educational intervention focusing on veterinary pharmacotherapy and were assessed via pre- and post-tests. • A 17-item multiple choice assessment was developed to assess pharmacists' knowledge of core concepts required to safely dispense medications to animal patients. Items were selected based on dispensing errors most commonly reported in available literature. • A baseline assessment was disseminated to all licensed pharmacists in NC. • A pilot study was conducted involving a convenience sample of pharmacists located in NC. Participants were involved in an educational intervention focusing on pertinent veterinary pharmacotherapy concepts and were assessed pre- and post-tests. Data was anonymously collected via SurveyMonkey®. • Data was exported for analysis which consisted of scoring the data with Winsteps measurement software. Results were then exported to SPSS statistical software for further analysis. • The study protocol and assessments were reviewed and approved by the North Carolina State University College of Veterinary Medicine IRB.
Study endpoints	<ul style="list-style-type: none"> • Improvement in knowledge of veterinary pharmacotherapy after participation in educational intervention. • Improved interprofessional relationships with local veterinarians.

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Results

- The statewide sample of participants (n = 602) were able to answer 5 (mean) to 6 (median) items (out of 17) correctly, which corresponds to a success rate of 29.41% to 35.29%.
- The comparison between demographic parameters showed a statistically significant difference ($p < 0.001$) to those without prior veterinary training (n=548, 33.1% accuracy) and those with previous training (n = 54, 49.8% accuracy).
- There were no discernible differences in participants' knowledge based on the subject matter of the question (pathophysiology, dosing, counseling, compounding, legality and toxicology).
- Pilot study participants (n = 60) were able to answer 5 (mean/median) items correctly (29.41%) on the pre-test and 16 (94.1%) items correctly on the post-test.
- When comparing group performance between the pre- and post-tests, pharmacists' scores more than doubled with a 64.7% increase in performance ($p < 0.001$).

Conclusion

The findings of this study suggest that a substantial portion of pharmacists lack the knowledge needed to process and dispense the veterinary prescriptions most commonly encountered in retail pharmacies. The findings evidence the crucial need for pharmacists to possess the competence to dispense medications for animal patients and have ready access to veterinary drug references. Further, evidence demonstrates an educational intervention focusing on veterinary pharmacy education and practice experience can successfully increase knowledge of these necessary core concepts.

Finally, a consistent veterinary pharmacy program that focuses on local, high-touch relationships with veterinarians has yielded significant gains in the interpersonal dynamics between the pilot pharmacy and the surrounding community veterinarians. The improvements in staff education and proactive development of programs and processes that meet veterinary needs has drastically enhanced the trust between the study pharmacists and the veterinarians they serve. One community veterinarian stated “as a veterinarian, our job is to provide the absolute best and safest care for our patients. With the increase in the availability of veterinary medications and the need for compounded medications, knowing the pharmacist will not dispense the wrong medication is important to me. Just because it is safe in people and they compound for people does not mean they know what is safe for dogs.” She added that “having a pharmacy I can trust, ask questions, and who know the drug interactions in animals is more important to me and my clients than anything else.”