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# Animals on Drugs: The Role of Pharmacists in Veterinary Medicine

Kylie Kelley

**Abstract:** With medication errors and unpreparedness of pharmacists in handling pet prescriptions becoming more prevalent, to compensate the deficiency there should be an increase in education and interprofessional collaboration. By providing pharmacists with a thorough education of animal pharmacology, pharmacists would more effectively thrive within their scope of practice and improve pet safety and collaboration with other veterinary healthcare providers. Whether a student pharmacist wants to specialize in veterinary pharmacy or retail pharmacy, it is important for the animal's well-being that someone who verifies the prescriptions does so correctly and with the knowledge needed to make informed decisions for animal patients.

In 2013, Americans spent 7.6 billion dollars on nonprescription and prescription pet medications. In 2014, it was estimated that 65% of households have pets and spend about 58 billion dollars on pet healthcare.<sup>1</sup> These numbers are continuing to rise, causing an increase in the number of pet prescriptions to be filled at retail pharmacies, and facilitating the development of specialty and online pet pharmacies.<sup>1</sup> With the increasing number of pet prescriptions, the scope of pharmacists has expanded to include these prescriptions. However, education in veterinary medicine is lacking and therefore, pharmacists lack confidence in filling these prescriptions. A survey completed in North Carolina of 13,000 pharmacists showed that 77% filled veterinary prescriptions, and out of those, 61% felt they were not competent to verify veterinary prescriptions.<sup>2</sup> This leads to a potential risk for medication errors, such as mistaking drug names with look-alike or sound-alike human drugs, dispensing incorrect dosage forms, misinterpreting abbreviations written on prescriptions, and dispensing wrong doses.<sup>3</sup> By receiving education on animal pharmacology, pharmacists would be better equipped to collaborate with veterinary healthcare providers and improve pet safety.

The FDA's Center for Veterinary Medicine (CVM) is responsible for regulating animal drugs.<sup>3</sup> It oversees not only efficacy but also safety and encourages the reporting of adverse events associated with drugs used in animals. Adverse event reporting data suggests that medication errors and unpreparedness of pharmacists in handling pet prescriptions is becoming more prevalent. For example, a lack of veterinary medicine knowledge caused a pharmacist to confuse a look-alike, sound-alike animal drug with a human one, resulting in injury to the animal. In this specific case, a dog was prescribed Zeniquin®, an animal approved antibiotic, but incorrectly received Sinequan®, a human drug for depression and anxiety.<sup>3</sup> As a result, the dog developed problems urinating, sleeping, and eating within twenty-four hours after receiving the antidepressant. Luckily, the dog was treated and recovered. In another example, a veterinarian wrote a prescription for an animal medication to be taken "SID" by a cat.<sup>3</sup> Veterinarians use "SID" to indicate once a day dosing, but the pharmacist labeled the medication as "QID" meaning four times a day. The pharmacist's lack of knowledge on veterinarian abbreviations caused the cat to overdose. In a survey by the Oregon Veterinary Medical Association, veterinarians stated that one-third of prescriptions are altered by pharmacists. The alteration of prescriptions is largely due to abbreviations, misinterpretations, and miscommunications.<sup>4</sup> Since most pharmacists are unfamiliar with animal drugs, human drugs used in animals, or veterinary abbreviations, mistakes are more likely to occur which can potentially cause harm to their animal patients.<sup>3</sup> As a result, an increase in animal education and interprofessional collaboration with veterinarians is needed.

Veterinary pharmacists are specialized to dispense medications, research drugs, educate pet owners, and compound prescriptions for animal patients. The role of veterinary pharmacists continues to expand as the number of drug products used in animals expands,

including medications that were previously just for human use but are now used in animals as well. Despite this growth, there are limited opportunities for pharmacy graduates to pursue additional training and become veterinary pharmacists. According to the ASHP Residency Directory, there are currently only five programs in the United States that offer a pharmacy residency in veterinary medicine out of the almost 1,500 first year post-graduate residency programs available. In addition, about 22% of all pharmacy schools offer a veterinary medicine elective, but only 4% of pharmacy students complete the elective.<sup>2</sup> Even though the Accreditation Council for Pharmacy Education does not require pharmacists to acquire veterinarian pharmacology to complete their education, expanding courses to incorporate animal pharmacology and/or offering electives for pharmacy students interested in retail pharmacy or veterinary medicine could help students increase their confidence with animal prescriptions.

Incorporating animal pharmacology in a pharmacy student's education will lower the risk for adverse events as well as improve the overall care of animal patients. The oath of a pharmacist conveys a pharmacist's duty to uphold safety in dispensing and verification procedures.<sup>5</sup> Pharmacists are the only healthcare experts that are legally allowed to care for both humans and animals, even though they are not allowed to recommend over the counter medications for animals.<sup>6</sup> According to the Indiana Board of Pharmacy, the responsibility of the pharmacist is to verify the drug, strength, and labeling of the filled prescription regardless if it's for a human or animal patient.<sup>7</sup> In addition, pharmacists have a responsibility to consult other healthcare providers about patients, prescription interpretation, and validity. This includes veterinarians, thereby making pharmacists equally responsible for pet safety.<sup>7,8</sup> Recognizably, pharmacists play a key role in medication maintenance and safety for pets by collaborating with veterinarian healthcare providers.

Pharmacist collaboration with veterinarians contributes to better health outcomes for animals. Veterinary hospitals now employ pharmacists to help compound prescriptions and consult with retail pharmacists about less expensive, generic alternatives for pet patients.<sup>8</sup> By educating pharmacists on animal pharmacology, it would allow the medication experts to have more knowledgeable conversations with veterinarians about implementing a care plan for their animal patients.<sup>9</sup> For example, during the COVID-19 pandemic, pharmacists and veterinarians worked together to treat COVID-19 positive animals at the Bronx Zoo in Bronx, New York.<sup>10</sup> The pharmacists and veterinarians collaborated to diagnose and treat the animals and improve their quality of life. Veterinary pharmacists are placed in a role that would allow them to analyze animal data and apply it to human pharmacology.

Educating pharmacists on animal pharmacology would increase pet safety and enhance collaboration between health care providers to improve health outcomes for animal patients. The healthcare system is evolving daily, with new treatments and larger scopes of practice,

providing an opportunity for pharmacy to grow as a field. To prepare for the increase in pet prescriptions, pharmacists require education on animal healthcare. Whether a student pharmacist wants to specialize in veterinary pharmacy or fill animal prescriptions in a retail setting, it is important for the animal's well-being that the pharmacist who verifies the prescriptions does so correctly and with the knowledge needed to make informed decisions. Animals are on drugs and pharmacists play a significant role in their pharmaceutical care.

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