

## LETTER

### **Bringing More Veterinary Pharmacy into the Pharmacy Curriculum**

*To the Editor:* Relative to other types of pharmacist-prescriber interactions, pharmacist-veterinarian exchanges in the community pharmacy setting have received relatively little attention. Yet, trends in prescription filling indicate that companion animal medications are increasingly sought in community pharmacies.<sup>1</sup> In recognition of this trend, the American Veterinary Medical Association (AVMA) now encourages veterinary pharmacology education for pharmacists through professional pharmacy curricula and continuing education.<sup>2</sup>

On the pharmacy side, the National Association of Boards of Pharmacy (NABP) concluded that pharmacists dispensing medications for veterinary patients should possess competence and have access to resources necessary for appropriate dispensing and care.<sup>3</sup> In an article earlier this year,<sup>4</sup> we described the implementation of a veterinary comparative counseling elective course taught through a veterinarian's perspective. This elective course is but one option through which to confer competencies to future pharmacists. As for pharmacists' access to necessary resources, NABP has indicated in the 2015 Model State Pharmacy Act and Model Rules that pharmacies should have ready access to references for veterinary drugs if applicable to the services they provide.<sup>5</sup>

However, merely possessing excellent references is not enough. Pharmacists who dispense medications for companion animals such as dogs and cats should be familiar with commonly treated dog and cat disease states and comparative pharmacotherapy. Knowledge of diseases and therapeutics can facilitate effective counseling. However, the Accreditation Council for Pharmacy Education's (ACPE) Standards for the Accreditation of Doctor of Pharmacy Degree Programs do not require veterinary pharmacy or pharmacotherapy in pharmacy school curricula. Furthermore, although the competency statements in the North American Pharmacist Licensure Examination (NAPLEX) blueprint are broad enough to allow for veterinary pharmacy topics, the examination currently does not test animal-related questions.<sup>6,7</sup> We believe pharmacy schools with a substantial proportion of graduates who enter community-based retail practices need to provide graduates with knowledge regarding veterinary diseases and therapies that pharmacists most commonly receive veterinary prescriptions to treat.

To provide this knowledge, we propose several options. In the pharmacy school setting, veterinary pharmacy can be covered either through elective courses (both in-house and online) or be integrated into core pharmacotherapy courses. The courses should cover common companion animal conditions including diabetes, hyper and hypothyroidism, seizures, pain, infectious diseases, inflammation, and behavior modification. For these conditions, students should be instructed in comparative pharmacotherapy, compounding, drug administration, and medication safety. In addition, schools could offer doctor of pharmacy students opportunities to take elective pharmacy practice experiences in companion animal clinics and veterinary hospitals. Certified online pharmacies and veterinary compounding outlets represent an additional conduit for patient care. In the postgraduate setting, continuing education could be offered by pharmacists, veterinarians, or others with expertise in aspects of animal therapy through onsite/online sessions or published articles.

Of central importance is the development of interprofessional coordination between the pharmacy and veterinary communities. With more interprofessional overlap, pharmacy educators can develop appropriate veterinary pharmacy learning objectives in conjunction with veterinary clinicians. Because of the lack of veterinarians with extensive veterinary pharmacy backgrounds available to instruct in pharmacy schools or continuing education, some transfer of interprofessional knowledge may occur through education of more pharmacy professional "hybrids" who are capable of transferring veterinary prescription and disease state knowledge and abilities to other pharmacists.

Acknowledging and working to enhance veterinary-pharmacy interprofessional education can greatly benefit both professions. Cost effective generic animal drug products are available, but a majority of prescribed companion animal medications are reformulated human drug products. Pharmacists familiar with administering human drugs to both humans and animals are well positioned to comparatively counsel pet owners. In addition, pharmacists with knowledge of compounding options for palatability, dosage adjustments, or commercially unavailable medications can improve owner compliance and patient health.<sup>8</sup> Furthermore, there are jobs for pharmacists with such expertise. Community and online pharmacy outlets may require expertise in veterinary pharmacology, compounding, and client/patient interaction to prepare for an anticipated increase in retail markets for veterinary pharmacy services. As educators and advocates for human and veterinary professions, we welcome additional strategies for the thoughtful dissemination of veterinary interprofessional knowledge.

Cory R. Theberge, PhD,<sup>a</sup>  
Inder Sehgal, DVM, PhD<sup>b</sup>

<sup>a</sup> University of New England College of Pharmacy,  
Portland, Maine

<sup>b</sup> Marshall University School of Pharmacy, Huntington,  
West Virginia

## REFERENCES

1. Plumb D. Webinar on “Drug Topics.” November 20, 2015.
2. May K. April board of directors meeting wrap-up, AVMA@Work. <http://atwork.avma.org/2015/04/12/april-board-of-directors-meeting-wrap-up/>. Accessed February 22, 2016.
3. Veterinary Pharmacy Education (Resolution 110-5-14). National Association of Boards of Pharmacy. May 30, 2014. <http://www.nabp.net/news/veterinary-pharmacy-education-resolution-110-5-14>. Accessed February 22, 2016.
4. Miller JC, Sehgal I. A Veterinary Comparative Counseling Elective Featuring Web-based, Student-created, Client Information Sheets. *Am J Pharm Educ.* 2016;80(1):Article 15.
5. Section 1. Facility, Part d.3.iv. Model State Pharmacy Act and Model Rules of the National Association of Boards of Pharmacy. National Association of Boards of Pharmacy. <http://www.nabp.net/members/model-pharmacy-act-rules>. Accessed February 22, 2016.
6. North American Pharmacist Licensure Examination (NAPLEX). Examination blueprint. <http://www.nabp.net/programs/examination/naplex/naplex-blueprint/#revised>.
7. National Association of Boards of Pharmacy. E-mail communication, March 4, 2016.
8. Compounding for Veterinarians & Animal Owners. Professional Compounding Centers of America. <http://www.pccarx.com/vets-animal-owners/compounding-for-veterinarians-animal-owners>. Accessed February 22, 2016.