



The Role and Education of the Veterinary Pharmacist

Michelle L. Ceresia, PharmD,^{✉a} Carl E. Fasser, PA,^b John E. Rush, DVM, MS,^c Richard T. Scheife, PharmD,^d Connie J. Orcutt, DVM,^e Donald L. Michalski, MS,^f Melissa R. Mazan, DVM,^c Mary T. Dorsey, PharmD,^g and Stephen P. Bernardi, MS^h

^aSchool of Pharmacy, Massachusetts College of Pharmacy and Health Sciences

^bBaylor College of Medicine

^cCummings School of Veterinary Medicine at Tufts University

^dTufts University School of Medicine

^eAngell Animal Medical Center, Boston, Massachusetts

^fSchool of Pharmacy and Veterinary Medicine, University of Wisconsin

^gAlmac Clinical Services, Durham, North Carolina

^hJohnson Drugs, Waltham, Massachusetts

[✉]Corresponding author.

Corresponding Author: Michelle L. Ceresia, PharmD, Assistant Professor of Pharmacy Practice, School of Pharmacy, Massachusetts College of Pharmacy and Health Sciences, 179 Longwood Avenue, Boston, Massachusetts 02115. Tel: 617-732-2088. Fax: 617-732-2244. E-mail: michelle.ceresia@mcphs.edu

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Abstract

Objective

To define the role and education of the traditional pharmacist who supports the needs of the veterinarian (hereafter referred to as veterinary pharmacist) and a pharmacist who practices solely in veterinary pharmacy (here after referred to as veterinary pharmacy specialist).

Methods

The Delphi technique involving 7 panels of 143 experts was employed to reach consensus on the definition of the roles and education of the veterinary pharmacist and veterinary pharmacy specialist.

Results

The veterinary pharmacy specialist's role included dispensing medications, complying with regulations, advocating for quality therapeutic practices, and providing consultative services, research, and education. The perceived role of the veterinary pharmacist was viewed as being somewhat narrower. Compared to veterinary pharmacists, a more in-depth education in veterinary medicine was viewed as essential to the role development of veterinary pharmacy specialists.

Conclusions

The authors hope their research will promote widespread awareness of the emerging field of veterinary pharmacy and encourage schools to offer increased access to clinically relevant professional training programs.

Keywords: veterinary pharmacy, Delphi, role, education, research method, curriculum

INTRODUCTION

The practice of veterinary pharmacy is an emerging field in the United States. Among the first references to the pharmacist's role in veterinary medicine surfacing about 50 years ago were articles addressing the use of antibiotics and veterinary biologicals.¹⁻³ Traditionally the roles of the veterinarian and pharmacist were mutually supportive. The veterinarian's charge was to diagnose and prescribe therapy, whereas the pharmacist's was to compound and dispense medications for animals.⁴ A 1977 interview of veterinarians in southeastern Wyoming found a need for increased pharmaceutical services in agriculture, and proposed that certain veterinary medications should be closely monitored and dispensed as prescriptions.⁵ But before undertaking such a role, suggested Kernan, pharmacists should develop an appreciation of veterinary products in general, and then should dispense veterinary medicines with the same diligence and attention to detail accorded to human drugs.⁶ However,

in recent years, others have recommended that the pharmacist's role in veterinary care could be expanded even further to include clinical services such as pain management and pharmacokinetic consults.⁷

Several publications have highlighted the increasing involvement of pharmacy in animal health care in the United States. Pharmacists caring for animals were initially employed by veterinary schools; the role of these pharmacists entailed medication selection and inventory and formulary control.^{8,9} Any additional knowledge and skills were obtained through job experience.^{10,11} Contemporary practicing veterinary pharmacists are presumed to be well versed with an in-depth knowledge of pharmacokinetics of the various species.⁸ Community pharmacists likewise have found themselves providing services to pet owners and filling prescriptions written by veterinarians. While a working knowledge of veterinary therapeutics is essential, Lust found a remarkable lack of confidence in knowledge of veterinary pathophysiology, legal aspects of compounding, and pharmacotherapy among pharmacists. The confidence ratings increased consistently upon completion of a veterinary pharmacy continuing education tutorial.¹²

Efforts to remedy this situation have been slow in coming due in part to the lack of consensus regarding the definition of the veterinary pharmacist.¹² The limited efforts under way in schools of pharmacy are focused on elective course offerings in animal therapeutics, with continuing education courses directed at providing practicing pharmacists with the knowledge and skill base needed for veterinary pharmacy.¹² Attempts to identify the content areas of importance to providing supportive animal care services by the pharmacist have relied largely on opinions, which have stressed the importance of familiarity with legal and regulatory issues,^{12,13} compounding practices for veterinary patients,¹⁴⁻¹⁶ antimicrobial agents used in veterinary medicine,¹⁷ the role of the pharmacist in veterinary medicine,¹⁸ veterinary therapeutics,¹² and the pharmacist's involvement in the education of veterinarians.¹⁹

Professional organizations provide support to community and hospital veterinary pharmacists.²⁰⁻²³ The Society of Veterinary Hospital Pharmacists focuses its efforts on being a resource for an exchange of ideas in this specialized area of pharmacy.²⁰ The American College of Veterinary Pharmacy encourages independent pharmacies to expand into the field of veterinary pharmacy.²¹ Professional organizations that support the community pharmacist concentrate their efforts on enhancing pharmacists' skills in the preparation of compounded medications for the treatment of animal illnesses,^{21,22} providing marketing strategies,²¹ and representing pharmacists on legislative issues to protect pharmacists who compound for animals.²³ A recent effort to prepare pharmacists for a role in veterinary medicine is exemplified in the learning experience offered at the University of California-Davis.²⁴

Despite these accomplishments, the challenge faced by pharmacy educators is how best to prepare current and future pharmacists to assist veterinarians in effectively providing pharmaceutical services to large, small, aquatic, wild, and exotic animals. The intent of this research was to delineate the role responsibilities and educational needs of the traditional pharmacist who supports the veterinarian and of the pharmacist who practices solely in veterinary pharmacy. The information derived from this effort will provide the foundation for pharmacy educators to design and build competencies and objectives required to ensure mastery of veterinary pharmacy practice.

METHODS

Research Method

This Delphi study was approved by the Massachusetts College of Pharmacy and Health Sciences Institutional Review Board. The Delphi technique was utilized because it is a consensus-building method uniquely suited for role delineation. It is a systematic approach for the collection and collation of opinions from experts without their need to convene; this eliminates bias based on social interaction among the respondents. The purpose of the Delphi study is to generate crucial information for decision making in a structured and reproducible fashion.²⁵⁻²⁸ "The technique uses anonymity, iteration, controlled feedback, statistical group response, and expert input to accomplish this goal."²⁸

Advisory Group

The process began with the formation of a 7-member advisory group composed of large-, small-, and exotic-animal veterinarians; veterinary hospital, community-based, and clinical-setting pharmacists; and a pharmacy educator (Figure 1). The group's initial meeting was devoted to a discussion of the opinions and observations reflected in the literature on the veterinary pharmacist's role and of the members' thoughts about the areas of information to be in the first questionnaire. This discussion resulted in the formation of 10 open-ended questions structured to capture information about the perceived role, training

requirements, pharmacy school's role, barriers to practice, related benefits, and practice settings associated with the traditional pharmacist who supports the needs of the veterinarian and with the pharmacist who practices solely in veterinary pharmacy. The description of a traditional pharmacist who supports the needs of the veterinarian (hereafter referred to as the veterinary pharmacist) and a pharmacist who practices solely in veterinary pharmacy (hereafter referred to as the veterinary pharmacy specialist) was not provided on the questionnaire and was left up to interpretation by the expert panelist. The advisory group then identified 20 experts in their respective areas to serve on each of 7 panels, and as a result invited 143 experts to participate as panelists in the study.

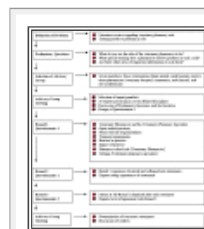


Figure 1

Diagrammatic representation of the three-round Delphi technique employed.

Round 1, Questionnaire 1

Responses to questionnaire 1 resulted in approximately 1,300 individual comments. Analysis of the replies uncovered some overlap and identified common issues. All responses were qualitatively analyzed using a 3-stage process that consisted of reading all items, collapsing identical statements, and organizing the final statements along thematic lines. This process resulted in the generation of 149 drafted statements that then were assigned to one of 5 thematic clusters for the veterinary pharmacist and the veterinary pharmacy specialist: role responsibilities, training needs, pharmacy school role (veterinary pharmacist), practice settings (veterinary pharmacy specialist), practice barriers, and impact potential. These 149 statements were used in each subsequent round of the Delphi.

Round 2, Questionnaire 2

Questionnaire 2 asked each panelist to indicate his or her agreement with each of the 149 items using a 5-point Likert-type scale where 1 equaled *strongly disagree* and 5 equaled *strongly agree*. The data from round 2 were analyzed using Microsoft Excel 2002 SP2 to calculate a group mean and standard deviation for each item.

Round 3, Questionnaire 3

With mean scores displayed for each item on questionnaire 2, the panelists were asked in round 3 to indicate their level of agreement with each of the items using the same 5-point Likert scale. The ratings received from round 3 were again subjected to analysis using Microsoft Excel 2002 SP2 to calculate a group mean and standard deviation for each item.

Advisory Group Final Meeting

Statistical consensus was defined by the advisory group as any response item with a mean Likert score ≥ 4.00 with a standard deviation less than 1.0. Statements that were close to reaching consensus, or that did not reach consensus and were considered to be essential, were reviewed by the advisory group. The advisory group determined that only those statements that reached statistical consensus would be used to define the role and training needs of the veterinary pharmacist and the veterinary pharmacy specialist.

RESULTS

One hundred forty-three panelists participated in the study: 20 large-animal veterinarians (10 equine and 10 bovine); 20 small-animal veterinarians; 22 wildlife and exotic-animal veterinarians; 20 hospital veterinary pharmacists; 21 community veterinary pharmacists; 20 pharmacy academicians; and 20 veterinarians and veterinary technicians who had exposure to the practice environment of a clinical veterinary pharmacist. Panelists were drawn from throughout the United States and Canada. Of the 143 panelists, 69 (48%), 82 (57%), and 55 (39%) completed the round 1, 2, and 3 questionnaires, respectively. This paper discusses the perceived role and the training required to carry out the role for both the veterinary pharmacist and the veterinary pharmacy specialist. Practice settings, barriers to practice, and impact on provision of services for the veterinary pharmacist and the veterinary pharmacy specialist will be reported separately.

Veterinary Pharmacist versus Veterinary Pharmacy Specialist Role

Expert panelists viewed 7 activities as important in the role of both the veterinary pharmacist and veterinary pharmacy specialist (Appendix 1). The veterinary pharmacy specialist's role was viewed as much broader, encompassing clinical practice, research, and education.

Appendix 1 illustrates the pattern of consensus exhibited by each panel regarding the perceived role of the veterinary pharmacist and veterinary pharmacy specialist. The wildlife and exotic-animal veterinarians, community veterinary pharmacists, and small-animal veterinarians reached consensus that the veterinary pharmacist should maintain references and formularies dealing with veterinary and human drugs, and provide drug information to pharmacists and veterinarians. The community veterinary pharmacists panel held the opinion that all the items listed except for one were important to be included in the definition of the role of the veterinary pharmacists. The most conservative view regarding the role of the veterinary pharmacist was held by the pharmacy academicians panel. For the veterinary pharmacy specialist, all items with the exception of 3 (provide information about drug use in animals to pharmacists, serve as liaison between owner and veterinarian concerning drug-related questions, and manage drug inventory for veterinarian) achieved a consensus value ≥ 4 for the community veterinary pharmacist, but the wide standard deviation (1.2 to 1.4) precluded inclusion as consensus items.

Veterinary Pharmacist versus Veterinary Pharmacy Specialist Training Needs

The second area of analysis involved understanding the views regarding the training needs to carry out the perceived role of both the veterinary pharmacist and the veterinary pharmacy specialist (Appendix 2). The panelists were in agreement that the training needs of the veterinary pharmacist varied considerably from that expected of the veterinary pharmacy specialist who requires a greater depth of knowledge in areas such as physiology, animal disease states, and pharmacokinetics.

The extent of consensus regarding the perceived training needs of the veterinary pharmacist and the veterinary pharmacy specialist varied across the panels (also shown in Appendix 2).

With the exception of the hospital veterinary pharmacists panel, the panels believed that the ability to prepare and compound medications for animals was an important training need for the veterinary pharmacist. Only those panels engaged with some aspect of veterinary pharmacy practice (clinical veterinary pharmacists, hospital veterinary pharmacists, community veterinary pharmacists) believed that additional training was needed in the area of understanding common animal disease states to perform in the role of the veterinary pharmacist.

The panelists believed that broader training was essential for the veterinary pharmacy specialist's role. Those panelists in veterinary medicine practice (wildlife and exotic-animal veterinarians, large-animal veterinarians, and small-animal veterinarians) saw a need for both didactic and clinical learning in veterinary pharmacy as means of preparation for a future role as a veterinary pharmacy specialist. The advisory group further considered residency or fellowship as crucial to the practice of the veterinary pharmacy specialist, even though this item did not achieve a consensus score (mean 3.78, standard deviation ± 0.98).

DISCUSSION

Various techniques to delineate specific training requirements for professionals have been employed; these include direct observation of day-to-day professional activities, surveys to practitioners, and seeking expert opinion from focus groups. In an emerging field such as veterinary pharmacy where the aforementioned information is not readily available, educators have resorted to alternative avenues to help guide the development of learning experiences. Use of the Delphi process for this research facilitated the development of consensus about the roles, responsibilities, and educational needs of the veterinary pharmacist and veterinary pharmacy specialist.

It is incumbent on the pharmacy academia to develop learning experiences that are relevant for practitioners and that promote successful clinical practice outcomes. Professional programs leading to the doctor of pharmacy degree are guided in this process by standards published by the Accreditation Council of Pharmacy Education.²⁹ A standard, the goal of the curriculum, states: "The college or school's professional degree program curriculum must prepare graduates with the professional competencies to enter pharmacy practice in any setting to ensure optimal medication therapy outcomes and patient safety, etc."²⁹ While the role of veterinary pharmacists has been discussed in various opinion articles,^{1-6,8-11,13,15,18,30} the authors of this study are not aware of formal guidelines published outlining the learning experiences required for preparing pharmacy students

to practice in this role. The educational needs identified through this research provide guidance with respect to content and, indirectly, the courses and experiential activities in need of revision.

Based on the educational requirements identified for the veterinary pharmacist by the expert panel, US colleges and schools of pharmacy should consider examining their curricula to identify potential areas of integration of topics; these include laws governing the dispensing of animal prescriptions, compounding of medications for animals, and veterinary drug literature. Examples of possible courses that an educator may consider to implement these topics include: Pharmacy Law, Drug Literature Evaluation, and Compounding. With these minor revisions in curricula, graduates working in a community setting would be qualified to fill and dispense the occasional prescription for a companion animal. They would be able to refer to an authoritative source to verify a dose, find the therapeutic use and common adverse effects listed for various animal species, and be familiar with the veterinary abbreviations and laws.

Some colleges or pharmacy schools might consider offering certificate programs to doctor of pharmacy (PharmD) students who have a special interest in veterinary pharmacy and contemplate practicing in a setting that fills many prescriptions for animals. Selective colleges of pharmacy that employ the appropriate faculty members could offer a veterinary pharmacy professional elective course and experience. Another requirement for the certificate program which should be considered is an elective experience at a community site that prepares compounded medicine for animals. During these learning experiences, the student should be required to master the core competencies and objectives defined by the expert panel. The authors regarded one subset of the expert panel, namely the community veterinary pharmacists, as having opinions that were particularly relevant for the practicing veterinary pharmacist and that should be considered for inclusion into the educational objectives for the certificate program; these objectives included understanding differences in animal pharmacokinetics and physiology, knowledge of common animal disease states, providing drug information needed to support the pet owner, and responding to medication questions posed by animal owners.

Although the expert panel did not agree regarding the need for a postgraduate degree, residency, or fellowship program, graduates interested in practicing in the role of a veterinary pharmacy specialist will need a comprehensive educational experience to learn the anatomy and physiology of the various species and understand the disease states seen in veterinary practice, among other things. In the authors' opinion, this type of experience is best offered in a residency or fellowship program, such as the one offered at the University of California-Davis. However, an alternative would be a postgraduate program similar to the learning experiences offered by the Royal Pharmaceutical Society of Great Britain³¹ and the University of Malta.³²

The data derived from round 3 of the Delphi process demonstrated a clear consensus of opinion regarding the similarities and differences in the delineated role responsibilities of veterinary pharmacist and the veterinary pharmacy specialist. Support was shown for pharmacist involvement in the provision of services to the veterinarian, with different panelist groups indicating different areas of role consensus. Major differences in areas of consensus were most apparent between the perceived role responsibilities of the veterinary pharmacist as compared to the veterinary pharmacy specialist. Likewise a similar pattern of variation in consensus was observed when comparing the educational needs of the veterinary pharmacist with those of the veterinary pharmacy specialist. While pharmacists assisting veterinarians in the delivery of services to animals have been mentioned in the literature,^{1-11,13,15,18,30} and a limited number of programs have been implemented to train the pharmacist for an expanded role in veterinary pharmacy,²⁴ this is the first attempt to delineate the role and educational needs of the veterinary pharmacist and veterinary pharmacy specialist using an established research method.

Various authors have noted the limitations of the Delphi method, including attrition rates of panelists.^{26,33-35} By the end of round 3, the number of panelists dropped to 55 (39%) of the original participants. The number of respondents per panel ranged from 1 (5%) to 11 (55%), with the most notable decline evident in the large-animal veterinarians panel. Of members on the original large-animal veterinarians panel, only 5 participated in rounds 1 and 2 and 1 in round 3, calling into question how representative the opinions expressed by the remaining panelists were. This is particularly important because large-animal veterinarians deal with many issues related to pharmacotherapy.

A second limitation relates to the cut-off point that limits the number of statements reaching consensus. Items that did not reach consensus but were close to 4.0 or ranked by 1 panel with mean scores of 4.5 or greater were re-examined. The advisory group believed that veterinary pharmacists should be trained in the differences of animal physiology and pharmacokinetics. The group believed that for a veterinary pharmacist to safely dispense a drug for an animal and provide

advice about drug interactions, safety, and adverse effects, the veterinary pharmacist must know the metabolism, protein binding, absorption, and distribution for the different species. Those on the community veterinary pharmacists panel believed strongly (mean score > 4.5) that the veterinary pharmacist should: (1) provide resources required for compounding drugs for animal use; (2) assist consumer to obtain medication for companion animal care; (3) counsel pet owners about drug use, drug-drug interactions, and adverse effects; and (4) serve as a source of discontinued human market drugs still used in veterinary practice. Training needs for the veterinary pharmacist were likewise ranked high (mean score > 4.5) by the community veterinary pharmacists panel, and included the following: (1) responding to medication questions posed by animal owners; (2) differences in animal physiology; and (3) drug information needed to support the pet owner.

A description of the traditional pharmacist who supports the needs of the veterinarian (referred to here as a veterinary pharmacist) and a pharmacist who practices solely in veterinary pharmacy (referred to here as a veterinary pharmacy specialist) was not provided; this omission was intentional to avoid bias to the study and to maintain the integrity of the Delphi process. The authors view the veterinary pharmacist as an integral member of a triad relationship which exists between the veterinarian, the pet owner, and the pharmacist. It is our opinion that the veterinary pharmacy specialist is a pharmacist who exclusively practices in veterinary pharmacy and has clinical activities incorporated into his or her role.

CONCLUSION

This is the first in-depth attempt to delineate the role responsibilities and education of the veterinary pharmacist and veterinary pharmacy specialist using the Delphi technique. Our study found that the role of the veterinary pharmacist involves dispensing, compounding, and the provision of drug information, while the veterinary pharmacy specialist's role expanded beyond these responsibilities to include consultative services, research, and education. Further refinement and validation of the role will be made through ongoing research and practice in this evolving field. The results of this research will help guide the educator to prepare pharmacists and create relevant, contemporary curricula in the field of veterinary pharmacy.

Appendix 1. Consensus Regarding the Perceived Role Responsibilities of the Veterinary Pharmacist and Veterinary Pharmacy Specialist by Panelist Group and the Extent of Overlap

	CLIN VET PHARM N=7	HOSP VET PHARM N=8,*9	COMM VET PHARM N=10	ACAD N=*7,8	EXOT VET N=*9,10	LG VET N=1	SM VET N=11	ALL N=*54,55
Provide available drugs to ordering veterinarians.		•	•		•	•	•	•
Respond to the needs of the veterinarian client.	•		•		•		•	•
Provide advice about drug storage, inventory control and controlled substances.	•	•	•		•	•		•
Provide resources required for compounding drugs for animal use.			•		•			
Provide advice about drug interactions, contraindications, safety and adverse effects.	•	•	•		•	•	•	•
Provide medication-related consultative services to veterinarians.			•					
Provide drug information to pharmacists and veterinarians.	•		•	•	•	•	•	•
Stock appropriate Rx, label, dispensing instructions and bottles for animal use.	•	•	•	•	•	•	•	•
Maintain compliance with laws governing dispensing for animals.	•	•	•	•	•	•	•	•
Fill and dispense human approved medicine for extra-label use in animals.	•	•	•	•	•	•	•	•
Adhere to statutes, regulations, and policies governing compounding for animals.	•	•	•	•	•	•	•	•
Prepare and compound medications for animals to aid compliance.	•	•	•	•	•	•	•	•
Serve as source of discontinued human market drugs used in veterinary practice.	•		•		•	•		
Assist consumer obtain medications for companion animal care.	•		•	•		•	•	
Assist veterinarian access drugs to support their clinical practice needs.	•	•	•	•	•	•	•	•
Monitor trends in controlled substance prescriptions for veterinarians.	•				•		•	•
Maintain references/formularies about veterinary and human drugs.	•	•	•	•	•	•	•	•
Counsel pet owners about drug administration, drug interactions, and adverse effects.	•	•	•	•			•	•
Serve as liaison between owner and veterinarian concerning drug-related questions.	•		•		•			
Keep veterinarians abreast of new uses for drugs in their practice.	•		•	•		•	•	•
Assist pharmacists and veterinarians understand drug pharmacokinetics.	•	•	•	•	•		•	•
Provide information about drug use in animals to pharmacists.	•	•		•	•	•	•	•
Advocate for quality therapeutic practices in veterinary medicine.	•	•		•	•	•	•	•
Provide therapeutic clinical consultative services to veterinarians.	•	•		•	•		•	•
Educate students and pharmacists about veterinary pharmacy practice.	•	•		•	•	•	•	•
Educate student veterinarians about rational drug therapy.	•	•		•	•		•	•
Assist with pharmaceutical care research involving animal species.	•				•		•	•
Manage drug inventory for veterinarian practice.				•		•		

Veterinarians and veterinary technicians that had exposure to the practice environment of a Clinical Veterinary Pharmacist (CLIN VET PHARM), Hospital Veterinary Pharmacists (HOSP VET PHARM), Community Veterinary Pharmacists (COMM VET PHARM), Pharmacy Academicians (ACAD), Exotic and Wildlife Veterinarians (EXOT VET), Large Animal Veterinarians (LG VET), Small Animal Veterinarians (SM VET), All Panels (ALL), Number of respondents (N), Number of respondents for the Veterinary Pharmacy Specialist only (*), Veterinary Pharmacists (statements within gray shaded box), Veterinary Pharmacy Specialists (statements within black lined box), Represents consensus for the veterinary Pharmacist (•), Represents consensus for the Veterinary Pharmacy Specialist (•)

Appendix 2. Consensus Regarding Perceived Training Needs of the Veterinary Pharmacist and Veterinary Pharmacy Specialist by Panelist Group and the Extent of Overlap

	CLIN VET PHARM N=7	HOSP VET PHARM N=8,*9	COMM VET PHARM N=10	ACAD N=*7,8	EXOT VET N=10	LG VET N=1	SM VET N=11	ALL N=55
Differences in animal physiology.	•		•					
Knowledge of common animal disease states.	•	•	•					
Knowledge of commons drugs used in veterinary medicine.	•	•	•		•	•	•	•
Differences in animal pharmacokinetics.	•		•					
Dispensing available human drugs for extra-label use in animals.	•	•	•	•	•	•	•	•
Responding to medications questions posed by animal owners.	•	•	•	•		•		
Drug information needed to support the pet owner.	•		•					
Providing consultative services to the veterinarian.	•	•	•		•			•
Drug information needed to support the veterinarian.	• ✕	• ✕	•	• ✕	• ✕	• ✕	• ✕	• ✕
Laws, statutes, regulations and compliance policies governing veterinary pharmacy practice.	• ✕	• ✕	•	• ✕	• ✕	• ✕	• ✕	• ✕
Prepare and compound medications for animals.	• ✕	✕	•	• ✕	• ✕	• ✕	• ✕	• ✕
Continuing professional education in veterinary pharmacy practice.	• ✕	• ✕	•		✕	• ✕	• ✕	• ✕
Comparative anatomy and physiology.	✕	✕		✕	✕	✕	✕	✕
Common animal disease pathophysiology.	✕	✕		✕		✕	✕	✕
Pharmacology and therapeutics in animal species.	✕	✕		✕	✕	✕	✕	✕
Drug interactions, adverse effects and toxicities in animals.	✕	✕		✕	✕	✕	✕	✕
Counseling education for working with pet owners.	✕			✕			✕	✕
Animal pharmacokinetics and pharmacodynamics.	✕	✕		✕	✕	✕	✕	✕
Dosing for animals. (e.g. allometric scaling)	✕	✕		✕		✕	✕	✕
Animal handling and routes of administration.	✕			✕		✕	✕	✕
Didactic course in veterinary pharmacy as student.	✕	✕			✕	✕	✕	✕
Clinical clerkship experience in veterinary pharmacy as student.	✕	✕			✕	✕	✕	✕
Residency or fellowship experience in veterinary pharmacy.	✕			✕	✕			
Graduate-degree granting program in veterinary pharmacy.								

Veterinarians and veterinary technicians that had exposure to the practice environment of a Clinical Veterinary Pharmacist (CLIN VET PHARM), Hospital Veterinary Pharmacists (HOSP VET PHARM), Community Veterinary Pharmacists (COMM VET PHARM), Pharmacy Academicians (ACAD), Exotic and Wildlife Veterinarians (EXOT VET), Large Animal Veterinarians (LG VET), Small Animal Veterinarians (SM VET), All Panels (ALL), Number of respondents (N), Number of respondents for the Veterinary Pharmacy Specialist only (*), Veterinary Pharmacists (statements within gray shaded box), Veterinary Pharmacy Specialists (statements within black lined box), Represents consensus for the veterinary Pharmacist (•), Represents consensus for the Veterinary Pharmacy Specialist (✕)

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