

Letters to the Editor

Botanical medicine, homeopathy, and the placebo effect

The AVMA is currently exploring two aspects of complementary and alternative medicine: a petition before the AVMA American Board of Veterinary Specialties for recognition of the American College of Veterinary Botanical Medicine¹ and a recent news report² on the role of homeopathy in the veterinary profession.

We know from archeological evidence that plants have been used to treat human and animal ailments since before recorded history. And, many plants are known to contain medicinal compounds. Well-known examples include morphine, derived from the opium poppy, and digitalis, which comes from the foxglove plant. Veterinarians and physicians depended on crude botanical preparations until the mid-1800s, but as our understanding of chemistry increased, efforts were made to purify active compounds and test them pharmacologically. Importantly, screening plants for medicinal compounds continues today. Such activities fall within the field of pharmacognosy (knowledge of natural drugs obtained from plants and other sources).

As explained in the recent *JAVMA* News report,² homeopathy is an 18th-century notion that rests on two basic principles: “the idea that a substance capable of causing particular symptoms in a healthy individual will cure similar symptoms in a person with disease” (the so-called “law of similars”) and the idea that these substances retain their medicinal properties when highly diluted (so-called “potentization”). Large-scale studies have shown that homeopathic preparations are not effective and that their reported positive actions are nothing more than a result of placebo effects. In veterinary medicine, some species—especially dogs, cats, and horses—may seem to react

positively to placebos, but this generally is a result of conditioned responses to human-animal interactions, such as touch, voice, and visual cues. In addition, a phenomenon known as placebo-by-proxy has been described, by which an optimistic animal owner (or even the veterinarian) may imagine improvements in a sick patient when no true benefit has occurred.

Following congressional passage of the Dietary Supplement Health and Education Act of 1994, there has been a flood of herbal preparations sold over the counter for myriad purposes, and use of such products is likely to continue unabated. However, herbal preparations are not equivalent to FDA-approved therapeutics, and botanical medicine belongs within the field of clinical pharmacology. As for homeopathy, there seems little justification for recognizing a modality that has not been shown to be effective. The AVMA’s position is clear³: “all aspects of veterinary medicine should be held to the same standards, including complementary, alternative and integrative veterinary medicine, non-traditional or other novel approaches.” When we ignore this basic principle, we undermine our credibility as a science-based profession.

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1. Comments invited on proposed veterinary botanical medicine specialty. *J Am Vet Med Assoc* 2017;250:827.
2. Larkin M. A closer look at veterinary homeopathy: what is the modality’s place in the profession? *J Am Vet Med Assoc* 2017;250:942-949.
3. AVMA. Complementary, alternative, and integrative veterinary medicine. Available at: www.avma.org/KB/Policies/Pages/AVMA-Guidelines-for-Complementary-and-Alternative-Veterinary-Medicine.aspx. Accessed May 18, 2017.

More on undergraduate education and student debt

I would like to respond to Dr. Ed Grace’s letter¹ regarding the reduction in prerequisite classes for veterinary medical college admission that Michigan State University will soon implement. Although Dr. Grace brings up a valid point about the richness of a full undergraduate experience, it is important to remember that the debt issues facing so many recent veterinary graduates and current students are quite complex.

There is no easy remedy to this professional crisis, and a reduction in prerequisite classes will not offer a universal solution. It is, however, one step toward addressing the issue, by offering an alternative path to reduce the time and expense of pursuing undergraduate and veterinary medical education. This approach also allows earlier entry into the professional workforce.

Instructions for Writing a Letter to the Editor

Readers are invited to submit letters to the editor. Letters may not exceed 500 words and 6 references. Letters to the Editor must be original and cannot have been published or submitted for publication elsewhere. Not all letters are published; all letters accepted for publication are subject to editing. Those pertaining to anything published in the *JAVMA* should be received within one month of the date of publication. Submission via email (JournalLetters@avma.org) or fax (847-925-9329) is encouraged; authors should give their full contact information, including address, daytime telephone number, fax number, and email address.

Letters containing defamatory, libelous, or malicious statements will not be published, nor will letters representing attacks on or attempts to demean veterinary societies or their committees or agencies. Viewpoints expressed in published letters are those of the letter writers and do not necessarily represent the opinions or policies of the AVMA.

A reduced path to veterinary medical college was not uncommon 20 to 30 years ago, and as Dr. Grace mentioned, many colleagues who took this path have gone on to have rewarding and successful careers. Likewise, our international colleagues regularly complete their veterinary degree in 5 to 6 years, and they, too, do not lack the skill or career acumen achieved by those who complete their degrees over a longer time span.

In addition, a reduction in prerequisite courses and earlier admission to veterinary medical college do not necessarily detract from the richness of an undergraduate education. At least at Michigan State University, even with fewer veterinary college prerequisites, students will still be required to take general education courses. In fact, most general education courses are completed within the first 2 years of undergraduate education.

Fewer prerequisites will allow those students who wish to enter veterinary medical college sooner the opportunity to do so, while still completing a bachelor's degree and also reducing their living expenses and tuition costs by up to 2 years. That could lighten their debt load by \$20,000 to \$30,000 in tuition alone. It is not "simply a ticket to veterinary school," nor does it grant a bachelor's degree to a student with "less than half an undergraduate education." It is simply an alternative pathway designed to allow students more options in regard to financial and professional health—not a requirement for all.

Importantly, most public colleges of veterinary medicine in the United States do not control what their tuition will be. Rather, tuition costs are decided by governing bodies at the university level and are largely driven by state funding allocations. Over the past 30 years, state support for public universities has substantially decreased, resulting in rising tuition.

The best way, therefore, to contain educational debt is through a multipronged approach aimed at both the undergraduate and veterinary college levels. The Office of the Registrar at Michigan

State University started tracking electronic academic data in 1968, and the university has awarded > 1,100 bachelor's degrees to students who entered the College of Veterinary Medicine prior to completion of a bachelor of science or bachelor of arts degree, using courses in the veterinary program to meet the requirements for the undergraduate degree.

Our new admissions requirements and selection process allow members of the faculty to assess academic preparation, experiences, and performance during the interview process. We know that students will select the path that is the best financial and academic fit for them, without sacrificing a fulfilling educational experience.

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1. Grace E. Undergraduate education and student debt (lett). *J Am Vet Med Assoc* 2017;250:1359.

Concerns with dispensing medications for use at home

Dispensing medications for use at home is a common practice in veterinary medicine. At-home treatment likely has benefits over in-clinic treatment, including convenience, reduced patient stress, and reduced cost, and is especially useful when multiple doses are needed or timeliness is critical to patient health. However, many dispensed medications can have deleterious health affects in unintended individuals, including humans. Physicians and pharmacists typically stress the need to properly safeguard dispensed medications and educate clients about safe medication storage.¹ However, veterinarians may not be aware of the risks associated with dispensed medication or with client education needs. Given that children are present in > 60% of pet-owning households and that, because of their behaviors and weight, individuals in this age group are potentially at increased risk of accessing veterinarian-dispensed medications and devel-

oping serious health problems if they accidentally ingest such medications, possible exposure of children to veterinarian-dispensed medications is a concern.² A study³ of human poison control center data highlighted the epidemiology of unintentional pediatric exposure to veterinary pharmaceutical products. In that study, a regional poison center received, on average, 95 calls/y from concerned caregivers about pediatric exposures to veterinary pharmaceutical products. The highest risk group was children < 6 years of age (88%) as a result of exploratory behavior (61%), and most exposures occurred in the home (96%). Most of these cases (97%) resulted in no or minor effects, although parental concern, inconvenience, and expense (if taken to a health-care facility) should not be discounted. Additionally, there is the potential for serious harm with some medications.

Although dispensing capsule and tablet pharmaceutical products in child-resistant containers is common practice in veterinary medicine, some of the poison center narratives included products that were not in child-resistant containers. Many of these pharmaceuticals included liquid medications or ointments, including antiparasitic medications, single doses of flea or heartworm preventatives, otic ointments, and oral doses of buprenorphine. These narratives were consistent with our private practice observations that veterinary staff frequently dispense products in a labeled plastic bag. We have observed this dispensing practice with multiple doses of buprenorphine in pre-filled, capped syringes for analgesia following surgery or similar conditions. With buprenorphine, children are at risk for developing respiratory depression, and the current poison control center and pediatric emergency medicine guidelines for managing children with buprenorphine exposure are medical observation for a minimum of 6 hours.⁴ Although a single dose of buprenorphine intended for a cat or small dog is unlikely to cause adverse effects in a child, if several doses that

have been stored together are consumed, serious health effects may occur. Health risks are compounded if caregivers do not recognize the potential severity and wait for symptoms to develop before seeking medical advice.

As veterinary professionals, we can protect families by dispensing all pharmaceutical products in child-resistant containers with a clear, appropriate label on each container. We should also remind clients to keep veterinary pharmaceutical products out of children's reach and away from human pharmaceutical products

to reduce incorrect product administration.

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2. *US pet ownership and demographics sourcebook*. 2012 edition. Schaumburg, Ill: AVMA, 2012.
3. Tomasi S, Roberts KJ, Stull J, et al. Pediatric exposures to veterinary pharmaceuticals. *Pediatrics* 2017;139:e20161496.
4. Hayes BD, Klein-Schwartz W, Doyon S. Toxicity of buprenorphine overdoses in children. *Pediatrics* 2008;121:e782-e786.