

Commentary

Do we have the courage needed to pursue structural reform of the veterinary medical degree curriculum?

Baljit Singh BVSC&AH, PhD

Dr. Singh is Dean of the Faculty of Veterinary Medicine, University of Calgary, Calgary, AB T2N 1N4, Canada.

Address correspondence to Dr. Singh (Baljit.singh1@ucalgary.ca).

As a profession, veterinary medicine has a long-standing and deep connection to the land. Over the past 4 to 5 decades, however, this once largely rural profession has undergone extensive urbanization and has shaken off some of its academic and cultural insularities to acquire a few global tendencies. Nevertheless, the profession retains some of its foundational boundaries and curricular structures, which are now creating systemic tensions, chronic issues, and choke points in veterinary medical degree programs.

Veterinary medical degree programs in Canada and the United States have been 4 years in duration for about 100 years. Required preveterinary coursework can generally be completed in 2 years of college or university education in a relevant discipline of study. Thus, obtaining a veterinary medical degree has traditionally required a minimum 6 years of postsecondary education. Importantly, however, many students have obtained a bachelor's or higher degree before starting the veterinary medical degree program, meaning that the total time spent in postsecondary education can be substantially longer than the minimum 6 years. Yet, most veterinary medical professionals would likely have difficulties articulating the philosophical and structural reasons for having a 4-year degree program.

The 4-year veterinary medical degree program is likely an outcome of the creation of 4-year training programs in human medicine following publication of the Flexner report.¹ In an effort to accommodate the increase in basic science and clinical content in the curriculum, medical schools have since moved the clinical training component of their programs so that it takes place after students have completed the 4-year MD degree. In contrast, the veterinary medical degree program has remained at 4 years, even while the curricular content has ballooned. For example, 20 years ago, veterinary students received little training in dentistry, oncology, communication or business skills, or the many new imaging modalities now included explicitly in the veterinary medical curricu-

lum. Colleges of veterinary medicine have managed to squeeze in all this additional content by sacrificing time devoted to education in the basic sciences, which the authors of the Pew report² recommended be enhanced, and by deploying technology and developing a heavier focus on "competencies," "day-one skills," and "job readiness." An argument has been made that integration of the content has resulted in efficiencies, such that more content can be taught during the same 4-year period. However, one could argue that the colleges have not done the robust integration at the deeper strategic and operational levels that is needed to make the content manageable for students. Packing continuously expanding content into the same 4 years is likely one of the many causes of reported increases in learning disabilities, stress, and anxiety among veterinary students. As educators, we have some responsibility to shoulder for this situation, but the response by veterinary medical academics to these issues has followed the same model as the response to student debt: hire student counselors and social workers and create better-lit gathering places, but avoid tackling the root causes.

In addition to the Pew report,^{2,3} which suggested that the veterinary profession would have to make "profound and fundamental changes in the way it functions, if it is to effectively cope with the changes occurring in its environment," there have been the KPMG report,⁴ the 2007 Foresight report,⁵ and the recent North American Veterinary Medical Education Consortium (NAVMEC) report, which was published in 2011.⁶ In particular, the NAVMEC report acknowledges information overload but goes on to recommend adding more teaching materials to the curriculum, focusing on areas such as food safety, zoonoses, animal welfare, globalization, agri-business, one health, business awareness, and understanding influencers of diversity in society. But what is taken out of the curriculum? To complete the story, the NAVMEC report does give a head nod to the problem, by stating that educators should review how much information needs to

be memorized and retained, instead of focusing on learning how to effectively access information. But how do we do that when we are obsessed with using every minute currently available in our programs to squeeze another bit of information into a seemingly endless series of 60-minute lectures?

I would argue that veterinary medical degree programs require a fundamental shift, not just minor tinkering and tweaking. The occasional efforts to create innovative teaching models, often led by individuals with little in-depth training in the foundations of education, have caused further chaos and resulted in unreliable data in the published literature. To my knowledge, only a few veterinary colleges in North America have experts in pedagogical methods and curriculum development on their staff. Many times, the curriculum does not seem to be explicitly married to appropriate teaching methodologies that distinguish between memorization, application, and accessing of information, as called for in the NAVMEC report, and current assessment tools may lead to further difficulties for students whose learning behaviors are not part of the curricular strategies.

The much-needed and overdue rectification of the current situation requires courageous system-wide steps to make foundational changes in the structure and delivery of veterinary medical degree programs. Specifically, I propose that veterinary colleges alter their programs so that they can admit students directly out of high school into a 6-year program or, after a year of undergraduate training, into a 5-year program in which preveterinary courses and veterinary basic sciences courses are closely aligned and integrated, with a clear line of sight to relevant learning end points and competencies. Students should begin their formative clinical experiences during the third year of the program, spending a set number of hours in clinics every week. The amount of time spent in clinics would expand in the fourth and fifth years of the program, and students would spend all of their time in clinics during the last year of the program. If direct entry of high school students into a 6-year program is not feasible, then the current program could perhaps be lengthened by 6 to 12 months to give students some breathing space (but not to add more electives or “critical” content).

Alternatively, veterinary colleges could keep the current 4-year structure for education in the basic and clinical sciences, having students pursue clinical experiences, if they so desired, at the end of this 4-year period. This would allow students to more easily pursue their interests. For example, a student interested in graduate education in biomedical sciences could go directly into a graduate program after completing

the 4 years of basic and clinical sciences, and could complete a 1-year clinical internship at any time to allow for provincial or state licensure.

Regardless of the duration of the veterinary medical degree program, veterinary colleges need to do a better job of integrating student learning behaviors into the pedagogical methodologies used to educate students. Because students are generally tech-savvy and highly accomplished in accessing information, there seems little need to deliver 60-minute lectures, and this time could be better spent developing thoughtful learning partnerships with students. Students should be encouraged to take more responsibility, but with seamless evaluation and validation of self-directed learning.

Current veterinary medical degree programs in North America are controlled by veterinary medical academics and accredited by the AVMA Council on Education. Thus, structural reform of veterinary medical education in North America requires leadership from the Association of American Veterinary Medical Colleges, professional bodies such as the AVMA and Canadian Veterinary Medical Association, and any other group interested in the future of veterinary medicine. Are we going to tackle this issue?

References

1. Flexner A. *Medical education in the United States and Canada: a report to the Carnegie Foundation for the Advancement of Teaching*. New York: Carnegie Foundation, 1910.
2. Pritchard WR. Some implications of structural change in veterinary medicine and its impact on veterinary education. *J Am Vet Med Assoc* 1993;203:361-364.
3. Pritchard WR. Overview of the Pew report. *J Am Vet Med Assoc* 1989;194:865-867, 870.
4. Kogan LR, McConnell SL, Schoenfeld-Tacher R. Response of a veterinary college to career development needs identified in the KPMG LLP study and the executive summary of the Brakke study: a combined MBA/DVM program, business certificate program, and curricular modifications. *J Am Vet Med Assoc* 2005;226:1070-1076.
5. Krehbiel JD. Implications of the foresight report for animal-welfare education and research: what are veterinary colleges teaching today about animal welfare? *J Vet Med Educ* 2010;37:64-68.
6. Andrews K, Chaddock M, Osburn BI. Baseline survey of progress by veterinary medical colleges in implementing recommendations from the North American Veterinary Medical Education Consortium. *J Am Vet Med Assoc* 2013;243:826-832.

For all commentaries, views expressed are those of the authors and do not necessarily reflect the official policy of the AVMA.