

One world of veterinary medicine

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Summary

The veterinary profession finds itself in the midst of a new world order. Today veterinarians are part of a world that is exquisitely interconnected culturally, economically, socially, and professionally. As a consequence, societal needs and expectations of the profession are more demanding, critical and far-reaching.

Veterinarians must play important roles in five intersecting domains of work: public health, bio-medical research, global food safety and security, ecosystem health and the more traditional role of caring for animals. To be successful in this broad and complex range of services and activities, veterinarians must possess an expanded knowledge base, acquire new skills, and develop a new mindset that will ensure their success and excellence in all these domains.

The veterinary profession is becoming more fragmented and specialised, and it needs to be brought back together by a single sphere of knowledge or discipline that can serve as an intellectual foundation. The concept of One World of Veterinary Medicine can do just that. With this mindset veterinarians will become better connected to the world around and gain new public recognition and esteem.

To achieve this, a special commitment by academic veterinary medicine is, of course, essential. Veterinary schools must lead an educational transformation that reaffirms the social contract of veterinarians and works to align diverse sectors, build a global community, find a common purpose and expand the 21st Century veterinary portfolio of services, activities, and new possibilities.

Keywords

One World – Veterinary education – Veterinary medicine.

Introduction

Today, the veterinary profession sits on the cusp of the greatest period of challenges and opportunities in its history. The 21st Century has ushered in remarkable scientific and technical advances and a world exquisitely interconnected culturally, economically, socially and professionally. The old English word 'connexity' is an appropriate description of our contemporary lives (7). The term helps define the merger of complexity and connectivity and this concept is a key driving force for our world and the veterinary profession.

Ironically, at a time of unprecedented interconnectivity, the veterinary profession finds itself more fragmented and specialised than at any other time in its history. To help reconcile this paradox, there is a particular need for

veterinarians to better connect to the world around them, understand the new scope of activities and obligations facing them, and collectively embrace a common theme or central discipline that unifies the profession to achieve both a sense of cohesiveness and create an identity for the public they serve. The theme of One World of Veterinary Medicine is now a compelling concept and has special merit today as it can help better position veterinary medicine to confront existing and future challenges.

Yesterday and today

The history of our profession is one of a series of metamorphoses. Its roots can be traced back to early cultural beginnings, when for many societies animals represented a total way of life and were a source of food,

clothing, fuel, transportation, work, recreation and companionship (as is still the case in many parts of the world today). As the value of animals increased, their care and well-being progressively improved. The era of Louis Pasteur and the emerging discipline of microbiology resulted in a new understanding of how animal and human health were linked and a new appreciation for comparative medicine and biomedical research. The veterinary profession really started taking shape with the recognition of the importance of horses, especially as assets of war, which was followed by still another metamorphosis characterised by the need to control animal epidemics, which led to the genesis of formal veterinary education and government Veterinary Services (3). Finally, the profession experienced the diversification and intensification of livestock and poultry production and today the profession has transitioned into a time where there is a new emphasis on companion animals and new specialised services. Furthermore, we now live and work in an era of globalisation, new emerging infectious disease and a resurgence of zoonoses; thus, the profession will be challenged to meet societal needs and expectations in public health, biomedical research, environmental health, and the safety and security of today's global food system.

Veterinary education has been pivotal in both responding to these metamorphoses and creating new knowledge and tools that have led to greater levels of sophistication in training and new services delivered by veterinarians. Yet, on reflection, the profession has been mainly reactive to this series of metamorphoses and past challenges. The key question for veterinary education today is: will academe lead the next metamorphosis or will it reluctantly be pushed into the future? The latter option will surely limit our effectiveness and sense of possibility. Our world of 'connexity' demands a new perspective based on a global and connected profession that will be central to preparing for, and leading, the most profound metamorphosis that we have ever experienced as a profession.

John Kotter stated that if we have anything to worry about, it is not our opportunities but rather it is acquiring the necessary skills and knowledge to take advantage of these opportunities (6). A One World of Veterinary Medicine viewpoint is necessary to envision the possibilities, expand our horizon, and ensure that we will be able to meet the rapidly changing needs and expectations of society. Successfully meeting these expectations is the ultimate measure of our professional success and a critical determinant of our future relevance.

Understanding the challenges

The challenges to global animal and public health are immense and growing. Today, the veterinary profession must be involved in the following critical issues:

- food safety
- food security
- antimicrobial resistance
- environmental degradation and sustainability
- the growing carbon footprint and huge energy demands of animal agriculture
- the vulnerability of animals due to intensified production systems
- movements of exotic animals and their products
- bio- and agro-terrorism
- the role of wildlife in disease transmission
- food-borne, water-borne and vector-borne diseases
- the emergence and reemergence of new zoonoses
- the global trade of food and animals, including the unprecedented demand for proteins of animal origin, which is projected to increase 50% by 2020 (2).

While we will need increasing levels of knowledge and advances in technology to meet these challenges, we will also need to better understand the new interconnected world of commerce, travel, trade, foods, society, policies, and political will that is the context of our contemporary One World of Veterinary Medicine (10). It is these factors, along with the remarkable ability of microbes to adapt, that are creating new opportunities and challenges for veterinary medicine and propelling us into the next metamorphosis.

In his play *The Tempest*, Shakespeare wrote that 'what's past is prologue.' This phrase essentially means that our past experiences and actions have a strong influence on how we approach today and our future. Unfortunately, this bias may not serve veterinary education, or our profession, very well as we find ourselves at the crossroads of a new world order characterised by profound and unprecedented change. Thus, defining and adapting the concept of One World of Veterinary Medicine will mean that the profession must literally re-perceive its future, not by looking at what we have always done, but rather, by focusing on what we really can and need to achieve in the context of the changing values and expectations of those whom we serve. Today's driving forces and rapidly changing world ensure that our next professional metamorphosis will be unlike any other and past solutions, activities and educational paradigms will probably become irrelevant.

Figure 1 illustrates the critical domains in which we must now work, engage and excel. We must balance our professional services and resources across these five themes and pay special attention to the areas where they intersect, which is where new possibilities are likely to emerge. One

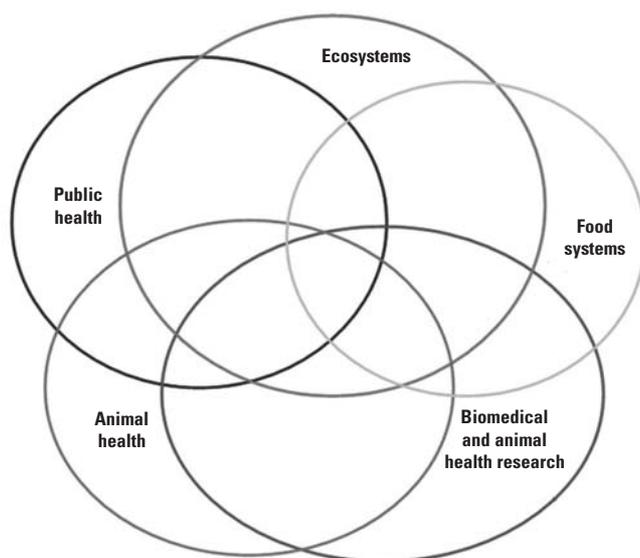


Fig. 1
Critical domains in which veterinarians must now work, engage and excel as One World of Veterinary Medicine

World of Veterinary Medicine is, then, a professional mindset and a group of activities in the domains of biomedical research, public health, ecosystem health, global food systems and the care and improvement of the health of our animal populations. One World of Veterinary Medicine also demands that we need to better understand the new global context in which these domains are embedded. While we must honour and respect the many significant contributions of yesterday, the past can neither be used to dictate our future direction nor define the portfolio of future possibilities.

Overcoming barriers to One World of Veterinary Medicine

Throughout the multiple metamorphoses that the profession has undergone, veterinary medical education has been essential in helping to prepare professionals with the requisite skills, experiences and knowledge to be successful and meet the needs of society. Academic veterinary medicine is also the point of greatest leverage for effecting change in our profession. Our global veterinary colleges and schools have a responsibility to prepare the next cadre of professionals to improve human and animal health and be prepared to work and contribute in the interconnected domains illustrated in Figure 1.

It has been stated that in order to transform others, we must first transform ourselves. Central to this

transformation is the responsibility of the veterinary faculty as a whole for developing a balanced, unbiased and broad-ranging curriculum that reflects the views of the entire faculty and is not limited to a single discipline, e.g. clinical medicine. At a time when new knowledge is being acquired at an unprecedented rate and when specialisation is a growing trend, we still need to build a common foundation that transcends scientific disciplines and specialisation and achieves a universal core that both pulls us together and gives us a basis for connecting to the world around us.

In addition to being involved in curricular issues, our veterinary educators are influential in the process of enculturation, which teaches students and new veterinarians, subtly or openly, the accepted norms and values of the profession and helps define the boundaries of our actions and thinking (5). Thus, veterinary faculties help dictate behaviours and establish what is acceptable and not acceptable within the frameworks of the profession. Enculturation can be a very strong unifying force, but also a potential deterrent to leading change. What are the predominant behaviour patterns and thought processes acquired in academia today that will mould the next generation of professionals? Is there an overwhelming clinical bias or are we encouraging young professionals to prepare for, and accept, the broadening societal challenges and new opportunities and domains of tomorrow?

Jacob Bronowski (1) once stated that ‘One source of reluctance among scientists of different disciplines or professions to share interests and insights is a lack of sufficient overviews of their own particular science.’ Similarly, veterinarians can also succumb to a limited view of their own activities and fail to achieve for themselves or others the fullest benefits from their efforts. An acceptance of the concept of One World of Veterinary Medicine could greatly help counteract this limitation.

Today, much of the public unfortunately perceives the veterinary profession as a mixture of discrete activities and fields of endeavour rather than a single cohesive whole with a unified social purpose. This perception impedes the recognition of any central focus or shared vision for the many multiple and seemingly divergent activities of veterinary medicine (8). Although the profession has achieved many successes, its significant benefits to human health – through its contributions to biomedical research, public health and environmental health – are under-appreciated, yet a wider appreciation of these benefits will be critical to gaining future public support and understanding. We all take great pride in our work and in the noteworthy contributions to the domain of maintaining and improving animal health, but we also need our clients and the general public to envision the profession as even more meaningful and purposeful. While animal health and care remain the *raison d’être* for our profession, the true

measure of our success will be determined by our performance in all five domains of work. A profession's brand image is based on distinction, trust and a public perception of what it does, how it affects them and how it benefits society. The areas of public health and global animal health and food systems are fundamental to One World of Veterinary Medicine and to our brand identity. The involvement of veterinarians in these areas demonstrates the wide-ranging remit of the profession, helps define our public persona, and highlights the valuable contribution of veterinary professionals to matters of global significance for both people and animals.

A call to action

A One World of Veterinary Medicine should be composed of professionals who possess the knowledge, skills, abilities and attitudes to be successful in the wide range of careers, activities and responsibilities that define our profession. Inherent in this outcome is the creation of well-educated veterinarians. An educated veterinarian must have a combination of:

- the basic biomedical, technical and clinical competences
- non-technical and social skills
- both foundational and specialised knowledge.

The foundational knowledge is the essence of a 'one world' concept and represents the core knowledge that transcends the boundaries of other disciplines and specialties and serves as a global and common mindset ensuring that veterinarians have an awareness of the world around them, appreciate and support the many roles and responsibilities of the profession, and are willing to deal with the growing uncertainties of our contemporary world. An educated veterinarian must also maintain an open mind to think, learn, and re-learn, and possess an intellectual curiosity and passion to discover the 'connectiveness' among the fields of clinical care, public health, global food systems, ecosystems and basic and applied research. The foundation of the One World of Veterinary Medicine is universal but also locally applicable, based on the different cultures, social values, and geographical sites that enrich the profession and also give relevance to our work across the globe.

The concept of One World of Veterinary Medicine underscores the need for a single discipline or sphere of knowledge. While we are used to considering the veterinary profession as a composite of multiple scientific and clinical disciplines, it is also appropriate to think about a common body of knowledge that could serve as our professional foundation. This knowledge could also be the common denominator that links our profession together

globally. Such a foundation is critical today, as our profession is progressively becoming fragmented into numerous areas of specialisation, especially in terms of clinical medicine. In the future, an educated veterinarian should be an individual who becomes an effective and productive citizen of the world contributing to society intellectually, economically, socially and ethically. Finally he/she must be professionally attuned but humanely informed, technologically sophisticated yet community dependent, rooted globally but informed locally, and capable of working independently but still collaboratively (9). These abilities build on the foundation of a 'one world' education and enable veterinarians to turn the concept of One World of Veterinary Medicine into a practical reality.

It is estimated that most new veterinary graduates will undertake approximately 100,000 hours of professional work and service over a lifetime. Many will make career changes during this time and others will continue careers in new areas of specialisation. Yet a strong intellectual foundation that can ground each of us should transcend these 100,000 hours, serve as a cohesive and unifying force, give us a sense of history and purpose, and at the same time, prepare and expand our horizons and professional opportunities. More and more of these professional hours are likely to be devoted to a broadening range of 'one world' activities.

While our backgrounds and careers are diverse and we have different challenges based on our global circumstances, our profession, and each of us individually, would benefit from an expanded professional view that gives us esteem, pride and public recognition. A 'one world' mindset and foundation could also serve as a 'brand' that would enable us to highlight the role of veterinarians as global citizens that make a difference in the lives of animals and people, thus achieving greater public respect and professional acceptance.

To ensure that veterinary professionals are able to make a valuable contribution to the global community, colleges, schools, and universities have a responsibility to design educational programmes that will maximise the probability of veterinarians achieving a 'one world' mindset. While students enter their veterinary education with existing knowledge, skills, and attitudes, it is the responsibility of veterinary educators to mould them into 'one world' professionals and equip them with both specialised knowledge and competences as appropriate, but also with a general and universal knowledge that helps to ground and direct their professional lives and reaffirms their social contract for a lifetime of service.

One World of Veterinary Medicine has the power to connect us together in meaningful ways across the growing number of specialties and ideological divides. Although further specialisation will continue to enable us to make

outstanding contributions, albeit more narrowly, we still must work to foster support for the broad One World of Veterinary Medicine concept rather than encourage growing loyalties to single disciplines and careers, thus avoiding potential fragmentation.

Conclusion

In reconsidering Shakespeare's pronouncement that 'what's past is prologue', which highlights the fact that history strongly influences our future, we can see that this adage can also be viewed as a serious admonition for the veterinary profession. Veterinary medicine is positioned at a strategic inflection point where past strategies, thinking and success may no longer be relevant for the future. Paul Kennedy suggested in his book *Preparing for the 21st Century* (4) that the task of reconciling the profound changes of today with our traditional structure, institutional arrangements and habitual ways of doing things, is likely to be our greatest problem in the future. His observation seems to hold true for academic veterinary medicine.

Our profession must not be perceived to be less than the sum of its parts. We need overarching goals and recognised themes that connect us in new ways to society and help us create an effective global response to the challenges we face. The most serious challenge to veterinary medicine today is how to meet the changing needs of a global society

with growing and diverse expectations; whether or not our profession is judged to be successful will depend on how well we address this challenge. To help ensure success, we need to create and adopt a One World of Veterinary Medicine mindset that will help align the diverse sectors of our profession, build a sense of global community and create a unifying purpose and an expanded portfolio of exciting possibilities and new services.

'One world' demands that we be engaged in biomedical research, public health, environmental and ecological health, and today's global food systems, in addition to our more traditional roles in animal health and care. A new world order driven by globalisation is creating a more fractured planet and giving rise to challenges that require the attention of the veterinary medical profession and the adoption of the One World of Veterinary Medicine concept. This is a special time for the veterinary profession and thus a special time for veterinary academic institutions, which must help lead and connect the profession in new ways across the globe, ensure success in new domains and make appropriate changes to the curricula, teaching, and learning objectives, thus better preparing the profession for the next profound metamorphosis.

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