

# Veterinary education: a basis for good governance leading to effective Veterinary Services

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## Summary

Veterinary education serves as the foundation on which a country can build effective Veterinary Services (VS). In addition, an appropriately well-educated animal health workforce will be better poised to actively participate in and advance good governance practices. Good governance, in turn, will lead to improved animal and veterinary public health infrastructures and help advance economic development across the globe.

A crucial first step in establishing a strong educational foundation is to define minimum competencies for both public- and private-practice veterinarians to perform veterinary service tasks. Defining minimum competencies will also assist veterinary education establishments (VEEs) in developing and implementing curricula to allow graduates to achieve those competencies. Incorporating veterinary educational prerequisites and requirements into governance documents that regulate VS will help to ensure that those who deliver VS have an adequate knowledge and skills base to do so. Public-private partnerships may be particularly effective in designing and implementing curricula that address defined minimum competencies and assure the quality of VEEs. Through these partnerships, a system of continuous quality improvement is established that embodies the qualities essential to good governance practices. Such practices will ultimately strengthen national VS, better protect animal and public health, and ensure food security.

## Keywords

Accreditation – Certification – Minimum competencies – National veterinary accreditation programme – OIE *Ad hoc* Group on Veterinary Education – Veterinary education – Veterinary Services.

## Introduction

*The foundation of every state is the education of its youth.*  
Diogenes Laertius, 3rd Century A.D.

Veterinary education is the cornerstone on which the veterinary profession is built and on which it advances and flourishes. Education also serves to continually refresh the skills and knowledge of graduate veterinarians. However, the veterinary profession is multifaceted, with the roles of veterinarians and veterinary para-professionals (e.g. veterinary technicians, veterinary nurses, para-veterinarians, community-based animal health workers)

being heavily influenced across regional and country borders by societal needs and expectations, financial resources, and the importance placed, for example, on companion animals *versus* food animals.

Despite the myriad career paths available to graduate veterinarians, the educational process leading to the first professional degree should provide all graduates with at least a basic understanding and skill level in those areas that most affect Veterinary Services (VS), as defined by the World Organisation for Animal Health (OIE). If graduates do not have these fundamental skills, the capacity of VS will be adversely affected, as will the protection of animal

and public health and the assurance of food security. In addition, a well-educated veterinary workforce will better be able to understand and actively participate in and advance good governance practices – namely, predictable, open and enlightened policy-making; a bureaucracy imbued with a professional ethos; and a strong civil society participating in public affairs (32). Such practices are a necessary base on which to provide quality VS through strong public–private partnerships. For these reasons alone, it seems appropriate for the veterinary authority to recognise the importance of veterinary education and include basic minimum requirements within governance documents that define and regulate national VS.

Defining such minimum requirements, though, is only the first step in ensuring the overall quality of veterinary educational establishments (VEEs) and in meeting the continuing education needs of those animal health professionals who focus their careers on VS. This paper will concentrate on the important role that private–public partnerships play in establishing minimum competencies for Day 1 veterinary graduates and ensuring the quality of primary and continuing veterinary education. Such private–public partnerships that embrace good governance practices will ultimately have a positive effect on the quality of VS.

## Defining regional core veterinary competencies

To assess the quality of any VEE, it is important first to determine the outcomes anticipated of the educational programme provided by that establishment. In other words, what knowledge and skills are expected of the new (Day 1) graduate? – recognising that the desired outcome may vary among countries or regions because of differing societal needs and expectations, financial resources, and animal health and educational infrastructures. In many developed countries, the delivery of national VS remains a vital public good, necessary to ensure food safety; animal, public and environmental health; and economic security. However, veterinarians in these countries are also expected to deliver services deemed primarily as a private good – for example, clinical interventions to treat or prevent non-zoonotic diseases in animals that do not directly affect the food supply (24). Thus, graduates of VEEs in these countries need to possess the knowledge and skills necessary to be effective in either broad area of the profession. In developing and in-transition countries, veterinary education typically emphasises knowledge and skills essential to the delivery of high-quality national VS. The delivery of such services for the public good will advance animal and veterinary public health infrastructures, leading to improved food and economic

security (24). It is the area of overlap between the two extremes of societal needs and expectations at which minimum competencies for the delivery of national VS can be found.

Over the past decade, many academic, professional and regulatory organisations have developed desired core competencies for the new veterinary graduate entering the profession in a given geographical region (13, 14, 20, 22). Therefore, these core competencies reflect the needs and resources of that region and address not only public veterinary practice – that is, the delivery of VS as defined by the OIE – but also private veterinary practice. Three regional examples of core competencies will be discussed in further detail, with each set of competencies sharing similarities with the others.

In 2010, the North American Veterinary Medical Educational Consortium (NAVMEC), a collaborative group of more than 400 stakeholders from private and public practice, academia, educational accreditation and testing and licensure groups, met to address the challenges and opportunities facing veterinary education in the United States (USA) and Canada (17, 20). During the course of these meetings, a roadmap was developed for veterinary medical education in the 21st Century, in which core competencies were defined as the ‘spectrum of knowledge that enables a veterinarian to have the confidence to be productive in his/her chosen career on the day after graduation’ (20). Core competencies developed by NAVMEC include the following:

- multispecies knowledge plus clinical competency in one or more species or disciplines
- One Health knowledge: animal, human and environmental health
- professional competencies: communication; collaboration; management; life-long learning, scholarship and the value of research; leadership; diversity and multicultural awareness; and adaptation to changing environments.

The Royal College of Veterinary Surgeons (RCVS), which has statutory authority in the United Kingdom (UK) to register veterinarians for practice, set standards of veterinary education and regulate professional conduct, bases its definition of Day 1 and Year 1 competences on an ‘integration of knowledge, skills and attitudes, the application of which enables the professional to perform effectively, and to respond to contingencies, change, and the unexpected’ (12, 22). The RCVS’s Day 1 competences are not dissimilar to the core competencies identified by NAVMEC:

- general professional competences and attributes describing the distinguishing characteristics of a veterinary surgeon

- underpinning knowledge and understanding describing in general terms the breadth of knowledge and understanding needed for a career as a veterinary surgeon, and for subsequent professional development in whatever sphere of veterinary science the individual wishes to pursue

- practically based veterinary competences describing the basic practical competences that are expected at:

- i) the point of graduation
- ii) following an extended period of further professional training in practice.

However, the RCVS provides additional detail about the specific skills and knowledge needed to assure competency. For example, under ‘General professional skills and attributes’, the RCVS indicates that, among other things, the new veterinary graduate should be able to:

- communicate effectively with clients, the lay public, professional colleagues and responsible authorities; listen effectively and respond sympathetically to clients and others, using language in a form appropriate to the audience and the context

- work effectively as a member of a multidisciplinary team in the delivery of services to clients

- be aware of personal limitations, and demonstrate awareness of when and from where to seek professional advice, assistance and support (22).

Under ‘Practical competences’, the RCVS has identified 20 different skills that the new veterinary graduate should be able to undertake, among which are the following:

- to know and apply the RCVS 12 Principles of Certification correctly

- to perform ante-mortem inspection of animals destined for the food chain and correctly identify conditions affecting the quality and safety of products of animal origin

- to correctly apply the principles of aseptic surgery (22).

The European Association of Establishments for Veterinary Education (EAEVE) has, as its members, the European faculties, schools and universities of veterinary medicine. The mission of EAEVE is to support, promote and develop veterinary education in Europe. In carrying out its mission, EAEVE relies on the minimum standards for veterinary surgeons set down in European Union (EU) Directive 2005/36 (13, 14). Additionally, EAEVE notes that the ‘quality of veterinary training is achieved by the concerted action of a series of steps during learning by the students. Very often quality of learning (and, indirectly, of teaching) is translated into the concept of the competence of the graduate, e.g. the graduate is sufficiently qualified to properly perform the tasks associated to the degree awarded by the educating faculty’ (13).

As a member of the EU, the UK has standards for veterinary education and training that are influenced by EU Directive 2005/36 (14). Perhaps not surprisingly, then, EAEVE’s list of recommended essential competencies at graduation mirror the competences defined by the RCVS.

## OIE Ad hoc Group on Veterinary Education

Several international veterinary and animal health organisations (18, 41) have more recently tackled the challenging task of defining global minimum competencies for new veterinary graduates. Development of such competencies must reflect the needs and capabilities of many societies. Consequently, it is a daunting but necessary first step in assessing the effectiveness of veterinary education to provide ongoing workforce capabilities for VS in compliance with international standards. Although only some veterinarians will focus their careers on the delivery of national VS, all veterinarians are responsible for promoting animal health, animal welfare and veterinary public health. Veterinary education is thus a cornerstone to ensure that the veterinary graduate has the required knowledge, skills, attitudes and aptitudes to understand and be able to perform entry-level national Veterinary Service tasks that relate to the security and promotion of animal and public health. These skills, knowledge, attitudes and aptitudes must encompass the basic clinical sciences necessary to detect, diagnose, treat and prevent animal disease (Fig. 1), as well as those skills necessary for active participation in



**Fig. 1**  
**A veterinarian from the United States Department of Agriculture Animal and Plant Health Inspection Service clips a tiny piece of a third eyelid from a sheep while students hold the sheep**

Photo by Stephen Ausmus. Courtesy of Agricultural Research Service Image Gallery  
(Available at: [www.ars.usda.gov/is/graphics/photos/nov02/k10086-1.htm](http://www.ars.usda.gov/is/graphics/photos/nov02/k10086-1.htm))

good governance practices at local, national, regional and international levels. In turn, the establishment of good governance practices will enhance the animal health infrastructure, leading to improved animal and human health and welfare.

Following the October 2009 OIE Global Conference on Veterinary Education, the OIE established the international *Ad hoc* Group on Veterinary Education (AHG) with representatives from each of the five OIE regions (Africa, the Americas, Asia, the Far East and Oceania, Europe and the Middle East) (9). The AHG was charged with addressing certain recommendations from the October 2009 conference (33) and focused its initial efforts on outlining minimum competencies for the entry-level veterinary graduate in the delivery of VS, as defined in the OIE *Terrestrial Animal Health Code (Terrestrial Code)*:

‘... the governmental and non-governmental organisations that implement animal health and welfare measures and other standards and recommendations in the *Terrestrial Code* and the OIE *Aquatic Animal Health Code* in the territory. The VS are under the overall control and direction of the Veterinary Authority. Private sector organisations, veterinarians, veterinary paraprofessionals or aquatic animal health professionals are normally accredited or approved by the Veterinary Authority to deliver the delegated functions’ (36).

To develop its initial report, the AHG used stakeholder input, as well as information gleaned from documents on the scope of VS as defined by the OIE; veterinary school curricula; educational accreditation standards and private practice accreditation programmes. The AHG presented that report to the OIE Terrestrial Animal Health Standards Commission (TAHSC) in early 2011, which in turn presented it to the World Assembly of Delegates at the OIE 79th General Session in May 2011 (34). Included in the report was the draft minimum competencies document developed by the AHG. In 2012, the OIE published the work of the AHG as its recommendations on the competencies of graduating veterinarians (‘Day 1 graduates’) to ensure the high quality of national VS and presented this final document to the delegates at the 80th General Session (39).

In the final Competencies document (39), the AHG defined both basic and advanced competencies – those that it believes will prepare the average entry-level (i.e. new graduate) veterinarian to promote global veterinary public health as well as provide an excellent base for advanced training and education for those who wish to pursue a career in national VS. More specifically, basic competencies refer to the minimum knowledge, skills, attitudes and

aptitudes required for a veterinarian to be licensed by a veterinary statutory body. These comprise general competencies (e.g. basic veterinary sciences, clinical veterinary sciences and animal production) and specific competencies directly relating to the OIE mandate (e.g. epidemiology, transboundary animal diseases, zoonoses, emerging and re-emerging diseases, disease prevention and control programmes, food hygiene, veterinary products, animal welfare, veterinary legislation and ethics, general certification procedures and communication skills).

Advanced competencies, as defined by the AHG, are the minimum knowledge, skills, attitudes and aptitudes required for a veterinarian to work within the Veterinary Authority. The Day 1 veterinary graduate – that is, the veterinarian who has just graduated from a VEE – is not expected to have mastered the advanced competencies, but instead is expected to have received an introduction to them during veterinary school. Moreover, having successfully completed a curriculum at a recognised VEE, the AHG envisioned that Day 1 graduates would have gained an enthusiasm for life-long learning and a general awareness and appreciation for the following advanced competencies: organisation of VS, inspection and certification procedures, management of contagious diseases, food hygiene, application of risk analysis, research, the international trade framework, and administration and management.

At its 79th General Session, the OIE World Assembly of Delegates reviewed the AHG report and subsequently approved Resolution 34, which called for the OIE to: ‘present a framework and recommendations to the World Assembly of Delegates on the Day 1 minimum competencies required by veterinarians for countries to meet the OIE quality standards for VS (both public and private components)...’ (37). The World Assembly of Delegates also adopted a modification recommended by TAHSC to Article 3.2.14. of the *Terrestrial Code*. This article outlines the information required to allow self- or third-party evaluation of the VS of a Member Country. Information requirements for veterinary education (i.e. the number of veterinary schools within the country, the length of the veterinary course and international recognition of the veterinary degree awarded) are included as a component of human resources (35). The modification adopted by the World Assembly in 2011 added the following language to such information requirements: a ‘curriculum addressing the minimum competencies of Day 1 veterinary graduates to assure the delivery of quality VS, as described in the relevant chapter(s) of the *Terrestrial Code*’ (35).

With the incorporation of this new language into the *Terrestrial Code*, it is anticipated that the assessment of veterinary education quality and capacity, as it relates

to the delivery of VS, will continue to be a component of the OIE Performance of Veterinary Services (PVS) Pathway. As defined by the OIE, the PVS Pathway is a 'global programme for the sustainable improvement of a country's VS', in particular, their compliance with OIE international standards on the quality of VS. This is an important foundation for improving animal and public health and enhancing compliance with sanitary and phytosanitary standards, at the national, regional and international level. It should be remembered that the activities of VS are a global public good and are consequently eligible for appropriate national, regional or international public funding support (40).

It is also anticipated that Member Countries who request a PVS Evaluation and a PVS Gap Analysis as first steps in improving the quality of their national VS would then potentially be able to develop twinning programmes between parent and candidate VEEs, the OIE and relevant donors, in a manner similar to that of the laboratory twinning programme initiated by the OIE in 2007 (38). Twinning programmes are designed to allow for an exchange of knowledge and skills over a determined project period to build capacity and expertise in certain areas; for example, diagnostic capabilities in the case of laboratory twinning or curriculum development and implementation in the case of VEE twinning.

## Assuring the quality of veterinary medical education

Defining the minimum core competencies expected of new veterinary graduates may be a necessary first step in assessing the quality of VEEs. However, such definition alone does not constitute an effective quality assurance programme. Accreditation is the process of applying standard requirements that reflect societal and professional expectations to both self and peer reviews of an educational institution or programme, to determine whether that institution or programme complies with all, some or none of the standards (3, 15). The peer-review component of accreditation is conducted by stakeholders in the academic programme under evaluation. For veterinary medicine, these stakeholders include both those involved in the educational process and the end-users of the product of the educational process – that product being the new veterinarian or veterinary para-professional.

Another component of the accreditation process comprises the standards that are established. Accreditation standards are not meant to be static. Instead, standards must be reviewed on a regular basis to ensure that they accurately reflect the minimum expectations for a given society and

profession at a given time (3). Accreditation standards will vary among countries and regions, dependent, in large part, on societal needs and financial and other infrastructural resources. To ensure that accreditation reflects the needs of a given society, whether those needs are defined on a local, national or regional basis, input on standards must be sought from all stakeholders. Thus, through the process of self and peer review, and the continuing refinement of standards, the accreditation of educational programmes is both a system of quality assurance and of quality improvement.

In many countries, educational accreditation or quality assessment may be conducted by a government organisation. However, in other countries (e.g. the USA, Canada, the UK, Australia, New Zealand), accreditation is typically conducted by organisations independent of, yet recognised by, the state, national or local governments (3, 7, 23). Government recognition of accreditation results in the accredited status conferring certain rights on the accredited programme, its students and its graduates (e.g. access to student loans, eligibility for licensure or registration to practise).

In the USA, the American Veterinary Medical Association's (AVMA) Council on Education (COE) is the sole accrediting entity recognised by the US Department of Education (USDE) for veterinary medical education (29). Recognition by the USDE obligates the COE to follow strict guidelines specifically designed to provide assurance that the appropriate standards of accreditation have been developed and are being applied fairly and uniformly to all veterinary programmes seeking accreditation (30).

The 11 COE Standards of Accreditation (organisation, finances, physical facilities and equipment, clinical resources, library and information resources, students, admission, faculty, curriculum, research and outcomes assessment) are reviewed on a regular basis and made available to the public in the online COE policies and procedures manual (3). Each standard also includes a compliance statement to further explain what compliance with that standard means. Veterinary education establishments seeking initial or ongoing accreditation must provide the COE with sufficient information so that the Council can reach a decision on compliance with each standard. Information provided by the VEE is supplemented by regular on-site evaluations. In this way, the COE compares each VEE to the same set of standards, to reach initial and continuing accreditation decisions in a consistent and fair manner. Moreover, because the COE does not prescribe how each VEE must meet each standard, the accreditation process allows for some flexibility in organisation, admissions requirements, curriculum development and implementation, and the assessment of student outcomes.

## Illustration of a private–public partnership to ensure the quality of veterinary education

Education leading to the first professional veterinary degree (e.g. DVM, VMD, BVSc) is a vital link in assuring the delivery of efficacious VS and, hence, protecting animal and public health. It is thus appropriate that the quality of that education is addressed legislatively at the regional, national or local level. This is most often accomplished through a process of licensure, certification or registration. As an example, in the USA, individual states have the responsibility for licensing veterinarians so that they may legally practise veterinary medicine in that state. Licensure is a government activity, with authority granted by the state legislature to the veterinary regulatory board in each state. The composition and scope of the regulatory boards are defined legislatively in each state's veterinary practice act. Both AVMA, the non-governmental, national professional veterinary association in the USA, and the American Association of Veterinary State Boards (AAVSB), a non-governmental association of veterinary state (USA) and provincial (Canada) regulatory boards, provide model veterinary practice acts that state governments may use to create, assess and modify their own practice acts (1, 6).

State governments establish veterinary practice acts because of the vital link between veterinary medicine and the assurance and protection of animal and public health. This link is highlighted in the preamble to AVMA's model veterinary practice act, which states:

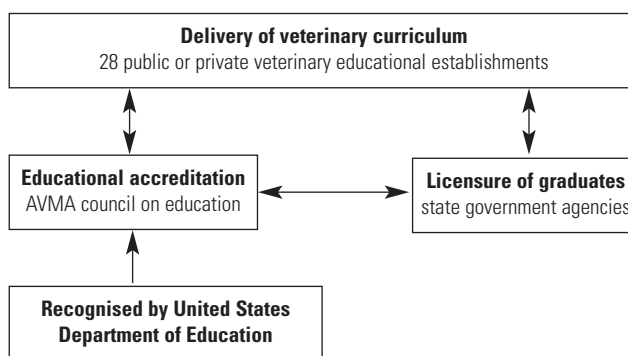
'This statute [practice act] is enacted as an exercise of the powers of the state to protect the health, safety, and welfare of the public and animals by ensuring the delivery of competent veterinary medical care. It is hereby declared that the practice of veterinary medicine is a privilege conferred by legislative grant to persons possessed of the personal and professional qualifications specified in this Act' (6).

The AAVSB has similar language in the legislative declaration of its model act, which states:

'The practices of veterinary medicine and veterinary technology... are declared professional practices affecting the public health, safety, and welfare and are subject to regulation and control in the public interest. It is further declared to be a matter of public interest and concern that the practices of veterinary medicine and veterinary technology, as defined in the Act, merit and receive the confidence of the public and that only qualified persons be permitted to engage in the practice of veterinary medicine or veterinary technology...' (1).

Thus, through each state's practice act, the government grants the regulatory board the authority to establish all rules necessary to establish and publish standards of practice and professional conduct for the practice of veterinary medicine. In every state, these standards include, at their very core, the educational prerequisite for licensure eligibility. Only those who have met this educational prerequisite are permitted to apply for state licensure and, hence, become eligible to practise veterinary medicine in a private setting within that state.

Although each state regulatory board may establish its own prerequisites, in all states, graduation from an AVMA/COE-accredited veterinary school or college is sufficient to meet, either in full or in part, the educational prerequisite for licensure eligibility. State governments accept COE accreditation as an essential quality assurance measure; in large part because the USDE recognises the COE as the sole accrediting entity for veterinary medical education. Each state government, then, recognises COE-accredited institutions as graduating entry-level veterinarians that meet state-mandated educational prerequisites for licensure eligibility. The private-public partnership to ensure the quality of new veterinary graduates in the USA is illustrated in Figure 2.



AVMA: American Veterinary Medical Association

**Fig. 2**  
**The private–public partnership which ensures the quality of new veterinary graduates in the United States**

In the United States, veterinary educational establishments, the accrediting entity (which is recognised by the federal government) and state government agencies cooperate to ensure that new graduate veterinarians have the necessary knowledge and skills to provide the public with quality veterinary care, in accordance with societal needs and expectations

Graduates of veterinary schools that are not accredited by AVMA/COE do not meet the standard educational prerequisite for licensure eligibility as described above. Without additional and specific state-mandated rules governing their eligibility for licensure, such veterinarians would be unable to practise clinical veterinary medicine in the USA. However, most state governments provide an alternative route to meet the educational prerequisite for licensure eligibility, which can be fulfilled by successful

completion of an educational equivalency certification programme that is recognised by the veterinary statutory body within each state. These certification programmes (2, 4) involve additional rigorous assessments (i.e. examinations) of graduates of non-accredited schools to ensure that their basic and clinical veterinary science knowledge and hands-on clinical skills meet the skill level expected of a new graduate of an AVMA/COE-accredited school. Once certified through an equivalency programme accepted by the state veterinary regulatory board, such graduates are then eligible to apply for licensure in the same manner as graduates from AVMA/COE-accredited schools.

State regulatory boards also define exemptions to licensure requirements for specific circumstances. In AVMA's model veterinary practice act, a suggested exemption is for any 'employee of the federal, state, or local government performing his or her official duties' (6). This exemption is intended to include full-time, temporary or contract employees, particularly in the case of emergency outbreaks or disaster situations. The AAVSB model practice act has a similar exemption: '... Any veterinary medical officer serving in the United States armed forces or in the federal or state government performing veterinary medical services within the scope of official duties, provided such veterinary medical services are limited to the period of their service' (1).

Exemptions in state practice acts for government veterinarians, however, do not negate the importance of quality education in forming the base on which veterinary employment is built. For example, the minimum educational prerequisites for employment as a veterinary medical officer with the United States Department of Agriculture (USDA) are almost identical to those for state licensure: graduation from an AVMA/COE-accredited veterinary school or certification through an accepted educational equivalency certification programme (31). Thus, the quality of entry-level veterinary education is assured through the accreditation of schools and colleges of veterinary medicine or certification of individual graduates from non-accredited schools. Educational accreditation and certification in turn form the basis on which to ensure the delivery of effective VS.

## Education and regulation of veterinary para-professionals

The use of veterinary para-professionals as partners in the animal health care team is commonplace in the more developed countries of the world. Indeed, such partnership has been proven to enhance the productivity and viability of veterinary practices and allowed for the

provision of a greater array of services to the animal-owning public (16, 21).

In the USA, the practice of veterinary technology, like the practice of veterinary medicine, is regulated at the state level through a private–public partnership. In this partnership, a private or public educational institution delivers the curriculum; a private accrediting body ensures quality and sustainability of curriculum delivery; and, most commonly, a public entity awards credentials to the graduates of accredited programmes through a process of examination and registration. Further, state veterinary or veterinary technology practice acts commonly define the jobs and tasks permissible under law that a veterinary technician can perform, independently or under the direct or indirect supervision of a licensed veterinarian.

Additionally, an accreditation process similar to that for VEEs is in place to ensure the quality of programmes that educate veterinary para-professionals (i.e. veterinary technicians). The AVMA Committee on Veterinary Technician Education and Activities (CVTEA) is recognised as the educational accrediting body by the government in those states that regulate the practice of veterinary technology (5). The Animal Health Technologist/Veterinary Technician Programme Accreditation Committee (AHT/VTP AC) of the Canadian Veterinary Medical Association (CVMA) accredits veterinary technology programmes in Canada (8). Because of the similarity in standards for veterinary technician education, practice and regulation between Canada and the USA, both AVMA and CVMA recommend that those bodies awarding credentials recognise the graduates of CVMA-accredited veterinary technology programmes as eligible for gaining credentials in the USA and *vice versa*.

Veterinary para-professionals are not only vital members of the animal health care team in the more developed regions of the world, but they also play an essential role in delivering VS in developing and in-transition countries. Specifically, by training multiple community-based animal health workers to work in partnership with a centrally located veterinarian, veterinary para-professionals can help to fill gaps in the provision of care to animals in the remotest and poorest regions of a country, thus contributing significantly to the advancement of local public health and economic stability (24).

The specific need for community-based animal health workers in such countries has resulted in the development of a different educational and regulatory template from that which exists in the USA and Canada. For example, to provide much-needed animal health care to remote villages in Afghanistan, district-based veterinary field units and village-based sub-units were established through partnerships between international aid agencies, the Afghan veterinary profession and, ultimately, the Afghan

government (24). Programmes were established to train local inhabitants to staff these units. Because of their familiarity with their region's culture and specific needs, these local workers could more easily deliver basic animal health care and serve as a first line of defence for disease detection and prevention. Community-based para-professional training programmes have been established in other countries as well. However, to be effective, all such programmes share the following practices: community support and needs assessment; cooperation and participation of veterinary authorities; curriculum development, trainer selection and provision of short, intensive training programmes (Fig. 3); recruitment of para-professional trainees from the locality in which they will ultimately work; monitoring the technical and personal performance of the trained para-professionals; requiring and providing continuing education; and integrating with the national VS (24).

## Illustration of a private–public partnership to ensure the delivery of Veterinary Services

In many countries, government veterinarians, veterinary para-professionals and other public animal health officials are the primary deliverers of VS. In others, however, the government workforce is augmented through partnerships with private-practice veterinarians and para-professionals. This is particularly true in more developed countries, in which fee-for-service is the accepted model for both companion and food animal veterinary practice. Here,



**Fig. 3**  
**A para-veterinary training centre in Jalalabad, Afghanistan, October 2008**

Photo by Dr Said Gul Safi, Afghanistan Veterinary Association

private-practice veterinarians and para-professionals are most often the first line of defence against the spread of animal and zoonotic diseases. Private-practice veterinarians, particularly if their competency can be ensured through an individual certification, recognition or accreditation process, provide an expanded workforce through which to deliver VS under the auspices of the competent veterinary authority.

Although effective public–private partnerships may exist in a number of countries, the authors will focus on only one partnership here; namely, the National Veterinary Accreditation Program (NVAP), administered through the VS division of the USDA Animal and Plant Health Inspection Service (APHIS). This programme was established in 1921 so that accredited private practitioners could assist federal and state veterinarians specifically in the areas of animal inspections, testing and certification, to control animal diseases and facilitate the movement of animals in accordance with state, federal and international regulations (26).

Since its inception, the basis of the NVAP has been education – specifically, education in areas essential to ensure the effective delivery of national VS. Education, most often completed as a component of the curriculum at an AVMA/COE-accredited school, is a requirement for initial accreditation. Several years ago, the USDA, in consultation with a number of stakeholders, including AVMA and the Association of American Veterinary Medical Colleges (AAVMC), began developing advanced continuing education modules required for accreditation renewal. In this way, the USDA can certify that accredited veterinarians remain current in the skills and knowledge essential for carrying out specific VS activities (10, 11). Additionally, continuing education helps to ensure that a broad-based and competent workforce can be quickly mobilised, should an animal health or welfare emergency – be it human-made or natural – arise.

Initial NVAP training is offered in an online format to veterinary students by USDA/APHIS, in cooperation with the AAVMC and AVMA/COE-accredited schools and colleges of veterinary medicine, or through the USDA website to veterinary graduates who are licensed or legally able to practise veterinary medicine in the state in which these accredited duties will be performed (19). This is followed by a core orientation programme, offered cooperatively by federal and state veterinary officials (28), with APHIS-approved supplemental training required every three years to renew accreditation (25). These supplemental training modules, some of which are still in development, and all of which are designed to provide current, relevant information to accredited veterinarians, are available online through the USDA, free of charge, and at major veterinary medical meetings throughout the USA.



In recognition of the varying potential threats to food security and animal and public health, due to the movement of companion (as opposed to food) animals, the enhanced NVAP now also recognises two categories of accredited veterinarians (27). Category I-accredited veterinarians can perform specific VS activities on all animals except food and fibre species, horses, birds, farm-raised aquatic animals, all other livestock species, and zoo animals that can transmit exotic animal diseases to livestock, and must complete three units of supplemental training every three years for accreditation renewal. Category II-accredited veterinarians can perform specific VS activities on all animals and must complete six units of supplemental training every three years for accreditation renewal.

The NVAP, like state licensure in the USA, is based firmly on specific and rigorous educational requirements designed to provide competent practitioners. The federal government administers the NVAP in cooperation with individual state governments. Accreditation then allows individual private-practice veterinarians, who meet the educational prerequisites on a continuing basis, to perform specific tasks in compliance with state, federal and, where appropriate, international regulations. The overriding goal of the NVAP continues to be for the USDA, private practitioners, state animal health officials and veterinary colleges to work collectively towards the goal of protecting and improving the health, quality and marketability of animals from the USA (26).

## Conclusions

The establishment of globally accepted minimum competencies and continuing education requirements for animal health personnel will help to ensure the adequate delivery of national VS. In addition, the concept of such minimum competencies has real value across country borders in ensuring, for example, that an international health certificate issued by a veterinarian in one country

may be regarded with confidence by the authorities in the receiving country, since they know that such certification was provided by a qualified individual. Establishing an accepted set of minimum competencies also provides additional information with which to conduct PVS assessments. This, in turn, will lead to the identification of gaps in educational infrastructure that can be improved upon to enhance the VS of OIE Member Countries.

Although defining minimum competencies may assist in developing quality assurance processes for VEEs, particularly in developing countries, such definition should not be equated with the accreditation of VEEs. Since accreditation of educational programmes is both a system of quality assurance and quality improvement, accreditation processes must take different societal needs and expectations into account, as well as differences in the importance that countries may place upon companion and food animal medicine and public and environmental health. In addition, in many countries, educational institutions are founded on the principles of academic freedom, and the faculty of the institution is charged with overseeing the curriculum to ensure that the institution's mission is fulfilled. In other countries, the veterinary curriculum is controlled centrally, with far less variation among VEEs. Therefore, accreditation of VEEs and assurance of the quality of continuing veterinary education, which encompasses all facets of the veterinary profession, may best be addressed on a national or regional basis, according to standards that reflect common societal needs and expectations.

Private-public partnerships, such as those illustrated in this paper, can have a positive impact on the quality of both primary and continuing veterinary education. Through such partnerships, which are both based and dependent on a system of good governance, the quality of national veterinary service programmes will be enhanced. This, in turn, will result in better assurance of animal and public health, animal welfare, food security and economic development and stability. ■

## L'enseignement de la médecine vétérinaire : les prémisses d'une bonne gouvernance pour des Services vétérinaires efficaces

E.A. Sabin & W.R. DeHaven

### Résumé

L'enseignement de la médecine vétérinaire constitue la fondation sur laquelle un pays peut bâtir des Services vétérinaires efficaces. En outre, des personnels qualifiés sont mieux armés pour prendre une part active à la bonne gouvernance des services de santé animale et pour en promouvoir les pratiques. De son côté, la bonne gouvernance se traduit par l'amélioration des infrastructures de santé animale et de santé publique vétérinaire et contribue ainsi au développement économique partout dans le monde.

Une première étape déterminante pour poser les bases de cet enseignement consiste à définir les compétences minimales requises pour que les futurs vétérinaires d'exercice tant public que privé puissent mener à bien l'ensemble des tâches relevant de la prestation des services vétérinaires. Une fois définies ces compétences minimales, les établissements d'enseignement vétérinaire peuvent élaborer et mettre en place des programmes de formation permettant d'acquérir ces compétences. L'énoncé de dispositions claires sur les conditions et les obligations de cet enseignement dans les documents de gouvernance réglementant les Services vétérinaires contribuera à garantir que tout prestataire de services vétérinaires possède les connaissances et les compétences requises. Les partenariats public-privé s'avèrent particulièrement efficaces pour concevoir et mettre en œuvre des programmes d'enseignement couvrant les compétences minimales ainsi définies et sont donc à même de garantir la qualité des établissements d'enseignement vétérinaire. Grâce à ces partenariats, un système d'amélioration continue de la qualité se met en place, incarnant les vertus essentielles des bonnes pratiques de gouvernance. À terme, ces pratiques renforceront les Services vétérinaires nationaux et protégeront de manière plus efficace la santé animale et publique, tout en assurant la sécurité alimentaire.

### Mots-clés

Accréditation – Certification – Compétences minimales – Enseignement de la médecine vétérinaire – Groupe *ad hoc* de l'OIE sur l'enseignement de la médecine vétérinaire – Programme national d'accréditation vétérinaire – Services vétérinaires.



## La enseñanza de la veterinaria, fundamento de un buen gobierno que lleve a Servicios Veterinarios eficaces

E.A. Sabin & W.R. DeHaven

### Resumen

La enseñanza de la veterinaria es la piedra angular sobre la cual un país puede erigir Servicios Veterinarios eficaces. Además, un cuerpo de trabajadores bien formados en materia de sanidad animal estará en mejores condiciones de participar activamente en la praxis y el fomento del buen gobierno. Este, a su vez,

se traducirá en mejores infraestructuras de salud pública veterinaria y ayudará a promover el desarrollo económico en todo el planeta.

Un primer paso crucial para sentar sólidas bases formativas consiste en definir las competencias mínimas que deben poseer los veterinarios que ejerzan en el ámbito tanto público como privado para desempeñar las labores propias de un servicio veterinario. Ello también ayudará a los establecimientos de enseñanza veterinaria a elaborar y aplicar planes de estudios concebidos para dotar a los titulados de dichas competencias. El hecho de integrar exigencias y prerequisites de la enseñanza veterinaria en los documentos relativos a la administración de los Servicios Veterinarios contribuirá a asegurar que quienes presten servicios veterinarios cuenten con una base adecuada de conocimientos y aptitudes para ejercer esa labor. Las alianzas publicoprivadas pueden resultar especialmente eficaces para concebir y aplicar planes de estudios que ofrezcan una serie de competencias mínimas y garanticen la calidad de los establecimientos de enseñanza veterinaria. Mediante este tipo de alianzas se instaura un sistema de mejora continua de la calidad que integra las cualidades esenciales para la praxis del buen gobierno, lo que a la postre redundará en un fortalecimiento de los Servicios Veterinarios de los países, en una mejor protección de la sanidad animal y la salud pública y en la garantía de la seguridad alimentaria.

#### Palabras clave

Acreditación – Certificación – Competencias mínimas – Enseñanza de la veterinaria – Grupo *ad hoc* de la OIE sobre enseñanza de la veterinaria – Programa nacional de acreditaciones veterinarias – Servicios Veterinarios.



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