

Integrating the issues of global animal and public health into the veterinary education curriculum: a Latin American perspective

J.M. Berruecos & L. Zarco

Facultad de Medicina Veterinaria y Zootecnia. Universidad Nacional Autónoma de México, Avenida Universidad 3000, Ciudad Universitaria, México DF 04510, México.

Summary

This paper describes the development of a consensus profile for the Latin American veterinarian, and its adoption as the basis for curricular change by veterinary schools in the region. The process has been conducted by three Pan American organisations: the Pan American Association of Veterinary Science, the Pan American Federation of Veterinary Schools, and the Pan American Council of Veterinary Education, with strong backing by the Food and Agriculture Organization of the United Nations. Recommendations for curricular harmonisation have been issued that will facilitate student and academic exchanges and, above all, will guarantee that the graduates from participating colleges have the knowledge, competencies and skills to adequately perform in the different fields of veterinary medicine, including those most relevant to global animal and public health.

Keywords

Curricular harmonisation – Latin America – Mexico – Veterinary education – Veterinary profile.

Introduction

The aim of this paper is to describe the historical development and present state of veterinary curricula in Latin American veterinary schools, with emphasis on the main areas that encompass the concept of global animal and public health, including animal and public health, animal welfare, food safety and environmental concerns. Veterinary education in Latin America started in 1853 with the creation in Mexico of the National School of Agronomy and Veterinary Medicine, today called Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México (12). During the following three decades it was the only veterinary school in Latin America. It was not until 1883 that another Latin American veterinary school was created, this time in Buenos Aires,

Argentina (15). At the end of the 19th Century only Mexico, Argentina and Chile (1898) had veterinary schools. During the next fifty years, eight more Latin American countries established veterinary schools: Peru (1902), Uruguay (1905), Cuba (1907), Brazil (1913), Colombia (1921), Ecuador (1934), Venezuela (1938) and Bolivia (1940). More than a century passed between the creation of the first Latin American veterinary school in Mexico and the opening of the first veterinary colleges in the Dominican Republic (1955), Guatemala (1956), Paraguay (1956), Nicaragua (1961) and Panama (1997) (for a review see reference 15).

Many of the founding faculty members of the first veterinary schools in other Latin American countries were veterinarians educated in Mexico (4). For this reason, the Mexican veterinary education curriculum greatly

influenced the development of the profession in the rest of the region. Later, and in no small measure due to geopolitical imperatives and to the influence of the American Veterinary Medical Association (AVMA), Mexico developed sophisticated systems for the organisation and evaluation of veterinary education (4, 11) that have in turn had great influence on the rest of the continent. For this reason, in this article the authors will first focus on the development of veterinary education in Mexico and later will describe the corresponding developments in the rest of Latin America.

Historical development of the veterinary curriculum in Mexico

At the beginning, veterinary education in Mexico was greatly focused on equine medicine, with special emphasis on the requirements of the military establishment (3). It was not until 1886 that a curricular change was made to include subjects on animal production, economy and hygiene. However, more than 30 years passed before a microbiology course, a food bacteriology course and a veterinary inspection course were included in the veterinary curriculum (1916). Up to that time, the veterinary curriculum at the college was dictated by Presidential decrees (3). However, in 1929 the veterinary school became part of the National Autonomous University of Mexico (UNAM) and ever since the faculty members have had the responsibility of analysing, debating and deciding the curricular changes (11).

It was under such faculty guidance that between 1929 and 1939 the idea began to take hold that animal health, animal production and human health were inseparable parts of a whole, and in 1939 the College changed its name to the National School of Veterinary Medicine and Animal Science (Escuela Nacional de Medicina Veterinaria y Zootecnia). At that time, several courses on animal production (by animal species) and on meat and dairy industries were incorporated into the curriculum (3). Ever since, the College has granted the degree of 'Veterinary Medicine and Animal Science' (Medicina Veterinaria y Zootecnia), a degree name that has been adopted by all veterinary schools in Mexico and by most veterinary colleges in Latin America. Thus, the scope of veterinary education in Latin America may be considered broader than the clinically-oriented North American veterinary curriculum, since it includes courses on animal nutrition, reproduction, genetics, economy of animal production and others (11).

In 1955 the curriculum was again modified to include for the first time specific courses on public health. In the same year Mexico was infected with foot and mouth disease. The

very intensive and costly campaign against the disease culminated with its total eradication and with a clear understanding of the importance of epidemiological surveillance and preventive medicine for the protection of animal and public health. In 1957, after more than a century of having only one veterinary college, a second one was created in Mexico which was soon followed by the establishment of many more. By the late 1980s Mexico had more than 35 veterinary colleges with wide variations in emphasis, quality and educational methods (14).

In the early 1990s Mexico signed the North American Free Trade Agreement with the United States of America (USA) and Canada. This prompted the creation in 1995 of Mexico's National Council of Veterinary Education (Consejo Nacional de Educación de la Medicina Veterinaria y Zootecnia), which was given the mission of developing systems for accreditation of veterinary schools and certification of veterinarians. The lack of these systems was perceived as a major obstacle to professional mobility between the three countries (12). To achieve these ends, it was necessary, given the great curricular differences among Mexican veterinary colleges, to define at the national level the 'veterinary profile' that described the different fields of work of the veterinary profession (14).

The National Council of Veterinary Education worked together with the Mexican Association of Veterinary Schools and the Mexican Federation of Veterinary Associations to develop the 'veterinary profile'. It was soon acknowledged that the veterinary profession in Mexico involved four major areas of professional activity:

- animal health and medicine
- animal production and economics
- food quality and safety
- public health.

Likewise, it was acknowledged that any veterinarian should be able to perform 10 general tasks, several of them well in line with the present concept of global animal and public health, such as:

- promote the well-being of society and of animals
- promote animal health through the application of preventive medicine, diagnostic capabilities, control methods and treatment of animal diseases and plagues
- participate in public health programmes through health education, prevention of zoonoses, food hygiene and food safety
- promote economically sustainable animal production practices
- participate in the adoption of measures to preserve the environment and the natural resources (5).

During 1995 and 1996, the Mexican Association of Veterinary Schools conducted a series of meetings in order to develop recommendations intended to harmonise the curricula of individual veterinary schools. The idea was to guarantee that a graduate of any of the schools would have the minimum competencies required to perform adequately in all the areas considered part of the national 'veterinary profile', while at the same time preserving the autonomy of the colleges and their freedom to maintain their own emphasis and educational methods (1, 2). In the years since then, several veterinary colleges, including the one at UNAM, have modified their curricula in such a way that they are now closer to fulfilling the recommendations for curricular harmonisation (17). In most cases, the curricular changes have involved the strengthening of areas within global animal and public health.

Latin American harmonisation of veterinary curricula

In most Latin American countries the development of veterinary education followed a path that was similar to that in Mexico, with a gradual transition from a curriculum oriented towards equine medicine to one that balanced animal health, animal production and public health. In many countries there was also an explosion in the number of veterinary colleges. At the present time there are more than 200 veterinary schools in South America, 160 of them in Brazil alone.

In 1992, under the auspices of the Panamerican Association of Veterinary Sciences (PANVET) – an international organisation that congregates the National Veterinary Associations of the American countries – the Deans of 23 veterinary schools from Argentina, Bolivia, Brazil, Chile, Guatemala, Mexico, Peru, the USA, Uruguay and Venezuela created the Pan American Federation of Veterinary Schools (PFVS). The objectives of the Federation include:

- 'to promote the periodic review and modification of veterinary curricula in order to deliver basic veterinary education according to the political, social, economic, sanitary and environmental realities of the region'
- 'to orient veterinary education towards higher emphasis on animal health, quality and efficiency of veterinary services, and ethical and environmental consciousness' (8).

By 2005 the membership included 55 schools from the founding countries plus schools in Canada, Colombia, Costa Rica, Cuba and Ecuador.

The need for quality control and harmonisation of veterinary curricula in South America became an urgent

matter with the constitution of the Mercosur (Mercado Común del Sur) trade agreement in 1991. Thus, in 1992 an educational plan was put into place that called for the harmonisation of educative systems in the signing countries. Starting in 1993 the Deans of the main veterinary colleges in Argentina, Brazil, Chile, Peru, Paraguay and Uruguay held a series of meetings that by 1997 had resulted in the definition of the 'veterinary profile' for Mercosur (9). Not surprisingly, due to the very intensive exchanges between regions, the profile was quite similar to the one that had been simultaneously defined in Mexico, with strong emphasis on animal production, animal health, public health and environmental responsibility.

In 1997 PANVET organised in Veracruz, Mexico, the first 'Pan American Meeting on Veterinary Education and Veterinary Practice', where the Mexican 'veterinary profile' and the Mercosur 'veterinary profile' were contrasted and complemented (10). Invited speakers from AVMA and the European Federation of Establishments of Veterinary Education shared their experiences of curricular harmonisation and the evaluation of veterinary education (PANVET, 1997). The following year, the PFVS, with strong support from the Food and Agriculture Organization of the United Nations (FAO), the Pan American Health Organization (PAHO) and the Inter-American Institute for Cooperation on Agriculture (IICA), held the 'First International Seminar on Veterinary Education for the Americas'. In the same year, the PFVS partnered with PANVET to create the Pan American Council on Veterinary Education (COPEVET), which was given the mission of coordinating improvements in school accreditation, professional certification and curricular harmonisation across the continent (6).

With respect to the issue of curricular harmonisation, the three continental organisations (PANVET, PFVS and COPEVET) continued working (16) and meeting at least twice a year (13). In 2004 they proposed the basic curriculum for veterinary education in Latin America (7), with the recommendation that every veterinary college in the region, regardless of educational methodology or species emphasis, ensure that its curriculum covers the following subjects:

- basic disciplines: anatomy, biochemistry, biostatistics, embryology, veterinary histology, animal physiology, research methodology
- animal health and medicine: immunology, microbiology, parasitology, veterinary propedeutics, general and systemic pathology, infectious diseases and epidemiology, pharmacology, toxicology, diagnostic approaches, clinical pathology, surgery, therapeutics, clinics (by species)

- animal production and economics: animal genetics, bromatology, animal nutrition, feeds and feeding, animal reproduction, economics of animal production, administration, animal production (by species)
- public health: preventive medicine and public health, epidemiology, veterinary deontology and legislation, food hygiene and inspection, food safety and certification
- ethics and social responsibility: ecology, bioethics, animal behaviour and welfare, sustainable animal production, rural development.

For each of the subjects an agreement has been reached in relation to the basic content that should at minimum be covered. For example, a course on preventive medicine and public health must minimally include information on education for health, classification of zoonotic diseases, natural history of diseases, organisation of health programmes, and programmes for the control and eradication of zoonotic diseases.

An incentive for adoption of the harmonisation recommendations by individual colleges and by national veterinary education systems is that COPEVET will

recognise accreditations of veterinary colleges that are granted by their national accrediting bodies if, among other things, the national accrediting body includes the harmonised curriculum among its standards for accreditation (6).

International harmonisation of the veterinary curriculum, and its adoption by the veterinary colleges in participating countries, makes the world safer and facilitates international trade because it implies that veterinarians from those countries are receiving at least the minimum competencies required to guarantee global animal and public health. Moreover, it facilitates international mobility of students, faculty members and practicing veterinarians and may open the doors for international cooperation on many projects. For example, a project is underway to develop electronic textbooks for every course of the harmonised Latin American veterinary curriculum with the collaboration of faculty members from all participating countries.

L'intégration des questions relatives à la santé animale mondiale et à la santé publique mondiale dans les programmes d'enseignement vétérinaire : la situation en Amérique latine

J.M. Berruecos & L. Zarco

Résumé

Les auteurs décrivent le profil vétérinaire tel qu'il a été récemment défini par consensus en Amérique latine pour servir de base aux réformes des programmes d'enseignement dans les écoles et facultés vétérinaires de la région. Trois organisations panaméricaines ont mené à bien ce processus : l'Association panaméricaine des sciences vétérinaires, la Fédération panaméricaine des facultés et écoles de sciences vétérinaires et le Conseil panaméricain pour l'enseignement des sciences vétérinaires, avec le soutien de l'Organisation des Nations unies pour l'alimentation et l'agriculture. Des recommandations relatives à l'harmonisation des programmes ont été formulées, visant à faciliter les échanges universitaires et les équivalences, et surtout à faire en sorte que les vétérinaires diplômés des établissements participants aient les connaissances, les compétences et les aptitudes nécessaires pour maîtriser les différents aspects de l'exercice de la médecine vétérinaire, y compris dans les domaines qui intéressent la santé animale mondiale et la santé publique.

Mots-clés

Amérique latine – Enseignement vétérinaire – Harmonisation des programmes – Mexique – Profil vétérinaire.

Integración de los temas de salud pública y veterinaria mundial en los planes de estudios veterinarios. El punto de vista de América Latina

J.M. Berruecos & L. Zarco

Resumen

Los autores describen la gestación de un perfil consensuado para caracterizar al veterinario latinoamericano, y su utilización como punto de partida para modificar los planes de estudios de las facultades de veterinaria de la región. Este proceso fue dirigido por tres organizaciones panamericanas: la Asociación Panamericana de Ciencias Veterinarias, la Federación Panamericana de Facultades y Escuelas de Medicina Veterinaria y el Consejo Panamericano de Educación en Ciencias Veterinarias, con el firme apoyo de la Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO). Se formularon recomendaciones para la armonización de planes de estudios que facilitarán los intercambios de profesores y estudiantes y, sobre todo, garantizarán que los titulados de cada facultad participante posean los conocimientos, las competencias y las aptitudes que se necesitan para ejercer eficazmente en los distintos ámbitos de la medicina veterinaria, en especial los más pertinentes para la salud pública y veterinaria mundial.

Palabras clave

América Latina – Armonización de planes de estudios – Enseñanza de la veterinaria – México – Perfil del veterinario.



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