Rev. sci. tech. Off. int. Epiz., 2009, **28** (2), 487-492

The responsibilities of veterinary educators in responding to emerging needs in veterinary medicine

R.E.W. Halliwell

Professor Emeritus, University of Edinburgh, 2a Ainslie Place, Edinburgh EH3 6AR, United Kingdom

Summary

It is an unfortunate fact that not only has veterinary education failed to adapt in the face of likely future needs, but it has also failed to respond to societal changes that have already taken place and that have affected the requirements for veterinary services and veterinary capability. The responsibility is primarily that of educators, although vision and foresight require a co-ordinated approach involving national and international veterinary organisations. Once it is accepted by all parties that change is essential, the implementation will fail unless there is a unified programme involving the schools and colleges, the accrediting agencies, the licensing authorities, governments, the professional organisations and corporate veterinary medicine. All have a role to play, and any one can readily block progress. A unified approach is an absolute requirement. The developed countries must take a leading role, but the issues are global, and ways must be found to facilitate change in all parts of the world. Disease knows no boundaries, and any strategy is only as strong as its weakest link.

Keywords

Accreditation – Curricula change – Foresight – Licensure – Unified leadership – Vision.

Introduction

The lifestyles of the 21st Century pose increasing problems for animal disease control and the biosecurity of foodstuffs. Western societies expect that fresh foods from around the world will be readily available from the local supermarket even though global harmonised standards in food safety have yet to be enacted. In addition, systems of animal husbandry in some parts of the world seem tailor-made for the spread of animal diseases, and for the development and emergence of new diseases. Thus far, although our systems have been recently challenged by the advent of bovine spongiform encephalopathy (BSE), severe acute respiratory syndrome (SARS), the avian influenza virus H5N1 and, most recently, the H1N1 influenza virus, we have been spared any devastating global pandemics. However, without question there are other challenges waiting in the wings.

Although this publication focuses on education as an imperative, it is worth noting here that progress will not be made unless governments conform to the highest scientific principles when tackling animal disease. So no matter how excellent our systems of education, all will be to no avail in the absence of sensible government policies. In the United Kingdom (UK), for example, the recent and ongoing handling of tuberculosis in the cattle population has meant that groups in favour of protecting badgers have prevented the possibility of effective control of the major wildlife reservoir of this disease. Furthermore, after the

catastrophic foot and mouth disease epidemic of 2001, the UK Government permitted the restocking of areas decimated by the disease with animals from areas where tuberculosis was endemic without pre-movement testing.

Pre-requisites for change

Impinging on the responsibilities of veterinary educators in responding to emerging needs in veterinary medicine are a number of issues and considerations which are important in shaping the future. These can be considered under a number of headings, each of which will be discussed below:

– foresight and vision

– a heightened awareness of the breadth of veterinary medicine

– curricular flexibility.

Foresight and vision

What does the future hold, and how can we best predict it? We have to train students to be knowledgeable about the present, and also to be able to predict and respond to the future. Some of the future is largely predictable in the light of current knowledge – for example, it is widely held that it is not a question of whether the H5N1 virus will mutate to a higher level of infectivity for humans, but rather when this will occur. On the other hand, in the 1980s and 1990s our knowledge of prion diseases was not such that one could have readily predicted the advent of BSE.

Foresight and vision are absolute necessities if we are to move forward to a higher level of preparedness. But whose responsibility is this? Consider the leadership of a state-funded veterinary school of the Midwest of the United States of America (USA). It is probably largely dependent on state funding, and the fund-holders in turn are responsible to their electorate. It would be very difficult to convince legislators to provide funding for major investments in new programmes, such as exotic disease control, that were highly unlikely to have any immediate or medium-term impact on the state in question. State legislators have a responsibility to their constituency, and it would indeed take a brave and visionary leader who would try to enact such programmes. Even where the issues are recognised and acknowledged, it is all too easy to assume that it is someone else's problem.

So this really has to be the responsibility of national and international organisations. A framework for vision was indeed slow to emerge until the Foresight Project initiative of the American Association of Veterinary Medical Colleges (8). This set the scene for a number of plausible and less plausible scenarios for the years ahead, and asked how the veterinary schools should adapt and ready their education programmes in preparedness. Some of the delegates indeed found it hard to connect with the future when asked, responding with such comments as '…but in my state we do it differently…'. Fortunately, the facilitators did an excellent job of maintaining focus, and a bold and imaginative report emerged. But change is a long-term process, and any impact upon curricular developments has yet to appear. One hopes that this initiative will not go the same way as the last report of this type (Pew report of 1988 [6]) – which was greeted with similar enthusiasm but which had little if any lasting impact upon veterinary education.

A heightened awareness of the breadth of veterinary medicine

In some parts of the world, the dominant image of the profession is the veterinarian working in mixed animal practice; some educators and the public alike have a myopic view of the breadth of veterinary medicine. Potential applicants who express no interest in the possibility of a career in this type of practice may well either be actively discouraged from applying, or fail in the admission process. Highly talented individuals who may well be major potential contributors to the veterinary field are lost to the profession. There is an urgent need to heighten the awareness of all parties, including high schools and colleges, as to the incredible diversity of opportunities that are available within the field. This has recently been the subject of a most interesting project in the UK which is described by Andrews elsewhere in this issue (1). Those entrusted with admissions selection must look 'outside the box', and be prepared to accept applicants with an unusual complement of attributes, rather than always going for the same stereotype. Similarly, the leaders of veterinary schools and colleges must exchange and share ideas about programmatic development. It is both impressive and humbling to note how many imaginative and original ideas have emerged from institutions in nations where funding for higher education amounts to a mere fraction of that available to some schools and colleges in developed countries.

Curricular flexibility

The curricula of many of the schools and colleges of the Western world tend to be traditional and conservative. Teaching hours are jealously guarded, and the often highly democratic system of governance ensures that the *status quo* will be maintained. Deans are often appointed for short terms only, which also favours the probability that change will not occur.

So in the past, the curricula of Western schools and colleges have not only been very slow to respond to changes in societal requirements for veterinary services, but they also have failed lamentably to predict future needs. Thus, in the USA, it was some two decades before an identified lack of expertise in veterinary public health was adequately addressed (3). Similarly, over the past 15 years, the UK schools have largely failed to respond to a call for increased numbers of veterinarians trained in the public health aspects of meat hygiene. Training programmes in this discipline tended to be bottom of the list in funding priorities, and predictably failed to enthuse the students. The result is that the large number of posts available in this sector are mostly taken by graduates from outside the UK who are far better trained to fulfil this requirement.

Impediments to change

Accreditation procedures

In the Western world, the attainment of accreditation by one or more agencies is essential for survival. In leading their institutions towards accreditation, administrators tend to place great weight on proving to the accreditors that they have strength in all of the basic core subjects. They tend to regard other areas as a luxury that they may (or more likely may not) be able to afford. However, accreditation agencies in general have a fairly relaxed attitude towards curricular issues, and the threat of failure in this area may be more perceived than real. Indeed, the standards of the American Veterinary Medical Association emphasise that: 'There must be sufficient flexibility in curriculum planning and management to facilitate timely revision in response to emerging issues, and advancement in knowledge and technology'. They further state that: 'Diversity in delivery of the curriculum is encouraged'. However, these aspects are really difficult to assess in a self-evaluation report or at a site visit. Also, what is missing is any encouragement to develop collaborative programmes with other institutions.

It is hard, nonetheless, to view the accreditation process as a real barrier to progress, although it would be helpful if it was structured to provide encouragement for forward-looking and visionary programmes – particularly those that would benefit from collaboration.

Lack of defined career structures

However great are one's desires to develop exciting new programmes – both during the veterinary degree programme and at a post-doctoral level – students will not be attracted into the area unless they are assured of employment that will provide them with an appropriate standard of living and the ability to repay student loans.

There must also be a career structure which will reward exceptional performance. It is unrealistic to expect posts in animal disease research, and in international animal health to be funded from the private sector, and both national and international funding sources are necessary. The case for such funding must be made in the strongest possible terms, emphasising that the cost of failing to act in disease outbreaks will probably dwarf the costs of developing robust international systems of research linked to national initiatives.

Overcrowded curricula

The biggest single impediment to embracing new initiatives is still the 'cult of coverage' which is at the heart of most of the curricula of the veterinary schools and colleges of the Western world. This was condemned and signed off to be buried with honour in the Pew report (6), and in numerous publications since that time (e.g. 2, 3, 5), but the cult is remarkably persistent and its death is lamentably slow.

There is universal agreement that the breadth of the basic and applied sciences that underpin veterinary degree programmes is one of the greatest strengths of veterinary education. After some 75% of the curriculum has been covered students can be described as 'omnipotential'. The remaining time in the curriculum should then be spent on acquiring clinical skills in a broad or narrow area, or on greater exposure to non-clinical disciplines. The basic common underlying designation of a veterinarian is applied to students at the 'omnipotential' point in their career; in other words, when they have received a broad instruction in basic and applied sciences. In turn this is followed by training in clinical skills, probably in a more limited area. The underpinning knowledge will permit a change to a different area should this be later desired. It should be of no concern that a graduate entering practice may have no clinical experience or practical skills in, say, farm animal medicine and surgery. The two papers by Klostermann and Walsh in this issue (4, 7) dispel many of the myths that have been promulgated about the 'deficiencies' and 'lack of benefits' of clinical training that is limited largely to a specific defined area.

A suitable curriculum must, of course, be matched with appropriate examination systems. The student should be examined on the courses that s/he has taken, and the training received. And so some harmony and a common thought process are necessary between those planning the training and those assessing whether or not a student has successfully completed it and can be licensed to practise.

Licensing systems

The opponents of curricular flexibility, and thus of diversity of expertise upon graduation, argue that these are unacceptable goals unless the public is protected by a system of limited licensure. Such a system would be a bureaucratic nightmare – more assuredly so when faced with a cumbersome and archaic system of local rather than national or international control of licensure, as exists in the USA. Published data suggest that some 50% of practising veterinarians in the Western world already voluntarily restrict their areas of activity, and the proportion of valid complaints of malpractice reported to regulatory authorities resulting from veterinarians practising outside their areas of competence are rare to non-existent. Almost all involve bad veterinarians practising badly, and limiting licensure to a defined area would have no impact. All that is required is a clear statement in guides to professional conduct that to offer services outside one's area of expertise – except in emergencies – is unacceptable and will be adjudged professional misconduct.

An interesting model has emerged in the Netherlands, whereby the likelihood of this occurring is limited by the requirement for malpractice insurance. The Utrecht school has long had a system in place in which students choose to study clinical skills primarily in just one specialist area (e.g. farm animals, or small animals), and insurance companies will only provide cover to applicants who provide evidence of training and experience in their area of practice activity. So the question of limited licensure is a non-issue which should be eliminated from the equation. If anything, a general licence available to all graduates should be supplemented by a system of post-graduate qualifications which can provide any necessary reassurance to the general public.

A framework for new programme development

If any new programme is to have international stature, it must be accompanied by cutting edge research and post-graduate training programmes, which together will be extremely costly. Much of the research will, of course, be funded from competitive external grants. But core research staff, together with appropriate infrastructure support, should be funded by 'hard money' (continuing funding) rather than 'soft money' (provided by short-term research grants). The education establishments are already suffering from serious funding shortfalls, and these are likely to increase over the next five to ten years. There is no major school in the world that has spare funds that it could commit to significant new programme initiatives. So how could any such programme emerge?

Do we need new schools in order to develop re-prioritised apportionment of funding? It certainly is simpler to develop innovative programmes in this way – unconstrained by the *status quo* and by existing prejudices. But although there are suggestions that some of the new schools have been developed in response to the perceived deficiencies of current programmes, this is a highly inefficient and costly way in which to address the problem. Also, the new schools themselves are hardly awash with funds, and some have been forced to make compromises in their training programmes by, for example, leaving the acquisition of clinical mastery mostly in the hands of practitioners who are essentially untrained as teachers. It is infinitely preferable that any call for an increase in the number of graduates entering the workplace or any call for new or expanded programme development be handled by increasing the size and hence the efficiency of existing schools and colleges rather than by creating new ones.

In part, funding for new programmes can be from a reassignment of existing resources, which requires bold leadership and vision. But realistically it is difficult to see successful new programmes emerging without inter-institutional collaboration and earmarked national and international funding.

Such funds should obviously be awarded on a competitive basis, and probably to supplement and strengthen programmes that already have some fundamental strength in one or more of the relevant disciplines.

Conclusions

The past three decades have witnessed a virtual stagnation in programmatic development in veterinary medicine. The majority of the educational effort has been focused locally, on local issues and local solutions. There has been a failure to recognise the big picture. There have been failings in academic leadership, failings of the national and international veterinary organisations, and failings at governmental and at intergovernmental levels. Our profession must tackle the issues in a unified manner – a profession divided is a profession weakened. There is a moral imperative that the developed nations take a leading role, but the full participation of all nations is a pre-requisite. The issues, the challenges and the opportunities are global. So must be the responsibility for the solutions.

Les responsabilités des enseignants vétérinaires face à l'émergence de nouveaux besoins en médecine vétérinaire

R.E.W. Halliwell

Résumé
Il faut malheureusement reconnaître que l'enseignement vétérinaire, non seulement n'a pas réussi à s'adapter en prévision des besoins futurs, mais a également échoué à répondre aux mutations sociétales déjà à l'œuvre, qui imposent de nouvelles exigences aux Services vétérinaires et demandent de nouvelles compétences aux vétérinaires. La responsabilité de cet échec incombe principalement aux enseignants, même si la vision de l'avenir et la capacité d'anticipation sont le fruit d'une démarche coordonnée associant les organisations vétérinaires nationales et internationales. Une fois la nécessité du changement acceptée par toutes les parties prenantes, sa mise en œuvre ne peut réussir que s'il existe un programme unifié intégrant les écoles et les facultés, les agences de certification, les autorités délivrant les agréments, les gouvernements, les organisations professionnelles et les vétérinaires praticiens. Chacun a un rôle à jouer, et chacun peut facilement bloquer le processus. Une approche unifiée est une condition absolue. Les pays développés doivent assumer un rôle de chefs de file, mais les questions à résoudre sont mondiales et il s'agit de trouver des solutions permettant de faciliter le changement partout dans le monde. Les maladies ne connaissent pas de frontières et la puissance d'une stratégie ne dépasse jamais celle du plus faible de ses maillons.

Mots-clés
Anticipation – Certification – Délivrance des agréments – Réforme du programme d'enseignement – Rôle moteur unifié – Vision.

Responsabilidades del cuerpo docente a la hora de responder a las nuevas necesidades de la medicina veterinaria

R.E.W. Halliwell

Resumen
Resulta lamentable que la enseñanza veterinaria haya sido incapaz de adaptarse no sólo a la previsible evolución de las necesidades en el futuro, sino también a los cambios que la sociedad ya ha experimentado y que han influido en las exigencias a que deben responder los servicios y profesionales veterinarios. Aunque el cuerpo docente es el principal responsable de tal estado de cosas, la clarividencia y la visión de futuro requieren planteamientos coordinados en los que intervengan asociaciones de veterinarios tanto nacionales como internacionales. Una vez que todas las partes hayan integrado la idea de que el cambio es indispensable, su aplicación práctica estará abocada al fracaso a menos que exista un programa unificado en el que participen establecimientos universitarios, organismos de homologación y acreditación, gobiernos, colegios profesionales y el mundo de la medicina veterinaria empresarial. Todas esas instancias tienen una función que desempeñar, y cualquiera de ellas puede

bloquear fácilmente todo avance. Es absolutamente necesario un planteamiento común. Los países industrializados deben encabezar el proceso, pero los problemas son mundiales, y por ello hay que encontrar la forma de propiciar el cambio en todas las regiones del planeta. La enfermedad no conoce fronteras, y la fuerza de una estrategia se mide por la solidez de su eslabón más débil.

Palabras clave
Acreditación – Evolución de los planes de estudios – Homologación – Liderazgo unificado – Prospectiva – Visión.

References

1. Andrews F. (2009). – Approaches to university admissions in the UK to match the expanding needs of the profession and the global society. *In* Veterinary education for global animal and public health (D.A. Walsh, ed.). *Rev. sci. tech. Off. int. Epiz.*, **28** (2), 699-707.

2. Halliwell R.E.W. (1999). – Veterinary education: time to abandon the cult of coverage. *Vet. Rec.*, **144** (6), 129-130.

3. Halliwell R.E.W. (2006). – Whither veterinary medical education – have we lost our direction? *J. vet. med. Educ.*, **33** (3), 309-316.

4. Klosterman E., Kass P.N. & Walsh D.A. (2009). – Approaches to veterinary education: tracking versus a final year clinical experience. Part one: the consequences of early career choice. *In* Veterinary education for global animal and public health (D.A. Walsh, ed.). *Rev. sci. tech. Off. int. Epiz.*, **28** (2), 797-810.

5. Prasse K.W., Heider L.E. & Maccabe A.T. (2007). – Envisioning the future of veterinary medicine: the imperative for change in veterinary medical education. *J. Am. vet. med. Assoc.*, **231** (9), 1340-1342.

6. Pritchard W.R. (1988). – Future directions for veterinary medicine. Durham NC: Pew National Veterinary Medical Education Program, Institute for Policy Sciences and Public Affairs, Duke University, Durham, North Carolina.

7. Walsh D.A., Klosterman E. & Kass P.H. (2009). – Approaches to veterinary education: tracking versus a final year broad clinical experience. Part two: instilled values. *In* Veterinary education for global animal and public health (D.A. Walsh, ed.). *Rev. sci. tech. Off. int. Epiz.*, **28** (2), 811-822.

8. Willis N.G., Monroe F.A., Potworski J.A., Halbert G., Evans B.E., Smith J.E., Andrews K.J., Spring L. & Bradbrook A. (2007). – Envisioning the future of veterinary medical education: the Association of Veterinary Medical Colleges Foresight Project, Final Report. *J. vet. med. Educ.*, **34** (1), 3-41.