East Meets West

The Reformation of Veterinary Education in China

Anthony James, Helen Kelly

China’s veterinary industry is in the throes of a growth spurt. Discover what’s happening in the country’s veterinary world, why and what the future may hold.

Until about 1982, China’s veterinarians were technicians who attended to farm animals, culling operations and cleaning everything from cages to teeth. Veterinary training began after high school and lasted anywhere from three to four years; no pre veterinary coursework was required. Typically the training was part of government-run programs at agricultural colleges, and the decision to become a veterinarian was often a default for those who had tried and failed to gain entrance into a more highly prized science program at a university. Veterinary students learned to treat ill animals but virtually without the benefit of western drugs, though most programmes included some traditional Chinese medicine. Quality of training varied program by program. Basic science was a luxury. Notions of pets and animal sentience were decades away. There were few veterinary hospitals because animal science meant livestock that stayed on farms and that didn’t warrant hospitals. At the end of the 20th century, animal welfare was a new concept in Chinese veterinary education that had yet to bear fruit.

A BRAVE NEW WORLD

Today all that is very much in flux. China is looking to the West, and specifically to the US, for models of veterinary education. Veterinary curricula in China’s large eastern progressive universities award five-year bachelor degrees. Members of China’s veterinary community who have observed veterinary practice abroad often express surprise and excitement about how their skills could advance; they often say they have become aware of animal sentience, the need to alleviate suffering and a more sophisticated approach to treating disease than that which they learned at home. Veterinary students who work with visiting veterinarians from abroad soak up information and ask for more. Moreover, as China strives to compete in the international market for dominance in scientific research as well as technology, she is considering how to meet standards of animal care for animals that are used in research. The country’s flagship veterinary training programmes, offered by universities located in the prosperous cities of Beijing, Nanjing Wuhan, Yangling, Harbin and Shenyang, recognise the need to advance if their graduates are to represent China in the world market.

Yet meeting international educational standards in veterinary science isn’t as simple as copying Western form. When China started on the path to international trade and middle class consumerism, the way was uniquely Chinese and has remained so. This isn’t surprising; when it comes to the human being’s relationships to each other, animals and the natural world China’s history is a mix of the equally powerful and often contradictory socialist, Confucian, Taoist and Buddhist traditions.
Confucian principles are human centered, while the religious traditions of Taoism and Buddhism hold in part that living in harmony with nature, including non-human animals, is essential to becoming a moral or enlightened individual. Confucian principles hold that, above all, one must obey the correctness of relationships where correctness is considered to be obedience and adherence to the hierarchy of authority and the rituals of society, even if adherence means detriment to well-being. “It might be worth underscoring the fact that Maoist or socialist morality and Confucian morality overlap in some respects”, say Jeffrey L. Richie, Associate Professor of Religion and Coordinator of the Asian Studies Program at Berea College. “Although these moral traditions take radically different views of social hierarchy, both agree that society is more important than the individual, and that the individual finds meaning and purpose through service and subordination to society”.

CHINA’S INTERPRETATION AND IMPLEMENTATION OF WESTERN STANDARDS

From the perspective of those assessing veterinary education and practice in China against international best practice, it would seem that the Chinese government understands the need to implement best practice standards and are proceeding stepwise; however, unsurprisingly in line with traditional approaches and attitudes.

Practical Experience

A cultural reliance on appearance, and particularly the appearance of wealth as legitimising modernity, disturbs many who support China’s commitment to deepen professional veterinary education. Professor of Molecular Oncology Dr Hwa-Chain Robert Wang, a Taiwan-trained veterinarian now teaching at the University of Tennessee, Knoxville, and Director of the US-China Project, offers this example. “People say—with technology, China will catch up to America. So the government has funded millions of dollars for all manner of diagnostic equipment and research facilities. But the veterinary students may not learn how to interpret the images so they don’t know what the data mean and can’t use it to diagnose, prepare treatment plans and prescribe”.

Whilst the list of courses and subjects in the undergraduate programmes are exhaustive, with the titles you’d expect—anatomy, physiology, immunology, histology, physics, chemistry, pharmacology, toxicology, biostatistics, epidemiology, microbiology, parasitology, pathology and public health—students have little opportunity to undertake comprehensive practical experience. So, while the basic science is sound, the clinical base is a problematic part of the programme.

“If I ask a locally-trained veterinarian how a medicine he is about to use affects blood pressure”, says Inter - national Fund for Animal Welfare’s Veterinary Advisor Dr Kati Loeffler, who has worked in China for nearly a decade, “he won’t know. If a dog presents with a swollen abdomen, the veterinarian will not examine the dog. He will, perhaps, inject the dog with a cornucopia of antibiotics, amino acids, diuretics, corticosteroids and may send home a powder of Chinese medicine. But he will not form a comprehensive clinical picture, much less develop an appropriate treatment plan. Case management is handled as though from a cookbook: weakness, this injection; sneezing, that injection; seizure, four injections and come back every three days for a new lot of red pills”.

Dr Hwa-Chain Robert Wang
This lack of clinical experience, and in particular lack of surgical experience, may be explained in economic and cultural terms. From a government perspective, science and technology can help feed the country’s 1.3 billion people. So, government funding of veterinary programs supports the science of livestock production and herd health but not the treatment of individual animals. And, while there is provision for clinical experience at university veterinary hospitals, which are run largely as private enterprises for care of pets, owners want only the faculty veterinarians, not students, to treat their pets. Thus the quality of the hospitals varies and clinical experience during veterinary training is restricted.

**Student/faculty Ratio**

Until recently, student/faculty ratio was much higher than in western veterinary programs. There was virtually no chance for mentoring or Western-type grand rounds. In grand rounds, students in a group observe patients and later offer diagnoses to a senior lecturer who critiques the analyses. Furthermore, most faculty trained in China’s system teach as they were taught, and few new faculty benefit from overseas postdoctoral experience.

**Textbooks**

There are textbooks for all the courses, typically written by Chinese academics and produced in China; or they are Chinese translations of Western texts but not often the most current text books used in Western schools.

**Traditional Chinese Medicine**

While Traditional Chinese Medicine (TCM) in general and acupuncture in particular are enjoying a growing presence in the West, and China’s veterinary students all have a course on herbs and acupuncture, TCM is used pharmaceutically rather than holistically. And in China the practices are downplayed as not scientific because they have not been subjected to rigorous evidence-based assessment.

“Chinese herbs are treasures, and they need to be explored using scientific assessment”, says Walter Hsu, Iowa State University College of Veterinary Medicine Professor of Pharmacology and Director of the Iowa State/China Agricultural University Exchange Program. “Whether we speak of Western or Eastern medicine, we want to know: is this medicine effective without harmful side effects at the dose we use to treat patients? There are many thousands of traditional Chinese remedies and empirical evidence that they have tonic effects, strengthen the immune system and alleviate suffering for some conditions. But we don’t have scientific proof they really work in the way we believe they do. Also, we don’t have traditional Chinese remedies for some major diseases such as cancer. There is much work to do with regard to how effective Chinese remedies are and mechanisms underlying their effects”.

**Licensing Standards**

Licensing and standards are fresh ideas on China’s landscape. Part of China’s effort to raise standards is a new Licensing Exam. Those who participated in the first iteration of the test were enthusiastic about the principle of licensing veterinarians. However in implementation, the arrangement is fraught with confusion. Will the responsible Government ministry write the questions? Will stakeholders such as faculty from the veterinary schools, China Veterinary Medical Association and employers have a say in
the questions, assessments, licensing requirements and standards? Kati Loeffler said that the examination appears to be focused on random facts rather than on comprehensive assessment and differential diagnosis. “I know some people whose surgical skills are primitive and they passed the exam”, Kati said. The exam is not yet mandatory, and there is no certainty about whether it will apply universally or only to those veterinarians undertaking private practice.

**THE WORRYING MATTER OF ACCESS TO DRUGS**

To Western trained veterinarians, one of the most worrying aspects of veterinary life in China is the lack of access to anaesthetics such as ketamine and to analgesics—particularly the opioids. Both classes are regulated, as use may render humans drug dependent, yet both classes form an essential part of a veterinarian’s arsenal. So among Western anaesthetics, only a proprietary combination of a dissociative agent, tiletamine hypochloride, and a tranquilizer, zolazepam hypochloride and isoflurane are officially available. The only analgesics are the non-steroidal anti-inflammatories and butorphanol. In theory drugs not considered at risk of abuse can be registered with the appropriate Government authority and imported, but Western drug companies typically find the bureaucratic jungle of drug registry a nightmare that results in drug registration delays of three to five or more years.

Part of this access-to-drugs problem is that the Chinese State Food and Drug Authority do not recognise OECD and US FDA drug safety and potency tests—just as OECD and US FDA do not recognise Chinese SFDA safety and potency tests. Another is the lobbying power of the local Chinese pharmaceutical industry to protect home turf. Further complications are the lack of a transnational wholesaler and the fact that most veterinarians believe they cannot trust the quality of domestic pharmaceutical products. The result overall is that drugs veterinary professionals need are not officially available. In this situation animals may suffer because veterinarians do without the necessary drugs, use unsuitable drugs or make do with therapeutic agents not best suited for the clinical situation.

As with many things in China, though, the situation is not black and white. With perseverance, we are told, veterinarians can obtain some controlled agents and other pharmaceuticals that are essential to responsible veterinary practice. But, as perseverance in the face of bureaucratic obstinacy very rarely wins out, the great majority of vets do not try to overcome the obstacles; instead, they rely on innovative ways to get around them. For example, a veterinarian’s friends working in a local human hospital may provide access to necessary drugs. Academic veterinarians sometimes obtain drugs by forming collaborative research partnerships with academic medical faculties and hospitals. Furthermore vets in NGOs and private practice may rely on informal import arrangements—euphemistically called grey imports—to get drugs from western suppliers via middlemen. And, some veterinarians resort to non-pharmaceutical grade chemicals they access through chemical companies. This latter is of concern to Western biotech companies - a concern reflected in the Guide for the Care and Use of Laboratory Animals 8th Edition’s new section on the use on non-pharmaceuticals.

We caution that if China is to become a truly major player in the world’s biotechnology industry, she must ensure professional veterinarians’ access to anaesthetics, analgesics and other drugs required for professional veterinary practice and the welfare and well-being of animals.
MOVING AHEAD

Within programs the Chinese call Project 211 and Project 985, the government aims to modernise and promote to prominence those academic programs considered important to China’s development. The projects fund equipment, support of faculty and other resources. Veterinary science at the prestigious universities benefits from one or both of these Projects.

In October 2009, China established the Chinese Veterinary Medical Association (CVMA) whose stated aim is to assist in the modernisation of Chinese veterinary science. Certainly, the creation of the CVMA is to be welcomed, yet understand that the role and function of the CVMA is a uniquely Chinese construct that brings to mind the mythical Chinese Unicorn called Qi-Lin. Qi-Lin is a chimera of several mythological animals, and like Qi-Lin the CVMA fulfills several roles. It serves as government ambassador, regulator of the profession and representative of the members. Certainly in the west these roles also exist but they are not vested in one association.

We anticipate that wearing all three hats will lead to conflict of interest. One can only hope that the CVMA will always follow its vision of promoting the development of the profession and the welfare of animals, even should their mission conflict with government policy.

FROM TODAY

In 2012, although veterinarians are predominantly employed by the government, there is a shift to private practice and research. Textbooks are more and more up to date and the student/faculty ratio is going down.

While things aren’t perfect, with the Chinese Veterinary Medical Association, China’s younger generation of veterinarians hope for a new era of professionalism. For many students, academics and practitioners the CVMA represents the hope of uniting the profession, raising standards to the highest common denominator and improving clinical practice.

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