

Prospects for collaboration between the veterinary professions in the United States and China

Mushtaq A. Memon, BVSc, PhD, DACT, and Huisheng Xie, DVM, PhD

Family farming is still the heart of rural China, supporting millions of families, with the typical family farm raising animals and growing crops suitable to the local climatic conditions and fulfilling the needs of local markets. But over the next 10 years, China is expected to experience the greatest degree of urbanization in world history. According to the McKinsey Global Health Institute,¹ the population of China will grow by approximately 350 million by 2025, with a billion people living in cities and 221 cities having a population of a million people or more. This trend toward urbanization is expected to be accompanied by a rapid increase in the size of the middle class, with an attendant tremendous increase in the demand for high-quality protein.

To meet increasing consumer demands, more Chinese veterinarians will be needed to assist with food animal production. In addition, although most Chinese veterinarians currently work in the areas of food safety, research, government, and agriculture, the increase in the number of middle-income and upper-income families will also result in an increase in the number of pets and an increase in the demand for small animal veterinarians.

Given these trends, there is great potential for collaborative efforts of mutual interest and benefit to the US and Chinese veterinary professions. In this article, we explore some of those areas of potential collaboration.

Organized Veterinary Medicine

The concept of organized veterinary medicine is new in China. The Chinese Veterinary Medical Association (ChVMA) was established just 4 years ago, on October 28, 2009,² and had only 1,940 individual and 370 corporate members at its inception, although there currently are more than 3,000 members. The goals of the ChVMA are to improve the quality of veterinary education in China, aid in the professional advancement of veterinarians, and elevate the standards of veterinary practice to improve the image of veterinarians in society.³ The first ChVMA annual conference was held in

October 2010 with a central theme of one world, one health; according to the organizers, 2,000 veterinarians attended the conference.

The AVMA has been actively involved in assisting in the development of the ChVMA. One of the forums at the first ChVMA annual conference was dedicated to comparing the national veterinary licensing systems in China and North America, and according to Dr. Larry Kornegay, then AVMA president and a speaker at the conference, the Chinese are serious about improving educational standards and developing an accreditation program for veterinary colleges.⁴ The ChVMA also plans to be involved in continuing education. Ongoing collaboration between the AVMA and ChVMA is vital to the expansion of organized veterinary medicine in China.

Veterinary Education

In China, human medicine is the first choice for many students who instead end up pursuing a career in veterinary medicine when their university entrance examination scores prove too low to allow them to be admitted to medical school. In Chinese society, veterinarians are often considered second-class professionals, but the ChVMA hopes to improve the public image of veterinarians and, thereby, attract the best students.

Dr. Ming Wang, dean of the China Agriculture University College of Veterinary Medicine, estimates that there are 300,000 to 1 million veterinarians in China.^{3,a} Dr. Ron DeHaven, AVMA Executive Vice President, explains that the reason the exact number of veterinarians in China is not known is that there has not been a quality-assurance program to test veterinary graduates or establish minimum standards.⁴

More than 60 colleges or universities in China offer some form of veterinary medical education, but only about 10 provide a 5-year veterinary education program. Others provide 3 or 4 years of education in veterinary science or in a combination of veterinary and animal science. With China's largely agriculture-based economy, most veterinary schools emphasize farm animal medicine, and all veterinary educational institutions are part of an agriculture university. However, some are veterinary colleges within universities, whereas others are departments within a college.

Veterinary graduates receive a Bachelor of Agricultural Sciences, Bachelor of Veterinary Medicine, or

From the Department of Clinical Sciences and Paul G. Allen School for Global Animal Health, College of Veterinary Medicine, Washington State University, Pullman, WA 99164 (Memon); and the Department of Small Animal Clinical Sciences, College of Veterinary Medicine, University of Florida, Gainesville, FL 32608 (Xie).

Address correspondence to Dr. Memon (memon@vetmed.wsu.edu).

Bachelor of Veterinary Science degree.⁵ Students are admitted after they complete high school and are considered to be undergraduate students. However, many veterinary graduates continue their education and pursue a Master's degree, with research projects related to various veterinary topics, including medicine, surgery, and traditional Chinese veterinary medicine.

Collaboration between US and Chinese veterinary educational institutions could be instrumental in helping raise the level of veterinary education in China. Recently, Cornell University agreed to assist the City University of Hong Kong in creating the first academic veterinary medicine program in the Chinese metropolis. The plan was to start the first class of 30 students at the school in 2012, with the school offering a Bachelor of Veterinary Medicine degree.⁶

The US-China Center for Animal Health was created at Kansas State University with a mission of improving veterinary education, enhancing continuing education, and supporting economic development.⁴ According to Dr. Ralph Richardson, dean of the Kansas State University College of Veterinary Medicine, China has a highly educated workforce working in academia, research, and government, but needs veterinary practitioners who can apply the results of that research. Dr. Richardson has proposed having Chinese students receive a veterinary education from accredited veterinary colleges in the United States and then return to China. The US-China Center is also working to encourage Chinese veterinarians to participate in continuing education, and the ChVMA is considering ways to incorporate mandatory continuing education into the veterinary licensure program.

Complementary and Alternative Veterinary Medicine

As the American public has become more interested in complementary and alternative medical treatments for their pets, many veterinary practitioners from the United States and other Western countries have begun seeking training in these modalities, including veterinary acupuncture, herbal therapy, and traditional Chinese veterinary medicine (TCVM).⁷ A recent survey⁸ of 41 colleges of veterinary medicine accredited by the AVMA Council on Education found that 16 offered formal courses in complementary and alternative veterinary medicine, with acupuncture being one of the most frequently taught modalities. Collaboration between the US and Chinese veterinary professions provides an important potential route for US veterinarians to receive training, either in the United States or China, from Chinese veterinarians with experience in acupuncture and other complementary modalities. In May 2012, for instance, veterinary students from Washington State University, Oklahoma State University, Louisiana State University, and the University of Queensland in Australia participated in a veterinary acupuncture course offered at Southwest University in Chongqing, China. The course was jointly taught by faculty members from the United States (University of Florida, Washington State University, and Oklahoma State University) and China (Southwest University). Similarly, Chinese faculty members with expertise in TCVM would be able to

contribute in teaching this modality to US veterinarians and veterinary students. During the third ChVMA annual conference, which was held in October 2012 in Su Zhou, > 50 veterinarians from 12 countries, including the United States, United Kingdom, Spain, Italy, France, Australia, Japan, South Korea, Thailand, Costa Rica, Canada, and Taiwan, participated in a 24-hour TCVM track that was taught by 10 professors from 6 colleges of veterinary medicine in China.

Global Health

More than 60% of infectious diseases in humans reportedly originate from animal hosts,⁹ 57 of the 70 animal diseases considered to be of greatest importance globally infect multiple hosts,¹⁰ and many emerging diseases of humans and animals are assumed to be maintained in reservoir hosts,¹¹ even though those reservoirs are rarely identified. In the past few years, many emerging disease threats have been handled through large-scale destruction of suspected animal disease reservoirs, and many times, actions are taken on the basis of the perceived threat of an emerging disease. Millions of cows were slaughtered in the United Kingdom to control an epidemic of bovine spongiform encephalopathy,¹² approximately 1 million pigs were destroyed in Malaysia to control an outbreak of Nipah virus infection,¹³ and millions of chickens were slaughtered in Hong Kong to prevent a projected pandemic of influenza A virus infection.¹⁴ Efforts are being made to study the animal-human disease interface at a global level to help prevent emerging diseases,¹⁵ and it has been said that diseases don't recognize borders. Therefore, global collaborative efforts among the veterinary professions of all countries are needed to combat emerging and zoonotic diseases.

Conclusion

There is an outstanding potential for collaboration opportunities of mutual interest and benefit between US and Chinese veterinary institutions. Because there is no substitute for in-person visits, the authors recommend exploring opportunities to allow veterinarians and veterinary students to travel to China to share information. Collaborations between Chinese veterinarians and veterinary specialty organizations and breed-specific organizations in the United States, including the American Association of Swine Veterinarians, American Association of Bovine Practitioners, and American Association of Equine Practitioners, is highly recommended. Healthy animals are critical for healthy people. Mutual understanding and respect of each other's culture and socioeconomic system are prerequisites for global peace.

a. Wang M, Dean, College of Veterinary Medicine, China Agriculture University, Beijing, China: Personal communication, 2011.

References

1. McKinsey & Co. Urban world: mapping the economic power of cities. Available at: www.mckinsey.com/mgi/publications/urban_world/index.asp. Accessed May 20, 2012.
2. Kahler SC. In China, the veterinary profession unites. AVMA,

- new Chinese VMA reach out to each other in partnership. *J Am Vet Med Assoc* 2010;236:261–263.
3. Chinese Veterinary Medical Association website. Available at: www.cvma.org.cn/Index.html. Accessed May 26, 2012.
 4. Kahler SC. Structure leads to progress in China. Chinese Veterinary Medical Association sets sights on quality education, economics. *J Am Vet Med Assoc* 2011;238:1384–1386.
 5. AVMA. Veterinary medical degrees granted throughout the world. Available at: www.avma.org/ProfessionalDevelopment/Education/Foreign/Pages/ECFVG-world-colleges-degrees.aspx. Accessed Apr 10, 2013.
 6. Cornell, China: long-distance partners. *J Am Vet Med Assoc* 2010;236:1283.
 7. Chrisman C, Xie H. Traditional Chinese veterinary medical education in colleges of veterinary medicine in China and the United States. *Am J Tradit Chinese Vet Med* 2010;5:1–5.
 8. Memon MA, Sprunger LK. Survey of colleges and schools of veterinary medicine regarding education in complementary and alternative veterinary medicine. *J Am Vet Med Assoc* 2011;239:619–623.
 9. Taylor LH, Latham SM, Woolhouse MEJ. Risk factors for human disease emergence. *Philos Trans R Soc Lond B Biol Sci* 2001;356:983–989.
 10. Cleaveland SC, Laurenson MK, Taylor LH. Diseases of humans and their domestic mammals; pathogen characteristics, host range and the risk of emergence. *Philos Trans R Soc Lond B Biol Sci* 2001;356:991–999.
 11. Daszak P, Cunningham AA, Hyatt AD. Wildlife ecology—emerging infectious diseases of wildlife: threats to biodiversity and human health. *Science* 2000;287:443–449.
 12. Donnelly CA, Ferguson NM, Ghani AC, et al. The epidemiology of BSE in cattle herds in Great Britain. 1. Epidemiological processes, demography of cattle and approaches to control by culling. *Philos Trans R Soc Lond B Biol Sci* 1997;352:781–801.
 13. Enserink M. Epidemiology—new virus fingered in Malaysian epidemic. *Science* 1999;284:407–410.
 14. Vogel G. Infectious disease: sequence offers clues to deadly flu. *Science* 1998;279:324.
 15. Paul G. Allen School for Global Animal Health. Available at: globalhealth.wsu.edu/. Accessed May 28, 2012.

For all commentaries, views expressed are those of the authors and do not necessarily reflect the official policy of the AVMA.