Perspectives on veterinary education in Thailand

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ABSTRACT

Veterinary education is the foundation of veterinary services in the country. Starting from the service sector in the army, veterinary education and practice in Thailand have been standardized and progressed toward international veterinary standards. The 6-year Doctor of Veterinary Medicine core curriculum is deployed to develop the curriculum for each Veterinary Education Establishment (VEE). The challenges for veterinary education and practices reflect the country’s expectations of veterinary services. With regional and global collaboration, the VEEs have been developing tools and learning platforms for delivering qualified veterinary graduates that fit fast-growing society needs.

Keywords: Veterinary education; Thailand

HISTORICAL INSIGHTS OF VETERINARY EDUCATION AND PRACTICE IN THAILAND

Fig. 1A provides a brief history of veterinary education and practice in Thailand. Since the establishment of veterinary practice and the veterinary school in 1912 and 1935, respectively, veterinary education in Thailand has been modernized according to the models from western countries. The establishment of the Veterinary Council of Thailand (VCT), which serves as the Veterinary Statutory Body (VSB) of the country, led to a significant shift in national veterinary standards, including the Veterinary Education Establishment (VEE) accreditation system, harmonization of Doctor of Veterinary Medicine (DVM) core curricula, veterinary licensure system, and post-graduate training. Several subcommittees were set up to execute the VCT tasks, as shown in Fig. 1A. With the trend of globalization, some VEEs are in the process of international accreditation. In addition, the harmonized accreditation system for the Association of Southeast Asian Nations (ASEAN) members is currently being developed.
Veterinary education in Thailand

A

1912
Veterinary practice establishment in the Royal Thai Army

4-year veterinary certificate curriculum
1st year: General veterinary education
2nd–3rd year: Clinical courses

1935
Establishment of the first veterinary school: Chulalongkorn University

Course update: 4-year DVM curriculum
1st–2nd year: General veterinary education and basic science
3rd–4th year: Clinical courses

1939
Course update: 5-year DVM curriculum
1st–2nd year: General veterinary education and basic science
3rd year: Pre-clinical courses
4th–5th year: Clinical courses

1957
Establishment of 6-year DVM curriculum

1981
Course update: 6-year DVM curriculum
1st–2nd year: General veterinary education and basic science
3rd–4th year: Pre- and para-clinical courses
4th–6th year: Clinical courses

B

*The Veterinary Competency Assessment (VCA)

Registration and licensing by the Veterinary Council of Thailand (VCT)

License renewal every 5 years with 100 continuing education (CE) credits

C

| Year | Course categories | Course titles | Course categories | Course titles |
|------|-------------------|---------------|-------------------|---------------|
| 1    | Basic health science | Chemistry, Biology, Physics, Animal Behavior | General veterinary education | Anatomy, Biochemistry, Animal Husbandry |
|      | General education | Perspectives in Veterinary Profession, Computer Application, Experiential English I | General education | Experiential English II |
| 2    | Pre-clinical veterinary education | Histology, Anatomy, Biochemistry, Physiology, Animal Husbandry | Pre-clinical veterinary education | Neuroanatomy, Physiology, Animal breeding, Parasitology, Microbiology |
| 3    | Para-clinical veterinary education | Field practice, Nutrition, Laboratory Animal Science, Pharmacology, Pathology, Parasitology, Microbiology, Immunology, Biostatistics | Para-clinical veterinary education | Clinical chemistry, Pharmacology, Toxicology, Pathology, Hematology and Cytology, Surgery, Anesthesiology, Medicine, Theriogenology, Public health, Clinical Immunology |
| 4    | Principle clinical education | Jurisprudential, Ethics, concepts of Animal Welfare | Companion animal clinical education | Poultry Health Management, Ruminants clinical approach and practice |
| 5    | Companion animal clinical education | Imaging, Clinical Science, Surgery, Meat inspection, Zootechnics, Epidemiology and Preventive Medicine | Food/Farm animal clinical education | Meat inspection, Zootechnics, Epidemiology and Preventive Medicine |
| 6    | Food/Farm animal clinical education | Swine medicine, Avian Medicine, Aquatic Medicine, Food Industry and Quality Control, One Health, Milk Hygiene and Meat Inspection, Zootechnics, Epidemiology and Preventive Medicine | Food/Farm animal clinical education | Swine medicine, Avian medicine, Aquatic medicine, Food Industry and Quality Control, One Health, Milk Hygiene and Meat Inspection, Zootechnics, Epidemiology and Preventive Medicine |
|      | Companion animal clinical rotation | Pathobiology, Surgery, Anesthesiology, Imaging, Reproduction, Medicine, Emergency and Critical Care, Public Health | Pathobiology, Aquatic Practice, Ruminant Practice, Avian Practice, Equine Practice, Public Health | Pathobiology, Aquatic Practice, Ruminant Practice, Avian Practice, Equine Practice, Public Health |
|      | Food/Farm animal clinical education | Pathobiology, Aquatic Practice, Ruminant Practice, Avian Practice, Equine Practice, Public Health | Clinical module* | Companion animal, Food/Farm animal, Professional practice |
|      | Professional skill | Rural and Community Veterinary Practice, Cooperative Study, Senior Project, Veterinary Business Orientation, Veterinary Professional Leadership and Communication | Professional skill | Professional English II |

*Selective module

Fig. 1. Summary of veterinary education and practice in Thailand. Brief history of veterinary education and practice in Thailand (A). Overview of the DVM core curriculum, licensure system, and postgraduate training and certification in Thailand (B). Diagram of the Faculty of Veterinary Science, Chulalongkorn University curriculum as a representative Veterinary Education Establishment curriculum (C). DVM, Doctor of Veterinary Medicine.

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The VSB is the official authority regulating veterinary practice and service in the country, which closely cooperates with the VEEs and academic consortiums to harmonize the quality of veterinary education and specialty board certification. The VCT accredits and allows the VEEs to use the harmonized DVM core curriculum to design their 6-year DVM program. Fig. 1B gives an overview of the DVM core curriculum, licensure system, and post-graduate training and certification in Thailand. Table 1 lists the current Thai VEEs.

For example, the DVM curriculum of the Faculty of Veterinary Science, Chulalongkorn University (CUVET) is explained here. CUVET uses a tracking curriculum with additional tailored 8-credit study modules to fulfill its 244-credit DVM program. CUVET employs its day-1 competencies, so-called CUVET DICs, to design theme-based education. The CUVET DICs comply with the DICs endorsed by the European Association of Establishments for Veterinary Education (EAEVE) [1], VCT [2], and the World Organization for Animal Health [3,4]. Furthermore, CUVET has developed additional platforms to accommodate student learning and practice efficiently, e.g., the blended-learning platform, online learning management system (e-LMS), skill practice center, Chulalongkorn University Innovation Center for Veterinary Clinical Training, and electronic training log system (CUVET Smart School). In addition, 21st-century skills and innovative and entrepreneurial training have been incorporated into the curriculum. Fig. 1C presents a diagram of the CUVET curriculum as a representative VEE curriculum.

CHALLENGES AND OPPORTUNITIES FOR VETERINARY EDUCATION AND PRACTICE IN THAILAND

The continuous changes in society’s needs and the expectation of veterinary services have posed challenges for veterinary education and practice in Thailand. Therefore, to efficiently serve society’s needs, veterinary education and practice in the country should be adaptable to the fast-growing social demands. Owing to the transboundary diseases and borderless veterinary service and cooperation, veterinary practitioners should be capable of serving local and international stakeholders. As part of the essential workforce to secure the food supply chain both in the livestock production and food production line, well-trained veterinarians are required to serve both national and international levels. Smart farming and automated

Table 1. VEEs in Thailand

| Name of VEEs | Accreditation status by VCT | No. of students (approximately) |
|--------------|-----------------------------|---------------------------------|
| Faculty of Veterinary Science, Chulalongkorn University | Fully accredited | 768 |
| Faculty of Veterinary Medicine, Kasetsart University | Fully accredited | 720 |
| Faculty of Veterinary Medicine, Mahanakorn University of Technology | Fully accredited | 600 |
| Faculty of Veterinary Medicine, Khon Kaen University | Fully accredited | 500 |
| Faculty of Veterinary Medicine, Chiang Mai University | Fully accredited | 396 |
| Faculty of Veterinary Science, Mahidol University | Fully accredited | 282 |
| Faculty of Veterinary Science, Rajamangala University of Technology Srivijaya | Fully accredited | 288 |
| Faculty of Veterinary Science, Rajamangala University of Technology Mahasarakham University | Fully accredited | 250 |
| Faculty of Veterinary Medicine, Rajamangala University of Technology Tawan-ok | Fully accredited | 171 |
| Faculty of Veterinary Science, Prince of Songkla University | Fully accredited | 149 |
| Faculty of Veterinary Medicine, Western University | Fully accredited | 68 |
| Akkhraratchakumari Veterinary College, Walailak University | In progress for accreditation | 127 (1st-5th yr-current operation) |
| Faculty of Veterinary Medicine and Applied Zoology, Princess Chulabhorn College of Medical Science, Chulabhorn Royal Academy | In the progress of program development | 86 (1st-3rd yr-current operation) |
| Faculty of Veterinary Medicine, Maejo University | In progress for accreditation | 0 |

VEE, Veterinary Education Establishment; VCT, Veterinary Council of Thailand.

*As of August 2022.
production system have been integrated into frontline business sectors. Therefore, graduate veterinarians must be trained to familiarize themselves with such systems. In terms of health security, veterinary education and service should incorporate one health concept into the education system. This concept of harmonizing human, animal, and environmental health will help all stakeholders efficiently address global health security issues.

Interestingly, the trend of pet owners in Thailand has expanded tremendously. Thus, the qualification of companion animal practitioners at the same level as their medical counterparts is expected. This leads to significant advances in companion animal veterinary practices. With the trend of wildlife and conservative veterinary practices, the need for specialized veterinarians working on zoo and wildlife animals is increasing. This has led to the establishment of the zoo and wildlife veterinary society in the country.

A robust veterinary education system has been established and maintained with the establishment of the national VSB, the VCT, and the harmonization of the Thailand Veterinary Dean Consortium. Owing to the coronavirus disease 2019 outbreak, however, the study platform to fulfill the curricular requirement is reduced. The lack of hands-on skill practice, animal cases, and on-site staff availability affected the quality of veterinary education. In addition, the social concerns on animal welfare led to the avoidance of healthy animal sacrifice for teaching. Many tools have been employed to improve and ensure the students’ clinical skills, including the skill practice and simulation center, e-LMS, and electronic training log system.

Regarding the opportunity for veterinary education and practice, many tools have been developed and applied to overcome the current weaknesses and threats. New technologies based on artificial intelligence and the internet of things have been incorporated into all medical and veterinary services ranging from disease diagnosis and surveillance, health monitoring and management, smart farming, and food production pipeline. This leads to the vast opportunity for modernizing veterinary education and practice in the country. In addition, the trend of hands-on training utilizing the simulation model and soft cadavers has been used to enhance practical skill training and assessment. Furthermore, the collaboration among stakeholders via the Public-Private-Partnership and the global connection has helped improve the quality of academic and research platforms in the country. Currently, some VEEs have started the process for international accreditation. The EAEVE, the American Veterinary Medical Association, and the Australasian Veterinary Boards Council are attractive international standards owing to their recognition and robust accreditation system. The international accreditation process and approval will shape the quality of the VEEs and modernize veterinary practice in Thailand.

**ASIAN PERSPECTIVES OF VETERINARY EDUCATION AND PRACTICE**

According to the Asian perspectives on veterinary education and practice, the trend of lifelong learning, shared learning resources, and international collaboration in academia, research, and innovation will provide sustainable ways to strengthen veterinary education and practice in the region. It is well accepted that the improvement of veterinary education and service in major Asian countries has led to positive changes in these countries. The flexible study program that fits local and global needs will be an invaluable platform for
sharing among the VEEs’ partners. These shared platforms may include shared credits, subjects, programs, and even the curriculum. On the other hand, a flexible educational policy is needed to achieve this platform. Shifting from traditional outcome-based and competency-based education to theme-based education was challenging, but it was valuable for all stakeholders. Improving an international language is indisputable for establishing borderless veterinary education and practice at regional and global levels. Thus, settling down on international language training and assessment in the veterinary curriculum is much required.

The establishment of harmonized veterinary education and accreditation system among the Asian countries will lead to the harmonization of regional veterinary services. The ASEAN member states have been developing a harmonized veterinary accreditation system via the ASEAN Veterinary Statutory Body Network in collaboration with the Southeast Asia Veterinary School Association [5,6]. This standard will be a good starting point for harmonizing veterinary education and practice in the region. Another challenge in Asian veterinary education and practice is the sustainability of the VEEs standards. The lessons learned from the international accreditation highlight the significance of the quality assurance process for maintaining a robust veterinary education system. Finally, as a global trend, veterinary graduates equipped with an innovative and entrepreneurial mindset will be desirable for coping with disruptive changes and leading technology development and translation. Along with 21st-century skills, including communication and decision-making skills, veterinary graduates will be the future frontline task force for veterinary services.

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