

University Grants Committee

Report of the Task Force on the Second Proposal of Establishing a School of Veterinary Medicine in Hong Kong Submitted by the City University of Hong Kong

December 2013

PREAMBLE

Hong Kong does not have any degree programme in veterinary medicine which leads to a professional veterinary qualification at present. Supply of qualified veterinarians is dependent on returning students who have studied veterinary medicine abroad or expatriates working in Hong Kong. Not until The City University of Hong Kong (CityU) first submitted a proposal to establish a veterinary school in Hong Kong in 2009, had there been any comprehensive discussion on the education and training needs of the veterinary sector. CityU's proposal provided an opportunity for, not only the University Grants Committee (UGC) sector, but also the Government and the entire veterinary sector to gain a deeper understanding of and to review a range of matters relating to veterinary education and training in Hong Kong.

Whilst its first attempt to seek funding support from the Government via the UGC in 2009 was not successful, CityU made another attempt and submitted a second proposal in late 2012. The UGC subsequently set up a Task Force, comprising local and overseas public health and veterinary science experts, as well as knowledgeable community leaders to examine the revised proposal with a fresh eye. To develop a balanced and informed view, the Task Force also sought comments from relevant stakeholders including Government bureaux and departments, the registration body, veterinary associations, animal welfare advocacy groups, academic institutions as well as potential partners during the review process.

This is the Task Force's report that attempts to address the issues related to the establishment of a veterinary school in Hong Kong. The report first gives an overview of the veterinary sector in Hong Kong and some concluding observations. The report then concentrates on CityU's proposal, analyses its strengths and weaknesses, and finally, in the context of the development of the veterinary sector in Hong Kong as a whole, makes recommendations for consideration of the UGC.

Comments and recommendations herein are made based on the collective views of Task Force Members after consultation with the stakeholders, visitation to CityU, and intense discussions thereafter. We, in particular, have been extremely impressed by the enthusiasm and passion of the veterinary sector towards their profession, its important contribution to animal welfare, as well as the promotion of public health and the prevention of infectious diseases.

I am also truly grateful to members of the Task Force for rendering their expert knowledge and advice which are truly important for putting together

this report and the recommendations herein. We would also like to thank the UGC for granting complete independence to the Task Force during the process of taking on this exercise.

Professor Roland T Chin
Veterinary School Task Force Convenor

27 December 2013

ABBREVIATIONS

AVMA	The American Veterinary Medical Association
BVM	Bachelor of Veterinary Medicine
CHKVA	The China (Hong Kong) Veterinary Association
CHP	Centre for Health Protection
CityU	The City University of Hong Kong
Cornell CVM	Cornell University College of Veterinary Medicine
CTCSA	Clinical Training Centre for Small Animals
CUHK	The Chinese University of Hong Kong
EDB	The Education Bureau
FHB	The Food and Health Bureau
FSTB	The Financial Services and Treasury Bureau
GRF	General Research Fund
HKCAAVQ	The Hong Kong Council for Accreditation of Academic and Vocational Qualifications
HKJC	The Hong Kong Jockey Club
HKMA	The Hong Kong Medical Association
HKSAR	The Hong Kong Special Administrative Region
HKVA	The Hong Kong Veterinary Association
HKU	The University of Hong Kong
Ocean Park	Ocean Park Hong Kong

PolyU	The Hong Kong Polytechnic University
RGC	Research Grants Council
RPg	Research Postgraduate
RSVC	The Royal Veterinary College, University of London
SPCA	The Society for the Prevention of Cruelty to Animals
TYB	To Yuen Building
VSB	Veterinary Surgeons Board

PART ONE: EXECUTIVE SUMMARY

Background of the CityU Veterinary School Proposal

1.1 CityU submitted a proposal in August 2009 requesting UGC's support to establish a veterinary school in Hong Kong. The UGC considered the proposal and the Government's views in 2010. Neither the UGC nor the Government supported the proposal in view of the significant policy, manpower and financial implications. CityU was informed of the UGC's decision on 26 April 2010.

1.2 CityU then considered launching the veterinary school on a self-financing basis in 2011. However, the institution resubmitted a new veterinary school proposal to the UGC in December 2012 with considerably expanded information, particularly on the demand and supply of veterinarians, accreditation of the veterinary programmes, its partnership with Cornell University, and the budget and facilities required.

Veterinary School Task Force and the Review Process

1.3 The UGC agreed at its meeting in January 2013 to set up a Task Force to critically examine the proposal, identify areas of concern and make recommendations for the consideration by the UGC. The Task Force membership includes local and overseas public health and veterinary science experts as well as well-informed community leaders.

1.4 The Task Force examined the second proposal by adopting an evidence-led investigative approach. A fact-finding exercise was carried out by contacting the relevant stakeholders to seek their comments and views on various aspects, including Government policies, societal needs, development of the veterinary sector, accreditation of the veterinary programme, employment prospects, etc. In addition to seeking their written comments, the Task Force also met with representative groups of stakeholders in July 2013, including Government bureaux, the Veterinary Surgeons Board, veterinary associations, animal protection group, Ocean Park, Hong Kong Jockey Club, CityU and Cornell representatives.

Observations of the Task Force on the Veterinary Sector in Hong Kong

1.5 From the information gathered in the fact-finding exercise, the Task Force makes ***eleven observations*** which are summarised as follows:-

- (1) ***Supply of Veterinarians:*** Veterinarians currently practising in Hong Kong are either former local students who have studied veterinary medicine abroad and returned with overseas degrees or expatriates working in Hong

Kong. Veterinarians are required to meet international standards in registration. Among the veterinarians registered with the VSB, only 70% are practising locally.

- (2) ***Pet Clinics:*** Companion animal clinics are primarily operated on a private and small scale basis. They collectively employ 80% of the practising veterinarians who are mainly general practitioners. Starting monthly salary can be below HK\$10,000. In terms of pets-per-veterinarian ratio, Hong Kong is better than some developed countries such as Japan and the US. That said, there is a demand for more specialist veterinarians in Hong Kong.
- (3) ***Food Safety and Disease Control:*** On food safety, it is primarily the Government's responsibility to inspect food sources, monitor meat imports, and provide free advice to the small number of local farms. The demand for veterinarians in these aspects is not large and most are employed by the Government. The concept of "One Health" seeks to bring together the expertise of physicians, veterinarians and other health professionals. Infectious disease prevention and control is an important focus and indeed an area of excellence of Hong Kong. More active adoption of veterinary science should further enhance disease control research and development. In addition, aquaculture may be a new focus for development for Hong Kong.
- (4) ***Others:*** Demand for veterinarians in other streams in the veterinary sector, such as the equine industry, recreational parks, animal welfare organizations, research laboratories and pet food industry, in general is relatively small.
- (5) ***Overall Demand for Veterinarians:*** Growth in demand for veterinarians in Hong Kong is likely to be moderate in the near to medium-term future. Supply of veterinary general practitioners is sufficient in general.
- (6) ***Veterinarians in Mainland China:*** Mainland China has large cattle, pig and poultry industries with more than 683 000 practising veterinarians and para-veterinarians. Around 4 000 veterinarians graduate from 40 veterinary schools every year. Salary for veterinarians in the Mainland is not high as compared to other jurisdictions. There is no apparent demand for veterinarians from overseas or Hong Kong, nor is there any plan for the authorities in Hong Kong and the Mainland to pursue mutual recognition of qualifications. That said, there may be limited opportunities for research collaboration in public health and epidemiology.

- (7) ***Government Policy in Food and Health:*** The Government has no intention to change the current policy in regard to food safety and disease control. While more investment in research into the link between animal and human disease transmission will be beneficial to the community at large, establishing an undergraduate veterinary programme is not considered to be the best approach to achieve this. FHB has made a manpower projection recently, which provides no evidence to support establishing a veterinary school.
- (8) ***Government Policy in Education:*** The current education policy with regard to the number of undergraduate intakes funded by the UGC institutions (i.e. 15 000 intake per year) will continue. The percentage of non-local undergraduates (i.e. the 20% ceiling) and the Government funding level will also be maintained. Veterinary medicine is not considered by the Government to be a priority in terms of Hong Kong's strengths and needs.
- (9) ***Government Financial Resources:*** Given the substantial resources required for a veterinary school and that public resources must be used in a prudent and cost-effective manner, the Government would take into account the community needs and policy justifications for, as well as the cost-effectiveness of, any proposed programmes before deciding on the provision of resources.
- (10) ***Stakeholders' Views:*** Though there is no genuine shortage of veterinarians in Hong Kong, it is the general view of the veterinary sector that a local veterinary school would enhance the professional image of veterinarians, upgrade professional development capacity, provide specialists backup to the sector, and perform relevant research.
- (11) ***Accreditation and Registration:*** The current VSB registration is based on the standards and requirements set by the main international accreditation bodies. It provides mobility and quality assurance for veterinarians practising in Hong Kong. That said, the VSB is not an accreditation body and hence any new veterinary school to be set up locally would need to seek accreditation status from international veterinary accreditation bodies, the process for which would take many years.

Recommendation on the CityU Veterinary School Proposal

1.6 Hong Kong does not have any degree programme in veterinary medicine at present, and there has never been a comprehensive discussion in the community on the education and training of veterinary professionals for Hong Kong. This is the first comprehensive review exercise on setting up a veterinary

school in Hong Kong. When reviewing CityU's second proposal submitted to the UGC in December 2012, the Task Force has taken the observations resulting from the fact-finding exercise into consideration.

1.7 The Task Force recognizes a number of strengths in CityU's proposal. The Task Force appreciates the efforts made by CityU in putting forward the proposal which provides an opportunity for the higher education sector to seek and attain a better understanding of the education and training needs of veterinary professionals for Hong Kong. The persistence and enthusiasm of CityU in pursuing the veterinary school project, and in establishing collaboration with overseas veterinary institutions and gaining support from various local stakeholders, is strong. In particular, CityU's partnership with Cornell University appears to be strong with long term commitment on both sides.

1.8 Notwithstanding the foregoing statement, the Task Force has identified several major issues which are either inadequately addressed in CityU's proposal or where the information provided is at variance with the observations of the Task Force as a result of the fact-finding exercise, especially in aspects such as demand for veterinarians and employment prospects of the graduates, budget estimation and the funding required for the proposed veterinary school, and placement and accreditation. On account of the above, the Task Force considers that the proposal does not provide a sufficiently persuasive case and hence would not be able to support it (*Recommendation 1*).

Task Force Recommendation on the Way Forward

1.9 That said, the Task Force agrees that establishing a veterinary school in Hong Kong will be beneficial to the community, especially for the purpose of strengthening infectious disease research and food safety support. To this end, the Task Force considers that establishing a fit-for-purpose veterinary school in Hong Kong, taking into account the local context, with a small professional veterinary medicine training programme and a strong and sustainable research and postgraduate programme will be advantageous for the strategic development for Hong Kong (*Recommendation 2*). But for such a fit-for-purpose veterinary school to materialize, issues in planning and execution would need to be carefully addressed (*Recommendation 3*) and Government policy and resource support would also need to be aligned (*Recommendation 4*).

PART TWO: BACKGROUND AND THE REVIEW EXERCISE

Background of CityU's Veterinary School Proposal

CityU's first proposal for a publicly funded veterinary school (2009)

2.1 In August 2009, the UGC received a proposal from CityU to establish a publicly-funded veterinary school in Hong Kong. CityU's proposal was based on two main grounds – community needs and public health. CityU considered that there was a strong demand for qualified veterinarians both locally and in the region. It also considered that the proposed school would enable Hong Kong to better handle new and unknown diseases originating from animals, thereby reducing the risk of loss of human lives and economic detriment, while promoting better protection of human health. The proposed six-year programme would start around 2012, with an initial intake of 30 students per year and increasing to about 50 students per year after five years' operation. CityU estimated the capital costs to be about HK\$500 million and the annual recurrent cost at HK\$150 million, i.e. about HK\$500,000 per place per year.

2.2 Due to the significant policy, manpower and financial implications, the UGC Secretariat sought views from the relevant Hong Kong Special Administrative Region (HKSAR) Government Bureaux, namely the Education Bureau (EDB), the Food and Health Bureau (FHB) and the Financial Services and Treasury Bureau (FSTB), respectively. All the three bureaux did not support the proposed veterinary school project mainly because:-

- the demand for veterinarians in Hong Kong, both in the public and private sectors, would be small and could not justify the cost of setting up and operating a veterinary school;
- Given competing priorities for public funds and strong demand from other existing programmes and courses, it would be difficult to support new disciplines with no genuine demand in the sector, and without proven track record or synergy with existing programmes at CityU. For indication, the same amount of recurrent funding requested for a veterinary school could help train say, 50 more doctors, or 150 nurses, or 200 engineers or 200 teachers per year;
- concerns were expressed on the feasibility, cost-effectiveness, and sustainability of the proposed veterinary school based on the information submitted by CityU; and

- the idea for conducting more research into the link between animal and human disease transmission was worth exploring further, but it was doubtful that a veterinary programme focusing on undergraduate veterinary training could achieve this. It was believed that a more efficient way to address research on public health issues would be to provide additional funding for research.

2.3 The UGC considered the proposal and the bureaux's views at its meeting on 8 January 2010 and again on 23 April 2010. CityU was also invited to give a presentation to the UGC and answered questions at the meeting on 23 April 2010. After thorough deliberation, the UGC did not endorse CityU's proposal with reasons as set out in the paragraphs above. Since it was noted that CityU might consider proceeding with setting up the veterinary school from its own funds should public grants not be available, the UGC had made it clear that the considerations related to the viability of a publicly-funded veterinary school would apply equally to a self-financed operation. As with all self-financed programmes, the UGC would ask the institutions to ensure that self-financed activity does not detract from the core work of the institutions, particularly in the run up to "3+3+4", and to have distinct separation of resources from publicly funded programmes.

Proposed to operate the veterinary school on a self-financing mode (2011)

2.4 In October 2011, CityU announced that it would launch the veterinary school on a self-financing basis. According to CityU, the University planned to set up a six-year Bachelor in Veterinary Medicine (BVM) programme in collaboration with the Cornell University College of Veterinary Medicine (Cornell CVM), with a first batch of 30 intake students. Limited postgraduate programmes would also be offered. Since the establishment of a vet school would be a huge endeavour with considerable financial and manpower implications, to have a better understanding of how a veterinary school was operated, the Administration and the UGC¹ paid a visit to Cornell in November 2012.

CityU's second proposal for a publicly funded veterinary school (2012)

2.5 In December 2012, CityU submitted a new proposal to the UGC to reapply for public grants to establish a veterinary school in Hong Kong. The revised proposal provided more substantive information, particularly on the demand for veterinarians in Hong Kong, course structure, accreditation of the

¹ The delegation included representatives of the Education Bureau, the Food and Health Bureau and the UGC, together with an ex-UGC Member, Prof. Willard Fee, who then became a Member of this Task Force.

programme, budget planning, facilities required, collaboration with and commitment of Cornell, etc.

Veterinary School Task Force Set Up by the UGC (2013)

2.6 It has been a common practice for the UGC to seek the views of relevant Government bureaux on any academic proposal if it involves significant policy, manpower and financial implications. As for the current veterinary school proposal, given that it was the second attempt of CityU to apply for public funding, and the reapplication included more substantive information, the UGC agreed at its meeting in January 2013 to set up a Task Force, comprising public health and veterinary science experts, as well as knowledgeable community leaders, to review the proposal in detail, identify areas of concern and put up recommendations for consideration by the UGC. The Terms of Reference of the Task Force is as follows:-

- to examine the revised veterinary school proposal of CityU with due regard to the general case for establishment of such provision in Hong Kong;
- to identify areas of concern and determine guiding questions to be raised to the Administration;
- to liaise/meet with the Administration and relevant stakeholders on the proposal;
- to set out option(s) concerning veterinary education and research in higher education in Hong Kong and assess the implications of such option(s) for the consideration of the Administration, as well as consider the proposal of CityU in that context;
- to discuss any other related issues as deemed appropriate by the Task Force;
- where necessary, to engage external experts to support the work; and
- to report back to the UGC.

The membership of the Task Force is at **Annex A**.

Review Process and Methodology Adopted by the Task Force

2.7 Having regard to its Terms of Reference, the Veterinary School Task

Force has examined CityU's second proposal, inter alia, the new arguments and elements therein, with a fresh eye and open mind, in the context of the general development of the veterinary sector in Hong Kong and the region. In this regard, the Task Force carried out an independent review on the revised proposal, irrespective of the rejection by the UGC of the first proposal four years ago.

2.8 This report presents the Task Force's findings and considerations on setting up a publicly funded veterinary school in Hong Kong. The Task Force has adopted a professional and investigative approach in examining the proposal. To achieve this, the Task Force has carried out a fact-finding exercise by reviewing a wide range of relevant issues, including the current demand and supply of veterinarians in Hong Kong and the Mainland; veterinary education and training; job prospects of veterinary graduates; accreditation and registration; the food safety regime of Hong Kong; and research on infectious disease and collaboration with the medical schools. Views from stakeholders against a list of questions pertinent to the general case of setting up a publicly funded veterinary school in Hong Kong were sought. The Task Force also met with selected stakeholders in July 2013 in order to have a more in-depth discussion based on their written submissions. The list of selected stakeholder organizations from which the Task Force has sought views, as well as their comments, are at **Annex B**.

2.9 The Task Force has carried out the following major tasks during the review process:-

- Reviewing the background of the veterinary school project including the first proposal submitted by CityU in 2009 as well as the written comments of the relevant bureaux. This step served primarily as an information reference source for the Task Force.
- Carefully considering the second proposal submitted by CityU in December 2012 including all other documents such as the major Addendum submitted by CityU in July 2013.
- Conduct an extensive fact-finding exercise to fully understand the situation of the local veterinary industry, the job market, the societal needs, the registration process, the quality assurance aspects, training and research, Government policies, and where appropriate, how these issues are related to the situation in Mainland China.
- Collecting views from relevant stakeholders by soliciting their written submissions and meeting with them in July 2013 for in-depth discussion.

- Visiting with the senior management team of CityU and Cornell in July 2013.

That said, it should be noted that the stakeholders have only offered broad views on whether Hong Kong should have a veterinary school or not. They have not commented on the specifics of CityU's proposal as they were not given details of the proposal as requested by CityU.

Assumptions and Review Framework

2.10 As well as stating how the Task Force carried out its work, it is important to make clear what this report does not cover. Views and recommendations expressed in the report are based on the information and evidence gathered during the fact-finding exercise, set in the context of the veterinary school proposal of CityU and the Hong Kong higher education sector as a whole. The Task Force has no intention or mandate to carry out a comprehensive review or to offer definitive recommendations on Government policies with regard to the education, training and continuing development needs of the veterinary profession in Hong Kong. Nor does it seek to evaluate other veterinary-related programmes offered previously or currently by other institutions in Hong Kong. The Task Force is of the view that the decision on the specific types of programmes and training that best suit the future development of the veterinary profession in Hong Kong should rest with the Government and the statutory licensing body (i.e. the Veterinary Surgeon Board, or VSB) in liaison with the veterinary sector as a whole.

2.11 The Task Force also did not attempt to carry out a quality review of CityU's academic programmes, as this should be done by CityU itself and through other channels such as the Quality Assurance Council and the Research Assessment Exercise. The Task Force is cognizant that it is unusual for the UGC to set up and designate a special group to examine and review a proposal of a specific academic programme submitted by a funded institution in isolation. Normally, if an institution wishes to seek public funding to launch an academic programme, it should be done through the triennial Academic Development Planning (ADP) process² so that the proposed new programme could be

² The UGC follows a triennial planning cycle for the recurrent grant allocation exercise to the UGC-funded institutions. The cycle usually starts two years before the commencement of each triennium. The process involves several stages including submission of the academic development proposals which serve as a platform for the UGC-funded institutions to introduce new publicly-funded academic programmes and/or phase-out the obsolete ones for consideration by the UGC. Instead of reviewing proposals of each and every programmes, the UGC will do so holistically. The current triennium runs from 2012/13 to 2014/15. The next triennium will be 2016/17 to 2018/19, with a roll-over year (i.e. 2015/16) arranged in-between, due to the special circumstances arising from the implementation of the new "3+3+4" academic structure in the UGC sector and the Research Assessment Exercise 2014.

evaluated in the context of the institution's strengths, fit for purpose, synergy with other programmes, and strategic direction. In this case, such contextual information about the institution was clearly absent.

2.12 While the Task Force did examine and comment on CityU's financial proposal in respect of the veterinary school, there was no attempt to carry out a review of the cost-effectiveness of such a publicly funded veterinary school in relation to the Government's financial position or the UGC funding model for the higher education sector. This was in line with the Task Force's terms of reference (see paragraph 2.6 above).

Organization of the Report

2.13 The main body of the report is organized as follows:-

- Part Three offers an environmental scan on the veterinary sector in Hong Kong and the Mainland based on a fact-finding exercise, and the views and comments gathered from stakeholders. In particular, current Government policies and Government views on setting up a veterinary school in Hong Kong were clearly noted after thorough reviews of the information provided by the EDB, the FHB, and the Agricultural, Fisheries and Conservation Department (AFCD);
- Part Four presents the views of the Veterinary School Task Force on CityU's proposal taking into consideration the circumstances and issues mentioned in Part Three; and
- Part Five sets out the recommendation(s) of the Veterinary School Task Force, including, *inter alia*, an ideal model of a veterinary school that best fits the situation of Hong Kong as considered by Task Force members, and the viability of such a model.

PART THREE: AN OVERVIEW OF HONG KONG'S VETERINARY SECTOR

Supply of veterinarians in Hong Kong

3.1 Hong Kong does not have any veterinary medicine degree programme at present. Students who wish to pursue veterinary medicine need to study abroad. A person is qualified for registration as a veterinary surgeon, if he/she satisfies the VSB³ that, amongst other requirements, he/she holds any of the qualifications recognized by the VSB (namely qualifications from about 50 specified universities in the United States, the United Kingdom, Ireland, Australia, Canada, New Zealand, South Africa and Taiwan) as stipulated by the Rules of the Veterinary Surgeons Board (Registration of Veterinary Surgeons). Details of the registration requirements are extracted at **Annex C**. The list of recognized qualifications is subject to review as and when appropriate⁴.

3.2 According to the VSB, there were 690 qualified registered veterinarians in Hong Kong as of June 2013. These veterinarians are either Hong Kong residents returning from overseas after their study or expatriates working in Hong Kong. The number has increased quite significantly over the last 15 years, from some 150 in 1998⁵. That said, out of these 690 registered veterinarians, only 513 were practising in Hong Kong⁶, and the local Chinese vis-à-vis expatriate ratio is about 60% to 40%⁷. Veterinarians in Hong Kong are employed in various professional areas. Among the registered veterinarians practising in Hong Kong, around 80% are in the companion animal sector (working as veterinarians in pet clinics), some 30 are working for the Government full time (mainly in regulatory and public health), 23 in animal welfare agencies, 14 in the equine industry, 13 in education or commercial sectors, such as pharmaceutical and pet food companies, and four in an

³ The VSB was established in 1998 under the Veterinary Surgeons Registration Ordinance (Cap. 529). Its main functions, as defined by the Ordinance, are to establish and maintain a register of registered veterinary surgeons; to set the qualification standards for registration as a veterinary surgeon; to receive, examine, accept or reject applications for registration; and to make rules for the professional conduct and discipline of registered veterinary surgeons and deal with disciplinary offences.

⁴ To assess the suitability of selected tertiary institutions in the European Union and Mainland China for inclusion of their relevant programmes into the list of recognised qualifications, the AFCD had commissioned the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) in April 2010 to conduct a study. The outcome of the Study will be ready by end-2013.

⁵ The statistics on veterinarians were captured since the establishment of the VSB in 1998.

⁶ The figures were provided by FHB and refer to those holding both a current practising certificate and a Hong Kong correspondence address in addition to veterinary registration. Figures as at August 2013.

⁷ According to a survey conducted by HKVA in 2011, there were 345 Chinese and 255 non-Chinese veterinarians registered with VSB by then, constituted to a 60% to 40% ratio. It is believed that the ethnic ratio will be more or less similar today.

amusement park⁸.

3.3 According to a recent survey conducted by the Hong Kong Veterinary Association (HKVA), each year around 50 local students go abroad to study veterinary medicine, and currently there are around 200 to 250 Hong Kong students studying in Australia, UK, Taiwan, US, Canada and other European countries. Whilst some will choose to return to Hong Kong to practise upon graduation, some have chosen to stay overseas to pursue further study or work. Though a robust manpower analysis on the veterinary sector has not been carried out, there are strong indications from the veterinary associations that the demand and supply of veterinarians in Hong Kong are in saturation, especially in the private pet clinic sector. Hong Kong, similar to other developed countries⁹, is currently experiencing an over-supply of clinical veterinarians and this has resulted in decreasing entry-level salaries. In this regard, some stakeholders are concerned and express reservations about establishing a local veterinary school. They assert that the increase in the number of veterinarians registered with the VSB each year is by no means an indication of an increase in demand for veterinarians, as there is no residency requirement for the registration (i.e. veterinarians registering with the VSB do not necessarily require a job offer).

3.4 There are also anecdotal indications that new graduates have been experiencing difficulties in securing employment in the companion animal sector in the territory, but in the absence of a formal manpower analysis, the exact extent of the difficulties faced by new graduates in finding jobs is unknown. All in all, many believe that supply and quality of veterinarians in Hong Kong is sufficient with the registered veterinarians available in the market and those returning from overseas countries.

3.5 Some point out that currently only students coming from well-off families can afford paying the expensive tuition to pursue a study in veterinary medicine abroad¹⁰. They therefore argue that a local veterinary programme

⁸ Figures on animal welfare agencies by SPCA (this refers only to veterinarians employed by SPCA); equine industry by HKJC; amusement park by Ocean Park and the remaining by FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

⁹ According to a recent survey, in Australia out of the annual 710 veterinary graduates, around 19% are unable to secure employment upon graduation, and nearly half have gone for pursuing further study.

Source: Annual Australian Graduate Survey, *Graduate Careers Australia*

<http://www.graduatecareers.com.au/Research/GradJobsDollars/BachelorAll/VeterinaryScience/index.htm>

Oversupply of vets also occurs in the US. A major study released by the American Veterinary Medical Association (AVMA) and conducted by IHS Healthcare & Pharma in partnership with the Center for Health Workforce Studies at the State University of New York estimates an excess capacity of veterinary services in the US. The report specifically indicates that the supply of veterinarians in the US in 2012 was 90 200, and that supply exceeded the demand for veterinary services by about 11 250 full-time equivalent veterinarians. Source: 2013 AVMA Veterinary Workforce Report

<https://www.avma.org/news/pressroom/pages/2013-AVMA-Veterinary-Workforce-Report-Confirms.aspx>

¹⁰ The annual tuition fee of the Doctor of Veterinary Medicine programme of the Cornell University is around

would provide opportunities for local students, in particular those from less privileged families, to pursue veterinary study at a lower tuition rate. However, some stakeholders consider that the issue can be resolved by the provision of scholarships (the pros and cons of which will be discussed in Part Five of the Report). They also doubt whether it is in the best interest of Hong Kong as a cosmopolitan city to rely only on locally trained veterinarians. Whilst Western countries such as Australia, New Zealand, the US and the UK are popular places for Hong Kong students to pursue veterinary medicine, there is an increasing trend for students to study in Taiwan because of the lower tuition¹¹. In fact, not all professionals practising in Hong Kong are trained locally. For instance, there are no publicly-funded undergraduate programmes in chiropractic and nutrition offered in Hong Kong, and practitioners are required to pursue the relevant studies and obtain the qualifications overseas.

Observation 1 (Supply of Veterinarians)

Veterinarians practising in Hong Kong are local students returning with overseas degrees and expatriates working in Hong Kong, with a ratio of around 60% to 40%. Only ~70% of the veterinarians registered are in practise. Veterinarians are required to meet international standards in registration and the supply of general veterinary practitioners is sufficient.

Hong Kong's private pet clinics

3.6 Companion animal practise accounts for around 80% of the veterinary employment opportunities in Hong Kong¹². Demand for veterinary services for companion animals is directly related to the number of pets in Hong Kong, the financial situation of the pet owners, and the level and quality of services that they expect to receive. According to the Census and Statistics Department, the total number of cats and dogs has increased by around 40% in the past five years, from some 297 000 in 2005-06 to 415 000 2010-11. When translating the figures into pets-per-veterinarian (cats and dogs) ratio, Hong

US\$44,250 for non-New York State resident. As for the Doctor of Veterinary Medicine programme provided by the University of Melbourne, Australia, it is around AUD52,756 each year for international students.

Source: <http://www.vet.cornell.edu/financialaid/CostOfAttendance.cfm>;

<http://www.vet.unimelb.edu.au/futurestudents/scholarshipsfees.html>

¹¹ According to the manpower survey carried out by the HKVA in 2011, more than 130 veterinarians practising in Hong Kong studied veterinary medicine in Taiwan, the second largest after Australia. Besides, as mentioned in a recent news report, the National Pingtung University of Science and Technology in Taiwan received 168 applications from Hong Kong students to pursue their 5-year bachelor of veterinary medicine programme last year. The annual tuition fee of which stands at around HK\$14,000, which is only one third of the annual tuition for a UGC-funded undergraduate programme at HK\$42,100.

Source: 兩港生赴台讀獸醫圓夢 城大：港開獸醫學院條件不遜台. Mingpao, 5 April 2013

¹² FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

Kong scores 1 200:1¹³. This is much lower (better) than other Asian economies such as Japan (1 500:1), Malaysia (2 400:1) and Singapore (2 500:1), and even Western countries like UK (2 400:1) and the US (3 100:1)¹⁴.

3.7 Nearly all the pet clinics in Hong Kong are privately run. Currently there are some 150 private clinics in Hong Kong.¹⁵ Most of them are small-sized clinics, with less than four veterinarians employed on average. According to a recent survey conducted by the HKVA, the number of new clinics opened during the past twenty years has been steady (figures up to 2009), with around nine to ten clinics opened every five years. However, there was a sudden burst during the last three years (i.e. 2010 to 2013), with 24 new clinics established. The HKVA suspects that a spike in new pet clinics in the recent three years may well reflect the difficulties of new graduates in seeking employment in existing establishments, with well-resourced newcomers resorting to set up their own businesses instead.

3.8 Most of the veterinarians in Hong Kong are general practitioners, and there are only seven veterinary specialists¹⁶ registered with the VSB at present. With the growing demand for quality specialized veterinary services, it has been a common practice for veterinary clinics in Hong Kong to outsource specialist services to overseas experts, by either sending the medical reports to seek their advice or inviting them to personally travel here to consult (the cost is usually borne by the clients for the latter services). Some local veterinarians will also invite overseas specialists to consult in their clinics for a short period of time, usually around one or two weeks, to provide the specialist services. With the current shortage of veterinary specialists stationing in Hong Kong, part-time consultancy is considered to be the most cost-effective practice. This signifies a potential need for more local veterinary specialists.

3.9 Job prospects and career opportunities have always been a major factor considered by students when choosing their field of studies, and the

¹³ The ratio takes into account the number of registered veterinarians only. According to the findings of the Thematic Household Survey on keeping of dogs and cats conducted by the Census and Statistics Department from October to December 2010, some 249 400 households were keeping dogs or cats, representing 10.6% of all households in Hong Kong. FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

¹⁴ Amber Batson, Global Companion Animal Ownership and Trade, June 2008, World Society for the Protection of Animals.
http://www.wspa.org.uk/Images/Pet%20ownership%20and%20trade%20-%20Global%20report_tcm9-10875.pdf

¹⁵ Figures provided by FHB.

¹⁶ Figures provided by VSB. In general, veterinary specialties include small animal surgery, neurology, canine and feline practice, internal medicine for small animals, exotic companion mammal practise, dentistry and ophthalmology. Veterinarians are required to seek separate authorization from the VSB under section 29.3 of the Code of Practice for the Guidance of Registered Veterinary Surgeons before they can advertise or profess to be a specialist in Hong Kong.

veterinary profession is no exception. According to the HKVA's survey, the number of veterinary job openings in small animal clinical practices each year is estimated to be around 30 (including routine job rotation of experienced veterinarians), and out of which around 15 to 20 are openings for new graduates. The starting salary of fresh graduates also fluctuates. The same survey conducted by the HKVA showed that veterinary clinics in Hong Kong usually offer a monthly salary ranging from HK\$10,000 to HK\$30,000, but some may offer below HK\$10,000. For the Government or the commercial sector, the entry salary may be higher.

Observation 2 (Veterinary Sector – Pet Clinics)

Pet clinics in Hong Kong are primarily private and small, employing around 80% of the practicing veterinarians; almost all are general practitioners, some with low starting salaries. Hong Kong has a lower pets-per-veterinarian ratio than many countries including Japan and the US. That said, there may be a need for more locally-based veterinary specialists.

Hong Kong's food safety and infectious disease control

3.10 In Hong Kong, the Government is responsible for the assurance of food safety (including imported food inspection) and promotion of public health (such as infectious disease control). Veterinarians employed in the public sector are designated to work on these two aspects. In fact, the Government is the second largest employer of veterinarians in Hong Kong, although compared to the private clinical practise, it only accounts for around 5% of the total number of jobs offered. Currently, there are 32 veterinary officer posts in the Government, mainly in the AFCD, the Food and Environmental Hygiene Department (FEHD) and the Centre of Food Safety (CFS)¹⁷. Government veterinarians are responsible for a variety of work, such as conducting assessments of imported meat and meat products; monitoring disease outbreaks and food incidents from countries where Hong Kong has established import protocols; conducting audit inspections and visits to Mainland farms¹⁸ eligible to supply live animals and chilled meat to Hong Kong; providing free advice¹⁹

¹⁷ FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

¹⁸ On a mutually agreed basis, all food animals for human consumption brought into Hong Kong must come from registered farms/plants and each consignment must be accompanied by a valid health certificate issued by the relevant Mainland authority. Currently there are 91 registered and 179 associated cattle and poultry farms eligible to supply live animals and chilled meat to Hong Kong.

¹⁹ Advice provided by the Government veterinarians is basically free. Livestock production operators in Hong Kong seldom seeks private veterinary services as it is difficult to pass on the costs to the customers due to the keen competition from the Mainland suppliers. Practically no private veterinarians would offer vaccine support or advice to the industry in Hong Kong.

to local farmers and livestock producers on various veterinary issues, etc. That said, some of the above surveillance duties are shared with health inspectors or other non-veterinary officers.

3.11 The livestock production and agriculture industry in Hong Kong has always been very small, with about 1 000 marine fish farms, 43 pig farms and 30 chicken farms in active operation at the moment.²⁰ Due to the emergence of infectious disease and public health and environmental problems associated with livestock keeping, the Government implemented the voluntary license surrender scheme for poultry and pig farms in 2005 and 2006 respectively²¹. The number of local poultry and pig farms has been declining steadily over the years since the inception of the scheme. There is no intention for the Government to reverse the trend, and the demand for veterinary services in these aspects is likely to continue to decline.

3.12 Mainland China is the main food supplier to Hong Kong, accounting for over 90% of the food consumed locally (with 94% fresh pork, 100% fresh beef, 91% vegetables and 67% eggs)²². Given the heavy reliance on imported food and to enhance control of food safety, the Government has been maintaining close liaison with the Mainland authorities on issues concerning food safety, food supply and prevention of animal and zoonotic diseases. Measures such as reviewing and updating the local food safety legislation and food standards with reference to relevant international standards and local needs, together with greater integration and collaboration with Mainland authorities on strengthening inspection and surveillance control, may in time require an increase in veterinary manpower, though such may not be significant as estimated by the Government.

3.13 On infectious disease monitoring and control, AFCD carries out relevant research and animal testing at its laboratory in Tai Lung²³. Separately, the Public Health Laboratory Services Branch of the Centre for Health Protection (CHP), the Department of Health has been conducting laboratory surveillance for emerging infectious diseases, including zoonotic diseases, in Hong Kong as one of its core activities. Government departments have also been working with local tertiary institutions to carry out various research projects, such as those studying the impact of emerging zoonotic disease on the population health²⁴.

²⁰ FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

²¹ AFCD Factsheet, January 2013.

<http://www.gov.hk/en/about/abouthk/factsheets/docs/agriculture.pdf>

²² Figures provided by FHB.

²³ AFCD Veterinary Laboratory.

http://www.afcd.gov.hk/english/quarantine/qua_vetlab/qua_vetlab_cim/qua_vetlab_cim.html

²⁴ Information on CHP provided by FHB. CHP has also engaged with a local university since 2008 to carry out a consultancy service to maintain a robust surveillance programme on novel/emerging pathogens,

3.14 The FHB also implements various research funding schemes to support studies on the impact of various aspects of zoonotic diseases. For instance, the Research Fund for the Control of Infectious Diseases (RFCID) was created in 2003 after the outbreak of SARS. The Fund was later consolidated into the Health and Medical Research Fund (HMRF), which was created in 2011 with a capital commitment of HK1.4 billion, to provide financial support for relevant institutions to carry out advanced medical and infectious disease research projects.²⁵ Currently, there are two portfolios of ongoing commissioned studies relating to the impact of various aspects of zoonotic diseases with funding support of HK\$46 million from the HMRF. Apart from these portfolios, the Fund will also support around three to four²⁶ new investigator-initiated projects every year. In 2011/12, there were four new projects on zoonotic diseases accounting for a total grant of HK\$4 million made available under the HMRF²⁷. Other Government agencies, such as the Research Grants Council (RGC) and the Innovation and Technology Fund (ITF), also provide grants to support institutions to conduct researches related to zoonotic disease and public health. In 2012/13, the total fund provided by RGC to related areas amounted to HK\$365 million. In the past three financial years, the ITF provided funding for five projects related to zoonotic diseases, involving a total funding of HK\$8.04 million²⁸.

3.15 Enhancement of food safety and public health, and the prevention of infectious disease are probably the strongest motivation for stakeholders who are in favor of establishing a local veterinary school that has cutting edge research capability. Currently, these areas are mainly led by the Government working with tertiary institutions with capability in disease research. Input and contribution from veterinary medical practitioners in such research area had been limited. Any change in approach would thus very much depend on public policies and availability of public funding. Despite the fact that the

including zoonotic pathogens of potential public health significance and monitoring of emerging antimicrobial resistance among zoonotic pathogens and commensals in Hong Kong and Mainland China. The information obtained through these channels is expected to be useful for the prevention and control of novel and emerging infectious diseases which may have potential public health significance in Hong Kong.

²⁵ With an aim to inform health policies, improve population health, strengthen the health system, enhance healthcare practices, advance standard and quality of care, and promote clinical excellence, HMRF supports two types of research projects, either through (a) investigator-initiated open calls with a normal funding ceiling of HK\$1 million per project, or (b) commissioned programmes by invitation with no pre-set funding ceiling. Projects supported in the past included the identification of the risks of new pathogens in animals that may infect humans, development and evaluation of the diagnostic tests for zoonotic disease, and devising surveillance methods and modelling for predicting the risk of the emergence of zoonotic diseases and their potential impact on population health.

²⁶ The exact amount and number of projects supported under the Fund each year depends on the number and scientific quality of applications submitted.

²⁷ All information on RFCID and HMRF provided by FHB.

²⁸ Figures provided by FHB.

Government has an established mechanism and protocols to ensure food safety and monitor disease outbreak, the Task Force shares the view of some stakeholders that there are knowledge gaps in these areas where the contribution of an able veterinary science institution would be beneficial. For infectious disease research in Hong Kong to excel, there should be close collaboration between veterinary medical scientists and human doctors.

3.16 As early as 1999, the World Health Organization has expounded the importance of veterinary science in contributing to the physical, mental and social well-being of humans. Human health is linked to animal health in both developing economies and industrialized regions, where animals provide transportation, energy, clothing and food, and in some cases live in proximity to humans. Veterinarians, through applying their training in epidemiology and zoonotic diseases, can help monitor livestock health thereby minimizing the spread of disease from animals to humans and ensuring food safety. They can provide expertise on infectious diseases, food protection, management of laboratories and animal facilities, biomedical research, health education, management of animal population, protection of the environment, and the management of public health emergencies²⁹. Around the world, an increasing number of veterinarians are contributing to these areas. In the US, for instance, the number of public health veterinarians working in the federal government rose from 2 500 in 2003 to 2 670 in 2007. They were employed in a variety of federal agencies, from the Department of Agriculture and the US Army, to the Food and Drug Administration and the Centers for Disease Control and Prevention³⁰. In view of the global trend, the Task Force sees a need for the Government in Hong Kong to push forward the development of veterinary public health both locally and in collaboration with regional countries.

3.17 With the vast majority of our food imported from the Mainland, continuous strengthening in exchange, discussion and collaboration with the Mainland authorities is essential, especially in food testing and surveillance at boundary control points³¹, as well as visits and audit inspections at the registered farms in the Mainland. Some stakeholders pointed out that aquaculture would be an important area in which Hong Kong should focus. Although the livestock production in Hong Kong is on a decline, there are still more than 1 000 marine cultures operating in the territory, contributing a substantial share of fish supply in Hong Kong. Indeed, while the city has a shortage of land, it is

²⁹ World Health Organization: Veterinary public health.

<http://www.who.int/zoonoses/vph/en/>

³⁰ The Need for Public-Health Veterinarians as Seen by Future Employers. 2008.

<http://www.onehealthinitiative.com/publications/Maccabe%20pdf.pdf>

³¹ For instance, in view of the recent H7N9 A1 outbreak on the Mainland, the Hong Kong Government has started to introduce PCR rapid test against H7A1 at the Man Kam To boundary control point. To further strengthen the surveillance against H7A1, the Government is also in discussion with the Mainland authorities with a view to introducing serological testing as soon as practicable.

surrounded by abundant water which may provide sufficient fish and seafood samples for food safety research. The Task Force considers that if there were to be a veterinary programme in Hong Kong, aquaculture could be a potential area of development.

3.18 The outbreak of infectious diseases in the past decade has raised the awareness of the general public towards animal disease and its impact on human population. Over the years, the Government has invested considerable resources in research on emerging zoonotic diseases and its impact on population health. These have contributed to the enhancement of the capacity of the public health system, including the strengthening of the disease surveillance system, infection control and laboratory diagnostic capacity. Apart from carrying out infectious disease research and animal testing at its laboratory in Tai Lung, the Government has also developed partnerships with some local tertiary institutions to conduct zoonotic disease research. In addition, the Government has worked with the Hong Kong Jockey Club (HKJC) on the import and export of horses and equine disease control and prevention. The Government considers that the existing collaborative mechanism has been working well and veterinarians have been recruited to serve these functions.

3.19 The Task Force recognizes the efforts made by the Government in establishing robust food safety and disease control mechanisms in the past years and in setting up the necessary state-of-the-art facilities. These are the strengths that can further develop Hong Kong into a regional centre of excellence in infectious disease control and food safety. The Task Force considers that this strategic advantage can be built on, and veterinary science can play an important role, in collaboration with Hong Kong's well-established medical science sector, to support the zoonotic and animal research for the prevention of human diseases. This is also in line with the One-Health Initiative promulgated at the international health community recently.

3.20 The One-Health concept is a worldwide strategy which promotes interdisciplinary collaborations and communications in all aspects – working locally, nationally, and globally – to attain optimal health for people, animals and the environment. Many emerging health issues are linked to increasing contact between human and wildlife, intensification and integration of food production, and the expansion of international travel. With the emergence of new infectious diseases in the 20th century, scientists began to recognize the challenges societies face regarding these threats that largely come from animals. Of the 1 400 microbes that are known to infect humans, more than 60% come from animals. Global trade of wildlife exacerbates the problem of disease emergence.

3.21 Veterinary medicine is essential for the support of zoonotic disease research, in particular those on human-animal interface in infectious diseases. Although there are many alternatives to enhance the research capacity on animal disease in Hong Kong, the benefits of having a veterinary school should not be overlooked. Nonetheless, the Task Force agrees that if a veterinary school was to be set up in Hong Kong with a focus on zoonotic disease and health care, the school should have tight coupling and deep collaboration with the existing medical schools to maximize the use of public resources and to enhance training and research.

Observation 3 (Veterinary Sector – Food Safety and Disease Control)

It is primarily the Government's responsibility to inspect food sources, audit meat imports crossing the boundary, and provide free advice to the small number of local farms. The demand for veterinarians in these areas is moderate and steady and most are directly employed by the Government.

Human health, animal health, and the ecosystem are inextricably linked. One Health seeks to promote, improve and defend the health and well-being of all species through collaboration among physicians, veterinarians, and other professionals. Infectious disease control has been an important focus and an area of excellence of Hong Kong. More active involvement of veterinary science should further enhance disease control research and development in the region. In addition, aquaculture could be a new focus for development for Hong Kong.

Hong Kong's animal welfare advocacy

3.22 Promotion of animal welfare is one of the focus areas of the local veterinarian community. The Government has been collaborating with animal welfare organisations (AWOs) to implement multi-pronged measures to safeguard animal health and welfare, as well as to ensure that animals and people co-exist in a harmonious way. AWOs in Hong Kong are offering services such as handling and rehoming of abandoned animals, neutering and euthanasia. Some of these services are sponsored by the Government and offered to the general public for free. To further enhance effectiveness in handling animal cruelty cases, the Government departments concerned including AFCD, the Hong Kong Police Force and the FEHD, in collaboration with the Society for the Prevention of Cruelty to Animals (SPCA), set up a special working group in 2011 to review the work on handling such cases. The "Animal Watch Scheme" was also launched in 2011 to step up cooperation

among stakeholders for joint efforts to combat crimes of cruelty to animals. AFCD has also set aside funding for application by AWOs for organising animal welfare-related activities, such as education and publicity campaigns, to raise public awareness of animal welfare³².

3.23 Some AWOs, especially the larger ones with associated pet clinics, have recruited veterinarians to run the clinics and work on animal welfare promotion. There are not many AWOs in Hong Kong. The most well-known one is SPCA, which currently employs 23 veterinary surgeons (including both full-time and part-time) coming from the UK, Australia, the US, Europe and Hong Kong³³. Government veterinarians have also worked on animal welfare promotion amongst their various duties, though more on the legal side such as enactment and enforcement of the relevant animal protection laws.

Hong Kong's equine industry

3.24 Equine industry is another area where veterinarians are employed. Horses in Hong Kong, including those kept by a few local private riding schools, are being taken care of by the HKJC. HKJC currently employs 14 veterinarians, and all of them are highly experienced practitioners specializing in racehorses. Most of these veterinarians are expatriates recruited from overseas and the turnover rate is not high³⁴.

Other industries in Hong Kong

3.25 Apart from the equine industry, parks in Hong Kong (including amusement and zoological parks) have also employed veterinarians to take care of their animals, but the number of veterinarians required is small. For instance, the Ocean Park has hired only four veterinarians, and in the near future (five to 10 years), the estimated number of veterinarians to be recruited will remain very small (around five to seven)³⁵.

3.26 There are also some veterinarians who work in tertiary institutions, mainly in teaching and research, though some are playing a supportive role such as managing the laboratory animals. Approximately 2% of the veterinarians work in the tertiary education and research sector³⁶.

3.27 Other sectors such as suppliers of pet foods, livestock feeds and

³² Information provided by FHB.

³³ Information provided by SPCA.

³⁴ Information provided by HKJC.

³⁵ Information provided by the Ocean Park.

³⁶ FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

vaccines and drugs for animal use have also employed veterinarians, but the number is extremely small because no research, product development, or manufacturing activities are conducted in Hong Kong. Veterinarians employed by these companies are working as technical advisors dealing with dog and cat food, livestock feed and vaccine/drug supplies. Although at one point, a small number of veterinarians were employed to work in these companies in the Mainland, there has been a substantial decrease in job opportunities there recently as most trading companies operating in the Mainland are able to hire, at much lower salaries, veterinarians with local experience³⁷.

Observation 4 (Veterinary Sector – Others)

Others in the veterinary sector include the equine industry, recreational parks, animal welfare organizations and pet food industry. The demand for veterinarians in these areas is small.

Overall Demand for veterinarians in Hong Kong

3.28 It is believed that the demand for veterinary services for pets will have limited growth. The demand for such services is directly related to the number of animals, their health and the level of services expected from the pet owners. However, since nearly half of the population of Hong Kong are living in public housing estates where the keeping of pets is not allowed, it is anticipated that the pet population is approaching saturation. Any growth in coming years will likely be incremental. Although pet owners are increasingly willing to pay for high quality and advanced veterinary services, this will only lead to increased demand for specialized veterinary services. As mentioned above, the existing system of referral to overseas experts is working well. A veterinary programme that aims to produce general practitioners may not therefore be well justified.

3.29 Demand for veterinary services in Hong Kong arising from food safety and public health is also expected to remain stable in the coming years given the anticipated decrease in the number of pig and poultry farms and the depletion in the livestock population in Hong Kong. Similarly, the horse population in Hong Kong will not increase significantly in the near future and hence the demand for veterinary services in this specialized sector will maintain stable. In response to growing public awareness of issues related to animal welfare, the Government will continue to step up efforts and work with the AWOs, but a significant increase in the number of veterinarians required in this aspect is not expected.

³⁷ FHB's manpower projection for veterinary surgeons in Hong Kong, November 2013.

Observation 5 (Overall Demand for Veterinarians)

Currently the number of veterinarians in Hong Kong appears to be sufficient. In the context of the current landscape of veterinary practice, any growth in demand for veterinarians could only come from new industries but such is likely to be moderate in the near or medium-term future.

Overview of the veterinary sector in Chinese Mainland

3.30 Some may think that Mainland China is a market which will provide promising employment prospects and opportunities for veterinarians trained in Hong Kong. As an emerging market with a booming economy, China's demand for veterinary services in various aspects, such as food supply and production³⁸ as well as the pet industry, could be expected to grow substantially in the foreseeable future. Although it has been difficult to garner accurate information on the veterinary sector in the Mainland, based on the information gathered from this fact-finding exercise, it seems that the veterinary market in the Mainland, in particular the demand for non-China trained veterinarians, is not as promising and alluring as some people think. This is elaborated below.

3.31 Mainland China has more than 683 000 veterinarians and para-veterinarians³⁹, which is the largest number in the world. Around 4 000 veterinary professionals are graduating from some 40 Mainland universities each year⁴⁰. The quality and standards of veterinarians in the Mainland vary greatly. While some of the veterinarians fill the typical professional roles (as in other countries), most work in the government and many others work as technicians or managers on farms. The salary level of veterinarians in the Mainland are also much lower than that of the developed countries, with some veterinarians working in the large cities (such as Shanghai and Beijing) earning

³⁸ Regarding cattle production, China has about 7.3 million milking cows in 2011, making it number three after India and the US in terms of milking cow numbers. Large-scale dairy cattle farming have been developing rapidly in China. In 2012, the number of dairy farms with inventory of over 1 000 heads has exceeded 1 200. Among them, there are about 50 large dairy farms (including farms being planned, under construction and in operation) with inventory of over 3 000 heads each, and over 10 super large dairy farms each with an inventory of 10 000 heads. On poultry production, China is the second largest chicken producer in the world after the US. It is the world's largest producer of eggs, with 40% of global output. Industry revenue has been growing steadily due to rises in poultry prices as well as output growth. The top four enterprises in the industry are estimated to account for less than 10.0% of industry revenue in 2013. The remaining 90% of the market share is dominated by over 630 000 small, family-owned poultry enterprises with total poultry numbers up to a few thousand. Source: China Cattle Farming & Dairy Industry Analysis and Forecast Report (2012-13) Beijing Shennong Kexin Agribusiness Consulting Co., Ltd.

³⁹ OIE data for 2011

http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/Veterinarians

⁴⁰ Animal Health in China (2008).

http://english.agri.gov.cn/hottopics/ah/201301/t20130115_9546.htm

a monthly pay of around RMB11,000 to 13,000. The salary level of those working in the second and third tier cities would naturally be lower⁴¹.

3.32 The pet industry in the Mainland has started to take off in recent years, attributable to the country's booming economy which provides greater disposable income for its citizens⁴². Despite the fact that the pet industry in China will continue to grow in the near future, it may take a long time for the culture of responsible pet ownership (of the sort we see in most developed Western countries) to take root in the Mainland. Until such time as the paradigm shift comes about, the consultation fees⁴³ for veterinary services in the Mainland would likely remain low, resulting in unattractive income for practicing professionals.

License to practise in the Mainland

3.33 At present, overseas veterinarians (including Hong Kong registered veterinarians) do not enjoy automatic qualification recognition in the Mainland. Those who wish to practise there must apply for a License for Diagnosis and Treatment of Animals issued by the relevant Mainland authority⁴⁴. To obtain the license, one must pass the National Board Examination (which is in Chinese)⁴⁵ and meet the relevant state/city requirements, which effectively will bar most expatriate veterinarians from practising in the country. Another hurdle for overseas veterinarians is the restricted use of veterinary drugs imported from foreign countries. Mainland China has a very strict control of foreign veterinary medicines and drugs, and there are very limited veterinary drugs and diagnostic reagents registered there. Given the complications of practising in the Mainland and the differences in the two systems, the Hong

⁴¹ Information provided by FHB.

⁴² According to a recent report by China Daily, it is estimated that China's pet care market is currently worth US\$1.2 billion. There was also a 35% increase in pet ownership between 2000 and 2012. Some 33 million households currently keep a cat or a dog in China. The expenditure on pet care has reached 7.84 billion yuan (US\$1.23 billion) in 2012, a 46% increase since 2007. It is also estimated that the market will increase a further 64% by 2017, with RMB 12.9 billion expected to be splurged on pet food, healthcare and dietary supplements.

Source: http://www.chinadaily.com.cn/bizchina/2012-08/30/content_15718772.htm

⁴³ Although we are unable to find any official statistics on the number of pet clinics in Mainland China, according to the Ministry of Agriculture of China, there are more than 100 animal clinics in Beijing alone at present, charging a consultation fee ranging from RMB 5 to 100 per session. In some other cities in Mainland China, such as Guangzhou and Shanghai, the consultation fee may range from RMB 100 to 300 – around half of the fee charged by the pet clinics in Hong Kong. The consultation fee does not include medical treatment on the pets. Though some best known clinics have recruited a few experienced veterinarians overseas to provide professional clinical services, most of these clinics recruit local veterinary graduates to support the daily operations.

Source: http://www.moa.gov.cn/fwllm/qgxxlb/bj/201209/t20120903_2919740.htm

⁴⁴ Information provided by FHB.

⁴⁵ 《中華人民共和國動物防疫法》

Kong Government has no plan to conduct any study that may lead to mutual recognition of veterinary qualifications between the Mainland and Hong Kong. Nor has there been any invitation from the Mainland authority to explore such possibility. As such, there is no guarantee that the future graduates of the proposed local veterinary school would be qualified to engage in practise across the boundary for the time being.

Job prospects of the veterinary sector in the Mainland

3.34 As mentioned above, there is already plentiful local supply of veterinarians and para-veterinarians in the Mainland, irrespective of their standard and quality. There are a limited number of foreign veterinarians working in the Mainland, and most of them are employed by international organizations or multinational food and drug corporations in the commercial sector. Job opportunities for overseas veterinary medical practitioners in the Mainland are few. The market also seems to be quite protected, as reflected in the complex examination and registration system which effectively discourages foreign veterinarians to practise there. As such, there seems to be no compelling reason for entrepreneurs eyeing business opportunities in the Mainland to hire fresh veterinary graduates from Hong Kong. Besides, given the relatively low consultation fee income, the general remuneration level for veterinarians in the Mainland is hardly attractive for Hong Kong graduates. It is therefore unrealistic to expect the Mainland to serve as a back-up employment market for any Hong Kong trained veterinarians who are surplus to local demand. However, there may be some limited opportunities for overseas-trained veterinarians with a strong focus on research and good training in public health and epidemiology, including those trained in Hong Kong if there will be a local veterinary school, for employment in universities and national research institutes in the Mainland. Though the Mainland China is strong in some disciplines such as biomolecular sciences, there are critical shortages of expertise in many clinical disciplines and particularly epidemiology and public health⁴⁶.

⁴⁶ Currently, there are less than five veterinary schools in the Mainland China teaching epidemiology at undergraduate level and no school teaching the subject at postgraduate level. The Ministry of Agriculture also recognizes that there is a serious deficiency in this area. Registration and licensing issues do not occur in the academic field in the Mainland.

Observation 6 (Veterinarians in Mainland China)

Mainland China has large cattle, pig and poultry industries and also the largest pool of practicing veterinarians in the world. Annually, 4 000 veterinarians graduate from 40 veterinary schools. One must pass the National Board Examination to practice. Salary for veterinarians is low as compared to other countries. There is no apparent demand for veterinarians from overseas or Hong Kong, and there exists no plans for mutual recognition of qualification with Hong Kong or elsewhere. That said, there may be some limited opportunities for overseas trained veterinary experts on public health and epidemiology research in universities and research institutes in the Mainland.

HKSAR Government's policy position

3.35 HKSAR Government has a key role to play in the development of the veterinary profession, as it directly (or indirectly) has control over the veterinarian registration mechanism and the number of veterinarians practising in Hong Kong, as well as the food safety, public health and other policies that would have an impact on societal needs and the employment prospects of veterinarians. Besides, given the considerable investment that would be required to establish a veterinary school in Hong Kong, especially in terms of land, capital and recurrent operational costs, the Government's endorsement and support, be it in policy, financial or in other forms, would be fundamental. Understanding the Government's views and commitment towards setting up a veterinary school in Hong Kong is therefore important to the Task Force, and to this end, the Task Force met with the FHB and the EDB twice, in April 2013 and July 2013, to seek their views on the matter.

3.36 From the written submissions and the face-to-face discussions with the senior Government representatives, the Task Force understands that there has been no substantive change in Government's position towards establishing a local veterinary school, as compared to three years ago when the UGC first sought their comments. Major points of the views of the bureaux are summarized as follows:-

- Employment demand and supply for veterinarians is the major concern of the Government when considering how worthy it is to support establishing a local veterinary school. Despite the fact that the Government has not conducted any specific manpower analysis or projection on the veterinary sector, based on the trend of the veterinarians registered with the VSB, manpower requirements of the Government, the private sector and other related organisations, the

number of pig and poultry farms in Hong Kong, the food safety mechanism and public health policies, integration with the Mainland China on the food supply, etc., the Government considers that there is no imminent manpower shortage in the various employment segments in the veterinary sector, at least in the short to medium term.

- The current veterinarian registration system, which relies on Hong Kong-born but foreign trained veterinarian and expatriate practitioners, has served Hong Kong well. There is no plan to change the system in the near future. Government's demand for veterinarian talent in the areas of food safety and public health is also well satisfied by the same route.
- Establishing a veterinary school involves considerable risks and resources in staffing, and the setting up of clinical and teaching facilities. As such, there must be a robust case demonstrating a strong demand which cannot be met by other alternative and more cost-effective measures, before the Government can consider the establishment of new policies to fund the programme. Given that there are competing priorities in the community, the Government must ensure that public resources are used in a prudent and cost-effective manner.

Observation 7 (Government Policy – Food and Health)

No change of current policy in regard to food safety and disease control. More research into the link between animal and human disease transmission will be beneficial, but an undergraduate veterinary programme is likely not the best approach to achieve this goal.

- On the education front, the Government has stated clearly that it has no intention, in the near future, to increase the number of first-year-first-degree undergraduate places, nor to adjust the 20% cap of the non-local students studying in Hong Kong. As such, if a new veterinary undergraduate programme was to be launched with public funding, it would have to be absorbed within the prevailing approved student number among the UGC sector, or within the institution offering the programme. Similarly, if the institution concerned would wish to admit non-local students to the programme, it would need to do so within the 20% cap across the entire institution. That said, according to the Government, veterinary medicine is not one of the niche areas or strengths under the current education policy for which the Government wishes to attract more

overseas talents from around the world to meet the needs of Hong Kong.

- If a veterinary school was to be established in Hong Kong, the Government considers that it must be of world-class quality. In other words, the proposed veterinary school must be internationally competitive in both teaching and research, and actively contribute to the local needs, particularly in the aspect of public health.
- The proposed veterinary school must also be able to obtain international accreditation, so as to produce high quality graduates who can successfully acquire professional recognition locally and elsewhere, in view of the high mobility of veterinary professionals. That said, as a new set-up, the Government would expect that a veterinary school, if there were to be one, would only train veterinarians employable in Hong Kong at the initial stage, given that it would not be possible to obtain accreditation status from the international accreditation bodies at the outset.

Observation 8 (Government Policy – Education)

No change of current policy in regard to the number of Government-funded undergraduate places, the percentage of non-local undergraduates, and the Government funding level. In addition, veterinary medicine is not considered a Government strategic priority in terms of strength and needs.

- On the management of public resources, the Government is of the view that it is duty-bound to ensure that public resources would be used in a prudent and cost-effective manner to meet the needs of Hong Kong. To this end, when considering whether to fund a new local veterinary school, the Government would need to go through due process to ascertain: (a) whether the need for launching such new programmes can be established; (b) whether there are sufficient policy justifications for the initiative and adequate grounds for funding it with public resources; and (c) whether the proposed means of achieving that particular public objective is the most cost-effective one.
- If additional new resources are required, the Government would also need to take into account the quantum of the new resources available, the financial budgetary situation and any other competing demands and priorities facing our society at the time.

- The significant and irreversible resource implications (including both financial and land resources) entailed by the proposed veterinary school would require Government's careful evaluation. Information on the employment prospects of the graduates, demand for veterinarians in various sectors, accreditation and constraints of Hong Kong in developing the school would need to be taken into account.

Observation 9 (Government Policy – Financial Resources)

Given the substantial resources required for the veterinary school and that public resources must be used in a prudent and cost-effective manner to meet the needs of Hong Kong, the Government would take into account the need and policy justifications for, as well as the cost-effectiveness of, the proposed programmes before provision of funding.

Summary of Views from Stakeholders on a local veterinary school

3.37 To obtain a more balanced picture concerning the issue of setting up a veterinary school in Hong Kong, the Task Force has, in addition to seeking views from the Government, also met with selected stakeholders in the veterinary sector, who are mostly registered veterinarians in Hong Kong, to seek their opinions on the subject matter. Basically there are two diverse views, i.e. one group who express support for the project and another group who express reservations, and the rationale behind each stance also varies. Their opinions represent an important part of the fact-finding exercise, and are used to derive the observations stated throughout Part Three of this Report.

3.38 The Task Force sought the views from stakeholders on the key qualities of an institution to offer a successful veterinary programme. Essential qualities cited include institutional commitment; ability to recruit high quality students; capacity to recruit and retain outstanding teaching and research staff; ability to design state-of-the-art curricula which will meet the needs of the community; outstanding strength in veterinary medicine related fields such as biological sciences; potential for interdisciplinary collaboration; ability to forge deep collaboration with medical sciences and public health within Hong Kong and the region; acquisition of adequate resources and infrastructure; and excellent track record in delivering major high impact higher education projects.

Observation 10 (Stakeholders' Views on a Local Veterinary School)

The veterinary sector in general agrees that there is no shortage of general practice veterinarians in Hong Kong. Nonetheless, a local veterinary school would enhance the professional image of veterinarians, upgrade professional development capacity, provide specialists backup to the sector, and perform relevant research.

Existing veterinary education and training programmes in Hong Kong

3.39 Although there is no veterinary degree programme offered in Hong Kong at present, some local tertiary institutions have attempted to provide veterinary-related programmes for students interested in the subject. The Hong Kong Polytechnic University (PolyU) offered a four-year Bachelor of Science (Honours) in Veterinary Nursing Programme jointly with the Royal Veterinary College (RVC), University of London, in 2010 on a self-financing basis. However, PolyU discontinued the programme after only one year of operation since there was little interest in the programme and there were serious doubts in its long-term sustainability⁴⁷.

3.40 Despite the unsuccessful experience of PolyU, the Tung Wah College (TWC), a self-financed post-secondary college established by the Tung Wah Group of Hospitals, announced in August 2012 the launch of a four-year Bachelor of Medical Science (Honours) (BMSc) Programme in 2013 with five majors including Veterinary Health Studies (VHS)⁴⁸. The Programme aims at providing a sound foundation for students who intend to pursue postgraduate studies in professional medical and health disciplines. The VHS stream will admit up to 15 students each year. Graduates with a VHS major may serve as para-professionals in the veterinary sector such as veterinary assistants, nurses or technicians⁴⁹. TWC has been liaising with the RVC of the University of London to allow a small number of top-performing graduates of the VHS stream to articulate to the four-year Bachelor in Veterinary Medicine Programme (BVetMed)⁵⁰ offered by the RVC, which is a professional veterinary programme

⁴⁷ 理大獸醫護士科 去年開今年停. Mingpao, 20 Oct 2011

⁴⁸ Tung Wah College Offers a New 4-year Bachelor of Medical Science (Hons) Programme and Forms Strategic Alliance with the Largest Integrated Healthcare Providers in Hong Kong and Asia. <http://www.twc.edu.hk/crpd/p/press-releases/14aug2012/>

⁴⁹ The above named para-professionals are not regulated by the VSB at the moment.

⁵⁰ Graduates of the TWC's BMSc Programme will be eligible to enter the second year of the RVC's BVetMed Programme, which is a five-year course.

Source:

<http://file.twc.edu.hk/en/Teaching%20and%20Learning/Academic%20Programmes/Bachelor%20Degree%20Programmes/Bachelor%20of%20Medical%20Science.aspx>

accredited by the UK's Royal College of Veterinary Surgeons and recognized by Hong Kong's VSB for the purpose of professional practice. Indeed, some local institutions are also looking for collaboration opportunities with veterinary schools overseas in all aspects. For instance, the Li Ka Shing Faculty of Medicine of The University of Hong Kong (HKU) and the Royal (Dick) School of Veterinary Studies of The University of Edinburgh (Edinburgh) had signed a memorandum of understanding (MoU) in November 2013 which would enable students of HKU's Bachelor of Biomedical Sciences (BBiomedSc) to take the first year courses of the Bachelor of Veterinary Medicine and Surgery (BVM&S) degree of Edinburgh through a one-year student exchange arrangement with the purpose of broadening students' horizon and offering them diverse articulation pathways for further study.⁵¹

3.41 To enhance the veterinary standards in Hong Kong, the VSB has also implemented a Continuing Professional Development (CPD) monitoring system since 2008 to keep veterinary surgeons abreast of the latest developments in veterinary science and medicine. CPD is an interactive process by which registered veterinary surgeons may enhance the skills and knowledge they have obtained at the time of graduation. Although it is voluntary in nature, all registered veterinary surgeons with a practising certificate are strongly encouraged to comply with the CPD requirement to ensure that their professional competency is up to date in accordance with s.16 of the Code of Practice for the Guidance of Registered Veterinary Surgeons. The recommended minimum CPD is 40 credit points over two years, of which at least 25 points have to be structured activities, such as any courses/lectures/seminars organized by organizations (e.g. HKVA) or institutions recognised by the VSB. Practising veterinary surgeons may record their CPD with the VSB⁵².

3.42 One justification in support of a local veterinary school is that it can help provide residency training for veterinary specialists, which is lacking in Hong Kong, though some consider that the current mechanism of inviting overseas specialists to visit Hong Kong on a regular basis and seeking their advice remotely works well and is cost-effective.

3.43 The Task Force agrees that there is a gap to be filled in specialist training. That said, it requires more investment and higher standards of research and facilities, and it will take quite some time for a new veterinary school to develop such an expertise before it can provide the specialist programmes and relevant residency training.

⁵¹ http://www.hku.hk/press/news_detail_10437.html

⁵² Information provided by VSB
<http://www.vsbhk.org.hk/eng/cpd.htm>

3.44 Stakeholders are of the view that, to establish a world-class research centre on infectious zoonotic disease and public health research, it is preferable to have a strong collaboration between a veterinary school and medical schools. This is also in line with the One-Health concept widely promoted in the public health community worldwide. That said, they consider that it is not necessary for the two to be located on the same campus as long as there exists tight collaboration. From a resource management perspective, it will be more cost-effective to run a veterinary school in an institution that also has a medical school. More importantly, the synergy created from research collaboration between the veterinary school and the medical school has been proven to be essential in enhancing both teaching and research. Some even consider that, instead of having a brand-new and full-fledged veterinary school which requires substantial start-up cost, it may be more economical and less risky to build on the existing strengths and capacity by providing more resources for zoonotic disease research which has already been carried out in the existing medical schools.

Accreditation and registration mechanism

3.45 Accreditation of the veterinary school is an integral and crucial part of quality assurance of the veterinary education and training. The process requires the veterinary programme to demonstrate its ability to provide high quality education and training which can produce graduates with a defined set of skills that enable them to be competent practitioners. Veterinary accreditation bodies have formulated clear standards and requirements of accreditation to review all aspects of the veterinary programme, such as mandate staff to student ratio, access to animals and animal production industries and availability of clinical materials and training opportunities.⁵³

3.46 Hong Kong does not have any veterinary degree programme and hence there is no formal process formulated to accredit any veterinary programme. The responsibility of assuring the quality of the veterinarians practising in the sector is left to the veterinary registration system adopted by the VSB. However, the VSB has emphasized that it is not, and will not become, an accreditation body. Though the Government has commissioned HKCAAVQ to carry out a Comparative Study on Veterinary Qualifications, the outcome of which may lead to a revision of the list of recognized qualifications, the VSB stressed that the study is not an accreditation exercise and no drastic change is expected to the current registration system. The VSB will continue to

⁵³ "Higher Education Base Funding Review" submitted by Council of Veterinary Deans of Australia and New Zealand (2011) in response to the consultation paper on "Base Funding Review Report" issued by the Australian Department of Industry, 2010-11.
http://www.innovation.gov.au/HigherEducation/Policy/BaseFundingReview/Documents/Submissions/AtoF/Council_of_Veterinary_Deans_of_Australia_and_New_Zealand.pdf

recognize the qualifications conferred by the list of veterinary institutions⁵⁴ accredited by the major international veterinary accreditation bodies⁵⁵, including the American Veterinary Medical Association Council on Education (AVMA CoE, the US model) and the Royal College of Veterinary Surgeons (RCVS, the UK model), as set out in Schedule 1 of the Rules of the Veterinary Surgeons Board (Registration of the Veterinary Surgeons). Comparison of these models is set out at **Annex D**. In this regard, for any veterinary programme to be launched locally, the VSB expected that its quality and standards must be benchmarked against the veterinary standards adopted by the international bodies.

3.47 The veterinary profession is highly flexible and mobile in that veterinarians are trained to adapt to and work in different environment around the world. A major consideration of a local veterinary programme is its ability to obtain accreditation status from the major international accreditation bodies (such as AVMA and RCVS), so as to allow its graduates to obtain the required qualifications to practise around the world. This is the same reason for the VSB to require the local veterinary school (if any) to obtain the accreditation status from these international bodies. However, according to the Task Force's investigation, it is impossible for a new veterinary school to obtain such an accreditation status from these international bodies at the outset. Accreditation will only be granted once the institution concerned has built up its reputation and quality assurance mechanism, which will take many years, usually after the graduation of a few cohorts of students⁵⁶.

⁵⁴ Qualifications conferred by institutions accredited by the AVMA and RCVS are mostly recognized and acceptable by countries within and outside the American and Commonwealth jurisdictions. Schedule 1(a) and Schedule 2 of the Rules of the Veterinary Surgeons Board (Registration of the Veterinary Surgeons) stated that graduates of the bachelor degree in veterinary medicine granted by the National Taiwan University and the National Chung Hsing University in Taiwan respectively, with a pass grade in the Junior and Senior Examinations for Professional and Technical Personnel in the Category of Veterinarian or other professional examination acceptable to the Board, would be qualified for registration with the Board. According to VSB, when deciding the list of institutions to be included in the Schedules in 1997, the Board had commissioned HKCAAVQ to conduct a review on all the institutions, including the two Taiwanese universities, to confirm whether the quality of the programmes provided could meet the registration requirements/standards set by VSB. Although the two Taiwanese universities are not accredited by AVMA nor RCVS, the review by HKCAAVQ in 1997 confirmed that the veterinary programmes offered by these two universities had met the standards set by VSB at that time.

⁵⁵ Schedule 1 of the Rules of VSB (Registration of the Veterinary Surgeons) has also included a number of Australian veterinary institutions which are accredited by the Australasian Veterinary Boards Council (AVBC). Australian veterinary science programme providers should meet the accreditation standards set by AVBC, which has reciprocal arrangement with RCVS and AVMA, so that graduate veterinarians of these Australian institutions can meet the rigorous international standards and are eligible to practise in those jurisdictions. Similarly, graduates of the veterinary programmes accredited by AVMA and RCVS (or other international bodies recognized by AVBC) would be able to practise in Australia.

<http://avbcpreview.azurewebsites.net/Media/Default/Website%20Documents/Documents/Table%20of%20quals%20recognised%20October%202013.docx>

⁵⁶ Provisional accreditation may be granted to the new veterinary institutions at the beginning of their operation of the veterinary programmes so as to facilitate their recruitment of students, but they must meet the requirements of these international bodies, such as the curriculum offered should comply with the necessary

3.48 There has been an observation made by some stakeholders that the current veterinary registration system allows many expatriate veterinarians to work in Hong Kong, which has intensified the already fierce competition in the local veterinary job market. Some suggested an examination mechanism to control the number and qualifications of veterinary professionals working in Hong Kong, similar to the Licensing Examination of the Hong Kong Medical Council, which is known for its stringency. They said that, a local veterinary school, if there were to be one, may help in setting up such an examination. While agreeing that producing high quality graduates that meets the community needs is of paramount importance, the Task Force does not concur with such market protection argument. The Task Force is of the view that the success of Hong Kong is premised on free, open and fair competition, which is a key to attract overseas talents to work here and enhance the quality of the overall workforce.

3.49 Veterinary degree accreditation and registration in the Mainland are not aligned with international accreditation systems. In addition, mutual recognition between the Mainland system and that of other jurisdictions, including Hong Kong, has not been worked out.

Observation 11 (Accreditation and Registration)

The current VSB registration is based on standards of international accreditation bodies. It provides career mobility and ensures professional quality for veterinarians practicing in Hong Kong. A new local veterinary programme may require many years to achieve the same accreditation status.

standards, the facilities and staff required are in place, a robust quality assurance and self-evaluation mechanism is established, etc.

PART FOUR: REVIEW OF THE CITYU PROPOSAL

4.1 The Task Force greatly appreciates the effort made by CityU in putting forward the veterinary school proposal which creates an opportunity to promote a better understanding of the education and training of veterinary professionals for Hong Kong. The proposal presents a plan to build on CityU's vision in professional education by extending its scope to fill a gap to meet the community needs. The Task Force evaluated the proposal on this basis.

4.2 The Task Force acknowledges the efforts of CityU in revising the original proposal and submitting the second proposal. The Task Force has examined the new proposal afresh together with all the supplementary information provided by CityU. Members of the Task Force also met with the senior management of CityU and the leadership team from the College of Veterinary Medicine of Cornell.

4.3 Apart from considering detailed analysis and justifications of why Hong Kong needs a veterinary school and how it would benefit the community at large, the Task Force has focused on CityU's proposal itself, which presents a partnership approach with Cornell and with various other stakeholders in the community.

4.4 Cornell's partnership with CityU, as presented in the proposal and the addendum, is manifested in two ways. (i) Professional Support: Cornell will play an advisory and consultative role to plan, prepare, launch and operate the proposed veterinary programme. The professional support rendered by Cornell will include staffing (i.e. secondment of Cornell staff to assist recruitment and training of CityU's staff), curriculum design and development (in both undergraduate and postgraduate levels), development of veterinary competence, accreditation and modus operandi of the proposed school. In addition, Cornell will also advise and assist CityU to implement a research programme in animal health and biomedical sciences complementary to its BVM programme. (ii) Teaching Programmes: At the postgraduate level, Cornell will provide a residency fellowship programme for experienced Hong Kong veterinary clinicians to receive residency training at Cornell. At the undergraduate level, CityU and Cornell are contemplating a dual-degree programme, though there are not many details on this initiative given in the proposal. Separately, an arrangement will be considered for CityU's veterinary students to spend two summers in Cornell studying with Cornell's staff.

4.5 While acknowledging CityU's effort, the Task Force also recognizes several limitations in the proposal. The Task Force has considered the proposal's strengths and weaknesses, which have led to the final recommendation made in the next section (re. **Recommendation 1**). It should

be emphasized that, in assessing the proposal and conducting the SWOT analysis, the Task Force has taken into account the Government's policy position, the conclusion made by the fact-finding exercise, the views of stakeholders, as well as the international best practice of overseas veterinary programmes.

Strengths of CityU's Veterinary School Proposal

Passion and partnership

4.6 As mentioned earlier, the Task Force's fact-finding exercise was triggered by CityU's proposal of setting up a veterinary school in Hong Kong. Before then, there had never been a comprehensive discussion in the community on the education and training of veterinary professionals for Hong Kong. Nor had there been any detailed analysis of the veterinary sector and its contribution to the development of Hong Kong, particularly in terms of animal care, food safety and public health. CityU's submission has created an opportunity for the UGC to take a deep look into the matter, thereby raising its understanding and awareness of the profession.

4.7 The Task Force affirms the strong partnership established between CityU and Cornell. The firm and sincere commitment made by both parties in the project is noteworthy, as reflected in the agreement on the mutual collaboration in the provision of the veterinary programme up to 2025; the joint appointment and recruitment of staff for the veterinary school; the secondment of Cornell staff to CityU; and the exploration of a dual degree programme with the two universities to enhance the programme. The Task Force, in particular, recognizes the strenuous effort made by Cornell in assisting CityU to put together the proposal and other aspects, such as staff recruitment and liaison with other international organizations. The Task Force appreciates Cornell's objective to promote public health through their international presence.

4.8 The Task Force also appreciates the persistence and enthusiasm of CityU in putting together and further improving the proposal in the past four years. The institutions' enthusiasm and passion is reflected in their fund-raising capacity. As mentioned in the proposal, its Development Office has devised a fund-raising strategy to raise donations with a target of HK\$1,000 million.⁵⁷ Cornell also stressed that the passion of the senior management of CityU was one of the reasons for Cornell to enter into the partnership and engage in the long-term commitment.

⁵⁷ As indicated by the Chairman of the CityU Council at a media interview, CityU had already received a donation of HK\$500 million for the veterinary school project.

Source: 城大培訓獸醫成本高 冀獲資助. Oriental Daily, 13 June 2013

4.9 CityU's enthusiasm is also shared by some stakeholders in the sector who strongly support the project. Indeed, the Task Force found that the veterinary sector is extremely passionate and enthusiastic towards their profession regardless of their opinion of the proposed veterinary school. Separately, CityU's ability to obtain support from and establish partnerships with other overseas institutions (e.g. The University of Sterling) and the relevant veterinary organizations and authorities in the Mainland is also commendable.

Weaknesses and Gaps of the Veterinary School Proposal

4.10 CityU's commitment and aspiration to set up a veterinary school aside, the Task Force considers the viability of the proposal not convincing. In particular, the proposal has put much emphasis and focus on the justifications and benefits of having a veterinary school in Hong Kong (i.e. the “why” question) instead of the planning and implementation (i.e. the “how” question) of it such as: a comprehensive cost structure with publicly-funded and self-financed activities clearly explored; a strategic direction with concrete staff recruitment plan set out; and a clear roadmap of accreditation from the international agency defined.

4.11 Some of the information in the proposal does not always agree with the outcomes of the fact-finding exercise conducted by the Task Force based on the interaction with the Government, experts and the stakeholders. Some gaps observed and doubts raised by the Task Force, with reference to the figures and information presented in CityU's proposal and addendum, are enunciated as follows.

Manpower analysis and employment prospects of the graduates

4.12 An example of disagreement relates to the manpower requirement of veterinarians in Hong Kong, Mainland China and the region. In its proposal, CityU indicated that there was a genuine need for veterinarians in Hong Kong because the pet population in Hong Kong had risen by 40% from 2005-06 to 2010-11 and it is believed that there would be a rising trend in the future. Moreover, the number of veterinarians registered with VSB has increased every year. Separately, a survey of more than 400 local pet owners indicated a strong demand for quality veterinary services. The number of advertisements publicized by HKVA indicated a strong demand for veterinarians locally. The proposal also argued that there was a tremendous growing demand for the supply of high-quality professional veterinary practitioners in Mainland China (in particular the Chinese-speaking veterinarians) which would provide a unique opportunity for Hong Kong. According to the proposal, these constitute

evidence indicating an increase in the demand for veterinarians in Hong Kong and the Mainland in the future.

4.13 While the Task Force notices the increase in the numbers of veterinarians and pet population in the past years, feedback from stakeholders indicates that the career opportunities for veterinary graduates seems not as promising as depicted in the proposal. First, the Task Force concludes from its interaction with the Government and the stakeholders that there is no notable manpower shortage, at least for the general practitioners in the companion animal sector, in the foreseeable future⁵⁸ (re. **Observations 1 and 5**). However, the Task Force considers that there is a need for veterinary specialist services in the community. It also sees merits in training veterinarians to support infectious disease research and to enhance the food safety, which may become areas of excellence in Hong Kong (re. **Observation 3**). Separately, the Task Force concludes that there is a formidable barrier for expatriate and Hong Kong veterinarians to be registered and practise in the Mainland given the stringent restriction in the license examination (re. **Observation 6**) and a significantly different pharmacopeia and availability of western medications. This differs from what is stated in the proposal that the Mainland can serve as a readily available market providing ample employment opportunity for Hong Kong trained veterinarians. A robust independently validated manpower analysis or projection of the supply of and demand for veterinarians in Hong Kong, Mainland China and the region is missing in CityU's proposal.

Budget estimation and funding

4.14 Veterinary medicine is a very-expensive discipline by comparison to most others including human medicine. This is in part due to the stringent requirements of the international accreditation bodies in order to ensure quality. For instance, veterinary students are required to be exposed to a whole range of animal species rather than specializing in one particular area. Other requirements such as low students-to-staff ratio, a minimum number of livestock animals and companion animals for each student, hospitalization of large and small animals, access to farms and provision of diagnostic laboratories, waste management and infection control facilities, as well as supervision of extramural training may have substantial cost implication to the veterinary programme providers.⁵⁹

4.15 The budget proposal presented by CityU does not provide enough evidence for the Task Force to conclude that the presented model is realistic and

⁵⁸ Around half of the population in Hong Kong is living in public housing estates where pets are not allowed. The Government has pointed out that such ban on pets would not be removed in the near future. In this regard, the increase of the pet population is believed to be moderate in the immediate future.

⁵⁹ Council of Veterinary Deans of Australia and New Zealand, "Higher Education Base Funding Review", 2011

sustainable. Besides, with reference to the operational costs⁶⁰ of other overseas veterinary schools and the two local medical schools, the Task Force considers that the proposed budget may have underestimated the actual recurrent funding as well as the capital costs and facilities required. These are explained as follows.

Steady state recurrent budget

4.16 On recurrent budget, CityU proposed an operating budget of HK\$148.3 million per year, at *steady state* (i.e. 8th year of its operation), to run the proposed School of Veterinary Medicine. This estimate excludes the operating cost of running the Clinical Training Centre for Small Animals (CTCSA) and the diagnostic laboratory, which are proposed to be self-financing operation.

4.17 On research, CityU has budgeted HK\$24.7 million to provide the basic research infrastructure⁶¹. The above was set at around 20% of the anticipated block grant from the UGC. The proposal emphasised that such amount only supports a basic research infrastructure. If an internationally recognized centre for research in veterinary medicine were to be established, the proposal estimated that an additional recurrent budget of HK\$100 million would be required, together with additional research staff and technical support. The proposal further assumes that the additional amount would come from competitive funding grants from the RGC and other sources. The Task Force considers that the amount of competitive external research funding to be secured annually should not be taken as a given. Relying almost entirely on the external competitive funding to support the postgraduate research programme may not be sustainable.

4.18 CityU originally has planned to fund the initial stage of development of the School, i.e. it will cover the first three years of operation in addition to the preparatory years. Funding from the UGC will be required from the fourth year of the operation onwards. However, in the latest addendum, CityU has changed to requesting UGC to provide HK\$30 million for the first two years, HK\$60 million for the third and fourth years and HK\$90 million for the fifth and sixth years of operation of the School. The changes in the latest addendum have not been justified.

⁶⁰ As understood by the Task Force, the annual total operational cost required by the veterinary schools in the US institutions ranged from US\$50 million to US\$100 million, disregarding other forms of subsidies and funding provided by the Government (such as the land, state laboratories, etc.)

⁶¹ According to CityU's December 2012 proposal, a separate HK\$5.9 million has been budgeted for studentships at the steady state. We assumed that this refers to studentships and allowance reserved for research students.

Capital development and cost

4.19 CityU proposed a two-stage approach to develop the site and necessary facilities for the proposed School of Veterinary Medicine – i.e. Stage 1 of the development will involve conversion of an on-campus building (i.e. To Yuen Building, TYB) to temporarily house the School and other facilities such as CTCSA, a diagnostic laboratory and staff offices during the pre-clinical years (from first to fourth years). A large animal training facility to provide hands-on clinical experience on cattle and pigs will also be established in the New Territories. Stage 2 will involve the construction of a dedicated building (i.e. AC-4) in a chosen site within CityU's existing campus area which will permanently house the School, a full-scale diagnostic laboratory, a small animal hospital, facilities for anatomy and anatomical pathology, a stand-alone veterinary library as well as other veterinary and biomedical research laboratories.

4.20 Details of the Stage 2 development of the AC-4, such as the cost structure and building schedule, are not available in the proposal and the Task Force cannot offer any assessment on it.

4.21 As for the Stage 1 development, the proposed cost is HK\$58 million (excluding the capital cost for CTCSA). The capital expenditure will be funded through reserve and donations, and given that CTCSA will be operated on a self-financing basis, its capital funding (i.e. HK\$90.3 million) will also be provided through a loan from the University with a 20-year repayment plan. Whilst the operation of the CTCSA will be further discussed, it is noteworthy that CityU's consultant has pointed out that the University may not be compensated with an adequate return under the proposed loan-financing plan. Furthermore, if the capital development involves comprehensive buildings with complete and advanced facilities, the construction and start-up costs could be much higher and it would add to the financial burden of the University.

Clinical Training Centre for Small Animals (CTCSA)

4.22 A main feature in the Stage 1 of the proposed veterinary school capital development is the CTCSA, which will be running on a fully commercial basis, with a loan from the University to support its capital set-up and initial operation. CityU assumes that the average caseload will reach 1 600 per month at steady state and over 90% cases to be handled will be specialist referral cases. A clinic consultation fee of HK\$2,000 will be charged per case, which will form the major source of income for the Centre. Together with the sales of other products and services provided by the diagnostic laboratory, a total of HK\$45.2 million can be generated per year when the Centre is in full operation.

4.23 The recurrent expenses of the Centre is estimated to be around HK\$40.5 million, with more than 30% spent on staff cost. However, this estimate does not take into account the cost for engaging the university faculty staff to provide clinical services at the Centre, which would incur additional expenditure. A profit of HK\$4.7 million is expected to be generated each year to pay off the loan granted from the University in 20-years' time.

4.24 In view that most of the cases are expected to be specialized referrals, facilities such as animal PET Scan, MRI Scan, CT Scan, etc. will be set up in the Centre. A total of HK\$50 million is set aside to set up these facilities and equipment.

4.25 CityU has not provided sufficient evidence for the Task Force to judge the validity of the proposed self-financing business model of the CTCSA. It is doubtful if there would be enough specialized referral caseload and specialist experts in the School to support its operation. Regarding the estimated number of specialized cases, the fact-finding exercise failed to obtain any solid demand statistics in this regard, and hence the Task Force questions whether the estimated caseload of 1 600 per month is achievable. Moreover, the Task Force considers that it will be highly likely that the Centre will require overseas specialists to visit and attend to some highly specialized cases, which will add to its operating cost. The CityU consultant also pointed out that if there are not enough specialized referral cases, the Centre will need to receive general cases with a lower consultation fee which will drive down the income. Besides, facilities and equipment such as PET Scan are costly to acquire (US\$2-6 million) and operate, and not even some of the top veterinary schools worldwide possess such equipment. It is doubtful whether the estimated budget can meet the necessary costs. Indeed, overseas experience indicates that veterinary teaching hospitals or clinics are unable to be commercially efficient and meet the costs without subsidies.⁶² Noteworthy is the fact that the clinical training center at Cornell does not run at a profit. Also, Cornell does not have a PET scanner. Against the above, the Task Force considers the budget plan of the CTCSA questionable.

Undergraduate and postgraduate programmes

4.26 The proposed veterinary school has proposed to admit an intake of 50 undergraduates and 90 taught postgraduates at steady state. Attrition rates

⁶² Council of Veterinary Deans of Australia and New Zealand, "Higher Education Base Funding Review", 2011. Impact of student instruction, student-client interactions and clinical research in the veterinary teaching clinic/hospital usually incurs 3-4 fold increase in the case completion times. Besides, staff-student ratios are usually lower for veterinary programmes clinical training as it requires intensive and rigorous hands-on manipulation with the client's valuable animals.

of 2%⁶³ and 0% are assumed in the two levels of study. According to the CityU consultant, whilst the interest for the undergraduate veterinary medicine programme is believed to be keen, the projected number of student intakes for the taught postgraduate programme appears to be unrealistic. Besides, it is the belief of the Task Force that CityU has underestimated the attrition rates of the programmes, especially in the early stage of its operation during which the veterinary school would be still pursuing accreditation from the international agencies, and there is a lack of demand growth in the local veterinary sector.

Clinical placement training

4.27 The fifth and sixth years of the proposed programme will focus on clinical training. According to the proposal, hands-on clinical training will be provided at CityU's facilities (including CTCSA), private veterinary clinics and farms, non-profit organisations, animal facilities within Hong Kong and the Mainland, as well as other veterinary schools overseas. The proposal asserted that CityU have obtained support from some local farms in the New Territories for clinical training in animal husbandry, farm management, etc. Separately, CityU has also identified an unused local pig farm, with fully functional waste treatment plants and animal-holding facilities, to be converted into a small-scale teaching farm which can allow students to practise husbandry, applied anatomy and examination techniques. On equine training, CityU has been liaising with the riding schools and HKJC to offer training on horse care and handling. Apart from a local teaching farm, CityU is also establishing collaborative partnerships with several veterinary institutions and dairy farms in the Mainland for provision of more training for the students.

4.28 On the training for large animals, from the information gathered from the fact-finding exercise, there are less than 10 herds of dairy cattle⁶⁴ in Hong Kong, which does not provide a critical mass of animals for training and study. Whilst there are about 1 600 racehorses kept by HKJC per year, the use of racehorses for veterinary training on a regular basis might not be feasible. As for clinical training on small animals, given that the commercially-run CTCSA is expected to handle mainly specialist referral cases, the Task Force questions whether it will be a good training platform for the undergraduate students who are the major users of the proposed veterinary school. To supplement the clinical training, the Task Force understands at the meeting with CityU and Cornell in July 2013 that the two universities are now working out plans to arrange students to spend two summers in Cornell for pre-clinical practices. Details of such plans are not known to the Task Force. Besides, costs arising

⁶³ The 2% attrition rate for the proposed undergraduate BVM programme is assumed by CityU with reference to their historical attrition of students, which is similar to the general attrition rates of other local institutions in Hong Kong.

⁶⁴ AFCD Factsheet, January 2013.

from the above training opportunities (i.e. clinical training at the CTCSA, the equine facilities, at the Ithaca campus at Cornell, etc.) are not mentioned in the proposal, and hence whether they are to be borne fully by CityU in collaboration with the partnering organisations, fully by the students or a shared-cost structure is unclear to the Task Force. It is worth noting that in some other jurisdictions, with the rising number of students in veterinary schools, the increasing demand for rotational placement of veterinary students in private clinics for hands-on clinical training has been questioned by private practitioners.⁶⁵

Necessary attributes of a world class veterinary school

4.29 The Task Force believes that the aspiration to establish a world class veterinary school with an ultimate goal to become a leader in the region requires a number of attributes. These include public health experience; robust research support from other related disciplines and departments (e.g. those in life science, biology, medical and allied health, etc.); capability to collaborate with other institutions; and ability to deliver a veterinary programme that caters to the needs of the local community and the region. However, the Task Force is of the view that the proposal does not present a convincing case that the University has sufficient strength and depth currently, or adequate concrete plans to meet these desirable attributes, so as to establish a veterinary school with world-class capability. The Task Force believes that CityU's strengths lie in areas other than health related and life science which would best support a veterinary school. According to the results of the RGC General Research Fund (GRF) Scheme⁶⁶, nearly half of the successful grants of CityU are engineering projects⁶⁷. As for the biology and medicine research projects supported, CityU was granted only around HK\$2 million, which accounted for around 1% of the total 160 successful grants among the eight UGC institutions in 2012/13 (with total grants amounting to HK\$154 million). Though the number of biology and medicine projects supported for CityU has slightly increased to 8 with grants of around HK\$5 million in 2013/14, it still only constitutes around 4% of the total of 203 projects in Hong Kong (with total grants amounting to HK\$167 million). The existing biological science programme of CityU is relatively small,⁶⁸ with limited capacity in infectious disease and medical science, and therefore may not have sufficient critical mass to provide best support for the proposed veterinary school. Further, the proposed collaboration with other local institutions to strengthen the capacity in these essential areas is tentative at the moment.

⁶⁵ Council of Veterinary Deans of Australia and New Zealand, "Higher Education Base Funding Review", 2011.

⁶⁶ GRF Results - <http://www.ugc.edu.hk/eng/rgc/result/grf/grf.htm>

⁶⁷ In 2012/13, CityU got 93 projects supported by RGC under the GRF Scheme in total, and among which 40% were engineering projects. The number has risen to 117 projects in total and 50% were engineering projects for 2013/14.

⁶⁸ There are around 150 staff in the Department of Biology and Chemistry of CityU at present, of which 36 are academic faculty members. Source: <http://www6.cityu.edu.hk/bhdbapp/deptweb/academic.html>

Accreditation and recognition

4.30 As stressed in the previous sections, obtaining an accreditation status from an international veterinary accreditation agency (e.g. AVMA or RCVS) is critical for the sustainability of a veterinary programme. As stated in the proposal, CityU will seek AVMA accreditation for its proposed veterinary programme, but details of the plan, such as roadmap, schedule and milestones, is not clearly presented. CityU has also indicated that it has been closely liaising with VSB on the recognition of the qualifications of the proposed veterinary programme so that its graduates can register with the existing VSB's structure. However, as the Task Force is given to understand, VSB is not yet prepared to assist in the process, for it has stressed that it is not an accreditation body. Besides, the accreditation process may take many years if the AVMA route is to be followed. Specifically this requires at least four to five cohorts of graduates before obtaining full accreditation status. Furthermore, AVMA does not offer any provisional accreditation status to newly established veterinary schools outside North America, and hence the exact timeframe to obtain full accreditation status may be very lengthy (over 10 years). There is no backup plan in the proposal if seeking AVMA accreditation is not successful (say seeking accreditation from a non-AVMA agency as an alternative). In other words, graduates of the first few cohorts of the proposed veterinary programme would not be able to practise in Hong Kong under the existing VSB policy and definitely not elsewhere where such accreditation is required.

4.31 The strengths and weaknesses of the proposal as stated above are summarized as follows:-

Strengths

- It is the first proposal put forward by a local institution which had given thought on the education and training of veterinary professionals for Hong Kong.
- CityU's enthusiasm and passion towards the project, as shown in the proposal and the merits of a partnership with Cornell, are recognized.

Weaknesses

- The growth in the demand for veterinarians in Hong Kong and the Mainland as presented in the proposal differs from what the Task Force has concluded from the fact-finding exercise, especially in respect of general practitioners.

- The proposed plan is not sufficiently well thought through, in particular on the budget estimates and the amount of funding required. There are several areas where the Task Force believes CityU may have underestimated the expenses. The budget proposal does not offer a convincing case that justifies the Task Force's support.
- For a local veterinary school which aspires to be a world-class institution with a strong focus on food safety and infectious disease research, there should be a strong foundation, including expertise and experience in related disciplines such as life science. However, as the Task Force understands, CityU's critical mass and strengths are not in biological and life science. The proposal also fails to provide a convincing roadmap in this regard.
- CityU proposes to seek AVMA accreditation which involves a lengthy process (about 10 years), but the proposal fails to outline a detailed plan and schedule to obtain the accreditation. Nor does it provide an alternative plan if the AVMA route proves too difficult.

Recommendation 1 (The CityU Veterinary School Proposal)

The Task Force is not able to recommend the CityU's proposal, as it does not provide a persuasive case for the development of a publicly-funded veterinary school with an aspiration to become a leader of world standing in the region.

PART FIVE: STRATEGIC DEVELOPMENT FOR HONG KONG

5.1 It follows from the previous sections that the Task Force is of the view that the CityU proposal does not provide a robust, coherent and persuasive case. In particular, it is not at all clear how the proposal will allow CityU to pursue its goal of developing a world-class veterinary school with an aspiration to become a leader in the region, given the critical issues set out in Part Four above. To this end, the Task Force is unable to render full support to the proposal.

5.2 That said, the Task Force is persuaded by the argument that having a full-fledged veterinary school physically present in Hong Kong would be beneficial to the development of Hong Kong, as it can help to further strengthen its infectious disease control capacity, address the identified gaps in food safety, aquaculture and the shortage of specialized veterinarians, as well as to promote the One-Health Initiative. Because of the initial clinical orientation of veterinary graduates in most parts of the world, veterinarians are under-represented in biomedical research and particularly for emerging infectious diseases. A research focused veterinary school has the potential to train more research focused veterinarians who can make a significant contribution to addressing the current and future zoonotic disease threats at the source in Hong Kong, Mainland China and the neighbouring countries.

5.3 The Task Force is also convinced that, with the substantial amount of investment entailed, the Hong Kong veterinary school, if there were to be one, should pitch itself at the very least among the best veterinary schools in the region in its initial development, and eventually be competitive with the best ones internationally, and benchmark with the international standards established by the international veterinary accreditation agencies. The vision is to attain world-class standing in both teaching and research.

5.4 Against the above, the Task Force considers that a veterinary school should be set up in Hong Kong with Government policy support with a primary strategic objective of enhancing its academic and research capability in veterinary science and positioning itself as a world-class center for food safety, public health and infectious disease control, which will serve as the leader in the region. Given that there is no apparent shortage of veterinarians in the companion animal sector, focus should not be placed on training general practitioners at undergraduate level, or else it may generate a mismatch between supply and demand in the veterinary sector.

A fit-for-purpose veterinary school for Hong Kong

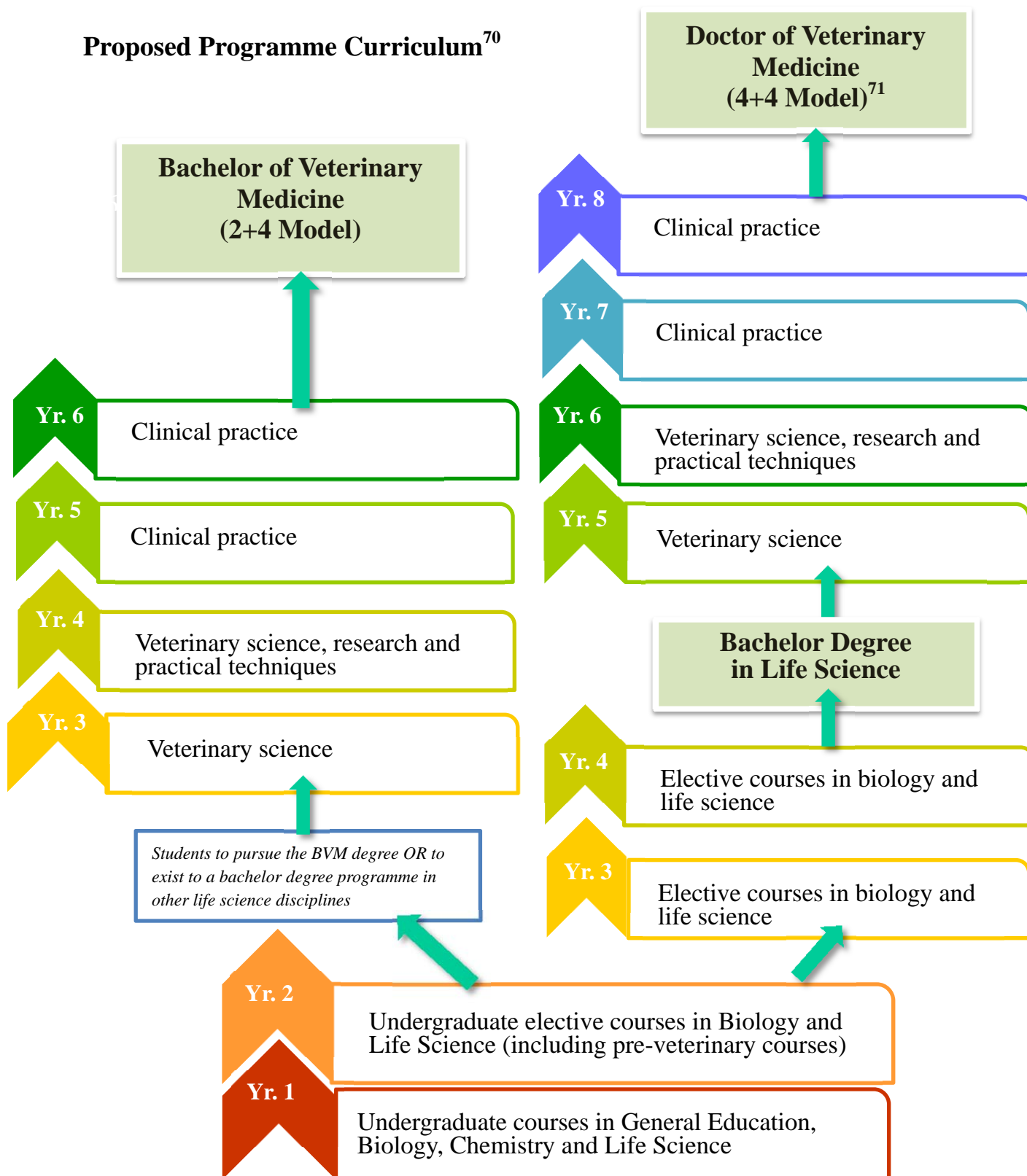
5.5 International accreditation agencies take into account a number of requirements when considering the accreditation status. Requirements include advanced physical and clinical infrastructure, reasonable students-to-staff ratio, provision of training using animals and animal cadavers, as well as intensive clinical training in a wide range of species. Apart from the above qualities, while recognizing the need and benefits of veterinary science and veterinary medicine in Hong Kong, the Task Force considers that a fit-for-purpose veterinary school model, comprising the following elements and features, would best serve the needs of Hong Kong taking into account the local context:

- The fit-for-purpose veterinary school should be internationally recognized and competitive at the world level. As repeatedly mentioned, it is essential for the school to obtain accreditation from major international agencies (e.g. AVMA, RCVS) for quality assurance and for mobility of its graduates to work outside Hong Kong.
- The school should have a strong focus on the postgraduate programme, particularly in zoonotic and infectious disease research and training. To create synergies and better use of resources, the school should seek tight inter- and intra-institutional collaboration with other related disciplines, departments, centers and laboratories.
- Instead of building a research-only school in veterinary science, the Task Force considers there is a need to build a full-fledged veterinary degree-awarding school, with a small number of students trained as general practitioners to provide the necessary academic vibrancy in teaching and vertical integration in research. A core teaching programme for general practitioners is necessary to support the range of facilities, sub-disciplines, academic infrastructure, support staff and faculty diversification upon which the postgraduate programme and research can be built.
- The professional veterinary medicine training programme offered for general practitioners can either follow the UK model (i.e. a six-year bachelor veterinary degree programme) or the US model (i.e. 4+4, a four-year bachelor degree programme in related fields plus a four-postgraduate degree programme in veterinary science). These are the most common forms of veterinary programmes in the world, and the Task Force considers that both are suitable for Hong Kong. The 4+4 model could also be set up with an overseas partner institution,

thus creating a twinning arrangement⁶⁹ which is highly regarded in the international veterinary sector. A diagram showing the possible pathway for a professional veterinary programme is on the next page:-

⁶⁹ The World Organization for Animal Health has been promoting the concept of “twinning” veterinary education and training in different regions, in particular, the veterinary institutions in developed countries to partner with those in the less developed areas.

Proposed Programme Curriculum⁷⁰



⁷⁰ The proposed programme curriculum was formulated with reference to typical veterinary curricula in the United States and United Kingdom.
Sources: <http://www.vet.cornell.edu/students/docs/DVMCurriculumOverviewSlideupdatedJuly2012.pptx> ; <http://www.nottingham.ac.uk/ugstudy/courses/veterinarymedicineandscience/veterinary-medicine-surgery.aspx>

⁷¹ Some institutions may give advanced standing and credit exemption to those students who have met the requirement on a case-by-case basis, and as such the study length of these students for the postgraduate programme maybe shortened.

- Overall, the Task Force considers that the ideal veterinary school for Hong Kong is one with a small professional veterinary medicine training but a top-heavy or overweight postgraduate and research programme, which will best suit the needs of Hong Kong. A cohort of around 25 intakes comprising a majority of local students with some non-local students is considered sufficient, for it can meet the purpose of providing vibrancy to the programme without aggravating the problem of over-supplying the general practitioners. The newly established Faculty of Veterinary Medicine of the University of Calgary can serve as a possible model with only 25 to 30 students for general veterinary medicine per year but a robust research programme. Further details on the Calgary model is at **Annex E**.

Recommendation 2 (A Fit-for-purpose Veterinary School)

For strategic development, Hong Kong is well positioned to develop a veterinary school that has a small professional veterinary medicine training programme but a top-heavy research and postgraduate programme for training research talents focusing on relevant areas such as zoonotic infectious diseases and public health.

Recommendation 3 (Planning and Execution)

For such a fit-for-purpose veterinary school to be established in Hong Kong, practical issues taking into account the local context such as lack of access to teaching farms must be addressed. In addition, sustained and tight collaboration from multiple parties including the Government, relevant institutions and the veterinary sector is essential.

Scholarship for students studying overseas

5.6 The Task Force has also examined other possible options to enhance the veterinary sector to better serve Hong Kong. One of the options expounded by some stakeholders is to provide scholarships for those interested in pursuing veterinary medicine to go overseas to study, and come back and serve the community upon graduation. This may be the most cost-effective option to get high quality veterinarians for Hong Kong without investing considerable amount of money to start a new veterinary school afresh. It also addresses the equity issue of students' aspiration to study abroad. It also allows those from a

disadvantaged background to receive veterinary education and professional training. In fact, the AFCD had formerly offered scholarships to sponsor interested outstanding students to study veterinary science abroad though the scheme has since been discontinued. Some other countries, such as Singapore, have also adopted the same model.

5.7 The Government could also consider providing scholarships specifically for overseas postgraduate residential training in specialty disciplines related to public health. This is a more targeted and cost effective approach for building public health capacity than by providing undergraduate scholarships.

5.8 While noting the benefits brought about by the scholarship option, the Task Force is of the view that for Hong Kong to further enhance its research excellence in public health and infectious disease control and to develop world-class specialization in veterinary medicine, establishing a local fit-for-purpose veterinary school would be a strategically more effective route. In the interim, universities in Hong Kong could develop research and postgraduate programmes in veterinary science to focus on research in public health and infectious diseases, and in training veterinary specialists at the postgraduate level.

Recommendation 4 (Government Policy Support)

For Hong Kong to further enhance its research excellence in public health and infectious disease control, Government has an important role to play in rendering policy support and to secure funding commitment to enable the establishment of a fit-for-purpose veterinary school or its equivalent in Hong Kong.