Current supply and demand of veterinarians in Japan

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Summary

Since 1966, approximately 1 000 veterinarians graduate each year from 16 veterinary schools in Japan. According to reports submitted by veterinarians to the Ministry of Agriculture, Forestry and Fisheries in January 2007, there were over 35 818 veterinarians in Japan at the end of 2006. Of this total, 13 202 (36.8%) were engaged in companion animal practice, 9 112 (25.4%) were civil servants and 4 180 (11.7%) were engaged in food animal practice. The total number of veterinarians has increased gradually over the past 40 years. Recently, the number of veterinarians engaged in companion animal practice has increased while the number of veterinarians engaged in food animal practice is declining. These trends reflect the change in demand for veterinarians in food and companion animal practice, resulting mainly from changes in the number of food animals and companion animals in recent years. The number of veterinarians in the public sector has decreased gradually due to the administrative reforms of recent years.

Keywords

Animal, Companion animal, Demand, Education, Food animal, Japan, Pet, Supply, Veterinarian, Veterinary practice, Veterinary profession.

Offerta e richiesta di veterinari in Giappone

Riassunto

Dal 1966 in Giappone esistono 16 facoltà di medicina veterinaria e si laureano circa 1.000 veterinari ogni anno. In base ai rapporti inviati a gennaio 2008 dai veterinari al Ministero dell'Agricoltura, Foreste e Pesca, alla fine del 2006 in Giappone vi erano circa 35.818 veterinari. Di questi 13.202 (36,8%) impegnato nella cura degli animali da compagnia, 9.112 (25,4%) nel servizio civile e 4.180 (11,7%) negli animali da reddito. Il numero di veterinari è aumentato gradualmente nel corso degli ultimi 40 anni. Di recente, il numero di veterinari impegnati nella cura degli animali da compagnia è aumentato mentre è diminuito quello dei veterinari che si occupano di animali da reddito. Questo andamento riflette il cambiamento che si è verificato nella richiesta di veterinari che si occupano di animali da reddito e animali da compagnia, derivante principalmente dall'aumento del numero di animali da compagnia. I veterinari impegnati nel settore pubblico sono diminuiti gradualmente in seguito alle riforme amministrative degli anni recenti.

Parole chiave

Animale, Animale da compagnia, Animali da reddito, Formazione, Giappone, Offerta, Pratica veterinaria, Professione veterinaria, Richiesta, Veterinario.

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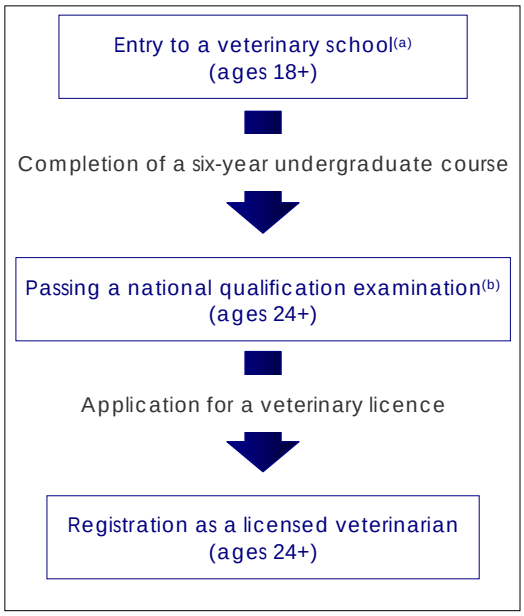
Introduction

The current veterinary qualification system in Japan dates back to 1949 when the Veterinary Licensing Law was enforced. In accordance with this law, the Minister of Agriculture, Forestry and Fisheries (MAFF) issues a veterinary licence to those who have passed the national qualification examination. The national veterinary qualification examination is held once a year in March by the Veterinary Affairs Council (VAC) in cooperation with MAFF. Those who satisfy one of the following conditions qualify to take the national examination:

- those who have completed the six-year under-graduate veterinary course in a Japanese veterinary school
- those who have graduated from a foreign veterinary school, or have obtained a veterinary licence in a foreign country, the academic capability of which is evaluated by the VAC to be equivalent to those who have graduated from a Japanese veterinary school
- those who have passed a preliminary examination held by the VAC (those who have graduated from a foreign veterinary school, or obtained a veterinary licence in a foreign country, the academic and professional capability of which is evaluated by the VAC not to be equivalent but to be close to those who have graduated from a Japanese veterinary school, qualify to take this preliminary examination).

Figure 1 illustrates the procedures that must be followed to become a veterinarian in Japan. Since 1966, there are 16 veterinary schools in Japan that generate a constant number of veterinarians each year. Every year, approximately 1 200 examinees take the national qualification examination and approximately 1 000 qualify as veterinarians.

Once qualified, the veterinarians must observe the provisions stipulated in the Veterinary Licensing Law and Veterinary Practice Law. The Veterinary Practice Law was issued and enforced in 1992 with the objective of ensuring the provision of quality veterinary services by setting the standards for facilities and management of veterinary practices. In accordance with this law, the Minister of Agriculture, Forestry and Fisheries develops a basic plan to ensure that quality veterinary services are provided nationwide, specifying the basic direction for the improved supply of veterinary services, improvement of practice facilities, target number of veterinarians in food animal practice and definition of rural areas where improved systems for provision of veterinary services are required.



(a) There are 16 veterinary schools in Japan as shown in Table I
(b) A national qualification examination is held once a year in early March

Figure 1
Procedure showing the steps followed to become a veterinarian in Japan

Due to the recent change in demand for veterinarians in different occupational categories, the MAFF established two study groups composed of experts representing various related fields, as follows:

- the first, in 2005, to identify current problems arising in small animal practices
- the second, in 2006, to address the situation of supply and demand of veterinarians.

The authors describe the evolution of the veterinary education and licensing system and the current situation of supply and demand of veterinarians in Japan, based mainly on data and information submitted to these study groups.

Evolution of veterinary education in Japan

Veterinary education before the end of the Second World War (pre-1945)

Modern veterinary education in Japan dates back to 1873 when a Japanese army school invited a French veterinarian, Augusto Angot, to train 15 students as army veterinarians (2). From 1874 until the end of the Second World War, veterinary education was mostly provided by agricultural colleges and army veterinary schools. Komaba and Sapporo Agricultural Colleges started teaching veterinary medicine in 1878 and 1880, respectively. These colleges were absorbed into the Tokyo and Hokkaido Imperial Universities in 1880 and 1918, respectively. Osaka Prefecture College (now Osaka Prefecture University) and Morioka Agricultural College (now Iwate University) were established to teach veterinary medicine in 1888 and 1902, respectively. In addition to these, over 20 colleges and schools were established to teach veterinary medicine but most of them were abolished in 1885 when veterinary licensing regulations were enforced. These universities and agricultural colleges provided veterinary education lasting three to four years that was focussed on training students for the maintenance of military and draught horses.

An increased demand for military horses after the Sino-Japanese War in 1894 led to the establishment of many other veterinary schools, but many of these were abolished after 1926 when the then Veterinary Licensing Law was amended so that only graduates from colleges qualified as veterinarians without taking a licensing examination. In 1944, there were two imperial universities (Tokyo and Hokkaido), eight agricultural colleges (Obihiro, Tottori, Tokyo, Iwate, Kagoshima, Miyazaki, Gifu and Utsunomiya), five prefecture agricultural schools (Osaka, Iwate, Ishikawa, Yamaguchi and Miyagi) and four private veterinary schools (Shiritsu [now Nihon Veterinary and Life Science], Tokyo-jui [now Nihon], Keio and Azabu) that taught veterinary medicine.

Veterinary education after the Second World War (post-1945)

In 1949, the eight colleges and one prefecture agricultural school that provided veterinary education became national universities, with one (Utsunomiya) being abolished in 1952 (2). One prefecture agriculture school (Osaka) became a prefecture university. Of the four private schools, one (Keio) was abolished in 1949 and three were transformed into universities between 1949 and 1952. In 1964 and 1966, a new veterinary school was established in two private universities (Rakuno-gakuen and Kitasato). Since 1966, there are ten national universities, one prefecture university and five private universities that provide veterinary education. Table I provides the list of these schools with their respective official enrolment capacities.

Table I
List of veterinary schools in Japan and enrolment capacity

Location of veterinary school	Annual enrolment capacity
Hokkaido University	40
Obihiro University of Agriculture and Veterinary Medicine	40
Iwate University	30
Tokyo University	30
Tokyo University of Agriculture	35
Gifu University	30
Tottori University	35
Yamaguchi University	30
Miyazaki University	30
Kagoshima University	30
Osaka Prefecture University	40
Rakuno-gakuen University	120
Kitasato University	120
Nippon Veterinary and Life Science University	80
Nihon University	120
Azabu University	120
Total	930

The official enrolment capacity of these schools has been 930 since 1966, but most veterinary schools have admitted more students than the official capacity stated. Since 1966, the Ministry

of Education has maintained a policy not to increase the enrolment capacity of veterinary schools or to authorise the establishment of new veterinary schools (8).

Since 1970, an attempt has been made to integrate some of the veterinary schools to increase the enrolment capacity for each school, but these attempts have not been successful. As a result, the enrolment capacity per school has remained relatively low (30-40 students per year and per school), thereby creating a poor education environment in terms of teaching staff and facility utilisation, when compared to veterinary schools in Europe and the United States (9).

These universities provided veterinary education that lasts four years for university entrants until 1982, but those commencing between 1978 and 1982 had to complete the four-year undergraduate course and a two-year masters course to qualify for the national licensing examination. For 1983 entrants and beyond, the veterinary undergraduate course was extended to six years.

In the current system, most students enter veterinary school at 18 or 19 years of age, complete a six-year course and graduate at 24 years of age or older. Figure 2 shows the age distribution of newly licensed veterinarians. Approximately 65% of the newly licensed veterinarians obtain their licence at the age of 25 or 26.

Current supply and demand for veterinarians

Data sources

There are two data sources that are useful when estimating the number of veterinarians, as follows:

- the MAFF database of registered veterinarians
- reports submitted by veterinarians every two years under the Veterinary Licensing Law.

However, neither of the data sources is completely accurate. The MAFF database includes not only live but also some deceased veterinarians (the MAFF is not necessarily notified when a veterinarian dies). It thus overestimates the number of veterinarians. There is under-reporting by veterinarians as part of the biannual obligatory reporting system based on the Veterinary Licensing Law. Over 60 000 veterinarians are registered in the MAFF database, while the number of veterinarians who submitted reports under the Veterinary Licensing Law varied between 29 000 and 36 000 in the past 10 years. According to the Japanese Veterinary Medicine Association, 50 000 veterinarians are estimated to be in Japan (9). For the purposes of this paper, we discuss the supply of veterinarians based on the reports submitted in January 2007 under the Veterinary Licensing Law.

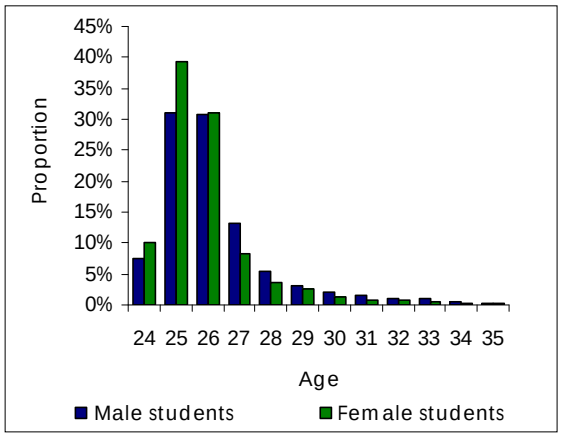


Figure 2
Age distribution of newly registered veterinarians in 2006 (6)

Total number of veterinarians and distribution by age, region and income

Approximately 1 000 veterinarians have graduated each year since 1966, resulting in a total number of 35 818 veterinarians at 31 December 2006. The total number of veterinarians has increased gradually due to the establishment of two veterinary schools in 1964 and 1966 and an improved survival rate of Japanese people. There will be a continual gradual increase over the next ten years, provided that the total enrolment capacity of the veterinary schools remains at the current level.

Figure 3 indicates the age distribution of active male and female veterinarians. The proportion

of female veterinarians is 23%, but varies depending on age and occupational categories. The proportion of female veterinarians is high in the younger generation, exceeding 50% of the total number that are under 33 years of age.

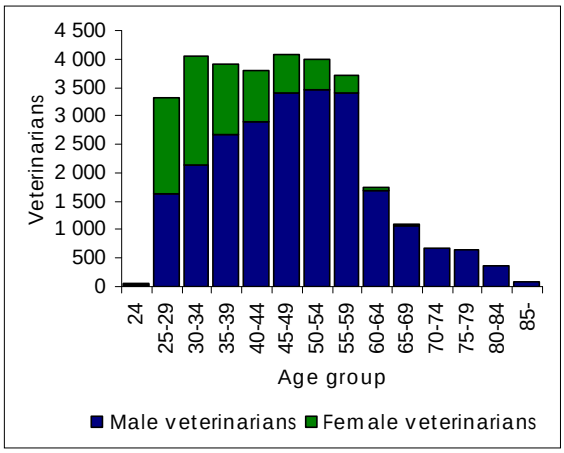


Figure 3
Distribution of active veterinarians in Japan by age group and sex at 31 December 2006 (6)

The geographic distribution of active veterinarians is shown in Figure 4. A large proportion of veterinarians engaged in companion animal practice are distributed in the Kanto region. Many veterinarians engaged in food animal practice are distributed in Hokkaido prefecture and Kyushu regions.

Figure 5 indicates the annual income of veterinarians engaged in companion animal practice (6). A total of 42% of veterinarians who are in the fifth year of companion animal practice earn less than 10 million yen (US$95 000) annually while 32% earn between 10 and 20 million yen (US$95 000-US$190 000) annually. The average age of veterinarians who work for food animal clinics of the NOSAI (Agricultural Mutual Relief) is 43; they earn an annual income of 8.1 million yen (US$77 000) (4).

Supply and demand of veterinarians in companion animal practice

Of the total number of veterinarians, 13 185 (36.8%) work in companion animal practices (Table II). The number of veterinarians engaged in companion animal practice has

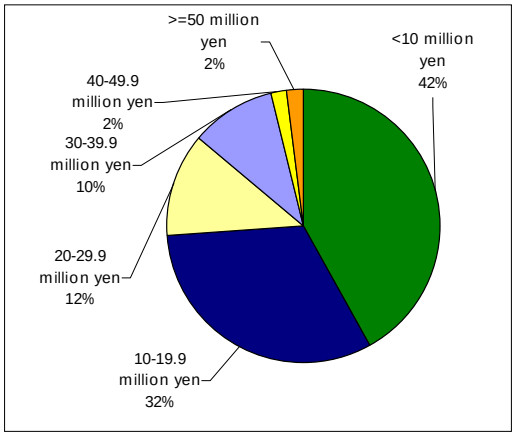


Figure 5
Annual income of Japanese veterinarians in the fifth year of companion animal practice (6)

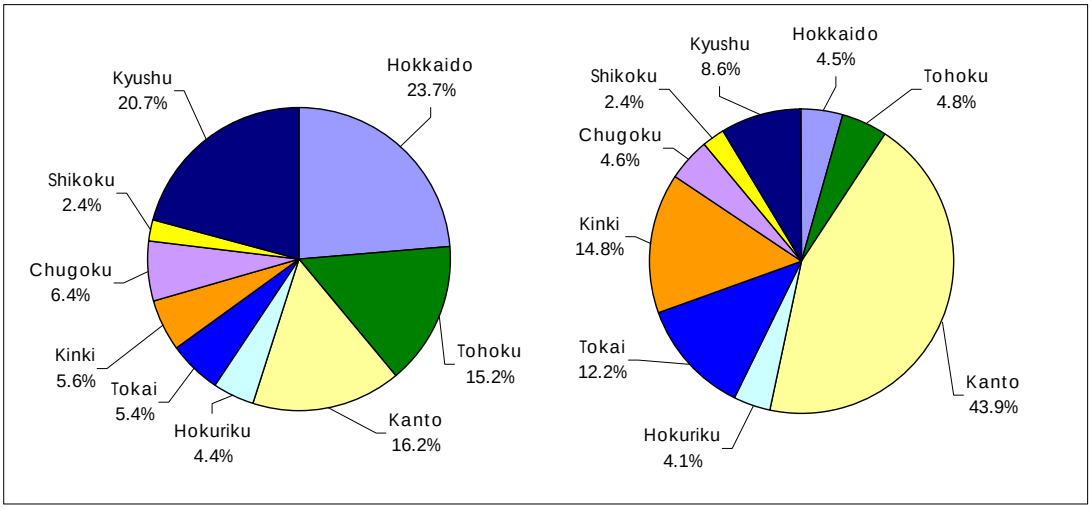


Figure 4
Geographic distribution of veterinarians engaged in food animal practice (left) and companion animal practice (right) in Japan at 31 December 2006 (6)

increased by 73% over the past 10 years. The average age of veterinarians in these practices at of the end of 2006 was 44.3. There will be a continuing increase in veterinarians in this area if the supply of newly licensed veterinarians is maintained at the current level (Table III).

At the end of 2006, the number of dogs and cats was estimated to be 12.1 million and 9.6 million, respectively (Table IV). In the past 10 years, the number of dogs and cats has increased by 21% and 22%, respectively.

Figure 6 indicates the number of visits per year made to veterinarians by dog and cat owners. Dog and cat owners in the Kanto, Kinki and Tokai regions make more visits to the veterinarian than those in other regions because owners in urban areas tend to be more concerned about the health of their companion animals.

The increased numbers of dogs and cats and the increasing number of visits made by the owners to the veterinarian has resulted in increased demand for veterinarians in companion animal practices in recent years. The demand for veterinarians in the future will depend not only on these numbers but also on the efficiency of veterinarians in providing their services. In recent years, there have been more veterinary auxiliaries who assist veterinarians in providing veterinary services (1). The efficiency of veterinarians may improve in the future with the assistance of these auxiliaries.

Table III
Number of veterinary graduates by occupation, 1996 and 2006

Occupation	Number of veterinary graduates	
	1996	2006
Civil servants in animal health	112	58
Civil servants in public health	116	67
Civil servants in others	15	6
Agriculture cooperatives	42	66
Private companies	91	64
Food animal practice	10	3
Companion animal practice	405	518
Food and companion animal practice	2	11
Other veterinary occupations	157	166
Not known	115	122
Total	1 065	1 081

Source: Ministry of Agriculture, Forestry and Fisheries

Supply and demand of veterinarians in food animal practice

Of the total number of veterinarians, 4 178 (11.7%) are engaged in food animal practice. The number of veterinarians who work in this area has decreased by 15% in the past 10 years. Considering the fact that the average age of veterinarians in food animal practice is 51.1, some 6.7 years older than the average age of veterinarians in companion animal practice, there will be a continuing decline in the number of veterinarians in this area if the supply of newly licensed veterinarians into this area remains at the current level.

Table II
Number of veterinarians engaged in different occupations in December 1996 and December 2006

Occupation	Number of veterinarians			
	December 1996		December 2006	
Civil servants in animal health	3 876	(13.2%)	3 579	(10.0%)
Civil servants in public health	4 941	(16.9%)	4 858	(13.6%)
Civil servants in education	382	(1.3%)	630	(1.8%)
Food animal practice	4 930	(16.8%)	4 178	(11.7%)
Companion animal practice	7 617	(26.0%)	13 185	(36.8%)
Private companies, research institutions	2 593	(8.8%)	2 824	(7.9%)
Other veterinary profession	1 593	(5.4%)	2 168	(6.1%)
Non-veterinary profession	3 369	(11.5%)	4 396	(12.3%)
Total	29 301	(100.0%)	35 818	(100.0%)

Source: Ministry of Agriculture, Forestry and Fisheries (7)

Table IV
Number of animals in Japan in1996 and 2006

Animal	Number of animals 1996	2006
Dairy cattle	1 927 000	1 635 000
Beef cattle	2 901 000	2 755 000
Pigs	9 900 000	9 620 000
Chickens	308 757 000	284 932 000
Horses	118 194	92 886
Dogs	10 022 000	12 089 000
Cats	7 850 000	9 596 000

Source: Ministry of Agriculture, Forestry and Fisheries (Livestock Statistics), Pet Food Industry Association

At 1 February 2006, there were 1.64 million dairy cattle, 2.76 million beef cattle, 9.62 million pigs (7 800 pig farms) and 285 million chickens (6 200 chicken farms) and 92 886 horses in Japan. The number of food animals including dairy cattle, beef cattle, pigs and chickens has been declining for the past 10 years. The MAFF has set a production target, which is 1.62 million dairy cattle and 3.48 million beef cattle, 9.34 million pigs, 174 million layers and 103 million broilers by 2015 (3).

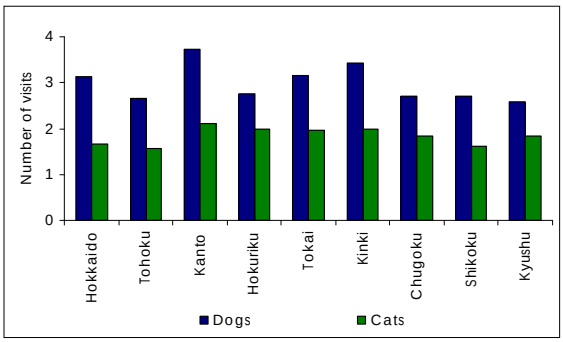


Figure 6
Average number of visits made in 2006 to consult a veterinarian by dog and cat owners in different regions of Japan (5)

The number of veterinary visits that beef and dairy cattle receive on average per year is 1.22 and 2.58, respectively (7). An average veterinarian attends 30 pig farms or 40 chicken farms or 300 horses each year (6). These numbers of visits that veterinarians make and the number of animals on farms that veterinarians attend to reflects the current role of veterinarians which mainly focuses on the treatment of individual animals. As the number of animals per farm increases in the future, there will probably be greater demand for veterinary services focusing on herd health management. If the role of veterinarians in food animal practice changes from the treatment of individual animals to herd management, there should be less demand for veterinarians in the future. A revision of the current basic plan for improved provision of veterinary services in rural areas under the Veterinary Practice Law is being considered to identify what measures are required to ensure the supply of veterinarians in food animal practice is sufficient to meet future demand.

Supply and demand of veterinarians in the public sector

At the end of December 2006, 9 067 veterinarians (25.3% of the total) were civil servants, mainly engaged in animal and public health services. The number of veterinarians who are civil servants engaged in animal health and public health is 3 579 and 4 858, respectively (7).

The total number of civil servants engaged in animal health and public health has gradually declined over recent years under the ongoing administrative reforms. As a result of the transformation of some of the government agencies into incorporated administrative agencies (executive agencies of the government), the number of veterinarians who work for incorporated administrative agencies has increased. The demand for veterinarians in the future in sectors such as animal and public heath, animal welfare and wildlife protection will depend on the government policies in these areas.

Supply and demand of veterinarians in other types of veterinary professions

At the end of December 2006, 4 992 veterinarians (13.9% of the total) were engaged in other activities of the veterinary profession. Of these, 2 824 veterinarians worked for incorporated administrative agencies or pharmaceutical companies as researchers in veterinary medicine (7).

Veterinarians not engaged in any type of veterinary profession

At the end of December 2006, 4 396 veterinarians (12.3% of the total) reported that they were not engaged in any type of veterinary profession (7). The number of veterinarians who are not engaged in any type of veterinary profession has increased by 30% in the past 10 years (Table II).

Conclusion (future trends)

The total number of veterinarians in Japan will gradually increase over the next 10 years and thereafter should stabilise. With the growing number of companion animals, there will be more demand for veterinary services in companion animal practice. There will be a shortage of veterinarians in companion animal practices unless their efficiency in providing veterinary services increases. The number of veterinarians engaged in food animal practice will decrease over the next 40 years if the supply of newly licensed veterinarians into this area remains at the current level. However, if the role of veterinarians in food animal practice changes from the treatment of individual animals to herd management, this will affect the demand for veterinarians in food animal practice in the future. The supply and demand for veterinarians in the public sector will depend on future government policies in animal health, public health, animal welfare and wildlife protection.

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