The New Zealand Veterinary Workforce in 2009-2010

Abstract

Of the 2833 annual practising certificate forms sent to veterinarians by the Veterinary Council of New Zealand (VCNZ) in early 2010 a total of 2251 were returned and of this group 2122 responded to a questionnaire of work activities carried out in 2009. Of the group that returned a completed APC form, the response rate to the questionnaire was 94%.

Among those veterinarians that applied for an APC in 2010 48% were female, a minor increase from the 47% recorded in 2009. Twenty-eight percent of the country's veterinarians received their primary degree overseas. Based on questionnaire responses relating to work carried out in 2009 40% of the country's veterinarians worked with large animals, 37% worked with companion animals and the remainder worked in laboratories, regulatory activities, teaching, and/or research.

Changes to the format of the 2010 APC form (Appendix 1) included a request for veterinarians to list their work place address instead of their contact address. Assuming that this change had little effect on veterinarian counts in the designated Rural Bonding Scheme areas it appears the scheme has had some effect on regional veterinarian counts. Changes in veterinarian counts for the Rural Bonding Scheme areas were as follows: Gisborne +3, Wairoa +4, Tararua -1, Buller, Grey and Westland +9, and Southland and Gore +7. Monitoring the impact of the scheme over the next few years will be an important piece of work in regard to the international issue of retaining young vets in rural areas.

The age distribution of the profession remains unchanged from 2009. Of note is the relatively high proportion of practising veterinarians 50-60 years of age and low proportion 25-40 years of age, compared with 2002. As the current cohort of veterinarians 50-65 year of age start to retire it is expected that there will be smaller numbers of domestic veterinarians available to replace them. While it is likely that this deficit will be overcome by admission of more international graduates into the country, of greater concern is that the number of veterinarians with experience working in New Zealand will reduce. In the medium to long term future this has important implications influencing the productivity of livestock, the ability to detect new and emerging disease conditions, and animal welfare.

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1 Introduction

This report presents a summary of the most relevant results from the 2009-2010 survey of veterinarians conducted by the Veterinary Council of New Zealand.

It follows the report of the New Zealand Veterinary Workforce in 2008-2009, which presented details on demographics and work activities of the profession and trends in retention.

2 Methods

The eligible population for the workforce survey questionnaire included veterinarians with general or provisional registration and a current APC at the date APC application forms for 2010-2011 were mailed out between January and May 2010.

The analyses in this report are presented in two categories. The first provides details of the status of the veterinary profession based on veterinarians who applied for an APC for 2010-2011. The second relates specifically to the questionnaire where veterinarians were asked to describe key aspects of their work activities for the twelve month period from 1 January to 31 December 2009 (inclusive). Work details were collected in the categories 'Employment', 'Role' and 'Work type' for up to four individual work areas.

A copy of the questionnaire is provided in Appendix 1. It should be noted that a small number of modifications were made to the 2010 questionnaire, based on analyses of survey responses from the 2009 questionnaire. These include: (1) a request to provide the physical address of work location (as opposed to contact address); and (2) inclusion of the following work type codes: MX (mixed practice), PA (production animals), RG (regulatory), and SR (small ruminants).

3 Results

3.1 Response

A total of 2833 APC forms were sent out between 6 January and 16 May 2010 by VCNZ to practising and non practising veterinarians. By June 2010 2251 APC forms had been returned of which 2122 included a completed workforce questionnaire. Of the group that received an APC form, the response rate was 75%, a decrease from the 85% response rate for the 2009 survey. Of the group that returned a completed APC form (presumably those that took out an APC for 2010-2011), the response rate to the questionnaire was 94%.

The analyses relating to the status of those applying for an APC or non practising status for 2010-2011 are based on the 2251 veterinarians that returned a completed APC form by June 2010. The analyses relating to work activities carried out in 2009 are based on the 2122 completed questionnaires.

3.2 Size of the veterinary workforce

Details of the numbers of registered practising and non-practising veterinarians in New Zealand for 2003 to 2010 (as at 30 June each year) are shown in Table 1. On 30 June 2010 there were 2392 practising veterinarians, an increase of 30% from 2002. This represents 55 practising veterinarians per 100,000 head of population, an increase in veterinarian availability from 48 per 100,000 in 2002. Note that the 30 June veterinarian counts are quoted here to document long term trends in the size of the veterinary workforce. All other analyses provided in this report relate to those applying for an APC or non-practising status for 2011 and/or those completing the questionnaire about activities carried out in 2009.

Table 1: Counts of registered, practising and non-practising veterinarians in the Veterinary Council of New Zealand database as at 30 June, 2003-2010. Population counts derived from Statistics New Zealand.

Outcome	Year							
	2003	2004	2005	2006	2007	2008	2009	2010
Practising	1940	2047	2122	2171	2275	2312	2360	2392
Non-practising	401	369	347	320	310	258	219	168
Total	2341	2416	2469	2491	2585	2570	2579	2560
Population [a]	4,009,200	4,061,400	4,098,900	4,140,300	4,228,000	4,268,600	4,315,800	4,367,700
Vets.head pop $^{-1}$	2067	1984	1932	1907	1858	1846	1829	1826
Vets.100,000^{-1}	48	50	52	52	54	54	55	55

[a] Data from Statistics New Zealand (URL: http://www.stats.govt.nz/browse_for_stats/population.aspx).

Table 2: Counts of full time equivalent veterinarians for 2009 by specialist status, gender and role code. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire and the Veterinary Council of New Zealand database.

Type	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
Non-specialist:								
Female	739	19	32	26	13	100	0	929
Male	819	57	28	82	21	183	0	1190
Total	1558	76	60	108	34	283	0	2119
Specialist:								
Female	8	4	2	0	0	2	0	16
Male	18	7	11	1	2	4	0	43
Total	26	11	13	1	2	6	0	59
All:								
Female	747	23	34	26	13	102	0	945
Male	837	64	39	83	23	187	0	1233
Total	1584	87	73	109	36	289	0	2178

Respondents were asked to record their role, the type of work performed and the total number of hours per week spent working in up to four individual work areas. Work hours were summed across all respondents for each role and work type category allowing the number of veterinarians in each category to be expressed in terms of full time equivalents (FTEs). Full time equivalents were calculated proportionately, so that 60 hours worked per week equals 1.5 FTE. Total numbers of veterinary FTEs vary across Tables 2 to 4 due to rounding.

Counts of veterinary FTEs by role code and stratified by specialist status and gender are shown in Table 2. Table 3 presents the same data, stratified by age. In the tables that follow the work category 'manager' should be interpreted in a broad sense, that is someone who oversees (i.e. manages) activities carried out by others in the workplace.

Table 3: Counts of full time equivalent veterinarians for 2009 by age, specialist status and role code. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire and the Veterinary Council of New Zealand database.

Type	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
Non-specialist:								
20-30	308	5	3	1	0	5	0	322
30-40	448	10	18	16	7	62	0	561
40-50	396	15	22	29	9	75	0	546
50-60	297	27	13	42	13	100	0	492
60+	107	20	4	21	4	41	0	197
Unknown	2	0	0	0	0	0	0	2
Total	1558	77	60	109	33	283	0	2120
Specialist:								
20-30	0	0	0	0	0	0	0	0
30-40	7	1	1	0	0	1	0	10
40-50	10	4	2	0	1	2	0	19
50-60	5	2	6	1	1	3	0	18
60+	4	3	4	0	0	1	0	12
Unknown	0	0	0	0	0	0	0	0
Total	26	10	13	1	2	7	0	59
All:								
20-30	308	5	3	1	0	5	0	322
30-40	455	11	19	16	7	63	0	571
40-50	406	19	24	29	10	77	0	565
50-60	302	29	19	43	14	103	0	510
60+	111	23	8	21	4	42	0	209
Unknown	2	0	0	0	0	0	0	2
Total	1584	87	73	110	35	290	0	2179

Figure 1 is a population pyramid comparing the ages of practising veterinarians in 2002 with 2010. This plot is derived from details of practising veterinarians in 2002 (n = 1800) and 2010 (n = 2251). Figure 1 shows that in 2010 the proportion of veterinarians 25-30 years of age was 10%, a decrease from 12% recorded in 2002. In 2010 the proportion of veterinarians 50-55 years of age was 12%, an increase from 10% recorded in 2002.

The age distribution of the profession remains unchanged from 2009. Of note is the high proportion of practising veterinarians 50-60 years of age and low proportion 25-40 years of age, compared with 2002. As the current cohort of veterinarians 50-65 year of age start to retire it is expected that there will be smaller numbers of New Zealand trained veterinarians available to replace them. While it is likely that this deficit will be overcome by admission of more international graduates into the country of greater concern is that the number of veterinarians with experience working in New Zealand will reduce. This raises a number of important issues:

- Care needs to be taken to ensure that the international graduates that join the New Zealand workforce have skill sets that match the country's animal health needs. Given the trend, common among many western countries, for the majority of graduates to work in the small animal sector it is conceivable that many of those seeking to work in New Zealand will be companion animal vets. Will these individuals fill New Zealand's acknowledged need for vets to work in the agricultural sector?
- The ability to detect new and emerging disease syndromes relies on a veterinary workforce (both clinical and non-clinical) with good local knowledge. Smaller numbers of practitioners with local knowledge represents a risk in that the profession's ability to detect unusual and subtle changes in a previously stable disease profile will be reduced.
- A lack of training in prevailing conditions of livestock raised under New Zealand farming conditions could result in potential negative impacts on the health and welfare of farmed animals.

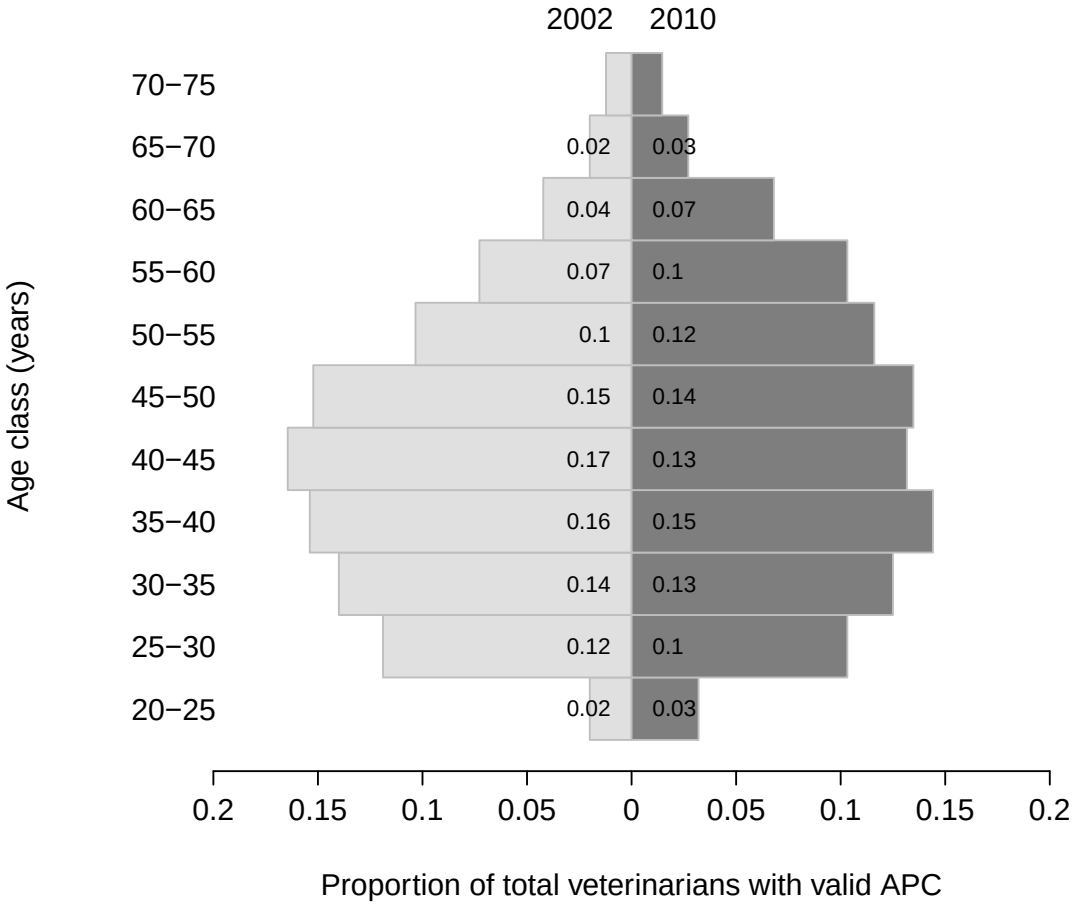


Figure 1: Population pyramid comparing the proportion of veterinarians in 5-year age groupings for 2002 (left) with 2010 (right).

Table 4 provides counts of veterinary FTEs, by work type classification and workplace region in 2009.

3.3 Hours worked per week

Counts of veterinarians (not veterinary FTEs) by categories of routine hours worked as a veterinarian in 2009 and stratified by primary role code are presented in Table 5. The median number of routine hours worked per week was 40 (interquartile range [IQR] 25-45), an increase from the median of 36 hours (IQR 20-45) reported for 2008.

For women the median routine hours worked per week was 35 (IQR 20-42) and for men it was 40 (IQR 30-46). The number of routine hours worked per week varied by role (Table 5 and Figure 2) with a greater variability in hours worked reported by clinicians, compared with those in other roles. The variability of hours worked per week was greater for males than it was for females, particularly for clinicians.

Compared with 2008, there has been a substantial decrease in the numbers of individuals working less than 40 hours per week in 2009 (Table 5). In 2008 766 of 2136 (36%) veterinarians reported that they worked 20-30 hours per week; in 2009 this had decreased to 583 of 2122 (27%).

Counts of veterinarians by categories of additional work hours are shown in Table 6. 'Additional work hours' in this context refers to work carried out as a veterinarian that did not relate to the four work areas listed in the body of the questionnaire. Table 7 shows the total number of hours worked per week, i.e. routine hours worked (Table 5) plus additional hours (Table 6).

Table 4: Counts of full time equivalent veterinarians for 2009 by region and work type classification. Key: BC beef cattle; CA companion animals (including avian, lifestyle block animals); DC dairy cattle; EQ equine; LA large animal (including production animals, deer); MISC miscellaneous (epidemiology, pharmaceutical, pathology, research, teaching); MONO monogastrics (pigs, poultry); MX mixed animal practice; OT other (including wildlife); PM practice management; REG regulatory (animal welfare, compliance, disease control, export certification, meat inspection); SR small ruminants (sheep, goats). Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Region	BC	CA	DC	EQ	LA	MISC	MONO	MX	OT	PM	REG	SR	Total
Auckland	2	226	11	38	6	19	0	23	12	9	22	1	368
Bay of Plenty	0	31	9	2	5	1	0	7	1	4	7	0	67
Canterbury	4	123	29	31	27	8	3	33	5	7	28	1	299
East Cape	2	12	1	1	3	0	0	5	0	1	6	1	31
Hawke's Bay	2	27	2	5	6	2	0	5	3	3	13	1	69
Manawatu	5	65	24	24	14	55	4	26	13	5	35	5	273
Marlborough	0	16	3	1	2	0	0	0	1	2	4	0	29
Nelson	0	19	1	1	1	1	0	11	0	2	4	1	40
Northland	1	31	14	2	2	1	0	18	0	3	6	0	78
Otago	0	27	10	0	9	5	0	19	1	2	16	1	90
Southland	1	20	20	4	11	1	0	19	1	2	20	3	100
Taranaki	1	12	14	2	2	1	0	11	1	0	3	0	49
Waikato	3	101	119	50	24	16	1	46	5	16	36	1	419
Wellington	1	85	24	4	4	19	0	19	21	6	54	1	237
West Coast	0	10	8	3	0	0	0	3	0	1	3	0	28
Total	21	804	291	167	116	129	9	245	65	62	255	16	2178

Table 5: Routine hours worked by veterinarians in 2009 (including hours doing work while on call), stratified by primary role code. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Hours	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
20-30	460	45	18	14	9	37	0	583 (27%)
30-40	313	21	18	14	6	36	0	408 (19%)
40-50	473	17	17	41	13	193	0	754 (36%)
50-60	189	11	10	16	2	15	0	243 (11%)
60+	110	2	3	6	3	4	0	128 (6%)
Missing	2	0	0	0	1	2	1	6 (0%)
Total	1547	96	66	91	34	287	1	2122 (100%)

Table 6: Additional work hours by veterinarians in 2009 (in other work types), stratified by primary role code. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Hours	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
20-30	47	3	0	0	0	5	0	55 (3%)
30-40	39	1	1	2	0	3	0	46 (2%)
40-50	34	3	2	3	0	5	0	47 (2%)
50-60	10	1	2	0	0	0	0	13 (1%)
60+	4	1	0	0	0	1	0	6 (0%)
Missing	1413	87	61	86	34	273	1	1955 (92%)
Total	1547	96	66	91	34	287	1	2122 (100%)

Table 7: Total work hours (i.e. routine work hours + additional hours) by veterinarians in 2009, stratified by primary role code. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Hours	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
20-30	308	34	6	4	6	22	0	380 (18%)
30-40	143	8	9	4	4	15	0	183 (9%)
40-50	569	25	24	49	18	213	0	898 (42%)
50-60	341	21	20	24	2	28	0	436 (21%)
60+	184	8	7	10	3	7	0	219 (10%)
Missing	2	0	0	0	1	2	1	6 (0%)
Total	1547	96	66	91	34	287	1	2122 (100%)

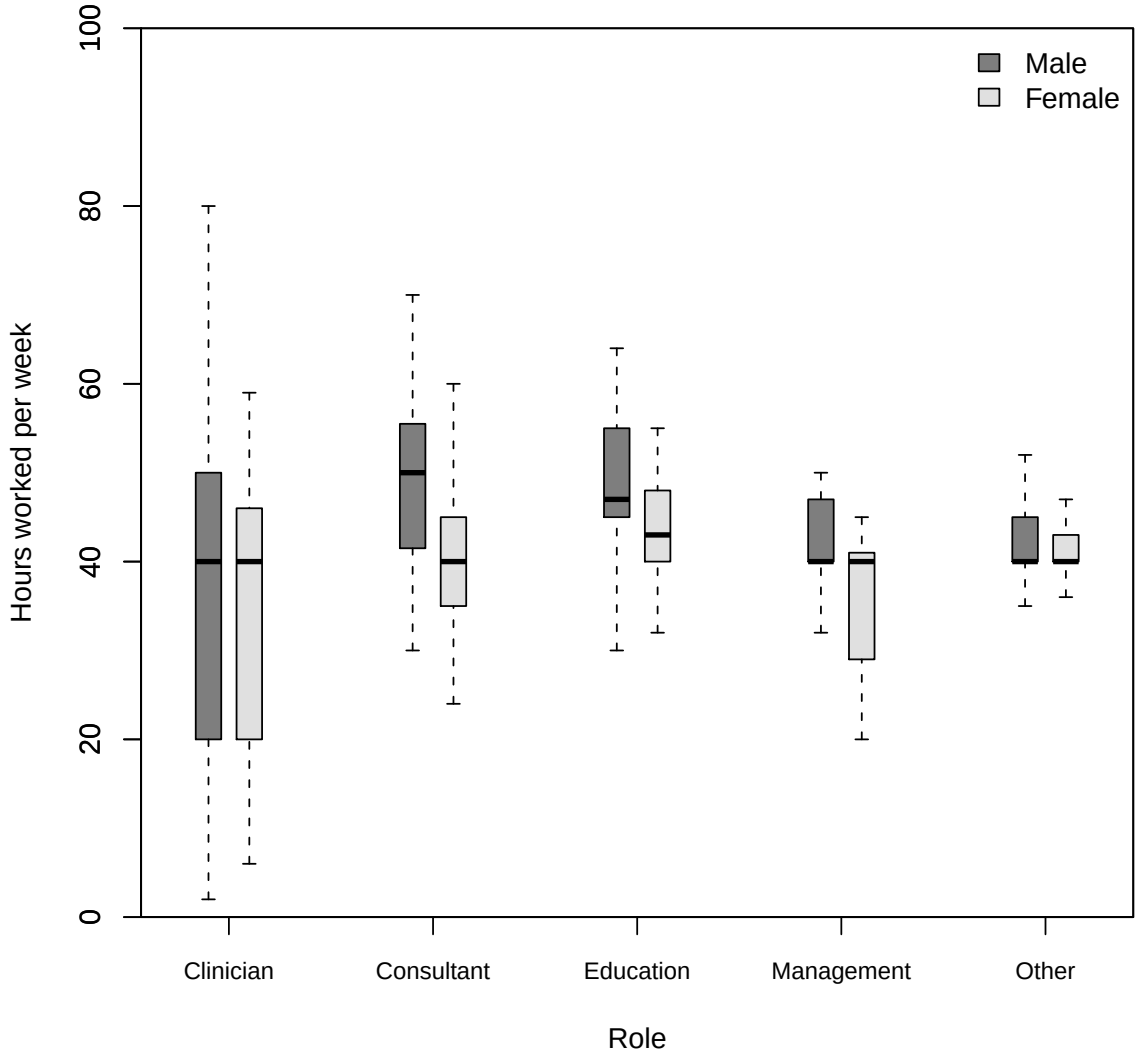


Figure 2: Box and whisker plot showing the number of hours worked per week by veterinarians in their primary work role in 2009 by gender. In the above plot the ends of each box are the upper and lower quartiles, so the box spans the interquartile range. The median is marked by a line inside each box. The whiskers are the two lines above and below each box that extend to the highest and lowest observations. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Table 8: Counts of veterinarians in categories of hours per week spent on call but not actually working by role codes worked in 2009. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Hours	Role							Total
	Clinician	Consultant	Education	Manager	Other	Technical	Not stated	
5	46	0	2	1	0	3	0	52 (2%)
10	73	3	1	5	0	5	0	87 (4%)
20	253	7	4	5	1	5	0	275 (13%)
30	259	3	1	1	1	1	0	266 (13%)
40	253	9	2	7	1	5	0	277 (13%)
None	663	74	56	72	31	268	1	1165 (55%)
Total	1547	96	66	91	34	287	1	2122 (100%)

Total work hours for 2009 (Table 7) varied little from those reported in 2008. This implies that those working part time (i.e. less than 40 hours per week in routine veterinary work) were spending the remainder of their time in other work activities.

Table 8 provides counts of veterinarians by categories of the number of hours per week spent on call but not actually working. Nine hundred and fifty seven of the 2122 veterinarians (45%) that responded to the questionnaire spent time during the week on-call during 2009. The median time spent on-call in any week was 20 (IQR 12-30) hours. Hours per week spent on call were similar for males (median 22 hours; IQR 14-30) and females (median 20 hours; IQR 12-30).

A greater proportion of the workforce reported up 40 hours per week on call in 2009 (277 of 2122 veterinarians, 13%) compared with 2008 (47 of 2136, 2%). It is not clear if this change has been due to a change in the way the question about on-call work activity was interpreted (the text of the question was the same for both questionnaires) or due to other factors. One explanation might be that in 2009, due to the recession, practices were less likely to employ part time veterinarians for on-call work (reducing the numbers working 20-30 hours, Table 5) preferring instead to cover this task using full time staff.

Table 9: Counts of veterinarians working less than 40 hours per week in their primary role in 2009 and their stated reasons for doing so. Source: the 2122 veterinarians who completed the 2010 workforce questionnaire.

Reason	Number (%)
Contract requirements	17 (2%)
Casual work	27 (3%)
Difficulty obtaining work	7 (1%)
Family care	77 (8%)
Health	6 (1%)
Work overseas	0 (0%)
Other	16 (2%)
Parental leave	8 (1%)
Personal preference	99 (10%)
Working part time	263 (27%)
Retired or semi-retired	38 (4%)
Study	4 (0%)
Not stated	429 (43%)
Total	991 (100%)

Table 9 provides a breakdown of the reasons cited for working less than 40 hours per week in their primary role in 2009. Of note here is the relatively high proportion that have not cited a reason (429 of 991, 43%). The most common reason among those providing a reason was (presumably) an elective decision to work part time (263 of 991, 27%).

3.4 Geographical distribution

Counts of veterinarians by region were based on the town or suburb of the work place address provided by each veterinarian on their workforce questionnaire. Note that this differs from the 2009 questionnaire in which respondents were asked to provide their contact address.

Regional population counts were obtained from the 2006 Census of Population and Dwellings (Anonymous, 2006). Regional livestock population counts were derived from the January 2008 version of AgriBase (Sanson & Pearson, 1997). Livestock population counts were expressed in terms of livestock units (LSUs). One LSU was defined as 250 kg liveweight, with cattle (beef and dairy) contributing 2 LSUs, sheep 0.2 LSUs, and pigs 0.5 LSUs.

Numbers of veterinarians, population counts, livestock unit counts and numbers of veterinarians per 100,000 head of human population and number of veterinarians per 100,000 LSUs in each of the 16 regions of New Zealand are listed in Table 10. The same data at the 2006 territorial land authority (TLA) level is provided in Appendix 2.[1]

Throughout New Zealand the number of veterinarians per 100,000 head of population was 56. The number of veterinarians ranged from 0 per 100,000 in the Kawera and Mackenzie Districts to 239 per 100,000 in Matamata-Piako (Appendix 2).

A colour shaded map showing the numbers of veterinarians per 100,000 head of population by TLA is shown in Figure 3. Figure 4 shows the number of veterinarians per 100,000 LSUs. Figures 5 and 6 show for the North and South Islands (respectively) the change in veterinarian counts per TLA in 2010 relative to 2009. A marked decrease in veterinarian numbers was recorded for the Wellington TLA (Figure 5). This is most likely to be due to the 2009 questionnaire asking for work place address rather than contact address. This change is likely to have increased veterinarian counts in regional locations and, a result, the change in TLA veterinarian counts for 2010 are not a true reflection of regional changes that occurred in 2010. Figures 5 and 6 should be interpreted accordingly.

Assuming that this change had little effect on veterinarian counts in the designated Rural Bonding Scheme areas it appears the scheme has had some effect on regional veterinarian counts. Changes in veterinarian counts for the Rural Bonding Scheme areas were as follows: Gisborne +3, Wairoa +4, Tararua -1, Buller, Grey and Westland +9, and Southland and Gore +7. Collaboration with MAF will be required to determine if the increased numbers in these areas are directly attributable to the bonding scheme. Monitoring the impact of the scheme over the next few years will be an important piece of work in regard to the international issue of retaining young vets in rural areas.

[1] http://www.stats.govt.nz/browse_for_stats/people_and_communities/geographic-areas/download-digital-boundaries.aspx

Table 10: Counts of veterinarians who had applied for an APC for 2010-2011 by June 2010, regional human and livestock unit population counts and the estimated number of veterinarians per 100,000 head of population and the estimated number of veterinarians per 100,000 livestock units. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010, the 2006 New Zealand Census of Population and Dwellings, and AgriBase (2010).

Region	Vets[a]	Population [b]	LSU [c]	Vets/pop [d]	Vets/LSU [e]
Auckland	385 (+34)	1,319,349	968,636	29	40
Bay of Plenty	71 (-27)	260,808	1,192,851	27	6
Canterbury	320 (+65)	520,278	3,607,048	62	9
East Coast	30 (+10)	44,463	941,787	67	3
Hawkes Bay	73 (-9)	147,639	1,697,391	49	4
Manawatu	266 (+42)	222,213	3,462,243	120	8
Marlborough	29 (+6)	42,549	320,048	68	9
Northland	88 (+5)	148,443	1,870,275	59	5
Otago	95 (+12)	195,348	2,325,747	49	4
Southland	100 (+22)	90,876	2,315,347	110	4
Taranaki	47 (-29)	104,280	1,659,046	45	3
Tasman-Nelson	47 (+3)	87,516	314,715	54	15
Waikato	411 (+75)	362,895	4,775,808	113	9
Wellington	262 (-116)	448,941	919,909	58	28
West Coast	27 (+9)	31,326	412,450	86	7
Unknown	0 (-185)	-	-	-	-
Total	2251 (-83)	4,026,924	26,783,301	56	8

[a] Numbers in parentheses indicate the change in veterinarian counts from 2009.
[b] Based on 2006 New Zealand Census of Population and Dwellings.
[c] Livestock units $\times$ 100,000.
[d] Veterinarians per 100,000 head of population.
[e] Veterinarians per 100,000 livestock units.

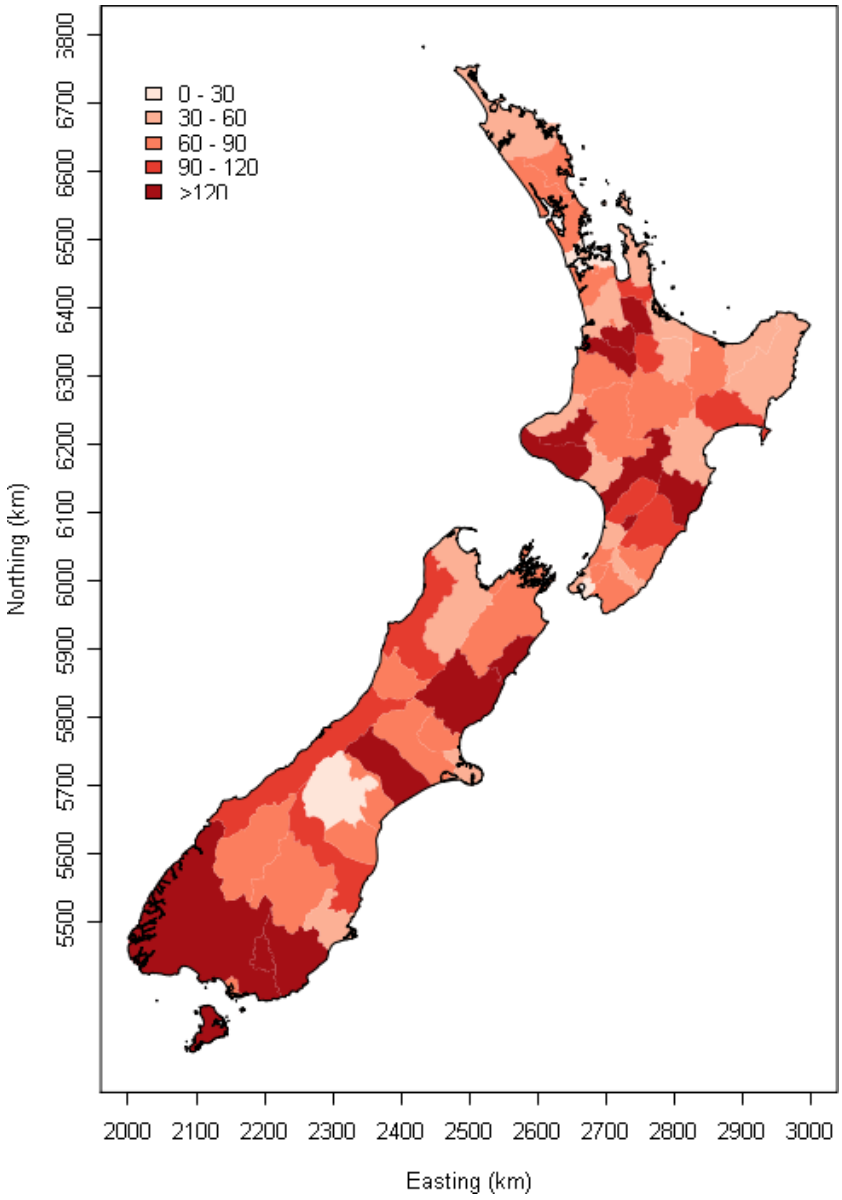


Figure 3: Map of New Zealand showing the number of veterinarians per 100,000 head of population in 2010 by territorial land authority. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010.

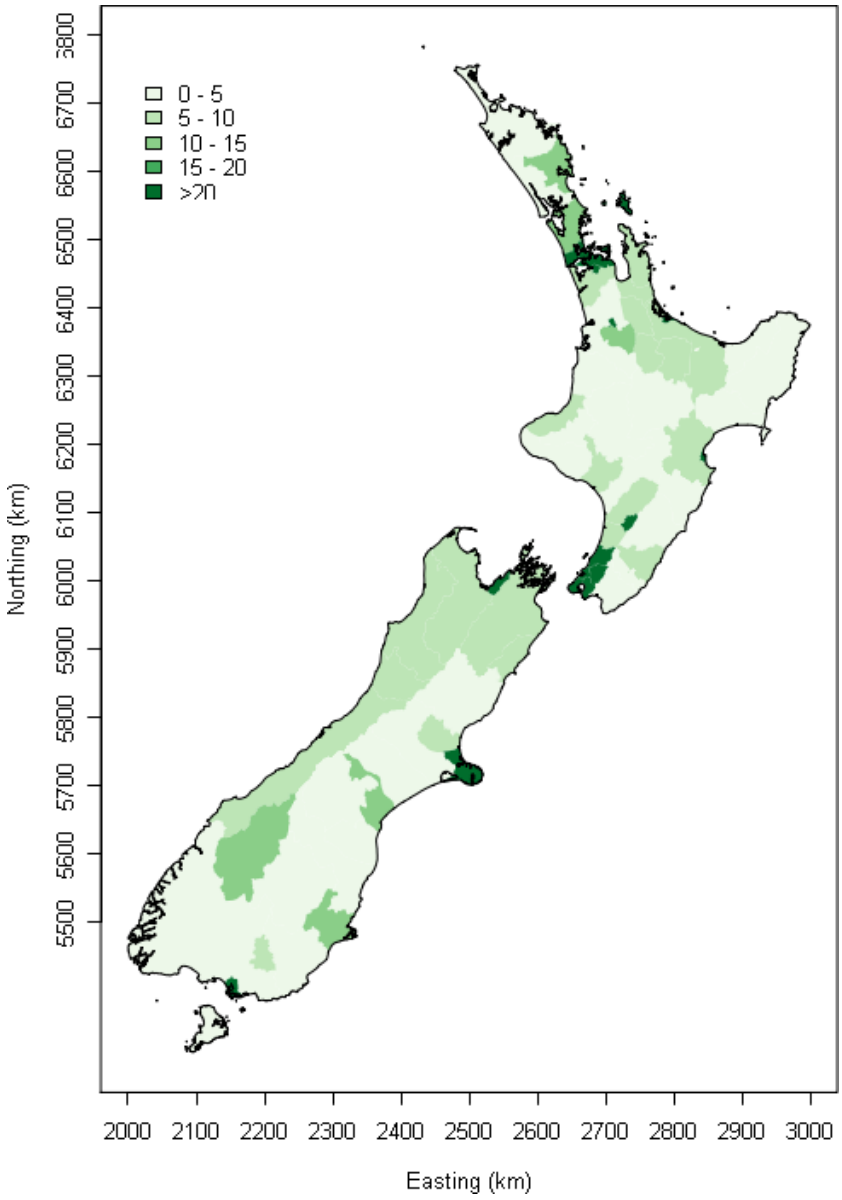


Figure 4: Map of New Zealand showing the number of veterinarians per 100,000 livestock units in 2010 by territorial land authority. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010.

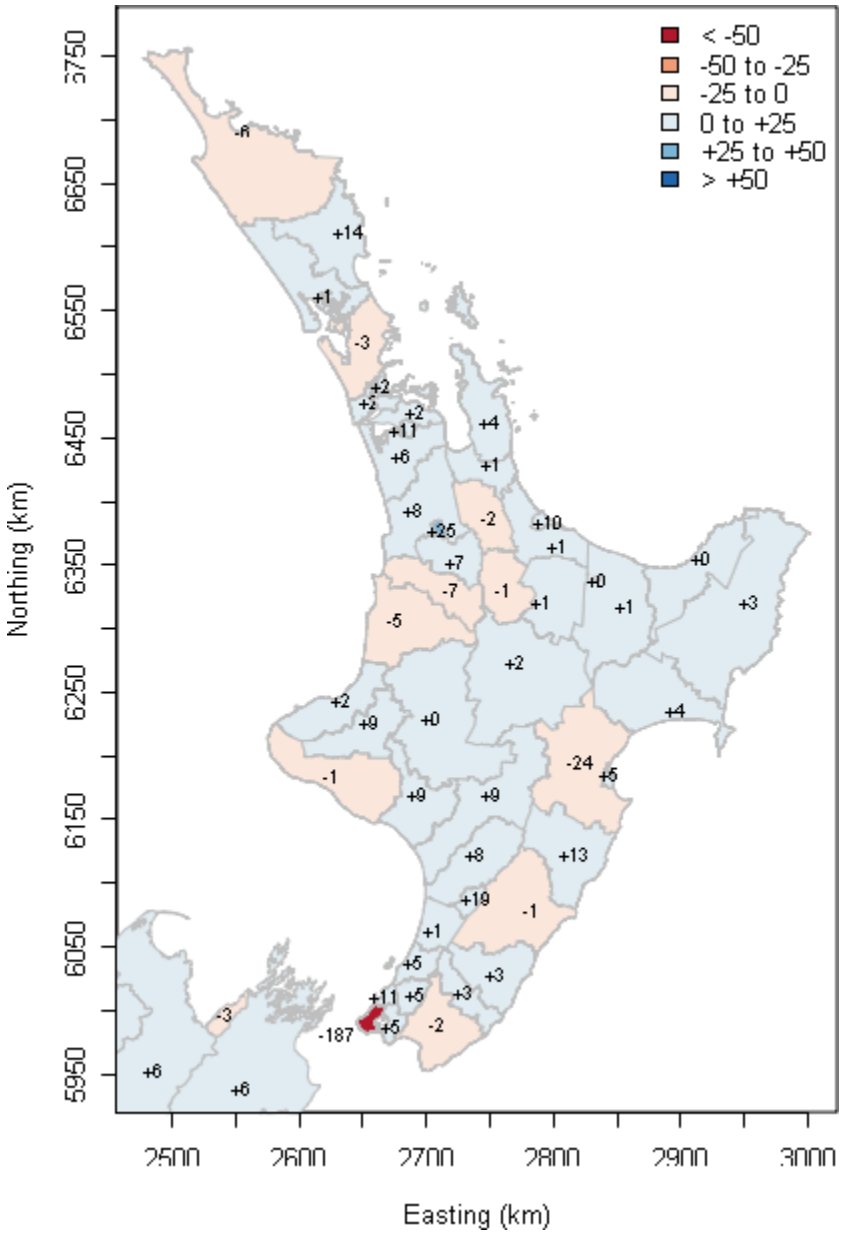


Figure 5: Map of the North Island of New Zealand showing the change in veterinarian counts per TLA in 2010 relative to 2009. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010.

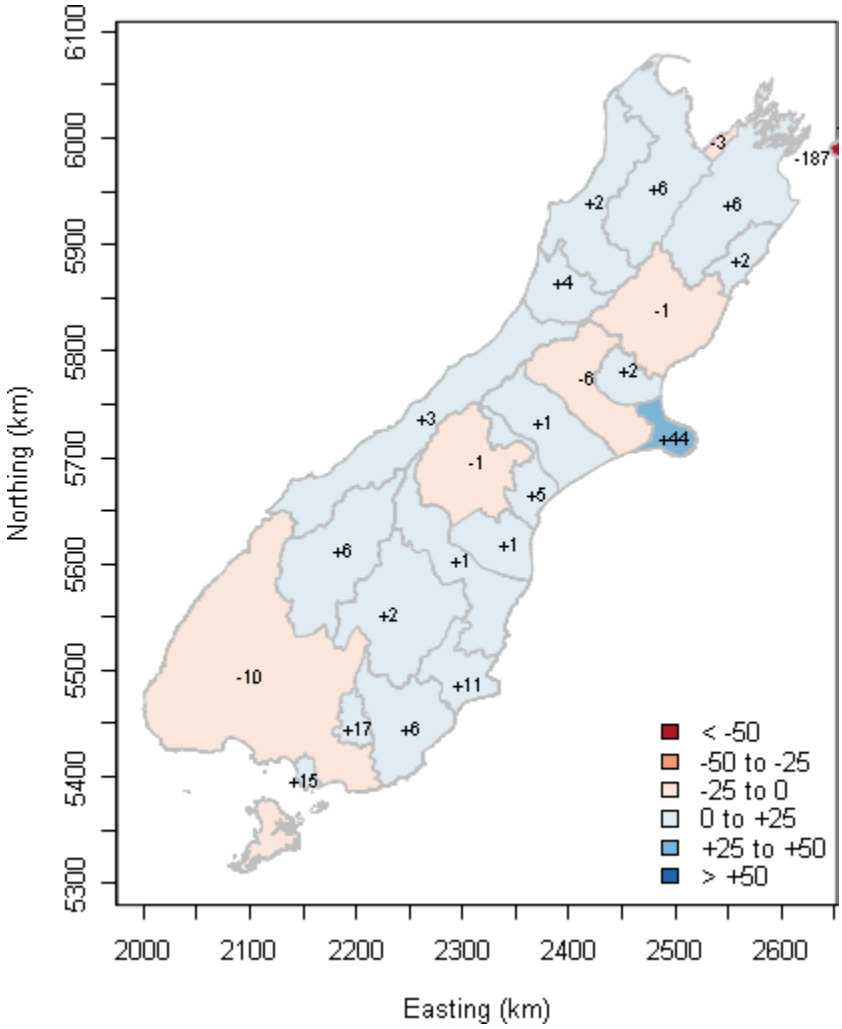


Figure 6: Map of the South Island of New Zealand showing the change in veterinarian counts per TLA in 2010 relative to 2009. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010.

Table 11: Counts of veterinarians in 2010, by country where their first veterinary qualification was obtained. Source: the 2251 veterinarians who applied for an APC from the VCNZ by June 2010.

Country where first veterinary qualification obtained	Number (%)
Australia	144 (6%)
European Union (excluding UK)	100 (4%)
New Zealand	1610 (72%)
North America	63 (3%)
Other	95 (4%)
Other European	25 (1%)
United Kingdom	210 (9%)
Not stated	4 (0%)
Total	2251 (100%)

3.5 International graduates

In 2010 the proportion of international graduates (i.e. veterinarians who obtained their primary veterinary qualification in a country that was not New Zealand) was 28% (Table 11). Graduates from the United Kingdom comprised the largest group of international graduates (210 of 2251, 9%) followed by Australia (144 of 2251, 6%).

Table 12: Counts of veterinarians registered and provisionally registered with the VCNZ for the first time in 2009 by country where their first veterinary qualification was obtained.

Country where first veterinary qualification obtained	Number (%)
Australia	18 (8%)
European Union (excluding UK)	21 (11%)
New Zealand	110 (52%)
North America	11 (5%)
Other	5 (2%)
Other European	1 (0%)
United Kingdom	42 (20%)
Not stated	2 (1%)
Total	212 (100%)

Figure 8 shows the number of international graduates taking out an APC for the first time by year and country where their first veterinary qualification was obtained.

Although UK-trained veterinarians were the largest non-New Zealand group of veterinarians registering in New Zealand for the first time in 2009 (Table 12), numbers entering the country to work have shown a progressive decline since 2005 (Figure 7).

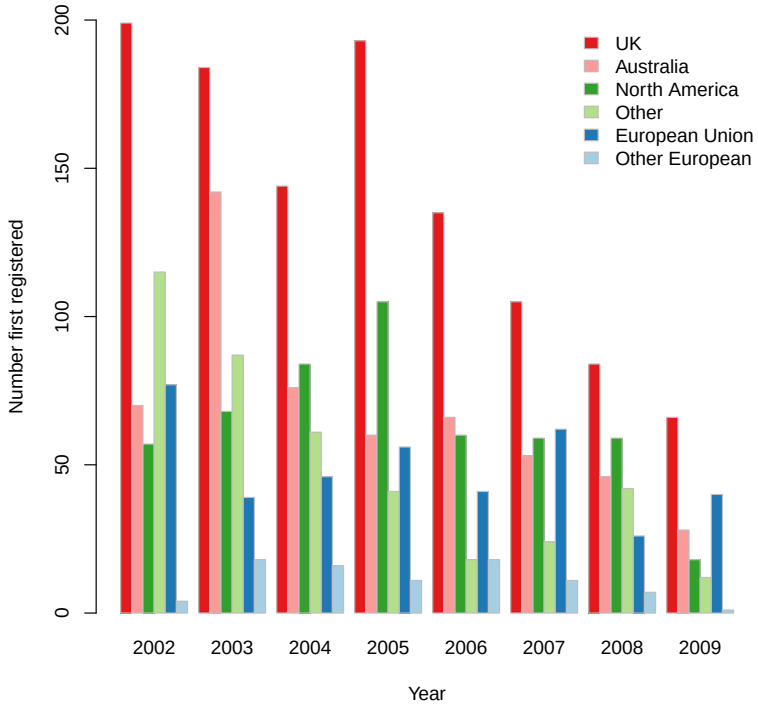


Figure 7: Bar chart showing counts of international graduates taking out an APC for the first time by year and country where their first veterinary qualification was obtained.

Table 13: Counts (and percentages) of veterinarians taking out an APC with the VCNZ at one, two, three, four and five years following year of first registration, 2002-2008.

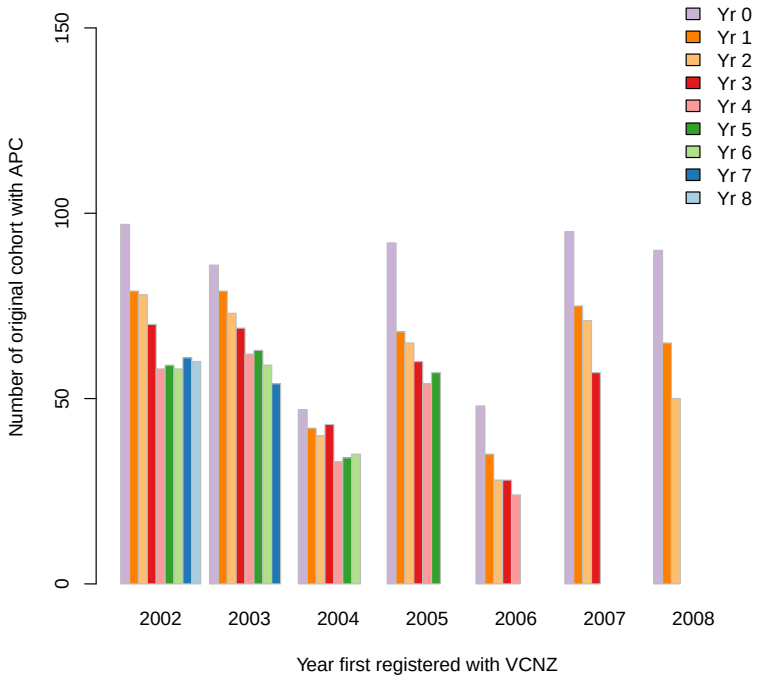
Final year class	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
New Zealand graduates:									
2002	97 (100%)	79 (81%)	78 (80%)	70 (72%)	58 (60%)	59 (61%)	58 (60%)	61 (63%)	60 (62%)
2003	86 (100%)	79 (92%)	73 (85%)	69 (80%)	62 (72%)	63 (73%)	59 (69%)	54 (63%)	-
2004	47 (100%)	42 (89%)	40 (85%)	43 (91%)	33 (70%)	34 (72%)	35 (74%)	-	-
2005	92 (100%)	68 (74%)	65 (71%)	60 (65%)	54 (59%)	57 (62%)	-	-	-
2006	48 (100%)	35 (73%)	28 (58%)	28 (58%)	-	-	-	-	-
2007	95 (100%)	75 (79%)	71 (75%)	-	-	-	-	-	-
2008	90 (100%)	65 (72%)	-	-	-	-	-	-	-
International graduates:									
2002	126 (100%)	72 (57%)	57 (45%)	57 (45%)	51 (40%)	46 (37%)	39 (31%)	37 (29%)	38 (30%)
2003	136 (100%)	80 (59%)	67 (49%)	61 (45%)	50 (37%)	47 (35%)	46 (34%)	43 (32%)	-
2004	104 (100%)	71 (68%)	60 (58%)	55 (53%)	52 (50%)	42 (40%)	42 (40%)	-	-
2005	137 (100%)	87 (64%)	70 (51%)	59 (43%)	59 (43%)	50 (36%)	-	-	-
2006	127 (100%)	74 (58%)	49 (39%)	46 (36%)	-	-	-	-	-
2007	130 (100%)	72 (55%)	52 (40%)	-	-	-	-	-	-
2008	121 (100%)	75 (62%)	-	-	-	-	-	-	-

3.6 Retention

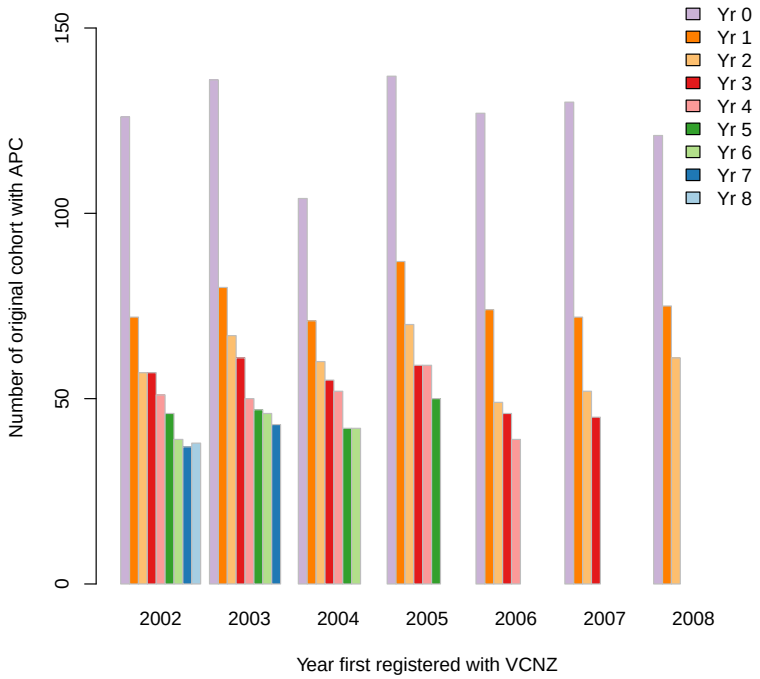
Table 13 provides details of retention rates for New Zealand and international graduates. In Table 13 the column titled 'Year 0' lists the number of veterinarians registering with VCNZ for the first time in the specified year. The columns titled Year 1, Year 2, ..., Year 8 show the number of the original cohort that took out a practising certificate in successive years following the year of first registration. Figures 8a and 8b present the same information as bar charts.

For both groups there was a marked decrease in numbers taking out an APC in Year 1, relative to Year 0. This decrease was greater for international graduates than New Zealand graduates, presumably due to those returning to their country of origin following a working holiday in New Zealand.

For New Zealand graduates numbers continue to decline up to Year 4, after which time they appear to become more stable (see, for example, the 2002, 2004 and 2005 cohorts, Figure 8a). As noted in the 2008-2009 report, ongoing monitoring is required to determine if these patterns are consistent over time.



(a) New Zealand graduates



(b) International graduates

Figure 8: Bar charts showing counts of: (a) New Zealand and (b) international graduates taking out an APC with the VCNZ at one to eight years following year of first registration with the VCNZ, 2002-2008.

Table 14: Counts of active veterinarians in 2009 who did not apply for an APC in 2010, by reason.

Reason	Number (%)
Contract requirements	1 (1%)
Casual work	0 (0%)
Difficulty obtaining work	5 (5%)
Family care	4 (4%)
Health	5 (5%)
Work overseas	10 (9%)
Other	14 (13%)
Parental leave	32 (29%)
Personal preference	10 (9%)
Working part time [α]	6 (6%)
Retired or semi-retired	17 (16%)
Study	5 (5%)
Total	109 (100%)

[α] Presumably a decision to work part time not as a veterinarian.

Table 14 provides a breakdown of the reasons 109 veterinarians did not apply for an APC in 2010. The most frequently cited reason for not applying for an APC was parental leave (32 of 109, 29%). Compared with the same data for 2009, there was a substantial decrease in the proportion citing work overseas as a reason for not applying for an APC (22% in 2009 compared with 9% in 2010). Establishing the proportion of veterinarians that take parental leave that subsequently fail to return to the veterinary workforce is an area that will be monitored closely as the appropriate data becomes available.

4 Acknowledgements

The Veterinary Council of New Zealand thanks Mark Stevenson, Massey University, who undertook the analysis and developed this report and all veterinarians who took time to complete the workforce survey.

5 Appendix 1

9 2009 WORKFORCE SURVEY

The following information will be used for statistical and research purposes and will not be published in a form that could identify any individual. Refer to 3(i) of the Guidance Notes for advice on completing the survey

9.1 Were you engaged in veterinary practice (which includes non-clinical work) in New Zealand during the year ended 31 December 2009?
Yes – Go to Question 9.2
No – There are no more questions

9.2 Workplace Location
Please enter the physical address where you mostly practised from in 2009. Please complete all fields

Practice Name, Branch or Organisation _____

Physical Address _____

Post Code:

9.3 Complete the following columns based on a typical working week. Use ONLY the codes provided below.
Use only ONE worktype code per column

	Most Hours Worked			Least hours worked	
Employment code*					
Role Code*					
Work type code*					Additional hours worked per week in any other work types
Hours worked per week including hours doing work while on call	+	+	+	+	

* If other please specify

Total hours worked for the week =

Hours on-call but not worked per week

9.4 If the total number of hours worked in a typical week is less than 40, print a reason code here:

9.5 If you worked less than 46 weeks of the last 52, print a reason code here:

9.6 If you are thinking about **not** working as a veterinarian during the year commencing 1 April 2010 print a reason code here:

9.7 If you are applying for a practising certificate after a period of **not** working as a veterinarian in New Zealand print a reason for your period of absence here :

Employment codes

CP	Club practice
IN	Industry
LA	Laboratory, diagnostic
MF	MAF or NZFSA
OG	Other government
OT	Other, please specify
PP	Group private practice
SE	Self employed (e.g. locum)
SO	SOE or Crown Institute
SP	Solo private practice
UN	University or tertiary

Role Codes

CL	Clinician
CO	Consultant
ED	Education
MN	Management (use only if you were employed in a management role)
OT	Other, (please specify)
TE	Technical (eg MAF/ industry/lab)

Work Type Codes

AV	Avian
AW	Animal welfare
BC	Beef cattle
CA	Companion animals
CO	Compliance
DC	Dairy cattle
DE	Deer
DI	Disease control

Work Type Codes continued

EC	Export certification
EP	Epidemiology
EQ	Equine
LI	Lifestyle block animals
MI	Meat inspection
MX	Mixed practice
OT	Other, please specify
PA	Production animals
PH	Pharmaceutical
PI	Pigs
PM	Practice management
PO	Poultry
PT	Pathology
RE	Research
RG	Regulatory
SR	Small ruminants
TE	Teaching
WI	Wildlife

Reason Codes

CO	Contract requirements
CW	Casual work (eg short term contracts)
DI	Difficulty obtaining work
FA	Family care
HE	Health
OE	Work overseas
OT	other, please specify
PL	Parental leave
PP	Personal preference
PT	Working part-time
RE	Retired or semi retired
ST	Study

Thank you for participating in the survey.

Please send the completed form and payment back intact in the reusable envelope by 26 February 2010 to be eligible for the rebated APC fee

6 Appendix 2

Table 15: Counts of veterinarians with an APC from the VCNZ by June 2010, territorial land authority human and livestock unit population counts and the estimated number of veterinarians per 100,000 head of population and the estimated number of veterinarians per 100,000 livestock units.

Region	Vets [a]	Population [b]	LSU [c]	Vets/pop[d]	Vets/LSU [e]
Far North District	28 (-6)	55,845	734,811	50	4
Whangarei District	51 (+14)	74,463	492,585	68	10
Kaipara District	13 (+1)	18,135	642,879	72	2
Rodney District	54 (-3)	89,559	391,831	60	14
North Shore City	45 (+2)	205,605	1,732	22	2598
Waitakere City	31 (+2)	186,444	6,070	17	511
Auckland City	130 (+12)	404,658	17,889	32	727
Manukau City	50 (+2)	328,968	54,902	15	91
Papakura District	31 (+11)	45,183	17,054	69	182
Franklin District	42 (+6)	58,932	479,158	71	9
Thames-Coromandel District	15 (+4)	25,938	151,975	58	10
Hauraki District	20 (+1)	17,193	394,079	116	5
Waikato District	22 (+8)	43,959	910,560	50	2
Matamata-Piako District	73 (-2)	30,483	843,947	239	9
Hamilton City	100 (+25)	129,249	7,973	77	1254
Waipa District	76 (+7)	42,501	598,000	179	13
Otorohanga District	13 (-7)	9,075	554,547	143	2
South Waikato District	22 (-1)	22,641	354,231	97	6
Waitomo District	7 (-5)	9,438	529,412	74	1
Taupo District	20 (+2)	32,418	431,084	62	5
Western BOP District	18 (+1)	42,075	304,195	43	6
Tauranga City	32 (+10)	103,632	7,718	31	415
Rotorua District	34 (+1)	65,901	414,369	52	8
Whakatane District	23 (+1)	33,300	355,294	69	6
Kawerau District	0 (0)	6,924	2,400	0	0
Opotiki District	4 (0)	8,976	108,875	45	4
Gisborne District	23 (+3)	44,463	941,787	52	2
Wairoa District	8 (+4)	8,481	367,629	94	2
Hastings District	37 (-24)	70,842	606,440	52	6
Napier City	17 (+5)	55,359	8,093	31	210
Central Hawke's Bay District	18 (+13)	12,957	715,229	139	3
New Plymouth District	36 (+2)	68,901	423,049	52	9
Stratford District	11 (+9)	8,892	301,075	124	4
South Taranaki District	39 (-1)	26,487	934,922	147	4
Ruapehu District	11 (0)	13,569	639,568	81	2
Wanganui District	24 (+9)	42,636	290,992	56	8
Rangitikei District	26 (+9)	14,712	702,400	177	4

Table 14 (continued)

Region	Vets [a]	Population [b]	LSU [c]	Vets/pop[d]	Vets/LSU [e]
Manawatu District	32 (+8)	28,254	626,655	113	5
Palmerston North City	143 (+19)	75,543	48,569	189	294
Tararua District	16 (-1)	17,634	941,603	91	2
Horowhenua District	17 (+1)	29,865	212,456	57	8
Kapiti Coast District	28 (+5)	46,200	36,126	61	78
Porirua City	21 (+11)	48,546	10,796	43	195
Upper Hutt City	24 + (5)	38,415	12,162	62	197
Lower Hutt City	25 (+5)	97,701	3,082	26	811
Wellington City	94 (-187)	179,466	14,902	52	631
Masterton District	19 (+3)	22,626	345,515	84	5
Carterton District	4 (+3)	7,098	187,854	56	2
South Wairarapa District	6 (-2)	8,889	309,472	67	2
Tasman District	17 (+6)	44,625	306,694	38	6
Nelson City	30 (-3)	42,891	8,021	70	374
Marlborough District	29 (+6)	42,549	320,048	68	9
Kaikoura District	5 (+2)	3,621	87,282	138	6
Buller District	9 (+2)	9,702	140,530	93	6
Grey District	10 (+4)	13,221	123,701	76	8
Westland District	8 (+3)	8,403	148,219	95	5
Hurunui District	14 (-1)	10,476	661,917	134	2
Waimakariri District	34 (+2)	42,834	505,169	79	7
Christchurch City	148 (+44)	348,435	29,913	42	495
Selwyn District	25 (-6)	33,666	564,382	74	4
Ashburton District	35 (+1)	27,372	789,431	128	4
Timaru District	35 (+5)	42,867	340,294	82	10
Mackenzie District	0 (-1)	3,801	233,373	0	0
Waimate District	6 (+1)	7,206	395,287	83	2
Waitaki District	20 (+1)	20,223	482,299	99	4
Central Otago District	10 (+2)	16,647	466,637	60	2
Queenstown-Lakes District	14 (+6)	22,956	126,990	61	11
Dunedin City	42 (+11)	118,683	293,154	35	14
Clutha District	23 (+6)	16,839	956,667	137	2
Southland District	39 (-10)	28,440	1,997,715	137	2
Gore District	20 (+17)	12,108	276,097	165	7
Invercargill City	41 (+15)	50,328	41,535	81	99
Unknown	4 (-181)	-	-		
Total	2251 (-83)	4,026,924	26,783,301	56	8

[a] Numbers in parentheses indicate the change in veterinarian counts from 2009.
[b] Based on 2006 New Zealand Census of Population and Dwellings.
[c] Livestock units $\times$ 100,000.
[d] Veterinarians per 100,000 head of population.
[e] Veterinarians per 100,000 livestock units.

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