

Workforce report
2018-19

VETERINARY COUNCIL
OF NEW ZEALAND
Te Kaunihera Rata Kararehe o Aotearoa



Contents

Facts at a glance.....	3
Age distribution	3
Work role.....	4
Work type.....	5
Workload.....	5
Ratio of veterinarians to veterinarian full time equivalents	5
Hours worked by age and gender	6
Hours on call by work role.....	8
Geographic distribution	9
Gender.....	14
Work role.....	14
Work type.....	16
International veterinary graduates.....	16
Work role.....	17
Work type.....	17
Ethnicity	20
Absence from full time work.....	20
Retention	20
Survey method	23
Appendix 1.....	25
Appendix 2.....	27
References	28

Facts at a glance

This report summarises results of the Veterinary Council of New Zealand (VCNZ) 2018-2019 Workforce Survey. The information for this survey was collected from a questionnaire voluntarily completed by veterinarians at the time they applied for their 2019-2020 Annual Practising Certificate (APC). Key veterinary workforce statistics for the period 2010 to 2019 are shown in Table 1.

Table 1: Key New Zealand veterinary workforce statistics, 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Practising vets ¹	2392	2425	2521	2608	2710	2802	2813	2887	2966	3054
Rep practising vet FTEs ²	2054	2176	2139	2058	2124	2029	2325	2458	2328	
Adj practising vet FTEs ³	2138	2272	2207	2214	2385	2166	2549	2679	2549	
Ratio of vets to vet FTEs ⁴	1.2	1.1	1.2	1.3	1.3	1.4	1.2	1.2	1.3	
Ratio of vets to adj vet FTEs ⁵	1.1	1.1	1.1	1.2	1.1	1.3	1.1	1.1	1.2	
Vets per 100,000 pop	55	55	56	58	60	61	61	62	63	64
Rep vet FTEs per 100,000 pop	47	49	48	46	47	44	50	53	49	
Adj vet FTEs per 100,000 pop	49	51	49	49	52	47	55	57	54	
Percent rep IVG FTEs ⁶	28	27	28	29	29	30	30	31	30	
Percent rep female FTEs ⁷	43	45	47	48	50	52	52	54	56	
Percent rep specialist FTEs	2.9	2.9	2.9	2.9	2.7	2.7	3.2	3.5	3.0	
Median age (years)	43	43	43	43	42	42	42	43	42	42
Average routine work hours ⁸	43	43	42	42	42	41	41	42	46	

¹ Numbers of veterinarians with an APC that were practising on 30 June of respective year.

² Number of veterinarian full time equivalents based on responses from workforce survey.

³ Number of veterinarian full time equivalents, adjusted for non-response to the workforce survey.

⁴ Number of veterinarians divided by the number of reported veterinarian FTEs.

⁵ Number of veterinarians divided by the number of adjusted veterinarian FTEs.

⁶ Number of reported international veterinary graduate FTEs divided by the total number of practising veterinarian FTEs.

⁷ Number of reported female FTEs divided by the total number of practising veterinarian FTEs.

⁸ Average routine work hours per week, includes activities carried out as a veterinarian during business hours as well as veterinary work done while on call.

The response rate for the 2018-2019 Workforce Survey was 87% (2651 completed surveys accompanied the 3049 APC forms that were returned to VCNZ by 30 June 2019), consistent with the 87% response rate reported for the 2017-2018 Workforce Survey.

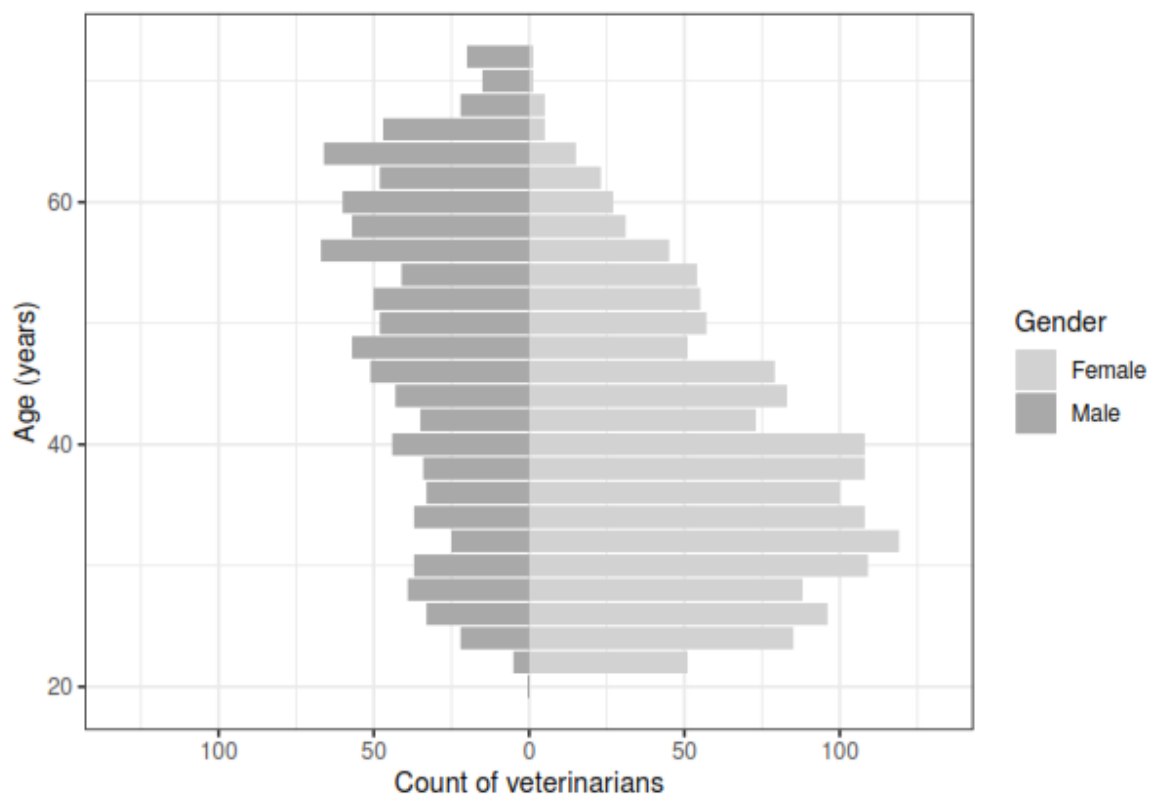
As of 30 June 2019 the number of practising veterinarians changed by +3% compared with the same time in 2018. This compares with changes (relative to the previous year) of +2.7% for 2018 and +2.6% for 2017.

Age distribution

Figure 1 is a population pyramid comparing the age distribution of men and women practising as veterinarians in New Zealand in 2019.

In 2019 the median age of male and female practising veterinarians was 51 and 38 years, respectively. The percentage of female veterinarians under 40 years of age was 55%. The percentage of male veterinarians under 40 years of age was 25%.

Figure 1: Population pyramid comparing counts of male and female veterinarians in 2-year age groupings in 2019



Work role

Table 2 shows counts of full time equivalent (FTE) veterinarians by work role for 2009-2018. The VCNZ Workforce Survey asks veterinarians about their work activities for the previous year so a workforce survey carried out in 2019 provides details of work activities that took place in 2018.

Since 2009 the number of FTEs in clinical roles has steadily increased. Education FTEs fluctuate from year to year (ranging from 130 in 2012 to 55 in 2018). As commented in previous workforce survey reports, it is likely that these fluctuations are due to inconsistency in the way individual veterinarians complete the workforce survey from one year to the next.

Work type

Counts of FTE veterinarians by work type and year are shown in Table 3. In 2018 there was no marked change in veterinarian FTE counts for each of the thirteen work type categories, compared with previous years.

Table 2: Counts of FTE practising veterinarians by work role and year, 2009-2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Clinician	1523	1472	1522	1494	1470	1578	1477	1688	1826	1691
Consultant	87	93	95	83	93	74	79	108	101	106
Education	71	55	104	130	70	61	40	62	57	55
Manager	106	139	143	122	106	133	106	131	129	126
Other	36	30	24	19	47	6	57	62	62	63
Technical	281	265	286	291	272	268	269	273	283	287
Not stated	0	0	2	0	0	4	1	1	0	0
Total	2104	2054	2176	2139	2058	2124	2029	2325	2458	2328

Table 3: Counts of FTE practising veterinarians by work type and year, 2009-2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Beef cattle	21	26	23	20	12	14	10	12	12	12
Companion animals	773	787	773	755	686	768	716	853	922	884
Dairy cattle	284	297	305	319	271	262	252	241	235	220
Equine	162	151	163	145	151	164	143	172	170	165
Large animals	113	102	95	101	101	94	105	97	105	115
Miscellaneous	124	115	154	185	132	110	78	114	118	107
Monogastric	9	11	10	7	9	7	6	12	8	10
Mixed animal practice	227	187	244	230	355	357	376	452	511	443
Other	59	44	37	38	48	25	56	70	90	84
Practice management	62	67	74	66	44	54	32	41	45	44
Regulatory	253	250	277	257	239	249	241	246	233	235
Small ruminants	15	16	18	15	11	9	10	11	10	9
Not stated	3	1	3	1	1	10	4	3	0	0
Total	2104	2054	2176	2139	2058	2124	2029	2325	2458	2328

Workload

Ratio of veterinarians to veterinarian full time equivalents

Figure 2 is an error bar plot showing the number of practising veterinarians required to deliver 40 hours of veterinary work per week (the ratio of veterinarians to veterinarian full time equivalents).

In Figure 2 veterinarian FTE counts have been adjusted to account for non-response to the workforce survey. Point estimates of vet to vet FTE ratio for each workforce survey year are

provided in Table 1.

Across the eleven years in which the workforce survey has been carried out the ratio of veterinarians to veterinarian FTEs has been relatively stable at 1.10.

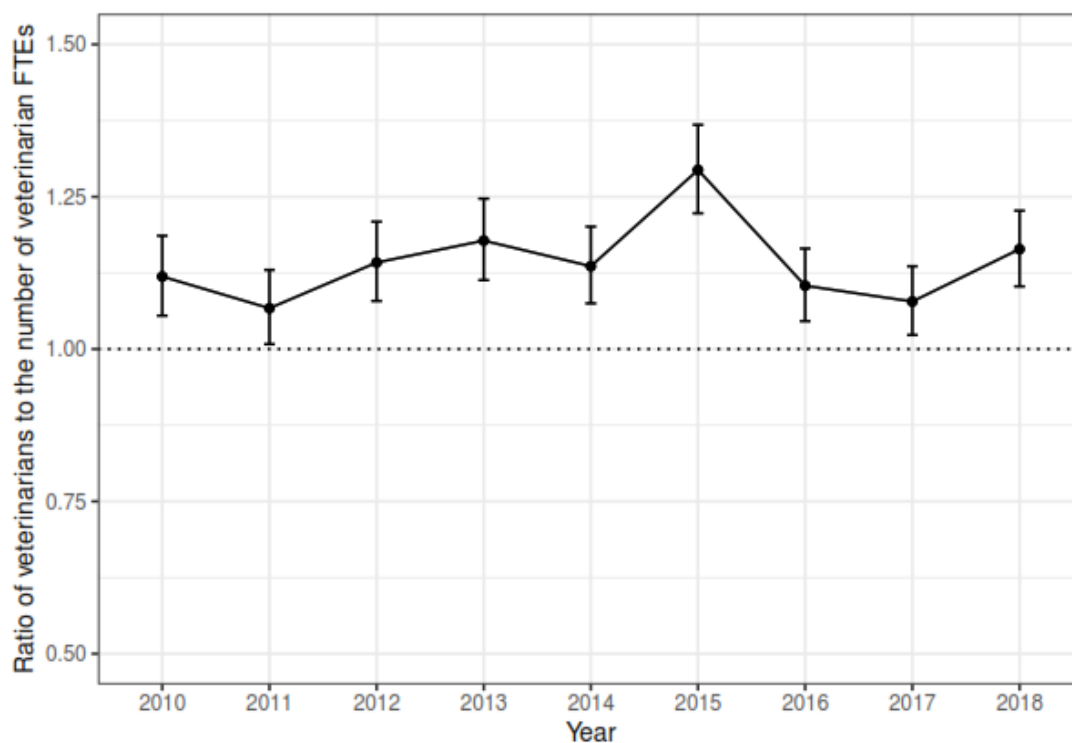
Table 4: Median routine work hours per week by practising veterinarians in their main work role, by age and gender, 2018.

Routine work includes activities carried out as a veterinarian during business hours as well as veterinary work done while on call.

	20-30 yrs	30-40 yrs	40-50 yrs	50-60 yrs	+60 yrs	Total
Female	44	40	32	36	36	40
Male	44	45	45	45	40	42
Total	44	40	40	40	40	40

Figure 2: Error bar plot showing the ratio of the number of veterinarians to the number of veterinarian FTEs (and their 95% confidence intervals), 2010-2018.

Veterinarian FTEs have been adjusted to account for non-response to the workforce survey.



Hours worked by age and gender

Table 4 shows the average routine work hours worked per week stratified by age and gender.

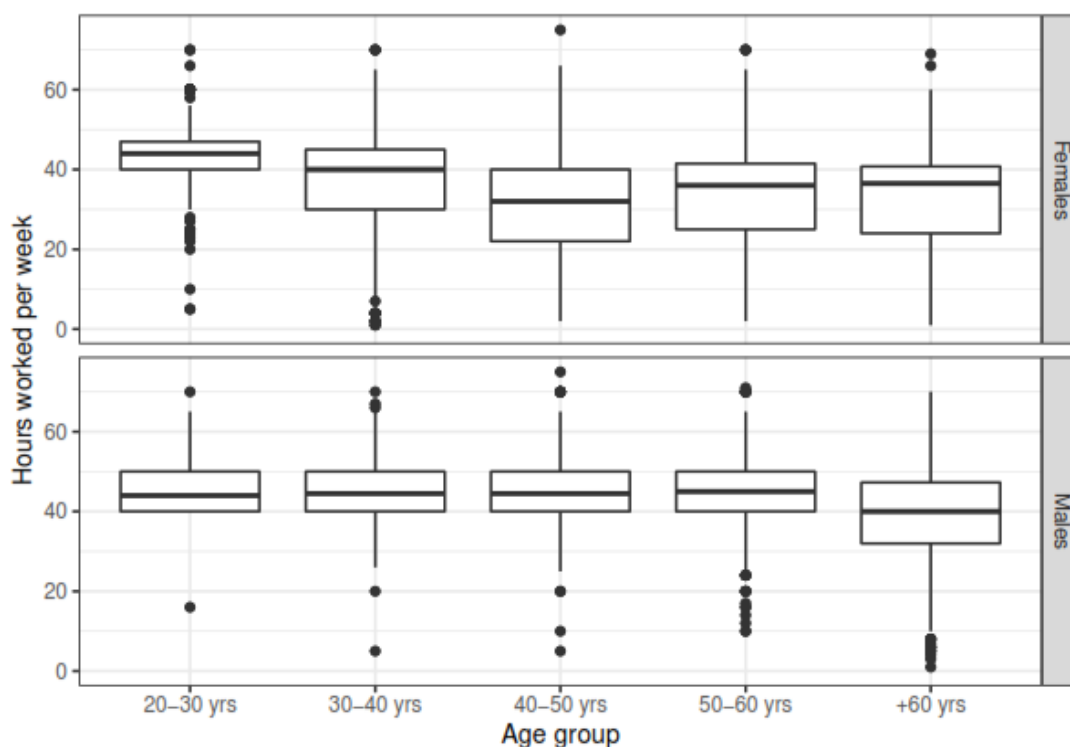
Figure 3 shows the same data as a box and whisker plot. In the context of the VCNZ Workforce Survey 'routine work hours' refers to work carried out as a veterinarian during business hours in addition to veterinary work done while on call.

Table 5: Median routine work hours per week by practising veterinarians in their main role, by gender and year, 2009-2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Female	40	40	40	40	40	40	40	40	40	40
Male	45	45	45	45	45	45	45	45	43	42
Total	44	42	42	42	42	42	40	40	40	40

Figure 3: Box and whisker plots showing the distribution of hours worked per week by age group and gender, 2018.

In the plot, the lines within the boxes indicate the median number of hours worked per week for each age group. The lower and upper bound of the boxes represent the 25th and 75th quantiles of the distribution of work hours, respectively. The lower and upper vertical lines extending from the boxes represent the lower and upper bounds of the 95% confidence interval around the distribution of work hours. The solid circles represent outliers (extreme values).



For all practising veterinarians the median number of routine work hours per week in 2018 was 40, consistent with routine weekly work hours reported for previous years. Similar to previous VCNZ Workforce Surveys, after the age of 30 male veterinarians worked a greater number of hours per week compared with females.

For males, median routine work hours per week peaked at 30 to 40 years of age, were relatively static across age groups, decreasing after the age of 60 (Figure 3). For females median routine work hours per week decreased after 30 years of age and remained relatively static between the ages of 45 and 60 years (Figure 3).

Table 6: Counts of practising veterinarians by number of on-call hours per week in main work type, 2018.

	None	1-4	5-9	10-19	20-49	+50	Total
Beef cattle	0	0	6	3	1	1	11
Companion animals	1	22	738	120	102	29	1012
Dairy cattle	0	6	103	57	61	9	236
Equine	0	1	52	27	40	25	145
Large animals	0	1	58	20	24	3	106
Miscellaneous	0	0	109	1	0	0	110
Monogastric	0	0	8	0	0	1	9
Mixed animal practice	0	3	137	118	151	22	431
Other	0	0	69	2	3	3	77
Practice management	0	1	19	1	0	1	22
Regulatory	0	0	234	2	2	1	239
Small ruminants	0	1	4	0	0	0	5
Total	1	35	1537	351	384	95	2403

Hours on call by work role

When completing the VCNZ Workforce Survey veterinarians were asked to record the number of hours when they were on call but were not required to work. If no on-call hours are reported, the veterinarian was either not on call, or chose not to provide details of their on-call hours in the survey.

Table 6 shows counts of veterinarians by on-call hours per week and their main work type. A total of 1 of 2403 practising veterinarian (0.04%) reported no on-call hours.

Geographic distribution

Regional population counts were derived from the Area Unit Population Projections by Territorial Authorities, 2006-2031 from Statistics New Zealand (Statistics New Zealand 2015). Population estimates for the years 2006, 2011, 2016, 2021 2026, and 2031 were plotted as a function of calendar year and population counts for each Territorial Authority for 2019 were estimated by interpolation.

A similar approach was taken with the livestock census data. AgriBase (Sanson and Pearson 1997) livestock population counts for January 2008, April 2010, April 2011 October 2012 and April 2013 were plotted as a function of calendar year and interpolation used to estimate livestock counts for 2019.

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.

Counts of practising veterinarians, population counts, livestock unit counts and counts of practising veterinarians per 100,000 head of human population and counts of practising veterinarians per 100,000 LSUs in 2019 are shown in Table 7. The same data by Territorial Authority are provided in Appendix 1.

Throughout New Zealand in 2019 (based on the 2018-2019 VCNZ Workforce Survey) the number of practising veterinarians per 100,000 head of population was 55. This figure differs from the 64 per 100,000 head of population quoted in the executive summary because the executive summary figure is based on the number of practising veterinarians with a valid APC on 30 June 2019 (n = 3054). The number of practising veterinarians ranged from 29 per 100,000 head of population in Auckland to 128 per 100,000 head of population in the Manawatu.

Table 7: Counts of practising veterinarians by region of main work site, 2019.

Region	Vets	Population ¹	LSUs ²	Vets/pop ³	Vets/LSU ⁴
Auckland	483	16.9	8.2	29	59
Bay of Plenty	98	3.0	6.2	32	16
Canterbury	396	6.1	41.8	65	9
East Coast	33	0.5	5.2	70	6
Hawkes Bay	95	1.6	14.1	60	7
Manawatu	302	2.4	20.9	128	14
Marlborough	30	0.5	1.3	63	22
Nelson	48	1.0	2.2	49	22
Northland	80	1.7	13.8	48	6
Otago	126	2.2	21.8	58	6
Southland	116	0.9	21.9	124	5
Taranaki	55	1.1	14.1	50	4
Waikato	470	4.2	39.0	113	12
Wellington	279	5.1	10.0	54	28
West Coast	22	0.3	2.6	67	8
Total	2633	47.4	223.0	55	12

¹ Population count x 100,000.

² LSU count x 100,000.

³ Number of practising veterinarians per 100,000 head of population.

⁴ Number of practising veterinarians per 100,000 livestock units.

Figure 4: Map of New Zealand showing the number of practising veterinarians per 100,000 head of population in 2019 by territorial land authority.

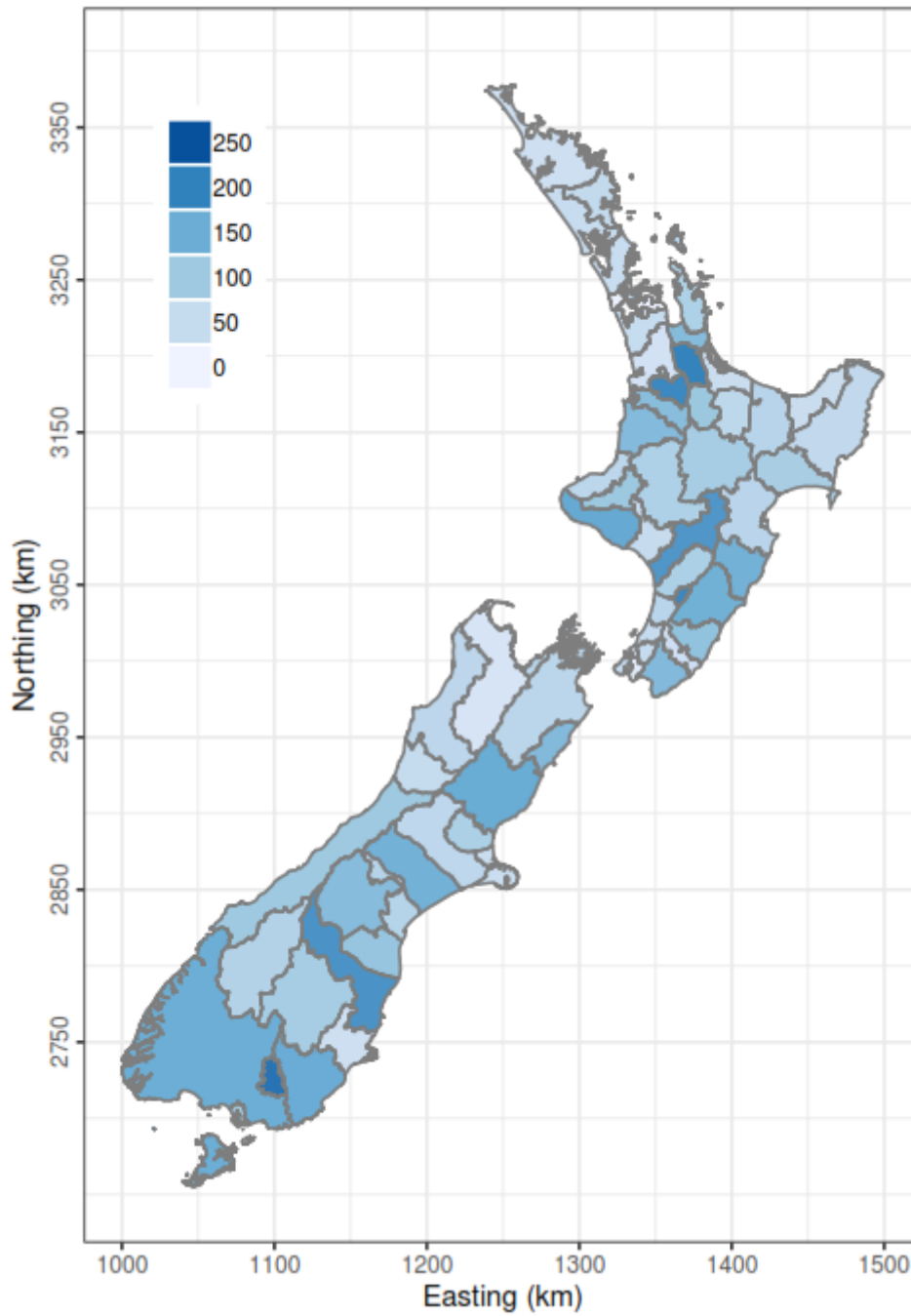
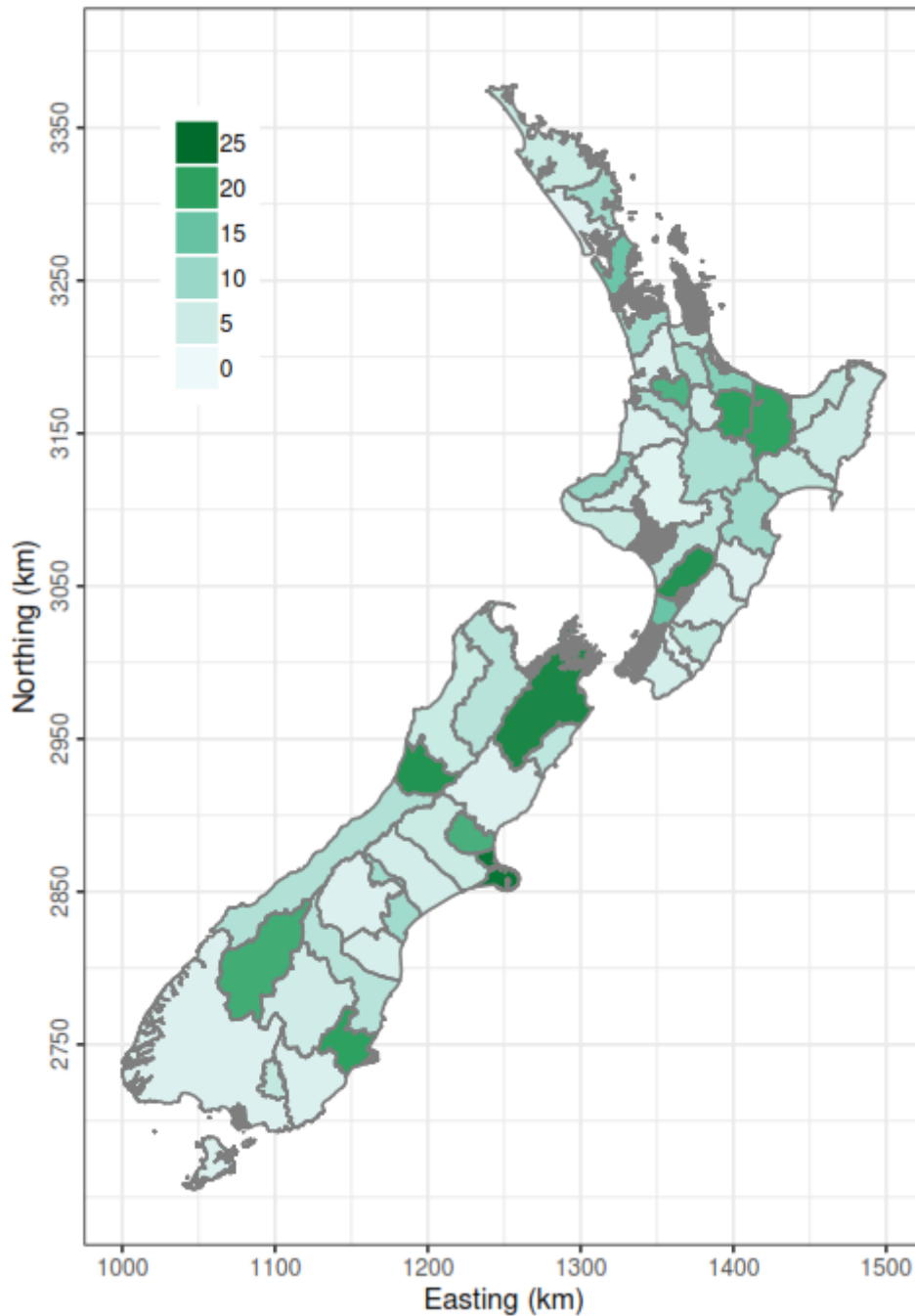


Figure 5: Map of New Zealand showing the number of practising veterinarians per 100,000 livestock units in 2019 by territorial land authority.



A colour shaded map showing the number of practising veterinarians per 100,000 head of population by TLA for 2019 is shown in Figure 4. Figure 5 shows the number of practising veterinarians per 100,000 LSUs. Figures 6 and 7 show, for the North and South Islands (respectively), the change in veterinarian counts per TLA in 2019 relative to 2018.

In 2018-2019 veterinarian counts decreased in Hastings, Manukau, Horowhenua, Thames-Coromandel

and Waipa Districts (Figure 6). In the South Island, veterinarian counts decreased in Ashburton, Grey, Hurunui and Timaru Districts.

Figure 6: Map of the North Island of New Zealand showing the change in practising veterinarian counts per TLA in 2019 relative to 2018.

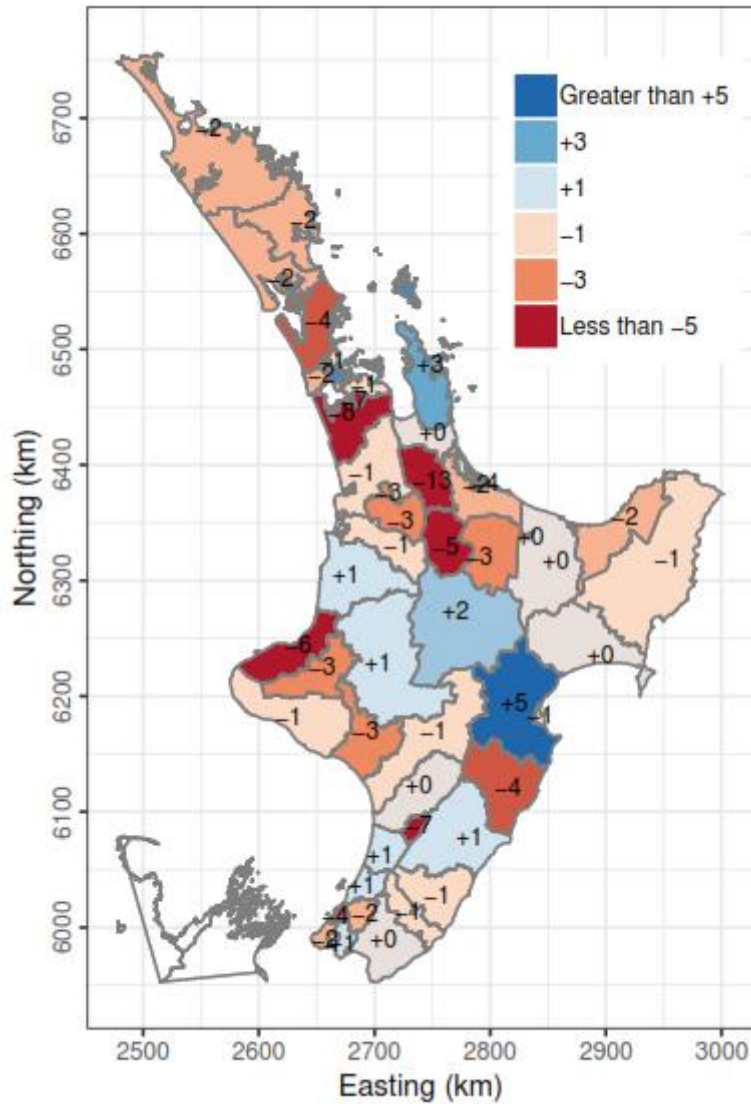
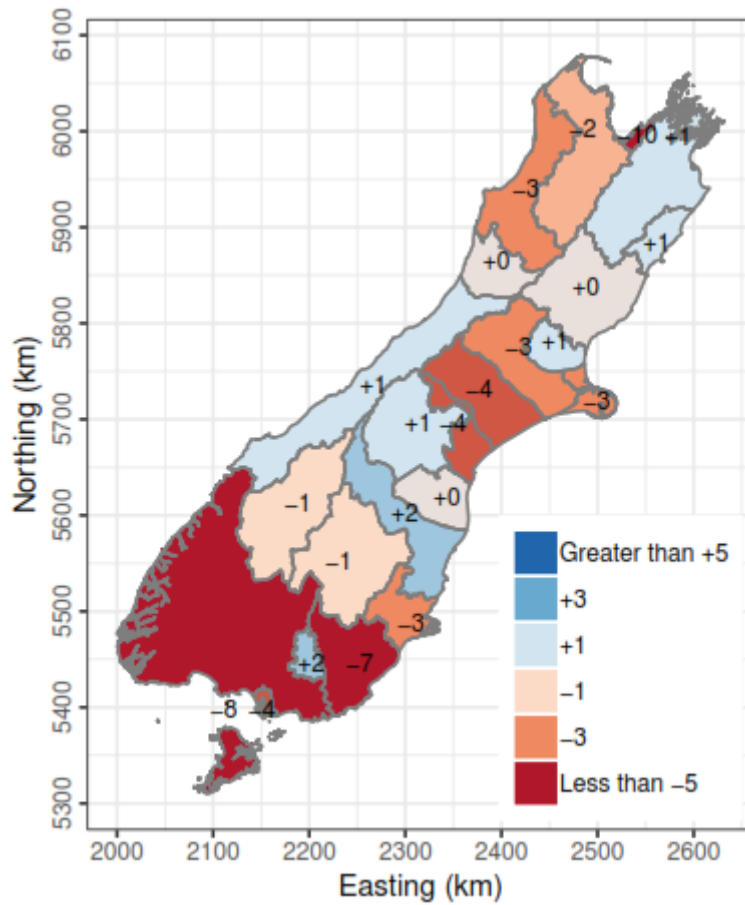


Figure 7: Map of the South Island of New Zealand showing the change in practising veterinarian counts per TLA in 2019 relative to 2018.



Gender

Work role

Table 8 shows the numbers of male and female FTEs in the 2018 workforce by work role.

Percentages of female FTEs by work role for 2009-2018 are shown in Table 9.

The overall proportion of female FTEs in the 2018 workforce was 56%. Consistent with the population pyramid shown in Figure 1 there has been a steady and consistent increase in the proportion of women in the New Zealand veterinary profession. Similar to previous VCNZ workforce surveys women were under-represented in consultant and (particularly) managerial roles in 2018 (Table 9).

Table 8: Counts of FTE practising veterinarians by work role and gender, 2018.

	Female	Male	Total
Clinician	999	692	1691
Consultant	39	67	106
Education	41	14	55
Manager	45	82	126
Other	44	19	63
Technical	144	142	287
Total	1311	1017	2328

Table 9: Percentage of women FTE practising veterinarians by work role, 2009-2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Clinician	46	47	49	50	50	52	55	55	57	59
Consultant	26	25	28	25	27	34	32	33	38	37
Education	47	57	54	54	59	64	73	68	74	75
Manager	24	26	28	26	28	30	29	29	29	35
Other	35	32	44	44	51	57	50	57	57	69
Technical	36	35	39	42	43	43	48	50	50	50
Not stated	0	0	35	0	0	49	100	0	0	0
Total	42	43	45	47	48	50	52	52	54	56

Table 10: Counts of FTE practising veterinarians by work type and gender, 2018.

	Female	Male	Total
Beef cattle	6	6	12
Companion animals	583	302	884
Dairy cattle	83	137	220
Equine	93	72	165
Large animals	49	67	115
Miscellaneous	67	40	107
Monogastric	3	7	10
Mixed animal practice	252	191	443
Other	48	36	84
Practice management	12	32	44
Regulatory	113	123	235
Small ruminants	5	4	9
Total	1311	1017	2328

Table 11: Percentage of female FTE practising veterinarians by work type, 2009-2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Beef cattle	25	31	29	37	18	41	25	44	54	50
Companion animals	55	55	58	59	60	60	62	61	62	66
Dairy cattle	35	36	38	39	36	38	41	38	40	38
Equine	38	39	40	40	41	48	45	48	50	56
Large animals	26	23	24	29	28	25	38	39	40	42
Miscellaneous	39	40	47	48	48	45	54	52	56	62
Monogastric	8	10	14	13	12	10	21	19	32	26
Mixed animal practice	40	41	44	43	47	54	52	56	56	57
Other	46	44	47	43	51	62	57	57	56	57
Practice management	25	19	22	23	17	22	27	24	25	27
Regulatory	34	34	37	42	44	42	47	47	47	48
Small ruminants	23	42	36	30	45	35	48	47	65	56
Not stated	0	0	23	90	100	46	56	35	0	0
Total	42	43	45	47	48	50	52	52	54	56

Work type

Table 10 shows counts of female and male FTEs in the 2018 workforce by work type. Percentages of female FTEs by work type for 2009-2018 are shown in Table 11.

Gender distribution within work type has changed relatively little over the eleven years in which the VCNZ workforce survey has been carried out. The highest proportion of female FTEs are in companion animal practice.

International veterinary graduates

In 2019 the proportion of international graduates (veterinarians who obtained their primary veterinary qualification in a country that was not New Zealand) was 30% (805 of 2633, Table 12). Similar to previous years, individuals from the United Kingdom comprised the largest group of international graduates (268 of 2633, 10%) followed by Australia (152 of 2633, 6%). Over the eleven years in which the workforce survey has been carried out there have been steady increases in the numbers of international veterinary graduate numbers from the European Union, North America, the United Kingdom and Australia, although these increases have appeared to stabilised in 2019.

Table 12: Counts of practising veterinarians (based on VCNZ registration details) by country of qualifying degree, 2010-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AU	137	123	127	121	131	146	121	141	161	152
EU other ¹	25	25	24	24	21	21	20	22	27	25
EU ²	98	100	106	102	107	122	105	134	137	122
N America	61	56	58	68	70	79	72	88	93	92
NZ	1532	1531	1634	1586	1586	1729	1552	1882	1918	1828
Not stated	0	0	0	0	0	0	0	3	3	7
Other	96	99	102	98	100	107	108	127	135	139
UK	198	206	221	214	217	243	245	262	286	268
Total	2147	2140	2272	2213	2232	2447	2223	2659	2760	2633

¹ EU other: Europe (non European Union).

² EU: European Union, including Belgium, Germany, Ireland, Poland and The Netherlands.

Table 13: Counts of FTE practising veterinarians by work role and country where first veterinary degree obtained, 2018.

	AU	EU other ¹	EU ²	N America	NZ	Not stated	Other	UK	Total
Clinician	80	16	72	53	1202	2	71	195	1691
Consultant	8	0	2	6	80	0	4	6	106
Education	6	0	0	2	33	0	4	9	55
Manager	7	0	5	2	91	1	6	14	126
Other	7	1	2	4	41	1	2	5	63
Technical	21	6	12	22	173	0	35	18	287
Total	129	23	93	90	1620	4	123	246	2328

¹ EU other: Europe (non European Union).

² EU: European Union, including Belgium, Germany, Ireland, Poland and The Netherlands.

Work role

The proportions of international veterinary graduates in each of the specified work roles have changed little over the eleven years in which the workforce survey has been carried out (Tables 13 and 14). Work roles with the highest proportion of international graduates include education (39% in 2018), technical (40% in 2018) and 'other' (35% in 2018).

Work type

Table 15 shows counts of FTE veterinarians by work type and international graduate status for 2019. Table 16 shows the percentage of FTE international veterinary graduates in the workforce by work type and year.

As noted for work role, the proportion of international graduates has changed little over the eleven-year workforce survey period. In 2018 international graduates working in the clinical work type categories (beef cattle, companion animals, dairy cattle, equine, large animals,

monogastric, mixed animals and small ruminants) ranged from 26% (small ruminants) to 43% (monogastric) of all FTEs working in that category. In 2018 42% of FTEs working in regulatory areas were international graduates.

Table 14: Percentage of FTE international veterinary graduates by work role, 2009-2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Clinician	25	25	24	25	26	27	28	28	29	29
Consultant	26	33	22	29	31	30	29	31	28	25
Education	47	47	50	46	54	49	43	40	40	39
Manager	27	21	19	20	22	19	20	25	26	28
Other	31	40	30	30	34	18	49	43	48	35
Technical	41	40	40	38	37	41	41	42	42	40
Not stated	0	0	0	0	0	43	0	0	0	0
Total	28	28	27	28	29	29	30	30	31	30

Table 15: Counts of FTE practising veterinarians by work type and country where first veterinary degree obtained, 2018.

	International	New Zealand	Total
Beef cattle	5	7	12
Companion animals	238	646	884
Dairy cattle	65	155	220
Equine	68	97	165
Large animals	23	93	115
Miscellaneous	37	70	107
Monogastric	4	6	10
Mixed animal practice	123	320	443
Other	37	47	84
Practice management	7	37	44
Regulatory	99	136	235
Small ruminants	2	7	9
Total	708	1620	2328

Table 16: Percentage of FTE international veterinary graduates by work type, 2009-2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Beef cattle	31	29	16	20	15	21	22	31	39	43
Companion animals	25	25	24	25	26	25	25	26	26	27
Dairy cattle	27	23	22	25	32	32	33	34	36	29
Equine	36	36	31	32	36	35	42	41	43	41
Large animals	16	21	17	16	13	21	19	19	22	20
Miscellaneous	45	39	41	40	43	40	34	41	40	34
Monogastric	66	69	63	75	74	61	35	45	54	43
Mixed animal practice	21	22	26	24	23	21	25	24	26	28
Other	24	22	18	31	34	61	54	41	48	44
Practice management	23	18	18	24	16	12	18	18	16	16
Regulatory	41	41	39	41	39	41	43	45	44	42
Small ruminants	18	19	21	9	15	8	7	15	13	26
Not stated	36	100	36	90	0	25	55	0	0	0
Total	28	28	27	28	29	29	30	30	31	30

Table 17: Counts of practising veterinarians (based on VCNZ registration details) by ethnicity, 2019.

	2019
Chinese	57
Indian	30
New Zealand Pakeha	1760
Not stated	189
NZ Maori	12
Other European	470
Other non-European	107
Pacific Island	8
Total	2633

Table 18: Counts of veterinarians working less than 40 hours per week in their main work role stratified by reason and year, 2009-2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Contract req	20	15	37	30	33	23	38	44	44	43
Casual work	29	33	37	25	20	31	27	44	47	37
Difficulty finding work	7	5	6	6	12	9	8	7	6	3
Family care	75	91	91	99	130	122	143	154	161	148
Health reasons	5	11	9	4	6	6	5	5	8	11
Other	21	10	4	14	16	10	11	24	14	30
Parental leave	8	10	9	16	13	9	12	11	9	14
Personal preference	99	108	133	117	120	112	130	168	167	182
Part time	255	265	270	286	243	182	244	323	328	314
Retired	39	38	35	38	36	35	31	39	38	32
Further study	5	8	5	4	4	16	14	6	7	11
Working overseas	0	0	0	1	3	0	2	0	2	1
Not stated	1504	1456	1535	1502	1438	1616	1419	1597	1692	1577
Total	2067	2050	2171	2142	2074	2171	2084	2422	2523	2403

Ethnicity

Counts of 2019 VCNZ registered practicing veterinarians by their first (self-declared) ethnic group are shown in Table 17. Of the 2633 practicing veterinarians in New Zealand in 2019, 1760 of 2633 (67%) identified themselves as New Zealand Pakeha; 12 of 2633 (0.46%) identified themselves as New Zealand Maori.

Absence from full time work

Table 18 provides counts of veterinarians that worked less than 40 hours per week in their main work role for 2009-2018.

Across the eleven workforce surveys the most commonly cited reasons for working 'part time' was an elective decision to work part time, to carry out family care, and personal preference. There has been a steady increase in the number of veterinarians working less than 40 hours per week to carry out family care.

Retention

Figure 8 shows the proportion of New Zealand VCNZ registered graduates that took out an APC as a function of the number of years since first registering with VCNZ.

Based on the data presented in Figure 8, a little over 75% of New Zealand veterinary graduates continue to take out an APC 10 years after the date of first registration.

Figure 8: Line plot showing the proportion of New Zealand veterinary graduates taking out an APC with VCNZ one to ten years following the year of first registration, 2004-2015.

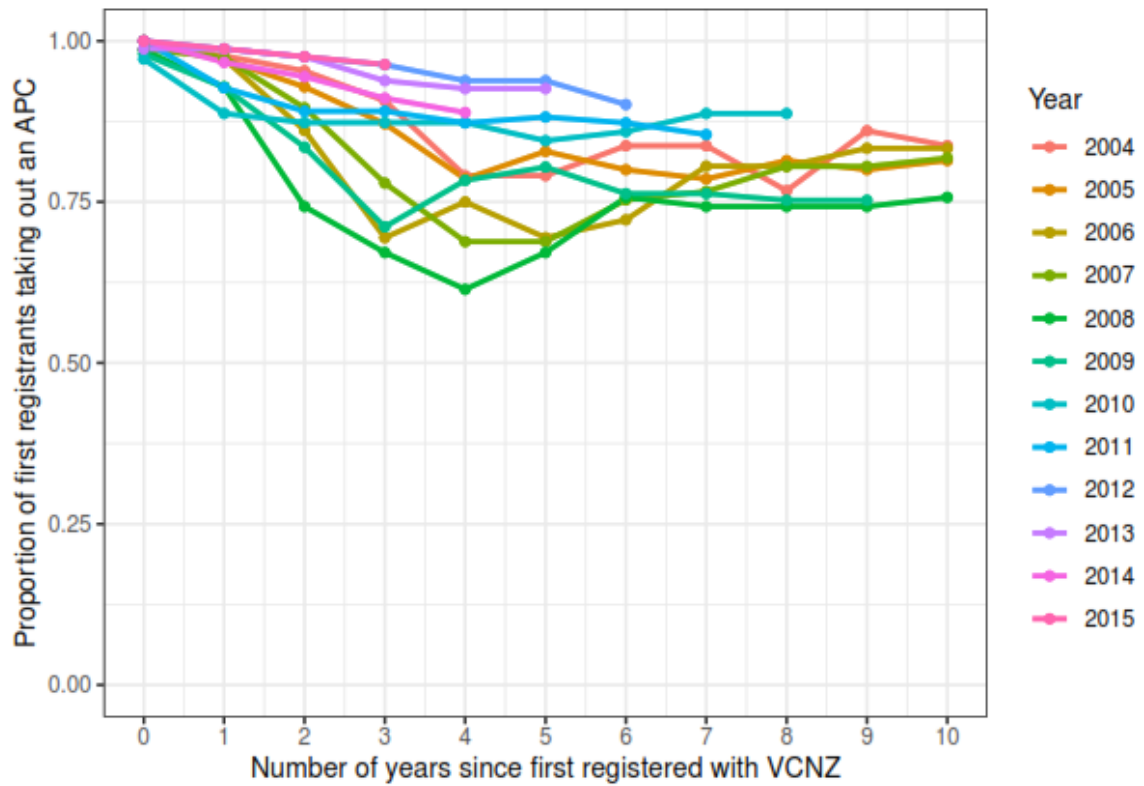


Figure 9: Line plot showing the proportion of international veterinary graduates taking out an APC with the VCNZ one to ten years following the year of first registration, 2004-2015.

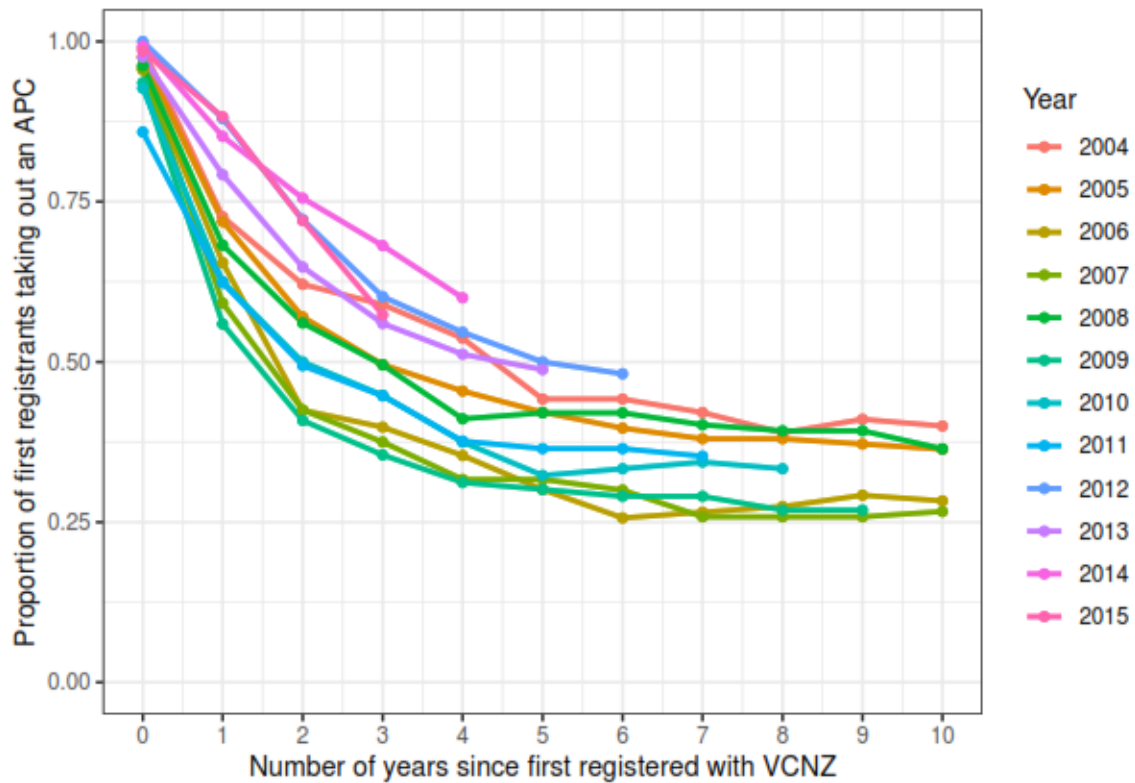


Figure 9 shows the proportion of international VCNZ registered graduates that took out an APC as a function of the number of years since first registering with VCNZ. Ten-year retention rates for international veterinary graduates continue to be in the order of 25% to 30%, substantially less than 10-year retention rates for New Zealand veterinary graduates.

Table 19: Summary of type, format, units (head count, FTEs) and year of data collection for each of the analyses presented in this report.

Group	Analysis	Format	Units	Year
All vets	Age	Plot	Head count	2019
All vets	Work role	Table	FTEs	2018
All vets	Work type	Table	FTEs	2018
All vets	Work load	Table	Head count	2018
All vets	Location of work	Map	Head count	2019
Gender	Work role	Table	FTEs	2018
Gender	Work type	Table	FTEs	2018
IVGs	Work role	Table	FTEs	2018
IVGs	Work type	Table	FTEs	2018
All vets	Retention	Plot	Head count	2019

Table 20: Counts of APC renewal requests sent out, APC applications completed, and workforce questionnaires completed, 2010-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
APC renewal requests	5666	2398	2840	3001	3132	3073	2479	3229	3338	3484
APC applications completed	2251	2278	2378	2319	2284	2816	2248	2894	2969	3049
Percent returned ¹	40	95	84	77	73	92	91	90	89	88
Questionnaires completed	2122	2140	2243	2219	2106	2396	2102	2509	2590	2651
Percent response ²	94	94	94	96	92	85	94	87	87	87

¹ Number of APC forms completed divided by the number of APC renewal requests sent out.

² Number of completed workforce questionnaires divided by the number of APC forms completed.

Survey method

The VCNZ Workforce Survey is carried out as part of the process for a registered veterinarian in New Zealand to renew their annual practising certificate (APC). A similar workforce survey is carried out each year by the Medical Council of New Zealand (Medical Council of New Zealand 2017).

The eligible population for the workforce survey questionnaire includes practising, non-practising and retired veterinarians whose details appear on the register of veterinarians held by VCNZ.

The analyses in this report are presented in two categories (Table 19). The first provides details of the status of the veterinary profession based on veterinarians who applied for an APC for 2019-2020. The second relates specifically to the questionnaire where veterinarians were asked to describe aspects of their work activities for the twelve-month period from 1 January to 31 December 2018 (inclusive). A copy of the workforce questionnaire included with the 2019 APC application form is provided in Appendix 2.

VCNZ asked a total of 3484 practising and non-practising veterinarians to renew their practising status between January and May 2019. By June 2019, 3049 veterinarians had completed an application form. Of these, 2651 completed the workforce questionnaire. The percentage of veterinarians invited to renew their practising status was 88% (Table 20). Of the veterinarians that completed an APC application (presumably those that took out an APC for 2019-2020) the response rate to the workforce questionnaire was 87%.

The analyses relating to the status of those applying for an APC or non-practising status for 2019-2020 are based on the 3049 veterinarians that completed an APC application by June

2019. The analyses relating to work activities carried out in 2018 are based on the 2651 completed workforce questionnaires.

Reported full time equivalent counts are calculated from the number of reported hours worked per week as recorded in the workforce survey. To account for the 13% of veterinarians who took out an APC but did not respond to the workforce survey we calculated the median work hours per week for gender and 10-year age groupings. Each veterinarian that took out an APC that did not respond to the workforce survey was taken in turn. An estimate of the number of hours worked per week for each non-responding veterinarian was made by taking a random draw from a Poisson distribution using the median number of hours worked per week appropriate for their gender and age distribution class.

Appendix 1: Counts of practising veterinarians by Territorial Land Authority of main work site, 2019.

Territorial Land Authority	Vets	Population ¹	LSUs ²	Vets/pop ³	Vets/LSU ⁴
Far North district	24	0.6	4.6	40	5
Whangarei district	47	0.9	5.3	54	9
Kaipara district	9	0.2	3.8	47	2
Rodney district	53	1.2	3.7	45	14
North Shore city	14	2.6	0.0	5	5344
Waitakere city	11	2.4	0.1	5	113
Auckland city	334	5.1	0.1	66	3056
Manukau city	11	4.4	0.2	2	56
Papakura district	25	0.6	0.2	45	149
Franklin district	36	0.7	3.9	48	9
Thames-Coromandel district	22	0.3	0.8	81	28
Hauraki district	22	0.2	3.6	125	6
Waikato district	19	0.5	6.7	35	3
Matamata-Piako district	64	0.3	7.7	198	8
Hamilton city	127	1.6	0.4	79	301
Waipa district	94	0.5	5.4	191	17
Otorohanga district	11	0.1	1.3	121	8
South Waikato district	22	0.2	4.9	102	4
Waitomo district	12	0.1	4.1	127	3
Taupo district	32	0.4	4.0	91	8
Western Bay of Plenty district	23	0.5	1.9	46	12
Tauranga city	56	1.3	0.3	42	194
Rotorua district	42	0.7	2.1	60	20
Whakatane district	23	0.3	1.2	67	20
Kawerau district	0	0.1	0.0	0	0
Opotiki district	4	0.1	0.7	45	6
Gisborne district	26	0.5	5.2	55	5
Wairoa district	7	0.1	1.2	87	6
Hastings district	50	0.8	5.4	64	9
Napier city	26	0.6	0.2	44	153
Central Hawke's Bay district	19	0.1	7.3	143	3
New Plymouth district	46	0.8	4.5	61	10
Stratford district	9	0.1	2.1	102	4
South Taranaki district	41	0.3	7.5	155	5
Ruapehu district	10	0.1	4.6	79	2
Wanganui district	21	0.4	0.6	49	38
Rangitikei district	25	0.1	4.0	176	6
Manawatu district	26	0.3	1.2	83	21
Palmerston North city	169	0.9	1.7	193	97
Tararua district	25	0.2	7.3	144	3
Horowhenua district	20	0.3	1.4	65	14
Kapiti Coast district	27	0.5	0.2	49	114
Porirua city	18	0.5	0.4	33	42
Upper Hutt city	21	0.4	0.2	50	122
Lower Hutt city	17	1.1	0.0	16	560
Wellington city	114	2.2	0.0	52	Inf
Masterton district	26	0.2	4.3	112	6
Carterton district	3	0.1	1.7	39	2

¹Population count x 100,000.

²LSU count x 100,000.

³Number of practising veterinarians per 100,000 head of population.

⁴Number of practising veterinarians per 100,000 livestock units.

South Wairarapa district	12	0.1	3.2	128	4
Tasman district	15	0.5	2.1	30	7
Nelson city	33	0.5	0.0	69	938
Marlborough district	30	0.5	1.3	63	22
Kaikoura district	5	0.0	0.8	128	6
Buller district	6	0.1	1.1	60	5
Grey district	7	0.1	0.3	51	21
Westland district	9	0.1	1.2	100	8
Hurunui district	18	0.1	6.9	152	3
Waimakariri district	46	0.6	2.6	83	18
Christchurch city	178	4.0	7.4	44	24
Selwyn district	28	0.5	5.4	59	5
Ashburton district	45	0.3	11.0	143	4
Timaru district	32	0.4	3.5	72	9
Mackenzie district	5	0.0	1.9	122	3
Waimate district	8	0.1	2.5	106	3
Chatham Islands territory	0	0.0	0.0	0	0
Waitaki district	36	0.2	5.1	179	7
Central Otago district	18	0.2	3.9	90	5
Queenstown-Lakes district	25	0.3	1.4	74	18
Dunedin city	52	1.3	2.6	41	20
Clutha district	26	0.2	8.8	151	3
Southland district	44	0.3	16.9	148	3
Gore district	25	0.1	4.1	215	6
Invercargill city	47	0.5	0.8	90	56

Appendix 2: 2018 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 question 10 of the Guidance Notes for advice on completing the survey.

10.1 Your practising status in 2018

Were you engaged in veterinary practice (which includes non-clinical work) in New Zealand during the year ended 31 December 2018?

- No There are no more questions
- Yes **Go to Question 10.2**

10.2 Workplace Location

Please enter the **physical address** where you mostly practised from in 2018. Do NOT enter a PO Box. Please complete all fields.

Practice Name, Branch or Organisation			
Physical Address			
			Post Code

10.3 Employment, Roles, Work types and Hours worked

Complete the following columns based on a typical working week. Use ONLY the codes provided below. Use only ONE worktype code per column. Use the nearest whole number (NO decimal points).

Employment code *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Additional hours worked per week in any other work types				
Role Code *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>					
Work type code *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>					
Hours worked per week including hours worked on call	<input type="text"/>	+	<input type="text"/>	+		<input type="text"/>	+	<input type="text"/>	+

* If other please specify

Total hours worked for the week = Hours on-call but not worked per week =

10.4 if the total number of hours worked in a typical week is less than 40, print a reason code here

10.5 if you worked less than 46 weeks of the last 52, print a reason code here

10.6 if you're thinking about **not** working as a veterinarian during the year commencing 1 April 2019 print a reason code here

10.7 if you're applying for a practising certificate after a period of not working as a veterinarian in New Zealand print a reason code for your period of absence here

<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

Employment codes

CP	Club practice
IN	Industry
LA	Laboratory, diagnostic
MP	MPI
OG	Other government
OT	Other (please specify)
PP	Group private practice
SE	Self employed (eg locum, contractor or consultant)
SO	SQE or Crown Institute
SP	Solo private practice
UN	University or tertiary

Role Codes

CL	Clinician
CO	Consultant

Role Codes continued

ED	Education
MN	Management (use only if you were employed in a management role)
OT	Other (please specify)
TE	Technical (eg MPI/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
EC	Export certification

Work Type Codes continued

EP	Epidemiology
EQ	Equine
LI	Lifestyle block animals
MI	Meat inspection
MX *	Mixed practice
DT	Other (please specify)
PA *	Production animals
PH	Pharmaceutical
PI	Pigs
PM	Practice management
PO	Poultry
PT	Pathology
RE	Research
RG *	Regulatory
SR	Small ruminants

Work Type Codes continued

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

* Use these general codes only if you cannot record all your work types using the other detailed codes, or it is too difficult to assign hours worked to each work type

10.8 Ethnicity

What ethnic group(s) do you belong to (please tick up to 2)?

- NZ European/Pasifika Pacific Island (Pasifika) Indian Other European
- NZ Māori Chinese Other non-European

Thank you for participating in the survey

Please email your completed application form with the fee to vet@vetcouncil.org.nz

We aim to process all applications within 7 days of receipt of payment and all required information. Provided there are no issues, we'll email your APC and tax invoice/receipt to you within 14 days.

References

Medical Council of New Zealand. 2017. "Workforce Survey 2017." Wellington, New Zealand: Medical Council of New Zealand.

Sanson, RL, and A Pearson. 1997. "AgriBase - a National Spatial Farm Database." In *Proceedings of the 8th International Symposium on Veterinary Epidemiology and Economics*, 12.16.1–12.16.3. Paris.

Statistics New Zealand. 2015. "National Population Estimates: June 2015 Quarter." Wellington, New Zealand: Statistics New Zealand.