



The New Zealand Medical Workforce in 2013 and 2014

Protecting the public, promoting good medical practice

Te tiaki i te iwi whānui me te whakatairanga pai i te mahi e pā ana ki te taha rongoā

Introduction

This report presents the results of the Medical Council of New Zealand workforce surveys for 2013 and 2014. It contains information about changes in the medical workforce including retention rates for doctors.

The data for the 2013 and 2014 workforce surveys were collected under the Health Practitioners Competence Assurance Act 2003 (HPCAA). The terms used may differ from those used in previous years when the Medical Practitioners Act 1995 was in force.

The Ministry of Health can provide more detailed analysis of this survey. Discuss your particular information needs with the Analytical Services Unit of the New Zealand Health Information Service.

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Results published in this report are based on survey data unless otherwise stated.

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Facts at a glance

	2009	2010	2011	2012	2013	2014
Size of the workforce ¹	13,408	13,883	14,333	14,686	14,964	15,366
Doctors per 100,000 population ²	310.7	317.9	325.4	328.7	336.9	340.8
Proportion of IMGs ³ (%)	40.6	41.1	41.5	41.4	41.9	42.0
Proportion of females (%)	39.1	39.6	40.4	41.3	41.7	42.4
Average age of workforce	44.9	45.1	45.2	45.4	45.5	45.7
Average weekly workload (hours)	44.2	43.9	43.7	43.9	43.7	43.6
Average proportion of new IMGs retained after 1 year ⁴	50.8	51.7	52.7	53.5	54.5	55.4

¹ Figures are based on registration data. See Table 1 for more information.

² Figures are based on the size of the workforce as measured by registration data (see Table 1) and Statistics New Zealand's estimated residential population as at 30 June of the particular survey period.

³ IMG: international medical graduate (see page 51 for definition)

⁴ See 'Retention' on page 36 for more information, and 'Survey' on page 48 for information on how this figure was calculated.

Changes in the medical workforce

The results of The New Zealand Medical Workforce in 2013 and 2014 survey are based on data self-reported by doctors. For the purposes of registration, general practice is a specialist scope of practice. However, for the purposes of the survey, specialist and general practitioner are recorded in separate categories to aid analysis and interpretation of the data

Size of the workforce

Registration data show that the number of active doctors increased by 2.7 percent in 2014 from 14,964 to 15,366. This change compares with increases of 1.8 percent in 2013 and 2.6 percent in 2012 (see Table 1).

Table 1: Estimated yearly workforce growth and changes in composition

	1980	1985	1990	1995	2000	2005	2010	2013	2014
Total workforce (based on registration data)¹	–	6,337	6,806	7,998	9,779	11,578	13,883	14,964	15,366
Percentage change in total workforce from previous year measured by registration data (%)	–	–	7.4	6.3	2.6	2.9	3.5	1.8	2.7
Short-term registrants ²	–	–	165	129	421	287	122	128	126
Short-term registrants as a percentage of workforce	–	–	2.5	1.7	4.3	2.5	0.9	0.9	0.8
Total workforce (based on survey response)	4,881	5,556	6,339	7,530	8,615	8,746	11,478	12,606	12,848
Graduated from:									
– New Zealand	3,266	4,095	4,480	5,024	5,645	5,459	6,766	7,324	7,457
– overseas	1,615	1,461	1,859	2,506	2,970	3,287	4,712	5,282	5,391
% IMGs	33.1	26.3	29.3	33.3	34.5	37.5	41.1	41.9	42.0
Average age of workforce	–	–	42	41	43	44	45	46	46

¹ From 2000 onwards, the total workforce according to registration data is calculated by combining the number of survey forms sent out to doctors with New Zealand addresses during the workforce survey period and the number of short-term registrants on the medical register as at 31 March of the survey period. For 1985, 1990 and 1995, the figure represents the number of doctors on the medical register with a current practising certificate as at 30 June of that year taken from Council's Annual Report.

² Short-term registrants are not asked to complete the workforce survey. In 2000 and earlier years, this number also represents doctors holding temporary registration under the Medical Practitioners Act 1995 and Medical Practitioners Act 1968. In 2005 and after, it represents a combination of doctors holding temporary registration under the Medical Practitioners Act 1995 and doctors with a special purpose scope of practice under the HPCAA. Data are from the medical register.

Age distribution of the workforce

Figure 1 compares the age distribution of the active workforce over the last 10 years as well as historical workforce data from 1980 and 1990.

Figure 2 is the same graph with only selected series displayed to highlight the changes over time.

In earlier years (2000–2004), the largest group of doctors (almost 20 percent) was in the 40–44 year age group. From 2005 to 2010 the largest group of doctors is aged 45–49 and from 2011, the largest group is doctors aged 50–54.

Comparing this with the data from 1980 and 1990 when the largest group of doctors were aged 25–29 and 30–34 respectively, the average age of the current medical workforce is higher than it used to be, and this trend is continuing.

Figure 1: Age distribution of the active workforce (1980–2014)

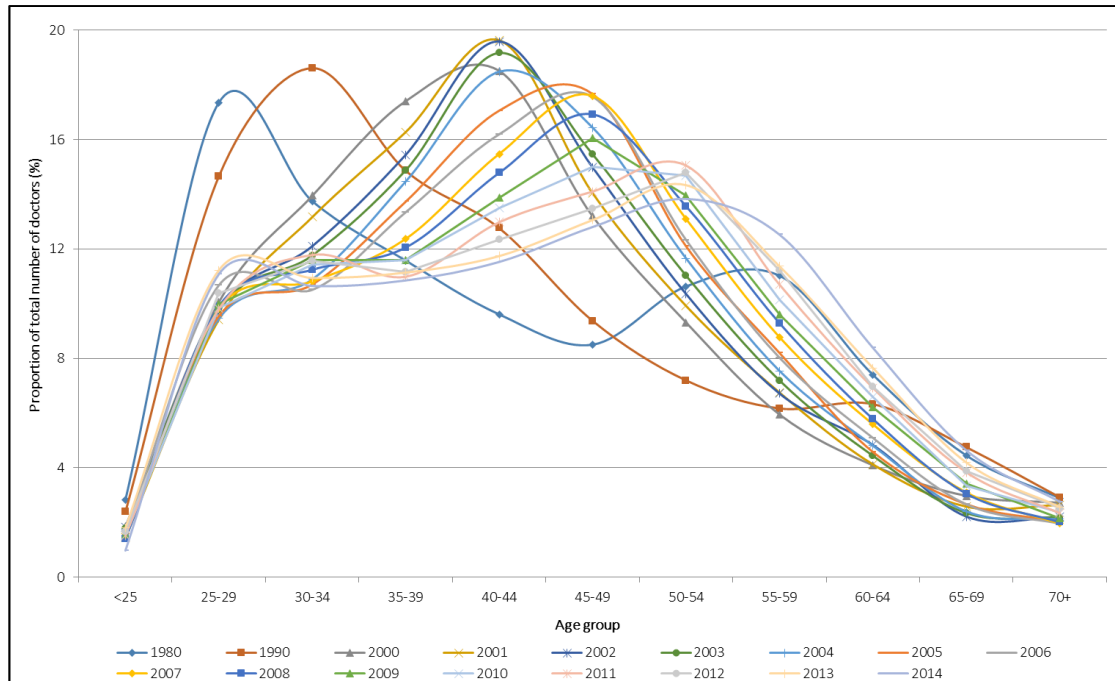
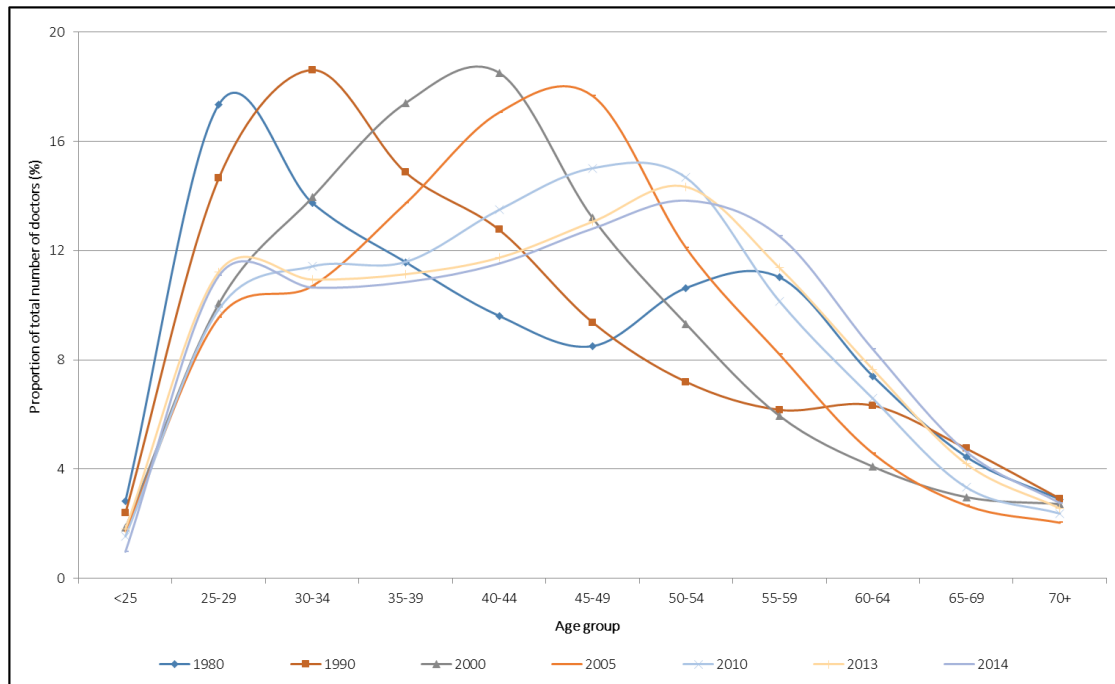


Figure 2: Age distribution of the active workforce (1980–2014), showing only 1980, 1990, 2000, 2010, 2013 and 2014 series



Gender distribution of the workforce

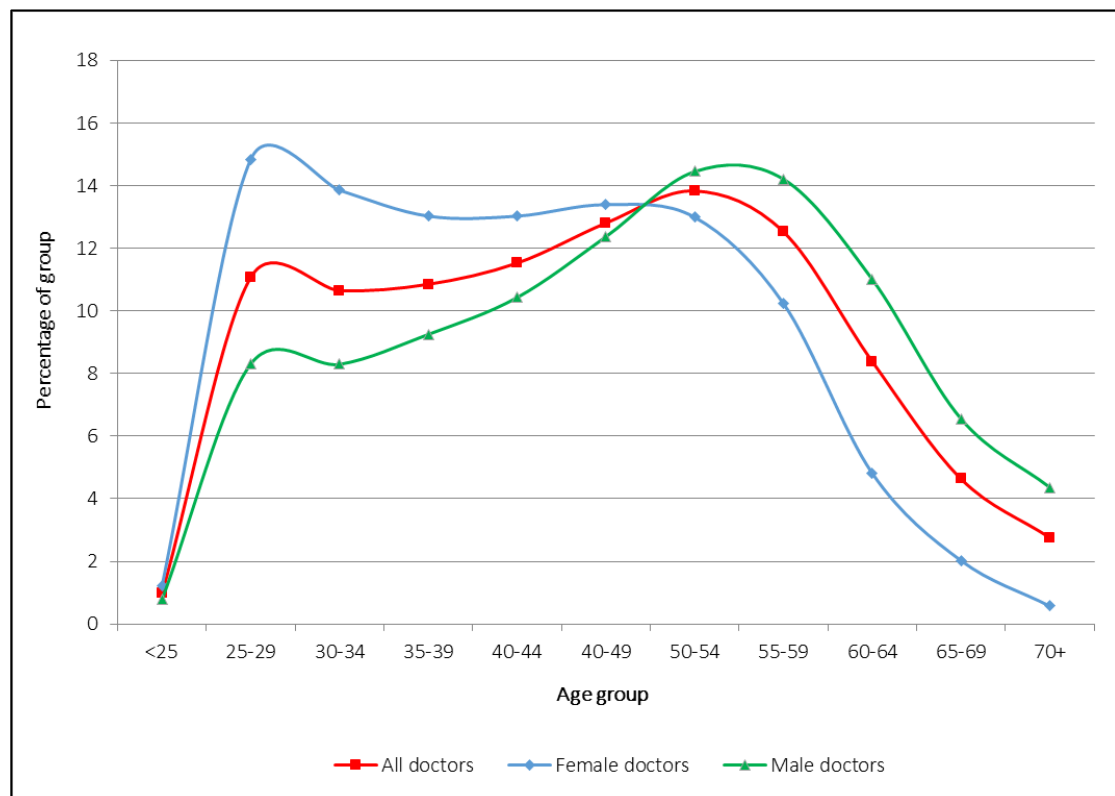
Figure 3 compares the age distribution of males and females in the active workforce.

Female doctors are more likely to be younger than 40 compared with male doctors: 43 percent of females in the workforce are under the age of 40, compared to 27 percent of males. Only 7 percent of females in the workforce are over the age of 60, compared to 22 percent of males.

This reflects that although male doctors have historically outnumbered female doctors, and still make up 58 percent of the medical workforce, this gap is decreasing. Females now outnumber males amongst new doctors: 58 percent of house officers, and 50 percent of registrars were female (see Table 16 on page 30).

There is a slight dip for female doctors around the 35–39 age group. We are unsure what factors may be behind this, but one possibility might be female doctors taking time out from the workforce for family reasons.

Figure 3: Age distribution of the active workforce by gender



Changes by work role

Table 2 shows how doctor numbers have changed, by work role at their main work site. All categories increased between 2013 and 2014.

This will in part be due to a significant decrease in the number recorded in the 'no answer' category and the reallocation of those doctors to other categories. This reflects that in 2014 there was an improvement in the quality of responses to the survey with more doctors providing the detail of the work they were doing compared to previous years.

However, viewed over time the figures show that the number of doctors in most workforce roles is steadily increasing and this trend can be seen in Figure 4 on page 6 which shows the growth in each category with values represented as percentage of their 2001 value.

Table 2: Changes in the medical workforce

Workforce role ²	Active doctors ¹							Percentage change 2013–2014
	2008	2009	2010	2011	2012	2013	2014	
General practitioner (GP)	3,435	3,541	3,532	3,614	3,594	3,679	3,770	2.5
House officer	891	970	961	1,034	1,071	1,135	1,171	3.2
Medical officer	411	500	526	523	554	511	546	6.8
Primary care other than GP	172	150	164	138	148	150	160	6.7
Registrar	1,653	1,689	1,774	1,787	1,897	2,013	2,104	4.5
Specialist	3,713	3,879	3,993	4,187	4,275	4,485	4,700	4.8
Other	237	275	291	247	275	315	282	-10.5
No answer	40	159	237	158	203	318	115	-63.8
Total	10,552	11,164	11,478	11,688	12,017	12,606	12,848	1.9

¹ Headcount based on doctors who responded to the survey.

² Work role at the doctor's main work site.

Figure 4: Changes in the medical workforce by work role (2001–2014)

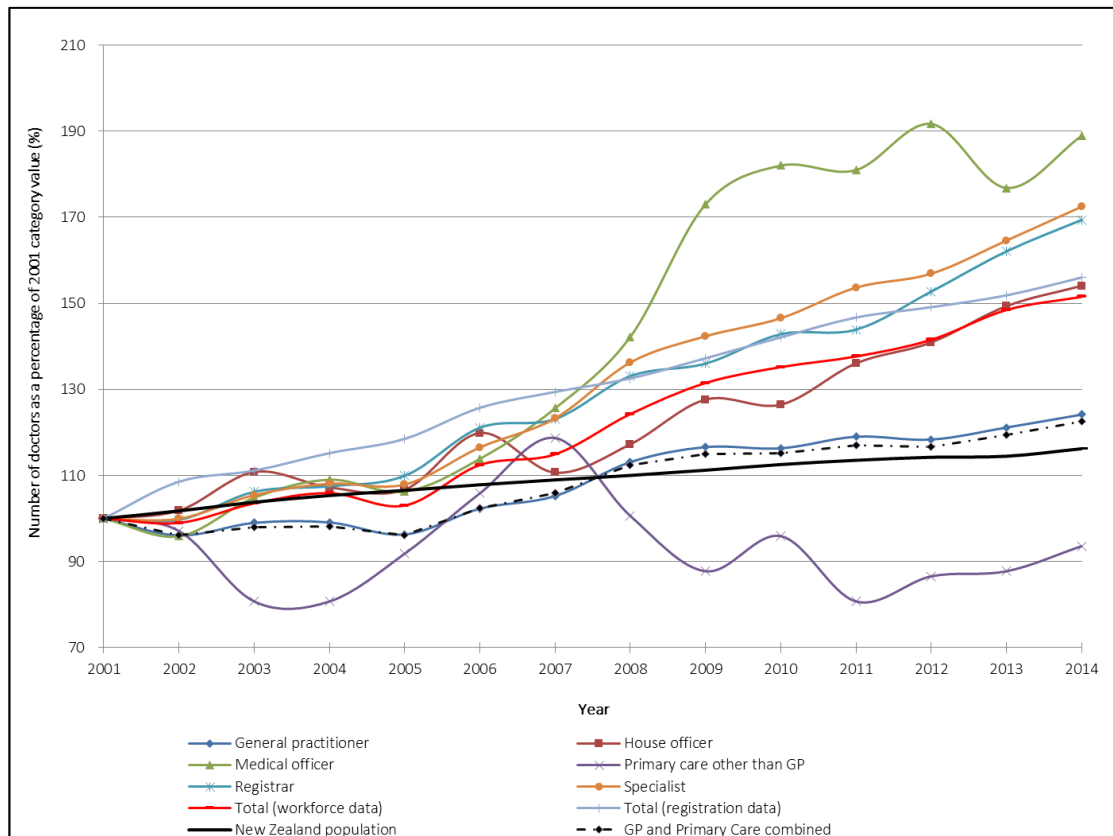


Figure 4 shows a gradual increase in most work roles since 2001.

The category, primary care other than GP shows large variations. Work roles can overlap, so this variation may be due to doctors moving from year to year between primary care other than GP, and general practitioner.

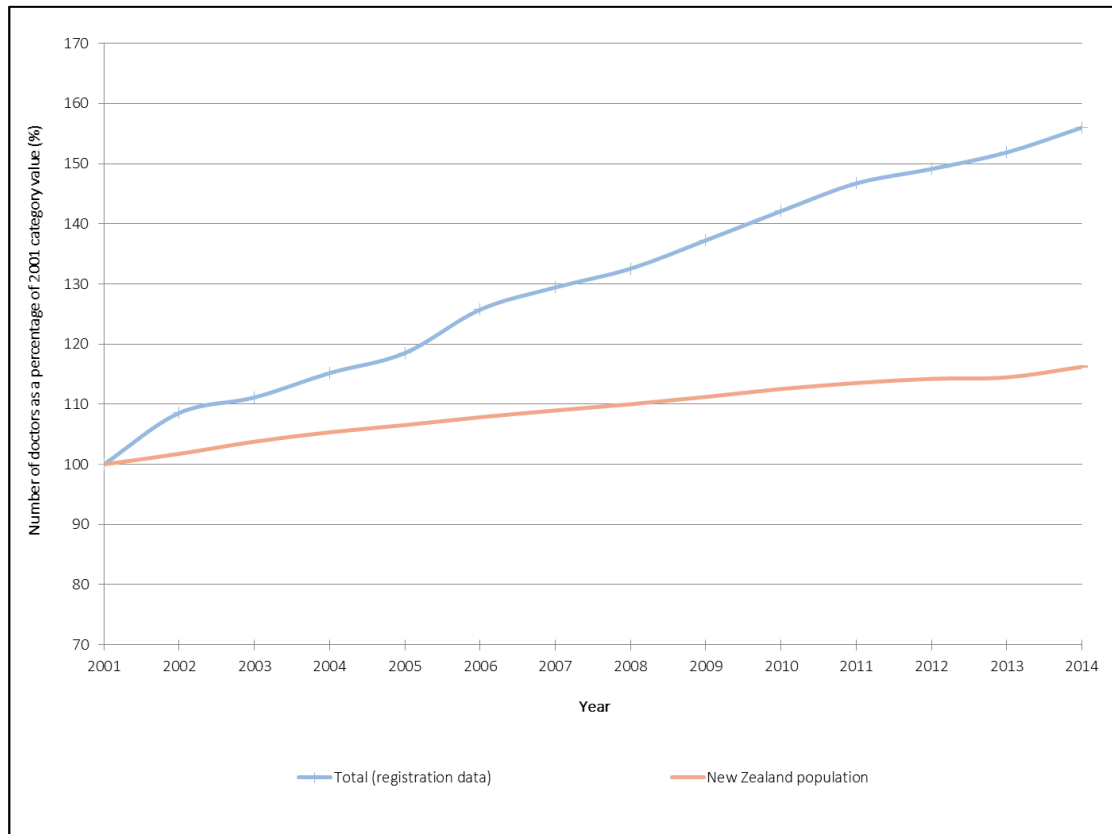
Furthermore, the category of primary care other than GP is relatively small numerically compared to most of the other categories and so as a result, increases that are small in comparison to the size of the medical workforce appear as large changes on this graph.

When the categories of general practitioner and primary care other than GP are combined, you can see that the size of the combined group is increasing at effectively the same rate as the general practitioner group.

The medical officer category also shows significant fluctuations since 2008, but like primary care other than GP, it is also smaller in comparison to the other categories and so small increases in numbers will appear as large changes on the graph. Viewed over time this group is increasing in size and is increasing faster than any of the other work types. The number of doctors in this category increased from 411 in 2008 to 546 in 2014.

Figure 5 shows just the size of the medical workforce as measured by registration data and the size of the New Zealand population. New Zealand population growth since 2001 has been far more gradual and consistent than the medical workforce's growth in the same period.

Figure 5: Change in size of the medical workforce compared to change in size of the New Zealand population (2001–2014)



Work type

The changes in work types since 2013 are shown in Table 3. Doctors working as house officers or in house officer rotations are not included in the table.

Table 3: Work types at main work site (house officers excluded)

Work type at main work site ¹	No. of doctors in main work site 2013	No. of doctors in main work site 2014	Percentage change 2013 to 2014	Average hours worked (all sites)	No. in vocational training ²	Average age 2014	Vocational registration, current practising certificate, NZ address ³
Accident and medical practice ⁴	97	130	34	34.8	44	45	131
Anaesthesia	705	842	19	46.8	182	46	734
Basic medical science	30	25	-17	48.4	*	52	-
Breast medicine	6	6	0	32.5	*	51	-
Clinical genetics	28	19	-32	36.4	*	43	12
Dermatology	49	60	22	43.7	*	53	62
Diagnostic and interventional radiology	299	371	24	44.2	49	48	449
Emergency medicine	383	454	19	40.8	149	42	219
Family planning and reproductive health	31	32	3	29.3	7	51	26
General practice ⁵	3,011	3,576	19	36.8	541	51	3281
Intensive care medicine	98	119	21	52.2	30	43	81
Internal medicine	967	1,217	26	47.6	303	46	945
Medical administration	37	40	8	42.2	*	54	25
Musculoskeletal medicine	21	23	10	43.2	0	59	21
Obstetrics & gynaecology	301	351	17	47.9	72	48	275
Occupational medicine	71	77	8	40.0	5	55	54
Ophthalmology	135	166	23	43.7	21	47	132
Paediatrics	364	447	23	45.5	132	44	354
Palliative medicine	59	72	22	36.7	7	53	53
Pathology	193	239	24	42.2	32	49	273
Primary care	290	326	12	37.5	44	52	-
Psychiatry	601	724	20	42.4	105	50	554
Public health medicine	193	212	10	38.7	19	51	178
Radiation oncology	76	88	16	48.2	19	46	59
Rehabilitation medicine	21	18	-14	45.6	4	50	22
Rural Hospital Medicine	49	52	6	44.3	13	44	99
Sexual Health Medicine	27	28	4	29.0	4	52	18

¹ Based on vocational scopes, except for these categories: basic medical science, breast medicine, primary care other than GP, and surgery: other.

² The vocational training work type may be different from the work type at the main work site.

³ Based on registration data: number of doctors on the register at 31 March 2014 with a vocational scope, current practising certificate, and New Zealand address. Doctors can hold multiple vocational scopes so may be counted twice or three times in different categories. However, as they can only select one work type as their main work site, it is possible for this column to have more doctors than there are at the main work site – dermatology is an example of this. There is no link between these doctors and those who responded to the survey. Categories marked with a '-' indicates work types which do not correspond to a vocational scope and so there is no data to report.

⁴ Accident and medical practice is now known as Urgent Care for the purposes of registration but has been left with its original name here to better allow for comparison with data from previous years.

⁵ General practice in this table represents the work type or area of practice of general practice, which is different from the work role or capacity of general practitioner. Most doctors in a work role of general practitioner will also be associated with the work type of general practice. However, it is possible for doctors in a work role of GP to report work in a work type other than general practice (for example occupational medicine).

* To avoid identifying individuals, categories with fewer than four doctors are omitted. The data have been replaced with an asterisk.

Work type at main work site ¹	No. of doctors in main work site 2013	No. of doctors in main work site 2014	Percentage change 2013 to 2014	Average hours worked (all sites)	No. in vocational training ²	Average age 2014	Vocational registration, current practising certificate, NZ address ³
Sports Medicine	25	34	36	41.9	7	47	26
Surgery: cardiothoracic	38	42	11	58.6	4	48	27
Surgery: general	368	332	-10	53.5	50	45	261
Surgery: neurosurgery	29	34	17	56.8	*	47	22
Surgery: orthopaedic	288	364	26	53.3	32	47	275
Surgery: other	56	41	-27	49.0	4	48	19
Surgery: otolaryngology	84	112	33	45.6	11	50	108
Surgery: paediatric	20	19	-5	61.1	*	49	19
Surgery: plastic	62	85	37	51.0	9	44	64
Surgery: urology	57	81	42	51.8	12	47	64
Surgery: vascular	27	31	15	54.6	*	46	32
Not answered	2169	585	-73	42.1	58	43	-
Other	400	115	-71	38.1	6	54	-
Grand total	11,765	11,589	-1.5	42.5	1,991	48	8,995

¹ Based on vocational scopes, except for these categories: basic medical science, breast medicine, primary care other than GP, and surgery: other.

² The vocational training work type may be different from the work type at the main work site.

³ Based on registration data: number of doctors on the register at 31 March 2014 with a vocational scope, current practising certificate, and New Zealand address. Doctors can hold multiple vocational scopes so may be counted twice or three times in different categories. However, as they can only select one work type as their main work site, it is possible for this column to have more doctors than there are at the main work site – dermatology is an example of this. There is no link between these doctors and those who responded to the survey. Categories marked with a '-' indicates work types which do not correspond to a vocational scope and so there is no data to report.

⁴ Accident and medical practice is now known as Urgent Care for the purposes of registration but has been left with its original name here to better allow for comparison with data from previous years.

⁵ General practice in this table represents the work type or area of practice of general practice, which is different from the work role or capacity of general practitioner. Most doctors in a work role of general practitioner will also be associated with the work type of general practice. However, it is possible for doctors in a work role of GP to report work in a work type other than general practice (for example occupational medicine).

* To avoid identifying individuals, categories with fewer than four doctors are omitted. The data have been replaced with an asterisk.

The overall number of doctors excluding house officers or those working in house officer rotations has dropped slightly since 2013 (a decrease of 1.5 percent from 11,765 to 11,580). This is unusual as in most years a slight increase is observed.

However, this decrease should be interpreted taking into consideration the significant changes in the work type categories of 'Not answered' and 'Other', both of which reduced by over 70 percent between 2013 and 2014 as well as decreases, albeit smaller ones in the equivalent work role categories.

The doctors previously counted in these categories will now be counted in other categories and where this reallocation was into either the work role of house officer or work type of house officer rotations, it will mean the doctor is not included in Table 3 because the filter used excludes these categories.

To help illustrate this we have included the equivalent data for the category of house officer rotations in Table 4. Doctors working in house officer rotations will mainly be New Zealand graduates in PGY1 or PGY2 as well as IMGs who have passed Council’s NZREX Clinical Examination and are completing Council’s requirements for registration in a general scope of practice.

Table 4: Work types at main work site (house officers)

Work type at main work site ¹	No. of doctors in main work site 2013	No. of doctors in main work site 2014	Percentage change 2013 to 2014	Average hours worked (all sites)	No. in vocational training ²	Average age 2014	Vocational registration, current practising certificate, NZ address ³
House officer rotations	814	1082	33	53.7	113	28.1	-

* Please see Table 3 on page 8 for the details of the footnotes in Table 4 as they are the same for both tables.

This shows that the category increased significantly between 2013 and 2014 (by 33 percent from 814 to 1,082) which suggests that in 2013 a significant portion of these doctors were counted in the work type categories of ‘Not answered’ and ‘Other’ and so were counted in the main table but are now being correctly reported.

It is anticipated that this figure will resume its trend of increasing slightly each year in 2015.

Work type and age

Looking at only those work types with 50 or more doctors, the average age was highest in occupational medicine (54.9 years) followed by dermatology (53.2 years), palliative care (52.6 years), primary care (51.7 years) and general practice (50.9 years).

As expected, the average age was lowest by a significant amount for those in house officer rotations (28.1 years) with the next lowest being emergency medicine (42.1 years), intensive care medicine (43.2 years) and plastic surgery (43.2 years).

Work types with an average age around that of the overall average for the workforce (45.7 years) were radiation oncology (45.8 years), anaesthesia (45.7 years) and internal medicine (45.6 years).

Work type and hours worked

Again looking at only those work types with 50 or more doctors, the average hours worked per week was highest in house officer rotations (53.7 hours per week), general surgery (53.5 hours) followed by orthopaedic surgery (53.3 hours), intensive care medicine (52.2 hours) and urology (51.8 hours).

The average hours worked per week was lowest in accident and medical practice (34.8 hours per week) followed by general practice (36.8 hours), primary care (37.5 hours), public health medicine and management (38.7 hours) and occupational medicine (40.0 hours).

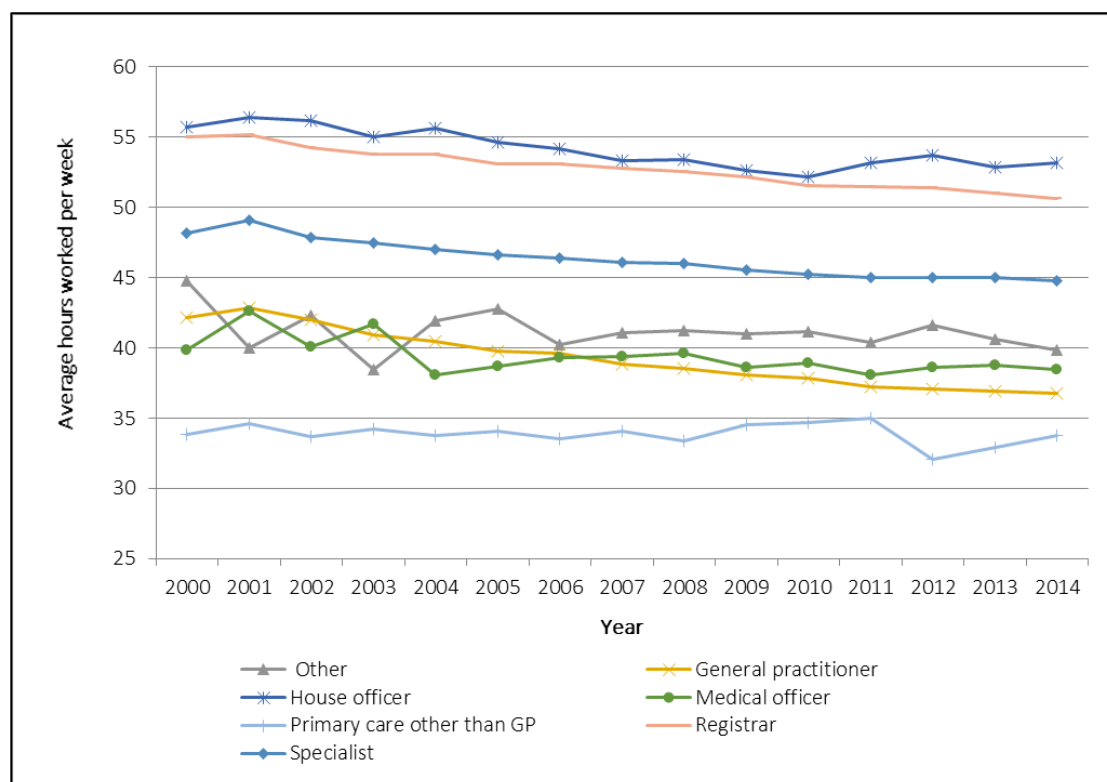
Workloads

Hours worked by work role

Figure 6 shows the average number of hours worked each week, by work role, at the doctor's main work site.

House officers reported working the most hours each week, closely followed by registrars. Primary care doctors reported working the fewest hours each week.

Figure 6: Average hours worked per week by work role at main work site



Hours worked by age and gender

For all active doctors, the average number of hours worked was 43.7 per week in 2013 and 43.6 in 2014. Table 5 shows that doctors aged in their twenties worked the most hours each week on average.

Females work a similar number of hours to males during their twenties. After the age of 30, males work more hours, and the gap is largest in the 40–44 age group. For males, the average number of hours remains above 50 hours per week until the 35–39 years age group.

For both males and females, the trend is for the average number of hours to decrease between the ages of 30 and 44, and then increase slightly, before again decreasing after the age of 60. This trend is more pronounced for females than for males.

Table 5: Average of total hours worked, by age and gender 2013–2014

2013

Gender	Age group											All ages, average hours
	<=24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	
Female	54.8	51.1	43.7	37.4	34.6	35.4	37.0	37.8	37.5	33.1	26.3	40.0
Male	55.5	53.6	50.2	47.6	47.4	46.4	46.6	46.6	43.7	38.4	29.6	46.3
All doctors	55.1	52.2	46.7	42.6	41.4	41.5	43.1	43.6	42.4	37.6	29.3	43.7

2014

Gender	Age group											All ages, average hours
	<=24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	
Female	56.3	51.5	45.2	38.2	35.0	35.0	36.4	38.2	36.6	35.7	25.3	40.1
Male	56.8	53.1	50.4	47.1	47.3	46.7	46.2	45.9	44.0	39.8	31.4	46.1
All doctors	56.5	52.2	47.6	42.6	41.4	41.5	42.3	43.3	42.2	39.0	30.8	43.6

Figure 7: Average hours worked each week and headcount, by gender 2014

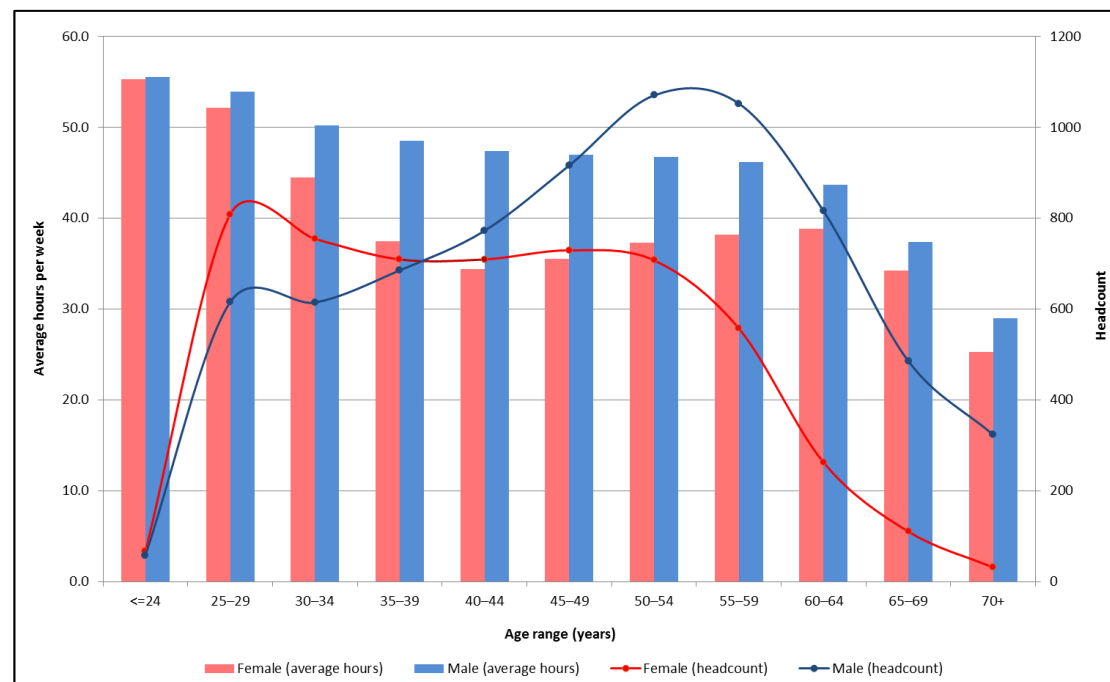


Table 6 shows that the average number of hours worked per week for males decreased slightly in 2013 to 46.3 and then to 46.1 in 2014. The average number of hours worked per week for females decreased to 40.0 in 2013 and then rebounded slightly to 40.1 in 2014.

This information is self-reported. It includes specialists in private practice and is not benchmarked against district health board (DHB) employment data.

Table 6: Average hours worked, by gender and year (2005–2014)

Gender	Year									
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Female	40.6	40.9	40	40.3	39.9	39.8	39.8	40.3	40.0	40.1
Male	48.3	47.9	47.7	47.4	46.9	46.6	46.4	46.4	46.3	46.1
All doctors	45.5	45.3	44.8	44.7	44.2	43.9	43.7	43.9	43.7	43.6

Hours on call by work role

When completing the workforce survey, doctors were asked to record all hours they actually worked in an average week as 'hours worked', including hours where they were on call and were required to work.

Hours on call counts the additional hours when doctors were on call but were not required to work. If no on-call hours are reported, the doctor was either not on call, or chose not to provide details of their on-call hours.

Table 7 shows on-call hours by workforce roles. Seventy-four percent of doctors reported no on-call hours. Specialists were most likely to be on call with just under half of specialists reporting some on call hours and 32 percent on call for 10 or more hours per week.

House officers were least likely to be on call with only 3.3 percent of doctors reporting on call hours. However this is not unexpected given that these doctors reported working the most hours on average per week (Table 8).

Table 7: Doctors' on-call hours, grouped in each work role

On-call hours, grouped	General practitioner	Primary care other than GP	House officer	Registrar	Medical officer	Specialist	Other
No on-call hours	78.7	88.8	96.7	88.6	79.5	54.4	90.4
1–4	6.7	2.5	0.3	1.0	1.3	5.0	1.8
5–9	3.7	0.6	1.2	3.6	3.8	8.6	2.3
10–19	4.2	3.1	0.8	3.0	8.2	16.4	2.5
20–49	4.6	2.5	0.7	2.9	4.9	12.7	2.5
50 and over	2.1	2.5	0.3	0.9	2.2	2.9	0.5
Total¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Individual categories may not add up to total due to rounding.

Table 8: Doctors' average on-call hours and average hours worked by work role

Measure	General practitioner	Primary care other than GP	House officer	Registrar	Medical officer	Specialist	Other
Average hours worked	36.8	33.8	53.2	50.6	38.5	44.8	39.5
Average hours on call	4.0	3.4	0.6	2.1	4.6	8.7	1.7
Proportion of doctors on call	21.3	11.3	3.3	11.4	20.5	45.6	9.6

Table 9 shows the main place of work for doctors on call for 10 or more hours each week, and compares specialists with all other work roles. Eighty-four percent of specialists on call for 10 or more hours worked in a public hospital at their main work site.

Of the doctors from other work roles who were on call for 10 or more hours, just under 53 percent worked in a group private practice at their main work site, and a further 30 percent worked in public hospitals.

Table 9: Proportion of doctors on call for 10 or more hours each week, by employer

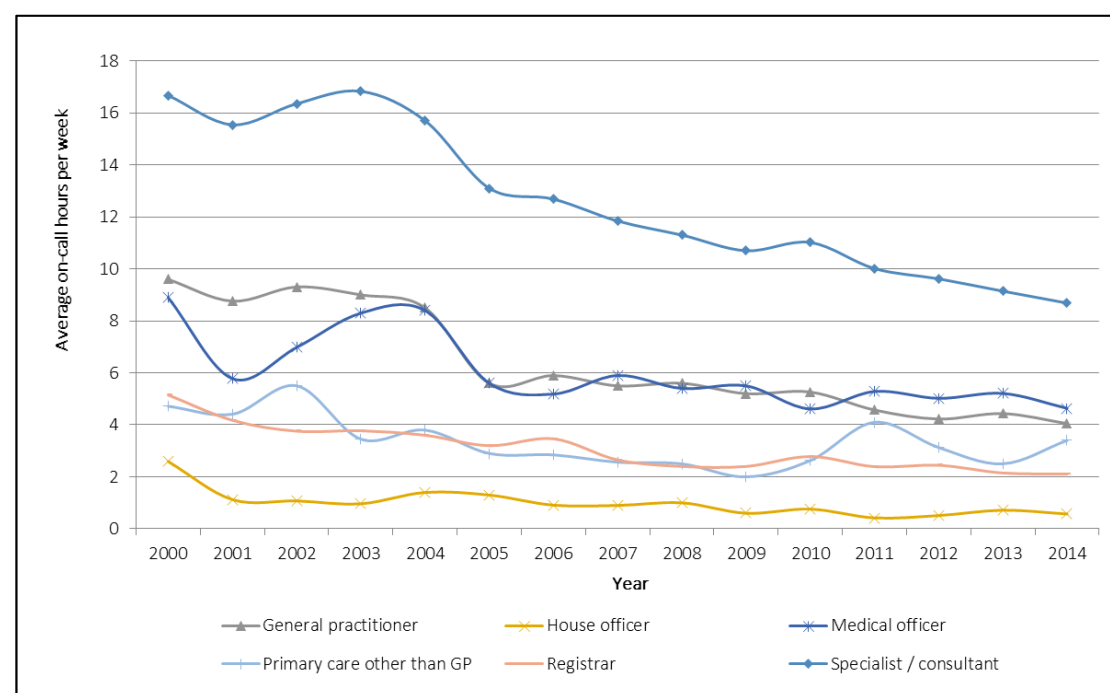
Main employer	Specialist	Other work roles	Total
Commercial company	1.0	1.4	1.1
Government department/agency	0.7	1.0	0.8
Professional body	0.0	0.4	0.2
Group private practice	6.8	52.8	23.7
Private hospital	2.1	0.7	1.6
Public hospital	83.7	29.5	63.7
Solo private practice	3.6	8.6	5.5
University/polytechnic	1.1	1.7	1.3
Other	1.0	4.1	2.2
Grand total¹	100.0	100.0	100.0

¹ Individual categories may not add up to total due to rounding.

Figure 8 shows the average weekly on-call hours, by work role at main work site, for each year back to 2000.

In general, on-call hours are decreasing across all work roles. Specialists have the highest average on-call hours, and house officers have the lowest. This is the opposite of average hours worked, where house officers work more hours per week than specialists.

Figure 8: Average on-call¹ hours, by work role at main work site



¹ On-call hours are defined as hours when the doctor was on call, but not actually working.

Geographic distribution

Important information about geographic data

Although care is taken in producing this data, we recommend that you use caution in interpreting and relying on figures in this section.

To allow data to be presented in geographic regions, we allocate every doctor who responds to the survey to their nearest territorial local authority (TLA) and district health board (DHB). However, there are a number of limitations which mean that this data will not always be completely accurate.

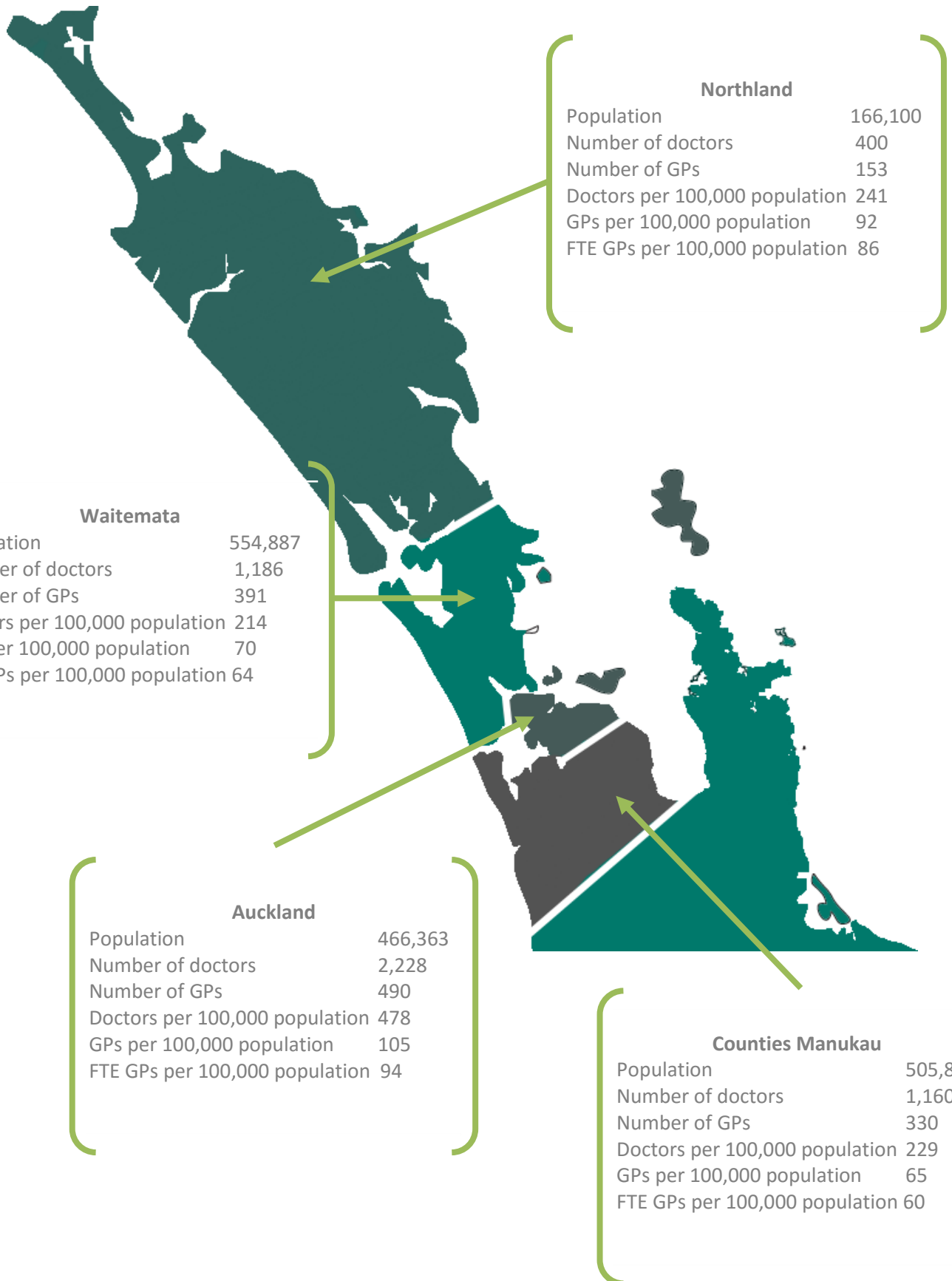
Doctors often work in more than one location and in allocating each doctor to a single TLA and DHB, we cannot fully represent every location in which the doctor is working. Some geographic regions are closely related, especially those in the wider Auckland region, and so to use this example, doctors might work across the entire Auckland region throughout the year but will only be represented in these figures against one TLA and DHB.

District health boards

The following pages show summary figures for each DHB for 2014. Note that the maps are for guidance only and do not accurately represent the actual boundaries between DHBs. The same information, as well as the equivalent figures for 2013 is presented in table form in Appendix 1 on page 53.

Southland and Otago District DHBs merged on 1 May 2010 to become a combined DHB called Southern DHB. This will eventually prevent us from reporting these groupings separately to allow comparison with previous years of data, but we will continue to do so while it remains possible.

Northern/Auckland region



Central North Island

Waikato

Population	404,700
Number of doctors	1,073
Number of GPs	297
Doctors per 100,000 population	265
GPs per 100,000 population	73
FTE GPs per 100,000 population	68

Bay of Plenty

Population	217,430
Number of doctors	556
Number of GPs	192
Doctors per 100,000 population	256
GPs per 100,000 population	88
FTE GPs per 100,000 population	76

Taranaki

Population	114,960
Number of doctors	249
Number of GPs	77
Doctors per 100,000 population	217
GPs per 100,000 population	67
FTE GPs per 100,000 population	60

Lakes

Population	103,600
Number of doctors	261
Number of GPs	93
Doctors per 100,000 population	252
GPs per 100,000 population	90
FTE GPs per 100,000 population	82

Tairāwhiti

Population	47,100
Number of doctors	109
Number of GPs	37
Doctors per 100,000 population	231
GPs per 100,000 population	79
FTE GPs per 100,000 population	70

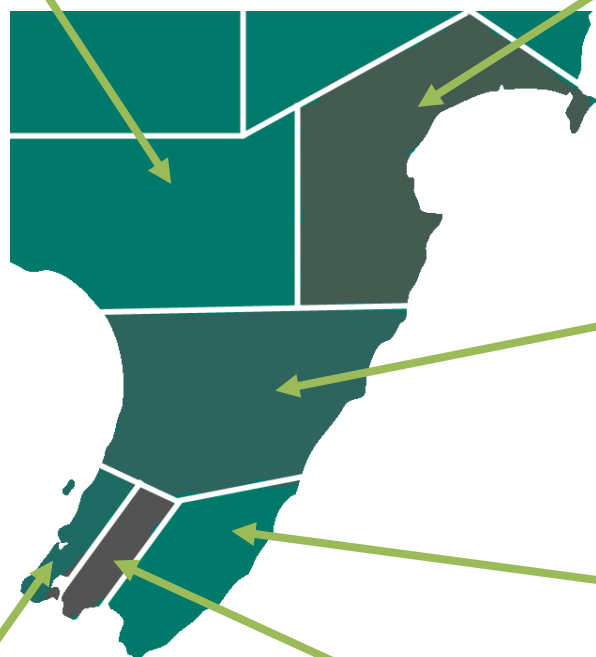
Lower North Island

Whanganui

Population	58,800
Number of doctors	134
Number of GPs	48
Doctors per 100,000 population	231
GPs per 100,000 population	83
FTE GPs per 100,000 population	87

Hawke's Bay

Population	158,850
Number of doctors	393
Number of GPs	142
Doctors per 100,000 population	247
GPs per 100,000 population	89
FTE GPs per 100,000 population	82



MidCentral

Population	161,850
Number of doctors	402
Number of GPs	107
Doctors per 100,000 population	248
GPs per 100,000 population	66
FTE GPs per 100,000 population	65

Wairarapa

Population	42,800
Number of doctors	67
Number of GPs	32
Doctors per 100,000 population	157
GPs per 100,000 population	75
FTE GPs per 100,000 population	74

Capital & Coast

Population	305,200
Number of doctors	1,174
Number of GPs	313
Doctors per 100,000 population	385
GPs per 100,000 population	103
FTE GPs per 100,000 population	87

Hutt

Population	143,500
Number of doctors	351
Number of GPs	105
Doctors per 100,000 population	245
GPs per 100,000 population	73
FTE GPs per 100,000 population	65

South Island

West Coast

Population	32,790
Number of doctors	55
Number of GPs	20
Doctors per 100,000 population	168
GPs per 100,000 population	61
FTE GPs per 100,000 population	68

Nelson/Marlborough

Population	143,200
Number of doctors	364
Number of GPs	144
Doctors per 100,000 population	254
GPs per 100,000 population	101
FTE GPs per 100,000 population	83

Southland¹

Population	127,400
Number of doctors	254
Number of GPs	110
Doctors per 100,000 population	199
GPs per 100,000 population	86
FTE GPs per 100,000 population	78

¹ Southland and Otago are officially merged as Southern but are being presented separately to allow comparison with previous years. See appendix 1 on page 53

Canterbury

Population	514,440
Number of doctors	1,597
Number of GPs	474
Doctors per 100,000 population	310
GPs per 100,000 population	92
FTE GPs per 100,000 population	81

South Canterbury

Population	58,100
Number of doctors	113
Number of GPs	39
Doctors per 100,000 population	194
GPs per 100,000 population	67
FTE GPs per 100,000 population	71

Otago¹

Population	182,500
Number of doctors	713
Number of GPs	176
Doctors per 100,000 population	391
GPs per 100,000 population	96
FTE GPs per 100,000 population	85

¹ Southland and Otago are officially merged as Southern but are being presented separately to allow comparison with previous years. See appendix 1 on page 53.

Urban/Rural

Method

Statistics New Zealand, in its report *New Zealand: An Urban/Rural Profile*¹ outlines the complexities involved in classifying an area as rural or urban, and notes that there is no internationally recognised definition of a 'rural' area.

One way of approximating how rural or urban an area is based on how densely it is populated. For the purposes of this section, we have allocated TLAs into one of three groups based on population density. The population density for each TLA was calculated by dividing its population by its land area (in km²).

So as an example, Wellington City, an urban area is listed as having an area of 290km² and a population of 200,000 giving it an average population density of 690 people per square kilometre. South Wairarapa District, generally considered a rural area, is listed as having an area of 2,387km² and a population of 9,920 giving it an average population density of 4.2 people per square kilometre.

The three groups are defined as:

1. Main urban — areas with 100 or more people per square kilometre.
2. Secondary urban — areas with between 21 and 99 people per square kilometre.
3. Rural — areas with 20 or less people per square kilometre.

Table 10: Summary of workforce statistics by population density of area

Workforce measure	Population density		
	Main urban 100+ people per km	Secondary urban 21—99 people per km	Rural 0—20 people per km
Total doctors ¹	9575	1721	1543
Total GPs ²	2474	632	807
Population ³	2,603,162	799,934	1,106,520
Doctors per 100,000 population	367.8	215.1	139.4
GPs per 100,000 population	95.0	79.0	72.9
Average hours worked	44.0	42.8	42.2
Average hours worked by GPs	33.9	34.7	37.4
Average on call hours	4.6	5.7	7.4
Average age	45.5	46.9	49.5
Proportion of female doctors (%)	43.5	41.1	36.9
Proportion of IMGs (%)	39.1	45.1	55.9

¹ Represents all active doctors who responded to the survey.

² Represents active doctors who reported working as a general practitioner at one or more of their work sites.

³ Population figures are based on Statistics New Zealand's estimated residential population as at 30 June of the particular survey period, in this case, 30 June 2014.

¹ Statistics New Zealand: New Zealand: An Urban/Rural Profile

http://www.stats.govt.nz/browse_for_stats/people_and_communities/Geographic-areas/urban-rural-profile.aspx

Number of doctors

Urban areas have a higher concentration of doctors and GPs compared with rural areas where population density is lower. Main urban areas have 368 doctors per 100,000 population compared with 139 doctors per 100,000 in rural areas.

Hours worked and on-call

For all doctors, the average number of hours worked per week is slightly lower in rural areas, but the number of on-call hours is higher. Doctors in rural areas on average were on call for 7.4 hours per week compared with 4.6 for doctors in main urban areas.

When looking just at hours worked by GPs, the average hours worked per week is higher in rural areas than in urban areas – 37.4 hours per week in rural areas compared with 33.9 hours per week in main urban areas.

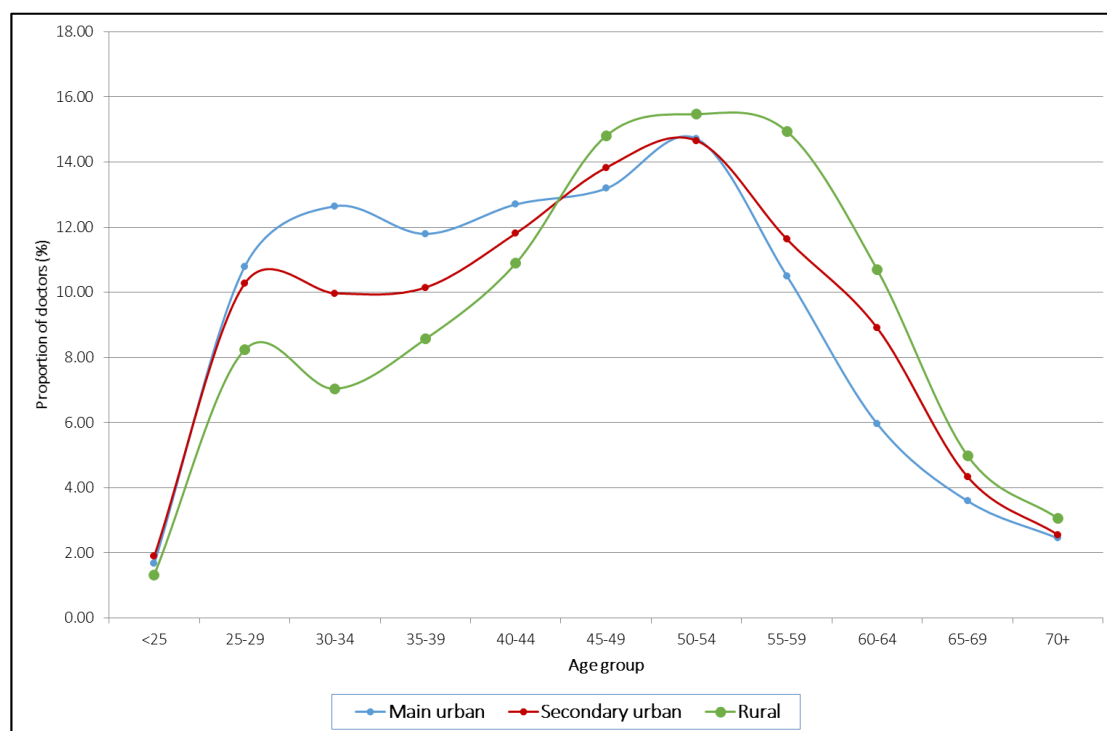
Age distribution

Overall, doctors working in rural areas are on average older than those working in urban areas – the average age is 49.4 in rural areas compared with 45.5 in main urban areas.

Figure 9 shows the distribution of doctors by age group and population density group. This highlights that a large proportion of doctors working in rural areas are aged 45–59.

While there is also a peak around doctors aged 50–54 in the urban areas, it is less pronounced. In urban areas, there is a higher proportion of doctors aged between 30 and 44 compared with rural areas.

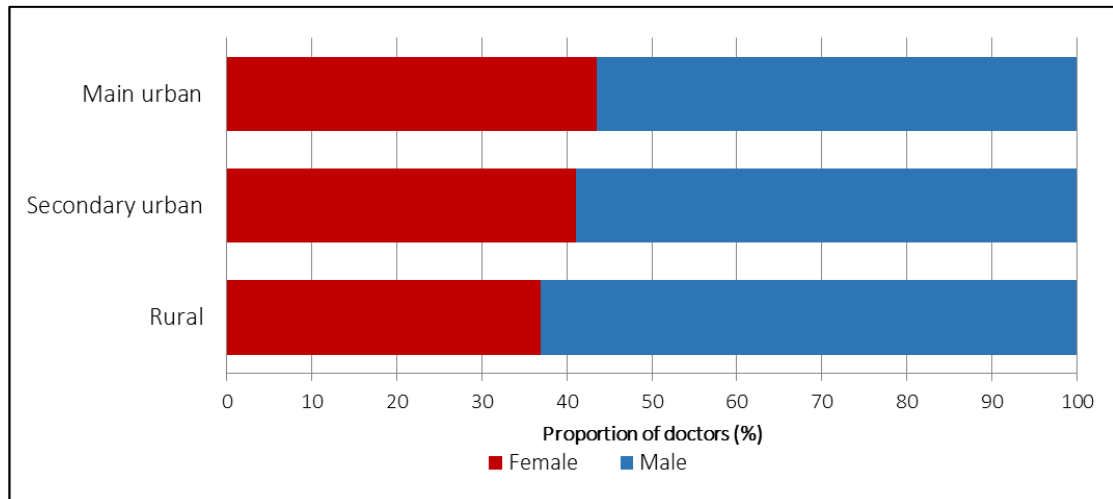
Figure 9: Distribution of doctors by age group and population density of area



Gender

There is a higher proportion of female doctors in urban areas compared with rural areas – 43.5 percent of doctors in main urban areas are female compared with 36.9 percent of doctors in rural areas.

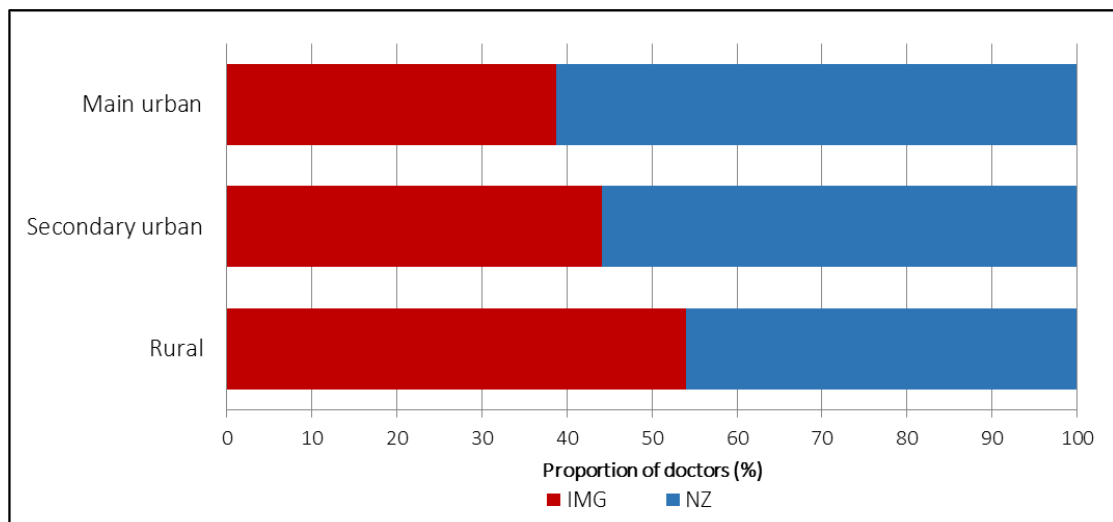
Figure 10: Proportion of doctors by gender and population density of area



International medical graduates

There is a higher proportion of international medical graduates (IMGs) in rural areas compared with urban areas – 55.9 percent of doctors in rural areas are IMGs compared to 39.1 percent in main urban areas. This may reflect that rural areas are sometimes harder to staff, and so positions in these areas are more likely to be filled by doctors from outside New Zealand.

Figure 11: Proportion of IMGs by population density of area



Ethnicity

The proportion of doctors who identified themselves as Māori increased to 3.2 percent after falling to 2.7 percent in 2013 and the proportion of Pasifika doctors increased to 2.0 percent, after increasing to 1.8 percent in 2012 and remaining the same in 2013 (see Table 11).

The proportion of doctors identifying as Chinese dropped to 4.9 percent after previously dropping to 5.1 percent in 2013 from 5.3 percent in 2012. After dropping to 16.9 percent in 2012 and then further dropping to 16.7 percent in 2013, 'Other European' reversed this trend increasing to 20.5 percent, the highest it has been since at least 2004.

Table 11: Proportion of doctors by ethnic group

Ethnicity	% 2008	% 2009	% 2010	% 2011	% 2012	% 2013	% 2014
New Zealand Māori	3.1	3.0	3.0	2.8	2.9	2.7	3.2
Pacific Island (Pasifika)	1.8	1.4	1.3	1.6	1.8	1.8	2.0
Chinese	5.9	5.4	5.3	5.1	5.3	5.1	4.9
Indian	5.3	5.7	5.9	5.8	5.8	5.2	5.7
Other non-European	11.3	10.5	9.9	11.6	12.9	14.4	11.5
Other European	15.8	18.2	19.7	18.2	16.9	16.7	20.5
NZ European / Pākehā	55.3	53.9	53.3	53.2	52.7	51.6	50.8
Not answered	1.2	1.7	1.5	1.7	1.6	2.3	1.2
Refused	0.2	0.1	0.2	0.1	0.0	0.1	0.1
Total ¹	100	100.0	100.0	100.0	100	100	100

¹ Individual categories may not add up to total due to rounding.

Table 12: Proportion of doctors and New Zealand population by ethnic group

Ethnicity	% Proportion of doctors (2014)	% Proportion of New Zealand population (2013 census) ²
New Zealand Māori	3.2	14.9
Pacific Island (Pasifika)	2.0	7.4
Chinese	4.9	4.3
Indian	5.7	3.9
Other non-European	11.5	-
Other European	20.5	-
NZ European / Pākehā	50.8	68.0
Not answered	1.2	-
Refused	0.1	-
Total ¹	100	100

¹ Individual categories may not add up to total due to rounding.

² Figures based on the results of the 2013 Census published by Statistics New Zealand – see <http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/ethnic-profiles.aspx>. Please note that different counting methods have been used – we are using a prioritised count to assign a doctor to one ethnic group (see method section of this document) whereas Statistics New Zealand count a person once for every ethnic group they identify with. Because of the way the Census results were published it was not possible to find an equivalent figure for each group.

Both Māori and Pasifika doctors continue to be noticeably under-represented compared to their proportion of the population. Chinese doctors are represented about the same in the medical workforce as they are within the New Zealand population and Indian doctors are more highly represented in the medical workforce compared with the New Zealand population.

Ethnicity by age

Table 13 shows the average age of doctors by ethnic group.

Māori, Pasifika and Chinese doctors all have average ages lower than the overall figure, with Chinese doctors having the lowest average ages for both females and males – 36 years and 42 years respectively. Both females and males identifying as New Zealand European/Pākehā had an average age higher than the overall figure.

Table 13: Average age of doctors by ethnicity and gender

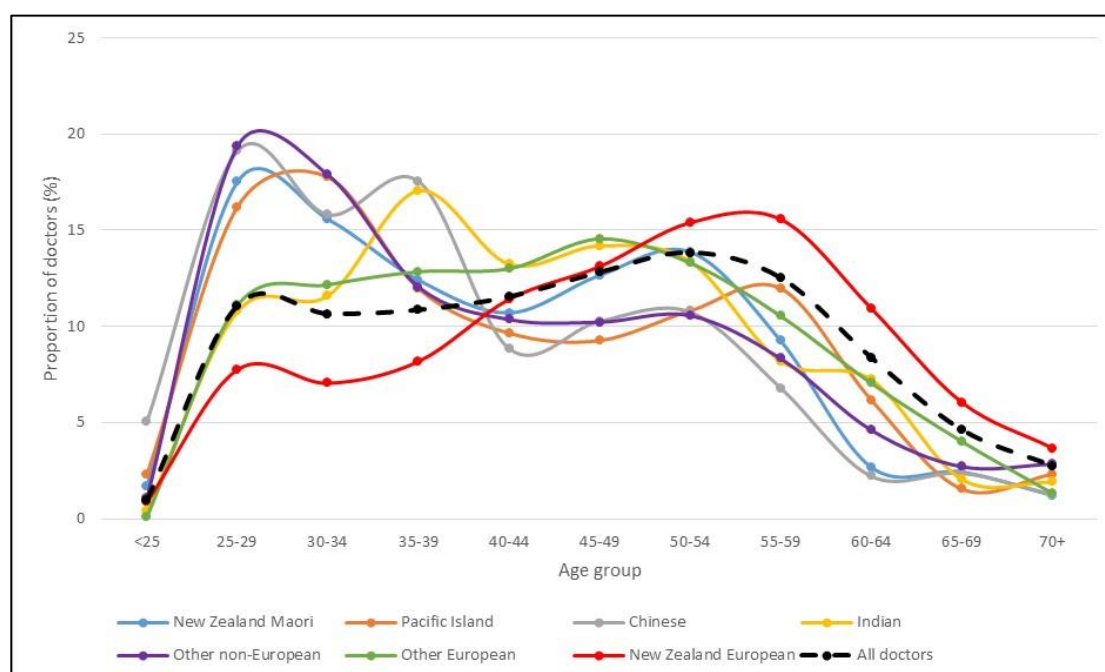
Ethnicity	Average age	
	Female	Male
New Zealand Māori	40	44
Pacific Island (Pasifika)	38	45
Chinese	36	42
Indian	42	45
Other non-European	40	43
Other European	42	47
NZ European / Pākehā	45	52
Not answered	40	46
Refused	54	56
All doctors ¹	40	44

¹ Individual categories may not add up to total due to rounding.

Figure 12 shows how doctors of different ethnicities are distributed by age group.

The highest proportion of doctors identifying as Māori, Pasifika and Chinese are aged 25-29 compared to those doctors identifying as New Zealand European where the largest proportions of doctors are aged between 50 and 59. Indian doctors are more evenly spread compared to other ethnic groups except for a spike in the 35-39 age group.

Figure 12: Distribution of doctors by ethnic group and age group



Ethnicity by work role

Table 14 shows the distribution of each ethnic group by work role at their main work site.

Table 14: Proportion of ethnic groups by work role at main work site

Ethnicity	No answer	Other	GP	HO	MO	PC	R	S	Total ¹
New Zealand Māori	0	4	29	15	4	3	21	22	100
Pacific Island (Pasifika)	0	0	28	18	4	1	24	24	100
Chinese	0	2	26	18	3	1	25	27	100
Indian	1	1	27	9	5	1	24	32	100
Other non-European	1	2	25	16	5	1	29	23	100
Other European	1	2	30	7	7	1	19	34	100
NZ European / Pākehā	0	2	31	7	3	1	10	44	100

¹ Individual categories may not add up to total due to rounding.

Three-quarters of doctors identifying as New Zealand European / Pākehā reported working either as a specialist (44 percent) or general practitioner (31 percent) at their main work site compared with 51 percent of doctors identifying as Māori and 52 percent of doctors identifying as Pasifika.

The proportion of doctors who reported working as either a house officer or registrar was 42 percent amongst Pasifika and 36 percent for Māori compared to only 17 percent for New Zealand European / Pākehā.

Figure 13: Proportion of ethnic groups by work role at main work site

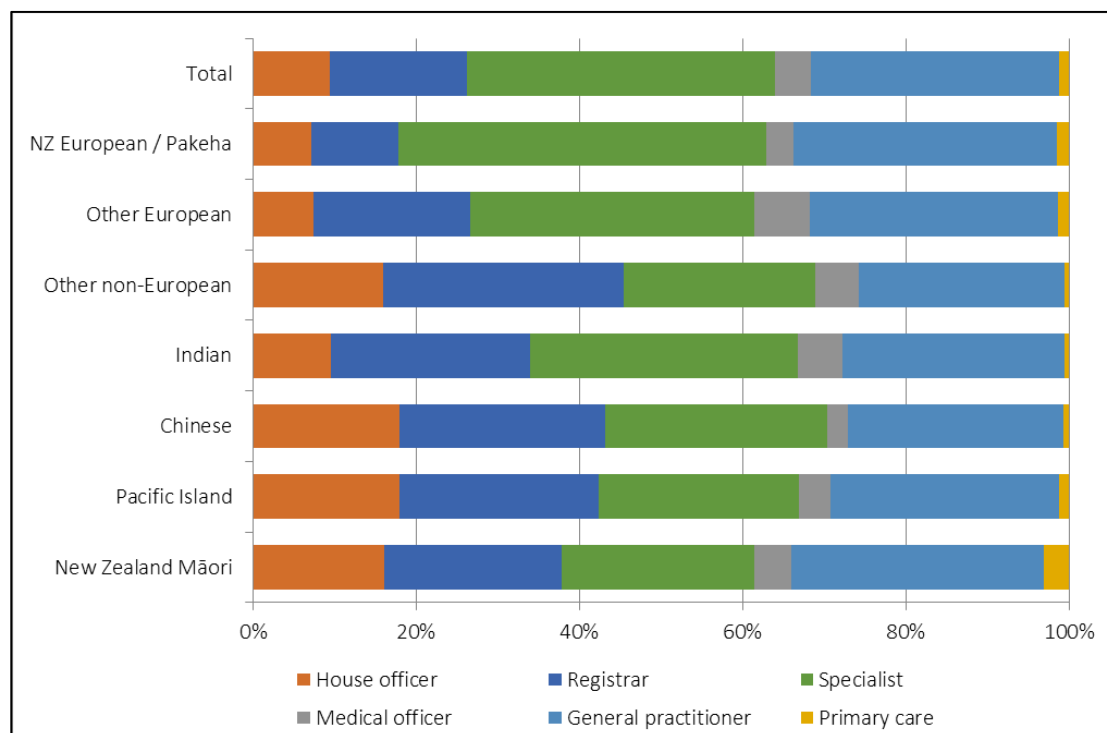


Table 15 represents the proportion of each work role made up by each ethnicity.

Doctors identifying as New Zealand Māori made up 3.2 percent of all doctors, but were more highly represented amongst house officers (5.4 percent) and registrars (4 percent). This suggests that although they are currently underrepresented amongst specialists (2 percent), this is likely to change in the future as those house officers and registrars advance into more senior positions within the workforce.

Doctors identifying as Pasifika are in a similar situation to those identifying as New Zealand Māori. They make up 2.0 percent of all doctors, but 3.9 percent of house officers and 3.0 percent of registrars.

Table 15: Proportion of each work role at main work site by ethnicity

Ethnicity	Work role						All doctors
	General Practitioner	Primary Care (Other than General Practitioner)	Medical Officer Special Scale	House Officer	Registrar	Specialist	
New Zealand Māori	3.2	7.5	3.3	5.4	4.0	2.0	3.2
Pacific Island (Pasifika)	1.9	1.9	1.8	3.9	3.0	1.3	2.0
Chinese	4.4	2.5	2.9	9.5	7.5	3.6	4.9
Indian	5.2	2.5	7.3	5.9	8.4	5.0	5.7
Other	9.6	5.0	14.1	19.6	20.1	7.2	11.5
Other European	20.7	20.6	31.7	16.3	23.3	19.0	20.5
NZ European / Pākehā	54.4	57.5	38.1	38.6	32.1	60.8	50.8
No answer	0.6	2.5	0.7	0.9	1.5	1.0	1.2
Refused	0.1	0.0	0.0	0.0	0.0	0.2	0.1
Total¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Individual categories may not add up to total due to rounding.

Doctors identifying as New Zealand European/Pākehā made up 50.8 percent of all doctors, but were more highly represented amongst specialists (60.8 percent) and GPs (54.4 percent), and were less represented amongst house officers (38.6 percent), and registrars (32.1 percent).

Other European and other non-European doctors were more highly represented amongst medical officers compared to their proportion of the workforce as a whole. 31.7 percent of medical officers identified as 'Other European' compared with 20.5 percent of the overall workforce. This may in part be due to doctors from Europe, the United States, and Canada being employed to fill these roles.

Gender

Vocational trainees

Table 16 shows the proportion of trainees in each vocational training area by gender and Figure 14 highlights those areas with more than 20 trainees.

Table 16: Vocational training area by gender

Vocational training area ¹	Female	Male	Total	Females as % of total training in area	Females training in area as % of all females training	Males training in area as % of all males training
Accident and medical practice ²	29	52	81	36	2.6	5.0
Anaesthesia	88	99	187	47	7.8	9.6
Dermatology	4	0	4	100	0.4	0.0
Diagnostic radiology	24	32	56	43	2.1	3.1
Emergency medicine	78	81	159	49	7.0	7.9
Family Planning & reproductive health	5	0	5	100	0.4	0.0
General practice	348	231	579	60	31.0	22.4
Intensive care medicine	4	13	17	24	0.4	1.3
Internal medicine	187	220	407	46	16.7	21.4
Medical administration	*	*	*	67	0.2	0.1
Obstetrics & gynaecology	66	13	79	84	5.9	1.3
Occupational medicine	*	4	*	20	0.1	0.4
Ophthalmology	5	18	23	22	0.4	1.7
Paediatrics	105	38	143	73	9.4	3.7
Palliative medicine	9	*	*	90	0.8	0.1
Pathology	22	14	36	61	2.0	1.4
Psychiatry	57	53	110	52	5.1	5.1
Public health medicine	14	*	*	82	1.2	0.3
Radiation oncology	6	16	22	27	0.5	1.6
Rehabilitation medicine	4	*	*	67	0.4	0.2
Rural Hospital Medicine	11	17	28	39	1.0	1.7
Sexual health medicine	*	*	*	50	0.2	0.2
Sports medicine	*	4	*	43	0.3	0.4
Surgery: cardiothoracic	*	*	*	25	0.1	0.3
Surgery: general	13	38	51	25	1.2	3.7
Surgery: neurosurgery	*	*	*	33	0.1	0.2
Surgery: orthopaedic	4	28	32	13	0.4	2.7
Surgery: other	0	*	*	0	0.0	0.1
Surgery: otolaryngology head and neck surgery	*	8	*	27	0.3	0.8
Surgery: paediatric	0	*	*	0	0.0	0.2
Surgery: plastic & reconstructive	11	*	*	85	1.0	0.2
Surgery: urology	4	6	10	40	0.4	0.6
Surgery: vascular	0	*	*	0	0.0	0.3
Other	11	23	34	32	1.0	2.2
Total	1,122	1,030	2,152	52	100.0	100.0

¹ House officers excluded.

² Now called urgent care but retaining existing name to allow easier comparison with previous years)

* To avoid identifying individuals, categories with fewer than four doctors, as well as the resulting total, are omitted. The data in the table have been replaced with an asterisk.

Analysing only those areas with more than 20 trainees, females were under-represented in:

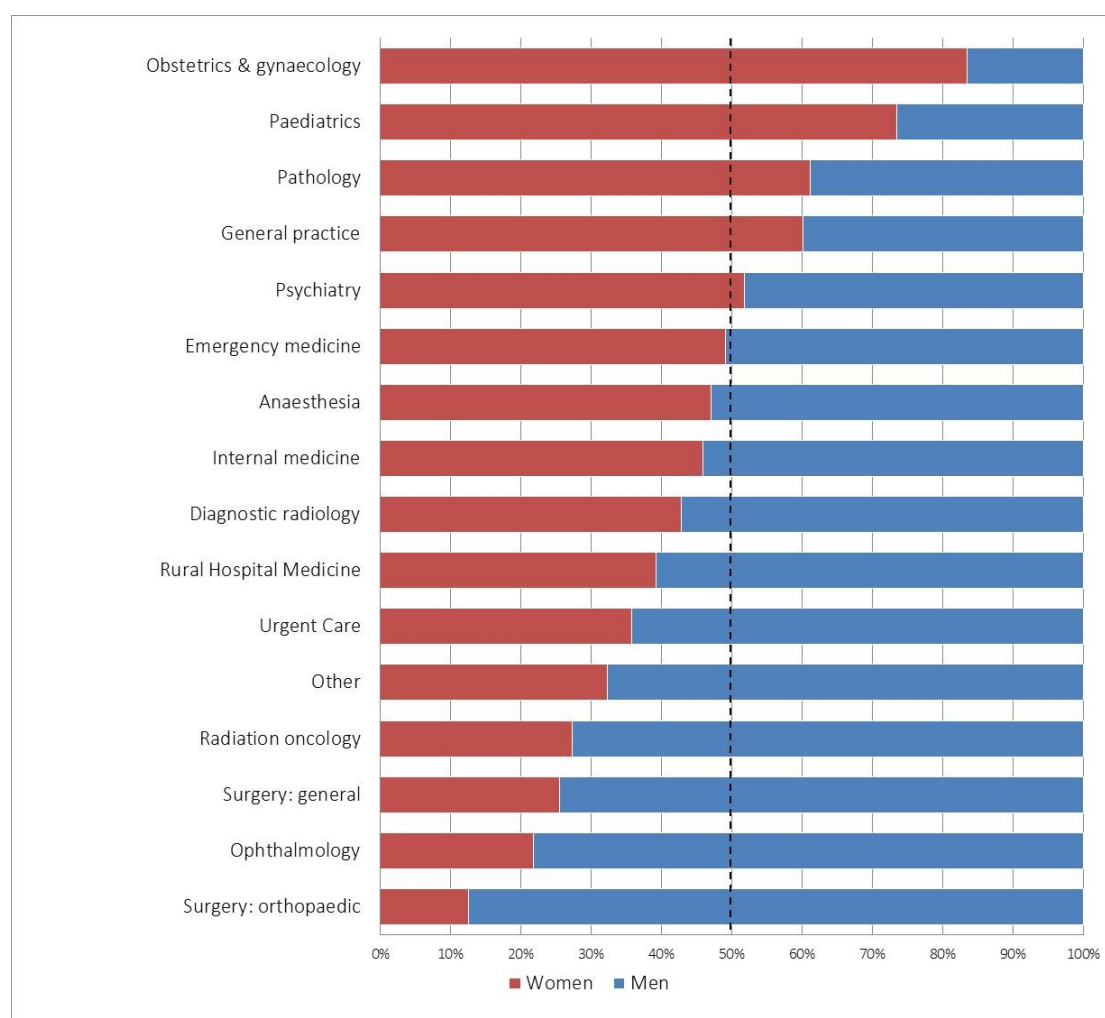
- ophthalmology (22 percent)
- general surgery (25 percent)
- radiation oncology (27 percent)
- orthopaedic surgery (13 percent).

Between 40 and 50 percent of vocational trainees were female in internal medicine, anaesthesia, diagnostic radiology and emergency medicine.

Females outnumbered males in vocational training in:

- psychiatry (52 percent)
- general practice (60 percent)
- pathology (61 percent)
- paediatrics (73 percent)
- obstetrics and gynaecology (84 percent).

Figure 14: Vocational training area by gender (areas with more than 20 trainees)



Work role

Table 17 shows the proportion of females in the workforce by work role at their main work site. The overall proportion of females in the workforce increased slightly to 42 percent. Females continued to outnumber males in house officer roles, making up 58 percent and for two consecutive years (2013 and 2014) have made up 50 percent of registrars.

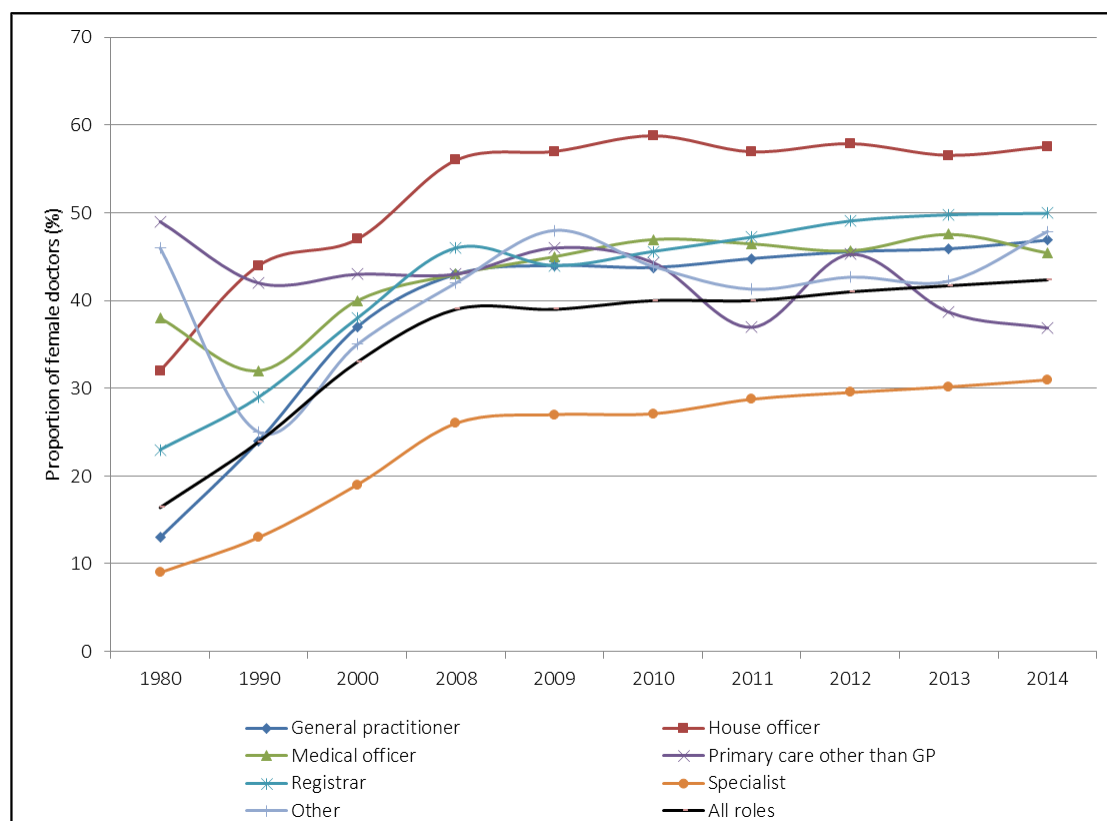
The proportion of females in the role of general practitioner increased slightly to 47 percent. There was also a slight increase in the role of specialist to 31 percent continuing a slow but steady upwards trend.

The proportion of females dropped slightly in primary care - from 45 to 39 in 2013, and then to 37 in 2014.

Table 17: Proportion of females by work role at main work site

Role at main work site	Percentage female									
	1980	1990	2000	2008	2009	2010	2011	2012	2013	2014
General practitioner	13	24	37	43	44	44	45	46	46	47
House officer	32	44	47	56	57	59	57	58	57	58
Medical officer	38	32	40	43	45	47	46	46	48	45
Primary care other than GP	49	42	43	43	46	44	37	45	39	37
Registrar	23	29	38	46	44	46	47	49	50	50
Specialist	9	13	19	26	27	27	29	30	30	31
Other	46	25	35	42	48	44	41	43	42	48

Figure 15: Proportion of females by work role at main work site



Work types

Table 18 shows the proportion of females working as specialists or GPs by work type 10 yearly from 1980, five-yearly from 2000 and then yearly for the last 5 years.

Figure 16 shows only those work types with a total of 50 or more doctors. Men outnumber women in all work types with a total of 50 or more doctors except for public health medicine where women made up 52 percent of doctors.

Females outnumbered males in the areas of sexual health medicine, where 79 percent of doctors were female, as well as in family planning and reproductive health (56 percent) and public health medicine (52 percent).

The proportion of females increased in clinical genetics (from 32 percent to 45 percent), diagnostic and interventional radiology (from 30 to 34 percent), intensive care medicine (from 18 to 23 percent) and pathology (from 36 to 43 percent).

The proportion of females decreased in accident and medical practice (from 33 percent to 25 percent), sports medicine (from 17 percent to 13 percent), paediatric surgery (from 20 percent to 8 percent) and vascular surgery (from 5 percent to 0 percent).

Females were significantly under-represented in the surgical scopes. Only 9.9 percent of doctors working in surgical specialties were female up slightly from 8 percent in 2011.

Figure 16: Proportion of doctors by work type and gender

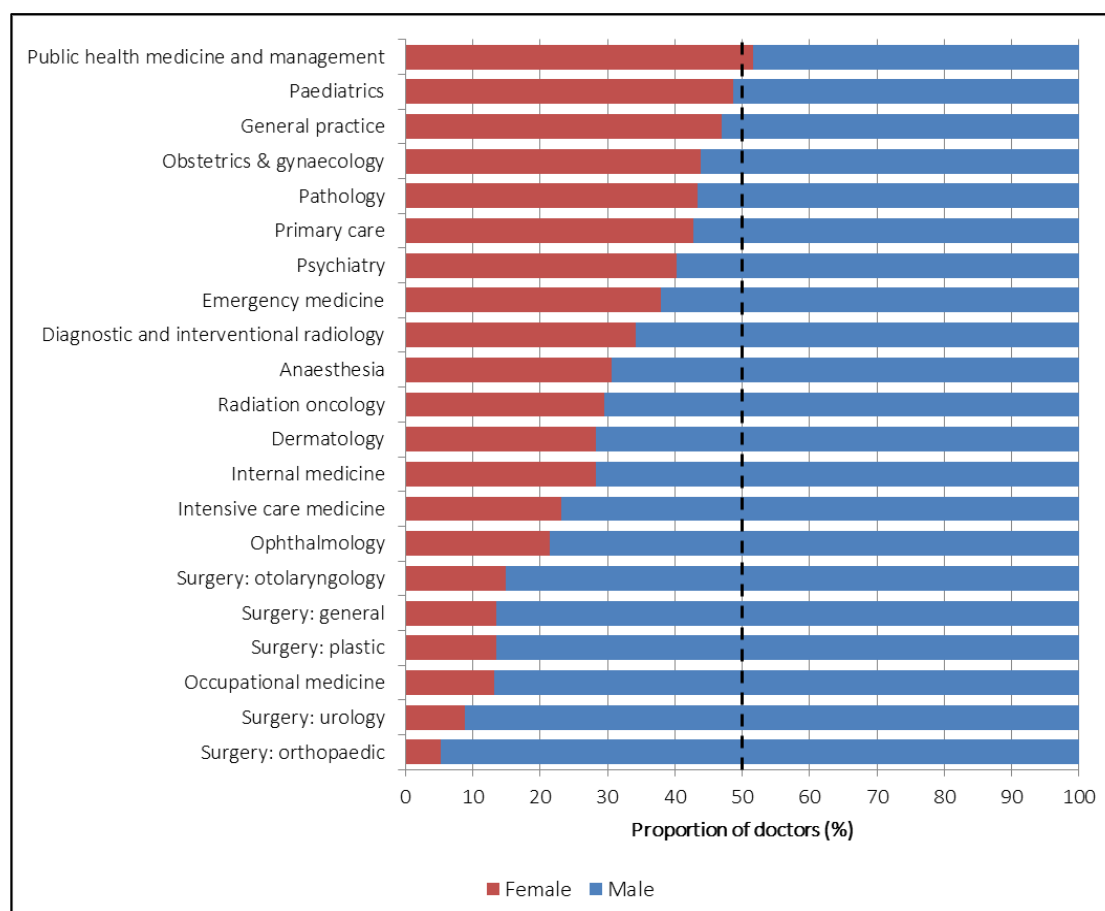


Table 18: Proportion of females by work type (specialists and GPs)

Work type	Percentage female								
	1980	1990	2000	2005	2010	2011	2012	2013	2014
Accident and medical practice	– ¹	–	–	31	34	44	32	33	25
Anaesthesia	19	16	20	26	31	27	29	31	31
Basic medical science	12	16	7	0	27	36	25	36	33
Clinical genetics	–	–	–	0	67	29	39	32	45
Dermatology	3	17	19	29	24	28	27	30	28
Diagnostic and interventional radiology	8	14	23	29	31	30	31	30	34
Emergency medicine	–	0	26	28	41	33	32	35	38
Family planning and reproductive health	–	–	–	71	93	67	67	55	56
General practice	13	24	38	40	44	44	45	46	47
Intensive care medicine	–	–	18	16	27	23	18	18	23
Internal medicine	4	7	15	20	32	25	27	26	28
Medical administration	–	–	–	45	30	38	22	27	24
Musculoskeletal medicine	–	–	0	0	12	6	6	5	5
Obstetrics & gynaecology	10	17	29	36	54	41	39	44	44
Occupational medicine	–	5	17	14	16	15	10	15	13
Ophthalmology	6	11	12	15	24	20	18	21	21
Paediatrics	21	23	30	29	53	45	47	45	49
Palliative medicine	–	–	–	55	52	47	43	43	46
Pathology	15	22	30	35	39	40	40	36	43
Primary care	0	–	30	32	44	43	45	38	43
Psychiatry	19	28	33	36	43	40	40	39	40
Public health medicine	12	23	28	44	47	45	46	50	52
Radiation oncology	–	5	15	16	31	28	31	29	30
Rehabilitation medicine	–	–	0	0	46	33	36	20	31
Rural hospital medicine	–	–	–	–	–	–	–	58	42
Sexual health medicine	17	–	50	70	80	83	75	70	79
Sports medicine	–	–	25	9	21	20	25	17	13
Surgery: cardiothoracic	–	–	6	6	13	6	11	4	4
Surgery: general	–	–	6	5	19	10	9	11	14
Surgery: neurosurgery	–	–	7	10	5	5	6	14	8
Surgery: orthopaedic	–	–	3	4	7	6	5	5	5
Surgery: other	–	–	3	8	11	9	23	20	18
Surgery: otolaryngology	0	2	5	3	13	11	10	11	15
Surgery: paediatric	–	–	15	8	17	14	15	20	8
Surgery: plastic	–	–	3	3	22	10	7	10	13
Surgery: urology	–	–	3	5	9	6	4	7	9
Surgery: vascular	–	–	0	0	5	0	0	5	0
Specialists and GPs²	–	–	29	32	34	36	36	37	38

¹ A dash means data were not available.

² Specialists and GPs exclude 'not answered' and 'other'.

International medical graduates

International medical graduates (IMGs) in this survey are doctors who obtained their primary medical qualification in a country other than New Zealand. Other countries define the term IMG differently, so care is needed when comparing the proportion of IMGs employed in New Zealand to the proportion employed in any other country.

From survey data, the proportion of IMGs amongst respondents is 41.9 percent. This is reasonably consistent with registration data which indicates that the proportion of IMGs in the workforce as at 30 June 2014 was around 43.4 percent. Data also suggest that this figure is increasing only very gradually.

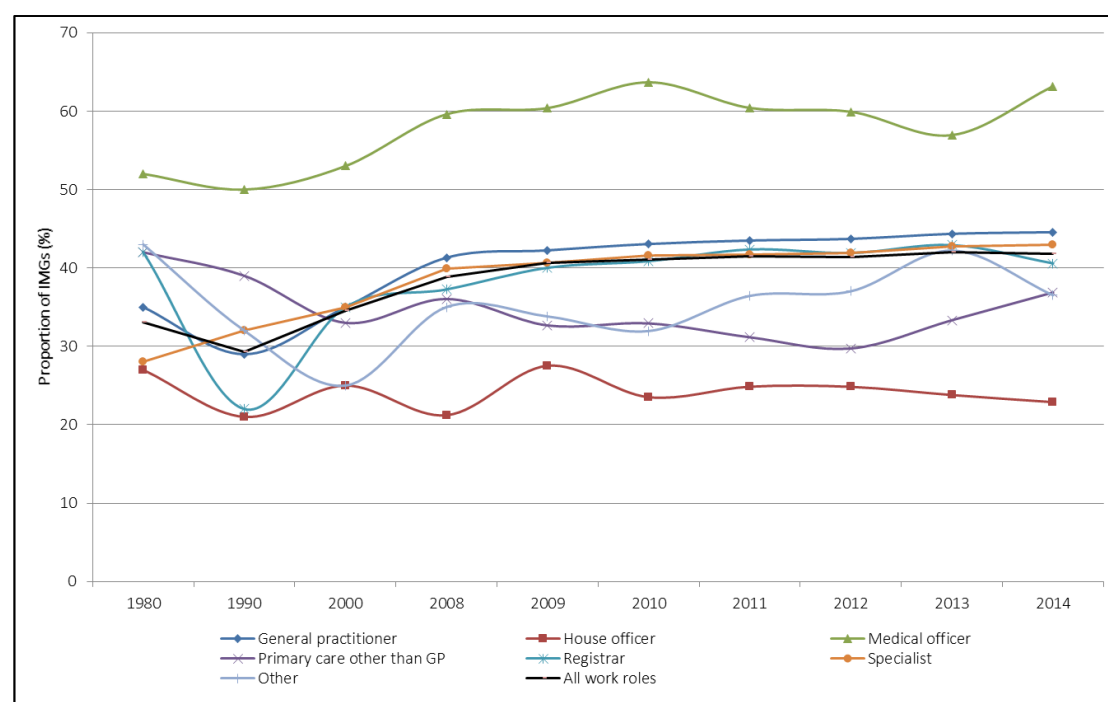
Work role

Table 19 shows that the medical officer work role again had the highest proportion of IMGs, at 63.2 percent. The proportion of IMGs in most work roles was either unchanged or only changed slightly compared to previous years.

Table 19: Proportion of IMGs by work role at work site

Role at main work site	Percentage of IMGs							
	1980	1990	2000	2010	2011	2012	2013	2014
General practitioner	35.0	29.0	35.0	43.1	43.5	43.7	44.4	44.6
House officer	27.0	21.0	25.0	23.5	24.9	24.8	23.8	22.9
Medical officer	52.0	50.0	53.0	63.7	60.4	59.9	56.9	63.2
Primary care other than GP	42.0	39.0	33.0	32.9	31.2	29.7	33.3	36.9
Registrar	42.0	22.0	35.0	40.9	42.4	41.9	42.9	40.6
Specialist	28.0	32.0	35.0	41.6	41.7	41.9	42.8	43.0
Other	43.0	32.0	25.0	32.0	36.4	37.0	42.2	36.5
All work roles	33.1	29.3	34.5	41.1	41.5	41.4	42.0	41.9

Figure 17: Proportion of IMGs by work role at main work site (1980-2014)



Work type

Figure 18 shows the proportion of IMGs working as specialists or general practitioners in vocational scopes for those areas with more than 50 doctors. The proportion of IMGs was more than 50 percent in obstetrics & gynaecology and psychiatry.

Figure 18: Proportion of IMGs by vocational scope (areas with more than 50 doctors)

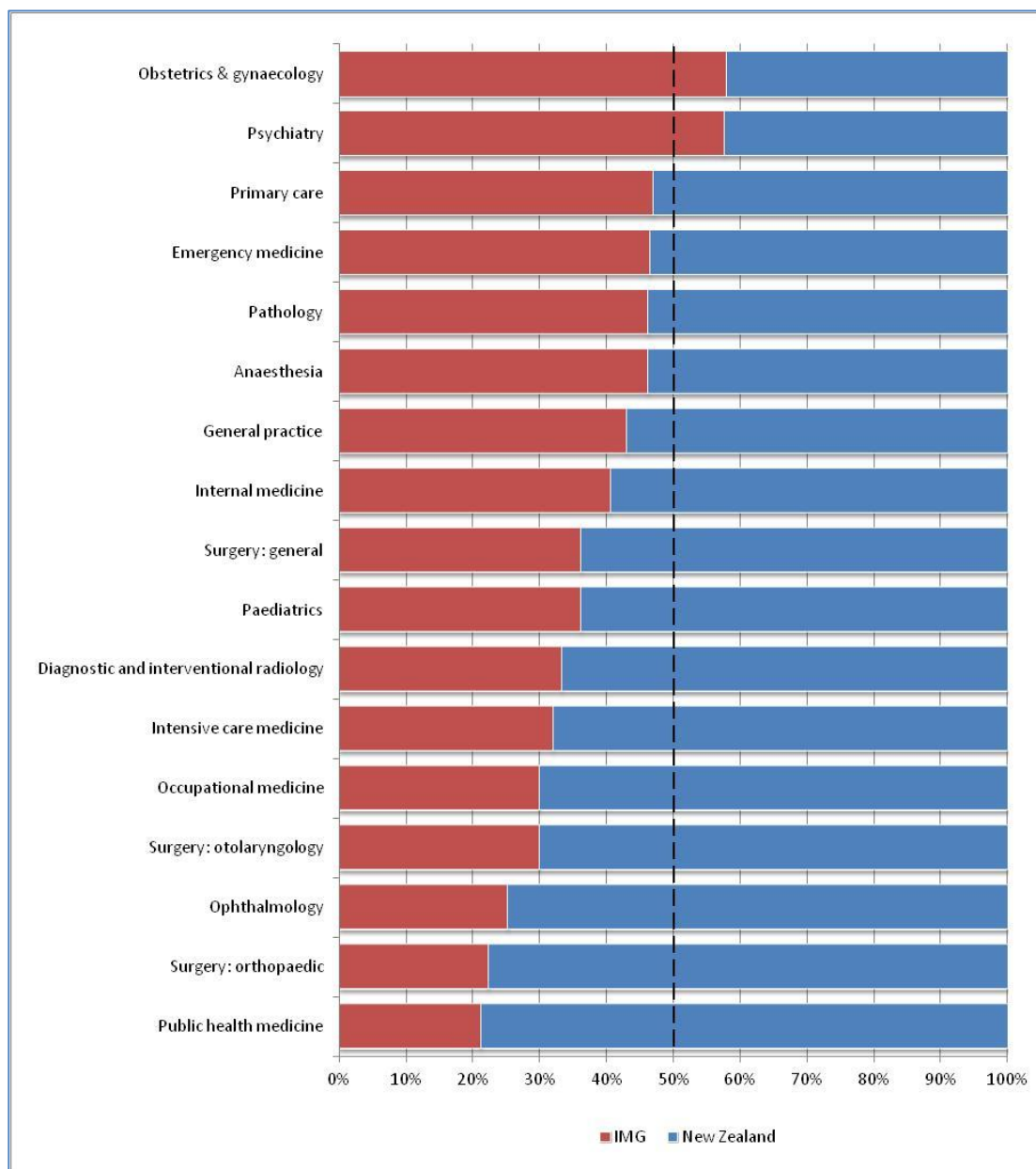


Table 20 shows the proportion of IMGs working as specialists or GPs in vocational scopes 10-yearly from 1980, 5 yearly from 2000 and then yearly for the last 4 years.

The proportion of IMGs increased in:

- sports medicine (from 6 to 13 percent)
- paediatric surgery (from 27 percent to 38 percent)
- plastic and reconstructive surgery (from 13 percent to 23 percent).

The proportion of IMGs decreased in palliative medicine (from 67 percent to 59 percent), accident and medical practice (decreased from 75 percent to 39 percent in 2014 after increasing from 62 percent in 2013), musculoskeletal medicine (from 47 percent to 43 percent) and paediatrics (from 42 percent to 39 percent).

Table 20: Proportion of IMGs by vocational scope¹ (specialists and GPs)

Vocational scope ¹	Percentage IMGs								
	1980	1990	2000	2005	2010	2011	2012	2013	2014
Accident and medical practice	– ²	–	–	59	50	56	62	75	39
Anaesthesia	41	39	45	48	46	46	46	45	48
Basic medical science	31	42	20	45	24	55	58	64	56
Clinical genetics				0	22	29	67	32	36
Dermatology	30	20	23	30	31	28	27	26	25
Diagnostic and interventional radiology	24	27	32	34	26	33	33	35	36
Emergency medicine	–	50	48	45	51	45	46	42	51
Family planning and reproductive health	–	–	–	40	36	100	33	55	67
General practice	35	30	35	40	40	42	43	43	45
Intensive care medicine	–	–	18	26	32	31	32	35	32
Internal medicine	24	34	33	38	40	40	41	41	43
Medical administration	–	–	–	30	36	42	39	33	47
Musculoskeletal medicine	–	–	40	33	29	29	35	47	43
Obstetrics & gynaecology	24	28	45	49	50	56	58	57	56
Occupational medicine	–	41	31	33	33	33	30	31	36
Ophthalmology	18	16	22	25	23	24	25	31	29
Paediatrics	38	39	32	42	40	37	36	42	39
Palliative medicine	–	–	–	73	59	79	71	67	59
Pathology	21	26	38	45	44	49	46	47	52
Primary care	0	–	38	44	45	46	47	38	40
Psychiatry	41	50	57	57	59	59	58	59	59
Public health medicine	44	36	20	25	22	21	21	20	23
Radiation oncology	–	55	62	56	54	60	54	54	48
Rehabilitation medicine	–	–	29	63	64	67	64	87	62
Rural hospital medicine	–	–	–	–	–	–	–	47	54
Sexual health medicine	33	50	33	36	37	33	25	20	21
Sports medicine	–	–	4	24	29	13	20	6	13
Surgery: cardiothoracic	–	–	28	48	55	50	44	54	52
Surgery: general	–	–	30	37	32	34	36	39	38
Surgery: neurosurgery	–	–	50	65	64	71	63	62	54
Surgery: orthopaedic	–	–	13	19	28	25	22	23	23
Surgery: other	–	–	21	28	36	33	32	30	27
Surgery: otolaryngology	31	24	28	29	35	23	30	29	32
Surgery: paediatric	–	–	31	29	50	21	31	27	38
Surgery: plastic	–	–	19	23	27	22	22	13	23
Surgery: urology	–	–	29	20	23	25	18	27	25
Surgery: vascular	–	–	11	18	35	32	20	26	24

All specialists and GPs³	–	–	35	41	41	42	43	43	43
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¹ All categories are vocational scopes except for basic medical science, primary care, and surgery: other.

² A dash means data were not available.

³ Specialists and GPs exclude 'not answered' and 'other'.

Retention

New Zealand graduates – retention by class

Table 21 and Figure 19 compare the retention rates at each year after graduation for successive classes of graduates from 1995 to 2014.

Table 21: Graduate retention of class years 1995–2014

Final class year ¹	Size of class ²	Number registered	Percentage of registered ³ graduates retained, by postgraduate year ⁴																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1995	275	257	96	85	74	76	81	75	72	69	66	66	68	67	70	68	68	68	68	69	67
1996	275	266	97	88	79	80	78	78	77	75	68	64	64	61	64	66	67	67	66	68	
1997	284	268	97	85	74	68	72	72	72	70	67	64	65	61	63	62	63	63	64		
1998	288	251	96	80	70	77	77	77	73	70	66	61	61	59	58	60	62	65			
1999	305	271	99	78	75	76	77	77	72	70	66	58	56	58	59	59	60				
2000	323	285	94	82	75	78	78	78	79	76	75	67	61	60	56	60					
2001	297	271	95	79	78	81	80	80	78	74	72	65	63	59	59						
2002	308	284	94	81	76	79	82	82	79	76	73	71	65	64							
2003	329	302	94	81	80	78	79	79	75	74	71	69	66								
2004	342	297	97	83	81	84	81	81	78	76	73	65									
2005	318	303	98	82	76	77	75	75	73	72	69										
2006	322	291	97	88	84	79	79	79	77	74											
2007	323	282	97	83	79	78	73	73	72												
2008	356	319	98	90	86	84	81	81													
2009	389	346	98	90	84	83	82														
2010	382	326	98	94	91	90															
2011	400	369	99	95	91																
2012	372	371	100	94																	
2013	424	396	99																		
2014	441	404																			

¹ 'Final class year' is used as Auckland and Otago medical schools identify graduate year differently.

² The 'Size of class' figure is taken from a list of those in final class years as given by medical schools. Not all will necessarily be eligible for graduation.

³ 'Registered' is defined as those from the class year who have been registered at some time.

⁴ 'Year' gives those who held one or more practising certificates in the year April to March as a percentage of the graduates from the class year who registered in New Zealand.

Table 22: Average percentage of registered graduates retained, by postgraduate year

	Postgraduate year																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Average percentage of registered graduates retained	97	85	80	79	78	78	75	73	70	65	63	61	61	63	64	66	66	68	67
Standard deviation	1.6	5.3	6.0	4.8	3.1	3.1	2.9	2.7	3.1	3.7	3.6	3.1	4.6	3.9	3.3	2.2	2.0	0.9	

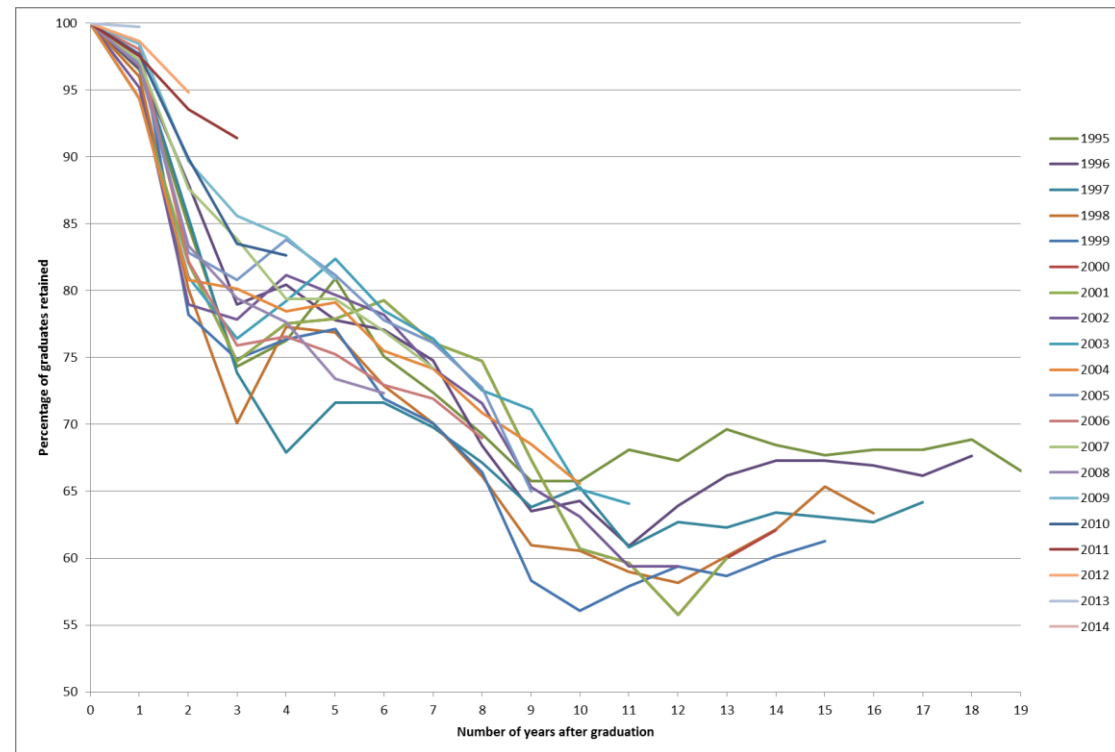
Tables 21 and 22 show that on average, 85 percent of graduates are retained 2 years after graduation and by the third year, 80 percent are retained.

Retention continues to drop, gradually decreasing to 70 percent 9 years after graduation before bottoming out at 61 percent in year 12 before beginning to increase again.

This suggests that although graduates may leave in the years immediately following graduation, some of these graduates do then return to New Zealand later in their careers.

Table 22 shows little variance in the percentage of registered graduates retained in any given postgraduate year across the class years analysed suggesting the trends around retention are well-established and have been consistent over time.

Figure 19: Graduate retention of class years 1995–2014



Where do graduates go

Unfortunately we have no firm statistics about what happens to medical graduates who do not register to do their intern year in New Zealand, or who leave New Zealand following graduation as it is difficult to collect data about these groups.

In terms of those who do not register, we do know that some medical graduates are international fee-paying students whose medical education has been sponsored by a country or organisation. These students are sometimes required to return to the country which has sponsored them or the country where their sponsoring organisation is based as a condition of their sponsorship.

Because generally these doctors do not register for the intern year, they are not counted in the retention analysis which compares the number initially registered with the number retained in subsequent years.

In terms of those medical graduates who do register initially but subsequently leave, there are a number of projects around the world looking into medical migration which are collecting data on the origin of doctors registered in various countries. We have been working with some of these researchers and through these collaborations we hope to be able to access data showing where our graduates are working and incorporate this information into the report for the 2015 survey results.

International medical graduates – retention after registration

Table 23 and Figure 20 compare the retention rates of IMGs at each year after initial registration for successive years from 2000 to 2013. Reliable data are not available for the years before 2000. Because the method used to calculate retention requires a full calendar year of certificate data, 2013 was the most recent cohort which could be analysed at the time of publishing. The 2014 cohort will be included in the next report.

Table 23: Retention rates for IMGs, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	924	47.4	38.2	34.5	31.0	28.4	27.5	26.6	24.7	22.7	21.6	22.1	20.5	19.6	20.0
2001	932	46.6	35.8	32.2	30.8	29.6	29.1	28.6	26.4	25.8	24.9	23.5	23.4	22.9	
2002	1,073	48.6	36.7	32.0	31.0	28.3	27.3	26.7	26.7	25.7	24.8	24.6	23.6		
2003	1,092	45.0	33.0	29.7	28.9	28.1	27.2	26.4	26.5	24.8	25.0	24.5			
2004	1,014	47.9	32.3	28.9	27.3	26.1	26.2	25.0	24.1	23.2	22.5				
2005	1,131	54.0	36.3	32.7	30.8	30.2	29.1	26.8	25.7	25.8					
2006	967	50.6	35.5	32.5	30.9	29.3	28.0	26.7	25.1						
2007	1,105	62.0	45.7	39.5	37.7	36.8	34.7	33.6							
2008	1,096	57.1	37.0	30.2	28.6	26.3	25.1								
2009	1,163	59.4	35.2	31.0	27.9	26.5									
2010	1,194	61.4	33.6	28.8	27.0										
2011	1,255	61.8	37.6	31.3											
2012	1,195	66.4	38.5												
2013	1,138	67.3													

¹ IMGs are included in a grouping if they held a practising certificate in that year but not in the previous year. For example, for an IMG to be included in the 2000 grouping, they must have held a practising certificate in 2000 and not held a practising certificate in 1999.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

Figure 20: Retention rate for IMGs, 2000–2013

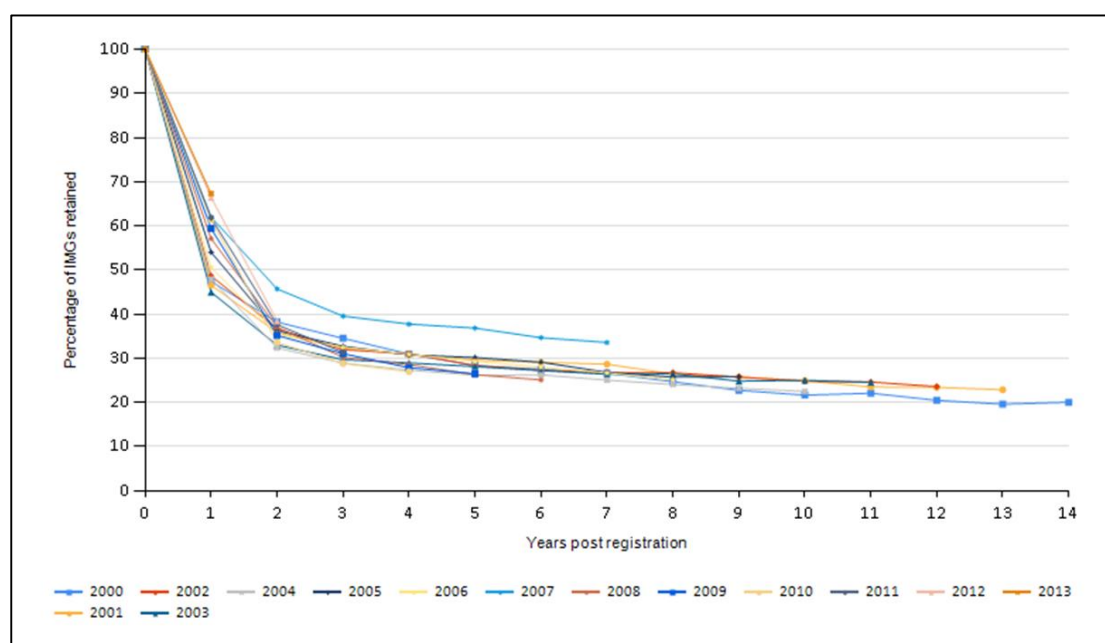


Table 24 shows that on average between 55 and 56 percent of IMGs are retained in the year immediately after initial registration.

After this initial drop, the percentage of IMGs continues to decrease more gradually, dropping to just less than 32 percent after 3 years from initial registration. This trend has been consistent across the period analysed, with little variance in the proportion retained.

Table 24: Average percentage of IMGs retained, by post-registration year

	Post-registration year													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Average percentage of IMGs retained	55.4	36.6	31.9	30.2	29.0	28.2	27.6	25.6	24.7	23.8	23.7	22.5	21.2	20.0
Standard deviation	7.8	3.3	2.9	3.0	3.1	2.7	2.6	1.0	1.4	1.6	1.2	1.8	2.3	

Retention of international medical graduates – by region

This section splits the IMGs we analysed into groups based on the region where they gained their primary medical qualification. The groups are the Americas, Asia, Europe, North Africa and Middle East, Oceania, Sub-Saharan Africa and the United Kingdom.

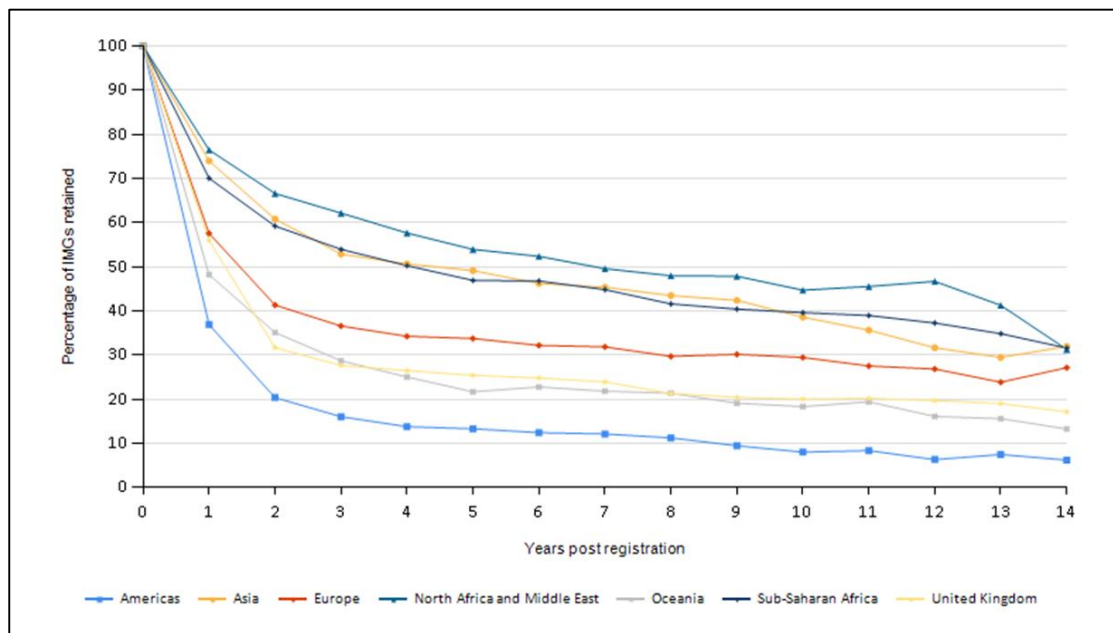
These groups are based on the level 1 major groups of the New Zealand Standard Classification for countries² although some groups have been combined and others split to make the figures easier to read. These combinations are:

- South-East Asia, North-East Asia and Southern and Central Asia have been combined to form the Asia grouping.
- North-West Europe and Southern and Eastern Europe have been combined in the Europe grouping.
- The United Kingdom has been separated out into its own group. It would normally form part of North-West Europe but as the United Kingdom is one of our main sources of IMGs, it was important to look at them separately.
- Because this section is analysing the retention of IMGs, New Zealand is not included in the Oceania group. This group therefore effectively represents Australian graduates and a small number from the Pacific Islands.

Figure 21 shows the average retention rate at each year after initial registration for successive years of IMG registrants from each country group. The full data for each group is presented in table form in Appendix 2 on page 55.

² Statistics New Zealand – Country – Classifications and related statistical standards: http://www.stats.govt.nz/surveys_and_methods/methods/classifications-and-standards/classification-related-stats-standards/country.aspx

Figure 21: Retention rate for IMGs by country, 2000–2013



Doctors from North Africa and the Middle East have the highest retention rate, followed by Sub-Saharan Africa and Asia.

Doctors from the Americas have the lowest retention rate, with just under 37 percent retained 1 year after registration. Seven years after registration, just over 12 percent remain.

Doctors from the United Kingdom also have lower-than-average retention rates. Just under 31 percent of these doctors are retained 2 years after registration, dropping to just over 20 percent after 8 years.

Similarly, doctors from Oceania have lower-than-average retention rates. Just under 32 percent of these doctors are retained 2 years after registration dropping to just over 21 percent after 8 years.

These figures suggest that doctors from the Americas, United Kingdom, and Oceania are more likely to come to New Zealand to work for a limited period than doctors from Asia, Africa, and Europe.

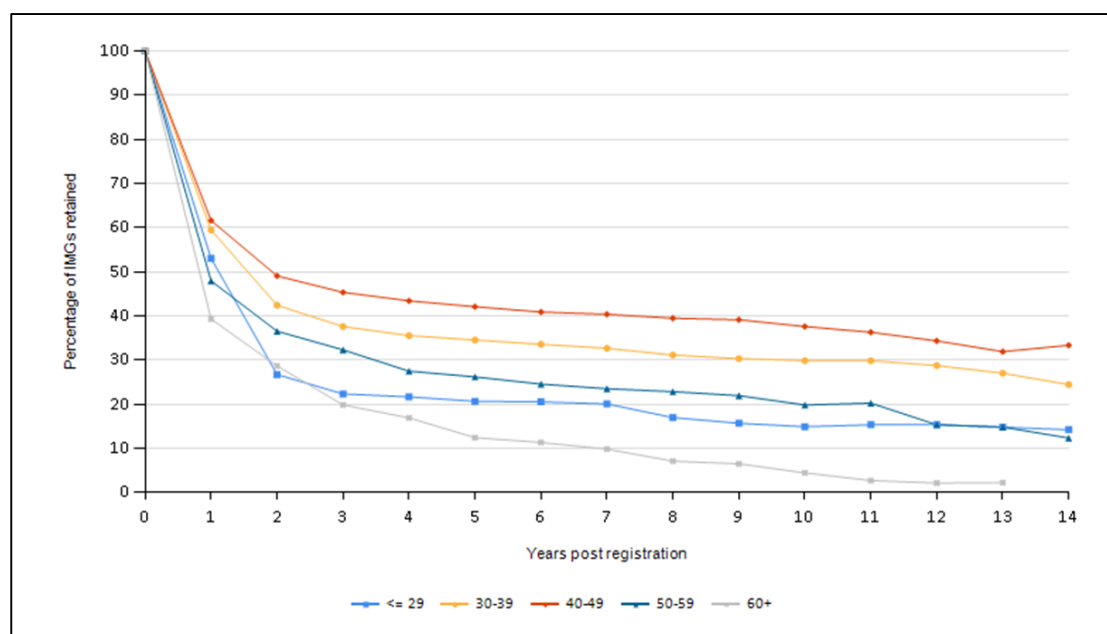
Retention of international medical graduates – by age group

This section splits the IMGs analysed into five age groups based on the doctor's age at 1 July of the original group year (for example, doctors from the 2000 group have their age taken as at 1 July 2000). The groupings are:

- Less than 30
- 30–39
- 40–49
- 50–59
- 60 or older.

Figure 22 shows the average retention rate at each year after initial registration for successive years of IMG registrants from each group. The full data for each group are presented in table form in Appendix 3 on page 59.

Figure 22: Retention rate for IMGs by age group, 2000–2013



Doctors in the 40–49 age group have the highest overall retention rate, followed by those in the 30–39 age group. More than 40 percent of doctors in the 40–49 age group are retained 7 years after registration.

Doctors from the 60+ age group have the lowest retention rate, followed by the 20–29 age group. The retention rate for doctors in the 20–29 age group drops to just below 21 percent after only 5 years, and then levels out to around 15 percent in subsequent years.

These figures suggest that doctors who come to New Zealand aged between 30 and 50 are more likely to stay long term.

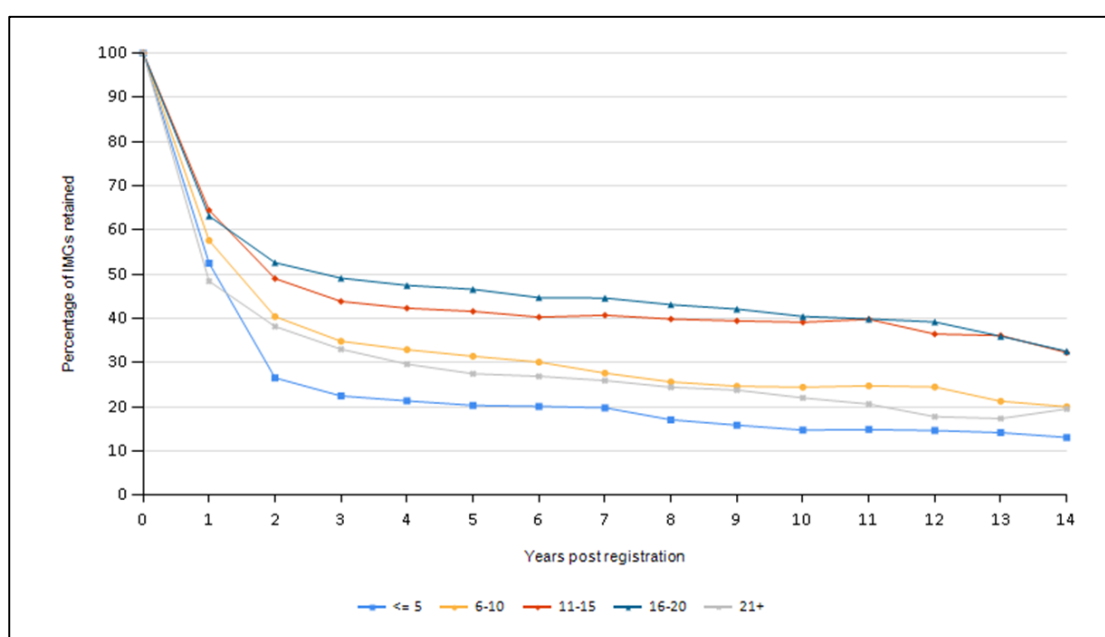
Retention of international medical graduates – by time since qualification

To analyse these figures, we split the IMGs into five groups based on the number of years since they gained their primary qualification (calculated at the original group year). For example, a doctor in the 2000 group who qualified in 1996 is included in the 1–4 group, as it is 4 years since they qualified.

The groups are less than 5, 5–10, 11–15, 16–20, and 21 or more.

Figure 23 shows the average retention rate at each year after initial registration for successive years of IMG registrants from each group. The full data for each group are presented in table form in Appendix 4 on page 62.

Figure 23: Retention rate for IMGs, by time since qualification



Doctors who held their primary qualification for between 11 and 20 years at the time they came to New Zealand have the highest retention rate. More than 40 percent of doctors in these groups are retained 9 years after registration.

Doctors who had only recently graduated when they registered in New Zealand (<5 years) have the lowest retention rate, dropping to just over 26 percent after 2 years and then dropping to around 20 percent after 5 years.

These results suggest that doctors who come to New Zealand early in their careers are less likely to stay long-term than doctors who arrive in the middle of their careers.

Retention of international medical graduates after full registration

The figures in the previous sections show that many IMGs do not come to New Zealand intending to stay long term. Instead, they come to fill a particular short-term need (that is, a locum position). This section analyses retention of IMGs after gaining full registration (in either a general or a vocational scope).

General scope

Table 25 shows the retention rate for IMGs in the years after they obtained a general scope of practice. To obtain a general scope, these doctors must have worked under supervision for between 6 months and one year. One year after obtaining a general scope, just over 77 percent of IMGs are still working in New Zealand. This decreases steadily to just under 65 percent after 5 years.

It is notable that the number of IMGs who obtained a general scope has increased dramatically since 2009 although the figures for 2012 and 2013 may indicate this trend is levelling out. Furthermore, the retention of IMGs who gained a general scope after one and two years since 2009 is a lot lower than in previous years.

One possible explanation is that more IMGs are applying for a general scope once they become eligible for it. Holding a general scope makes it easier for an IMG to return to New Zealand, should they leave to work overseas. The Council is also proactive in notifying IMGs when they become eligible for a general scope. As a result, this means that some IMGs might be applying for a general scope, not because they intend to stay in New Zealand long-term, but to leave the option open should they wish to return in the future.

We will continue to examine this trend as more data become available in future years.

Table 25: Retention rate for IMGs after general scope obtained

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	256	82.8	76.2	72.3	68.4	64.1	63.7	59.8	55.1	51.2	48.0	45.3	44.9	42.6	
2001	242	82.6	75.6	74.0	69.0	63.6	60.7	57.4	53.7	51.7	52.1	49.6	49.2	47.5	
2002	250	87.2	78.4	72.4	72.8	68.4	66.8	63.2	61.6	60.4	57.2	55.6	55.6		
2003	315	90.2	81.0	79.0	74.0	71.1	67.9	67.0	66.7	60.6	58.4	56.5			
2004	311	83.3	74.6	69.1	66.2	63.7	59.8	57.6	54.3	55.6	52.7				
2005	323	77.4	72.8	68.7	64.7	65.6	64.4	62.8	60.1	58.5					
2006	284	80.6	76.1	69.4	67.6	65.5	60.9	60.9	60.9						
2007	331	82.5	76.7	75.2	71.0	67.4	62.8	59.8							
2008	384	74.7	70.8	65.1	61.7	57.6	55.5								
2009	470	79.6	69.8	65.7	61.9	59.8									
2010	574	69.0	63.6	59.6	56.4										
2011	567	61.2	54.3	50.3											
2012	473	64.9	55.0												
2013	538	63.6													
Average percentage of IMGs retained		77.1	71.1	68.4	66.7	64.7	62.5	61.1	58.9	56.3	53.7	51.8	50.0	46.2	42.6
Standard deviation		9.1	8.5	7.7	5.2	4.0	3.8	3.2	4.7	4.2	4.2	5.1	5.2	1.8	

¹ IMGs are included in a grouping if they were registered in a general scope of practice at some point during the year.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

Vocational scope

Table 26 shows the retention rate for IMGs in the years after they obtained a vocational scope of practice, and Table 26 on the following page shows the equivalent figures for New Zealand graduates.

The requirements to obtain a vocational scope can vary. Some IMGs will have already worked in New Zealand for a number of years and completed some or all of an approved vocational training programme in New Zealand. Doctors who completed their postgraduate training overseas will have completed between 6 months and 2 years of supervised practice.

Table 26: Retention rate for IMGs after vocational scope obtained

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	161	90.1	85.7	83.9	78.9	77.6	73.9	72.7	69.6	68.3	67.7	67.1	66.5	66.5	64.6
2001	278	89.9	83.8	84.5	80.2	78.8	75.2	74.8	74.5	73.0	72.7	69.4	68.3	66.2	
2002	202	90.6	89.1	87.1	85.6	82.7	81.2	81.7	79.2	76.7	76.7	71.8	71.3		
2003	223	92.4	87.9	84.8	79.8	78.5	76.2	74.9	74.4	73.1	72.6	70.9			
2004	226	86.7	80.1	80.1	75.7	72.1	70.4	68.1	67.3	66.4	64.2				
2005	206	89.3	83.0	79.6	77.7	74.3	75.2	72.8	72.3	70.9					
2006	206	86.4	84.0	79.6	76.2	74.3	72.3	72.3	68.9						
2007	223	78.9	75.3	74.4	73.1	68.2	66.4	64.1							
2008	229	82.5	79.0	72.1	70.3	66.8	65.1								
2009	239	82.8	76.2	72.4	69.9	68.2									
2010	241	84.6	77.2	75.1	73.9										
2011	327	84.1	78.0	76.1											
2012	354	84.5	75.4												
2013	398	87.4													
Average percentage of IMGs retained		86.5	81.1	79.1	76.5	74.1	72.9	72.7	72.3	71.4	70.8	69.8	68.7	66.3	64.6
Standard deviation		3.8	4.8	5.1	4.7	5.3	5.0	5.1	4.1	3.7	4.9	2.0	2.4	0.2	

¹ IMGs are included in a grouping if they were registered in a vocational scope at some point during that year.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

One year after obtaining a vocational scope, 86.5 percent of IMGs are retained. This decreases gradually to just fewer than 73 percent after 6 years.

The figures also reflect that an increasing number of IMGs are obtaining vocational scopes with this figure increasing 147 percent since 2000, much of this increase occurring in the last four years where the number increased from 239 in 2009 to 398 in 2013 (a 66 percent increase).

Table 27 shows the equivalent retention rate for New Zealand graduates in the years after they obtained a vocational scope of practice.

Table 27: Retention rate for New Zealand graduates after vocational scope obtained

First year registered ¹	Number registered	Percentage of New Zealand graduates retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	219	95.0	94.1	94.5	95.0	94.5	95.0	91.8	90.0	90.4	89.5	88.6	88.1	87.7	87.2
2001	364	94.8	94.5	93.1	93.1	92.3	92.3	92.6	92.0	91.8	90.1	89.6	89.0	88.2	
2002	276	91.7	90.9	90.2	94.2	93.1	91.7	91.3	90.9	89.9	88.0	87.3	86.6		
2003	250	93.2	90.0	92.0	92.0	90.8	90.4	89.6	89.6	89.2	89.2	89.2			
2004	211	88.6	90.5	89.1	88.2	89.6	88.2	87.2	87.2	88.6	87.2				
2005	235	87.7	87.2	90.6	89.8	88.1	88.5	88.1	88.1	88.9					
2006	226	85.8	90.3	89.4	87.2	88.9	88.9	88.1	88.1						
2007	215	85.6	83.3	85.1	87.0	84.7	86.5	84.7							
2008	220	85.0	90.0	90.0	88.6	90.5	89.1								
2009	223	87.0	87.9	89.7	91.0	90.1									
2010	212	86.3	88.2	90.1	90.1										
2011	265	81.5	81.5	81.1											
2012	232	82.8	80.2												
2013	277	84.1													
Average percentage of NZ graduates retained		87.8	88.4	89.6	90.6	90.3	90.1	89.2	89.4	89.8	88.8	88.7	87.9	87.9	87.2
Standard deviation		4.3	4.4	3.5	2.8	2.8	2.6	2.7	1.7	1.2	1.2	1.0	1.2	0.4	

¹ New Zealand graduates are included in a grouping if they were registered in a vocational scope during that year.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

The retention rate for New Zealand graduates after they have obtained a vocational scope of practice is higher than that of IMGs.

Although the retention rate for both New Zealand graduates and IMGs is on average between 85 and 90 percent one year after registration in a vocational scope, the retention rate for New Zealand graduates stabilises and even increases slightly in subsequent years to just under 90 percent.

By comparison, the retention rate for IMGs continues to drop after the first year, decreasing to around 70 percent 10 years after registration in a vocational scope.

A possible contributing factor to this reduced retention this is that IMGs are likely to be older and at a later stage in their careers when they gain their vocational scope compared to New Zealand graduates as many will have already been practising as specialists before coming to New Zealand. Because of this their retention is more likely to be affected by doctors who are retiring from medical practice.

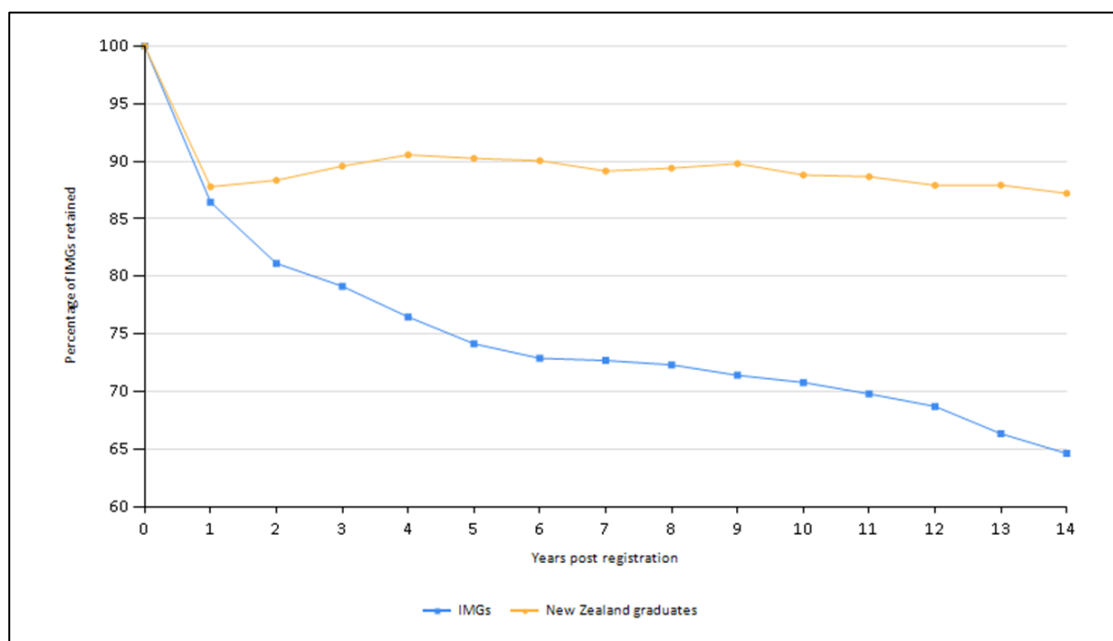
Looking at those doctors who gained a vocational scope of practice in 2014, the average age of doctors at the time they gained their vocational scope was 39.4 years for New Zealand graduates and 44 years for IMGs.

Another possible contributing factor is that Council policy currently requires doctors to apply for a vocational scope if they are intending to work as a specialist for more than one year; up until a recent policy change, this period was even more limited only allowing six months before a vocational scope application was required.

Therefore, similar to those applying for a general scope, some doctors who are applying for a vocational scope may be doing so not because they intend to stay in New Zealand long term, but to leave the option open should they wish to return in the future.

Figure 24 compares the retention of IMGs and New Zealand graduates after they obtain a vocational scope. The vertical axis starts at 60 percent to better show the difference in retention for the two groups.

Figure 24: Retention rate for IMGs and New Zealand graduates after vocational scope obtained



Survey method

Timing of the questionnaire

Workforce data are collected as part of the renewal of practising certificates. In 2000 the certificate renewal process was changed from one universal date to four renewal periods, based on the doctor's birth date.

The four periods of data in this report for the 2013 data are: November 2012, February 2013, May 2013, and August 2013. For the 2014 data the equivalent periods are November 2013, February 2014, May 2014 and August 2014.

The questionnaire was posted out a month or more before the end of each period. All data were collected within 3 months of a renewal period ending.

Sampling frame

The sampling frame for the workforce survey questionnaire consisted of doctors who:

- held a current general, provisional general, vocational, or provisional vocational scope of practice,
- held a current practising certificate, or held one at some point in the previous year, and
- had a New Zealand address at the date the questionnaire was posted.

Changes to the Council's registration policies mean that this sampling frame now includes some doctors who previously held temporary registration and would have been excluded. However, the sampling frame does not include doctors registered for specific short-term purposes (special purpose scope of practice).

Responses to the survey

For the 2013 workforce survey, survey forms were sent out to 14,186 doctors with New Zealand addresses. Ninety-seven percent (13,806) replied. For the 2014 survey, survey forms were sent out to 14,505 doctors with New Zealand addresses. Just under 98 percent (14,179) replied.

The results in this report include only the 12,606 active doctors for 2013 and 12,848 active doctors for 2014 – that is, those working 4 or more hours a week, as shown in Table 1 on page 2 of this report.

Some doctors in active employment may not have responded to the survey. No allowance has been made in figures for the response rate.

Categories of data

Data for this report were collected in employer, role, and work type categories at a main work site, and at second and third work sites where appropriate.

Role options were:

- general practitioner
- primary care
- house officer
- registrar
- medical officer
- specialist/consultant
- other.

Use of registration data

This report also includes data drawn from the Council's registration information to avoid duplicating questions in the practising certificate application including data around a doctor's age, sex, registration date, and year and country of graduation.

Where the Council's registration database is cited as a source for additional analysis, issue of a practising certificate is used as the measure of workforce participation.

Geographic analysis

Geographical analysis used territorial local authorities (TLAs) and district health board (DHB) regions based on the employment information for the main work site.

DHB populations were determined by amalgamating TLA population counts from the estimated resident population as at 30 June 2013 and 2014³.

Because the TLAs in the Auckland region have been combined into one, population figures for the separated areas are no longer available. Therefore, the DHB locality populations for Waitemata, Auckland and Counties Manukau have been estimated.

The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2012 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

Full-time equivalents (FTEs) were calculated proportionately, with 40 hours per week being one FTE.

Ethnicity

For the purposes of this report, multiple responses of ethnicity are reported as a single category, according to a simplified version of Statistics New Zealand's prioritisation standard. A single ethnic category was selected from multiple responses in the following order of priority:

1. New Zealand Māori
2. Pacific Island (Pasifika)
3. Chinese
4. Indian
5. Other non-European
6. Other European
7. NZ European / Pākehā.

³ Statistics New Zealand: Estimated Resident Population as at 30 June 2013 and 2014.

Calculating retention rates

Retention of New Zealand graduates

Retention of New Zealand graduates is calculated by comparing the list of graduates provided by the universities for a particular year with the lists of doctors who we granted practising certificates to in subsequent years.

Retention of international medical graduates

IMGs are included in a group if they practised in New Zealand in that year but not in the previous year. For example, for an IMG to be included in the 2000 cohort they must have practised in New Zealand in 2000 but not in 1999.

The retention rate is calculated by comparing the number of IMGs active at some point during a year to the number originally in that group. The retention rate is expressed as a percentage.

Inclusion in a group is not related to the date of graduation in the IMG's home country.

Explanation of terms used

Active doctors

Active doctors are doctors who, by their own estimate, worked a total of at least 4 hours in medical (including non-clinical) work during a typical working week.

Full-time equivalent (FTE)

Proportional calculation of FTEs is based on a 40-hour week; for example, 60 hours equal 1.5 FTE. On-call time is included in hours worked only if it is actually worked.

General practitioner or GP

Unless otherwise stated, a general practitioner is any respondent who has indicated they are working in that work role (see Work role below) at one of their work sites. It does not specifically refer to doctors holding the FRNZCGP qualification or doctors holding a vocational scope of general practice.

House officer

This work role category takes in doctors in their first few years out of medical school (Doctors in their first year out of medical school are also sometimes known as interns).

Hours on call

Refers to the additional hours when doctors are on call but not actually working.

Hours worked

Unless otherwise stated, hours worked are as reported by the survey respondent.

The combined total of hours worked across all work sites is based on a typical working week during the previous year (or the most recent week, if the respondent cannot identify a typical week).

International medical graduate

An international medical graduate (or IMG) is a doctor who obtained their primary medical qualification in a country other than New Zealand; previously known as an overseas trained doctor.

Main work site

A doctor's main work site is the place where they spend most of their working hours.

Medical officer

The National DHB Collective Agreement (MECA) between the Association of Salaried Medical Specialists (ASMS) and DHBs⁴ defines medical officer as 'any medical practitioner who is registered under the Health Practitioners Competence Assurance Act 2003 ... who is not a medical specialist'. Medical Officers are sometimes called Medical Officers of Special Specialist Scale (MOSS).

Registered within a vocational scope of practice

Doctors registered in a vocational scope of practice have completed an approved or equivalent postgraduate training programme leading to the award of an approved or equivalent postgraduate qualification.

Registration within a vocational scope of practice was previously known as vocational registration.

Specialist

This work role category is generally understood to require membership of the relevant specialist college, but survey respondents may apply the term more broadly to themselves.

To help with results analysis, GPs and doctors working in accident and medical practice or other primary care disciplines are recorded under separate work role categories.

Work role

Work role category options in the survey were:

- GP
- primary care other than GP
- house officer
- registrar
- medical officer
- specialist/consultant
- other.

Work type

This is the category of work at main work site, from the options shown in Table 3 on page 9.

⁴http://www.asms.org.nz/Site/Employment_in_NZ/National_DHB_Collective_Agreement_-_MECA/MECA.aspx

Further information

If you would like further information about the medical workforce, contact:

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Email: data-enquiries@moh.govt.nz

Website: www.moh.govt.nz

Phone: 04 816 2850

If you would like to contact the Council's Information Systems Analyst about this report, please email workforce@mcnz.org.nz.

Acknowledgements

This report was prepared by Andrew Cullen, Senior Information Systems Analyst.

The Medical Council of New Zealand would like to thank the doctors who completed the workforce survey, as well as all those who helped in reviewing the report and providing feedback.

Appendix 1 – Distribution of the workforce by district health board

Tables 28 and 29 show the distribution of all doctors and GPs by the DHB locality at the doctor's main work site for 2013 and 2014.

Table 28: Workforce by DHB locality of main work site 2013

DHB locality	Doctors	GPs ¹	DHB locality population ⁷	Doctors per 100,000 population	FTEs for GPs at all work sites ²	FTEs for GPs per 100,000 population	GPs per 100,000 population
Northland	397	143	164,800	241	134	81	87
Waitemata	1,159	386	542,571	214	348	64	71
Auckland	2,198	479	456,010	482	425	93	105
Counties Manukau	1,100	315	494,619	222	297	60	64
Waikato ³	1,041	286	398,780	261	272	68	72
Bay of Plenty	560	190	214,930	261	162	75	88
Lakes	263	97	103,200	255	87	84	94
Tairāwhiti	107	39	47,000	228	35	74	83
Hawke's Bay	387	144	157,850	245	128	81	91
Taranaki	264	80	113,810	232	70	62	70
MidCentral	418	104	160,650	260	107	67	65
Whanganui	129	40	58,050	222	43	74	69
Wairarapa	79	30	42,390	186	30	71	71
Hutt	330	108	142,500	232	95	67	76
Capital & Coast ⁴	1,138	311	301,900	377	262	87	103
Nelson Marlborough	356	129	142,200	250	106	75	91
West Coast	63	19	3,2920	191	20	61	58
Canterbury	1,538	448	503,640	305	396	79	89
Otago	704	179	180,650	390	161	89	99
South Canterbury	113	41	57,510	196	43	75	71
Southland ⁵	262	111	125,600	209	101	80	88
Total	12,606	3,679	4,441,580	284	3,324	75	83
Southern ⁶	966	290	306,250	315	262	86	95

¹ Number of GPs is the number of doctors who reported a work role of GP at their main work site.

² The calculation of GP FTE includes all hours recorded at site 1, site 2, and site 3 where the work role was GP for that work site.

³ Includes all TLA Ruapehu to simplify analysis. Officially, Ruapehu District is split between Whanganui and Waikato DHBs.

⁴ Includes all TLA Kapiti to simplify analysis. Officially, Kapiti Coast District is split between Capital & Coast and MidCentral DHBs.

⁵ Includes all TLA Queenstown–Lakes to simplify analysis. Officially, Queenstown–Lakes District is split between Southland and Otago DHBs.

⁶ Southern is the result of a merger between Southland and Otago and was formed on 1 May 2010. For consistency with previous reports, the DHB localities for Southland and Otago are still shown separately in the main table, but the combined figures are shown underneath.

⁷ The DHB locality populations for Waitemata, Auckland and Counties Manukau are estimates because the TLA which made up these DHB regions previously have been merged into one Auckland TLA and so TLA populations are no longer available. The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2012 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

Table 29: Workforce by DHB locality of main work site 2014

DHB locality	Doctors	GPs ¹	DHB locality population ⁷	Doctors per 100,000 population	FTEs for GPs at all work sites ²	FTEs for GPs per 100,000 population	GPs per 100,000 population
Telemedicine ⁸	9	0	-	-	-	-	-
Northland	400	153	166,100	241	142	86	92
Waitemata	1,186	391	554,887	214	355	64	70
Auckland	2,228	490	466,363	478	439	94	105
Counties Manukau	1,160	330	505,846	229	306	60	65
Waikato ³	1,073	297	404,700	265	276	68	73
Bay of Plenty	556	192	217,430	256	165	76	88
Lakes	261	93	103,600	252	85	82	90
Tairāwhiti	109	37	47,100	231	33	70	79
Hawke's Bay	393	142	158,850	247	130	82	89
Taranaki	249	77	114,960	217	69	60	67
MidCentral	402	107	161,850	248	104	65	66
Whanganui	134	48	58,000	231	51	87	83
Wairarapa	67	32	42,800	157	32	74	75
Hutt	351	105	143,500	245	94	65	73
Capital & Coast ⁴	1,174	313	305,200	385	266	87	103
Nelson Marlborough	364	144	143,200	254	118	83	101
West Coast	55	20	32,790	168	22	68	61
Canterbury	1,597	474	514,440	310	418	81	92
Otago	713	176	182,500	391	155	85	96
South Canterbury	113	39	58,100	194	41	71	67
Southland ⁵	254	110	127,400	199	100	78	86
Total	12,848	3,770	4,509,616	285	3,401	75	84
Southern ⁶	967	286	309,900	312	255	82	92

¹ Number of GPs is the number of doctors who reported a work role of GP at their main work site.

² The calculation of GP FTE includes all hours recorded at site 1, site 2, and site 3 where the work role was GP for that work site.

³ Includes all TLA Ruapehu to simplify analysis. Officially, Ruapehu District is split between Whanganui and Waikato DHBs.

⁴ Includes all TLA Kapiti to simplify analysis. Officially, Kapiti Coast District is split between Capital & Coast and MidCentral DHBs.

⁵ Includes all TLA Queenstown–Lakes to simplify analysis. Officially, Queenstown–Lakes District is split between Southland and Otago DHBs.

⁶ Southern is the result of a merger between Southland and Otago and was formed on 1 May 2010. For consistency with previous reports, the DHB localities for Southland and Otago are still shown separately in the main table, but the combined figures are shown underneath.

⁷ The DHB locality populations for Waitemata, Auckland and Counties Manukau are estimates because the TLA which made up these DHB regions previously have been merged into one Auckland TLA and so TLA populations are no longer available. The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2012 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

⁸ Represents doctors working in telemedicine who we could not allocate to a particular DHB locality based on the information available to us.

Appendix 2 – Retention of international medical graduates by country

Tables 30 to 36 show the cohort retention rate at each year after initial registration for successive years of IMG registrants from each group, as described on page 40. The footnotes referred to in these tables are detailed on page 57 following table 36 and are the same for all tables in this section.

Table 30: Retention rate for graduates from the Americas, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	113	29.2	19.5	15.0	9.7	9.7	8.8	7.1	7.1	6.2	7.1	7.1	5.3	7.1	6.2
2001	128	18.8	14.1	12.5	9.4	8.6	11.7	14.1	10.2	10.2	8.6	10.2	8.6	7.8	
2002	121	24.8	19.0	11.6	10.7	8.3	7.4	9.1	9.9	7.4	7.4	5.8	5.0		
2003	155	24.5	17.4	12.9	12.9	12.3	11.0	11.6	11.0	11.0	10.3	10.3			
2004	138	31.9	16.7	13.8	10.9	10.1	10.9	9.4	9.4	7.2	6.5				
2005	178	39.9	23.6	21.9	19.1	21.3	18.0	15.7	15.7	14.6					
2006	150	34.7	20.7	19.3	16.7	19.3	18.7	15.3	15.3						
2007	200	43.0	21.0	16.0	16.0	15.5	14.5	14.5							
2008	225	37.8	21.3	16.4	16.0	12.4	10.7								
2009	238	39.9	21.4	20.2	15.5	15.1									
2010	249	44.2	19.3	14.9	14.5										
2011	239	46.4	23.4	17.6											
2012	239	48.5	27.2												
2013	234	52.6													
Average percentage of IMGs retained		36.9	20.4	16.0	13.8	13.3	12.4	12.1	11.2	9.4	8.0	8.3	6.3	7.4	6.2
Standard deviation		10.0	3.4	3.2	3.2	4.5	3.9	3.3	3.2	3.1	1.5	2.3	2.0	0.5	

Table 31: Retention rate for graduates from Asia, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	119	73.9	69.7	63.0	58.0	53.8	49.6	48.7	43.7	42.0	36.1	36.1	33.6	31.9	31.9
2001	89	70.8	58.4	50.6	50.6	44.9	46.1	44.9	42.7	38.2	34.8	31.5	30.3	27.0	
2002	126	74.6	66.7	56.3	49.2	50.0	44.4	42.9	43.7	42.1	36.5	33.3	31.0		
2003	125	69.6	65.6	59.2	56.0	52.0	50.4	48.0	47.2	42.4	43.2	41.6			
2004	90	68.9	65.6	57.8	54.4	53.3	52.2	51.1	50.0	45.6	42.2				
2005	100	78.0	68.0	62.0	57.0	54.0	53.0	45.0	44.0	44.0					
2006	109	68.8	54.1	45.9	43.1	40.4	38.5	35.8	33.0						
2007	149	78.5	59.7	53.0	51.7	52.3	47.7	46.3							
2008	103	76.7	58.3	43.7	39.8	38.8	34.0								
2009	99	76.8	59.6	56.6	52.5	51.5									
2010	85	74.1	55.3	45.9	44.7										
2011	99	68.7	54.5	40.4											
2012	97	70.1	54.6												
2013	87	86.2													
Average percentage of IMGs retained		74.0	60.8	52.9	50.6	49.1	46.2	45.3	43.5	42.4	38.6	35.6	31.6	29.4	31.9
Standard deviation		5.0	5.6	7.5	5.9	5.7	6.4	4.6	5.3	2.5	3.8	4.4	1.7	3.5	

Table 32: Retention rate for graduates from Europe, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	59	50.8	49.2	40.7	33.9	32.2	30.5	32.2	27.1	27.1	25.4	30.5	27.1	23.7	27.1
2001	71	47.9	38.0	39.4	35.2	36.6	29.6	29.6	26.8	29.6	29.6	26.8	25.4	23.9	
2002	100	59.0	40.0	37.0	38.0	32.0	32.0	31.0	33.0	28.0	29.0	28.0	28.0		
2003	93	41.9	34.4	29.0	28.0	28.0	26.9	25.8	26.9	25.8	24.7	24.7			
2004	91	61.5	51.6	44.0	45.1	47.3	45.1	42.9	38.5	38.5	38.5				
2005	116	64.7	43.1	39.7	34.5	35.3	34.5	34.5	31.9	31.9					
2006	127	44.9	31.5	28.3	30.7	26.8	26.0	25.2	23.6						
2007	131	66.4	49.6	42.7	38.2	38.2	35.1	33.6							
2008	174	58.6	42.5	35.6	33.3	31.6	29.9								
2009	201	58.2	40.3	36.3	33.3	29.4									
2010	163	61.3	33.1	28.8	26.4										
2011	175	59.4	41.1	37.1											
2012	190	66.3	42.6												
2013	199	64.8													

Average percentage of IMGs retained	57.6	41.3	36.6	34.2	33.7	32.2	31.8	29.7	30.1	29.4	27.5	26.8	23.8	27.1
Standard deviation	8.0	6.2	5.3	5.1	6.0	5.7	5.6	5.0	4.6	5.5	2.4	1.3	0.2	

Table 33: Retention rate for graduates from North Africa and the Middle East, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	32	78.1	71.9	71.9	71.9	62.5	59.4	56.3	56.3	53.1	43.8	37.5	34.4	34.4	31.3
2001	27	74.1	59.3	63.0	51.9	51.9	51.9	48.1	51.9	48.1	48.1	51.9	51.9	48.1	
2002	26	80.8	69.2	65.4	57.7	57.7	57.7	57.7	57.7	53.8	57.7	53.8	53.8		
2003	18	72.2	55.6	50.0	50.0	44.4	44.4	33.3	33.3	33.3	38.9	38.9			
2004	20	80.0	65.0	55.0	55.0	45.0	55.0	45.0	35.0	35.0	35.0				
2005	22	81.8	81.8	77.3	72.7	68.2	68.2	68.2	68.2	63.6					
2006	12	66.7	75.0	58.3	50.0	41.7	33.3	33.3	33.3						
2007	11	72.7	63.6	54.5	54.5	54.5	54.5	54.5							
2008	15	73.3	66.7	60.0	53.3	60.0	46.7								
2009	15	86.7	73.3	60.0	53.3	53.3									
2010	22	86.4	63.6	63.6	63.6										
2011	18	77.8	66.7	66.7											
2012	24	66.7	54.2												
2013	15	73.3													

Average percentage of IMGs retained	76.5	66.6	62.1	57.6	53.9	52.3	49.6	47.9	47.8	44.7	45.5	46.7	41.3	31.3
Standard deviation	6.3	7.8	7.6	8.2	8.5	10.0	12.1	14.0	11.7	8.8	8.5	10.7	9.7	

Table 34: Retention rate for graduates from Oceania, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	68	48.5	42.6	38.2	32.4	29.4	30.9	26.5	23.5	16.2	13.2	16.2	16.2	14.7	13.2
2001	67	50.7	34.3	31.3	25.4	25.4	26.9	26.9	20.9	20.9	20.9	17.9	16.4	16.4	
2002	64	50.0	43.8	35.9	34.4	26.6	25.0	18.8	21.9	18.8	17.2	17.2	15.6		
2003	61	52.5	34.4	32.8	29.5	26.2	29.5	31.1	34.4	24.6	26.2	26.2			
2004	93	40.9	28.0	21.5	19.4	17.2	15.1	12.9	14.0	15.1	14.0				
2005	74	45.9	32.4	27.0	21.6	20.3	23.0	18.9	17.6	18.9					
2006	70	38.6	35.7	22.9	22.9	21.4	18.6	18.6	17.1						
2007	77	44.2	29.9	28.6	27.3	24.7	23.4	20.8							
2008	80	41.3	28.8	20.0	18.8	10.0	12.5								
2009	78	35.9	24.4	17.9	17.9	15.4									
2010	82	46.3	36.6	29.3	25.6										
2011	116	52.6	44.0	38.8											
2012	87	69.0	41.4												
2013	84	58.3													
Average percentage of IMGs retained		48.2	35.1	28.7	25.0	21.7	22.7	21.8	21.3	19.1	18.3	19.4	16.1	15.6	13.2
Standard deviation		8.6	6.4	7.1	5.5	6.0	6.3	5.9	6.6	3.4	5.4	4.6	0.4	1.2	

Table 35: Retention rate for graduates from Sub-Saharan Africa, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	95	67.4	67.4	56.8	53.7	51.6	46.3	45.3	40.0	36.8	37.9	35.8	32.6	31.6	31.6
2001	105	71.4	66.7	62.9	61.0	54.3	51.4	50.5	49.5	41.9	42.9	42.9	41.0	38.1	
2002	131	58.0	61.1	55.7	51.1	44.3	45.8	41.2	41.2	42.7	38.2	38.2	38.2		
2003	113	65.5	55.8	52.2	48.7	49.6	49.6	44.2	45.1	44.2	39.8	38.9			
2004	79	64.6	51.9	46.8	48.1	45.6	44.3	43.0	41.8	38.0	39.2				
2005	75	62.7	52.0	52.0	53.3	50.7	50.7	45.3	40.0	38.7					
2006	96	56.3	46.9	45.8	43.8	38.5	34.4	34.4	33.3						
2007	90	72.2	65.6	58.9	58.9	54.4	54.4	54.4							
2008	41	73.2	51.2	51.2	46.3	43.9	43.9								
2009	47	66.0	53.2	48.9	40.4	36.2									
2010	36	75.0	61.1	44.4	47.2										
2011	35	82.9	74.3	71.4											
2012	35	82.9	62.9												
2013	29	82.8													
Average percentage of IMGs retained		70.0	59.2	53.9	50.2	46.9	46.8	44.8	41.6	40.4	39.6	38.9	37.3	34.8	31.6
Standard deviation		8.7	8.1	7.8	6.2	6.3	5.8	6.0	5.0	3.0	2.0	2.9	4.2	4.6	

Table 36: Retention rate for graduates from the United Kingdom, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	438	37.7	23.5	22.8	20.5	18.0	18.9	18.7	18.3	16.9	17.1	17.8	16.9	16.0	17.1
2001	445	41.3	28.8	24.0	24.7	24.9	24.3	23.4	21.6	22.7	21.8	19.8	21.1	22.0	
2002	505	41.6	24.0	21.4	23.0	21.6	20.8	21.8	20.6	20.6	21.0	22.2	21.0		
2003	527	39.5	23.7	21.8	22.4	22.2	20.9	21.1	20.9	20.1	21.3	20.9			
2004	503	43.5	23.7	22.7	20.9	19.7	20.5	20.1	19.5	19.5	18.9				
2005	566	50.9	29.9	26.0	25.6	24.7	23.7	22.4	21.9	22.6					
2006	403	53.6	33.3	32.8	30.8	29.5	29.3	28.3	26.3						
2007	447	64.4	49.2	42.3	39.8	38.9	36.7	35.3							
2008	458	62.4	37.1	30.8	29.7	28.4	28.2								
2009	485	68.2	33.6	28.5	26.2	25.8									
2010	557	67.5	33.4	30.0	27.5										
2011	573	67.9	35.1	28.6											
2012	523	72.5	36.3												
2013	490	72.4													
Average percentage of IMGs retained		56.0	31.7	27.6	26.5	25.4	24.8	23.9	21.3	20.4	20.0	20.2	19.7	19.0	17.1
Standard deviation		13.3	7.3	6.0	5.5	6.0	5.7	5.4	2.5	2.2	2.0	1.8	2.4	4.3	

¹ IMGs are included in a grouping if they held a practising certificate in that year but not in the previous year. For example, for an IMG to be included in the 2000 grouping, they must have held a practising certificate in 2000 and not held a practising certificate in 1999.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

Appendix 3 – Retention of international medical graduates by age group

Tables 37 to 41 show the average retention rate at each year after initial registration for successive years of IMGs. The IMGs are split into five age groups based on the doctor's age at 31 March of the year they were first registered (as described on page 42). The footnotes referred to in these tables are detailed on page 60 following table 41 and are the same for all tables in this section.

Table 37: Retention rate for IMGs aged 29 or younger, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	352	38.9	24.4	22.4	20.7	17.6	18.2	17.6	16.5	14.2	13.6	13.9	14.5	13.1	14.2
2001	328	36.3	19.8	16.2	16.8	18.0	18.9	18.3	15.2	16.8	16.5	14.3	14.3	16.5	
2002	376	39.1	20.2	18.1	19.7	18.4	17.8	18.1	18.6	17.3	17.3	18.6	17.3		
2003	376	37.2	18.1	17.0	16.0	16.0	14.6	15.2	15.7	14.6	14.6	14.4			
2004	394	38.6	16.2	15.5	14.7	12.7	13.7	13.7	12.7	12.7	12.4				
2005	436	49.3	27.1	23.9	22.9	21.6	20.4	19.0	17.9	18.3					
2006	291	45.4	32.6	29.6	28.9	27.8	26.1	25.1	22.0						
2007	336	67.9	45.5	37.5	36.3	36.6	35.1	33.3							
2008	382	57.9	29.8	22.3	20.7	19.6	19.6								
2009	420	60.0	26.0	21.0	19.0	18.1									
2010	474	65.8	27.2	23.8	22.4										
2011	453	65.6	28.3	20.8											
2012	436	68.6	31.9												
2013	430	71.9													
Average percentage of IMGs retained		53.0	26.7	22.3	21.6	20.6	20.5	20.0	16.9	15.7	14.9	15.3	15.4	14.8	14.2
Standard deviation		13.6	7.7	6.2	6.2	6.8	6.5	6.3	2.9	2.1	2.0	2.2	1.7	2.4	

Table 38: Retention rate for IMGs aged 30–39, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	303	55.1	46.9	41.9	38.6	34.7	34.3	33.7	29.7	28.1	27.1	27.1	25.1	24.1	24.4
2001	341	56.6	46.9	42.8	41.9	39.6	38.7	36.4	34.9	34.6	33.1	32.3	32.3	29.9	
2002	384	53.9	47.7	42.2	39.8	37.0	35.7	33.9	33.6	31.8	30.2	29.4	28.9		
2003	379	50.7	39.3	35.9	35.9	35.4	33.0	32.2	32.2	31.1	31.4	30.6			
2004	302	53.0	39.4	33.8	31.5	31.5	32.5	30.8	30.1	27.5	27.5				
2005	360	57.5	39.2	35.0	33.1	33.3	31.7	29.2	28.9	28.9					
2006	380	58.2	37.4	33.4	31.8	31.6	30.5	29.5	28.4						
2007	448	64.7	47.3	43.1	39.7	38.6	36.2	35.7							
2008	415	61.0	41.9	34.9	33.3	31.1	29.4								
2009	387	62.8	41.1	37.0	34.6	32.6									
2010	369	62.1	39.0	33.6	30.6										
2011	411	63.3	44.5	37.5											
2012	366	66.9	40.7												
2013	373	67.0													
Average percentage of IMGs retained		59.5	42.4	37.6	35.5	34.5	33.5	32.7	31.1	30.3	29.9	29.8	28.7	27.0	24.4
Standard deviation		5.3	3.7	3.8	3.9	3.1	3.0	2.7	2.5	2.7	2.6	2.2	3.6	4.1	

Table 39: Retention rate for IMGs aged 40–49, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	156	55.8	55.8	52.6	49.4	50.0	45.5	43.6	41.7	40.4	37.8	37.2	32.1	32.1	33.3
2001	148	54.7	50.0	43.9	43.2	39.9	39.2	43.2	39.9	33.8	33.8	33.1	33.8	31.8	
2002	167	63.5	53.9	48.5	46.1	43.1	41.9	41.9	41.9	41.3	38.9	38.3	37.1		
2003	197	53.8	50.3	45.7	43.7	40.6	41.1	39.6	39.1	35.5	36.5	36.5			
2004	186	58.6	51.6	48.4	47.3	46.2	44.6	42.5	42.5	41.4	40.9				
2005	196	66.8	55.6	52.6	49.5	49.0	48.5	44.9	41.8	42.3					
2006	150	50.7	36.0	35.3	35.3	32.7	30.0	28.7	29.3						
2007	164	64.6	51.8	45.7	43.9	41.5	40.2	38.4							
2008	144	58.3	45.1	42.4	40.3	37.5	36.8								
2009	169	65.1	46.7	45.0	40.8	40.2									
2010	163	65.0	43.6	41.1	38.0										
2011	199	62.8	45.7	42.7											
2012	194	74.2	51.5												
2013	165	68.5													

Average percentage of IMGs retained	61.6	49.1	45.3	43.4	42.1	40.9	40.3	39.5	39.1	37.6	36.3	34.3	31.9	33.3
Standard deviation	6.5	5.5	4.9	4.5	5.3	5.4	5.2	4.6	3.6	2.7	2.2	2.6	0.2	

Table 40: Retention rate for IMGs aged 50–59, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	73	42.5	37.0	32.9	23.3	21.9	16.4	17.8	19.2	16.4	13.7	19.2	15.1	15.1	12.3
2001	62	43.5	33.9	43.5	29.0	27.4	22.6	24.2	24.2	22.6	21.0	19.4	16.1	14.5	
2002	95	45.3	32.6	27.4	24.2	21.1	18.9	18.9	17.9	20.0	20.0	16.8	14.7		
2003	94	38.3	35.1	26.6	27.7	26.6	29.8	25.5	27.7	26.6	26.6	25.5			
2004	90	52.2	40.0	35.6	30.0	31.1	28.9	26.7	22.2	23.3	17.8				
2005	93	45.2	34.4	32.3	25.8	25.8	25.8	22.6	24.7	22.6					
2006	88	45.5	36.4	37.5	31.8	30.7	30.7	27.3	23.9						
2007	108	37.0	32.4	27.8	28.7	28.7	25.9	25.0							
2008	92	46.7	37.0	28.3	28.3	25.0	21.7								
2009	115	49.6	37.4	30.4	25.2	23.5									
2010	110	54.5	36.4	27.3	28.2										
2011	100	50.0	39.0	38.0											
2012	111	64.0	43.2												
2013	97	56.7													

Average percentage of IMGs retained	47.9	36.5	32.3	27.5	26.2	24.5	23.5	22.8	21.9	19.8	20.2	15.3	14.8	12.3
Standard deviation	7.3	3.0	5.4	2.6	3.4	5.0	3.5	3.4	3.4	4.7	3.7	0.7	0.4	

Table 41: Retention rate for IMGs aged 60 or older, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	40	40.0	27.5	17.5	5.0	2.5	7.5	2.5	2.5	0	2.5	2.5	2.5	2.5	0
2001	53	26.4	26.4	17.0	13.2	11.3	9.4	7.5	5.7	5.7	3.8	1.9	1.9	1.9	
2002	51	37.3	27.5	11.8	11.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
2003	46	37.0	23.9	19.6	17.4	17.4	17.4	15.2	10.9	6.5	4.3	4.3			
2004	42	42.9	31.0	19.0	21.4	14.3	11.9	9.5	9.5	9.5	9.5				
2005	46	34.8	21.7	15.2	17.4	15.2	15.2	13.0	8.7	8.7					
2006	58	34.5	34.5	25.9	22.4	10.3	12.1	10.3	10.3						
2007	49	42.9	40.8	26.5	28.6	24.5	18.4	18.4							
2008	63	39.7	30.2	22.2	19.0	11.1	7.9								
2009	72	40.3	26.4	26.4	16.7	15.3									
2010	78	33.3	21.8	12.8	12.8										
2011	92	47.8	33.7	23.9											
2012	88	39.8	27.3												
2013	73	53.4													
Average percentage of IMGs retained		39.3	28.7	19.8	16.9	12.4	11.3	9.8	7.1	6.5	4.4	2.7	2.1	2.2	0
Standard deviation		6.5	5.4	5.2	6.2	6.7	5.2	5.8	3.7	3.0	3.0	1.1	0.3	0.4	

¹ IMGs are included in a grouping if they held a practising certificate in that year but not in the previous year. For example, for an IMG to be included in the 2000 grouping, they must have held a practising certificate in 2000 and not held a practising certificate in 1999.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.

Appendix 4 – Retention of international medical graduates by time since qualification

Tables 42 to 46 show the average retention rate at each year after initial registration for successive years of IMGs. The IMGs are split into five groups based on the number of years since the doctor gained their primary qualification (The groupings are described on page 43). The footnotes referred to in these tables are detailed on page 63 following Table 46 and are the same for all tables in this section.

Table 42: Retention rate for IMGs 5 years or less post-qualification, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	360	38.1	23.1	20.8	19.2	16.1	16.9	16.4	15.6	13.1	12.5	12.2	13.1	11.9	13.1
2001	361	39.1	22.2	18.6	18.6	20.2	20.2	19.4	16.6	18.0	16.9	15.0	14.7	16.3	
2002	410	39.5	20.7	18.0	20.2	18.3	16.8	17.1	17.3	16.1	15.9	17.3	16.1		
2003	417	37.6	19.4	18.0	16.5	16.8	15.8	16.1	16.8	15.1	14.9	14.9			
2004	423	38.5	16.8	15.8	15.1	13.2	14.7	15.1	13.9	13.7	13.5				
2005	499	49.1	27.3	24.2	22.8	21.6	20.6	19.6	18.6	19.0					
2006	337	43.6	30.9	27.3	26.4	25.5	24.0	22.8	20.5						
2007	416	66.6	42.3	35.6	34.1	34.4	32.5	31.5							
2008	466	55.8	28.3	22.5	20.6	19.1	19.1								
2009	499	59.1	25.1	21.2	18.6	17.6									
2010	564	64.7	27.1	23.8	22.2										
2011	529	65.6	30.4	23.3											
2012	525	66.3	31.4												
2013	502	70.9													
Average percentage of IMGs retained		52.5	26.5	22.4	21.3	20.3	20.1	19.8	17.0	15.8	14.7	14.8	14.6	14.1	13.1
Standard deviation		12.9	6.6	5.3	5.2	6.0	5.5	5.4	2.1	2.4	1.8	2.1	1.5	3.1	

Table 43: Retention rate for IMGs 6–10 years post-qualification, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	190	51.1	41.6	36.8	33.7	30.0	31.1	28.9	25.3	23.7	22.6	24.7	22.1	20.0	20.0
2001	187	46.5	39.0	35.3	34.8	32.1	31.6	28.9	26.7	27.3	27.3	25.7	24.6	22.5	
2002	217	51.2	42.4	39.2	35.5	33.2	33.6	30.9	30.9	27.6	28.1	27.2	26.7		
2003	216	39.8	28.2	23.1	24.1	22.7	21.3	20.8	21.3	21.8	22.2	21.3			
2004	165	47.9	32.7	27.9	24.2	25.5	26.1	21.8	23.0	20.6	21.8				
2005	183	57.9	38.3	35.5	35.5	34.4	31.7	27.3	26.8	26.8					
2006	241	58.9	35.7	32.8	30.7	29.5	27.8	26.6	25.3						
2007	256	62.1	48.8	44.9	41.4	39.8	37.1	35.5							
2008	222	65.3	44.6	35.6	35.1	32.9	30.6								
2009	205	65.9	46.3	38.5	37.1	34.1									
2010	184	63.0	39.1	33.2	29.9										
2011	230	63.9	44.3	34.8											
2012	180	68.9	43.9												
2013	218	64.2													
Average percentage of IMGs retained		57.6	40.4	34.8	32.9	31.4	30.1	27.6	25.6	24.6	24.4	24.7	24.5	21.2	20.0
Standard deviation		8.8	5.7	5.5	5.3	4.8	4.6	4.7	3.1	3.0	3.0	2.5	2.3	1.7	

Table 44: Retention rate for IMGs 11–15 years post-qualification, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	124	62.1	57.3	51.6	48.4	44.4	40.3	42.7	37.1	36.3	35.5	33.9	30.6	31.5	32.3
2001	135	65.2	57.8	51.9	49.6	46.7	48.1	46.7	45.2	43.7	41.5	42.2	43.7	40.7	
2002	160	60.6	55.6	47.5	44.4	43.1	41.9	40.6	41.9	41.3	38.1	36.3	35.0		
2003	154	67.5	55.8	53.9	53.9	53.2	49.4	49.4	47.4	47.4	47.4	46.8			
2004	139	62.6	48.9	41.0	41.0	38.1	38.1	38.8	36.7	34.5	33.1				
2005	156	62.2	44.9	39.7	35.3	38.5	35.9	33.3	33.3	33.3					
2006	126	61.1	42.9	38.9	38.1	38.1	38.9	38.1	37.3						
2007	159	68.6	47.2	42.1	39.6	37.7	36.5	35.8							
2008	156	64.1	50.6	40.4	37.8	36.5	33.3								
2009	152	63.8	43.4	42.1	40.1	39.5									
2010	141	62.4	45.4	39.7	36.9										
2011	146	61.0	40.4	37.0											
2012	152	71.7	46.7												
2013	145	69.7													
Average percentage of IMGs retained		64.5	49.0	43.8	42.3	41.6	40.3	40.7	39.8	39.4	39.1	39.8	36.4	36.1	32.3
Standard deviation		3.5	5.9	5.8	6.0	5.3	5.4	5.4	5.1	5.6	5.6	5.8	6.6	6.6	

Table 45: Retention rate for IMGs 16–20 years post-qualification, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	86	59.3	59.3	57.0	50.0	53.5	44.2	43.0	41.9	39.5	36.0	39.5	32.6	31.4	32.6
2001	84	60.7	51.2	48.8	52.4	46.4	45.2	50.0	48.8	41.7	41.7	40.5	41.7	40.5	
2002	90	63.3	60.0	54.4	51.1	48.9	48.9	48.9	48.9	47.8	44.4	44.4	43.3		
2003	103	55.3	51.5	49.5	44.7	39.8	39.8	36.9	36.9	31.1	35.0	35.0			
2004	102	62.7	60.8	54.9	52.0	52.0	51.0	48.0	47.1	45.1	45.1				
2005	97	71.1	62.9	54.6	53.6	52.6	52.6	49.5	46.4	47.4					
2006	82	56.1	41.5	39.0	39.0	39.0	34.1	32.9	31.7						
2007	76	61.8	59.2	50.0	50.0	48.7	48.7	47.4							
2008	69	55.1	44.9	43.5	39.1	37.7	37.7								
2009	87	70.1	54.0	50.6	47.1	47.1									
2010	93	65.6	46.2	41.9	43.0										
2011	107	58.9	44.9	44.9											
2012	97	73.2	47.4												
2013	82	70.7													
Average percentage of IMGs retained		63.1	52.6	49.1	47.5	46.6	44.7	44.6	43.1	42.1	40.4	39.9	39.2	35.9	32.6
Standard deviation		6.2	7.3	5.7	5.3	5.8	6.3	6.4	6.6	6.3	4.7	3.9	5.8	6.4	

Table 46: Retention rate for IMGs 21 or more years post-qualification, 2000–2013

First year registered ¹	Number registered	Percentage of IMGs retained, by post-registration year ²													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2000	164	46.3	42.1	37.2	30.5	28.0	28.0	25.6	25.6	23.8	22.6	22.6	20.7	20.7	19.5
2001	165	40.6	36.4	33.9	26.7	24.8	21.8	23.0	20.6	18.2	17.6	15.8	15.2	13.9	
2002	196	48.5	37.8	30.1	28.6	22.4	20.4	20.9	19.4	20.9	19.9	18.4	17.3		
2003	202	43.1	39.1	32.2	32.7	32.2	33.7	30.7	30.7	27.7	26.7	25.7			
2004	185	50.3	39.5	36.2	34.1	33.0	30.3	27.6	25.9	26.5	23.2				
2005	196	48.0	37.2	35.2	31.6	30.1	31.1	28.1	26.5	25.5					
2006	181	42.5	35.9	34.3	30.9	25.4	25.4	23.2	22.1						
2007	198	47.0	42.4	34.8	34.3	32.8	29.3	28.3							
2008	183	45.4	35.5	29.5	29.0	23.5	21.9								
2009	220	46.8	34.5	30.9	24.1	22.3									
2010	212	48.6	32.5	25.5	23.6										
2011	243	53.5	42.0	36.2											
2012	241	58.9	41.1												
2013	191	58.1													
Average percentage of IMGs retained		48.4	38.2	33.0	29.6	27.5	26.9	25.9	24.4	23.8	22.0	20.6	17.7	17.3	19.5
Standard deviation		5.4	3.2	3.5	3.7	4.3	4.7	3.3	3.9	3.6	3.5	4.4	2.8	4.8	

¹ IMGs are included in a grouping if they held a practising certificate in that year but not in the previous year. For example, for an IMG to be included in the 2000 grouping, they must have held a practising certificate in 2000 and not held a practising certificate in 1999.

² The retention rate is expressed as a percentage and equals the number of doctors from the grouping who held a practising certificate at some point in that year, compared with the number of doctors originally in that grouping.