



The New Zealand Medical Workforce in 2015

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 2015. It contains information about changes in the medical workforce including retention rates for doctors.

The data for the 2015 workforce survey 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. www.moh.govt.nz

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

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Facts at a glance

	2010	2011	2012	2013	2014	2015
Size of the workforce ¹	13,080	13,493	13,880	14,110	14,324	14,617
Doctors per 100,000 population ²	299.5	306.3	313.2	317.7	317.6	318.1
Proportion of IMGs ³ (%)	41.1	41.5	41.4	41.9	42.0	40.4
Proportion of females (%)	39.6	40.4	41.3	41.7	42.4	43.5
Average age of workforce	45.1	45.2	45.4	45.5	45.7	45.2
Average weekly workload (hours)	43.9	43.7	43.9	43.7	43.6	44.4
Average proportion of new IMGs retained after 1 year ⁴	51.7	52.7	53.5	54.5	55.4	56.9

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 62 for definition).

⁴ See 'Retention' on page 45 for more information and 'Survey method' on page 59 for information on how this figure was calculated.

Changes in the medical workforce

The results of *The New Zealand Medical Workforce in 2015* survey are based on data self-reported by doctors.

Size of the workforce

Registration data show that the number of registered doctors increased by 2.0 percent in 2015 from 14,324 to 14,617. This change compares to an increase of 1.5 percent in the previous year (see Table 1).

Table 1: Estimated yearly workforce growth and changes in composition

	1980	1985	1990	1995	2000	2005	2010	2014	2015
Total workforce (based on registration data)¹	-	6,337	6,806	7,998	9,779	11,215	13,080	14,324	14,617
Percentage change in total workforce from previous year measured by registration data (%)	-	-	-	-	-	-	3.5	1.5	2.0
Short-term registrants ²	-	-	165	129	421	54	97	113	103
Short-term registrants as a percentage of workforce	-	-	2.4	1.6	4.3	0.5	0.7	0.8	0.7
Total workforce (based on survey response)	4,881	5,556	6,339	7,530	8,615	8,746	11,478	12,848	13,921
Graduated from:									
– New Zealand	3,266	4,095	4,480	5,024	5,645	5,459	6,766	7,457	8,287
– overseas	1,615	1,461	1,859	2,506	2,970	3,287	4,712	5,391	5,634
% IMGs	33.1	26.3	29.3	33.3	34.5	37.6	41.1	42.0	40.5
Average age of workforce	-	-	42	41	43	44	45	46	45

¹ The total workforce according to registration data 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.

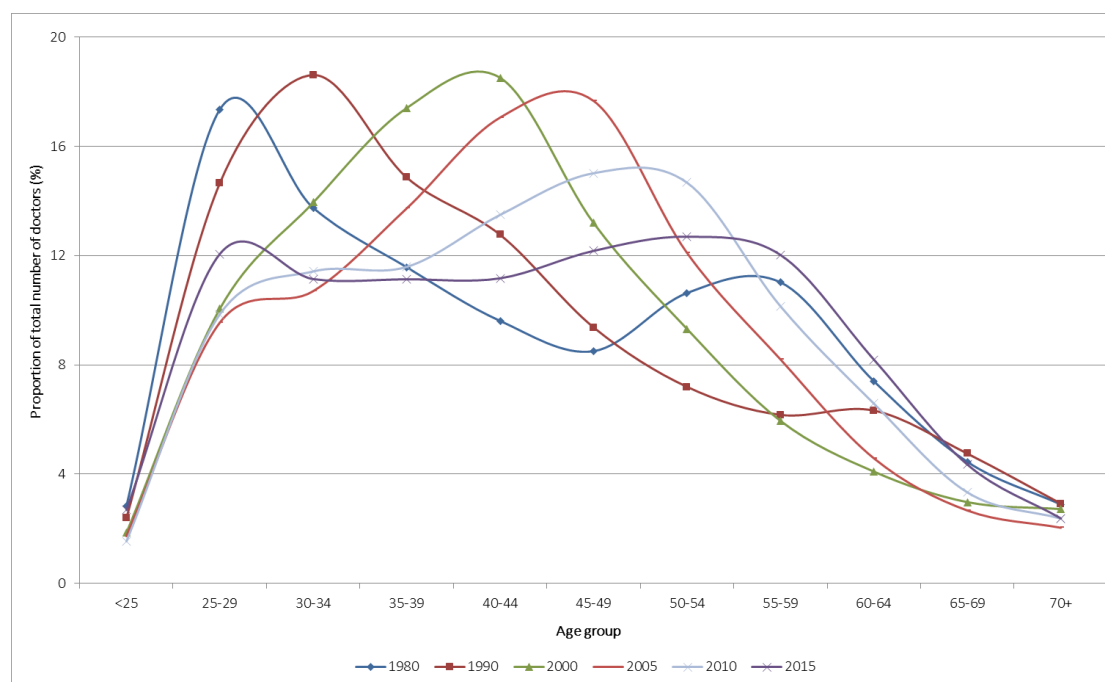
Age distribution of the workforce

Figure 1 compares the age distribution of the active workforce from 1980 to 2015, focusing on selected series (1980, 1990, 2000, 2005, 2010 and 2015) to aid in comparing the changes over time.

In 2015, the largest group of doctors are those aged 50–54. In 2010 and 2005, this was doctors aged 45–49, and in 2000, the largest group was doctors aged 40–44. Looking further back, in 1990, the largest group of doctors was those aged 30–34, and in 1980, it was those aged 25–29.

This reflects that the average age of the workforce is higher than it used to be. However, the overall distribution for 2015 appears more even than in previous years, and the proportion of doctors aged 25–29 has noticeably increased. This is possibly due to the increased numbers of graduates being produced by New Zealand’s medical schools in recent years (see Table 24 on page 45).

Figure 1: Age distribution of the active workforce (1980–2015)



Gender distribution of the workforce

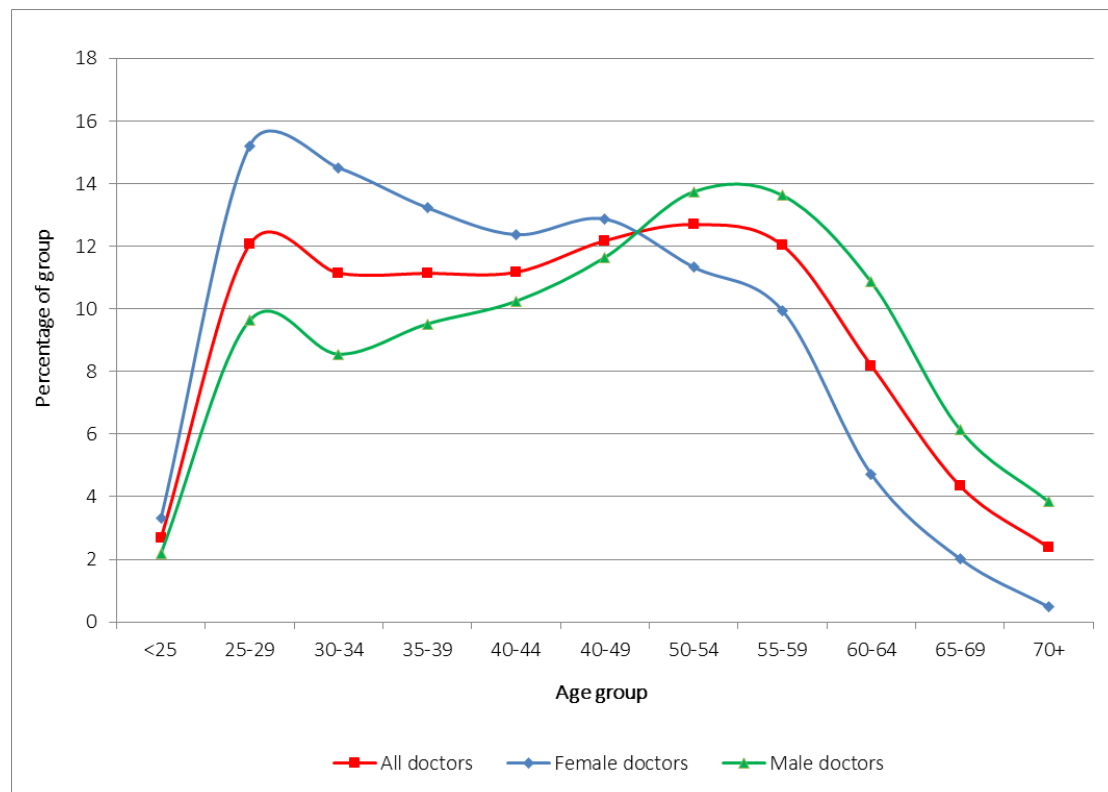
Figure 2 compares the age distribution of males and females in the active workforce.

Female doctors are more likely to be younger than 40 compared with male doctors: 46 percent of females in the workforce are under the age of 40, compared to 29 percent of males. Only 7 percent of females in the workforce are over the age of 60, compared to 21 percent of males.

This reflects that, although male doctors have historically outnumbered female doctors and still make up 57 percent of the medical workforce, this gap is decreasing. Females now outnumber males amongst new doctors: 57 percent of house officers and 51 percent of registrars were female (see Table 20 on page 39).

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 2: Age distribution of the active workforce by gender



Changes by work role

Clarification regarding terminology used

In some cases, the categories may not reflect current terminology but have been retained to allow for comparison of data over time. The main example of this is house officers who are now more commonly known as interns.

General practitioner and specialist

For the purposes of registration, general practice is a specialist scope of practice, and doctors registered in a vocational scope of general practice are considered to be specialists. However, for the purposes of the survey, specialist and general practitioner are recorded in separate categories to aid analysis and interpretation of the data. Because data is self-reported, not all doctors who report themselves as specialists or GPs will hold a vocational scope of practice.

Changes by work role over time

Table 2 shows how doctor numbers have changed, by work role at their main work site.

All categories increased between 2014 and 2015 except medical officer, which dropped by 4.2 percent. The house officer role increased significantly, up almost 30 percent from the previous year. One possible explanation for this is that Council's new prevocational training requirements for PGY2 interns may mean that more doctors in their PGY2 year are reporting their work role as house officer.

The no answer category continues to decrease, which is a positive trend, and the reallocation of these doctors into valid categories may also be part of the reason for the increases seen in 2015.

Table 2: Changes in the medical workforce

Workforce role ²	Active doctors ¹						Percentage change 2014–2015
	2010	2011	2012	2013	2014	2015	
General practitioner (GP)	3,532	3,614	3,594	3,679	3,770	3,884	2.0
House officer	961	1,034	1,071	1,135	1,171	1,516	29.5
Medical officer	526	523	554	511	546	523	-4.2
Primary care other than GP	164	138	148	150	160	174	8.7
Registrar	1,774	1,787	1,897	2,013	2,104	2,433	15.8
Specialist	3,993	4,187	4,275	4,485	4,700	5,039	7.2
Other	291	247	275	315	282	376	33.3
No answer	237	158	203	318	115	16	-86.1
Total	11,478	11,688	12,017	12,606	12,848	13,921	8.4

¹ Headcount based on doctors who responded to the survey.

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

Viewed over time, the figures show that the number of doctors in most workforce roles is steadily increasing. This trend can be seen in Figure 3, which shows the growth in each category, with values represented as a percentage of their 2001 value to allow comparison of changes in categories with widely varied numbers of doctors.

Figure 3: Changes in the medical workforce by work role (2001–2015)

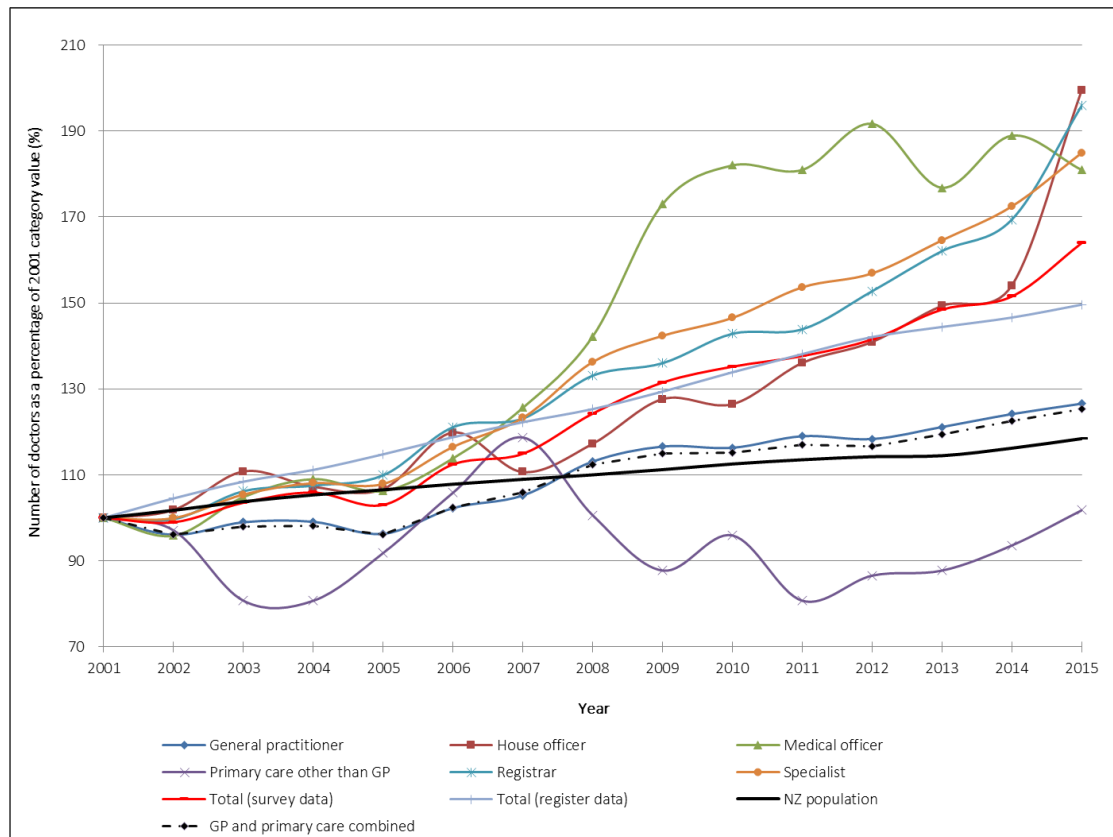


Figure 3 shows an gradual increase in most work roles since 2001.

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

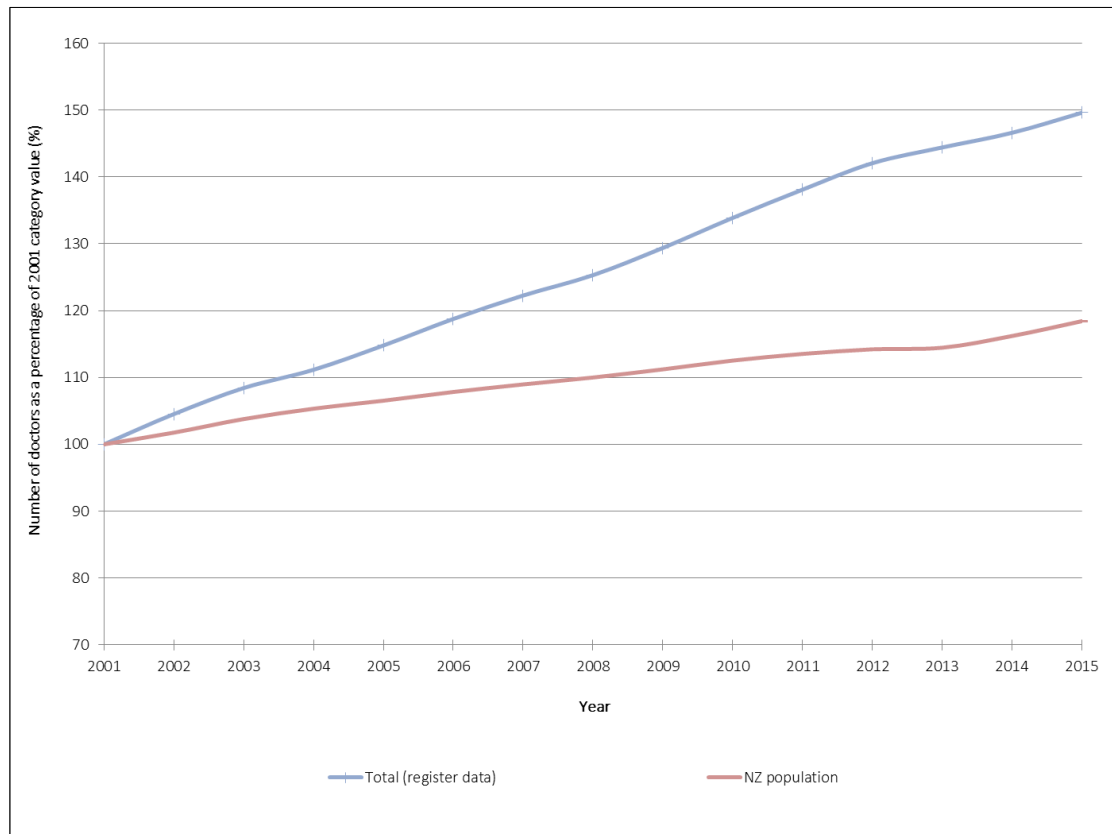
Furthermore, the primary care other than GP category is relatively small numerically compared to most of the other categories, and so as a result, increases that are small in comparison to the size of the medical workforce appear as large changes on this graph.

When the general practitioner category and primary care other than GP category 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 the primary care other than GP category, it is also smaller in comparison to the other categories and so small increases in numbers will appear as large changes on the graph.

Figure 4 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 4: Change in size of the medical workforce compared to change in size of the New Zealand population (2001–2015)



Work type

The changes in work types since 2014 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 2014	No. of doctors in main work site 2015	Percentage change 2014 to 2015	Average hours worked (all sites)	No. in vocational training ²	Average age 2015	Vocational registration, current practising certificate, NZ address ³
Accident and medical practice ⁴	130	123	-5	35.3	57	45	131
Anaesthesia	842	928	10	47.3	227	45	727
Basic medical science	25	66	164	42.9	11	48	-
Breast medicine	6	7	17	29.6	0	54	-
Clinical genetics	19	11	-42	36.8	2	47	12
Dermatology	60	72	20	40.6	4	51	62
Diagnostic and interventional radiology	371	465	25	43.8	72	47	389
Emergency medicine	454	528	16	41.4	188	41	218
Family planning and reproductive health	32	28	-13	27.4	9	48	26
General practice ⁵	3,576	3,990	12	36.6	656	50	3,253
Intensive care medicine	119	147	24	52.5	54	42	81
Internal medicine	1,217	1,469	21	48.5	362	44	935
Medical administration	40	76	90	41.0	7	55	24
Musculoskeletal medicine	23	23	0	40.7	2	60	21
Obstetrics and gynaecology	351	405	15	48.7	105	46	266
Occupational medicine	77	79	3	41.5	6	54	53
Ophthalmology	166	178	7	44.6	25	46	129
Paediatrics	447	517	16	44.7	133	43	348
Palliative medicine	72	93	29	35.5	17	50	51
Pathology	239	222	-7	42.8	36	48	267
Primary care other than GP	326	181	-44	35.1	25	51	-
Psychiatry	724	808	12	42.7	136	49	546
Public health medicine	212	212	0	38.5	18	50	176
Radiation oncology	88	78	-11	48.6	18	45	59
Rehabilitation medicine	18	29	61	41.5	9	48	22
Rural hospital medicine	52	60	15	47.7	12	46	99
Sexual health medicine	28	36	29	28.1	8	51	18
Sports medicine	34	35	3	42.1	7	46	25
Surgery: cardiothoracic	42	48	14	58.2	5	46	26
Surgery: general	332	339	2	55.6	66	44	257
Surgery: neurosurgery	34	37	9	57.4	2	45	22
Surgery: orthopaedic	364	402	10	54.9	49	45	274
Surgery: other	41	87	112	52.4	13	45	19
Surgery: otolaryngology	112	147	31	47.4	16	48	108
Surgery: paediatric	19	28	47	63.0	5	47	19
Surgery: plastic	85	89	5	52.1	18	44	64
Surgery: urology	81	82	1	51.1	13	47	63
Surgery: vascular	31	51	65	54.4	5	44	32
Not answered	585	30	-95	44.1	12	44	-
Other	115	165	43	39.9	14	52	21
Total	11,589	12,371	7		1,991	48	8,843

- 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 2015 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 dash indicates work types that do not correspond to a vocational scope and so there are 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).

The overall number of doctors excluding house officers or those working in house officer rotations increased by 7 percent in 2015. Looking at individual categories with more than 50 doctors, there were notable increases in surgery: otolaryngology (31 percent), palliative medicine (29 percent), diagnostic and interventional radiology (25 percent) and intensive care medicine (24 percent).

Areas that decreased in 2015 included accident and medical practice (down 5 percent), pathology (down 7 percent) and radiation oncology (down 11 percent).

The primary care category dropped by 44 percent (from 326 in 2014 to 181 in 2015), but as with the primary care other than GP category, this decrease should be viewed in conjunction with the 12 percent increase in the general practice category. If these two categories are combined, there is an overall increase of just under 7 percent (from 3,902 to 4,171), which is comparable to the increase in the overall number of doctors, excluding house officers or those working in house officer rotations.

Work type and age

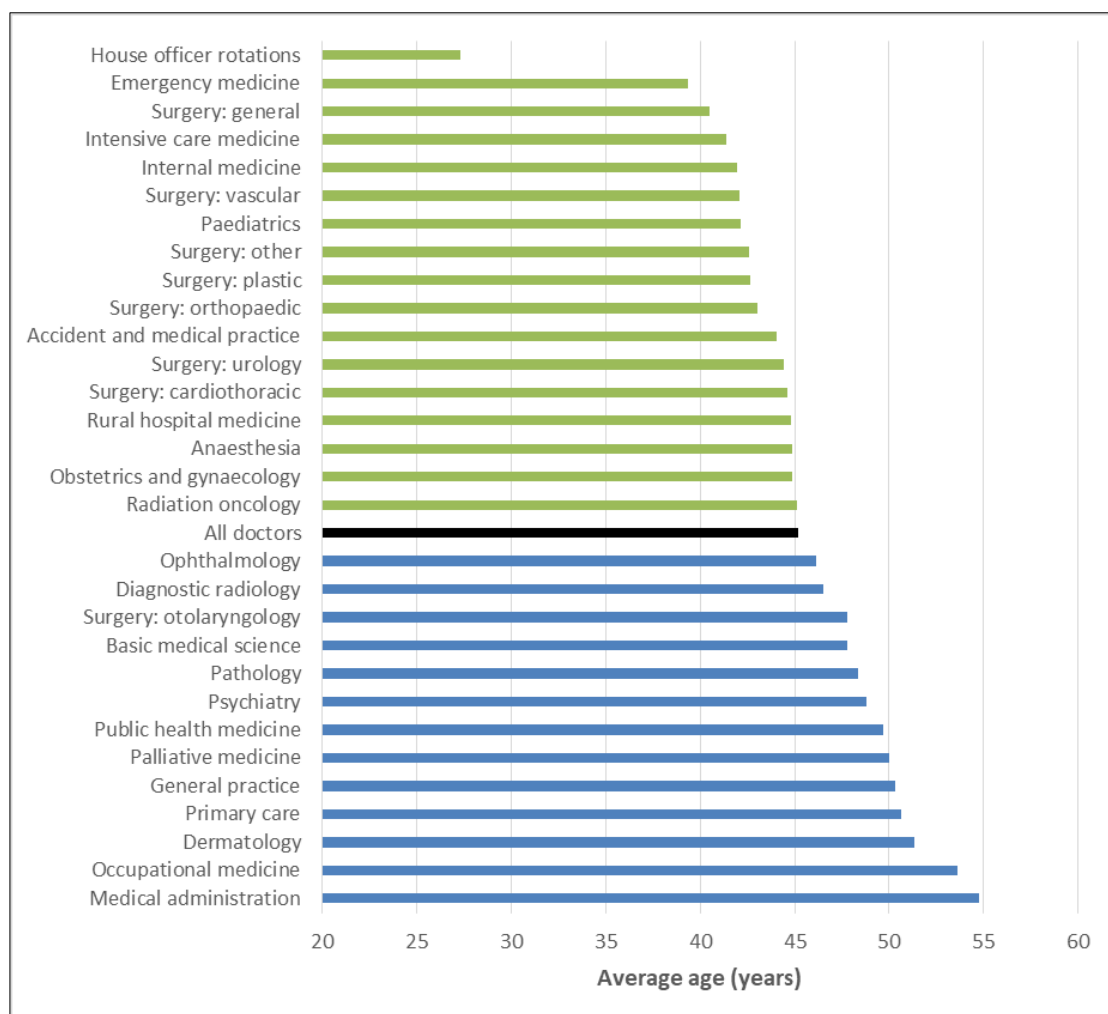
Figure 5 compares the average age of different work types focusing on those work types with more than 50 doctors. The average age was highest in medical administration (54.8 years) followed by occupational medicine (53.7 years), dermatology (51.3 years), primary care (50.6 years) and general practice (50.3 years).

As expected, the average age was lowest by a significant amount for those in house officer rotations (27.3 years) with the next lowest being emergency medicine (39.4 years), intensive care medicine (41.4 years) and vascular surgery (42.1 years).

Internal medicine had an average age of 41.9 years. However, this appears to reflect doctors who have reported a work role of house officer and a work type of internal medicine. If you exclude the work type of house officer, the average age for doctors working in internal medicine is 44.1 years, just under the overall average age of the workforce.

Other work types with an average age around that of the overall average for the workforce (45.2 years) were radiation oncology (45.1 years), obstetrics and gynaecology (44.9 years) and anaesthesia (44.9 years).

Figure 5: Average age by work type at main work site (areas with more than 50 doctors)



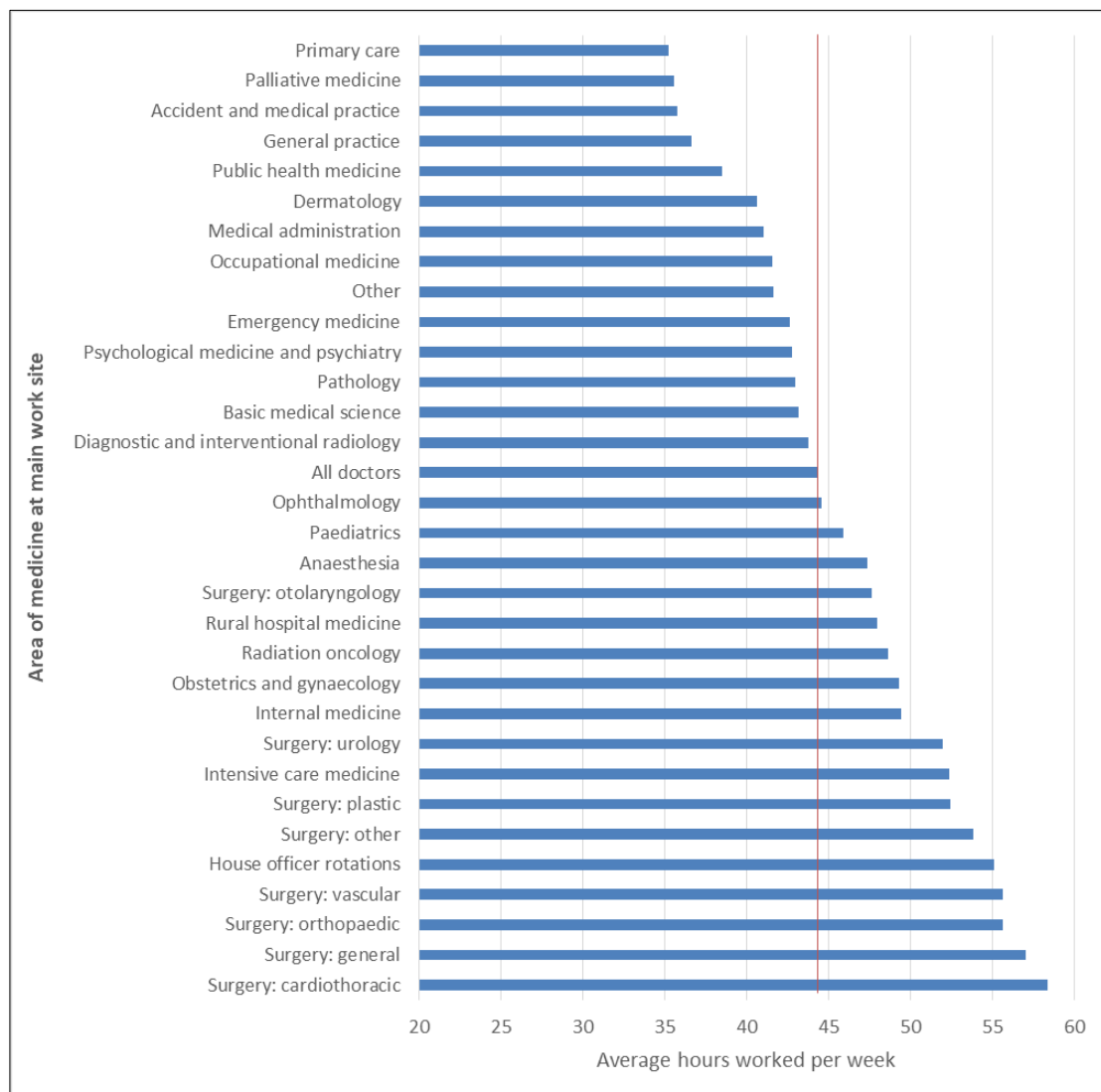
Work type and hours worked

Figure 6 shows the average hours worked by work type, again looking only at those work types with 50 or more doctors. The average hours worked per week was highest in cardiothoracic surgery (58.4 hours per week), general surgery (57.0 hours), followed by orthopaedic surgery (55.7 hours) and vascular surgery (55.6 hours). House officer rotations, which was highest in 2014, was the next highest with 55.1 hours.

The average hours worked per week was lowest in primary care (35.2 hours), palliative medicine (35.3 hours), accident and medical practice (35.7 hours) and general practice (36.6 hours).

Areas with average hours worked around the overall average (44.4 hours) were ophthalmology (44.6 hours), diagnostic and interventional radiology (43.8 hours) and paediatrics (45.9 hours).

Figure 6: Average hours worked by work type (areas with more than 50 doctors)



Workloads

Hours worked by work role

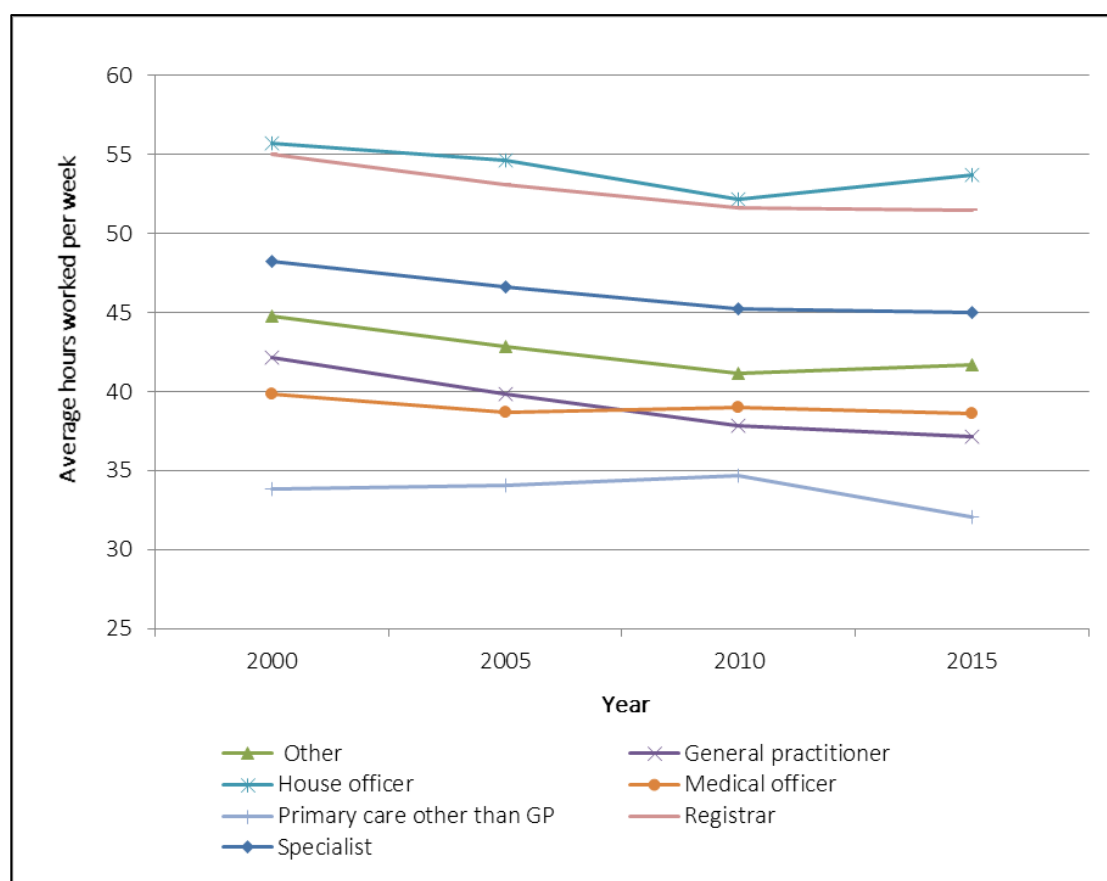
Figure 7 shows the changes over time in the average number of hours worked each week, by work role, at the doctor's main work site.

Overall, the average number of hours doctors have reported working has been decreasing since 2000 but increased in 2015 to 44.4 hours, the highest it has been since 2009.

House officers reported working the most hours each week, closely followed by registrars. Primary care doctors reported working the fewest hours each week, although this has been increasing and is above 35 hours per week for the first time in 2015.

Conversely, average hours worked by specialists and GPs have continued to decrease over time, and both are at their lowest level since 2000.

Figure 7: 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 44.4 per week in 2015. Table 4 shows that doctors aged in their 20s worked the most hours each week on average.

Figure 8 shows average hours worked by gender. Females work a similar number of hours to males during their 20s. After the age of 30, males work more hours, and the gap is largest in the 40–44 and 45–49 age groups. For males, the average number of hours remains above 50 hours per week until the 35–39 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 4: Average of total hours worked, by age and gender

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	57.3	53.9	45.7	37.5	36.2	35.6	37.2	37.2	36.2	35.9	25.0	41.2
Male	57.9	55.1	51.7	47.7	47.5	46.8	46.3	45.9	43.4	39.1	31.3	46.8
All doctors	57.6	54.4	48.3	42.4	42.1	41.7	42.7	42.8	41.6	38.4	30.8	44.4

Figure 8: Average hours worked each week and headcount, by gender

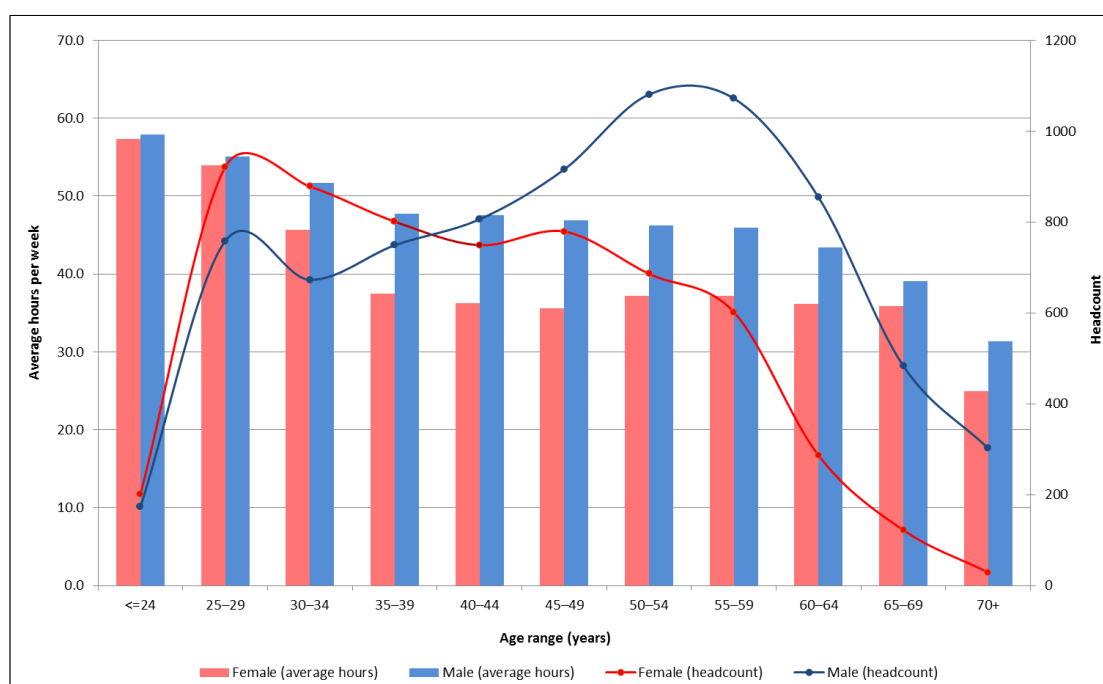


Table 5 shows that the average number of hours worked per week for females increased in 2015 to 41.2. The average number of hours worked per week for males also increased in 2015 to 46.8.

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

Table 5: Average hours worked, by gender and year (2005–2015)

Gender	Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Female	40.6	40.9	40	40.3	39.9	39.8	39.8	40.3	40.0	40.1	41.2
Male	48.3	47.9	47.7	47.4	46.9	46.6	46.4	46.4	46.3	46.1	46.8
All doctors	45.5	45.3	44.8	44.7	44.2	43.9	43.7	43.9	43.7	43.6	44.4

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 6 shows on-call hours by workforce roles. Just under 70 percent of doctors reported no on-call hours. Specialists were most likely to be on call, with over half of specialists reporting some on-call hours and 36 percent on call for 10 or more hours per week.

Table 6: 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	75.7	79.3	95.8	85.5	75.1	47.2	86.7
1–4	7.2	4.6	0.4	1.3	1.9	6.0	2.1
5–9	4.4	3.4	1.4	3.7	3.4	10.8	1.3
10–19	5.3	2.3	1.6	5.3	7.6	18.0	3.2
20–49	4.9	4.6	0.7	3.5	8.8	14.8	5.1
50 and over	2.5	5.7	0.1	0.7	3.1	3.2	1.6
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 7 shows the average on-call hours, average hours worked and proportion of doctors on call by work role at the doctor's main work site. Looking at the combined total of hours worked and hours on call, house officers reported the most hours (56.2), followed by specialists (54.7) and then registrars (54.5).

House officers were least likely to be on call, with only 4.2 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 7: Doctors' average on-call hours and average hours worked by work role

Work role	Measure			
	Average hours worked	Average hours on call	Average total hours (worked and on-call hours combined)	Proportion of doctors on call
General practitioner	36.6	4.8	41.4	24.3
Primary care other than GP	35.3	7	42.3	20.7
House officer	55.7	0.5	56.2	4.2
Registrar	52.1	2.4	54.5	14.5
Medical officer	37.7	6.7	44.4	24.9
Specialist	44.5	10.2	54.7	52.8
Other	39.9	3.2	43.1	13.3

Table 8 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 – 83 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, 43 percent worked in a group private practice at their main work site, and just over 39 percent worked in public hospitals.

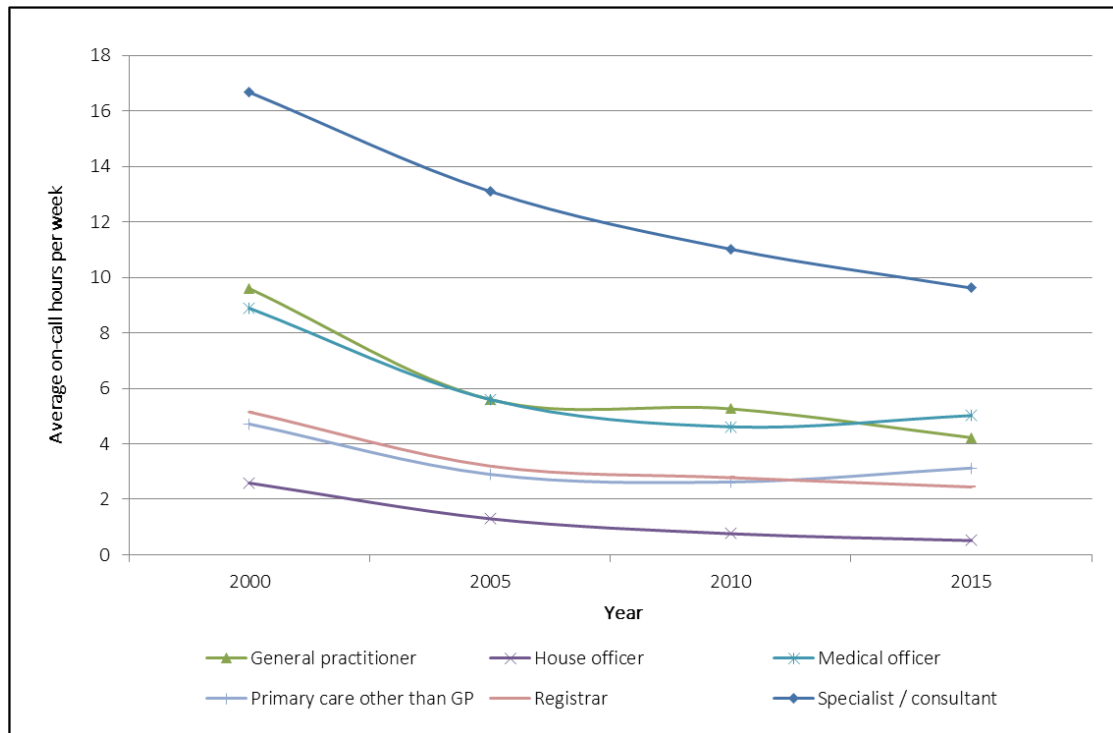
Table 8: Proportion of doctors on call for 10 or more hours each week, by employer

Main employer	Specialist	Other work roles	Total
Commercial company	1.3	2.4	1.6
Government department/agency	2.0	3.2	2.4
Professional body	0.0	0.6	0.2
Group private practice	6.3	43.0	18.3
Private hospital	2.9	0.9	2.2
Public hospital	82.8	39.1	68.4
Solo private practice	3.7	9.5	5.6
University/polytechnic	1.1	1.4	1.2
Other	1.3	4.7	2.4
Total¹	100.0	100.0	100.0

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

Figure 9 shows the average weekly on-call hours, by work role at main work site, at 5-yearly intervals back to 2000.

Figure 9: 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.

In recent years, on-call hours have been 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.

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 that mean that these 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 and Wellington regions. Taking this example, doctors might work across the entire Wellington region throughout the year but will only be represented in these figures against one TLA and DHB.

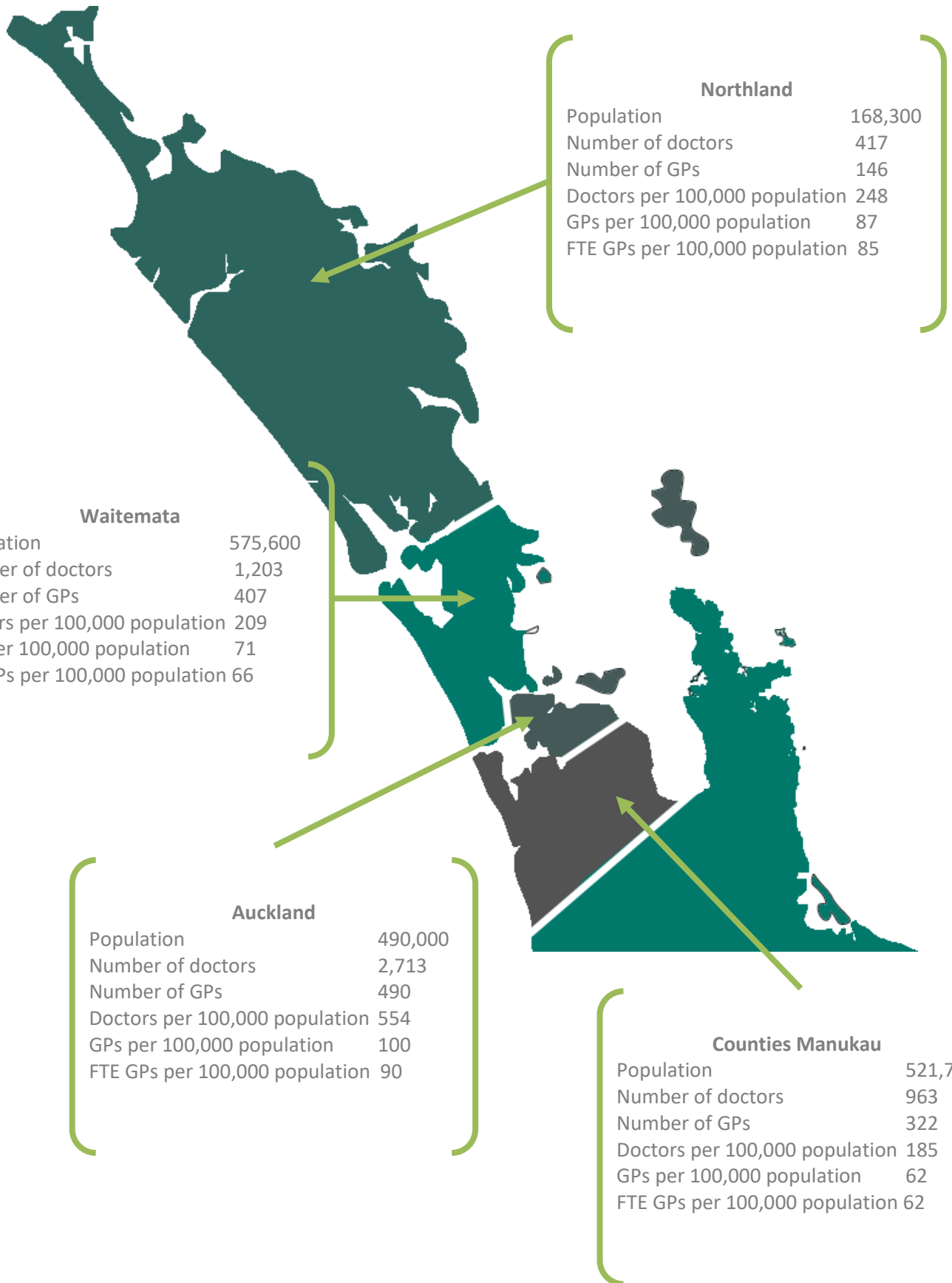
Auckland combined into a single TLA region – the Auckland ‘Super City’ – in November 2010. In the years that followed, we continued to report the separate regions from before the merger to allow comparison with previous years. Unfortunately, because this has now become unmanageable, from 2015 onwards, the figures for Auckland will be presented as a single TLA. The separate DHBs within Auckland will still continue to be reported separately.

District health boards

The following pages show summary figures for each DHB for 2015. Note that the maps are for guidance only and do not accurately represent the actual boundaries between DHBs. The same information is presented in table form in Appendix 1 on page 65.

Population figures presented here for each DHB are based on Statistics New Zealand’s estimated residential population as at 30 June 2015.

Northern/Auckland region



Central North Island

Waikato

Population	390,600
Number of doctors	1,167
Number of GPs	307
Doctors per 100,000 population	299
GPs per 100,000 population	79
FTE GPs per 100,000 population	76

Bay of Plenty

Population	221,500
Number of doctors	669
Number of GPs	210
Doctors per 100,000 population	259
GPs per 100,000 population	95
FTE GPs per 100,000 population	83

Taranaki

Population	115,900
Number of doctors	265
Number of GPs	75
Doctors per 100,000 population	229
GPs per 100,000 population	65
FTE GPs per 100,000 population	60

Lakes

Population	104,800
Number of doctors	276
Number of GPs	99
Doctors per 100,000 population	263
GPs per 100,000 population	94
FTE GPs per 100,000 population	80

Tairāwhiti

Population	47,400
Number of doctors	123
Number of GPs	39
Doctors per 100,000 population	259
GPs per 100,000 population	82
FTE GPs per 100,000 population	78

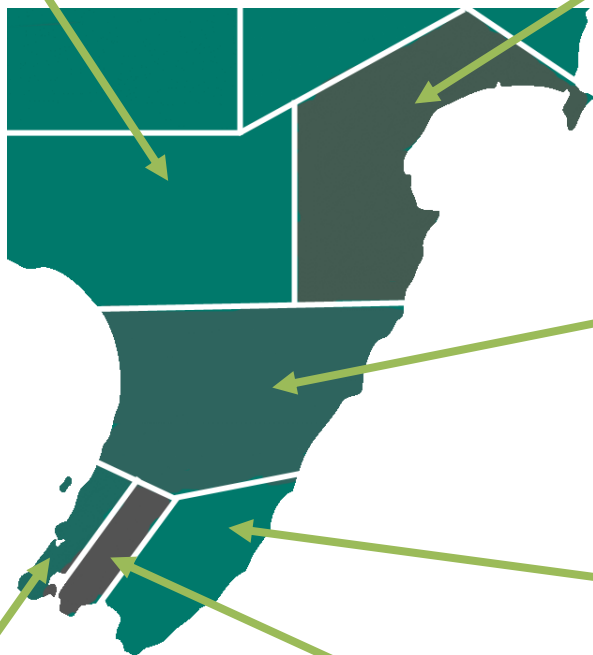
Lower North Island

Whanganui

Population	62,600
Number of doctors	135
Number of GPs	47
Doctors per 100,000 population	216
GPs per 100,000 population	75
FTE GPs per 100,000 population	74

Hawke's Bay

Population	159,900
Number of doctors	444
Number of GPs	143
Doctors per 100,000 population	278
GPs per 100,000 population	89
FTE GPs per 100,000 population	85



MidCentral

Population	172,100
Number of doctors	480
Number of GPs	109
Doctors per 100,000 population	279
GPs per 100,000 population	63
FTE GPs per 100,000 population	69

Wairarapa

Population	43,200
Number of doctors	73
Number of GPs	32
Doctors per 100,000 population	169
GPs per 100,000 population	74
FTE GPs per 100,000 population	72

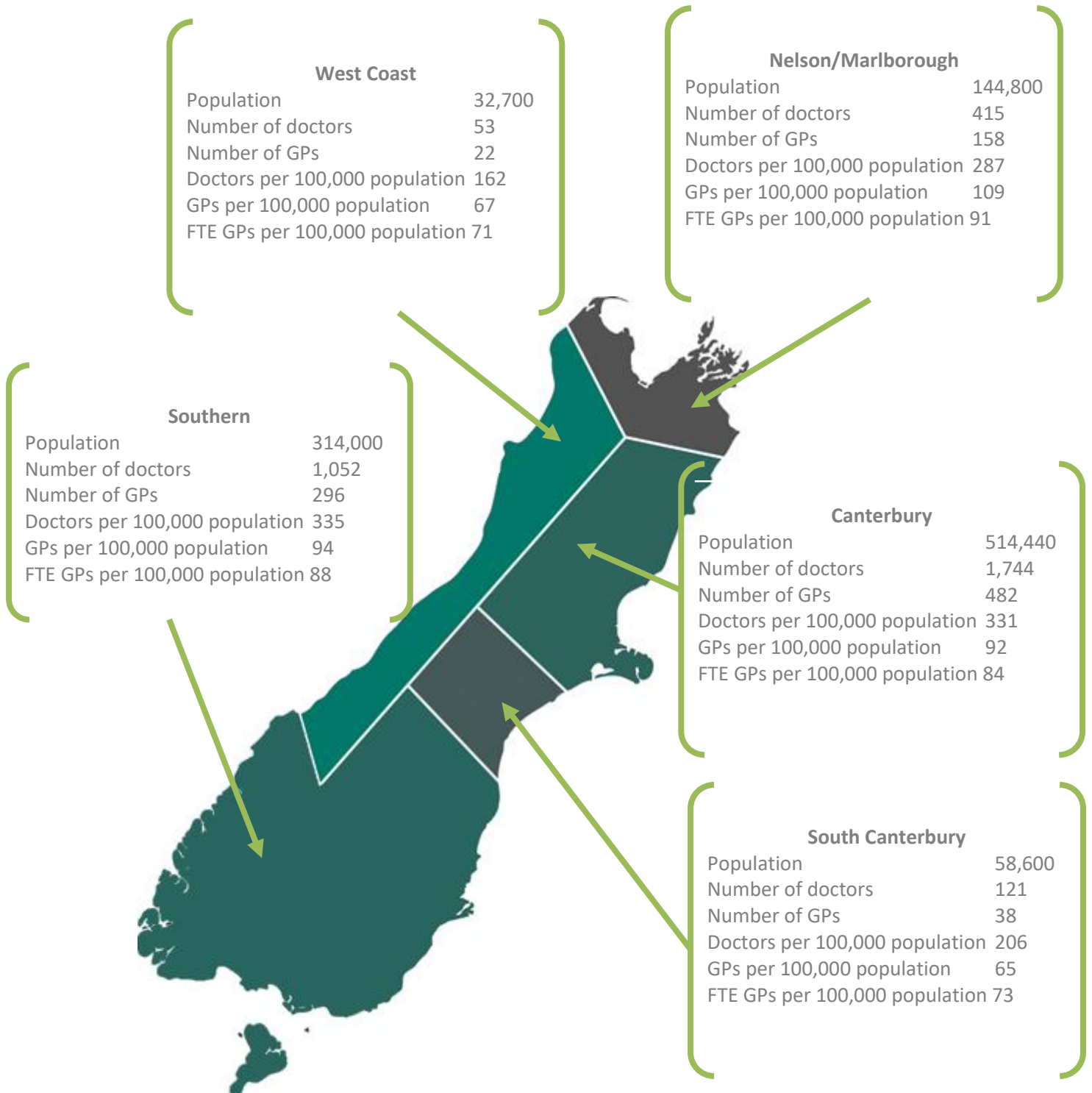
Capital & Coast

Population	301,100
Number of doctors	1,294
Number of GPs	317
Doctors per 100,000 population	430
GPs per 100,000 population	105
FTE GPs per 100,000 population	98

Hutt

Population	144,800
Number of doctors	320
Number of GPs	105
Doctors per 100,000 population	222
GPs per 100,000 population	73
FTE GPs per 100,000 population	68

South Island



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).

As an example, Wellington City, an urban area, is listed as having an area of 290 km² and a population of 203,800, giving it an average population density of 702 people per square kilometre. South Wairarapa District, generally considered a rural area, is listed as having an area of 2,387 km² and a population of 10,000, giving it an average population density of 4.2 people per square kilometre.

The three groups are defined as:

- main urban — areas with 100 or more people per square kilometre
- secondary urban — areas with 21–99 people per square kilometre
- rural — areas with 20 or fewer people per square kilometre.

Table 9: Summary of workforce statistics by population density of area

Workforce measure	Population density		
	Main urban 100+ people per km ²	Secondary urban 21–99 people per km ²	Rural 0–20 people per km ²
Total doctors ¹	10,459	1,821	1,637
Total GPs ²	2,624	573	812
Population ³	2,836,660	638,300	1,120,790
Doctors per 100,000 population	368.7	285.3	146.1
GPs per 100,000 population	92.5	89.8	72.4
Average hours worked	44.8	43.8	42.6
Average hours worked by GPs	33.9	33.9	37.2
Average on-call hours	5.3	7.1	8.7
Average age	44.7	45.4	48.1
Proportion of female doctors (%)	44.3	42.4	39.2
Proportion of IMGs (%)	37.8	43.0	54.5

¹ Represents all active doctors who responded to the survey.

² Represents active doctors who reported working in general practice 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 2015.

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 compared with rural areas. Main urban areas have the highest concentration with 368.7 doctors per 100,000 population, slightly higher than secondary urban areas (285.3 doctors per 100,000 population), with both significantly higher than rural areas (146.1 doctors per 100,000 population).

Number of GPs

Similarly, the number of GPs per 100,000 population is highest in urban areas compared with rural areas. Again, main urban areas have the highest concentration (92.5 GPs per 100,000 population), closely followed by secondary urban areas (89.8), with rural areas significantly lower (72.4).

Combined Auckland region

With Auckland being presented as a combined region for the first time in 2015, we also looked at this region by itself. As you would expect, the combined region is categorised as a main urban area with its population of 1,570,500 and land area of 4,938 km², giving it a population density of 318 people per square kilometre.

Presented as a combined region, Auckland represents over a third of New Zealand's population and has 35.1 percent of all doctors and 31.8 percent of all GPs. Compared with other main urban areas, it has a slightly lower concentration of doctors and GPs (310.7 doctors and 81.1 GPs per 100,000 population), reflecting that this combined region now encompasses a range of areas, some of which would be considered secondary urban or possibly even rural when viewed in isolation.

Table 10: Summary of workforce statistics – Auckland City

Workforce measure	Auckland City
Total doctors ¹	4,879
Total GPs ²	1,273
Population ³	1,570,500
Doctors per 100,000 population	310.7
GPs per 100,000 population	81.1
Average hours worked	45.1
Average hours worked by GPs	34.7
Average on call hours	4.6
Average age	45.4
Proportion of female doctors (%)	45.1
Proportion of IMGs (%)	35.1

¹ Represents all active doctors who responded to the survey.

² Represents active doctors who reported working in general practice 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 2015.

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 8.7 hours per week compared with 5.3 for doctors in main urban areas.

Looking only at hours worked by GPs, the average hours worked per week is higher in rural areas than in urban areas – 37.2 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 tend to be on average older than those working in urban areas – the average age is 48.1 years in rural areas compared with 44.7 years in main urban areas.

Figure 10 and Table 11 show 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 and drops away earlier than in rural areas. In urban areas, there is a higher proportion of doctors aged 30–44 compared with rural areas.

Figure 10: Distribution of doctors by age group and population density of area

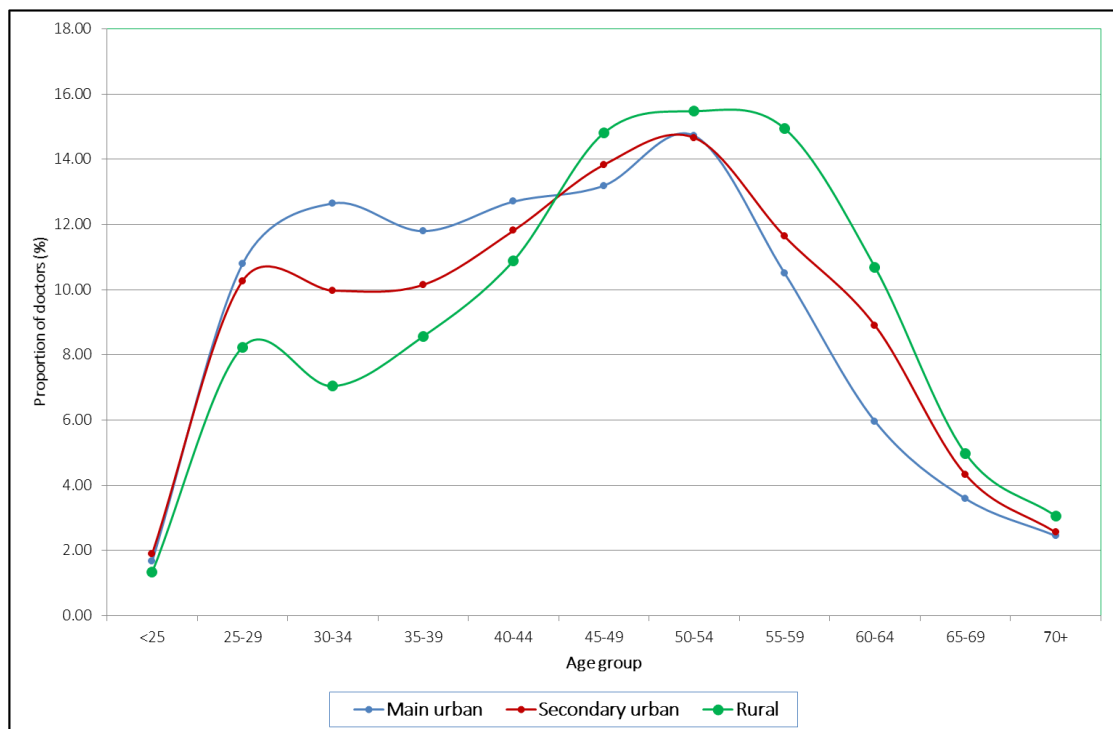


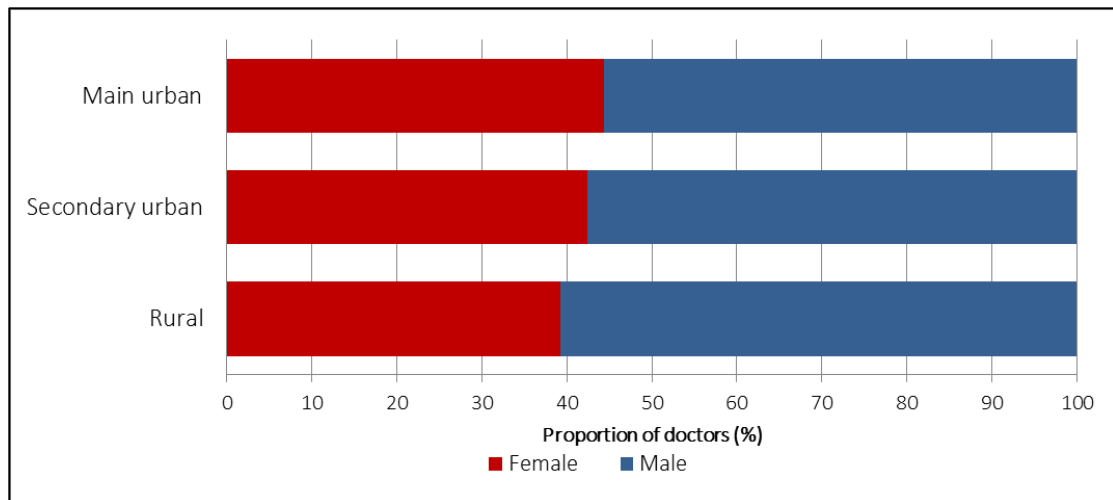
Table 11: Doctors by population density and age group

Age Group	Main urban		Secondary urban		Rural	
	Doctors	Average hours	Doctors	Average hours	Doctors	Average hours
<25	269	58.1	66	54.7	39	58.7
25–29	1,310	54.9	235	52.2	134	53.6
30–34	1,235	48.8	182	47.5	134	44.9
35–39	1,195	43.3	193	39.4	160	39.8
40–44	1,242	42.2	171	42.8	142	40.7
45–49	1,244	41.7	233	42.1	218	41.1
50–54	1,309	42.9	224	42.3	234	42.4
55–59	1,237	42.9	203	42.5	233	42.6
60–64	778	41.7	168	42.4	194	40.3
65–69	405	38.5	99	36.9	101	39.5
70+	235	29.9	47	35.5	48	31.1

Gender

Figure 11 shows there is a higher proportion of female doctors in urban areas compared with rural areas – 44.3 percent of doctors in main urban areas are female compared with 39.2 percent of doctors in rural areas.

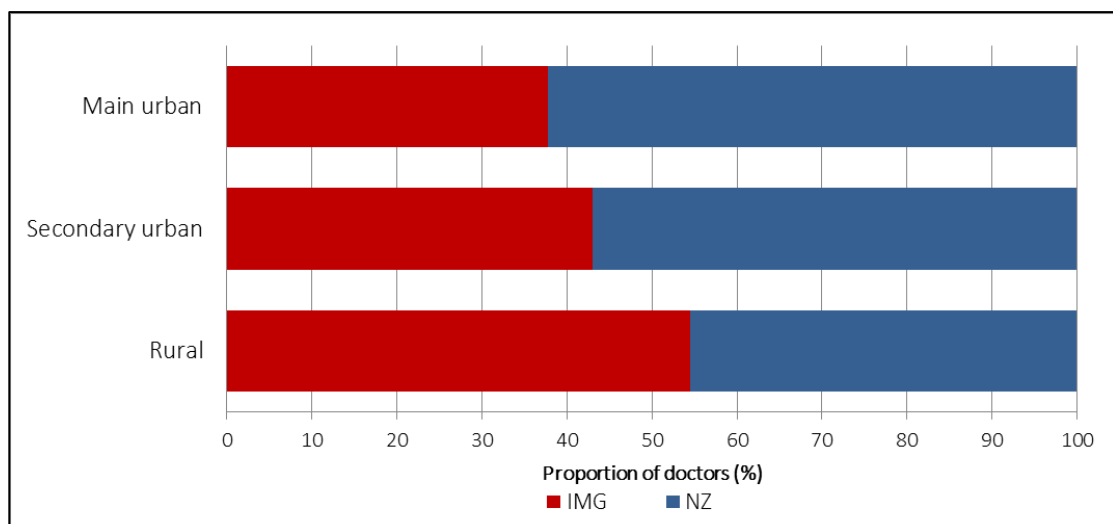
Figure 11: Proportion of doctors by gender and population density of area



International medical graduates

There is a higher proportion of international medical graduates (IMGs) in rural areas compared with urban areas – 54.5 percent of doctors in rural areas are IMGs compared to 37.8 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 12: Proportion of IMGs by population density of area



Ethnicity

Changes in ethnicity of the workforce over time

Figure 12 shows the ethnicities of doctors. The proportion of doctors who identified themselves as Māori increased slightly to 3.4 percent, and the proportion of Pasifika doctors remained steady at 2.0 percent, after increasing to 1.8 percent in 2012 and remaining the same in 2013 (see Table 12).

The proportion of doctors identifying as Chinese increased to 5.9 percent after previously dropping to 4.9 percent in 2014, and the proportion of doctors identifying as Indian also increased (from 5.7 percent to 6.0 percent).

The proportion of doctors identifying as other European remained at 20.5 percent, after increasing to this level for the first time in 2014.

The proportion of doctors identifying as NZ European/Pākehā increased in 2015 for the first time in a number of years – previously, this group’s proportion of the workforce has consistently decreased each year.

Table 12: Proportion of doctors by ethnic group

Ethnicity	% 2005	% 2010	% 2011	% 2012	% 2013	% 2014	% 2015
NZ Māori	2.6	3.0	2.8	2.9	2.7	3.2	3.4
Pacific Island (Pasifika)	1.5	1.3	1.6	1.8	1.8	2.0	2.0
Chinese	5.4	5.3	5.1	5.3	5.1	4.9	5.9
Indian	5.1	5.9	5.8	5.8	5.2	5.7	6.0
Other non-European	10.8	9.9	11.6	12.9	14.4	11.5	11.9
Other European	15.4	19.7	18.2	16.9	16.7	20.5	20.5
NZ European/Pākehā	57.5	53.3	53.2	52.7	51.6	50.8	51.4
Not answered	1.5	1.5	1.7	1.6	2.3	1.2	2.4
Refused	0.2	0.2	0.1	0.0	0.1	0.1	0.0
Total ¹	100	100.0	100.0	100	100	100	100.0

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

Proportion of doctors by ethnicity in the workforce compared with the New Zealand population

Table 13 shows the proportion of doctors by ethnicity, as well as the equivalent proportion of the overall New Zealand population based on the results of the most recent Census.

Table 13: Proportion of doctors and New Zealand population by ethnic group

Ethnicity	% Proportion of doctors (2015)	% Proportion of New Zealand population (2013 Census) ²
NZ Māori	3.4	14.7
Pacific Island (Pasifika)	2.0	6.6
Chinese	5.9	3.6
Indian	6.0	3.2
Other non-European	11.9	4.9
Other European	20.5	6.5
NZ European/Pākehā	51.4	60.5
Not answered/refused	2.4	-
Total ¹	100.0	100.0

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 ‘Survey method’ on page 59), whereas Statistics New Zealand counts 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.

Even allowing for differences in method, both Māori and Pasifika doctors continue to be noticeably under-represented compared to their proportion of the population.

However, the proportion Māori doctors is higher amongst newer doctors, especially house officers (see table 16 on page 31) and there has been significant progress at graduate level. In December 2016, a record number of Māori and Pasifika doctors graduated from both New Zealand medical schools. Otago University reported that, for the first time, “Māori representation within the total number of medical graduates equate[d] to the proportion of Māori in the New Zealand population”.²

Similarly, Auckland University reported that “Māori and Pacific medical graduates made up about a fifth of the 215 doctors to graduate from their six years of training” and that “[t]his is averaging around 20 to 25 percent of medical students per year now at the University of Auckland which is closer to the population proportion for this age group, and very positive”.³

If this level of representation continues at the graduate level, we should see increased representation of Māori and Pasifika doctors in the medical workforce in future years.

² University of Otago, 7 December 2016 <http://www.otago.ac.nz/news/news/otago628801.html>

³ University of Auckland, 23 November 2016 <https://www.auckland.ac.nz/en/about/news-events-and-notice/news/news-2016/11/record-number-of-new-mori-and-pacific-doctors-this-year.html>

Ethnicity by age

Table 14 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 – 34.9 years and 39.8 years respectively. Both females and males identifying as NZ European/Pākehā had an average age higher than the overall figure, with male doctors the only group to have an average age greater than 50.

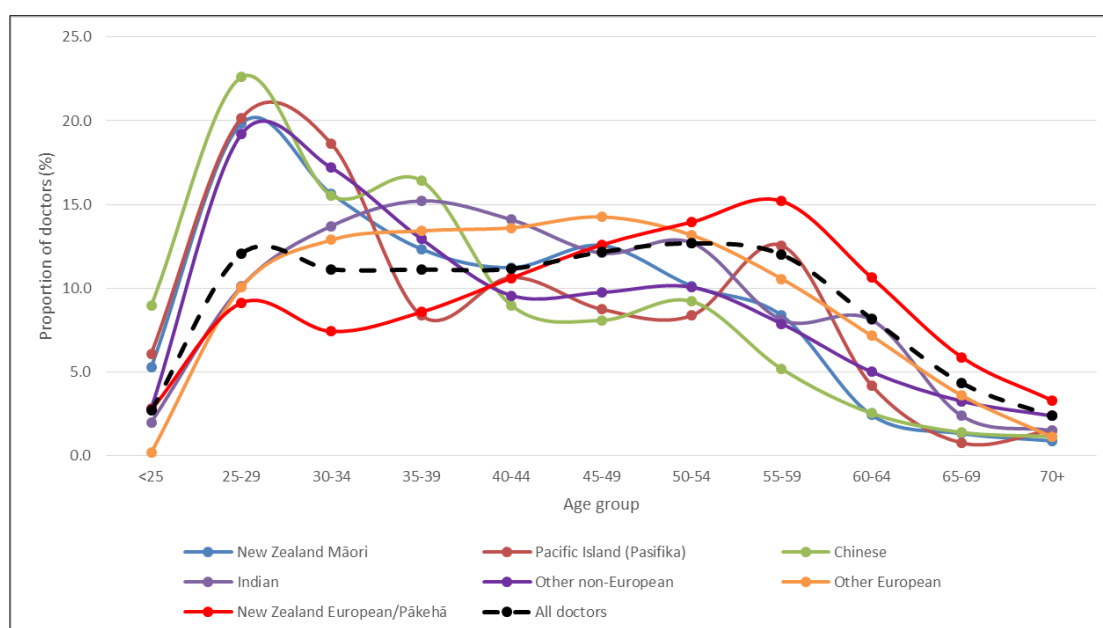
Table 14: Average age of doctors by ethnicity and gender

Ethnicity	Average age		
	Female	Male	Overall
NZ Māori	38.5	41.2	39.9
Pacific Island (Pasifika)	37.5	42.1	40.1
Chinese	34.9	39.8	37.8
Indian	41.8	44.9	43.8
Other non-European	38.4	43.5	41.4
Other European	42.2	47.3	44.8
NZ European/Pākehā	43.7	51.0	47.9
Not answered	38.0	43.4	41.2
Refused	-	60.2	60.2
All doctors ¹	41.8	47.7	45.2

Figure 13 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 NZ European/Pākehā, where the largest proportions of doctors are aged 50–59. Indian doctors are more evenly spread compared to other ethnic groups except for a spike in the 35–39 age group.

Figure 13: Distribution of doctors by ethnic group and age group



Ethnicity by work role

Table 15 shows the distribution of each ethnic group by work role at their main work site.

Table 15: Proportion of ethnic groups by work role at main work site

Ethnicity	No answer	Other	GP	HO	MO	PC	R	S	Total ¹
NZ Māori	0.4	4.0	25.8	20.5	5.1	0.9	21.4	22.0	100.0
Pacific Island (Pasifika)	0.0	2.3	26.2	22.4	3.0	1.9	24.3	19.8	100.0
Chinese	0.0	1.6	23.7	22.9	1.6	0.8	25.3	24.1	100.0
Indian	0.1	1.5	25.1	9.6	4.5	0.4	24.1	34.8	100.0
Other non-European	0.1	2.0	23.9	15.9	4.6	0.8	29.3	23.5	100.0
Other European	0.1	2.9	28.7	5.9	5.5	1.2	19.4	36.4	100.0
NZ European/Pākehā	0.5	2.5	31.4	6.9	3.2	1.4	10.4	43.8	100.0

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

Three-quarters of doctors identifying as NZ European/Pākehā reported working either as a specialist (43.8 percent) or general practitioner (31.4 percent) at their main work site compared with 47.8 percent of doctors identifying as Māori and 46.0 percent of doctors identifying as Pasifika.

Figure 14 shows the work roles of ethnic groups. The proportion of doctors who reported working as either a house officer or registrar was 46.8 percent amongst Pasifika and 41.9 percent for Māori compared to only 17.3 percent for NZ European/Pākehā.

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

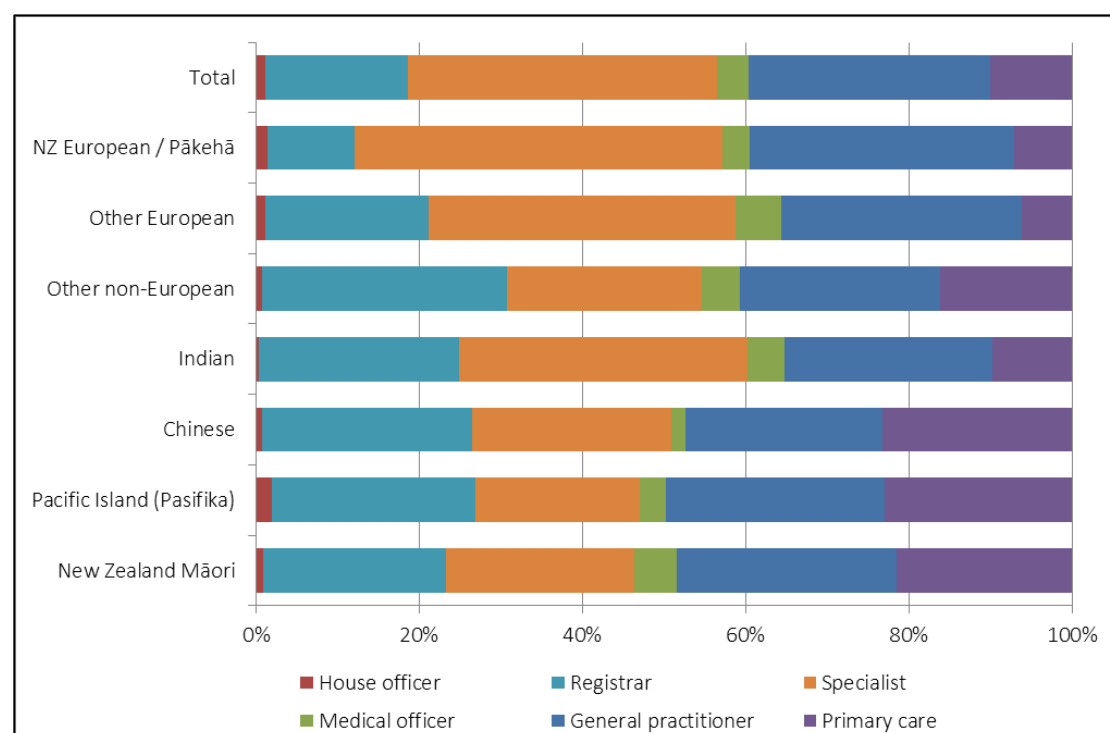


Table 16 represents the proportion of each work role made up by each ethnicity.

Doctors identifying as NZ Māori made up 3.3 percent of all doctors but were more highly represented amongst house officers (6.1 percent) and registrars (4 percent). As noted in previous years' reports, this suggests that, although they are currently under-represented 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 NZ Māori. They make up 1.9 percent of all doctors but 3.9 percent of house officers and 2.6 percent of registrars.

Like doctors identifying as NZ Māori and Pasifika, those identifying as Chinese are also highly represented amongst house officers and registrars (11.9 and 8.2 percent respectively), compared to their overall proportion (5.7 percent).

Table 16: Proportion of each work role at main work site by ethnicity

Ethnicity	Work role						All doctors
	General practitioner	Primary care other than GP	Medical officer special scale	House officer	Registrar	Specialist	
NZ Māori	3.0	2.3	4.4	6.1	4.0	2.0	3.3
Pacific Island (Pasifika)	1.8	2.9	1.5	3.9	2.6	1.0	1.9
Chinese	4.9	3.4	2.5	11.9	8.2	3.8	5.7
Indian	5.2	1.7	6.9	5.1	7.9	5.5	5.8
Other	10.0	6.9	14.0	16.8	19.3	7.5	11.5
Other European	20.6	18.4	28.9	10.8	21.9	19.9	19.8
NZ European/Pākehā	53.1	62.6	40.9	42.3	32.3	57.9	49.8
No answer	1.4	1.1	1.0	3.2	3.7	2.3	2.3
Refused	0.1	0.6	0.0	0.0	0.0	0.1	0.0
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 NZ European/Pākehā made up 49.8 percent of all doctors but continue to be more highly represented amongst specialists (57.9 percent) and GPs (53.1 percent) and less represented amongst house officers (42.3 percent) and registrars (32.3 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 – 28.9 percent of medical officers identified as other European compared with 19.8 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.

Ethnicity by work type

Table 17 represents the proportion of each work role made up by each ethnicity.

Table 17: Distribution of ethnicity by work type at main work site

Work type	No answer	Refused	NZ Māori	Pacific Island (Pasifika)	Chinese	Indian	Other	Other European	NZ European/Pākehā	Total
House officer rotations	2.5	0.0	6.4	3.8	12.6	4.6	18.5	10.7	40.7	100.0
Not recorded	7.7	0.0	10.3	2.6	2.6	15.4	10.3	15.4	35.9	100.0
Other	3.3	0.6	6.1	0.6	5.0	4.4	8.8	13.3	58.0	100.0
Accident and medical practice	1.6	0.0	1.6	1.6	4.7	3.1	13.4	28.3	45.7	100.0
Anaesthesia	3.1	0.0	2.8	0.9	6.0	4.7	7.9	24.5	50.3	100.0
Basic medical science	3.0	0.0	1.5	1.5	4.5	6.0	17.9	20.9	44.8	100.0
Breast medicine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.1	42.9	100.0
Clinical genetics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.7	58.3	100.0
Dermatology	0.0	0.0	0.0	0.0	8.3	5.6	4.2	11.1	70.8	100.0
Diagnostic and interventional radiology	4.1	0.0	0.9	0.9	5.6	5.8	9.7	15.9	57.3	100.0
Emergency medicine	3.3	0.0	3.5	1.4	3.7	4.0	8.3	36.2	39.7	100.0
Family planning	0.0	0.0	3.6	0.0	7.1	0.0	14.3	17.9	57.1	100.0
General practice	1.5	0.1	3.3	2.1	4.7	5.3	10.5	20.4	52.2	100.0
Intensive care medicine	1.3	0.0	1.3	1.3	3.3	3.9	7.9	22.4	58.6	100.0
Internal medicine	2.9	0.0	2.3	1.1	8.2	6.9	15.4	18.4	44.8	100.0
Medical administration	0.0	0.0	6.6	2.6	1.3	0.0	3.9	15.8	69.7	100.0
Musculoskeletal medicine	0.0	0.0	7.1	3.6	10.7	3.6	3.6	10.7	60.7	100.0
Obstetrics and gynaecology	0.7	0.0	3.8	2.0	5.4	8.8	14.4	23.3	41.5	100.0
Occupational medicine	1.3	0.0	2.5	1.3	0.0	2.5	3.8	15.0	73.8	100.0
Ophthalmology	3.9	0.0	1.7	1.7	8.4	7.8	12.3	18.4	45.8	100.0
Paediatrics	2.0	0.0	2.8	2.0	4.8	5.2	8.7	17.1	57.5	100.0
Palliative medicine	0.0	0.0	0.0	0.0	5.4	1.1	4.3	29.0	60.2	100.0
Pathology	4.5	0.4	0.9	1.8	5.4	4.5	10.8	17.9	53.8	100.0
Primary care	1.1	0.0	3.3	1.6	6.0	4.4	11.5	12.1	59.9	100.0
Psychiatry	1.3	0.1	3.4	1.9	2.9	9.3	12.7	26.4	42.0	100.0
Public health medicine	1.9	0.0	7.5	2.8	0.9	3.8	4.7	9.4	68.9	100.0
Radiation oncology	5.1	0.0	2.5	2.5	6.3	11.4	17.7	20.3	34.2	100.0
Rehabilitation medicine	5.3	0.0	2.6	0.0	7.9	21.1	18.4	18.4	26.3	100.0
Rural hospital medicine	1.6	0.0	1.6	1.6	0.0	6.3	11.1	31.7	46.0	100.0
Sexual health medicine	2.8	0.0	0.0	0.0	2.8	2.8	2.8	36.1	52.8	100.0
Sports medicine	0.0	0.0	11.4	0.0	0.0	0.0	11.4	2.9	74.3	100.0
Surgery: cardiothoracic	3.8	0.0	1.9	1.9	1.9	26.9	13.5	17.3	32.7	100.0

Work type	No answer	Refused	NZ Māori	Pacific Island (Pasifika)	Chinese	Indian	Other	Other European	NZ European/Pākehā	Total
Surgery: general	4.3	0.2	2.9	4.8	6.0	6.5	13.6	11.7	50.0	100.0
Surgery: neurosurgery	0.0	0.0	0.0	0.0	10.3	10.3	20.5	23.1	35.9	100.0
Surgery: orthopaedic	3.5	0.0	4.2	2.4	5.7	4.4	9.0	14.1	56.7	100.0
Surgery: other	0.0	0.0	2.0	2.0	7.1	5.1	15.3	17.3	51.0	100.0
Surgery: otolaryngology	2.0	0.0	2.0	0.7	4.6	6.0	10.6	19.2	55.0	100.0
Surgery: paediatric	3.6	0.0	3.6	10.7	3.6	10.7	14.3	21.4	32.1	100.0
Surgery: plastic	3.2	0.0	4.3	0.0	5.3	3.2	14.9	18.1	51.1	100.0
Surgery: urology	3.2	0.0	3.2	2.1	5.3	5.3	7.4	14.9	58.5	100.0
Surgery: vascular	8.6	0.0	5.2	1.7	3.4	10.3	24.1	19.0	27.6	100.0
All doctors	2.3	0.0	3.3	1.9	5.7	5.8	11.5	19.8	49.8	100.0

Looking at those work types with more than 100 doctors, doctors identifying as NZ Māori are more highly represented in public health medicine (6.4 percent) and house officer rotations (6.1 percent) compared to their overall representation (3.3 percent). They are less highly represented in pathology (0.9 percent) accident and medical practice (1.6 percent), internal medicine (2.3 percent), intensive care medicine (1.3 percent) and ophthalmology (1.7 percent).

Similarly, those doctors identifying as Pasifika (1.9 percent overall) are most highly represented in house officer rotations (3.8 percent), public health medicine (2.8 percent), general surgery (4.8 percent) and orthopaedic surgery (2.4 percent) and are less highly represented in accident and medical practice (1.6 percent), anaesthesia (0.9 percent), diagnostic and interventional radiology (0.9 percent), intensive care medicine (1.3 percent) and internal medicine (1.1 percent).

Doctors identifying as NZ European/Pākehā (49.8 percent overall) are most highly represented in public health medicine (68.9 percent), primary care (59.9 percent), intensive care medicine (58.6 percent) and diagnostic and interventional radiology (57.3 percent). These doctors are less highly represented in house officer rotations, psychiatry, emergency medicine (39.7 percent) and obstetrics and gynaecology (41.5 percent).

The figures for the house officer rotations work type are consistent with those for ethnicity by work role, where doctors identifying as NZ Māori, Pasifika and Chinese are more highly represented amongst house officers and doctors identifying as NZ European/Pākehā are less highly represented.

Over a third of doctors working in emergency medicine reported themselves as other European (36.2 percent). These doctors were also highly represented in accident and medical practice (28.3 percent).

Ethnicity by vocational training area

Table 18 represents the proportion of doctors in vocational training by ethnicity for each training area.

Table 18: Proportion of doctors in training by ethnicity and area of training

Training area	No answer	NZ Māori	Pacific Island (Pasifika)	Chinese	Indian	Other	Other European	NZ European/Pākehā	Total
Other	0.0	0.0	20.0	0.0	0.0	20.0	0.0	60.0	100.0
Accident and medical practice	0.9	5.3	4.4	4.4	9.6	17.5	27.2	30.7	100.0
Anaesthesia	3.2	5.0	1.4	9.9	6.8	13.5	24.3	36.0	100.0
Clinical genetics	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	100.0
Dermatology	0.0	0.0	0.0	0.0	33.3	33.3	0.0	33.3	100.0
Diagnostic radiology	4.9	1.2	1.2	8.6	8.6	22.2	6.2	46.9	100.0
Emergency medicine	4.5	5.0	2.5	4.5	4.0	8.5	42.7	28.1	100.0
Family planning and reproductive health	0.0	0.0	0.0	16.7	0.0	16.7	50.0	16.7	100.0
General practice	2.1	6.4	4.1	6.6	8.4	18.3	14.3	39.6	100.0
Haematology	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	100.0
Intensive care medicine	3.7	3.7	1.9	11.1	7.4	9.3	20.4	42.6	100.0
Internal medicine	3.8	2.5	0.5	13.2	9.4	25.2	14.5	30.8	100.0
Medical administration	0.0	0.0	0.0	0.0	0.0	0.0	25.0	75.0	100.0
Obstetrics and gynaecology	0.0	8.0	2.7	7.1	7.1	17.9	17.0	40.2	100.0
Occupational medicine	0.0	0.0	0.0	0.0	0.0	0.0	14.3	85.7	100.0
Ophthalmology	0.0	4.2	8.3	12.5	16.7	33.3	0.0	25.0	100.0
Paediatrics	3.3	4.7	2.7	7.3	6.0	13.3	15.3	47.3	100.0
Pain medicine	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Palliative medicine	0.0	10.0	0.0	10.0	0.0	0.0	20.0	60.0	100.0
Pathology	6.7	0.0	2.2	8.9	11.1	26.7	13.3	31.1	100.0
Psychiatry	2.1	5.7	3.5	8.5	9.2	20.6	24.8	25.5	100.0
Public health medicine	0.0	5.3	5.3	0.0	0.0	0.0	15.8	73.7	100.0
Radiation oncology	16.7	0.0	5.6	11.1	22.2	33.3	11.1	0.0	100.0
Rehabilitation medicine	0.0	0.0	0.0	11.1	22.2	44.4	22.2	0.0	100.0
Rural hospital medicine	0.0	7.7	2.6	0.0	0.0	10.3	20.5	59.0	100.0
Sexual health medicine	0.0	0.0	0.0	0.0	0.0	25.0	75.0	0.0	100.0
Sports medicine	0.0	0.0	0.0	0.0	0.0	25.0	12.5	62.5	100.0
Surgery: cardiothoracic	0.0	0.0	0.0	0.0	25.0	0.0	25.0	50.0	100.0
Surgery: general	8.8	1.5	5.9	4.4	7.4	8.8	22.1	41.2	100.0
Surgery: neurosurgery	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	100.0
Surgery: oral and maxillofacial	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0

Training area	No answer	NZ Māori	Pacific Island (Pasifika)	Chinese	Indian	Other	Other European	NZ European/Pākehā	Total
Surgery: orthopaedic	2.0	8.0	6.0	10.0	6.0	20.0	12.0	36.0	100.0
Surgery: otolaryngology head and neck surgery	0.0	5.9	0.0	11.8	5.9	35.3	23.5	17.6	100.0
Surgery: paediatric	0.0	0.0	16.7	16.7	0.0	16.7	50.0	0.0	100.0
Surgery: plastic and reconstructive	5.3	0.0	0.0	15.8	0.0	15.8	42.1	21.1	100.0
Surgery: urology	9.1	0.0	9.1	18.2	18.2	18.2	18.2	9.1	100.0
Surgery: vascular	16.7	0.0	0.0	0.0	16.7	33.3	33.3	0.0	100.0
All doctors	3.0	4.7	2.9	8.2	7.8	17.8	19.4	36.2	100.0

Doctors identifying as NZ Māori or Pasifika are overall more likely to be in vocational training whereas doctors identifying as NZ European/Pākehā are less likely to be in vocational training.

Looking at those areas with 20 or more doctors in training, doctors identifying as NZ Māori were most highly represented in obstetrics and gynaecology (8.0 percent of those in training in that area), orthopaedic surgery (8.0 percent), rural hospital medicine (7.7 percent) and general practice (6.4 percent).

No doctors training in pathology identified as NZ Māori, with other areas where they were less represented included diagnostic radiology (1.2 percent), internal medicine (2.5 percent), and general surgery (1.5 percent).

Doctors identifying as Pasifika were most highly represented in ophthalmology (8.3 percent), orthopaedic surgery (6.0 percent) and general surgery (5.9 percent) and least highly represented in internal medicine (0.5 percent), diagnostic radiology (1.2 percent) and accident and medical practice (1.4 percent).

Just under 80 percent of doctors training in rural hospital medicine identified as either NZ European/Pākehā or other European. Other areas where similar results were observed included emergency medicine (70.9 percent), general surgery (63.2 percent) and paediatrics (62.7 percent). This same group of doctors was least represented in ophthalmology (25 percent), pathology (44.4 percent) and internal medicine (45.3 percent).

Gender

Vocational trainees

Table 19 shows the proportion of trainees in each vocational training area by gender, and Figure 15 highlights those areas with more than 20 trainees.

In 2015, slightly more women than men reported they were in vocational training (52.9 percent). The largest group of trainees are in general practice, making up 32.4 percent of female doctors and 21.8 percent of male doctors in vocational training. The next largest group of trainees are those training in internal medicine, making up 13.3 percent of women and 16.8 percent of men in training.

Table 19: 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	38	71	109	34.9	3.0	6.2
Anaesthesia	94	119	213	44.1	7.3	10.4
Clinical genetics	*	0	*	100.0	0.2	0.0
Dermatology	*	0	*	100.0	0.2	0.0
Diagnostic radiology	35	44	79	44.3	2.7	3.9
Emergency medicine	96	88	184	52.2	7.5	7.7
Family planning and reproductive health	6	0	6	100.0	0.5	0.0
General practice	416	249	665	62.6	32.4	21.8
Haematology	0	*	*	0.0	0.0	0.2
Intensive care medicine	21	28	49	42.9	1.6	2.5
Internal medicine	170	192	362	47.0	13.3	16.8
Medical administration	*	6	*	25.0	0.2	0.5
Obstetrics and gynaecology	87	21	108	80.6	6.8	1.8
Occupational medicine	*	5	*	28.6	0.2	0.4
Ophthalmology	7	17	24	29.2	0.5	1.5
Paediatrics	96	38	134	71.6	7.5	3.3
Pain medicine	*	0	*	100.0	0.1	0.0
Palliative medicine	9	*	*	90.0	0.7	0.1
Pathology	31	14	45	68.9	2.4	1.2
Psychiatry	64	70	134	47.8	5.0	6.1
Public health medicine	13	5	18	72.2	1.0	0.4
Radiation oncology	*	14	*	17.6	0.2	1.2
Rehabilitation medicine	6	*	*	66.7	0.5	0.3
Rural hospital medicine	18	16	34	52.9	1.4	1.4
Sexual health medicine	*	*	*	75.0	0.2	0.1
Sports medicine	*	5	*	28.6	0.2	0.4
Surgery: cardiothoracic	*	*	*	25.0	0.1	0.3
Surgery: general	22	46	68	32.4	1.7	4.0
Surgery: neurosurgery	*	*	*	50.0	0.1	0.1
Surgery: oral and maxillofacial	*	*	*	33.3	0.1	0.2
Surgery: orthopaedic	6	43	49	12.2	0.5	3.8
Surgery: otolaryngology head and neck surgery	6	11	17	35.3	0.5	1.0
Surgery: paediatric	4	*	*	66.7	0.3	0.2

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
Surgery: plastic and reconstructive	12	7	19	63.2	0.9	0.6
Surgery: urology	*	8	*	27.3	0.2	0.7
Surgery: vascular	0	6	6	0.0	0.0	0.5
Other	*	4	*	20.0	0.1	0.4
Total	1282	1142	2424	52.9	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 most under-represented in:

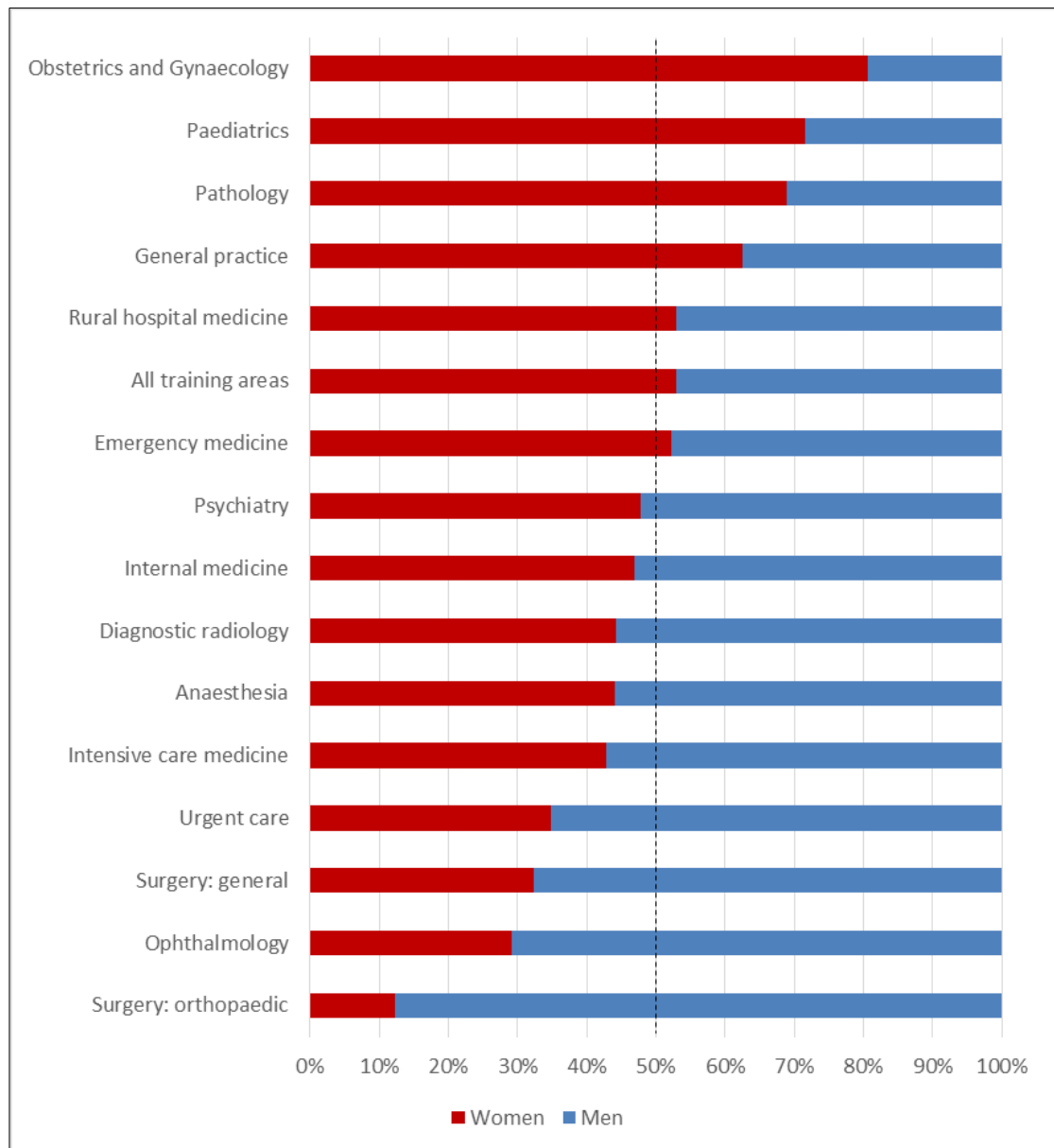
- orthopaedic surgery (12.2 percent)
- ophthalmology (29.2 percent)
- general surgery (32.4 percent)
- urgent care (34.9 percent).

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

Females outnumbered males in vocational training in:

- emergency medicine (52.2 percent)
- rural hospital medicine (52.9 percent)
- general practice (62.6 percent)
- pathology (68.9 percent)
- paediatrics (71.6 percent)
- obstetrics and gynaecology (80.6 percent).

Figure 15: Vocational training area by gender (areas with more than 20 trainees)



Work role

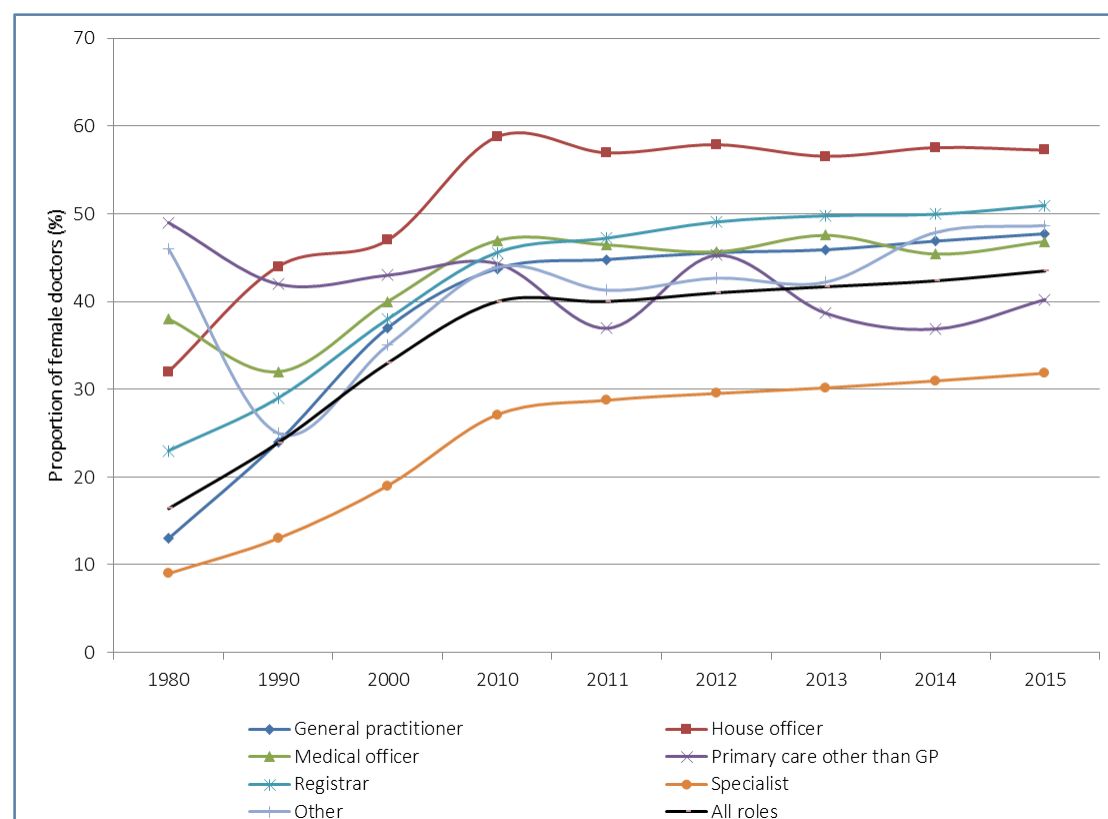
Table 20 and Figure 16 show the proportion of females in the workforce by work role at their main work site. The overall proportion of females in the workforce (based on survey responses) increased to 43.5 percent in 2015, up from 42 percent in 2014. Females continued to outnumber males in house officer roles, making up 57 percent, and now also slightly outnumber males in registrar roles (51 percent) after being evenly split for the previous 2 years.

The proportion of females in the role of GP increased slightly to 48 percent. There was also a slight increase in the role of specialist to 32 percent, continuing a slow but steady upwards trend.

Table 20: Proportion of females by work role at main work site

Role at main work site	Percentage female								
	1980	1990	2000	2010	2011	2012	2013	2014	2015
General practitioner (GP)	13	24	37	44	45	46	46	47	48
House officer	32	44	47	59	57	58	57	58	57
Medical officer	38	32	40	47	46	46	48	45	47
Primary care other than GP	49	42	43	44	37	45	39	37	40
Registrar	23	29	38	46	47	49	50	50	51
Specialist	9	13	19	27	29	30	30	31	32
Other	46	25	35	44	41	43	42	48	49

Figure 16: Proportion of females by work role at main work site

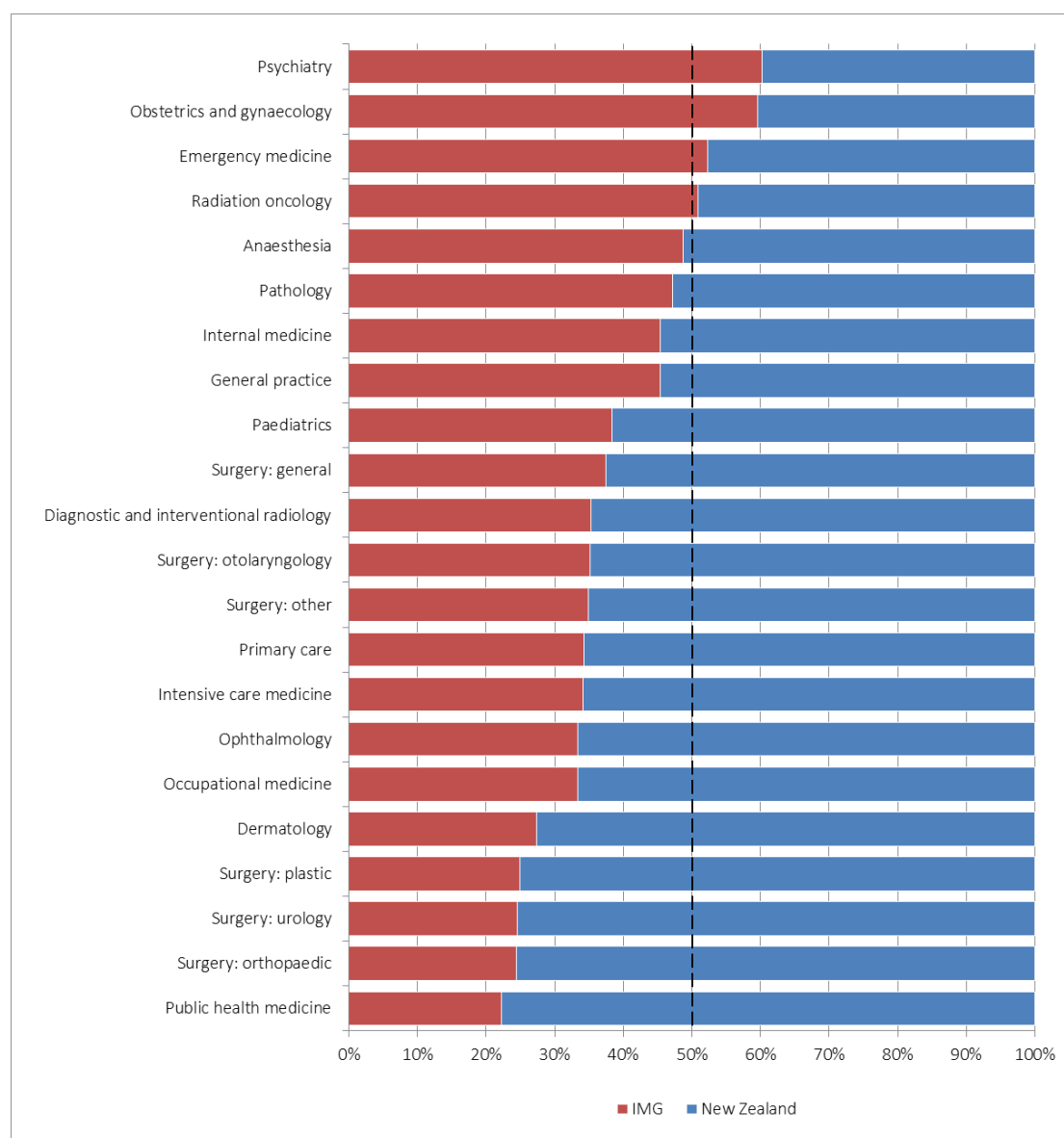


Work types

Table 21 shows the proportion of females working as specialists or GPs by work type 10-yearly from 1980, 5-yearly from 2000 and then yearly for the last 5 years.

Figure 17 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 56 percent of doctors.

Figure 17: Proportion of doctors by work type and gender



The work types with the highest proportions of female doctors were clinical genetics (83 percent), sexual health medicine (81 percent), family planning (67 percent), public health medicine (56 percent) and palliative medicine (55 percent).

Females remain significantly under-represented in the surgical scopes, although this is improving. In 2015, 10.7 percent of doctors working in surgical specialities were female, up slightly from 9.9 percent in 2014.

Other work types where women are under-represented include sports medicine (12 percent), occupational medicine (14 percent), intensive care medicine (22 percent), ophthalmology (22 percent), medical administration (23 percent), accident and medical practice (26 percent) and rural hospital medicine (29 percent).

Table 21: Proportion of females by work type (specialists and GPs)

Work type	Percentage female								
	1980	1990	2000	2010	2011	2012	2013	2014	2015
Accident and medical practice	- ¹	-	-	34	44	32	33	25	26
Anaesthesia	19	16	20	31	27	29	31	31	31
Basic medical science	12	16	7	27	36	25	36	33	49
Clinical genetics	-	-	-	67	29	39	32	45	83
Dermatology	3	17	19	24	28	27	30	28	31
Diagnostic and interventional radiology	8	14	23	31	30	31	30	34	34
Emergency medicine	-	0	26	41	33	32	35	38	40
Family planning and reproductive health	-	-	-	93	67	67	55	56	67
General practice	13	24	38	44	44	45	46	47	48
Intensive care medicine	-	-	18	27	23	18	18	23	22
Internal medicine	4	7	15	32	25	27	26	28	31
Medical administration	-	-	-	30	38	22	27	24	23
Musculoskeletal medicine	-	-	0	12	6	6	5	5	10
Obstetrics and gynaecology	10	17	29	54	41	39	44	44	45
Occupational medicine	-	5	17	16	15	10	15	13	14
Ophthalmology	6	11	12	24	20	18	21	21	22
Paediatrics	21	23	30	53	45	47	45	49	47
Palliative medicine	-	-	-	52	47	43	43	46	55
Pathology	15	22	30	39	40	40	36	43	40
Primary care	0	-	30	44	43	45	38	43	45
Psychiatry	19	28	33	43	40	40	39	40	40
Public health medicine	12	23	28	47	45	46	50	52	56
Radiation oncology	-	5	15	31	28	31	29	30	31
Rehabilitation medicine	-	-	0	46	33	36	20	31	31
Rural hospital medicine	-	-	-	-	-	-	58	42	29
Sexual health medicine	17	-	50	80	83	75	70	79	81
Sports medicine	-	-	25	21	20	25	17	13	12
Surgery: cardiothoracic	-	-	6	13	6	11	4	4	12
Surgery: general	-	-	6	19	10	9	11	14	14
Surgery: neurosurgery	-	-	7	5	5	6	14	8	9
Surgery: orthopaedic	-	-	3	7	6	5	5	5	5
Surgery: other	-	-	3	11	9	23	20	18	14
Surgery: otolaryngology	0	2	5	13	11	10	11	15	15
Surgery: paediatric	-	-	15	17	14	15	20	8	12
Surgery: plastic	-	-	3	22	10	7	10	13	17
Surgery: urology	-	-	3	9	6	4	7	9	10
Surgery: vascular	-	-	0	5	0	0	5	0	10
Specialists and GPs²	-	-	29	34	36	36	37	38	39

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 40.5 percent, down from 41.9 percent in 2014. This is reasonably consistent with registration data, which indicate that the proportion of IMGs in the workforce as at 30 June 2015 was around 42.4 percent, also down in 2015 from 43.0 percent in 2014 and 43.5 percent in 2013.

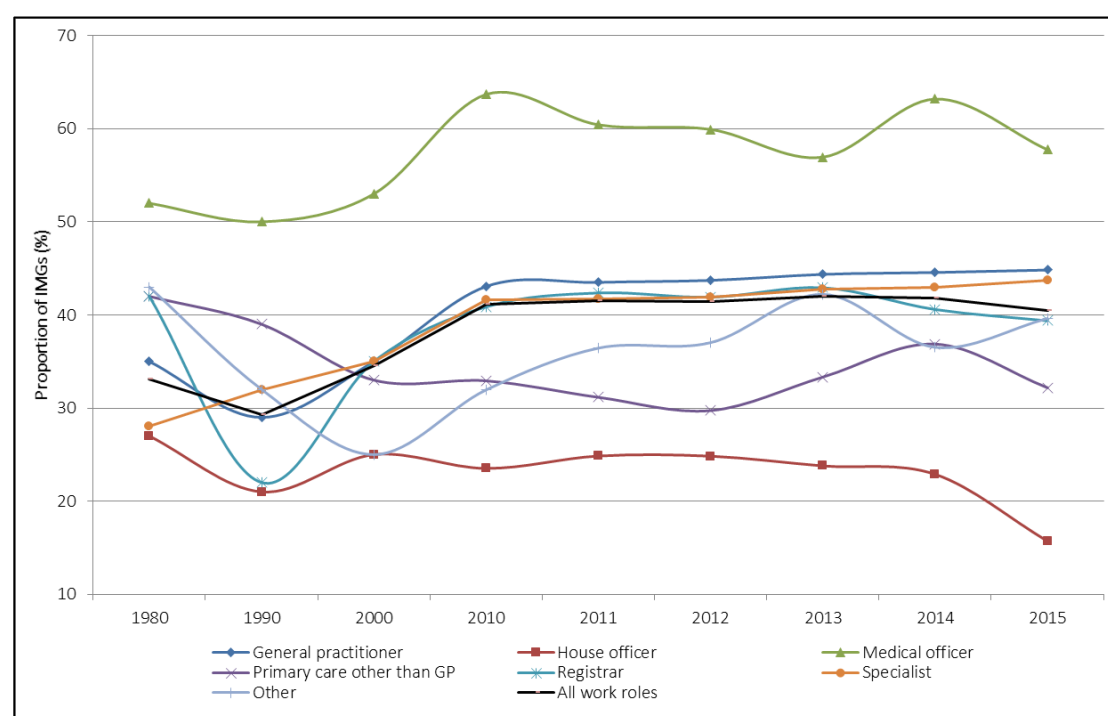
Work role

Table 22 and Figure 18 show that the medical officer work role again had the highest proportion of IMGs, at 57.7 percent. The proportion of IMGs in most work roles was either unchanged or only slightly changed compared to previous years.

Table 22: 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	2015
General practitioner	35.0	29.0	35.0	43.1	43.5	43.7	44.4	44.6	44.8
House officer	27.0	21.0	25.0	23.5	24.9	24.8	23.8	22.9	15.7
Medical officer	52.0	50.0	53.0	63.7	60.4	59.9	56.9	63.2	57.7
Primary care other than GP	42.0	39.0	33.0	32.9	31.2	29.7	33.3	36.9	32.2
Registrar	42.0	22.0	35.0	40.9	42.4	41.9	42.9	40.6	39.4
Specialist	28.0	32.0	35.0	41.6	41.7	41.9	42.8	43.0	43.7
Other	43.0	32.0	25.0	32.0	36.4	37.0	42.2	36.5	39.6
All work roles	33.1	29.3	34.5	41.1	41.5	41.4	42.0	41.9	40.5

Figure 18: Proportion of IMGs by work role at main work site (1980–2015)



Work type

Figure 19 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 and gynaecology, psychiatry and emergency medicine.

Figure 19: Proportion of IMGs by vocational scope (areas with more than 50 doctors)

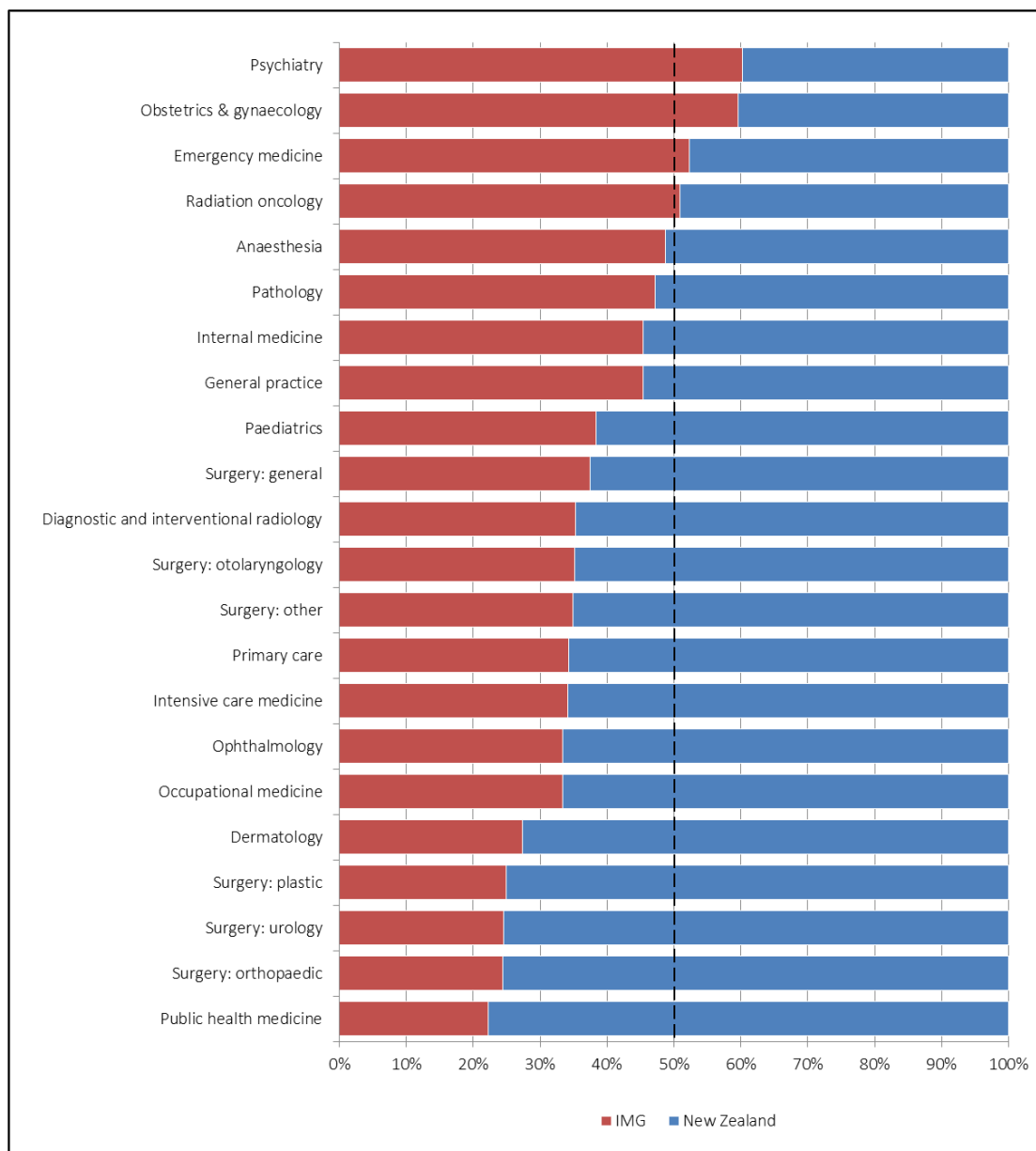


Table 23 shows the proportion of IMGs working as specialists or GPs in vocational scopes 10-yearly from 1980–2010 and then yearly for the last 5 years.

The proportion of IMGs increased most notably in accident and medical practice (from 39 percent to 52 percent), vascular surgery (from 24 percent to 37 percent), rehabilitation medicine (from 62 percent to 69 percent) and ophthalmology (from 29 percent to 33 percent).

The proportion of IMGs decreased most notably in musculoskeletal medicine (from 43 percent to 29 percent) and sports medicine (from 13 percent to 8 percent).

Table 23: Proportion of IMGs by vocational scope¹ (specialists and GPs)

Vocational scope ¹	Percentage IMGs								
	1980	1990	2000	2010	2011	2012	2013	2014	2015
Accident and medical practice	- ²	-	-	50	56	62	75	39	52
Anaesthesia	41	39	45	46	46	46	45	48	49
Basic medical science	31	42	20	24	55	58	64	56	62
Clinical genetics				22	29	67	32	36	17
Dermatology	30	20	23	31	28	27	26	25	27
Diagnostic and interventional radiology	24	27	32	26	33	33	35	36	35
Emergency medicine	-	50	48	51	45	46	42	51	52
Family planning and reproductive health	-	-	-	36	100	33	55	67	67
General practice	35	30	35	40	42	43	43	45	45
Intensive care medicine	-	-	18	32	31	32	35	32	34
Internal medicine	24	34	33	40	40	41	41	43	45
Medical administration	-	-	-	36	42	39	33	47	42
Musculoskeletal medicine	-	-	40	29	29	35	47	43	29
Obstetrics and gynaecology	24	28	45	50	56	58	57	56	60
Occupational medicine	-	41	31	33	33	30	31	36	33
Ophthalmology	18	16	22	23	24	25	31	29	33
Paediatrics	38	39	32	40	37	36	42	39	38
Palliative medicine	-	-	-	59	79	71	67	59	60
Pathology	21	26	38	44	49	46	47	52	47
Primary care	0	-	38	45	46	47	38	40	34
Psychiatry	41	50	57	59	59	58	59	59	60
Public health medicine	44	36	20	22	21	21	20	23	22
Radiation oncology	-	55	62	54	60	54	54	48	51
Rehabilitation medicine	-	-	29	64	67	64	87	62	69
Rural hospital medicine	-	-	-	-	-	-	47	54	57
Sexual health medicine	33	50	33	37	33	25	20	21	25
Sports medicine	-	-	4	29	13	20	6	13	8
Surgery: cardiothoracic	-	-	28	55	50	44	54	52	50
Surgery: general	-	-	30	32	34	36	39	38	38
Surgery: neurosurgery	-	-	50	64	71	63	62	54	61
Surgery: orthopaedic	-	-	13	28	25	22	23	23	24
Surgery: other	-	-	21	36	33	32	30	27	35
Surgery: otolaryngology	31	24	28	35	23	30	29	32	35
Surgery: paediatric	-	-	31	50	21	31	27	38	41
Surgery: plastic	-	-	19	27	22	22	13	23	25
Surgery: urology	-	-	29	23	25	18	27	25	25
Surgery: vascular	-	-	11	35	32	20	26	24	37
All specialists and GPs³	-	-	35	41	42	43	43	43	44

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 24 and Figure 20 compare the retention rates at each year after graduation for successive classes of graduates from 1995 to 2015.

Table 24: Graduate retention of class years 1995–2015

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	20	21
1995	275	257	96	85	74	76	81	75	72	69	66	66	68	67	70	68	68	68	68	69	67	67	68
1996	275	266	97	88	79	80	78	78	77	75	68	64	64	61	64	66	67	67	66	68	67	67	
1997	284	268	97	85	74	68	72	72	72	70	67	64	65	61	63	62	63	63	64	64	64		
1998	288	251	96	80	70	77	77	77	73	70	66	61	61	59	58	60	62	65	62	61			
1999	305	271	99	78	75	76	77	77	72	70	66	58	56	58	59	59	60	61	61				
2000	323	285	94	82	75	78	78	78	79	76	75	67	61	60	56	60	62	64					
2001	297	271	95	79	78	81	80	80	78	74	72	65	63	59	59	58	59						
2002	308	284	94	81	76	79	82	82	79	76	73	71	65	64	62	63							
2003	329	302	94	81	80	78	79	79	75	74	71	69	66	63	61								
2004	342	297	97	83	81	84	81	81	78	76	73	65	65	64									
2005	318	303	98	82	76	77	75	75	73	72	69	67	66										
2006	322	291	97	88	84	79	79	79	77	74	72	67											
2007	323	282	97	83	79	78	73	73	72	73	72												
2008	356	319	98	90	86	84	81	81	81	81													
2009	389	346	98	90	84	83	82	82	83														
2010	382	326	98	94	91	90	90	90															
2011	400	369	99	95	91	90	89																
2012	372	371	100	94	91	89																	
2013	424	396	99	95	93																		
2014	441	404	99	97																			
2015	455	430	100																				

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 25: 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	20	21
Average percentage of registered graduates retained	97	86	81	80	80	79	76	74	70	65	64	62	61	62	63	65	64	66	66	67	68
Standard deviation	1.8	6.0	6.9	5.6	4.8	4.3	3.6	3.2	2.9	3.4	3.3	2.9	4.0	3.8	3.4	2.6	3.0	3.4	1.5	0.3	

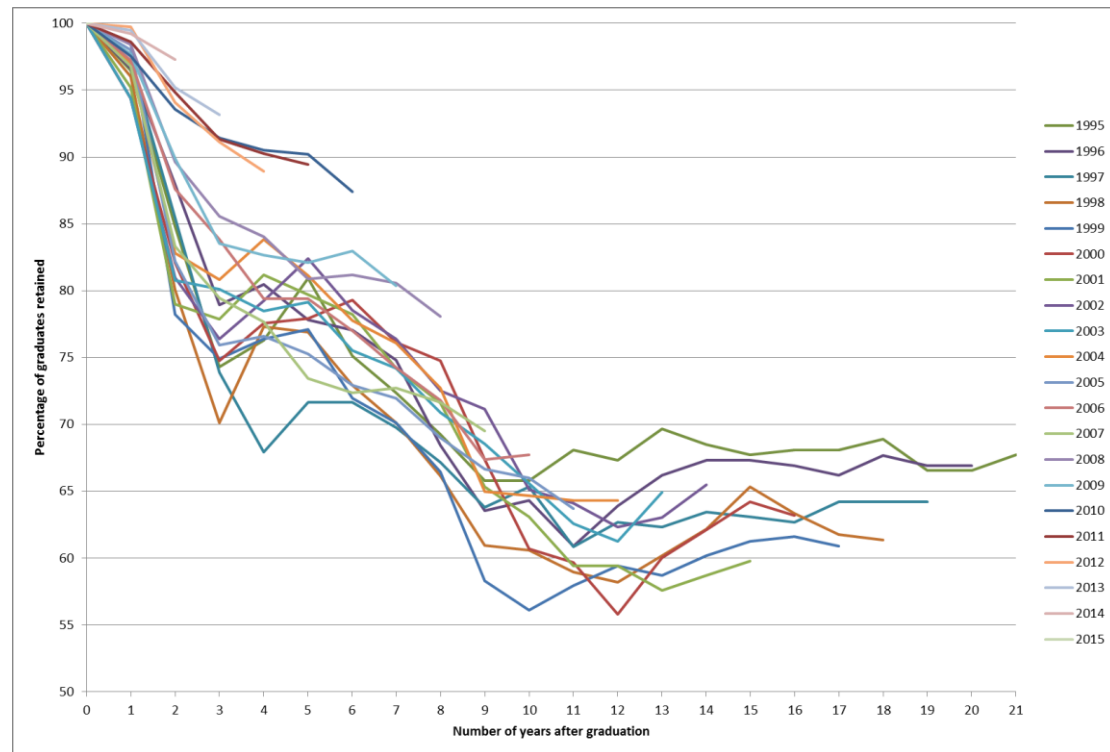
Table 24 and Table 25 show that, on average, 85 percent of graduates are retained 2 years after graduation, and by the third year, 80 percent are retained.

Figure 20 shows that retention continues to drop, gradually decreasing to 70 percent 9 years after graduation before bottoming out at 61 percent in year 13 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 25 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.

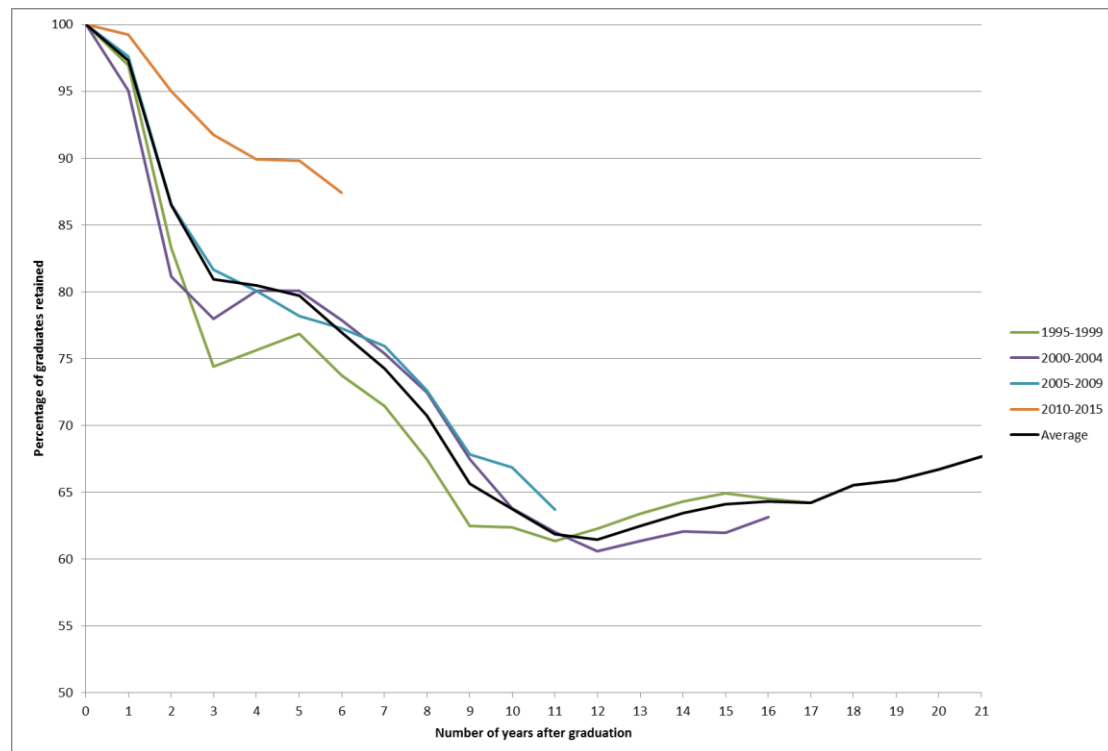
Figure 20: Graduate retention of class years 1995–2015



While there is not much variance in the percentage of registered graduates looking at all cohorts back to 1995, the retention rates for more recent cohorts suggests that retention is improving.

Figure 21 presents the same information as Figure 20 but groups the cohorts with the overall average also included for comparison. This shows that, although retention rates are similar for the cohorts from 1995 through 2009, cohorts from 2010 onwards show a much higher rate of retention over the first few years that we have available data for.

Figure 21: Graduate retention of class years 1995–2015



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 that 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.

International medical graduates – retention after registration

Table 26 and Figure 22 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, 2015 was the most recent cohort that could be analysed at the time of publishing. The 2016 cohort will be included in the next report.

Table 26: Retention rates for IMGs, 2000–2015

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	15	16
2000	924	47	38	35	31	28	27	27	25	23	22	22	20	20	20	20	20
2001	932	47	36	32	31	30	29	29	26	26	25	23	23	23	23	23	
2002	1073	49	37	32	31	28	27	27	27	26	25	25	24	23	23		
2003	1092	45	33	30	29	28	27	26	26	25	25	25	23	24			
2004	1014	48	32	29	27	26	26	25	24	23	22	22	22				
2005	1131	54	36	33	31	30	29	27	26	26	25	25					
2006	967	51	35	32	31	29	28	27	25	24	24						
2007	1105	62	46	40	38	37	35	34	32	31							
2008	1096	57	37	30	29	26	25	23	23								
2009	1163	59	35	31	28	26	26	25									
2010	1194	61	34	29	27	26	25										
2011	1255	62	38	31	29	28											
2012	1195	66	38	32	31												
2013	1138	67	38	33													
2014	1008	65	39														
2015	950	70															

- 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 22: Retention rate for IMGs, 2000–2015

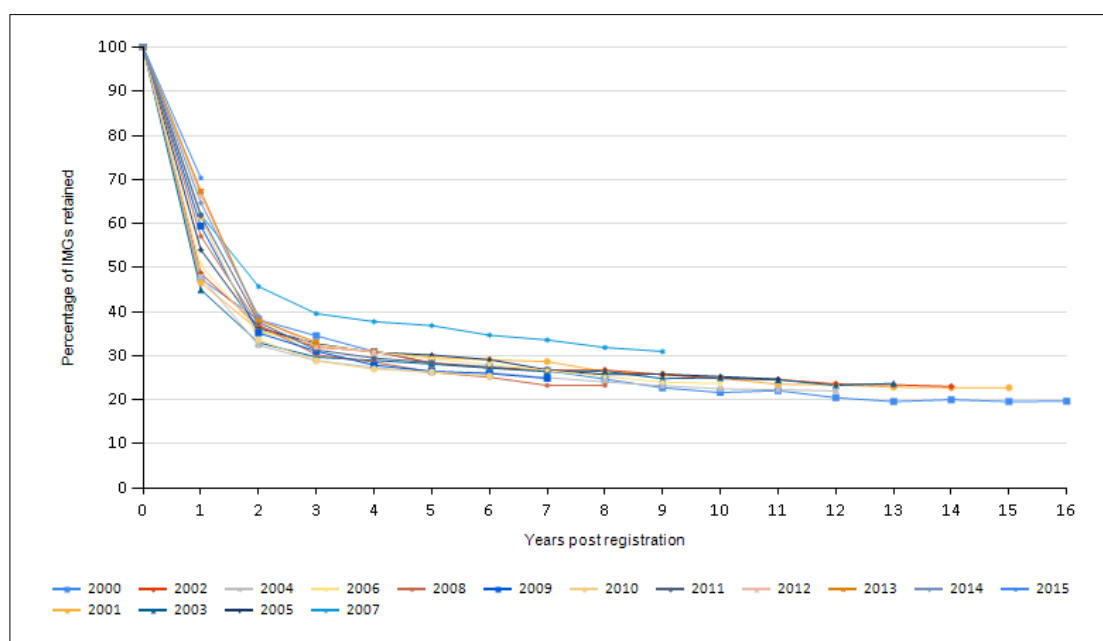


Table 27 shows that, on average, 57 percent of IMGs are retained in the year immediately after initial registration, dropping to 37 percent after 2 years.

After this initial drop, the percentage of IMGs continues to decrease more gradually, dropping by 1–2 percent each subsequent year. This trend has been consistent across the period analysed, with little variance in the proportion retained.

Table 27: 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	15	16
Average percentage of IMGs retained	57	37	32	30	29	28	27	26	25	24	24	23	22	22	21	20
Standard deviation	8.4	3.2	2.7	2.7	2.9	2.6	2.8	2.5	2.6	1.4	1.2	1.3	1.9	1.7	2.2	

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.

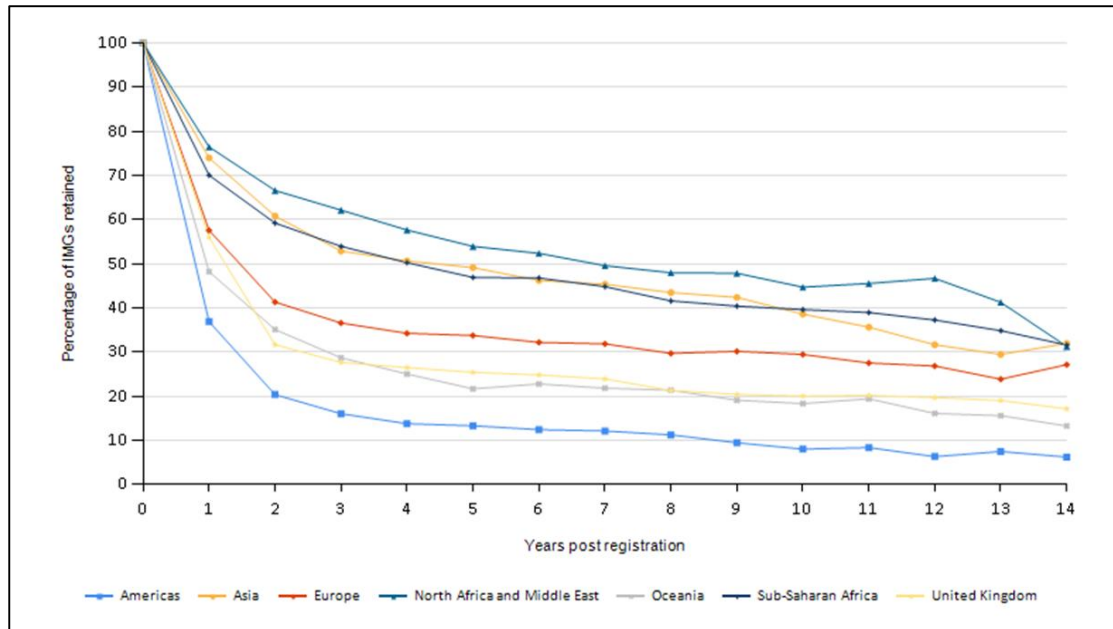
These groups are based on the level 1 major groups of the New Zealand Standard Classification for countries,⁴ although some groups have been combined and others split to make the figures easier to read:

- 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.

⁴ 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 23 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 66.

Figure 23: Retention rate for IMGs by country, 2000–2015



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 39 percent retained 1 year after registration, and 7 years after registration, just over 12 percent remain.

Doctors from the United Kingdom also have lower than average retention rates. Just over 32 percent of these doctors are retained 2 years after registration, dropping to 23 percent after 8 years.

Similarly, doctors from Oceania have lower than average retention rates. Just under 36 percent of these doctors are retained 2 years after registration, dropping to just over 20 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.

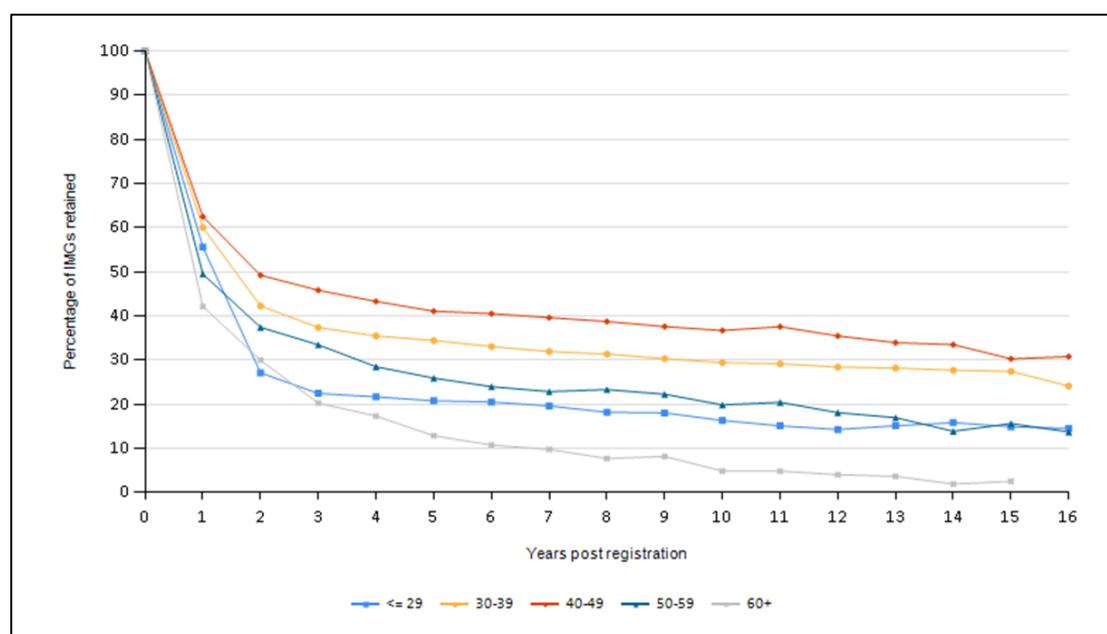
Retention of international medical graduates – by age group

This section splits the IMGs analysed into five age groups based on the doctors' 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:

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

Figure 24 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 73.

Figure 24: Retention rate for IMGs by age group, 2000–2015



Doctors in the 40–49 age group have the highest overall retention rate, followed by those in the 30–39 age group. Around 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 and 50–59 age groups. 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.

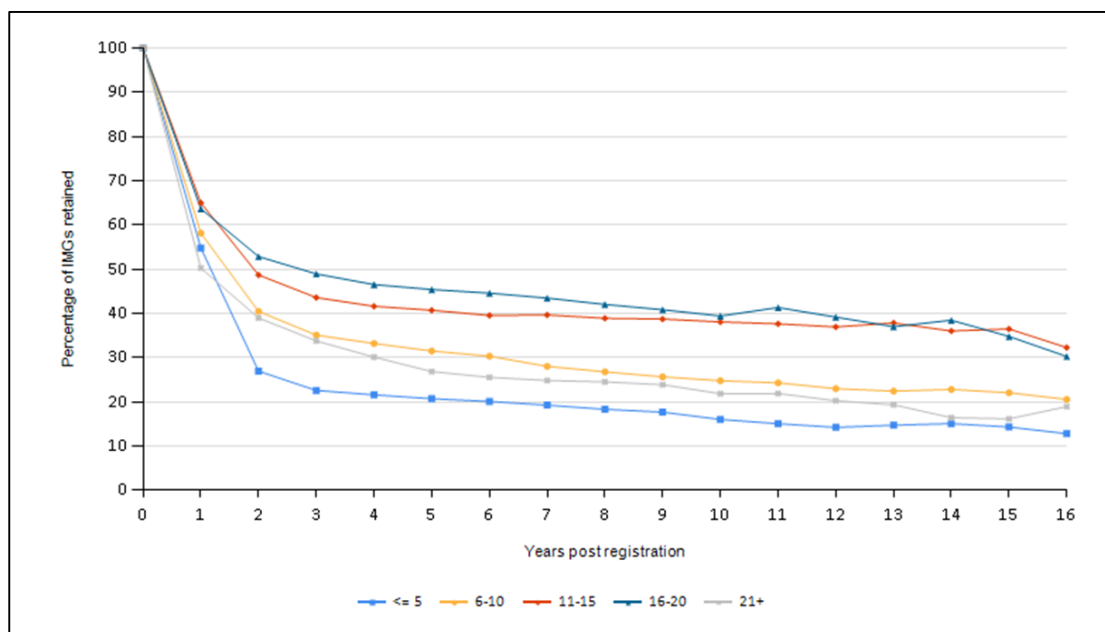
Retention of international medical graduates – by time since qualification

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 years or more.

Figure 25 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 78.

Figure 25: 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. Around 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 under 27 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

Figure 26 and Table 28 show 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 1 year. Just under 75 percent of IMGs are still working in New Zealand 1 year after obtaining a general scope. This decreases steadily to just over 62 percent after 5 years.

The number of IMGs who obtained a general scope increased after 2009, peaking at 567, although this seems to be levelling out and possibly dropping back down given the figures for the last 3 years. However, the trend of reduced retention of IMGs who gained a general scope after 1 and 2 years since 2009 has continued in 2015.

As noted in previous reports, a possible explanation is that more IMGs are applying for a general scope once they become eligible for it but do not necessarily intend to continue practising in New Zealand. Holding a general scope makes it easier for an IMG to return to New Zealand should they leave to work overseas, and so this may indicate that IMGs are simply leaving the option open should they wish to return in the future.

Figure 26: Retention rates for IMGs and New Zealand graduates after general scope obtained, 2000-2015

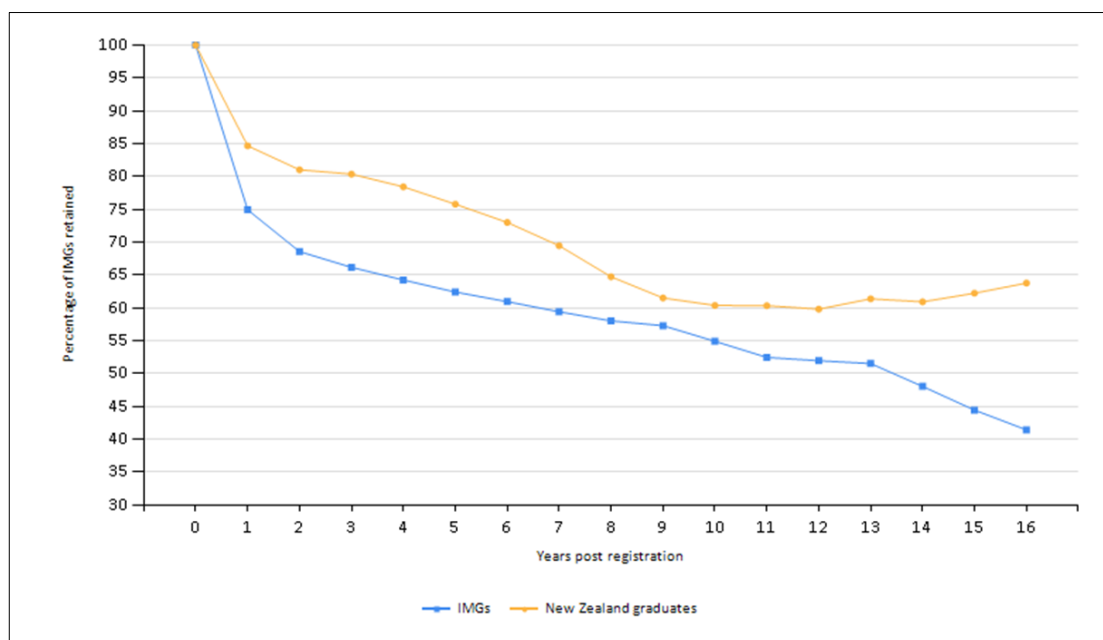


Table 28: Retention rate for IMGs after general scope obtained

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	15	16
2000	256	82.8	76.2	72.3	68.4	64.1	63.7	59.8	55.1	51.2	48.0	45.7	45.3	44.9	42.6	43.0	41.4
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	45.9	45.9	
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	56.4	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	56.5	57.1			
2004	311	83.3	74.6	69.1	66.2	63.7	59.8	57.6	54.3	55.6	52.7	52.7	53.1				
2005	323	77.4	72.8	68.7	64.7	65.6	64.4	62.8	60.1	58.5	57.0	54.5					
2006	284	80.6	76.1	69.4	67.6	65.5	60.9	60.9	60.9	59.2	58.8						
2007	331	82.5	76.7	75.2	71.0	67.4	62.8	60.1	60.1	61.0							
2008	384	74.7	70.8	65.1	61.7	57.6	55.5	50.3	49.5								
2009	470	79.6	69.8	65.7	61.9	59.8	55.1	54.9									
2010	574	69.0	63.6	59.6	56.4	54.9	52.6										
2011	567	61.2	54.3	50.3	49.2	47.1											
2012	473	64.9	55.0	53.5	52.0												
2013	538	63.6	52.8	51.9													
2014	538	58.7	50.7														
2015	407	60.4															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	74.9	68.6	66.2	64.2	62.4	60.9	59.4	58.0	57.3	54.9	52.4	51.9	51.5	48.0	44.4	41.4
Standard deviation	10.4	10.4	9.1	7.7	6.6	4.9	4.7	5.2	4.0	4.0	4.1	4.7	6.2	6.8	2.0	

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

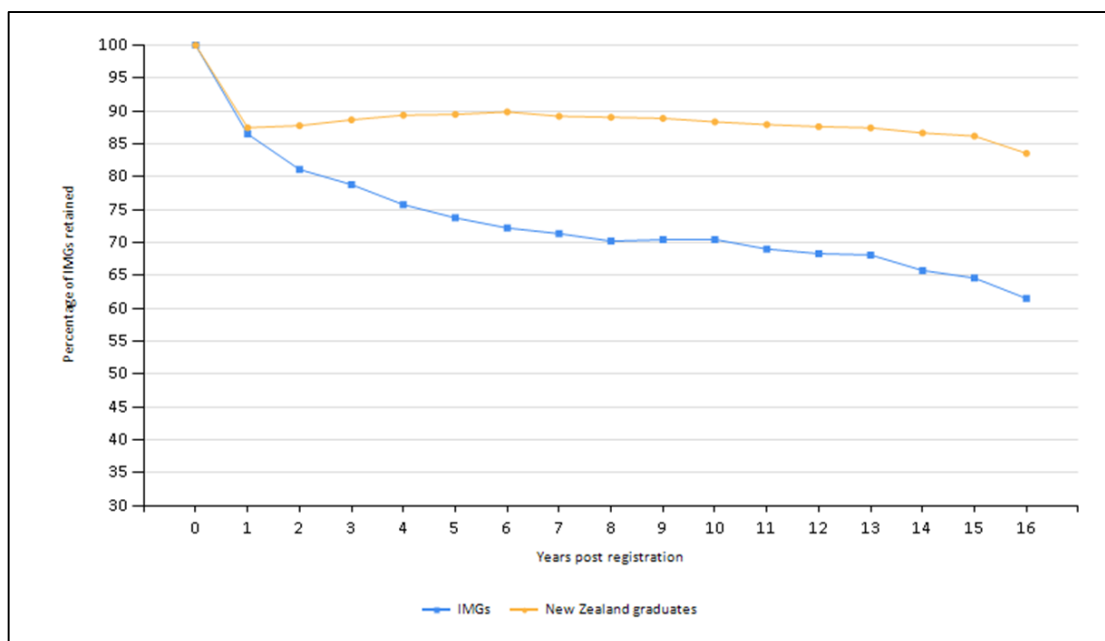
Table 29 show the retention rate for IMGs in the years after they obtained a vocational scope of practice. Table 30 shows the equivalent figures for New Zealand graduates, and Figure 27 compares the rates for IMGs and New Zealand graduates. The vertical axis starts at 60 percent to better show the difference in retention for the two groups.

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

The number of IMGs who obtained a vocational scope dropped in 2015 for the first time in a number of years, decreasing to 308 after peaking at 403 in 2014.

Previously, the numbers had been steadily increasing and were up 150 percent compared to 2000, with much of this increase occurring in the final 4 years where the number increased from 241 in 2010 to 403 in 2014 (a 67 percent increase).

Figure 27: Retention rate for IMGs and New Zealand graduates after vocational scope obtained



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 1 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 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 2015, the average age of doctors at the time they gained their vocational scope was 38 years for New Zealand graduates and 43 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 1 year. Up until a recent policy change, this period was even more limited, only allowing 6 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

Table 29: 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	15	16
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	63.4	61.5
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	65.8	65.8	
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	69.8	66.8		
2003	223	92.4	87.9	84.8	79.8	78.5	76.2	74.9	74.4	73.1	72.6	70.9	70.0	70.0			
2004	226	86.7	80.1	80.1	75.7	72.1	70.4	68.1	67.3	66.4	64.2	65.9	65.5				
2005	206	89.3	83.0	79.6	77.7	74.3	75.2	72.8	72.3	70.9	69.9	68.9					
2006	206	86.4	84.0	79.6	76.2	74.3	72.3	72.3	68.9	69.9	69.4						
2007	223	78.9	75.3	74.4	73.1	68.2	66.4	64.6	62.8	65.0							
2008	229	82.5	79.0	72.1	70.3	66.8	65.1	63.8	62.9								
2009	239	82.8	76.2	72.4	69.9	68.2	66.9	67.8									
2010	241	84.6	77.2	75.1	73.9	73.4	71.4										
2011	327	84.1	78.0	76.1	71.6	70.0											
2012	354	84.5	75.4	73.2	72.0												
2013	398	87.4	82.9	80.4													
2014	403	86.6	78.9														
2015	308	87.0															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	86.5	81.1	78.8	75.8	73.7	72.2	71.3	70.2	70.4	70.5	69.0	68.3	68.1	65.8	64.6	61.5
Standard deviation	3.5	4.5	5.0	4.6	5.0	4.8	5.4	5.5	3.9	4.0	2.2	2.4	2.1	1.1	1.7	

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.

Table 30 shows the equivalent retention rate for New Zealand graduates in the years after they obtained a vocational scope of practice.

Table 30: 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	15	16
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	85.8	83.6
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	87.6	86.5	
2002	276	91.7	90.9	90.2	94.2	93.1	91.7	91.3	90.9	89.9	88.0	87.3	87.0	85.9	85.1		
2003	250	93.2	90.0	92.0	92.0	90.8	90.4	89.6	89.6	89.2	89.2	89.2	89.2	88.0			
2004	211	88.6	90.5	89.1	88.2	89.6	88.2	87.2	87.2	88.6	87.2	85.3	84.8				
2005	235	87.7	87.2	90.6	89.8	88.1	88.5	88.1	88.1	88.9	88.1	87.7					
2006	226	85.8	90.3	89.4	87.2	88.9	88.9	88.1	88.1	87.2	86.3						
2007	215	85.6	83.3	85.1	87.0	84.7	86.5	84.7	85.6	85.1							
2008	220	85.0	90.0	90.0	88.6	90.5	89.1	90.0	90.0								
2009	223	87.0	87.9	89.7	91.0	90.1	89.7	88.8									
2010	212	86.3	88.2	90.1	90.1	88.7	88.2										
2011	265	81.5	81.5	81.1	81.5	82.6											
2012	232	82.8	80.2	82.8	84.1												
2013	277	84.1	82.3	83.4													
2014	327	82.6	85.6														
2015	289	87.9															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of NZ graduates retained	87.5	87.8	88.7	89.4	89.5	89.9	89.2	89.1	88.9	88.3	87.9	87.6	87.4	86.7	86.2	83.6
Standard deviation	4.2	4.4	4.0	3.9	3.3	2.4	2.4	2.0	2.0	1.3	1.6	1.8	1.1	1.3	0.5	

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.

Survey method

Change in delivery method

For the first time, Council is delivering the survey questionnaire electronically. This change is as a result of Council moving its practising certificate renewal process online, with doctors now renewing through myMCNZ (<https://mymcnz.org.nz/>). This particular survey is a hybrid, with the first quarter being delivered through the existing paper-based system and the other three-quarters being delivered electronically.

Initial indications are this change has been a positive one for the survey with the data collected being more complete

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 are November 2015, February 2016, May 2016 and August 2016.

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
- 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 2015 workforce survey, survey forms were sent out to 14,604 doctors with 14,556 responding (an overall response rate of 99.7 percent).

Please note that this does not mean that 99.7 percent of practising doctors completed the survey as there will have been practising doctors who either did not renew their practising certificate or did so through a different mechanism and so, in either case, will not have been asked to complete the survey.

For the 2015 survey period, there were 15,955 unique doctors whose practising certificates ended during the period (this is when the survey is normally completed). Therefore, it could be said that, overall, the results represent around 91 percent of doctors who practised during the period being asked about in the survey.

Also, the response rate represents the overall response rate and does not take into account the quality of the information provided. Some doctors, although they sent back the survey, did not answer all of the questions asked (or they provided incomplete answers).

This latter limitation is partially mitigated with the move to delivering the survey electronically, as the online form will prompt doctors if they don't provide any of the required pieces of data on the survey form.

Active doctors

The results in this report include only the responses from the 13,921 active doctors – that is, those who reported working 4 or more hours a week, as shown in Table 1 on page 2 of this report.

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 and TLA populations were sourced from the corresponding tables of Statistics New Zealand's Estimated Resident Population dataset as at 30 June 2015.⁵

Because the TLAs in the Auckland region have been combined into one, population figures for the separated areas are no longer available, and so from 2015 onwards, Auckland TLA will be presented as one category.

Full-time equivalent (FTE)

Full-time equivalents (FTEs) are calculated proportionately – 40 hours per week is 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. NZ Māori
2. Pacific Island (Pasifika)

⁵ Statistics New Zealand: Estimated Resident Population as at 30 June 2015.

3. Chinese
4. Indian
5. Other non-European
6. Other European
7. NZ European/Pākehā.

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 were granted practising certificates 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 = 1.5 FTE. On-call time is included in hours worked only if it is actually worked.

General practitioner (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 (IMG)

An international medical graduate is a doctor who obtained their primary medical qualification in a country other than New Zealand. IMGs were previously called overseas-trained doctors.

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 DHBs⁶ 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 were previously called medical officers of special specialist scale (MOSS).

Registered within a vocational scope of practice

⁶ http://www.asms.org.nz/Site/Employment_in_NZ/National_DHB_Collective_Agreement_-_MECA/MECA.aspx

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 8.

Further information

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

Analytical Services
National Collections & Reporting
National Health Board
PO Box 1043
Wellington

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

Table 31 shows the distribution of all doctors and GPs by the DHB locality at the doctor's main work site for 2015.

Table 31: Workforce by DHB locality of main work site

DHB locality	Doctors	GPs ¹	DHB locality population ²	Doctors per 100,000 population	FTEs for GPs at all work sites ³	FTEs for GPs per 100,000 population	GPs per 100,000 population
Northland	417	146	168,300	248	143	85	87
Waitemata	1,203	407	575,600	209	381	66	71
Auckland	2,713	490	490,000	554	439	90	100
Counties Manukau	963	322	521,700	185	323	62	62
Waikato ⁴	1,167	307	390,600	299	297	76	79
Bay of Plenty	659	210	221,500	298	183	83	95
Lakes	276	99	104,800	263	84	80	94
Tairāwhiti	123	39	47,400	259	37	78	82
Hawke's Bay	444	143	159,900	278	136	85	89
Taranaki	265	75	115,900	229	69	60	65
MidCentral	480	109	172,100	279	119	69	63
Whanganui	135	47	62,600	216	46	74	75
Wairarapa	73	32	43,200	169	31	72	74
Hutt	320	105	144,000	222	98	68	73
Capital & Coast ⁵	1,294	317	301,100	430	294	98	105
Nelson Marlborough	415	158	144,800	287	132	91	109
West Coast	53	22	32,700	162	23	71	67
Canterbury	1,744	482	526,700	331	441	84	92
South Canterbury	121	38	58,600	206	43	73	65
Southern	1,052	296	314,000	335	277	88	94
Total	13,921	3,844	4,595,500	309	3,598	78	85

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

² Figures are based on Statistics New Zealand's estimated residential population as at 30 June 2015.

³ 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.

⁴ Includes all TLA Ruapehu to simplify analysis. Officially, Ruapehu District is split between Whanganui and Waikato DHBs.

⁵ Includes all TLA Kapiti to simplify analysis. Officially, Kapiti Coast District is split between Capital & Coast and MidCentral DHBs.

Appendix 2 – Retention of international medical graduates by country

Table 32 to Table 38 show the cohort retention rate at each year after initial registration for successive years of IMG registrants from each group, as described on page 49. The footnotes referred to in these tables are detailed on page 72 following Table 38 and are the same for all tables in this section.

Table 32: Retention rate for graduates from the Americas, 2000–2015

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	15	16
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	6.2	5.3
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	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	4.1	6.6		
2003	155	24.5	17.4	12.9	12.9	12.3	11.0	11.6	11.0	11.0	10.3	10.3	11.6	11.6			
2004	138	31.9	16.7	13.8	10.9	10.1	10.9	9.4	9.4	7.2	6.5	7.2	8.0				
2005	178	39.9	23.6	21.9	19.1	21.3	18.0	15.7	15.7	14.6	14.0	14.0					
2006	150	34.7	20.7	19.3	16.7	19.3	18.7	15.3	15.3	14.7	12.7						
2007	200	43.0	21.0	16.0	16.0	15.5	14.5	14.5	15.0	12.5							
2008	225	37.8	21.3	16.4	16.0	12.4	10.7	9.8	11.6								
2009	238	39.9	21.4	20.2	15.5	15.1	14.7	15.1									
2010	249	44.2	19.3	14.9	14.5	12.9	10.4										
2011	239	46.4	23.4	17.6	17.6	15.9											
2012	239	48.5	27.2	23.0	22.2												
2013	234	52.6	25.6	21.4													
2014	193	48.7	29.5														
2015	172	55.8															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	38.8	21.3	16.9	14.7	13.5	12.4	12.2	11.7	10.5	9.5	9.1	7.7	7.7	7.1	7.0	5.3
Standard deviation	10.8	4.1	3.7	3.9	4.1	3.6	3.2	3.0	3.3	2.9	3.0	2.7	3.1	1.3	1.1	

Table 33: Retention rate for graduates from Asia, 2000–2015

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	15	16
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	30.3	31.1
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	25.8	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	31.0	29.4		
2003	125	69.6	65.6	59.2	56.0	52.0	50.4	48.0	47.2	42.4	43.2	41.6	40.0	40.8			
2004	90	68.9	65.6	57.8	54.4	53.3	52.2	51.1	50.0	45.6	42.2	43.3	40.0				
2005	100	78.0	68.0	62.0	57.0	54.0	53.0	45.0	44.0	44.0	42.0	42.0					
2006	109	68.8	54.1	45.9	43.1	40.4	38.5	35.8	33.0	33.9	32.1						
2007	149	78.5	59.7	53.0	51.7	52.3	47.7	46.3	45.0	40.9							
2008	103	76.7	58.3	43.7	39.8	38.8	34.0	29.1	31.1								
2009	99	76.8	59.6	56.6	52.5	51.5	50.5	44.4									
2010	85	74.1	55.3	45.9	44.7	47.1	43.5										
2011	99	68.7	54.5	40.4	40.4	40.4											
2012	97	70.1	54.6	48.5	48.5												
2013	87	86.2	74.7	65.5													
2014	73	80.8	57.5														
2015	74	79.7															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	74.8	61.5	53.5	49.7	48.2	46.4	43.6	42.3	41.1	38.1	38.0	35.0	32.7	29.0	28.6	31.1
Standard deviation	5.1	6.4	7.8	6.1	5.7	5.9	6.5	6.2	3.6	4.3	5.0	4.7	5.8	3.1	2.3	

Table 34: Retention rate for graduates from Europe, 2000–2015

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	15	16
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	23.7	23.7
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	23.9	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	27.0	26.0		
2003	93	41.9	34.4	29.0	28.0	28.0	26.9	25.8	26.9	25.8	24.7	24.7	21.5	21.5			
2004	91	61.5	51.6	44.0	45.1	47.3	45.1	42.9	38.5	38.5	38.5	36.3	36.3				
2005	116	64.7	43.1	39.7	34.5	35.3	34.5	34.5	31.9	31.9	31.0	30.2					
2006	127	44.9	31.5	28.3	30.7	26.8	26.0	25.2	23.6	21.3	20.5						
2007	131	66.4	49.6	42.7	38.2	38.2	35.1	33.6	32.8	34.4							
2008	174	58.6	42.5	35.6	33.3	31.6	29.9	27.6	27.6								
2009	201	58.2	40.3	36.3	33.3	29.4	28.9	27.9									
2010	163	61.3	33.1	28.8	26.4	24.5	26.4										
2011	175	59.4	41.1	37.1	34.9	32.6											
2012	190	66.3	42.6	35.8	34.2												
2013	199	64.8	38.7	36.2													
2014	138	71.0	42.8														
2015	182	70.9															

	Post-registration year																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Average percentage of IMGs retained	59.2	41.2	36.5	34.3	32.9	31.3	31.0	29.8	29.6	28.4	29.4	27.6	24.0	25.7	23.8	23.7	
Standard deviation	8.8	5.8	4.9	4.7	6.0	5.5	5.2	4.6	5.3	5.7	4.0	5.4	2.3	1.6	0.2		

Table 35: Retention rate for graduates from North Africa and the Middle East, 2000–2015

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	15	16
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	31.3	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	48.1	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	50.0	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	27.8	27.8			
2004	20	80.0	65.0	55.0	55.0	45.0	55.0	45.0	35.0	35.0	35.0	35.0	30.0				
2005	22	81.8	81.8	77.3	72.7	68.2	68.2	68.2	68.2	63.6	68.2	63.6					
2006	12	66.7	75.0	58.3	50.0	41.7	33.3	33.3	33.3	33.3	25.0						
2007	11	72.7	63.6	54.5	54.5	54.5	54.5	54.5	54.5	54.5							
2008	15	73.3	66.7	60.0	53.3	60.0	46.7	53.3	40.0								
2009	15	86.7	73.3	60.0	53.3	53.3	53.3	53.3									
2010	22	86.4	63.6	63.6	63.6	68.2	68.2										
2011	18	77.8	66.7	66.7	55.6	50.0											
2012	24	66.7	54.2	54.2	41.7												
2013	15	73.3	60.0	53.3													
2014	17	76.5	58.8														
2015	20	75.0															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	76.4	65.6	60.9	56.2	54.8	53.9	50.3	47.8	46.9	45.2	46.8	39.6	40.1	44.4	39.7	31.3
Standard deviation	5.9	7.7	7.6	8.7	8.9	10.1	10.8	12.7	11.6	14.4	11.4	12.4	10.8	11.8	11.9	

Table 36: Retention rate for graduates from Oceania, 2000–2015

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	15	16
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	11.8	11.8
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	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	15.6	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	26.2	27.9			
2004	93	40.9	28.0	21.5	19.4	17.2	15.1	12.9	14.0	15.1	14.0	15.1	15.1				
2005	74	45.9	32.4	27.0	21.6	20.3	23.0	18.9	17.6	18.9	17.6	16.2					
2006	70	38.6	35.7	22.9	22.9	21.4	18.6	18.6	17.1	20.0	20.0						
2007	77	44.2	29.9	28.6	27.3	24.7	23.4	20.8	20.8	24.7							
2008	80	41.3	28.8	20.0	18.8	10.0	12.5	11.3	12.5								
2009	78	35.9	24.4	17.9	17.9	15.4	12.8	12.8									
2010	82	46.3	36.6	29.3	25.6	26.8	30.5										
2011	116	52.6	44.0	38.8	33.6	30.2											
2012	87	69.0	41.4	35.6	34.5												
2013	84	58.3	40.5	38.1													
2014	126	58.7	42.1														
2015	98	63.3															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	49.8	35.9	29.9	26.4	22.8	22.5	19.8	20.3	19.9	18.4	18.1	17.9	18.7	15.1	14.1	11.8
Standard deviation	9.1	6.3	7.2	6.1	6.1	6.9	6.6	6.4	3.5	4.4	4.1	4.7	6.2	1.7	3.3	

Table 37: Retention rate for graduates from Sub-Saharan Africa, 2000–2015

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	15	16
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	31.6	32.6
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	40.0	39.0	
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	35.9	34.4		
2003	113	65.5	55.8	52.2	48.7	49.6	49.6	44.2	45.1	44.2	39.8	38.9	38.1	38.9			
2004	79	64.6	51.9	46.8	48.1	45.6	44.3	43.0	41.8	38.0	39.2	38.0	38.0				
2005	75	62.7	52.0	52.0	53.3	50.7	50.7	45.3	40.0	38.7	41.3	41.3					
2006	96	56.3	46.9	45.8	43.8	38.5	34.4	34.4	33.3	29.2	30.2						
2007	90	72.2	65.6	58.9	58.9	54.4	54.4	54.4	50.0	44.4							
2008	41	73.2	51.2	51.2	46.3	43.9	43.9	39.0	36.6								
2009	47	66.0	53.2	48.9	40.4	36.2	36.2	36.2									
2010	36	75.0	61.1	44.4	47.2	38.9	33.3										
2011	35	82.9	74.3	71.4	62.9	60.0											
2012	35	82.9	62.9	65.7	54.3												
2013	29	82.8	62.1	55.2													
2014	20	75.0	70.0														
2015	27	81.5															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	71.1	60.1	54.9	51.5	47.3	44.6	43.4	42.0	39.5	38.5	39.2	37.6	36.1	35.3	35.3	32.6
Standard deviation	8.7	8.0	7.8	6.7	7.3	7.2	6.1	5.5	5.1	4.1	2.5	3.0	3.3	4.3	5.3	

Table 38: Retention rate for graduates from the United Kingdom, 2000–2015

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	15	16
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	17.4	17.4
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	21.3	21.6	
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	21.8	21.2		
2003	527	39.5	23.7	21.8	22.4	22.2	20.9	21.1	20.9	20.1	21.3	20.9	19.4	19.7			
2004	503	43.5	23.7	22.7	20.9	19.7	20.5	20.1	19.5	19.5	18.9	18.5	18.5				
2005	566	50.9	29.9	26.0	25.6	24.7	23.7	22.4	21.9	22.6	21.9	21.2					
2006	403	53.6	33.3	32.8	30.8	29.5	29.3	28.3	26.6	24.8	25.6						
2007	447	64.4	49.2	42.3	39.8	38.9	36.7	35.3	32.4	32.7							
2008	458	62.4	37.1	30.8	29.7	28.4	28.2	26.6	25.8								
2009	485	68.2	33.6	28.5	26.2	25.8	25.6	24.3									
2010	557	67.5	33.4	30.0	27.5	27.1	26.0										
2011	573	67.9	35.1	28.6	27.2	27.4											
2012	523	72.5	36.3	28.1	27.5												
2013	490	72.4	34.7	28.8													
2014	441	67.8	35.8														
2015	377	75.6															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	57.9	32.1	27.7	26.6	25.7	25.0	24.2	23.0	22.5	21.1	20.1	19.4	19.9	19.9	19.5	17.4
Standard deviation	13.6	6.9	5.5	5.1	5.5	5.1	4.9	4.4	4.8	2.6	1.7	1.8	2.8	2.4	3.0	

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

Table 39 to Table 43 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 51). The footnotes referred to in these tables are detailed on page 77 following Table 43 and are the same for all tables in this section.

Table 39: Retention rate for IMGs aged 29 or younger, 2000–2015

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	15	16
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	14.2	14.5
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	15.9	15.5	
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	17.8	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	12.5	13.0			
2004	394	38.6	16.2	15.5	14.7	12.7	13.7	13.7	12.7	12.7	12.4	12.2	12.7				
2005	436	49.3	27.1	23.9	22.9	21.6	20.4	19.0	17.9	18.3	18.6	17.0					
2006	291	45.4	32.6	29.6	28.9	27.8	26.1	25.1	22.0	21.0	21.0						
2007	336	67.9	45.5	37.5	36.3	36.6	35.1	33.3	28.9	29.2							
2008	382	57.9	29.8	22.3	20.7	19.6	19.6	17.8	16.0								
2009	420	60.0	26.0	21.0	19.0	18.1	18.6	17.6									
2010	474	65.8	27.2	23.8	22.4	22.6	22.2										
2011	453	65.6	28.3	20.8	21.0	20.1											
2012	436	68.6	31.9	22.5	22.2												
2013	430	71.9	29.5	23.5													
2014	322	67.7	29.5														
2015	343	79.6															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	55.6	27.1	22.4	21.6	20.7	20.5	19.6	18.2	18.0	16.3	15.1	14.3	15.1	15.8	14.9	14.5
Standard deviation	14.7	7.2	5.7	5.7	6.2	5.9	5.7	4.8	5.2	3.0	2.3	1.9	2.4	1.5	1.0	

Table 40: Retention rate for IMGs aged 30–39, 2000–2015

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	15	16
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	23.8	24.1
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	30.2	31.1	
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	29.2	28.4		
2003	379	50.7	39.3	35.9	35.9	35.4	33.0	32.2	32.2	31.1	31.4	30.6	29.6	29.6			
2004	302	53.0	39.4	33.8	31.5	31.5	32.5	30.8	30.1	27.5	27.5	27.5	26.2				
2005	360	57.5	39.2	35.0	33.1	33.3	31.7	29.2	28.9	28.9	28.3	28.1					
2006	380	58.2	37.4	33.4	31.8	31.6	30.5	29.5	28.4	27.6	28.2						
2007	448	64.7	47.3	43.1	39.7	38.6	36.2	35.7	34.6	32.8							
2008	415	61.0	41.9	34.9	33.3	31.1	29.4	28.0	29.6								
2009	387	62.8	41.1	37.0	34.6	32.6	31.3	30.0									
2010	369	62.1	39.0	33.6	30.6	31.7	30.4										
2011	411	63.3	44.5	37.5	36.0	36.0											
2012	366	66.9	40.7	34.7	33.9												
2013	373	67.0	41.8	37.3													
2014	350	63.7	40.6														
2015	330	63.6															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	60.0	42.2	37.4	35.4	34.4	33.0	31.9	31.3	30.3	29.4	29.1	28.4	28.2	27.7	27.4	24.1
Standard deviation	5.1	3.5	3.6	3.6	2.9	2.9	2.9	2.5	2.7	2.3	2.0	2.9	2.7	3.0	5.2	

Table 41: 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	15	16
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	30.1	30.8
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	31.8	30.4	
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	35.3	35.3		
2003	197	53.8	50.3	45.7	43.7	40.6	41.1	39.6	39.1	35.5	36.5	36.5	34.5	36.5			
2004	186	58.6	51.6	48.4	47.3	46.2	44.6	42.5	42.5	41.4	40.9	39.8	39.8				
2005	196	66.8	55.6	52.6	49.5	49.0	48.5	44.9	41.8	42.3	40.8	40.3					
2006	150	50.7	36.0	35.3	35.3	32.7	30.0	28.7	29.3	28.0	28.0						
2007	164	64.6	51.8	45.7	43.9	41.5	40.2	38.4	39.0	37.8							
2008	144	58.3	45.1	42.4	40.3	37.5	36.8	34.0	33.3								
2009	169	65.1	46.7	45.0	40.8	40.2	41.4	39.1									
2010	163	65.0	43.6	41.1	38.0	34.4	36.2										
2011	199	62.8	45.7	42.7	39.7	37.7											
2012	194	74.2	51.5	49.5	45.4												
2013	165	68.5	50.9	47.9													
2014	164	68.9	49.4														
2015	152	68.4															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	62.5	49.2	45.8	43.3	41.1	40.5	39.6	38.7	37.6	36.7	37.5	35.5	33.9	33.5	30.3	30.8
Standard deviation	6.5	5.1	4.6	4.3	5.4	5.0	5.0	4.5	4.9	4.6	2.6	3.0	2.4	1.8	0.2	

Table 42: Retention rate for IMGs aged 50–59, 2000–2015

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	15	16
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	15.1	13.7
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	14.5	16.1	
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	13.7	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	25.5	24.5			
2004	90	52.2	40.0	35.6	30.0	31.1	28.9	26.7	22.2	23.3	17.8	18.9	18.9				
2005	93	45.2	34.4	32.3	25.8	25.8	25.8	22.6	24.7	22.6	21.5	22.6					
2006	88	45.5	36.4	37.5	31.8	30.7	30.7	27.3	25.0	20.5	18.2						
2007	108	37.0	32.4	27.8	28.7	28.7	25.9	25.0	25.9	25.9							
2008	92	46.7	37.0	28.3	28.3	25.0	21.7	19.6	22.8								
2009	115	49.6	37.4	30.4	25.2	23.5	21.7	20.9									
2010	110	54.5	36.4	27.3	28.2	21.8	20.9										
2011	100	50.0	39.0	38.0	31.0	27.0											
2012	111	64.0	43.2	41.4	36.9												
2013	97	56.7	42.3	39.2													
2014	111	55.0	44.1														
2015	73	65.8															

	Post-registration year																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Average percentage of IMGs retained	49.5	37.4	33.4	28.5	25.9	23.9	22.8	23.3	22.2	19.8	20.4	18.1	16.9	13.9	15.6	13.7	
Standard deviation	8.2	3.7	5.8	3.6	3.4	4.6	3.4	3.1	3.3	4.0	3.1	4.5	5.1	1.3	0.7		

Table 43: Retention rate for IMGs aged 60 or older, 2000–2015

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	15	16
2000	40	40.0	27.5	17.5	5.0	2.5	7.5	2.5	2.5	0.0	2.5	2.5	2.5	2.5	0.0	2.5	0.0
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	1.9	0.0	
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	0.0	0.0		
2003	46	37.0	23.9	19.6	17.4	17.4	17.4	15.2	10.9	6.5	4.3	4.3	6.5	6.5			
2004	42	42.9	31.0	19.0	21.4	14.3	11.9	9.5	9.5	9.5	9.5	9.5	7.1				
2005	46	34.8	21.7	15.2	17.4	15.2	15.2	13.0	8.7	8.7	6.5	8.7					
2006	58	34.5	34.5	25.9	22.4	10.3	12.1	10.3	10.3	10.3	5.2						
2007	49	42.9	40.8	26.5	28.6	24.5	18.4	18.4	16.3	14.3							
2008	63	39.7	30.2	22.2	19.0	11.1	7.9	6.3	3.2								
2009	72	40.3	26.4	26.4	16.7	15.3	11.1	12.5									
2010	78	33.3	21.8	12.8	12.8	12.8	5.1										
2011	92	47.8	33.7	23.9	18.5	17.4											
2012	88	39.8	27.3	19.3	20.5												
2013	73	53.4	34.2	26.0													
2014	61	60.7	42.6														
2015	52	63.5															

	Post-registration year																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Average percentage of IMGs retained	42.1	30.0	20.2	17.3	12.8	10.7	9.7	7.7	8.1	4.8	4.8	4.0	3.6	1.9	2.5		
Standard deviation	9.9	6.3	5.1	5.8	6.2	5.0	5.3	4.7	3.9	2.6	3.5	2.6	2.5				

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

Table 44 to Table 48 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 52). The footnotes referred to in these tables are detailed on page 82 following Table 48 and are the same for all tables in this section.

Table 44: Retention rate for IMGs 5 years or less post-qualification, 2000–2015

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	15	16
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	12.8	12.8
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	15.8	15.8	
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	16.8	16.3		
2003	417	37.6	19.4	18.0	16.5	16.8	15.8	16.1	16.8	15.1	14.9	14.9	13.2	13.7			
2004	423	38.5	16.8	15.8	15.1	13.2	14.7	15.1	13.9	13.7	13.5	13.2	13.9				
2005	499	49.1	27.3	24.2	22.8	21.6	20.6	19.6	18.6	19.0	19.0	17.6					
2006	337	43.6	30.9	27.3	26.4	25.5	24.0	22.8	20.5	19.0	19.3						
2007	416	66.6	42.3	35.6	34.1	34.4	32.5	31.5	28.1	27.2							
2008	466	55.8	28.3	22.5	20.6	19.1	19.1	17.6	17.2								
2009	499	59.1	25.1	21.2	18.6	17.6	17.8	16.6									
2010	564	64.7	27.1	23.8	22.2	22.3	22.2										
2011	529	65.6	30.4	23.3	23.6	22.9											
2012	525	66.3	31.4	22.3	22.3												
2013	502	70.9	29.1	24.3													
2014	400	65.8	29.8														
2015	419	76.6															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	54.8	26.9	22.6	21.6	20.7	20.1	19.2	18.3	17.6	16.0	15.0	14.2	14.7	15.1	14.3	12.8
Standard deviation	13.8	6.2	4.9	4.8	5.5	5.0	4.9	4.1	4.5	2.6	2.2	1.2	2.3	1.8	2.1	

Table 45: Retention rate for IMGs 6–10 years post-qualification, 2000–2015

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	15	16
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	20.0	20.5
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	23.0	24.1	
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	25.8	25.3		
2003	216	39.8	28.2	23.1	24.1	22.7	21.3	20.8	21.3	21.8	22.2	21.3	21.3	21.3			
2004	165	47.9	32.7	27.9	24.2	25.5	26.1	21.8	23.0	20.6	21.8	20.0	20.0				
2005	183	57.9	38.3	35.5	35.5	34.4	31.7	27.3	26.8	26.8	26.8	26.8					
2006	241	58.9	35.7	32.8	30.7	29.5	27.8	26.6	25.3	24.5	24.5						
2007	256	62.1	48.8	44.9	41.4	39.8	37.1	35.5	33.6	32.8							
2008	222	65.3	44.6	35.6	35.1	32.9	30.6	27.5	27.9								
2009	205	65.9	46.3	38.5	37.1	34.1	33.2	31.7									
2010	184	63.0	39.1	33.2	29.9	30.4	29.3										
2011	230	63.9	44.3	34.8	32.6	33.0											
2012	180	68.9	43.9	37.2	36.7												
2013	218	64.2	39.9	36.2													
2014	161	65.8	41.6														
2015	166	57.8															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	58.1	40.4	35.1	33.2	31.5	30.3	28.0	26.8	25.6	24.8	24.3	22.9	22.4	22.8	22.0	20.5
Standard deviation	8.5	5.3	5.1	4.9	4.4	4.2	4.4	3.8	3.9	2.6	3.0	2.7	2.5	2.7	2.9	

Table 46: Retention rate for IMGs 11–15 years post-qualification, 2000–2015

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	15	16
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	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	40.7	41.5	
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	35.6	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	42.9	43.5			
2004	139	62.6	48.9	41.0	41.0	38.1	38.1	38.8	36.7	34.5	33.1	35.3	32.4				
2005	156	62.2	44.9	39.7	35.3	38.5	35.9	33.3	33.3	33.3	32.7	31.4					
2006	126	61.1	42.9	38.9	38.1	38.1	38.9	38.1	37.3	37.3	38.1						
2007	159	68.6	47.2	42.1	39.6	37.7	36.5	35.8	35.8	35.8							
2008	156	64.1	50.6	40.4	37.8	36.5	33.3	34.0	35.3								
2009	152	63.8	43.4	42.1	40.1	39.5	36.8	36.8									
2010	141	62.4	45.4	39.7	36.9	37.6	35.5										
2011	146	61.0	40.4	37.0	34.9	34.9											
2012	152	71.7	46.7	44.1	40.8												
2013	145	69.7	49.0	40.0													
2014	154	67.5	44.2														
2015	133	69.9															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	65.0	48.7	43.6	41.6	40.7	39.5	39.6	38.9	38.7	38.1	37.6	36.9	37.8	36.0	36.5	32.3
Standard deviation	3.6	5.6	5.4	5.8	5.2	5.1	5.3	4.8	4.9	5.1	5.7	6.0	5.4	4.3	7.1	

Table 47: Retention rate for IMGs 16–20 years post-qualification, 2000–2015

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	15	16
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	29.1	30.2
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	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	41.1	41.1		
2003	103	55.3	51.5	49.5	44.7	39.8	39.8	36.9	36.9	31.1	35.0	35.0	34.0	35.0			
2004	102	62.7	60.8	54.9	52.0	52.0	51.0	48.0	47.1	45.1	45.1	44.1	44.1				
2005	97	71.1	62.9	54.6	53.6	52.6	52.6	49.5	46.4	47.4	44.3	44.3					
2006	82	56.1	41.5	39.0	39.0	39.0	34.1	32.9	31.7	30.5	29.3						
2007	76	61.8	59.2	50.0	50.0	48.7	48.7	47.4	46.1	43.4							
2008	69	55.1	44.9	43.5	39.1	37.7	37.7	31.9	30.4								
2009	87	70.1	54.0	50.6	47.1	47.1	47.1	46.0									
2010	93	65.6	46.2	41.9	43.0	39.8	40.9										
2011	107	58.9	44.9	44.9	40.2	39.3											
2012	97	73.2	47.4	43.3	42.3												
2013	82	70.7	57.3	52.4													
2014	97	63.9	51.5														
2015	82	70.7															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	63.7	52.8	48.9	46.5	45.4	44.6	43.4	42.0	40.8	39.4	41.3	39.1	37.0	38.4	34.8	30.2
Standard deviation	6.0	6.8	5.6	5.4	5.9	5.8	7.0	7.3	6.8	6.1	3.8	5.4	4.6	5.1	8.1	

Table 48: Retention rate for IMGs 21 or more years post-qualification, 2000–2015

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	15	16
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	20.1	18.9
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	13.3	12.1	
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	16.3	16.3		
2003	202	43.1	39.1	32.2	32.7	32.2	33.7	30.7	30.7	27.7	26.7	25.7	25.7	26.2			
2004	185	50.3	39.5	36.2	34.1	33.0	30.3	27.6	25.9	26.5	23.2	23.2	22.2				
2005	196	48.0	37.2	35.2	31.6	30.1	31.1	28.1	26.5	25.5	24.5	25.5					
2006	181	42.5	35.9	34.3	30.9	25.4	25.4	23.2	22.7	20.4	18.2						
2007	198	47.0	42.4	34.8	34.3	32.8	29.3	28.3	28.8	27.8							
2008	183	45.4	35.5	29.5	29.0	23.5	21.9	20.2	20.2								
2009	220	46.8	34.5	30.9	24.1	22.3	21.8	20.5									
2010	212	48.6	32.5	25.5	23.6	19.8	17.0										
2011	243	53.5	42.0	36.2	31.3	27.6											
2012	241	58.9	41.1	37.8	34.0												
2013	191	58.1	42.9	38.7													
2014	196	59.7	45.4														
2015	150	66.7															

	Post-registration year															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Average percentage of IMGs retained	50.2	39.0	33.8	30.1	26.8	25.5	24.8	24.5	23.9	21.8	21.9	20.2	19.3	16.4	16.1	18.9
Standard deviation	7.2	3.6	3.7	3.6	4.5	5.3	3.7	4.0	3.6	3.4	4.0	4.1	5.4	3.1	5.7	

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.