The New Zealand Medical Workforce in 2011

Protecting the public, promoting good medical practice
Te tiaki I te iwi whānui me te whakatairanga pai e pā ana ki te taha rongoā

Introduction

This report summarises the most relevant results of the Medical Council of New Zealand 2011 workforce survey. It contains information about changes in the medical workforce including retention rates for doctors.

The data for the 2011 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.

Facts at a glance

	2011	2010	2009	2008	2007	2006
Size of the workforce[1]	14,333	13,883	13,408	12,949	12,643	12,283
Doctors per 100,000 population[2]	325	317	310	303	299	297
Proportion of IMGs[3] (%)	41.5	41.1	40.6	38.9	38.4	39.9
Proportion of females (%)	40	40	40	39	38	37
Average age of workforce	45	45	45	45	45	44
Average weekly workload (hours)	43.7	43.9	44.2	44.7	44.8	45.3
Average proportion of new IMGs retained after 1 year[4]	52.7	51.7	50.8	50.0	48.4	48.1

[1] Based on registration data. See Table 1 for more information.
[2] 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 42 for definition)
[4] See 'Retention' on page 30 for more information, and 'Survey' on page 40 for information on how this figure was calculated.

Changes in the medical workforce

Size of the workforce

Registration data show that the number of active doctors increased by 3.2 percent, from 13,883 in 2010 to 14,333 in 2011. This change compares with increases of 3.5 percent in 2009 and 2010 (see Table 1).

Table 1: Estimated yearly workforce growth and changes in composition

	1980	1985	1990	1995	2000	2005	2009	2010	2011
Total workforce (based on registration data)[1]	–	–	–	–	9,779	11,578	13,408	13,883	14,333
Percentage change in total workforce from previous year measured by registration data (%)	–	–	–	6.3	2.6	2.9	3.5	3.5	3.2
Short-term registrants[2]	–	–	165	129	421	287	139	122	138
Short-term registrants as a percentage of workforce	–	–	2.5	1.7	4.3	2.5	1.0	0.9	1.0
Total workforce (based on survey response)	**4,881**	**5,556**	**6,339**	**7,530**	**8,615**	**8,746**	**11,164**	**11,478**	**11,688**
Graduated from:									
– New Zealand	3,266	4,095	4,480	5,024	5,645	5,459	6,630	6,766	6,837
– overseas	1,615	1,461	1,859	2,506	2,970	3,287	4,535	4,712	4,851
% IMGs	33.1	26.3	29.3	33.3	34.5	37.5	40.6	41.1	41.5
Average age of workforce	–	–	42	41	43	44	45	45	45

[1] The total workforce according to registration data is calculated by combining the number of survey forms sent out to doctors with New Zealand addresses during the workforce survey period and the number of short-term registrants on the register as at 31 March of the survey period.

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

Age distribution of the workforce

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

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

In earlier years (2000–2003), the largest group of doctors (almost 20 percent) was in the 40–44 year age group. By 2009, the largest group of doctors is aged 45–49 and in 2011, the largest group is doctors aged 50–54.

Comparing this with the data from 1980 and 1990, the average age of the current medical workforce is higher than it used to be, and this trend is continuing.

Figure 1: Age distribution of the active workforce (1980–2011)

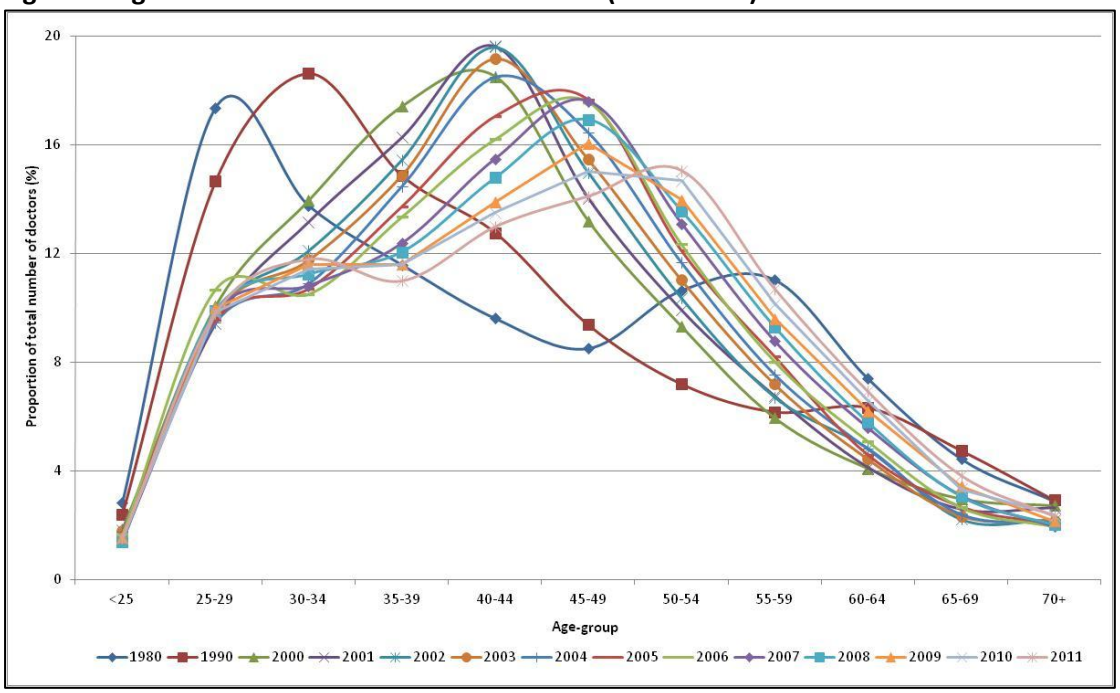
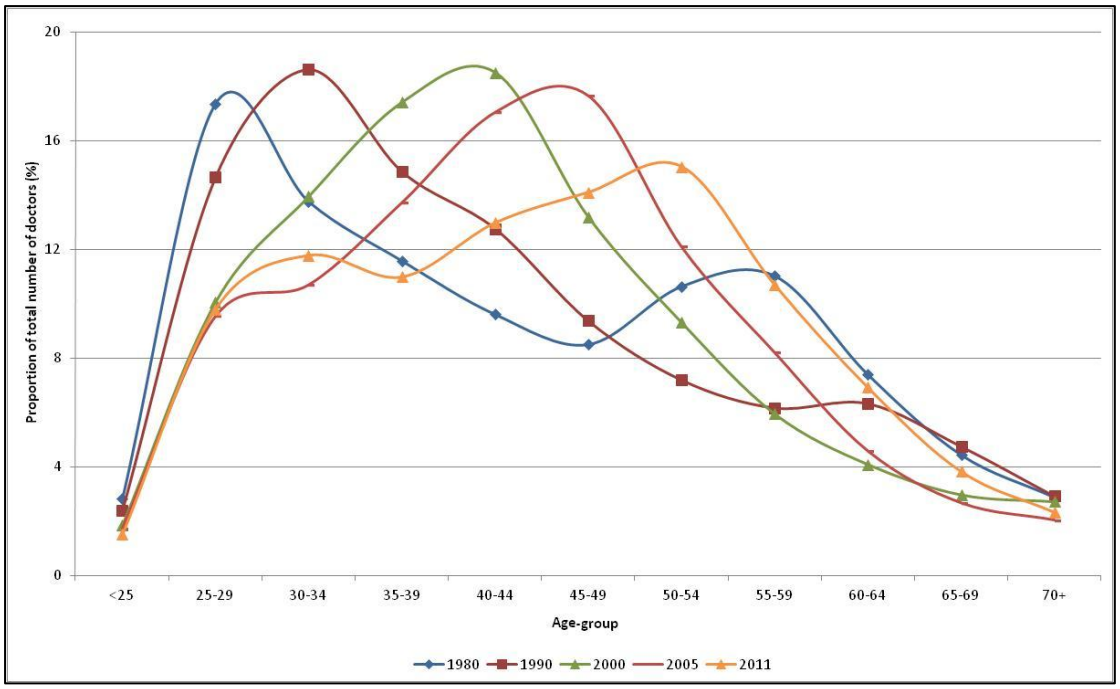


Figure 2: Age distribution of the active workforce (1980–2011), showing only 1980, 1990, 2005, and 2011 series

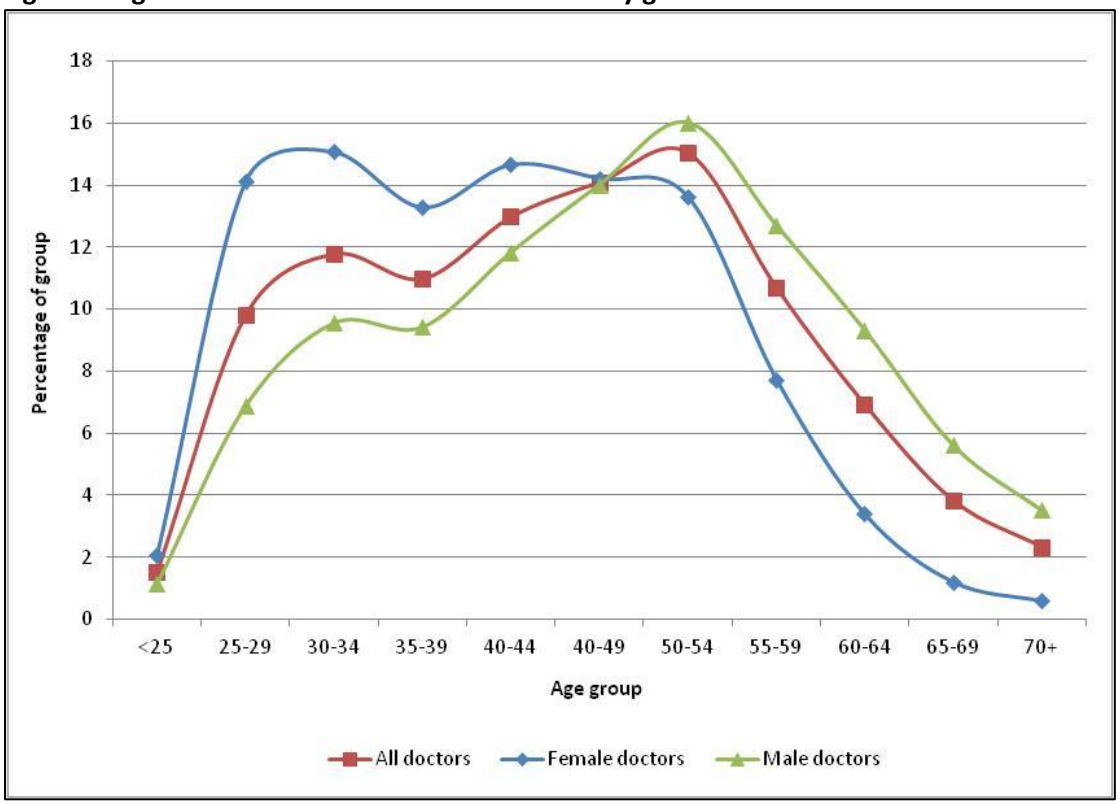


Gender distribution of the workforce

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

The younger age groups have more females than males: 45 percent of females in the workforce are under the age of 40, compared to 27 percent of males. Only 5 percent of females in the workforce are over the age of 60, compared to 18 percent of males.

Figure 3: Age distribution of the active workforce by gender



Changes by work role

Table 2 shows how doctor numbers have changed, by work role at their main work site. General practice and specialist are up 2.3 and 4.9 percent respectively and primary care other than GP is down 15.9 percent.

Table 2: Changes in the medical workforce

	Active doctors[1]							Percentage change 2010–2011
Workforce role[2]	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	
General practice	2,924	3,106	3,195	3,435	3,541	3,532	3,614	2.3
House officer	811	911	841	891	970	961	1,034	7.6
Medical officer	307	329	363	411	500	526	523	-0.6
Primary care other than GP	157	181	203	172	150	164	138	-15.9
Registrar	1,365	1,504	1,529	1,653	1,689	1,774	1,787	0.7
Specialist	2,940	3,175	3,359	3,713	3,879	3,993	4,187	4.9
Other	207	248	237	237	275	291	247	-15.1
No answer	35	93	30	40	159	237	158	-33.3
Total	8,746	9,547	9,757	10,552	11,164	11,478	11,688	1.8

[1] Headcount based on doctors who responded to the survey.
[2] Work role at the doctor's main work site.

Figure 4 represents the changes shown in Table 2, with category values represented as a percentage of their 2001 value. This means that changes in categories with vastly different totals can be compared on the same graph.

Figure 4: Changes in the medical workforce by work role (2001–2011)

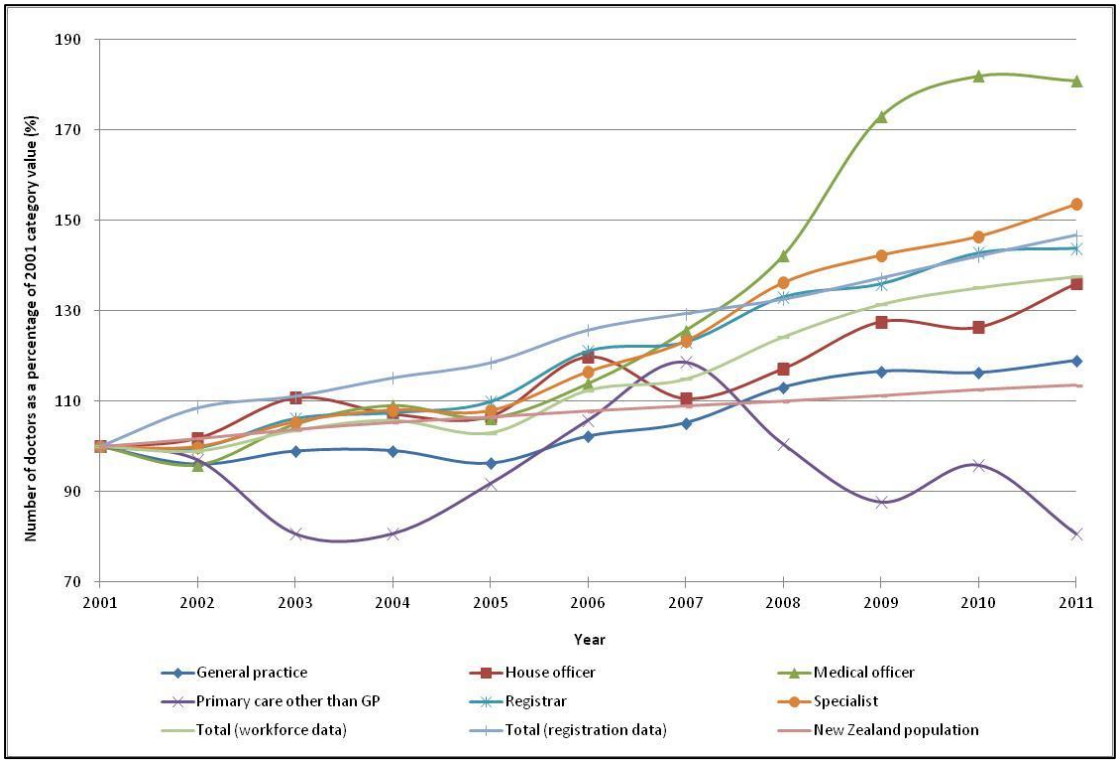


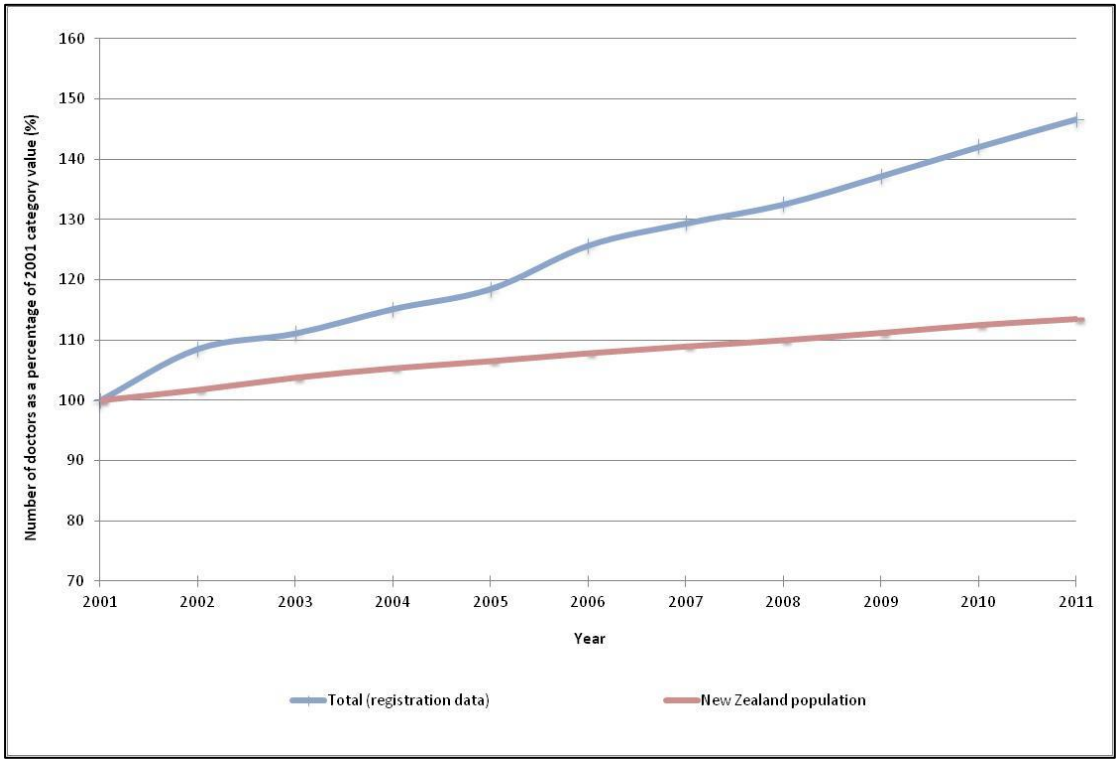
Figure 4 shows a gradual increase in most work roles since 2001.

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

The Medical officer category is relatively small. As a result, increases that are small in comparison to the size of the medical workforce appear as large changes on this graph. The number of doctors in this category increased from 411 in 2008 to 526 in 2010 although it has levelled out in 2011.

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

Figure 5: Change in size of the medical workforce compared to change in size of the New Zealand population (2001–2011)



Work type

The changes in work types since 2010 are shown in Table 3. Doctors working as house officers 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 2011	No. of doctors in main work site 2010	Percentage change 2010 to 2011	Average hours worked (all sites)	No. in vocational training[2]	Average age 2011	Vocational registration, current practising certificate, NZ address[3]
Accident and medical practice	121	107	13	36.5	28	47	116
Anaesthesia	733	678	8	47.9	166	45	582
Basic medical science	40	45	-11	45.8	8	48	-
Breast medicine	7	8	-13	32.7	0	49	-
Clinical genetics	9	9	0	43.7	0	48	8
Dermatology	56	54	4	39.8	*	52	54
Diagnostic and interventional radiology	335	328	*	44.1	46	47	305
Emergency medicine	356	338	5	41.1	106	41	142
Family planning and reproductive health	29	28	4	24.3	4	50	27
General practice	3141	2782	13	37.4	499	50	2700
Intensive care medicine	69	90	-23	51.4	21	43	61
Internal medicine	1151	1066	8	48.3	280	44	782
Medical administration	54	66	-18	41.1	6	53	16
Musculoskeletal medicine	19	17	12	41.8	*	57	22
Obstetrics & gynaecology	326	314	4	49.0	75	46	234
Occupational medicine	68	64	6	41.3	8	54	49
Ophthalmology	146	128	14	43.2	17	47	125
Paediatrics	411	394	4	45.4	120	43	297
Palliative medicine	66	54	22	38.7	10	52	38
Pathology	195	192	*	41.8	22	49	237
Primary care	394	376	5	37.2	52	52	484
Psychiatry	642	620	4	42.9	103	49	160
Public health medicine	213	196	9	39.6	24	49	45
Radiation oncology	54	54	0	51.9	12	45	18
Rehabilitation medicine	22	28	-21	41.3	5	44	35
Sexual health medicine	25	30	-17	28.9	*	50	20
Sports medicine	21	24	-13	41.0	*	43	19
Surgery: cardiothoracic	36	38	-5	59.4	5	45	26
Surgery: general	289	254	14	53.2	43	44	242
Surgery: neurosurgery	29	22	32	53.9	*	48	21
Surgery: orthopaedic	300	288	4	51.8	35	46	248
Surgery: other	43	45	-4	45.1	*	47	17

[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 2011 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

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

Work type at main work site[1]	No. of doctors in main work site 2011	No. of doctors in main work site 2010	Percentage change 2010 to 2011	Average hours worked (all sites)	No. in vocational training[2]	Average age 2011	Vocational registration, current APC, NZ address[3]
Surgery: otolaryngology	112	98	14	48.0	9	47	97
Surgery: paediatric	20	18	11	61.8	*	46	16
Surgery: plastic	70	55	27	50.0	12	45	54
Surgery: urology	63	57	11	52.3	8	47	55
Surgery: vascular	25	20	25	56.6	*	46	26
Not answered	993	1635	-39	44.0	280	42	
Other	172	137	26	42.0	34	45	
Grand total	**10855**	**10757**	1	**43.0**	**2054**	**47**	**7378**

[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 2011 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

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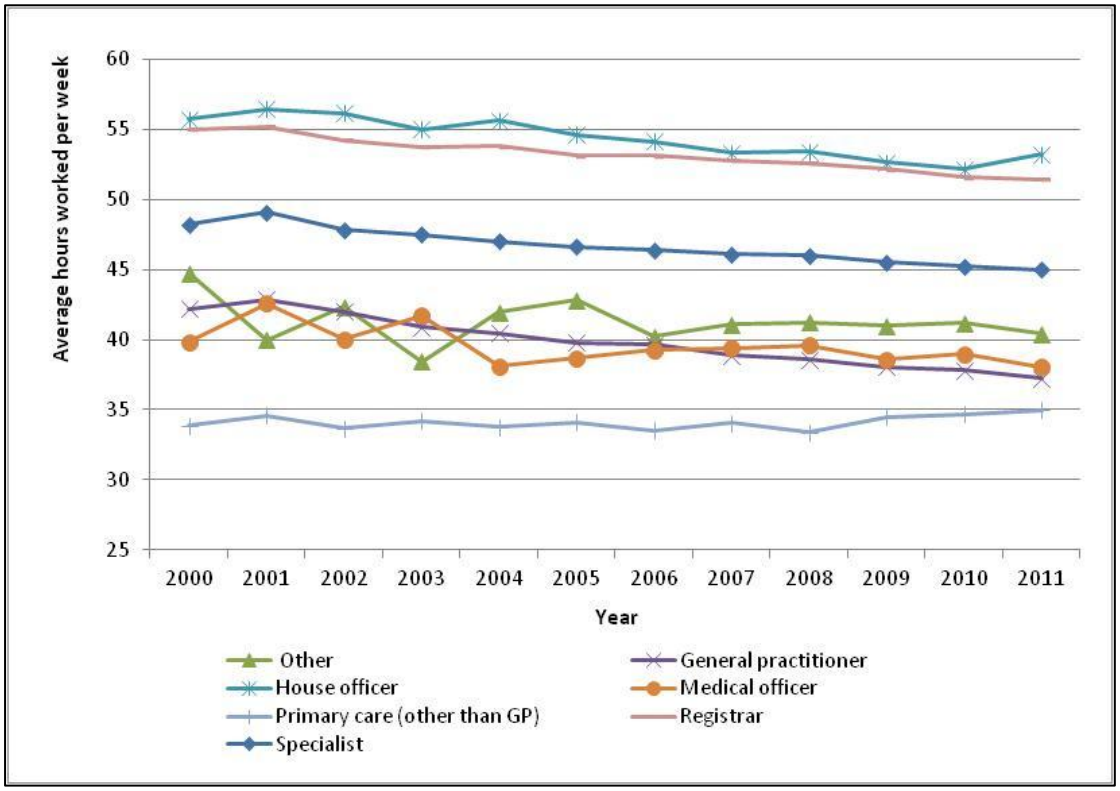
Workloads

Hours worked by work role

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

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

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



Hours worked by age and gender

For all active doctors, the average number of hours worked was 43.7 per week. Table 4 shows that doctors aged in their twenties worked the most hours each week on average.

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

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

Table 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	54.7	51.5	43.6	36.5	34.1	35.8	37.2	38.7	37.0	31.7	25.9	39.8
Male	56.3	53.8	51.0	48.5	47.2	47.2	47.2	45.4	43.6	36.7	28.4	46.4
Total[1]	55.4	52.4	47.2	42.6	41.2	42.5	43.5	43.4	42.3	36.1	28.1	43.7

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

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

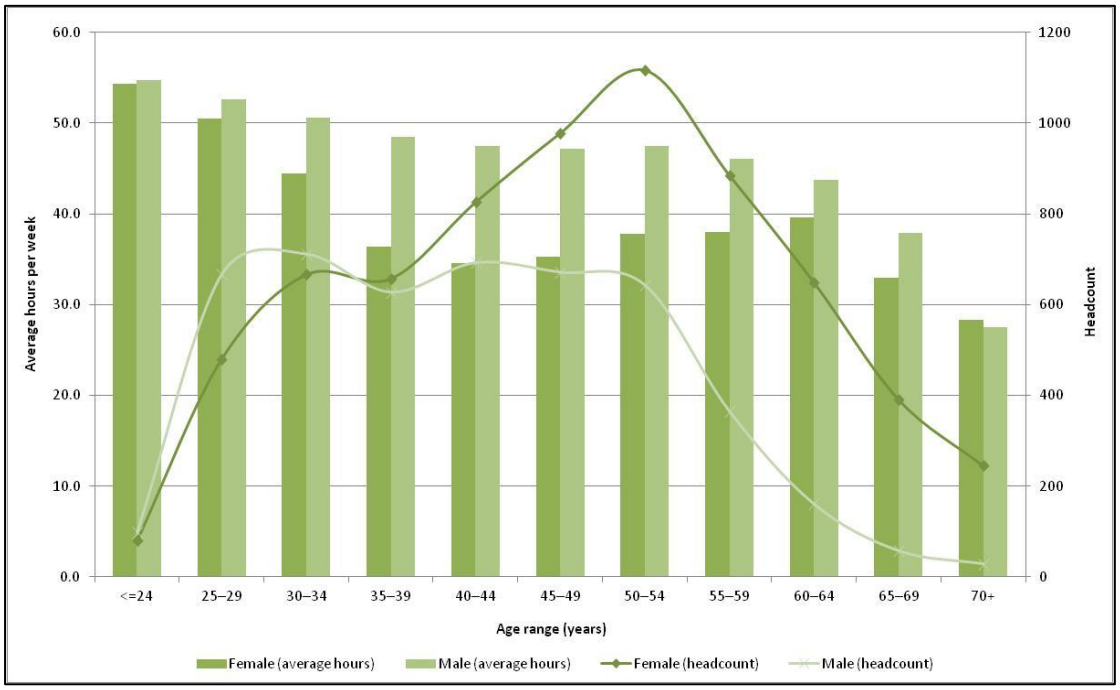


Table 5 shows that the average number of hours worked per week for both males and females is decreasing steadily, dropping from 43.9 overall in 2010 to 43.7 in 2011.

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

Table 5: Average hours worked, by gender and year (2004–2011)

Gender	Year							
	2004	2005	2006	2007	2008	2009	2010	2011
Male	48.5	48.3	47.9	47.7	47.4	46.9	46.6	46.4
Female	40.9	40.6	40.9	40	40.3	39.9	39.8	39.8
Total[1]	**45.8**	**45.5**	**45.3**	**44.8**	**44.7**	**44.2**	**43.9**	43.7

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

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 those on call.

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. Seventy percent of doctors reported no on-call hours. Just under half of specialists were on call, with 35 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 practice	Primary care other than GP	House officer	Registrar	Medical officer	Specialist	Other
No on-call hours	76	97	80	83	88	51	89
1–4	6	0	1	2	1	5	1
5–9	5	1	2	4	3	9	2
10–19	5	1	7	4	4	17	4
20–49	5	0	7	5	3	15	2
50 and over	2	0	2	2	1	3	1
Total[1]	100	100	100	100	100	100	100

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

Table 7 shows the main place of work for doctors on call for 10 or more hours each week, and compares specialists with all other work roles. Eighty-two percent of specialists on call for 10 or more hours worked in a public hospital at their main work site.

Of the doctors from other work roles who were on call for 10 or more hours, just under 44 percent worked in a group private practice at their main work site, and a further 32 percent worked in public hospitals.

Table 7: Proportion of doctors on call for 10 or more hours each week, by employer

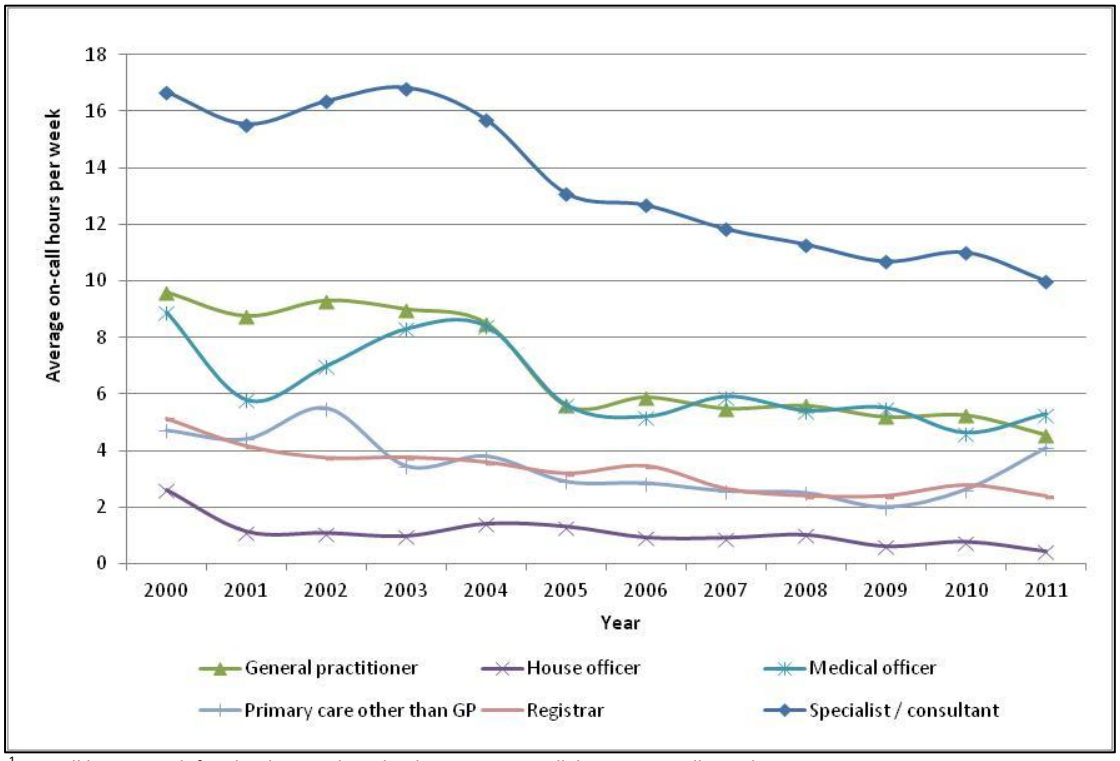
Main employer	Specialist	Other work roles	Total
Commercial company	1.1	0.9	1.1
Government department / agency	0.7	1.9	1.1
Professional body	0.1	0.8	0.3
Group private practice	6.7	43.7	19.1
Private hospital	1.9	0.4	1.4
Public hospital	81.7	32.2	65.2
Solo private practice	4.8	11.5	7.0
University / polytechnic	1.4	1.6	1.5
Not answered	0.3	1.2	0.6
Other	1.3	5.7	2.8
Grand total[1]	100.0	100.0	100.0

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

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

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

Figure 8: Average on-call[1] hours, by work role at main work site



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

Geographic distribution

Important information about geographic data

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

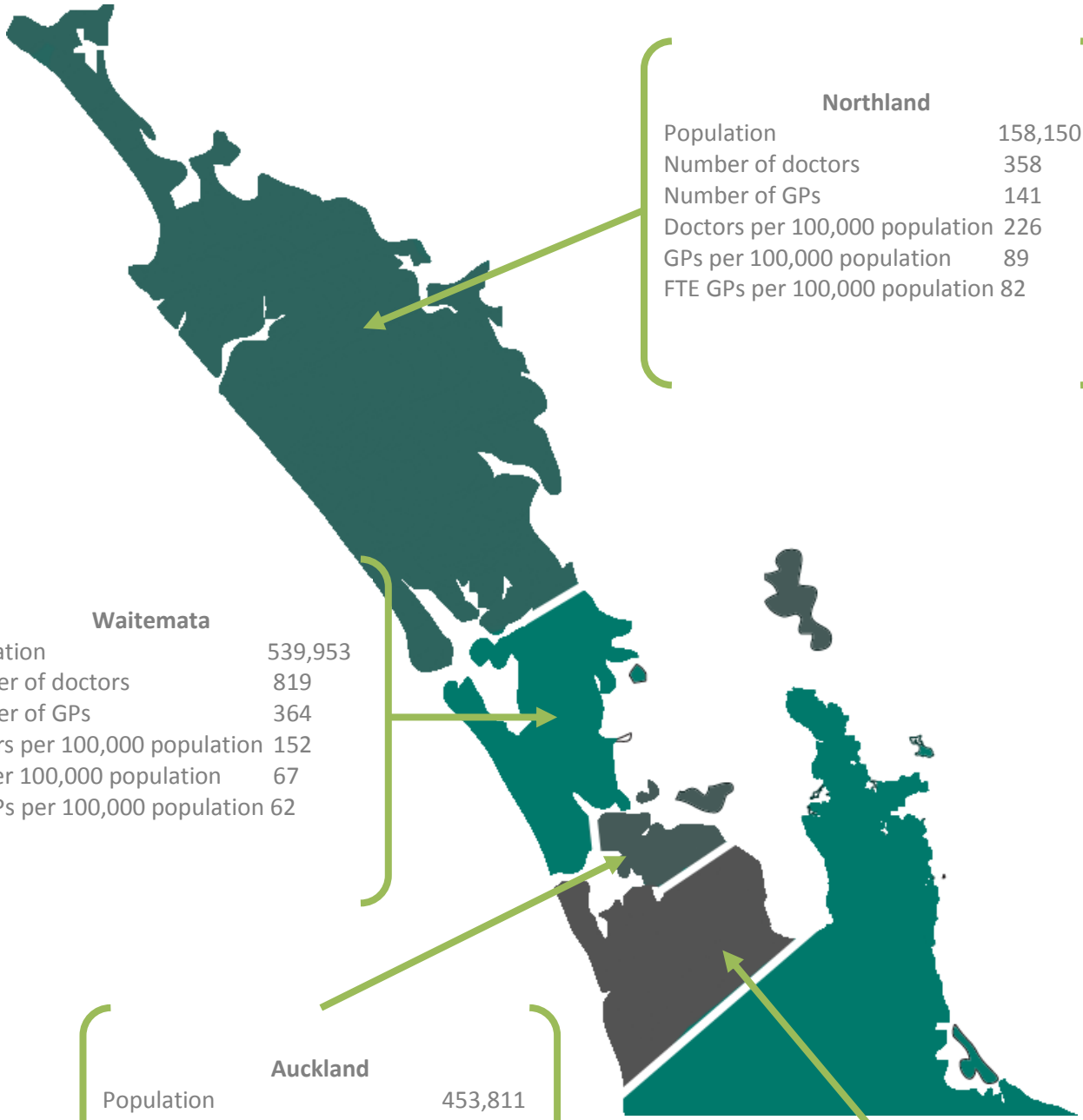
To allow data to be presented in geographic regions, we allocate every doctor who responds to the survey to their nearest territorial local authority (TLA) and district health board (DHB). However, there are a number of limitations which mean that this data may not always be completely accurate.

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

District health boards

The following pages show summary figures for each DHB. 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 44.

Northern / Auckland region



Northland

Population	158,150
Number of doctors	358
Number of GPs	141
Doctors per 100,000 population	226
GPs per 100,000 population	89
FTE GPs per 100,000 population	82

Waitemata

Population	539,953
Number of doctors	819
Number of GPs	364
Doctors per 100,000 population	152
GPs per 100,000 population	67
FTE GPs per 100,000 population	62

Auckland

Population	453,811
Number of doctors	2,568
Number of GPs	503
Doctors per 100,000 population	566
GPs per 100,000 population	111
FTE GPs per 100,000 population	100

Counties Manukau

Population	492,232
Number of doctors	758
Number of GPs	293
Doctors per 100,000 population	154
GPs per 100,000 population	60
FTE GPs per 100,000 population	55

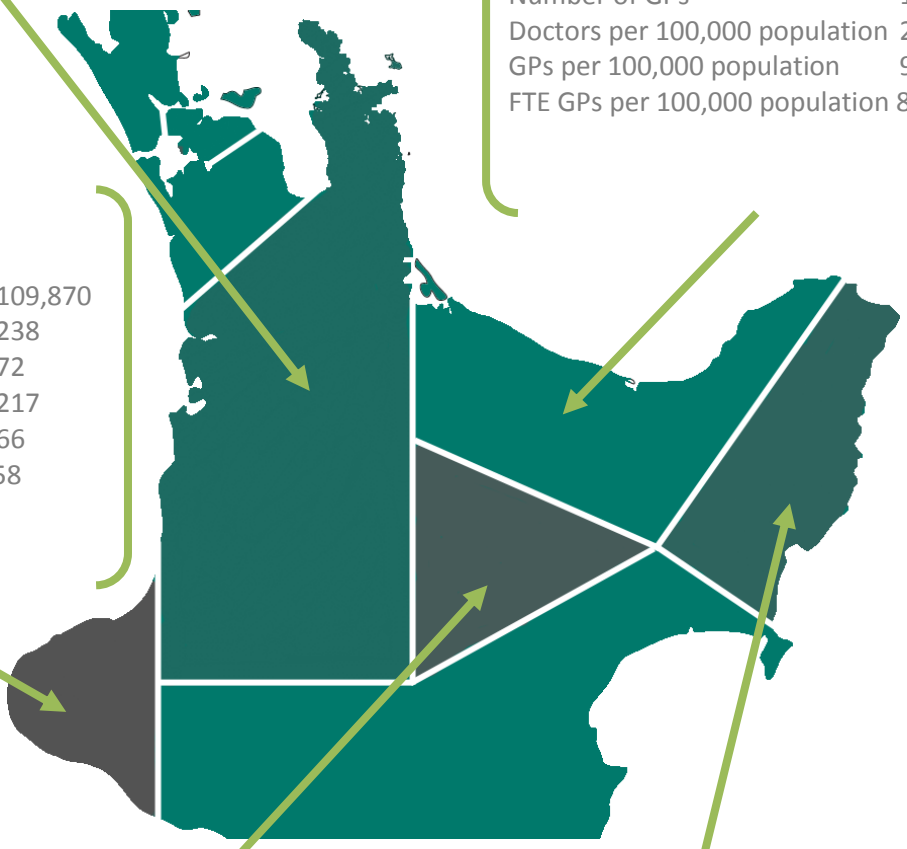
Central North Island

Waikato

Population	389,000
Number of doctors	928
Number of GPs	281
Doctors per 100,000 population	239
GPs per 100,000 population	72
FTE GPs per 100,000 population	69

Bay of Plenty

Population	211,890
Number of doctors	519
Number of GPs	199
Doctors per 100,000 population	245
GPs per 100,000 population	94
FTE GPs per 100,000 population	81



Taranaki

Population	109,870
Number of doctors	238
Number of GPs	72
Doctors per 100,000 population	217
GPs per 100,000 population	66
FTE GPs per 100,000 population	58

Lakes

Population	103,100
Number of doctors	271
Number of GPs	101
Doctors per 100,000 population	263
GPs per 100,000 population	98
FTE GPs per 100,000 population	87

Tairawhiti

Population	46,600
Number of doctors	104
Number of GPs	37
Doctors per 100,000 population	223
GPs per 100,000 population	79
FTE GPs per 100,000 population	77

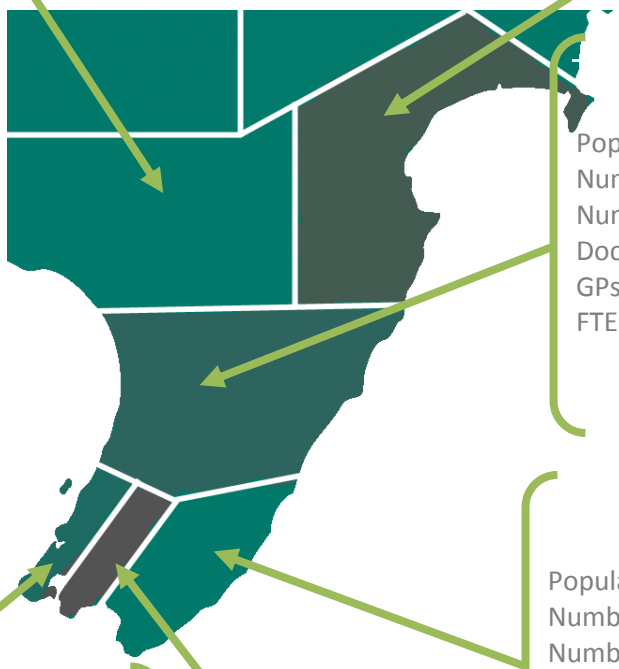
Lower North Island

Whanganui

Population	58,300
Number of doctors	121
Number of GPs	43
Doctors per 100,000 population	208
GPs per 100,000 population	74
FTE GPs per 100,000 population	75

Hawke's Bay

Population	155,150
Number of doctors	373
Number of GPs	138
Doctors per 100,000 population	240
GPs per 100,000 population	89
FTE GPs per 100,000 population	83



MidCentral

Population	160,500
Number of doctors	378
Number of GPs	90
Doctors per 100,000 population	236
GPs per 100,000 population	56
FTE GPs per 100,000 population	58

Wairarapa

Population	40,570
Number of doctors	57
Number of GPs	29
Doctors per 100,000 population	197
GPs per 100,000 population	71
FTE GPs per 100,000 population	74

Capital & Coast

Population	302,600
Number of doctors	1,078
Number of GPs	282
Doctors per 100,000 population	356
GPs per 100,000 population	93
FTE GPs per 100,000 population	78

Hutt

Population	144,500
Number of doctors	284
Number of GPs	97
Doctors per 100,000 population	197
GPs per 100,000 population	67
FTE GPs per 100,000 population	61

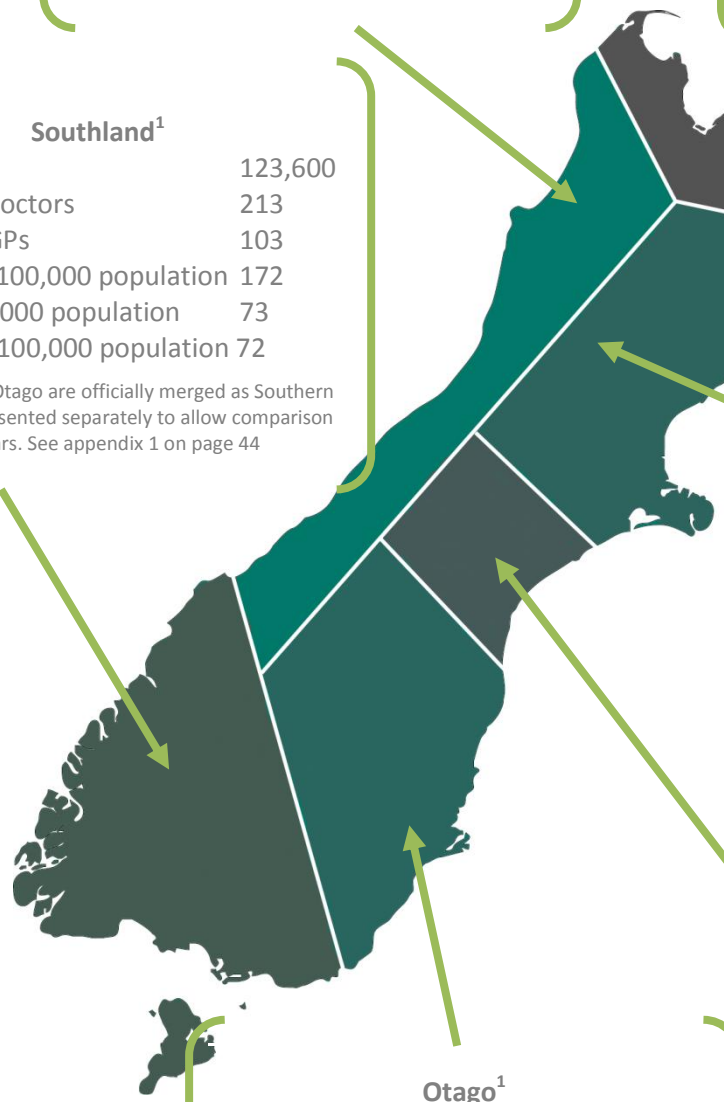
South Island

West Coast

Population	32,960
Number of doctors	58
Number of GPs	22
Doctors per 100,000 population	176
GPs per 100,000 population	67
FTE GPs per 100,000 population	59

Nelson / Marlborough

Population	139,900
Number of doctors	338
Number of GPs	135
Doctors per 100,000 population	242
GPs per 100,000 population	96
FTE GPs per 100,000 population	86



Southland[1]

Population	123,600
Number of doctors	213
Number of GPs	103
Doctors per 100,000 population	172
GPs per 100,000 population	73
FTE GPs per 100,000 population	72

[1] Southland and Otago are officially merged as Southern but are being presented separately to allow comparison with previous years. See appendix 1 on page 44

Canterbury

Population	502,650
Number of doctors	1,450
Number of GPs	465
Doctors per 100,000 population	288
GPs per 100,000 population	93
FTE GPs per 100,000 population	82

South Canterbury

Population	56,380
Number of doctors	99
Number of GPs	41
Doctors per 100,000 population	176
GPs per 100,000 population	73
FTE GPs per 100,000 population	72

Otago[1]

Population	182,850
Number of doctors	676
Number of GPs	178
Doctors per 100,000 population	370
GPs per 100,000 population	97
FTE GPs per 100,000 population	92

[1] Southland and Otago are officially merged as Southern but are being presented separately to allow comparison with previous years. See appendix 1 on page 44.

Distribution of workforce by territorial local authority

Table 8 shows the distribution of the workforce generally, as well as the general practice workforce by TLA.

Table 8: Medical workforce, by territorial local authority of main work site

Site 1 TLA	No. of all doctors	No. of GPs[1]	FTEs GPs[2]	FTEs per 100,000	Average hours GPs	No. of doctors per 100,000	IMGs % of all	TLA population[3]
Cities								
North Shore City	559	175	155	67	34	242	41	230,737
Waitakere City	178	123	113	54	36	85	42	208,971
Auckland City	2568	503	455	100	34	566	34	453,811
Manukau City	679	225	208	55	36	180	43	376,558
Hamilton City	747	144	131	90	35	513	49	145,600
Tauranga City	428	137	113	97	32	370	47	115,700
Napier City	81	58	55	94	36	140	56	57,800
Palmerston North City	323	53	56	68	39	393	47	82,100
Porirua City	70	40	36	69	35	133	39	52,700
Upper Hutt City	33	32	29	70	36	80	48	41,500
Lower Hutt City	251	65	59	57	35	244	38	103,000
Wellington City	959	195	159	79	30	479	34	200,100
Nelson City	235	66	55	119	33	509	29	46,200
Christchurch City	1358	392	336	91	33	369	37	367,700
Dunedin City	612	140	129	102	36	486	35	126,000
Invercargill City	138	44	44	84	40	260	59	53,000
All cities	**9219**	**2392**	**2132**	**80**	**34**	**346**	**39**	**2,661,477**
Districts								
Far North District	70	54	51	86	37	120	73	58,500
Whangarei District	275	76	69	86	35	342	46	80,500
Kaipara District	13	11	11	55	38	68	38	19,150
Rodney District	82	66	65	65	39	82	46	100,245
Papakura District	36	29	30	60	39	72	36	50,071
Franklin District	43	39	34	52	35	66	53	65,603
Thames Coromandel District	44	24	25	91	41	163	57	27,000
Hauraki District	14	13	13	68	39	75	71	18,750
Waikato District	15	14	15	24	43	23	53	64,300
Matamata–Piako District	22	18	18	56	38	69	45	32,000
Waipa District	38	30	30	66	38	82	66	46,100
Otorohanga District	*	*	4	38	47	32	33	9,320
South Waikato District	14	14	13	55	36	61	50	22,900
Waitomo District	9	8	8	80	34	93	22	9,630
Taupo District	35	26	26	77	41	103	51	34,100
Western BOP District	28	27	25	55	36	61	50	45,800
Rotorua District	236	75	63	92	33	343	50	68,900
Whakatane District	54	26	24	69	37	157	70	34,500
Kawerau District	4	4	*	42	29	58	100	6,940
Opotiki District	5	5	6	72	51	56	60	8,950
Gisborne District	104	37	36	77	35	223	51	46,600
Wairoa District	6	6	6	78	43	72	83	8,350
Hastings District	281	69	63	83	36	372	41	75,500
Central Hawke's Bay District	5	5	5	38	41	37	80	13,500
New Plymouth District	222	61	51	69	32	301	51	73,800

Site 1 TLA	No. of all doctors	No. of GPs[1]	FTEs GPs[2]	FTEs per 100,000	Average hours GPs	No. of doctors per 100,000	IMGs % of all	TLA population[3]
Stratford District	*	*	4	47	58	33	67	9,170
South Taranaki District	13	8	8	30	41	48	69	26,900
Ruapehu District	22	13	14	102	42	164	68	13,400
Whanganui District	112	35	35	81	39	257	67	43,500
Rangitikei District	9	8	9	58	38	61	56	14,800
Manawatu District	25	14	14	48	41	83	40	30,000
Tararua District	11	10	11	61	43	62	64	17,700
Horowhenua District	19	13	12	39	34	62	79	30,700
Kapiti Coast District	49	47	42	84	35	98	55	49,800
Masterton District	44	17	19	79	41	187	68	23,500
Carterton District	6	5	4	54	33	78	67	7,650
South Wairarapa District	7	7	7	79	43	74	71	9,420
Tasman District	36	33	30	63	36	75	67	48,100
Marlborough District	67	36	35	76	35	147	51	45,600
Kaikoura District	4	4	4	111	43	104	50	3,850
Buller District	6	5	6	58	39	59	50	10,100
Grey District	50	15	12	84	31	360	58	13,900
Westland District	*	*	*	23	42	22	50	8,960
Hurunui District	12	12	12	110	42	106	58	11,300
Waimakariri District	24	22	21	43	38	49	38	48,600
Selwyn District	20	17	17	40	37	49	50	41,100
Ashburton District	32	18	20	66	44	106	38	30,100
Timaru District	92	34	34	75	40	206	40	44,700
Mackenzie District	4	4	4	109	44	99	50	4,050
Waimate District	*	*	*	36	37	39	100	7,630
Waitaki District	23	16	16	75	39	110	70	20,900
Cent. Otago District	24	10	13	69	32	130	46	18,400
Queenstown–Lakes District	45	35	31	109	35	157	49	28,700
Clutha District	17	12	12	66	38	97	53	17,550
Southland District	14	13	12	41	37	47	50	29,600
Gore District	16	11	10	82	37	130	69	12,300
All districts	**2469**	**1222**	**1166**	**67**	**37**	**142**	**52**	**1,742,989**
All TLA	**11,688**	**3,614**	**3,297**	**75**	**35**	**265**	**42**	**4,404,466**

[1] Number of GPs is the number of doctors who reported a work role of general practitioner at their main work site.

[2] The calculation of GP FTE includes all hours recorded in GP role at all work sites.

[3] Statistics New Zealand, estimated residential population as at 30 June 2011. The DHB locality populations for Rodney District, North Shore City, Waitakere City, Auckland City, Manukau City, Papakura District and Franklin District are estimates because the TLA which made up these DHB regions previously have been merged into one Auckland TLA and so TLA populations are no longer available. The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2011 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

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

Ethnicity

The proportion of doctors who identified themselves as Māori dropped to 2.8 percent, and the proportion of Pacific doctors increased from 1.3 percent to 1.6 percent (see Table 9). Both Māori and Pacific doctors continue to be noticeably under-represented compared to their proportion of the population.

The proportion of doctors identifying as Chinese dropped from 5.3 percent to 5.1 percent. 'Other European' dropped from 18.7 percent to 18.2 percent, and the proportion identifying as Indian dropped from 5.9 to 5.8 percent.

Māori, Pacific, Chinese and Indian doctors all have average ages lower than the overall figure, with Chinese doctors having the lowest average ages for both females and males. Both males and females identifying as New Zealand European / Pakeha had an average age higher than the overall figure.

Table 9: Ethnicity and average ages of the medical workforce

	%	%	%	%	%	%	%	Average age	
Ethnicity	2011	2010	2009	2008	2007	2006	2005	Females	Males
New Zealand Māori	2.8	3.0	3.0	3.1	2.7	2.5	2.6	39	44
Pacific Island	1.6	1.3	1.4	1.8	1.6	1.6	1.5	38	43
Chinese	5.1	5.3	5.4	5.9	5.7	5.2	5.4	35	41
Indian	5.8	5.9	5.7	5.3	5.2	5.2	5.1	41	43
Other non-European	11.6	9.9	10.5	11.3	11.1	10.8	10.8	41	46
Other European	18.2	19.7	18.2	15.8	15.3	17.3	15.4	39	45
NZ European / Pakeha	53.2	53.3	53.9	55.3	56.9	55.9	57.5	43	51
Not answered	1.7	1.5	1.7	1.2	1.4	1.3	1.5	38	47
Refused	0.1	0.2	0.1	0.2	0.4	0.2	0.2	55	57
Total[1]	100.0	100	100	100	100	100	100	42	48

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

Table 10 shows the distribution of each ethnic group by work role at their main work site.

Table 10: Proportion of ethnic groups by work role at main work site

Ethnicity	No answer	Other	GP	HO	MO	PC	R	S	Total[1]
New Zealand Māori	1	4	31	16	4	2	18	24	100
Pacific Island	1	1	32	20	3	2	22	20	100
Chinese	1	2	29	16	2	0	27	22	100
Indian	1	0	26	12	6	0	26	28	100
Other non-European	1	1	28	15	6	1	25	23	100
Other European	1	2	31	7	7	1	18	33	100
NZ European / Pakeha	1	2	33	6	4	2	10	43	100

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

Doctors identifying as Māori reported their main work role as:

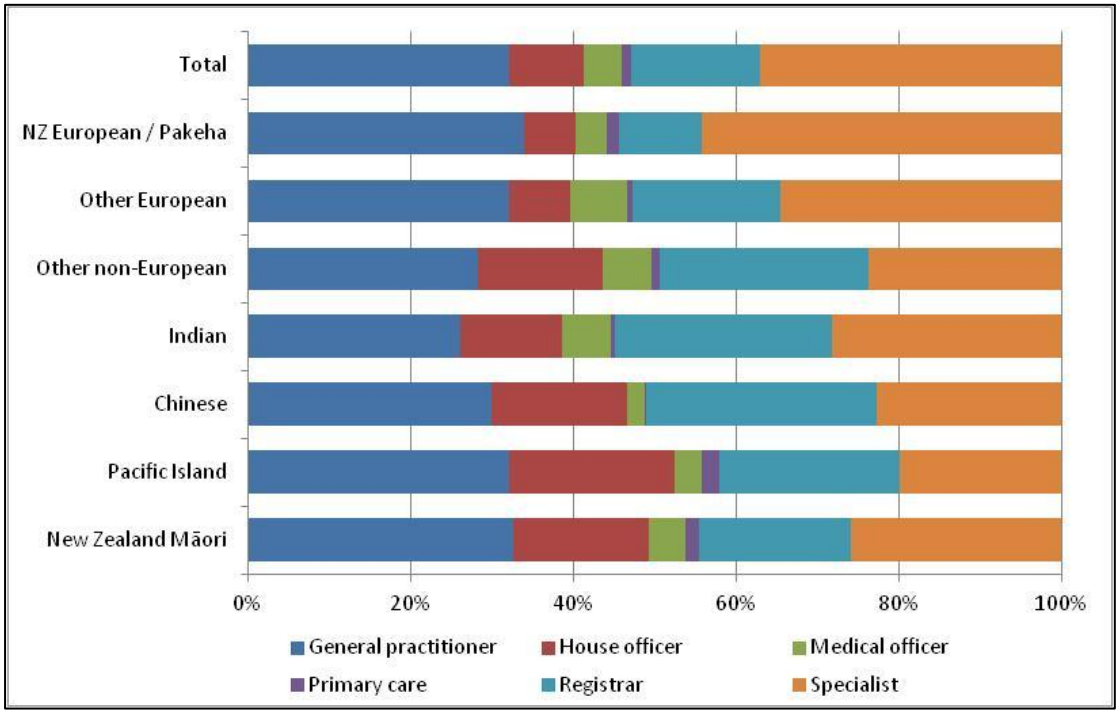
- GP (31 percent)
- specialist (24 percent)
- registrar (18 percent)
- house officer (16 percent).

Doctors identifying as Pacific Island showed similar figures, reporting their main work role as:

- GP (32 percent)
- specialist (20 percent)
- registrar (22 percent)
- house officer (20 percent).

Specialists made up 33 percent of doctors identifying as 'Other European'. For those doctors identifying as New Zealand European / Pakeha, 43 percent reported their main work role as specialist, and 33 percent as GP.

Figure 9: Proportion of ethnic groups by work role at main work site



Gender

Vocational trainees

Table 11 shows the proportion of trainees in each vocational training area by gender.

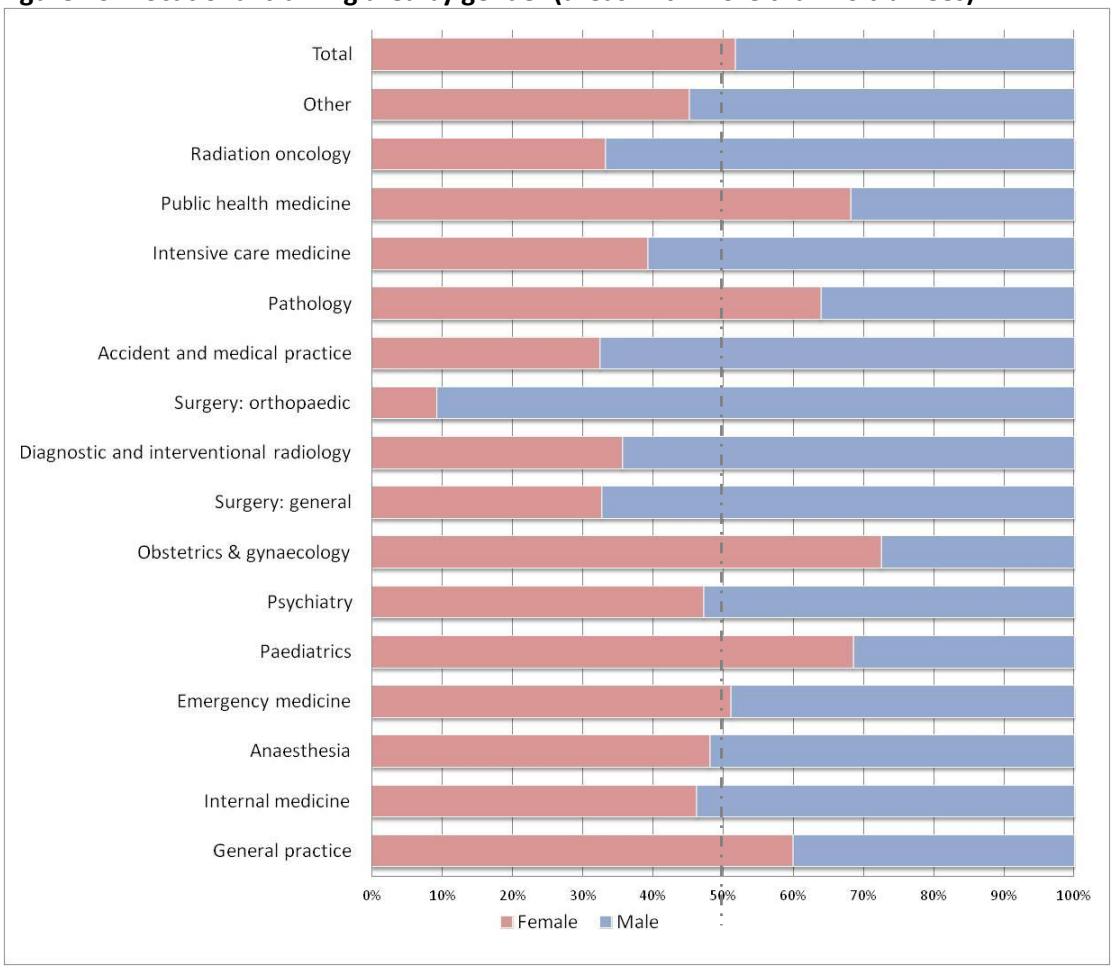
Table 11: Vocational training area by gender

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	13	27	40	33	1.3	2.9
Anaesthesia	89	96	185	48	8.8	10.2
Dermatology	0	*	*	0	0.0	0.1
Diagnostic and interventional radiology	20	36	56	36	2.0	3.8
Emergency medicine	66	63	129	51	6.5	6.7
Family planning and reproductive health	*	0	*	100	0.3	0.0
General practice	365	244	609	60	36.1	26.0
Intensive care medicine	11	17	28	39	1.1	1.8
Internal medicine	137	159	296	46	13.6	16.9
Medical administration	*	6	*	33	0.3	0.6
Obstetrics & gynaecology	58	22	80	73	5.7	2.3
Occupational medicine	5	7	12	42	0.5	0.7
Ophthalmology	8	11	19	42	0.8	1.2
Paediatrics	87	40	127	69	8.6	4.3
Palliative Medicine	5	*	*	71	0.5	0.2
Pathology	23	13	36	64	2.3	1.4
Psychiatry	43	48	91	47	4.3	5.1
Public health medicine	15	7	22	68	1.5	0.7
Radiation oncology	7	14	21	33	0.7	1.5
Rehabilitation medicine	6	*	*	75	0.6	0.2
Rural Hospital Medicine	*	*	*	67	0.2	0.1
Sexual health medicine	5	*	*	83	0.5	0.1
Sports medicine	0	*	*	0	0.0	0.2
Surgery: cardiothoracic	*	*	*	25	0.1	0.3
Surgery: general	21	43	64	33	2.1	4.6
Surgery: neurosurgery	*	4	*	20	0.1	0.4
Surgery: orthopaedic	4	39	43	9	0.4	4.1
Surgery: other	0	*	*	0	0.0	0.2
Surgery: otolaryngology	5	7	12	42	0.5	0.7
Surgery: paediatric	0	*	*	0	0.0	0.1
Surgery: plastic & reconstructive	5	8	13	38	0.5	0.9
Surgery: urology	*	11	*	15	0.2	1.2
Surgery: vascular	*	*	*	25	0.1	0.3
Other	33	31	64	52	3.3	3.3
Grand total	**1,011**	**940**	**1,951**	52	100.0	100.0

[1] House officers excluded.

* 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.

Figure 10: Vocational training area by gender (areas with more than 20 trainees)



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

- accident and medical practice (33 percent)
- diagnostic and interventional radiology (38 percent),
- intensive care medicine (39 percent)
- radiation oncology (33 percent)
- general surgery (33 percent)
- orthopaedic surgery (9 percent).

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

Females outnumbered males in vocational training in:

- general practice (60 percent)
- obstetrics & gynaecology (73 percent)
- paediatrics (69 percent)
- pathology (64 percent)
- public health medicine (68 percent).

Work role

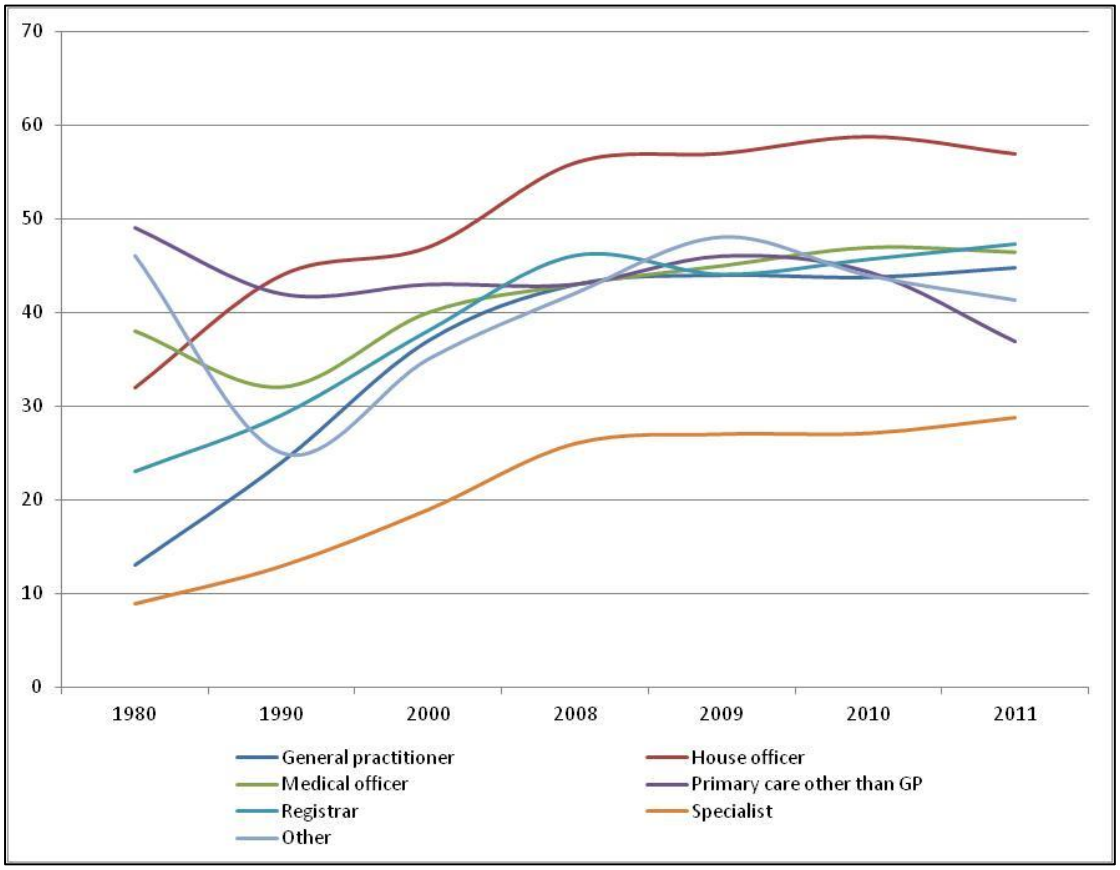
Table 12 shows the proportion of females in the workforce by work role at their main work site. The overall proportion of females in the workforce remained at 40 percent. Females continued to outnumber males in house officer roles, making up 57 percent.

The proportion of females increased in the roles of GP, registrar and specialist but decreased in the roles of house officer and primary care.

Table 12: Proportion of females by work role at main work site

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

Figure 11: Proportion of females by work role at main work site



Work types

Table 13 shows the proportion of females working as specialists or GPs in vocational scopes 10-yearly from 1980, and then yearly for the last 3 years.

Females outnumbered males in the vocational scope of sexual health medicine, where 83 percent of doctors were female.

The proportion of females increased in accident and medical practice from 34 percent to 44 percent. The proportion of females decreased in obstetrics & gynaecology (from 54 percent to 41 percent) and paediatrics (from 53 percent to 45 percent).

Females were significantly under-represented in the surgical scopes. Only 8 percent of doctors working in surgical scopes were female down from 13 percent in 2010.

Table 13: Proportion of females by vocational scope (specialists and GPs)

	Percentage female						
Vocational scope	**1980**	**1990**	**2000**	**2005**	**2009**	**2010**	**2011**
Accident and medical practice	–[1]	–	–	31	44	34	44
Anaesthesia	19	16	20	26	25	31	27
Basic medical science	12	16	7	0	22	27	36
Clinical genetics	–	–	–	0	45	67	29
Dermatology	3	17	19	29	29	24	28
Diagnostic and interventional radiology	8	14	23	29	29	31	30
Emergency medicine	–	0	26	28	29	41	33
Family planning and reproductive health	–	–	–	71	33	93	67
General practice	13	24	38	40	44	44	44
Intensive care medicine	–	–	18	16	15	27	23
Internal medicine	4	7	15	20	23	32	25
Medical administration	–	–	–	45	22	30	38
Musculoskeletal medicine	–	–	0	0	6	12	6
Obstetrics & gynaecology	10	17	29	36	38	54	41
Occupational medicine	–	5	17	14	14	16	15
Ophthalmology	6	11	12	15	20	24	20
Paediatrics	21	23	30	29	41	53	45
Palliative medicine	–	–	–	55	50	52	47
Pathology	15	22	30	35	37	39	40
Primary care	0	–	30	32	37	44	43
Psychiatry	19	28	33	36	39	43	40
Public health medicine	12	23	28	44	48	47	45
Radiation oncology	–	5	15	16	26	31	28

[1] A dash means data were not available.
[2] Specialists and GPs exclude 'not answered' and 'other'.

		Percentage female					
Vocational scope	**1980**	**1990**	**2000**	**2005**	**2009**	**2010**	**2011**
Rehabilitation medicine	–	–	0	0	21	46	33
Sexual health medicine	17	–	50	70	80	80	83
Sports medicine	–	–	25	9	21	21	20
Surgery: cardiothoracic	–	–	6	6	10	13	6
Surgery: general	–	–	6	5	8	19	10
Surgery: neurosurgery	–	–	7	10	18	5	5
Surgery: orthopaedic	–	–	3	4	5	7	6
Surgery: other	–	–	3	8	7	11	9
Surgery: otolaryngology	0	2	5	3	9	13	11
Surgery: paediatric	–	–	15	8	15	17	14
Surgery: plastic	–	–	3	3	8	22	10
Surgery: urology	–	–	3	5	6	9	6
Surgery: vascular	–	–	0	0	0	5	0
Specialists and GPs[2]	**–**	**–**	**29**	**32**	**34**	**34**	**36**

[1] A dash means data were not available.
[2] Specialists and GPs exclude 'not answered' and 'other'.

International medical graduates

International medical graduates 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 take care when comparing the proportion of IMGs employed in New Zealand to the proportion employed in any other country.

From survey data, the proportion of international medical graduates (IMGs) is 41.5 percent. This is consistent with registration data published in the Medical Council's annual reports, which show that the proportion of IMGs in the workforce at any given time is between 40 and 43 percent. Data also suggest that this figure is increasing only very gradually.

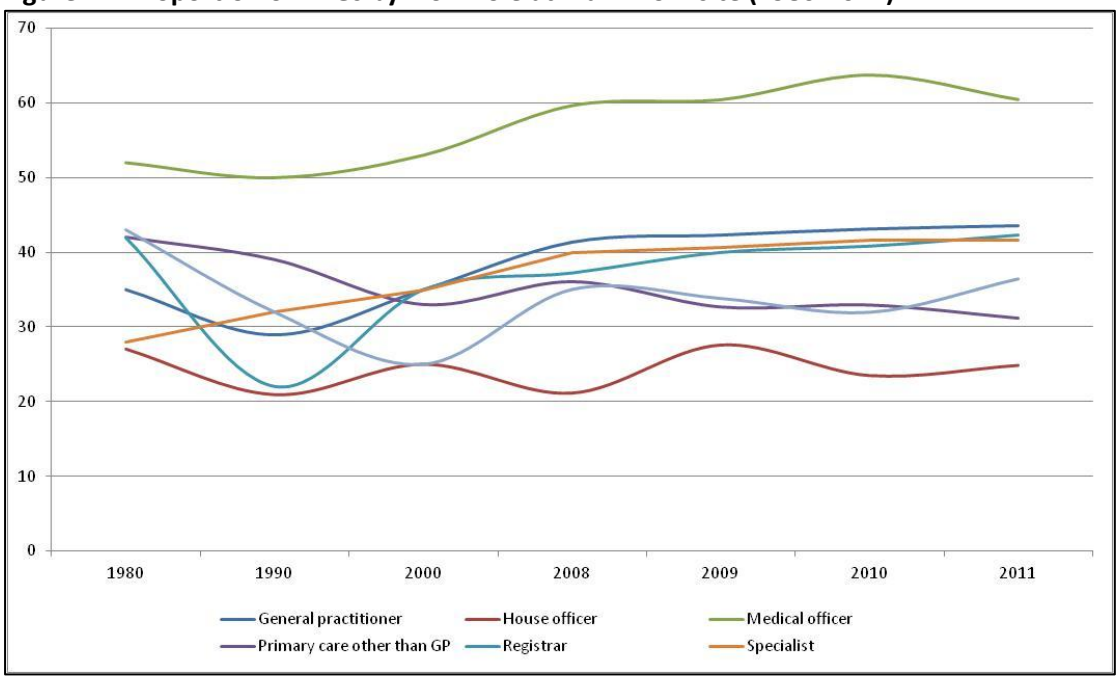
Work role

Table 14 shows that the medical officer work role again had the highest proportion of IMGs, at 60 percent. The proportion of IMGs in most work roles was either unchanged or only changed slightly compared to previous years.

Table 14: Proportion of IMGs by work role at work site

	Percentage of IMGs						
Role at main work site	**1980**	**1990**	**2000**	**2008**	**2009**	**2010**	**2011**
House officer	27	21	25	21	28	24	25
Registrar	42	22	35	37	40	41	42
Medical officer	52	50	53	60	60	64	60
Primary care other than GP	42	39	33	36	33	33	31
Other	43	32	25	35	34	32	36
GP	35	29	35	41	42	43	43
Specialist	28	32	35	40	41	42	42

Figure 12: Proportion of IMGs by work role at main work site (1980-2011)



Work type

Figure 13 shows the proportion of IMGs working as specialists or general practitioners in vocational scopes for those areas with more than 50 doctors.

The proportion of IMGs was more than 50 percent in obstetrics & gynaecology and psychiatry and was only just under 50 percent in pathology (49 percent).

Figure 13: Proportion of IMGs by vocational scope (areas with more than 50 doctors)

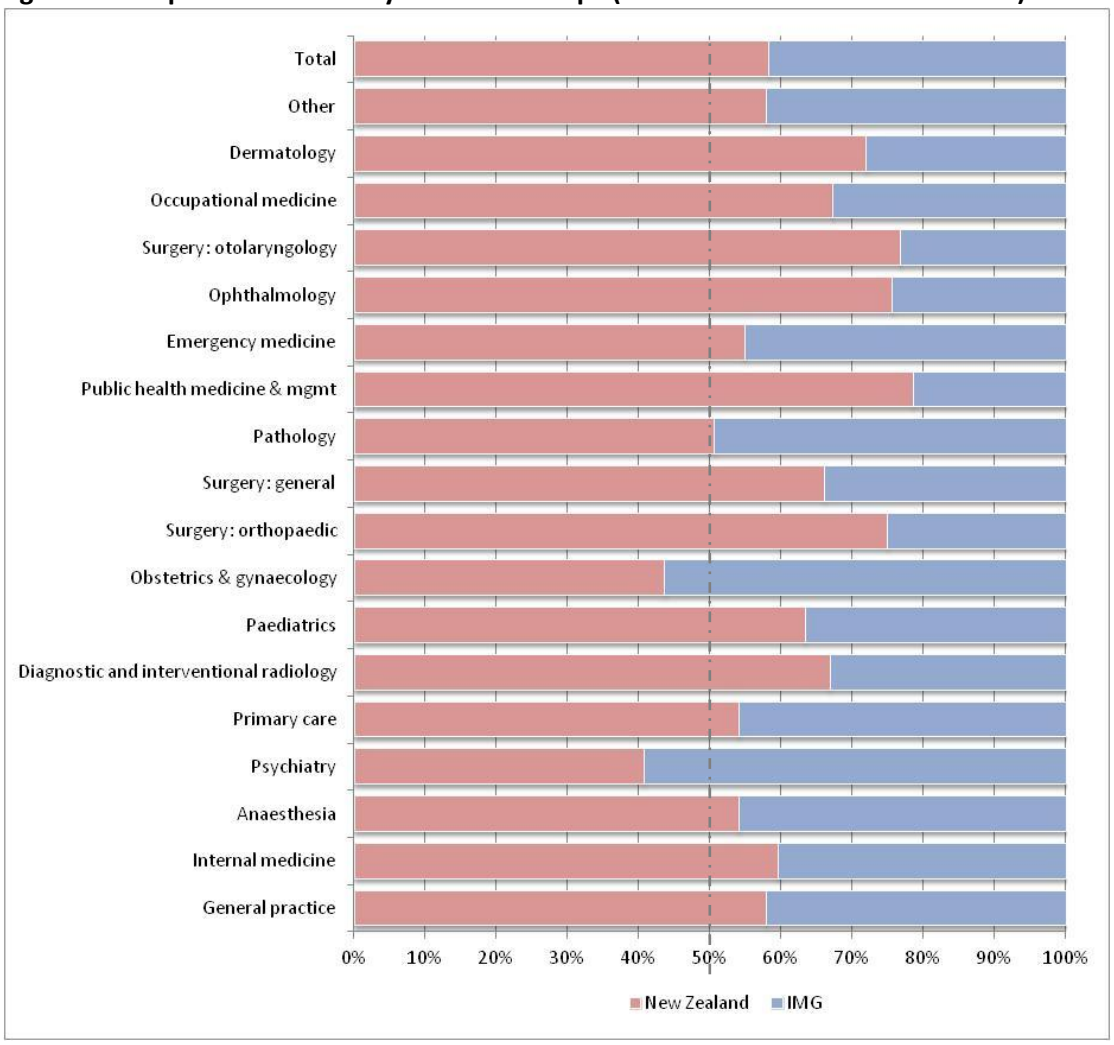


Table 15 shows the proportion of IMGs working as specialists or GPs in vocational scopes 10-yearly from 1980, and then yearly for the last 3 years.

The proportion of IMGs increased in:

- accident and medical practice (from 50 percent to 56 percent)
- diagnostic and interventional radiology (from 26 to 33 percent)
- obstetrics & gynaecology (from 50 percent to 56 percent)
- palliative medicine (from 59 percent to 79 percent).

The proportion of IMGs decreased in:

- surgery: otolaryngology (from 35 percent to 23 percent)
- emergency medicine (from 51 percent to 45 percent)
- dermatology (from 31 to 28 percent)
- paediatrics (from 40 percent to 37 percent).

Table 15: Proportion of IMGs by vocational scope[1] (specialists and GPs)

	Percentage of IMGs						
Vocational scope	**1980**	**1990**	**2000**	**2008**	**2009**	**2010**	**2011**
Accident and medical practice	–[2]	–	–	59	59	50	56
Anaesthesia	41	39	45	48	46	46	46
Basic medical science	31	42	20	45	56	24	55
Clinical genetics				0	55	22	29
Dermatology	30	20	23	30	29	31	28
Diagnostic and interventional radiology	24	27	32	34	35	26	33
Emergency medicine	–	50	48	45	43	51	45
Family planning and reproductive health	–	–	–	40	33	36	100
General practice	35	30	35	40	42	40	42
Intensive care medicine	–	–	18	26	33	32	31
Internal medicine	24	34	33	38	39	40	40
Medical administration	–	–	–	30	43	36	42
Musculoskeletal medicine	–	–	40	33	28	29	29
Obstetrics & gynaecology	24	28	45	49	52	50	56
Occupational medicine	–	41	31	33	35	33	33
Ophthalmology	18	16	22	25	21	23	24
Paediatrics	38	39	32	42	41	40	37
Palliative medicine	–	–	–	73	71	59	79
Pathology	21	26	38	45	44	44	49
Primary care	0	–	38	44	38	45	46
Psychiatry	41	50	57	57	58	59	59
Public health medicine	44	36	20	25	22	22	21
Radiation oncology	–	55	62	56	58	54	60
Rehabilitation medicine	–	–	29	63	57	64	67
Sexual health medicine	33	50	33	36	33	37	33
Sports medicine	–	–	4	24	32	29	13
Surgery: cardiothoracic	–	–	28	48	40	55	50
Surgery: general	–	–	30	37	37	32	34
Surgery: neurosurgery	–	–	50	65	65	64	71
Surgery: orthopaedic	–	–	13	19	22	28	25
Surgery: other	–	–	21	28	24	36	33
Surgery: otolaryngology	31	24	28	29	30	35	23
Surgery: paediatric	–	–	31	29	15	50	21
Surgery: plastic and reconstructive	–	–	19	23	25	27	22
Surgery: urology	–	–	29	20	21	23	25
Surgery: vascular	–	–	11	18	33	35	32
Specialists and GPs[3]	**–**	**–**	**35**	**41**	**41**	**41**	**42**

[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 16 and Figure 12 compare the retention rates at each year after graduation for successive classes of graduates from 1995 to 2010.

Table 16: Graduate retention of class years 1995–2010

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
1995	275	258	96	84	74	76	80	74	72	69	65	66	67	67	69	68	67	67
1996	275	264	97	88	78	80	78	77	75	69	64	64	61	64	66	67	67	
1997	284	266	97	86	73	68	72	72	70	68	64	65	61	63	62	64		
1998	288	251	96	80	69	77	77	73	70	66	61	61	59	58	60			
1999	305	270	99	79	75	77	77	72	70	67	59	56	58	60				
2000	323	286	94	82	74	77	78	79	76	74	67	60	59					
2001	297	271	95	79	78	81	80	78	74	72	65	63						
2002	308	285	94	81	76	79	82	78	76	72	71							
2003	329	302	94	81	80	78	79	75	74	71								
2004	342	284	101	87	85	88	85	81	79									
2005	318	297	100	84	77	78	77	74										
2006	322	287	99	89	85	80	80											
2007	323	284	96	83	79	77												
2008	356	308	102[5]	93	88													
2009	389	337	100	92														
2010	382	317	100															

[1] 'Final class year' is used as Auckland and Otago medical schools identify graduate year differently.
[2] 'Size of class' 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.
[5] The percentage retained can be more than 100 percent where more graduates were registered in that year than were registered in the first postgraduate year.

Tables 16 and 17 show that on average, 84 percent of graduates are retained 2 years after graduation. By the third year, 78 percent are retained, rising to 79 percent 5 years after graduation. Retention rates level out to between 61 and 67 percent in years 8 to 14 after graduation.

Table 19 shows little variance in the percentage of registered graduates retained in any given postgraduate year across the class years analysed.

We have no firm statistics about what happens to medical graduates who do not register to do their intern year in New Zealand. Available figures include fee-paying students, and the initial drop in retention may possibly be caused by these graduates returning to their sponsoring countries. Others do their internship overseas, and some take a year off.

We do not collect information about doctors no longer practising in New Zealand. They may be practising overseas, or not practising at all. Some doctors leave New Zealand to gain postgraduate qualifications and then return some years later.

Figure 14: Graduate retention of class years 1995–2010

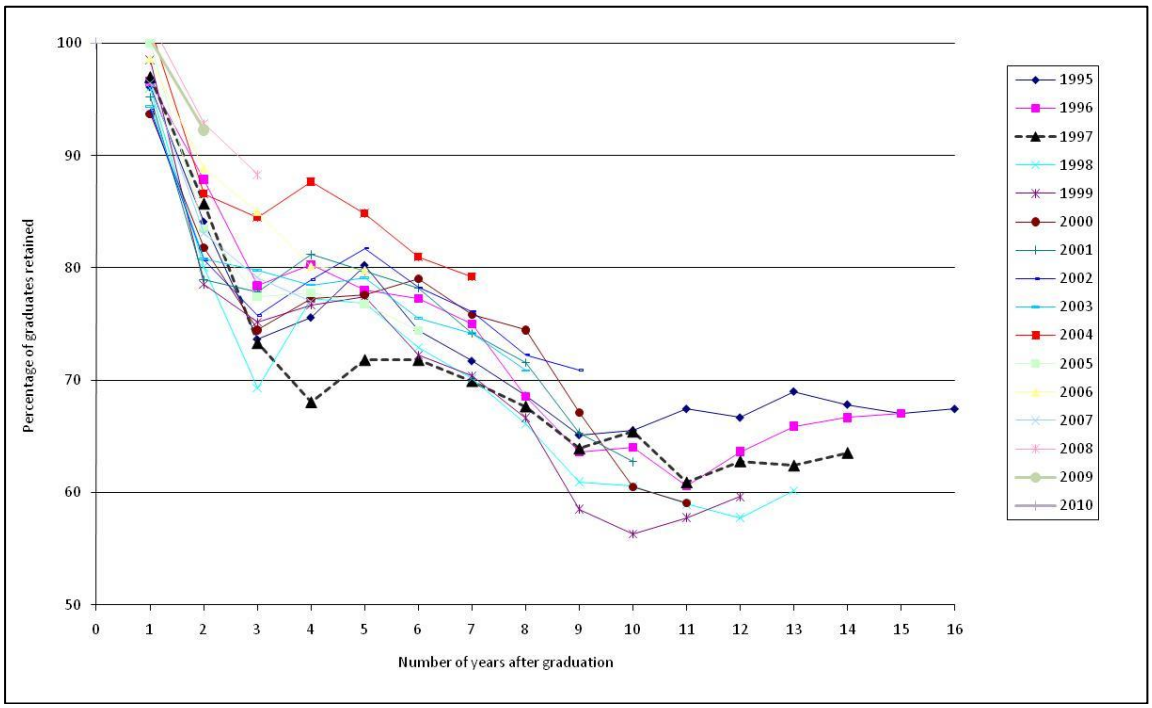


Table 17: Average percentage of registered graduates retained, by postgraduate year

	Postgraduate year															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Average percentage of registered graduates retained	98	84	78	78	79	76	74	70	64	62	61	62	64	66	67	67
Standard deviation	2.7	4.6	5.1	4.3	3.2	3.0	3.1	2.8	3.7	3.3	3.5	3.5	3.9	2.2	0.0	-

International medical graduates – retention after registration

Table 18 compares the retention rates of IMGs at each year after initial registration for successive years from 2000 to 2010. Reliable data are not available for the years before 2000.

Table 18: Retention rates for IMGs, 2000–2010

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
2000	**924**	47.4	38.2	34.5	31.0	28.4	27.5	26.6	24.7	22.7	21.6	22.1
2001	**932**	46.6	35.8	32.2	30.8	29.6	29.1	28.6	26.4	25.8	24.9	
2002	**1073**	48.6	36.7	32.0	31.0	28.3	27.3	26.7	26.7	25.7		
2003	**1092**	45.0	33.0	29.7	28.9	28.1	27.2	26.4	26.5			
2004	**1014**	47.9	32.3	28.9	27.3	26.1	26.2	25.0				
2005	**1131**	54.0	36.3	32.7	30.8	30.2	29.2					
2006	**967**	50.6	35.5	32.5	30.9	29.3						
2007	**1105**	62.0	45.7	39.5	37.7							
2008	**1096**	57.1	37.0	30.2								
2009	**1163**	59.4	35.2									
2010	**1194**	61.4										

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

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

Figure 15: Retention rate for IMGs, 2000–2010

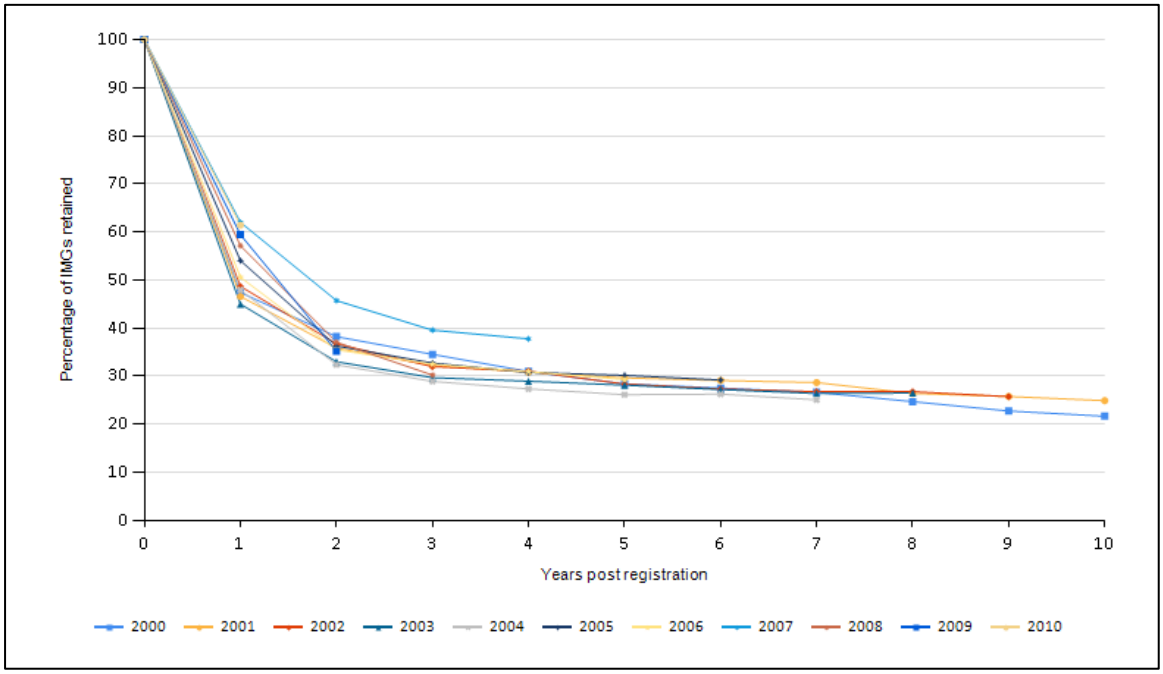


Table 19 shows that on average just under 53 percent of IMGs are retained in the year immediately after initial registration.

After this initial drop, the percentage of IMGs continues to decrease more gradually, dropping to just fewer than 33 percent after 3 years from initial registration. Table 19 shows that this trend has been consistent across the period analysed, with little variance in the proportion retained.

Table 19: Average percentage of IMGs retained, by post-registration year

	Post-registration year										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Average percentage of IMGs retained	52.7	36.6	32.5	31.1	28.6	27.7	26.7	26.1	24.7	23.3	22.1
Standard deviation	6.3	3.7	3.2	3.0	1.3	1.2	1.3	0.9	1.7	2.3	

Retention of international medical graduates – by region

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

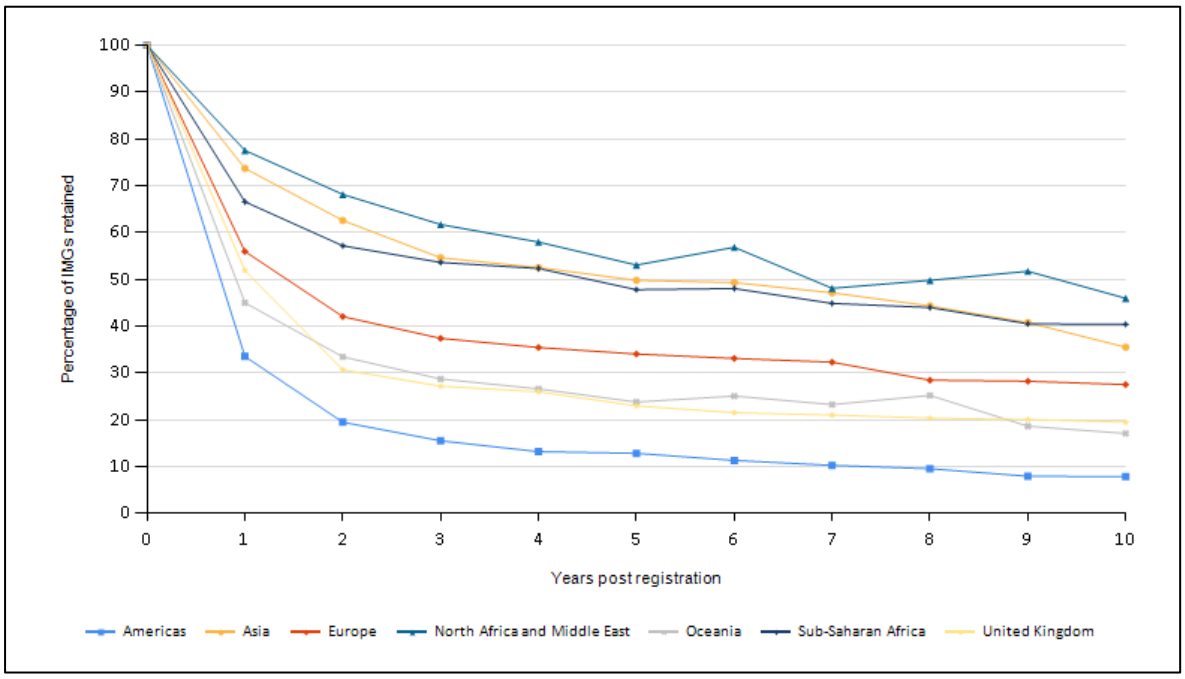
These groups are based on the level 1 major groups of the New Zealand Standard Classification for countries[1] although some groups have been combined and others split to make the figures easier to read. These combinations are:

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

Figure 16 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 45.

[1] 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 16: Retention rate for IMGs by country, 2000–2010



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 over 30 percent retained 1 year after registration. Seven years after registration, less than 10 percent remain.

Doctors from the United Kingdom also have lower-than-average retention rates. Just over 30 percent of these doctors are retained 2 years after registration, dropping to just over 20 percent after 8 years.

Similarly, doctors from Oceania have lower-than-average retention rates. Just over 40 percent of these doctors are retained 2 years after registration dropping to just fewer than 25 percent after 8 years.

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

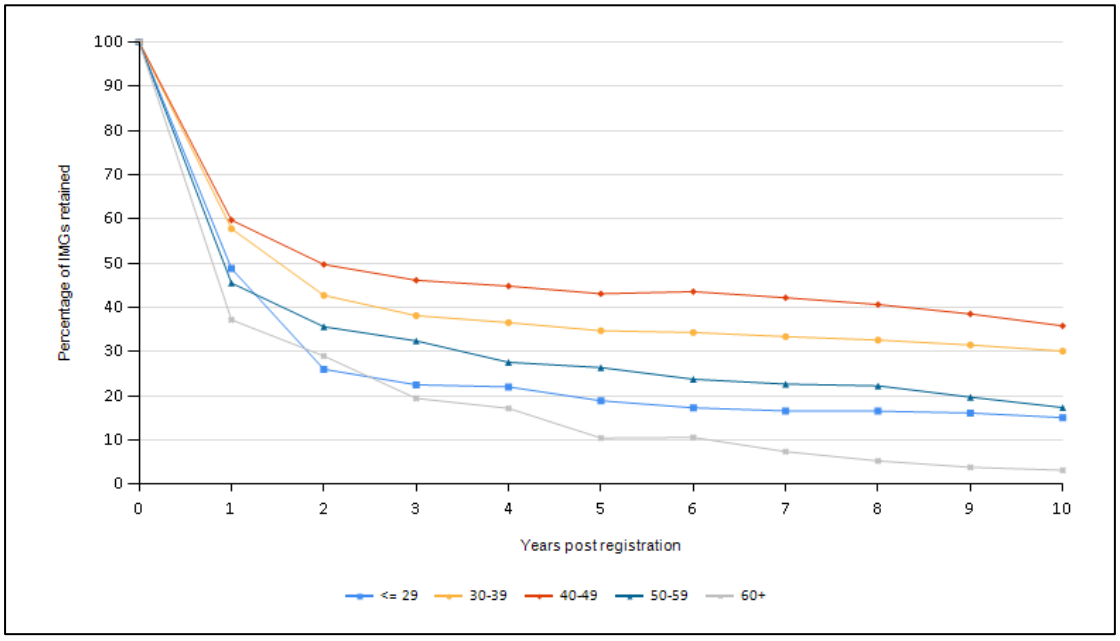
Retention of international medical graduates – by age group

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

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

Figure 17 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 49.

Figure 17: Retention rate for IMGs by age group, 2000–2010



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

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

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

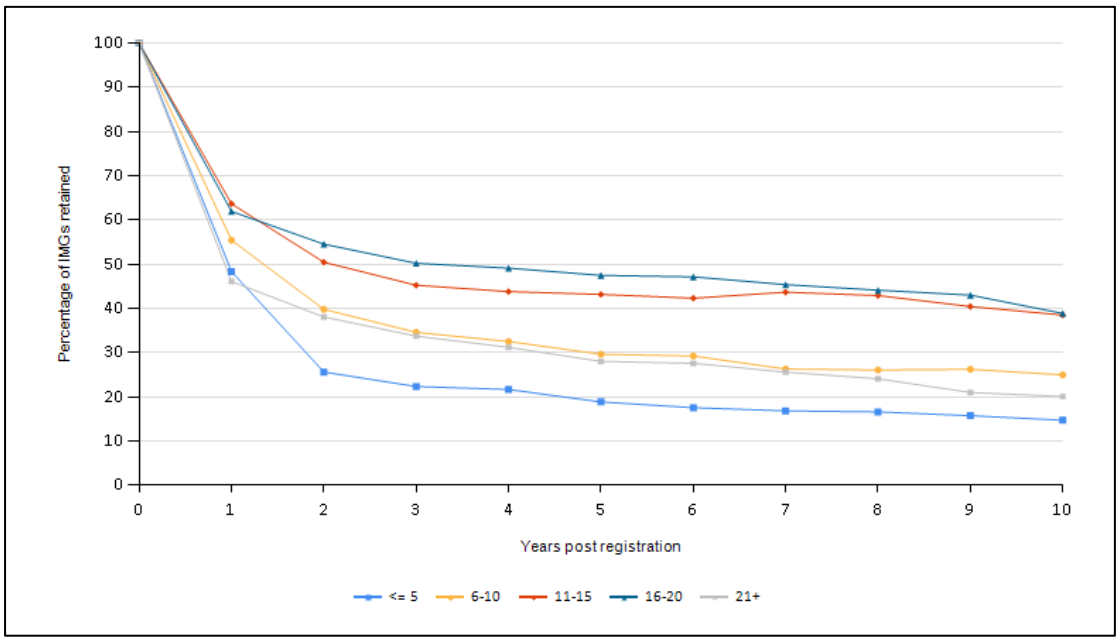
Retention of international medical graduates – by time since qualification

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

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

Figure 18 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 52.

Figure 18: Retention rate for IMGs, by time since qualification



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

Doctors who had only recently graduated when they registered in New Zealand (<5 years) have the lowest retention rate, dropping to just over 25 percent after 1 year and then dropping below 20 percent after 5 years.

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

Retention of international medical graduates after full registration

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

General scope

Table 20 shows the retention rate for IMGs in the years after they obtained a general scope of practice. To obtain a general scope, these doctors must have worked under supervision for 1–2 years. One year after obtaining a general scope, just over 80 percent of IMGs are still working in New Zealand. This decreases steadily to 66 percent after 5 years.

It is notable that the number of IMGs who obtained a general scope has increased more dramatically in 2009 and 2010 than in previous years. Furthermore, the retention of IMGs who gained a general scope in 2010 one year later is a lot lower than in previous years.

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

We will re-examine this trend as more data become available in future years.

Table 20: Retention rate for IMGs after general scope obtained

Year registered	Number registered	Percentage retained, by post-registration year[1]										
		1	2	3	4	5	6	7	8	9	10	11
2000	**256**	82.8	76.2	72.3	68.4	64.1	63.7	59.8	55.1	51.2	48.0	45.7
2001	**242**	82.6	75.6	74.0	69.0	63.6	60.7	57.4	53.7	51.7	52.1	
2002	**250**	87.2	78.4	72.4	72.8	68.4	66.8	63.2	61.6	60.4		
2003	**316**	89.9	80.7	78.8	73.7	71.2	67.7	66.8	66.5			
2004	**311**	83.3	74.6	69.1	66.2	63.7	59.8	57.6				
2005	**323**	77.4	72.8	68.7	64.7	65.6	64.4					
2006	**284**	80.6	76.1	69.4	67.6	65.5						
2007	**331**	82.5	76.7	75.2	71.0							
2008	**384**	74.7	70.8	65.1								
2009	**470**	79.6	69.8									
2010	**574**	69.0										
Average percentage of IMGs retained		80.9	75.2	71.7	69.2	66.0	63.9	60.9	59.2	54.4	50.1	45.7
Standard deviation		5.7	3.3	4.1	3.1	2.8	3.2	4.0	5.9	5.2	2.8	

[1] The retention rate equals the number of doctors from the group who held a practising certificate at some point in that year, compared with the number of doctors originally in that group.

Vocational scope

Table 21 shows the retention rate for IMGs in the years after they obtained a vocational scope of practice, and table 22 shows the equivalent figures for New Zealand graduates.

The requirements to obtain a vocational scope can vary. Some IMGs will have already worked in New Zealand for a number of years and completed some or all of an approved vocational training programme in New Zealand. Doctors who completed their postgraduate training overseas must have completed 1–2 years of supervised practice.

Table 21: Retention rate for IMGs after vocational scope obtained

Year registered	Number registered	Percentage retained, by post-registration year[1]										
		1	2	3	4	5	6	7	8	9	10	11
2000	**161**	90.1	85.7	83.9	78.9	77.6	73.9	72.7	69.6	68.3	67.7	67.1
2001	**278**	89.9	83.8	84.5	80.2	78.8	75.2	74.8	74.5	73.0	72.7	
2002	**202**	90.6	89.1	87.1	85.6	82.7	81.2	81.7	79.2	76.7		
2003	**223**	92.4	87.9	84.8	79.8	78.5	76.2	74.9	74.4			
2004	**226**	86.7	80.1	80.1	75.7	72.1	70.4	68.1				
2005	**206**	89.3	83.0	79.6	77.7	74.3	75.2					
2006	**206**	86.4	84.0	79.6	76.2	74.3						
2007	**223**	78.9	75.3	74.4	73.1							
2008	**229**	82.5	79.0	72.1								
2009	**239**	82.8	76.2									
2010	**242**	84.7										
Average percentage of IMGs retained		86.8	82.4	80.7	78.4	76.9	75.4	74.4	74.4	72.7	70.2	67.1
Standard deviation		4.2	4.7	5.0	3.8	3.6	3.5	4.9	3.9	4.2	3.5	

[1] The retention rate equals the number of doctors from the group who held a practising certificate at some point in that year, compared with the number of doctors originally in that group.

One year after obtaining a vocational scope, 87 percent of IMGs are retained. This decreases gradually to 77 percent after 6 years.

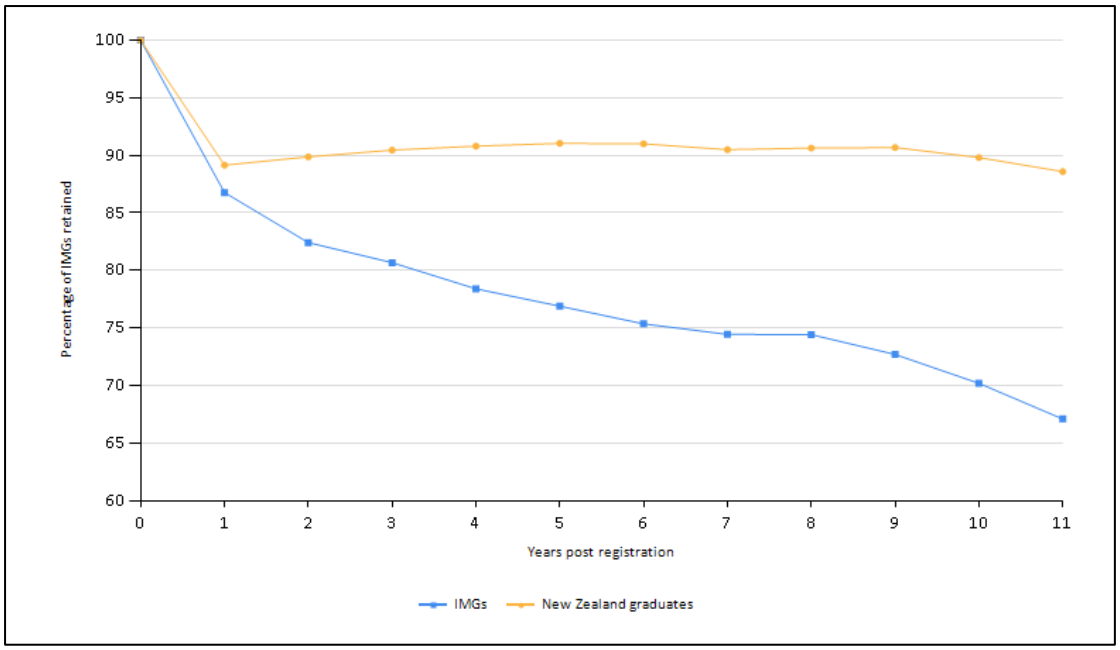
Table 22: Retention rate for New Zealand graduates after vocational scope obtained

Year registered	Number registered	Percentage of NZ graduates retained, by post-registration year[1]									
		1	2	3	4	5	6	7	8	9	10
2000	**219**	95.0	94.1	94.5	95.0	94.5	95.0	91.8	90.0	90.4	89.5
2001	**364**	94.8	94.5	93.1	93.1	92.3	92.3	92.6	92.0	91.8	90.1
2002	**276**	91.7	90.9	90.2	94.2	93.1	91.7	91.3	90.9	89.9	
2003	**250**	93.2	90.0	92.0	92.0	90.8	90.4	89.6	89.6		
2004	**211**	88.6	90.5	89.1	88.2	89.6	88.2	87.2			
2005	**235**	87.7	87.2	90.6	89.8	88.1	88.5				
2006	**226**	85.8	90.3	89.4	87.2	88.9					
2007	**215**	85.6	83.3	85.1	87.0						
2008	**220**	85.0	90.0	90.0							
2009	**223**	87.0	87.9								
2010	**212**	86.3									
Average		89.1	89.9	90.5	90.8	91.0	91.0	90.5	90.6	90.7	89.8
Standard deviation		3.8	3.3	2.7	3.2	2.4	2.6	2.1	1.1	1.0	0.4

[1] The retention rate equals the number of doctors from the group who held a practising certificate at some point in that year, compared with the number of doctors originally in that group.

Figure 19 compares the retention of IMGs and New Zealand graduates after they obtain a vocational scope. The vertical axis starts at 60 percent to better show the difference in retention for the two groups.

Figure 19: Retention rate for IMGs and New Zealand graduates after vocational scope obtained



The retention rate after 1 year for New Zealand graduates is just under 90 percent, and only slightly lower for IMGs. After 2 years, the retention rate for New Zealand graduates stabilises at just over 90 percent. For IMGs it decreases steadily to around 75 percent after 6 years.

Survey method

Timing of the questionnaire

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

The four periods of data in this report ended November 2010, February 2011, May 2011, and August 2011.

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 with:

- a general, provisional general, vocational, or provisional vocational scope of practice
- a current practising certificate
- 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 2011 workforce survey, survey forms were sent out to 13,552 doctors with New Zealand addresses. Ninety-three percent (12,654) replied.

The results in this report include only the 11,688 active doctors – that is, those working 4 or more hours a week, as shown in Table 1 on page 2 of this report.

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

Categories of data

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

Role options were:

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

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

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

DHB populations were determined by amalgamating TLA population counts from the estimated resident population as at 30 June 2011[2].

Because the TLAs in the Auckland region have been combined into one, population figures for the separated areas are no longer available. Therefore, the DHB locality populations for Waitemata, Auckland and Counties Manukau have been estimated. The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2011 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

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

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

1. New Zealand Māori
2. Pacific Island
3. Chinese
4. Indian
5. Other non-European
6. Other European
7. New Zealand European.

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.

Results were generated using Microsoft Access software.

Calculating retention rates

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 purchased PCs in subsequent years.

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.

[2] Statistics New Zealand: Estimated Resident Population as at 30 June 2011.

Explanation of terms used

Active doctors

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

Full-time equivalent (FTE)

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

General practitioner or GP

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

House officer

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

Hours on call

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

Hours worked

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

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

International medical graduate

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

Main work site

The place where a doctor spends most of their working hours.

Medical officer

The National DHB Collective Agreement (MECA) between the Association of Salaried Medical Specialists (ASMS) and DHBs[3] defines Medical Officer as 'any medical practitioner who is registered under the Health Practitioners Competence Assurance Act 2003 … who is not a medical specialist'.

Registered within a vocational scope of practice

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

[3] http://www.asms.org.nz/Site/Employment_in_NZ/National_DHB_Collective_Agreement_-_MECA/MECA.aspx

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 7.

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

The Medical Council of New Zealand would like to thank the doctors who completed the workforce survey.

This report was prepared by Andrew Cullen with assistance from Christine Whiteford, who helped check the data.

Appendix 1 – Distribution of the workforce by district health board

Table 23 shows the distribution of all doctors and GPs by the DHB locality at the doctor's main work site.

Table 23: Workforce by district health board locality of main work site

DHB locality	Doctors	GPs[1]	DHB locality population[7]	Doctors per 100,000 population	FTEs for GPs at all work sites[2]	FTEs for GPs per 100,000 population	GPs per 100,000 population
Northland	358	141	158,150	226	130	82	89
Waitemata	819	364	539,953	152	333	62	67
Auckland	2,568	503	453,811	566	455	100	111
Counties Manukau	758	293	492,232	154	272	55	60
Waikato[3]	928	281	389,000	239	270	69	72
Bay of Plenty	519	199	211,890	245	171	81	94
Lakes	271	101	103,000	263	90	87	98
Tairawhiti	104	37	46,600	223	36	77	79
Hawke's Bay	373	138	155,150	240	129	83	89
Taranaki	238	72	109,870	217	63	58	66
MidCentral	378	90	160,500	236	93	58	56
Whanganui	121	43	58,300	208	44	75	74
Wairarapa	57	29	40,570	140	30	74	71
Hutt	284	97	144,500	197	88	61	67
Capital & Coast[4]	1078	282	302,600	356	237	78	93
Nelson Marlborough	338	135	139,900	242	120	86	96
West Coast	58	22	32,960	176	20	59	67
Canterbury	1,450	465	502,650	288	410	82	93
Otago	676	178	182,850	370	169	92	97
South Canterbury	99	41	56,380	176	41	72	73
Southland[5]	213	103	123,600	172	98	79	83
Total	**11,688**	**3,614**	**4,404,466**	**265**	**3,297**	**75**	**82**
Southern[6]	889	281	306,450	290	266	87	92

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

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

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

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

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

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

7 The DHB locality populations for Waitemata, Auckland and Counties Manukau are estimates because the TLA which made up these DHB regions previously have been merged into one Auckland TLA and so TLA populations are no longer available. The estimates have been produced by dividing up the population of the new Auckland TLA as at 30 June 2011 into the proportions the previous TLA boundaries made up of the total at 30 June 2010 when these TLA were still separated out by Statistics New Zealand.

Appendix 2 – Retention of international medical graduates by country

Tables 24 to 28 show the cohort retention rate at each year after initial registration for successive years of IMG registrants from each group, as described on page 33.

Table 24: Retention rate for graduates from the Americas, 2000–2010

First year registered	Number registered	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	113	29.2	19.5	15.0	9.7	9.7	8.8	7.1	7.1	6.2	7.1	7.1
2001	128	18.8	14.1	12.5	9.4	8.6	11.7	14.1	10.2	10.2	8.6	
2002	121	24.8	19.0	11.6	10.7	8.3	7.4	9.1	9.9	7.4		
2003	155	24.5	17.4	12.9	12.9	12.3	11.0	11.6	11.0			
2004	138	31.9	16.7	13.8	10.9	10.1	10.9	9.4				
2005	178	39.9	23.6	21.9	19.1	21.3	18.0					
2006	150	34.7	20.7	19.3	16.7	19.3						
2007	200	43.0	21.0	16.0	16.0							
2008	225	37.8	21.3	16.4								
2009	238	39.9	21.4									
2010	249	44.2										
Average percentage of IMGs retained		33.5	19.5	15.5	13.2	12.8	11.3	10.3	9.5	7.9	7.8	7.1
Standard deviation		8.4	2.8	3.4	3.6	5.3	3.6	2.7	1.7	2.0	1.1	

Table 25: Retention rate for graduates from Asia 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	119	73.9	69.7	63.0	58.0	53.8	49.6	48.7	43.7	42.0	36.1	36.1
2001	89	70.8	58.4	50.6	50.6	44.9	46.1	44.9	42.7	38.2	34.8	
2002	126	74.6	66.7	56.3	49.2	50.0	44.4	42.9	43.7	42.1		
2003	125	69.6	65.6	59.2	56.0	52.0	50.4	48.0	47.2			
2004	90	68.9	65.6	57.8	54.4	53.3	52.2	51.1				
2005	100	78.0	68.0	62.0	57.0	54.0	53.0					
2006	109	68.8	54.1	45.9	43.1	40.4						
2007	149	78.5	59.7	53.0	51.7							
2008	103	76.7	58.3	43.7								
2009	99	76.8	59.6									
2010	85	74.1										
Average percentage of IMGs retained		73.7	62.6	54.6	52.5	49.8	49.3	47.1	44.3	40.8	35.5	36.1
Standard deviation		3.7	5.2	6.8	4.9	5.2	3.4	3.2	2.0	2.2	0.9	

Table 26: Retention rate for graduates from Europe, 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**59**	50.8	49.2	40.7	33.9	32.2	30.5	32.2	27.1	27.1	25.4	30.5
2001	**71**	47.9	38.0	39.4	35.2	36.6	29.6	29.6	26.8	29.6	29.6	
2002	**100**	59.0	40.0	37.0	38.0	32.0	32.0	31.0	33.0	28.0		
2003	**93**	41.9	34.4	29.0	28.0	28.0	26.9	25.8	26.9			
2004	**91**	61.5	51.6	44.0	45.1	47.3	45.1	42.9				
2005	**116**	64.7	43.1	39.7	34.5	35.3	34.5					
2006	**127**	44.9	31.5	28.3	30.7	26.8						
2007	**131**	66.4	49.6	42.7	38.2							
2008	**174**	58.6	42.5	35.6								
2009	**201**	58.2	40.3									
2010	**163**	61.3										
Average percentage of IMGs retained		55.9	42.0	37.4	35.4	34.0	33.1	32.3	28.4	28.2	27.5	30.5
Standard deviation		8.2	6.6	5.6	5.2	6.8	6.4	6.4	3.0	1.2	2.9	

Table 27: Retention rate for graduates from North Africa and the Middle East, 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**32**	78.1	71.9	71.9	71.9	62.5	59.4	56.3	56.3	53.1	43.8	37.5
2001	**27**	74.1	59.3	63.0	51.9	51.9	51.9	48.1	51.9	48.1	48.1	
2002	**26**	80.8	69.2	65.4	57.7	57.7	57.7	57.7	57.7	53.8		
2003	**18**	72.2	55.6	50.0	50.0	44.4	44.4	33.3	33.3			
2004	**20**	80.0	65.0	55.0	55.0	45.0	55.0	45.0				
2005	**22**	81.8	81.8	77.3	72.7	68.2	72.7					
2006	**12**	66.7	75.0	58.3	50.0	41.7						
2007	**11**	72.7	63.6	54.5	54.5							
2008	**15**	73.3	66.7	60.0								
2009	**15**	86.7	73.3									
2010	**22**	86.4										
Average percentage of IMGs retained		77.5	68.1	61.7	58.0	53.0	56.8	48.1	49.8	51.7	45.9	37.5
Standard deviation		6.3	7.8	8.7	9.2	10.1	9.4	9.8	11.2	3.1	3.1	

Table 28: Retention rate for graduates from Oceania, 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**68**	48.5	42.6	38.2	32.4	29.4	30.9	26.5	23.5	16.2	13.2	16.2
2001	**67**	50.7	34.3	31.3	25.4	25.4	26.9	26.9	20.9	20.9	20.9	
2002	**64**	50.0	43.8	35.9	34.4	26.6	25.0	18.8	21.9	18.8		
2003	**61**	52.5	34.4	32.8	29.5	26.2	29.5	31.1	34.4			
2004	**93**	40.9	28.0	21.5	19.4	17.2	15.1	12.9				
2005	**74**	45.9	32.4	27.0	21.6	20.3	23.0					
2006	**70**	38.6	35.7	22.9	22.9	21.4						
2007	**77**	44.2	29.9	28.6	27.3							
2008	**80**	41.3	28.8	20.0								
2009	**78**	35.9	24.4									
2010	**82**	46.3										
Average percentage of IMGs retained		45.0	33.4	28.7	26.6	23.8	25.0	23.2	25.2	18.6	17.1	16.2
Standard deviation		5.3	6.2	6.4	5.3	4.3	5.7	7.3	6.3	2.4	5.4	

Table 29: Retention rate for graduates from Sub-Saharan Africa, 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**95**	67.4	67.4	56.8	53.7	51.6	46.3	45.3	40.0	36.8	37.9	35.8
2001	**105**	71.4	66.7	62.9	61.0	54.3	51.4	50.5	49.5	41.9	42.9	
2002	**131**	58.0	61.1	55.7	51.1	44.3	45.8	41.2	41.2	42.7		
2003	**113**	65.5	55.8	52.2	48.7	49.6	49.6	44.2	45.1			
2004	**79**	64.6	51.9	46.8	48.1	45.6	44.3	43.0				
2005	**75**	62.7	52.0	52.0	53.3	50.7	50.7					
2006	**96**	56.3	46.9	45.8	43.8	38.5						
2007	**90**	72.2	65.6	58.9	58.9							
2008	**41**	73.2	51.2	51.2								
2009	**47**	66.0	53.2									
2010	**36**	75.0										
Average percentage of IMGs retained		77.5	68.1	61.7	58.0	53.0	56.8	48.1	49.8	51.7	45.9	37.5
Standard deviation		6.3	7.8	8.7	9.2	10.1	9.4	9.8	11.2	3.1	3.1	

Table 30: Retention rate for graduates from the United Kingdom, 2000–2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**438**	37.7	23.5	22.8	20.5	18.0	18.9	18.7	18.3	16.9	17.1	17.8
2001	**445**	41.3	28.8	24.0	24.7	24.9	24.3	23.4	21.6	22.7	21.8	
2002	**505**	41.6	24.0	21.4	23.0	21.6	20.8	21.8	20.6	20.6		
2003	**527**	39.5	23.7	21.8	22.4	22.2	20.9	21.1	20.9			
2004	**503**	43.5	23.7	22.7	20.9	19.7	20.5	20.1				
2005	**566**	50.9	29.9	26.0	25.6	24.7	23.7					
2006	**403**	53.6	33.3	32.8	30.8	29.5						
2007	**447**	64.4	49.2	42.3	39.8							
2008	**458**	62.4	37.1	30.8								
2009	**485**	68.2	33.6									
2010	**557**	67.5										
Average percentage of IMGs retained		51.9	30.7	27.2	26.0	23.0	21.5	21.0	20.3	20.1	19.5	17.8
Standard deviation		11.9	8.2	6.9	6.5	3.8	2.0	1.8	1.4	2.9	3.3	

Appendix 3 – Retention of international medical graduates by age group

Tables 29 to 33 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 35).

Table 29: Retention rate for IMGs aged 29 or younger, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**352**	38.9	24.4	22.4	20.7	17.6	18.2	17.6	16.5	14.2	13.6	13.9
2001	**328**	36.3	19.8	16.2	16.8	18.0	18.9	18.3	15.2	16.8	16.5	
2002	**376**	39.1	20.2	18.1	19.7	18.4	17.8	18.1	18.6	17.3		
2003	**376**	37.2	18.1	17.0	16.0	16.0	14.6	15.2	15.7			
2004	**394**	38.6	16.2	15.5	14.7	12.7	13.7	13.7				
2005	**436**	49.3	27.1	23.9	22.9	21.6	20.4					
2006	**291**	45.4	32.6	29.6	28.9	27.8						
2007	**336**	67.9	45.5	37.5	36.3							
2008	**382**	57.9	29.8	22.3								
2009	**420**	60.0	26.0									
2010	**474**	65.8										
Average percentage of IMGs retained		48.8	26.0	22.5	22.0	18.9	17.3	16.6	16.5	16.1	15.0	13.9
Standard deviation		12.1	8.7	7.2	7.3	4.8	2.6	2.0	1.5	1.7	2.0	

Table 30: Retention rate for IMGs aged 30–39, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**303**	55.1	46.9	41.9	38.6	34.7	34.3	33.7	29.7	28.1	27.1	27.1
2001	**341**	56.6	46.9	42.8	41.9	39.6	38.7	36.4	34.9	34.6	33.1	
2002	**384**	53.9	47.7	42.2	39.8	37.0	35.7	33.9	33.6	31.8		
2003	**379**	50.7	39.3	35.9	35.9	35.4	33.0	32.2	32.2			
2004	**302**	53.0	39.4	33.8	31.5	31.5	32.5	30.8				
2005	**360**	57.5	39.2	35.0	33.1	33.3	31.7					
2006	**380**	58.2	37.4	33.4	31.8	31.6						
2007	**448**	64.7	47.3	43.1	39.7							
2008	**415**	61.0	41.9	34.9								
2009	**387**	62.8	41.1									
2010	**369**	62.1										
Average percentage of IMGs retained		57.8	42.7	38.1	36.5	34.7	34.3	33.4	32.6	31.5	30.1	27.1
Standard deviation		4.5	4.0	4.2	4.1	2.9	2.6	2.1	2.2	3.3	4.3	

Table 31: Retention rate for IMGs aged 40–49, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**156**	55.8	55.8	52.6	49.4	50.0	45.5	43.6	41.7	40.4	37.8	37.2
2001	**148**	54.7	50.0	43.9	43.2	39.9	39.2	43.2	39.9	33.8	33.8	
2002	**167**	63.5	53.9	48.5	46.1	43.1	41.9	41.9	41.9	41.3		
2003	**197**	53.8	50.3	45.7	43.7	40.6	41.1	39.6	39.1			
2004	**186**	58.6	51.6	48.4	47.3	46.2	44.6	42.5				
2005	**196**	66.8	55.6	52.6	49.5	49.0	49.0					
2006	**150**	50.7	36.0	35.3	35.3	32.7						
2007	**164**	64.6	51.8	45.7	43.9							
2008	**144**	58.3	45.1	42.4								
2009	**169**	65.1	46.7									
2010	**163**	65.0										
Average percentage of IMGs retained		59.7	49.7	46.1	44.8	43.1	43.6	42.2	40.6	38.5	35.8	37.2
Standard deviation		5.5	5.9	5.4	4.6	6.0	3.5	1.6	1.4	4.1	2.9	

Table 32: Retention rate for IMGs aged 50–59, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**73**	42.5	37.0	32.9	23.3	21.9	16.4	17.8	19.2	16.4	13.7	19.2
2001	**62**	43.5	33.9	43.5	29.0	27.4	22.6	24.2	24.2	22.6	21.0	
2002	**95**	45.3	32.6	27.4	24.2	21.1	18.9	18.9	17.9	20.0		
2003	**94**	38.3	35.1	26.6	27.7	26.6	29.8	25.5	27.7			
2004	**90**	52.2	40.0	35.6	30.0	31.1	28.9	26.7				
2005	**93**	45.2	34.4	32.3	25.8	25.8	25.8					
2006	**88**	45.5	36.4	37.5	31.8	30.7						
2007	**108**	37.0	32.4	27.8	28.7							
2008	**92**	46.7	37.0	28.3								
2009	**115**	49.6	37.4									
2010	**110**	54.5										
Average percentage of IMGs retained		45.5	35.6	32.4	27.6	26.4	23.7	22.6	22.2	19.7	17.3	19.2
Standard deviation		5.3	2.4	5.7	2.9	3.9	5.4	4.0	4.5	3.1	5.1	

Table 33: Retention rate for IMGs aged 60 or older, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**40**	40.0	27.5	17.5	5.0	2.5	7.5	2.5	2.5		2.5	2.5
2001	**53**	26.4	26.4	17.0	13.2	11.3	9.4	7.5	5.7	5.7	3.8	
2002	**51**	37.3	27.5	11.8	11.8	2.0	2.0	2.0	2.0	2.0		
2003	**46**	37.0	23.9	19.6	17.4	17.4	17.4	15.2	10.9			
2004	**42**	42.9	31.0	19.0	21.4	14.3	11.9	9.5				
2005	**46**	34.8	21.7	15.2	17.4	15.2	15.2					
2006	**58**	34.5	34.5	25.9	22.4	10.3						
2007	**49**	42.9	40.8	26.5	28.6							
2008	**63**	39.7	30.2	22.2								
2009	**72**	40.3	26.4									
2010	**78**	33.3										
Average percentage of IMGs retained		37.2	29.0	19.4	17.1	10.4	10.6	7.3	5.2	3.8	3.1	2.5
Standard deviation		4.8	5.5	4.8	7.3	6.1	5.6	5.5	4.1	2.6	0.9	

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

Tables 34 to 38 show the average retention rate at each year after initial registration for successive years of IMGs. The IMGs are split into five groups based on the number of years since the doctor gained their primary qualification. (The groupings are described on page 36.)

Table 34: Retention rate for IMGs 5 years or less post-qualification, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	360	38.1	23.1	20.8	19.2	16.1	16.9	16.4	15.6	13.1	12.5	12.2
2001	361	39.1	22.2	18.6	18.6	20.2	20.2	19.4	16.6	18.0	16.9	
2002	410	39.5	20.7	18.0	20.2	18.3	16.8	17.1	17.3	16.1		
2003	417	37.6	19.4	18.0	16.5	16.8	15.8	16.1	16.8			
2004	423	38.5	16.8	15.8	15.1	13.2	14.7	15.1				
2005	499	49.1	27.3	24.2	22.8	21.6	20.6					
2006	337	43.6	30.9	27.3	26.4	25.5						
2007	416	66.6	42.3	35.6	34.1							
2008	466	55.8	28.3	22.5								
2009	499	59.1	25.1									
2010	564	64.7										
Average percentage of IMGs retained		48.3	25.6	22.3	21.6	18.8	17.5	16.8	16.6	15.7	14.7	12.2
Standard deviation		11.3	7.3	6.1	6.2	4.0	2.4	1.6	0.7	2.5	3.1	

Table 35: Retention rate for IMGs 6–10 years post-qualification, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	124	62.1	57.3	51.6	48.4	44.4	40.3	42.7	37.1	36.3	35.5	33.9
2001	135	65.2	57.8	51.9	49.6	46.7	48.1	46.7	45.2	43.7	41.5	
2002	160	60.6	55.6	47.5	44.4	43.1	41.9	40.6	41.9	41.3		
2003	154	67.5	55.8	53.9	53.9	53.2	49.4	49.4	47.4			
2004	139	62.6	48.9	41.0	41.0	38.1	38.1	38.8				
2005	156	62.2	44.9	39.7	35.3	38.5	35.9					
2006	126	61.1	42.9	38.9	38.1	38.1						
2007	159	68.6	47.2	42.1	39.6							
2008	156	64.1	50.6	40.4								
2009	152	63.8	43.4									
2010	141	62.4										
Average percentage of IMGs retained		63.7	50.4	45.2	43.8	43.2	42.3	43.6	42.9	40.4	38.5	33.9
Standard deviation		2.5	5.8	6.0	6.4	5.6	5.4	4.3	4.5	3.8	4.2	

Table 36: Retention rate for IMGs 11–15 years post-qualification, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**40**	40.0	27.5	17.5	5.0	2.5	7.5	2.5	2.5		2.5	2.5
2001	**53**	26.4	26.4	17.0	13.2	11.3	9.4	7.5	5.7	5.7	3.8	
2002	**51**	37.3	27.5	11.8	11.8	2.0	2.0	2.0	2.0	2.0		
2003	**46**	37.0	23.9	19.6	17.4	17.4	17.4	15.2	10.9			
2004	**42**	42.9	31.0	19.0	21.4	14.3	11.9	9.5				
2005	**46**	34.8	21.7	15.2	17.4	15.2	15.2					
2006	**58**	34.5	34.5	25.9	22.4	10.3						
2007	**49**	42.9	40.8	26.5	28.6							
2008	**63**	39.7	30.2	22.2								
2009	**72**	40.3	26.4									
2010	**78**	33.3										
Average percentage of IMGs retained		37.2	29.0	19.4	17.1	10.4	10.6	7.3	5.2	3.8	3.1	2.5
Standard deviation		4.8	5.5	4.8	7.3	6.1	5.6	5.5	4.1	2.6	0.9	

Table 37: Retention rate for IMGs 16–20 years post-qualification, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**86**	59.3	59.3	57.0	50.0	53.5	44.2	43.0	41.9	39.5	36.0	39.5
2001	**84**	60.7	51.2	48.8	52.4	46.4	45.2	50.0	48.8	41.7	41.7	
2002	**90**	63.3	60.0	54.4	51.1	48.9	48.9	48.9	48.9	47.8		
2003	**103**	55.3	51.5	49.5	44.7	39.8	39.8	36.9	36.9			
2004	**102**	62.7	60.8	54.9	52.0	52.0	51.0	48.0				
2005	**97**	71.1	62.9	54.6	53.6	52.6	53.6					
2006	**82**	56.1	41.5	39.0	39.0	39.0						
2007	**76**	61.8	59.2	50.0	50.0							
2008	**69**	55.1	44.9	43.5								
2009	**87**	70.1	54.0									
2010	**93**	65.6										
Average percentage of IMGs retained		61.9	54.5	50.2	49.1	47.5	47.1	45.4	44.1	43.0	38.9	39.5
Standard deviation		5.5	7.2	5.9	4.9	6.0	5.0	5.4	5.8	4.3	4.0	

Table 38: Retention rate for IMGs 21 or more years post-qualification, 2000-2010

First year registered	Size of original cohort	Percentage retained, by post-registration year										
		1	2	3	4	5	6	7	8	9	10	11
2000	**164**	46.3	42.1	37.2	30.5	28.0	28.0	25.6	25.6	23.8	22.6	22.6
2001	**165**	40.6	36.4	33.9	26.7	24.8	21.8	23.0	20.6	18.2	17.6	
2002	**196**	48.5	37.8	30.1	28.6	22.4	20.4	20.9	19.4	20.9		
2003	**202**	43.1	39.1	32.2	32.7	32.2	33.7	30.7	30.7			
2004	**185**	50.3	39.5	36.2	34.1	33.0	30.3	27.6				
2005	**196**	48.0	37.2	35.2	31.6	30.1	31.1					
2006	**181**	42.5	35.9	34.3	30.9	25.4						
2007	**198**	47.0	42.4	34.8	34.3							
2008	**183**	45.4	35.5	29.5								
2009	**220**	46.8	34.5									
2010	**212**	48.6										
Average percentage of IMGs retained		46.1	38.0	33.7	31.2	28.0	27.6	25.6	24.1	21.0	20.1	22.6
Standard deviation		2.9	2.7	2.6	2.6	4.0	5.3	3.8	5.2	2.8	3.5	