# The New Zealand Medical Workforce in 2016

**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 2016. It contains information about changes in the medical workforce including retention rates for doctors.**

In recent times, there has been a focus on the shortage of rural doctors which has been highlighted by the Royal New Zealand College of General Practitioners. The 2016 Workforce Survey highlights some disparities including hours worked, age and gender between rural doctors and their urban counterparts.

Most notably, there are a higher proportion of female doctors in urban areas compared with rural areas – 44.7 percent of doctors in main urban areas are female compared with 39.7 percent of doctors in rural areas. Also, doctors working in rural areas tend to be on average older than those working in urban areas, although this is affected by house officers who tend not to work in rural areas, and the average age of GPs is actually very similar. See page 24 for further analysis of urban and rural doctors.



## Facts at a glance

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| Size of the workforce[1] | 13,493 | 13,880 | 14,110 | 14,324 | 14,617 | 15,078 |
| Doctors per 100,000 population[2] | 306.3 | 313.2 | 317.7 | 317.6 | 318.1 | 321.3 |
| Proportion of IMGs[3] (%) | 41.5 | 41.4 | 41.9 | 42.0 | 40.4 | 40.4 |
| Proportion of females (%) | 40.4 | 41.3 | 41.7 | 42.4 | 43.5 | 43.9 |
| Average age of workforce | 45.2 | 45.4 | 45.5 | 45.7 | 45.2 | 45.5 |
| Average weekly workload (hours) | 43.7 | 43.9 | 43.7 | 43.6 | 44.4 | 44.7 |
| Average proportion of new IMGs retained after 1 year[4] | 52.7 | 53.5 | 54.5 | 55.4 | 56.9 | 57.7 |

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 65 for definition).

4 See 'Retention' on page 48 for more information and 'Survey method' on page 62 for information on how this figure was calculated.

# Changes in the medical workforce

The results of *The New Zealand Medical Workforce in 2016* survey are based on data self-reported by doctors. The survey data were collected under the Health Practitioners Competence Assurance Act 2003 (HPCAA).

However, other data sources are referenced where they are more appropriate. For example, registration data are often a better source for the total number of doctors as it will capture all doctors, not just those who completed the survey.

Results published in this report are based on survey data unless otherwise stated. For information on the survey method and response rate, please see 'Survey method' on page 62.

## Size of the workforce

Registration data show that the number of registered doctors increased by 3.2 percent in 2016 from 14,617 to 15,078. This change compares to an increase of 2.0 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 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total workforce (based on registration data)[1]** | **-** | **6,337** | **6,806** | **7,998** | **9,779** | **11,215** | **13,080** | **14,324** | **14,617** | **15,078** |
| Percentage change in total workforce from previous year measured by registration data (%) | - | - | - | - | - | - | 3.5 | 1.5 | 2.0 | 3.2 |
| Short-term registrants[2] | - | - | 165 | 129 | 421 | 54 | 97 | 113 | 103 | 89 |
| Short-term registrants as a percentage of workforce | - | - | 2.4 | 1.6 | 4.3 | 0.5 | 0.7 | 0.8 | 0.7 | 0.6 |
| **Total workforce (based on survey response)** | **4,881** | **5,556** | **6,339** | **7,530** | **8,615** | **8,746** | **11,478** | **12,848** | **13,921** | **14,165** |
| Graduated from: | | | | | | | | | | |
| – New Zealand | 3,266 | 4,095 | 4,480 | 5,024 | 5,645 | 5,459 | 6,766 | 7,457 | 8,287 | 8,439 |
| – overseas | 1,615 | 1,461 | 1,859 | 2,506 | 2,970 | 3,287 | 4,712 | 5,391 | 5,634 | 5,726 |
| % IMGs | 33.1 | 26.3 | 29.3 | 33.3 | 34.5 | 37.6 | 41.1 | 42.0 | 40.5 | 40.4 |
| Average age of workforce | - | - | 42 | 41 | 43 | 44 | 45 | 46 | 45 | 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.

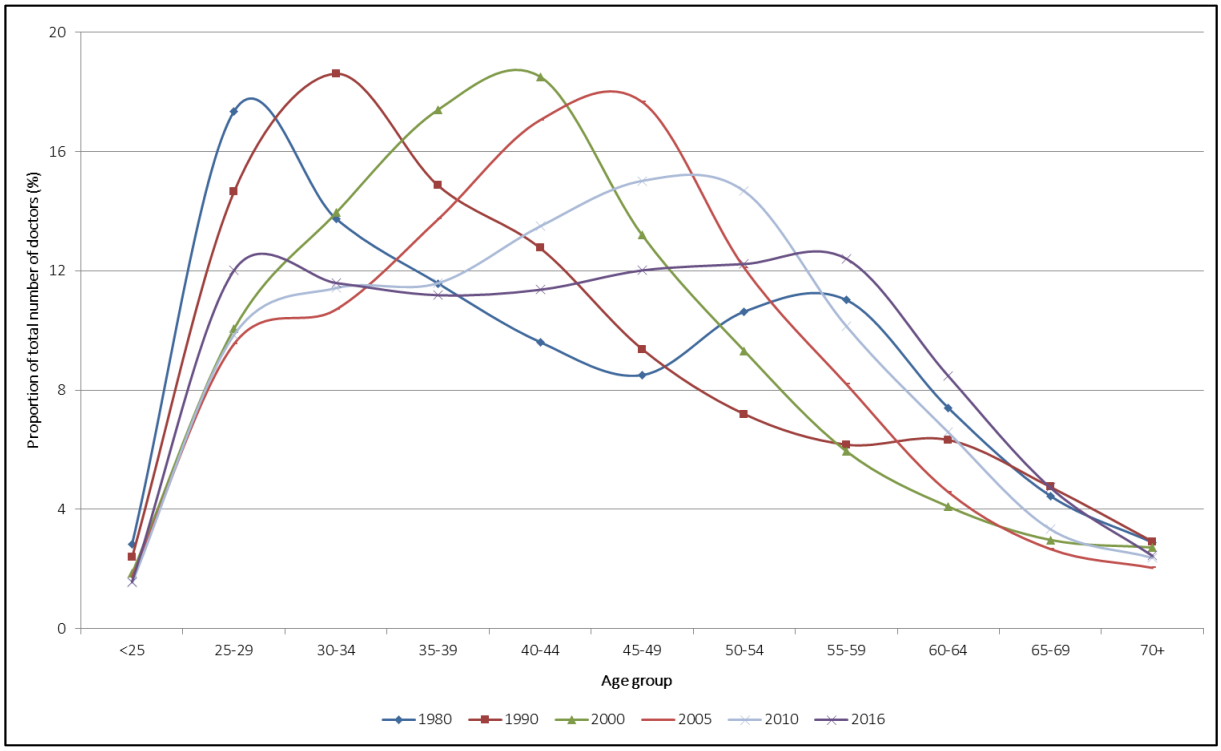
## Age distribution of the workforce

Figure 1 compares the age distribution of the active workforce from 1980 to 2016, focusing on selected series (1980, 1990, 2000, 2005, 2010 and 2016) to aid in comparing the changes over time.

In 2016, the largest group of doctors were those aged 55–59, closely followed by 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 2016 appears more even than in previous years, and the proportion of doctors aged 25–29 has noticeably increased since 2000. As noted in the previous report, this is likely due to the increased numbers of graduates being produced by New Zealand's medical schools in recent years (see Table 25 on page 48).

**Figure 1: Age distribution of the active workforce (1980–2016)**



## Gender distribution of the workforce

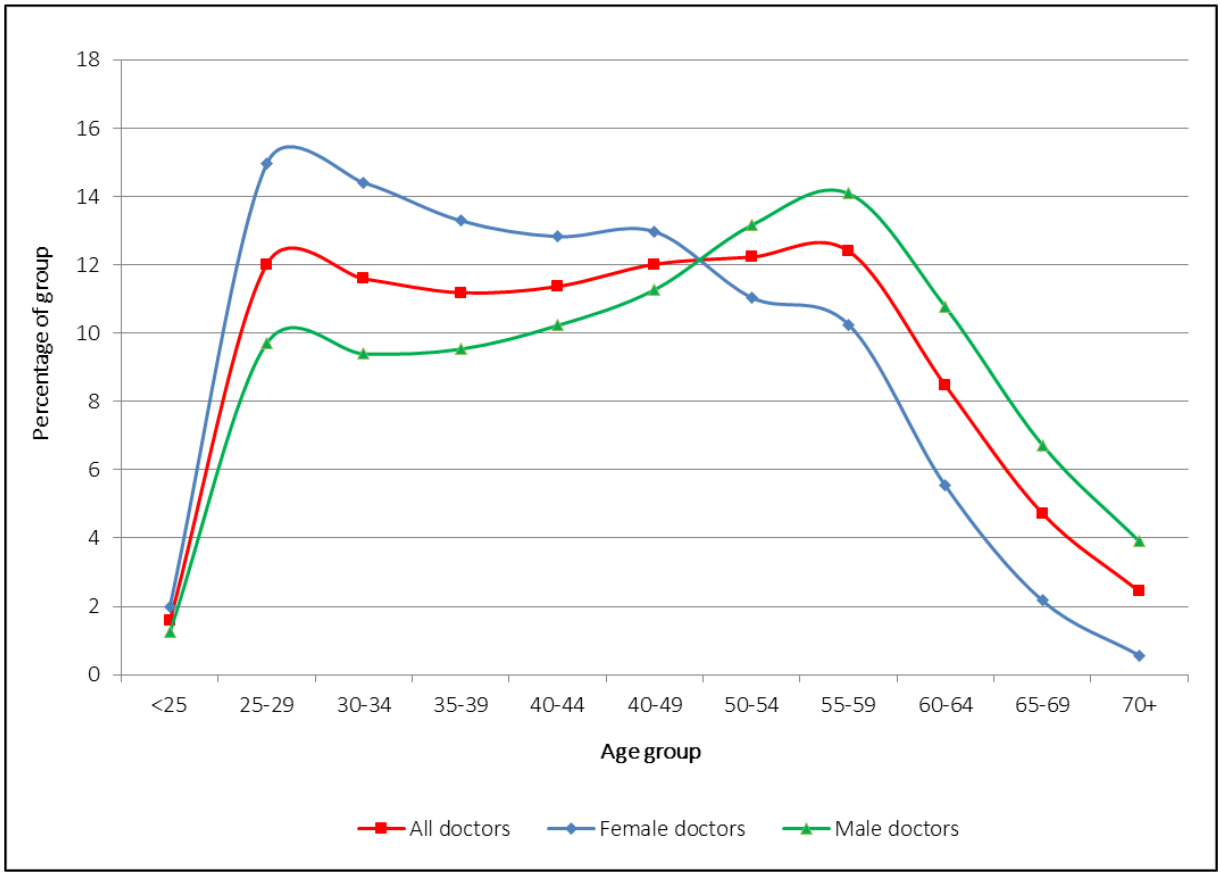
Figure 2 compares the age distribution of males and females in the active workforce.

Female doctors are more likely to be younger than 40 compared with male doctors: 45 percent of females in the workforce are under the age of 40 compared to 30 percent of males. Only 8 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 56 percent of the medical workforce, this gap is decreasing. Females now outnumber males amongst new doctors: 56 percent of house officers and 51 percent of registrars are female (see Table 21 on page 41).

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, specialists and general practitioners are recorded in separate categories to aid analysis and interpretation of the data. Because work role data are self-reported, the work type of general practitioner will include both specialist general practitioners who hold a vocational scope and generally-registered general practitioners. Similarly, not all doctors who report themselves as specialists will necessarily 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.

The categories of general practitioner, medical officer, registrar and specialist all increased between 2015 and 2016. However, the category of house officer decreased by 12 percent after increasing by almost 30 percent the previous year. One possible explanation for this is that Council's new prevocational training requirements for PGY2 interns may mean that doctors in their PGY2 year are unsure of how to report their work role, resulting in these fluctuations.

The other answer category decreased in 2016, which is a positive trend, and the no answer category has dropped to zero, with this survey being the first to be conducted completely electronically. The reallocation of these doctors into valid categories may also be part of the reason for the increases seen in 2015 and 2016.

**Table 2: Changes in the medical workforce**

| | Active doctors[1] | | | | | | | Percentage change 2015–2016 |
|---|---|---|---|---|---|---|---|---|
| **Workforce role[2]** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | |
| General practitioner (GP) | 3,532 | 3,614 | 3,594 | 3,679 | 3,770 | 3,884 | 3,950 | 2.8 |
| House officer | 961 | 1,034 | 1,071 | 1135 | 1171 | 1,516 | 1,333 | -12.1 |
| Medical officer | 526 | 523 | 554 | 511 | 546 | 523 | 602 | 15.1 |
| Primary care other than GP | 164 | 138 | 148 | 150 | 160 | 174 | 146 | -16.1 |
| Registrar | 1,774 | 1,787 | 1,897 | 2,013 | 2,104 | 2,433 | 2,553 | 4.9 |
| Specialist | 3,993 | 4,187 | 4,275 | 4,485 | 4,700 | 5,039 | 5,252 | 4.2 |
| Other | 291 | 247 | 275 | 315 | 282 | 376 | 329 | -12.5 |
| No answer | 237 | 158 | 203 | 318 | 115 | 16 | - | -100.0 |
| **Total** | **11,478** | **11,688** | **12,017** | **12,606** | **12,848** | **13,921** | **14,165** | **1.8** |

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 (2001–2016)**

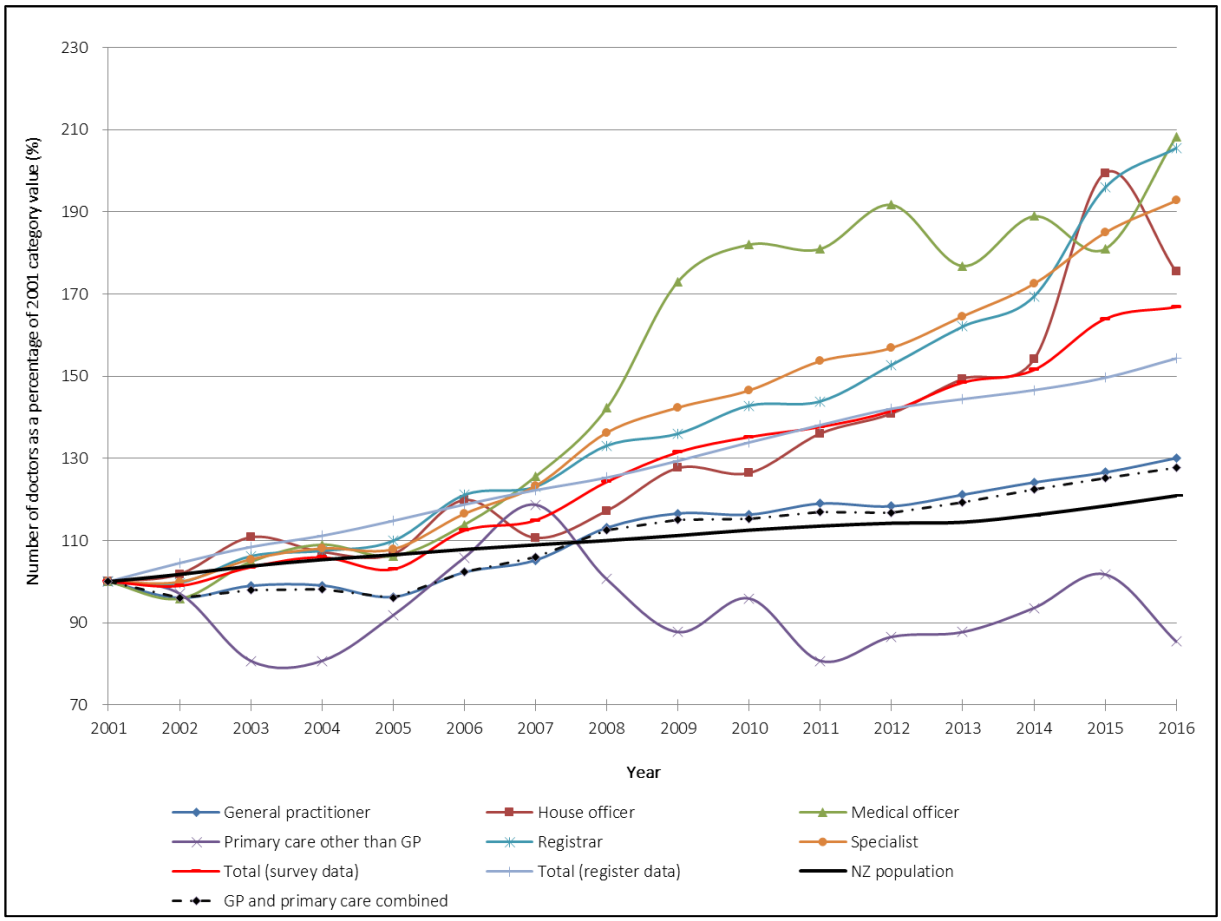



Figure 3 continues to show a gradual increase in most work roles since 2001.

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.

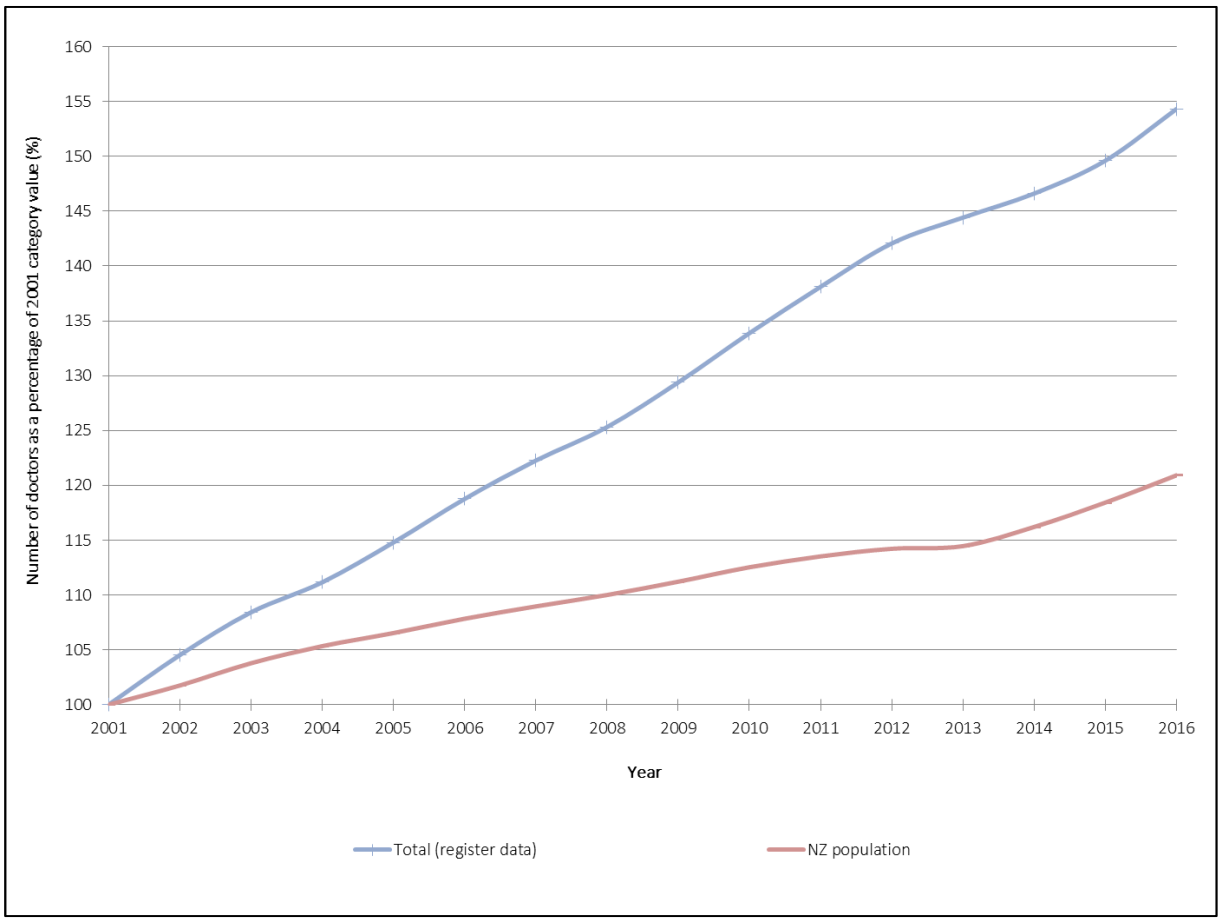
Furthermore, the primary care other than GP category is relatively small numerically compared to most of the other categories and so increases that are small in comparison to the size of the medical workforce appear as large changes on this graph.

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 more gradual 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 (2001–2016)[1]**




1 Change is measured compared to the 2001 value of the series and is represented as a percentage. For example, in 2016, the New Zealand population was 4,692,200, which was 121 percent of its value in 2001 (3,880,500).

## Work type

The changes in work types since 2015 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 2015 | No. of doctors in main work site 2016 | Percentage change 2015 to 2016 | Average hours worked (all sites) | No. in vocational training[2] | Average age 2016 | Vocational scope, current practising certificate, NZ address[3] |
|---|---|---|---|---|---|---|---|
| Accident and medical practice[4] | 123 | 147 | 0.20 | 34.2 | 56 | 44 | 160 |
| Anaesthesia | 928 | 982 | 5.82 | 47.5 | 236 | 45 | 756 |
| Basic medical science | 66 | 82 | 24.24 | 40.6 | 16 | 48 | - |
| Breast medicine | 7 | 0 | -100.00 | | - | - | - |
| Clinical genetics | 11 | 11 | 0.00 | 41.0 | 2 | 46 | 15 |
| Dermatology | 72 | 83 | 15.28 | 38.6 | 2 | 52 | 63 |
| Diagnostic and interventional radiology | 465 | 485 | 4.30 | 44.8 | 80 | 46 | 392 |
| Emergency medicine | 528 | 571 | 8.14 | 42.1 | 196 | 41 | 238 |
| Family planning and reproductive health | 28 | 28 | 0.00 | 25.9 | 8 | 50 | 22 |
| General practice[5] | 3,990 | 4,185 | 4.89 | 36.4 | 695 | 50 | 3,397 |
| Intensive care medicine | 147 | 149 | 1.36 | 52.5 | 47 | 41 | 91 |
| Internal medicine | 1,469 | 1,556 | 5.92 | 48.8 | 235 | 43 | 985 |
| Medical administration | 76 | 65 | -14.47 | 45.3 | 10 | 54 | 26 |
| Musculoskeletal medicine | 23 | 21 | -8.70 | 39.1 | 1 | 60 | 20 |
| Obstetrics and gynaecology | 405 | 427 | 5.43 | 48.3 | 110 | 46 | 283 |
| Occupational medicine | 79 | 70 | -11.39 | 40.6 | 9 | 54 | 56 |
| Ophthalmology | 178 | 189 | 6.18 | 43.6 | 24 | 46 | 133 |
| Paediatrics | 517 | 546 | 5.61 | 46.2 | 103 | 43 | 362 |
| Palliative medicine | 93 | 89 | -4.30 | 35.0 | 14 | 50 | 51 |
| Pathology | 222 | 220 | -0.90 | 42.5 | 35 | 48 | 277 |
| Primary care other than GP | 181 | 104 | -42.54 | 33.2 | 17 | 54 | - |
| Psychiatry | 808 | 829 | 2.60 | 43.0 | 142 | 49 | 547 |
| Public health medicine | 212 | 198 | -6.60 | 37.5 | 15 | 50 | 172 |
| Radiation oncology | 78 | 83 | 6.41 | 48.1 | 18 | 45 | 63 |
| Rehabilitation medicine | 29 | 25 | -13.79 | 45.3 | 4 | 49 | 23 |
| Rural hospital medicine | 60 | 71 | 18.33 | 47.8 | 15 | 45 | 106 |
| Sexual health medicine | 36 | 32 | -11.11 | 28.3 | 5 | 51 | 18 |
| Sports medicine | 35 | 35 | 0.00 | 41.0 | 9 | 44 | 24 |
| Surgery: cardiothoracic | 48 | 50 | 4.17 | 59.4 | 4 | 45 | 28 |
| Surgery: general | 339 | 311 | -8.26 | 55.9 | 63 | 43 | 265 |
| Surgery: neurosurgery | 37 | 45 | 21.62 | 57.3 | 6 | 41 | 22 |
| Surgery: oral and maxillofacial[6] | - | 28 | - | 47.5 | 3 | 46 | 23 |
| Surgery: orthopaedic | 402 | 420 | 4.48 | 55.7 | 57 | 45 | 268 |
| Surgery: other | 87 | 90 | 3.45 | 54.9 | 10 | 43 | - |
| Surgery: otolaryngology | 147 | 146 | -0.68 | 46.7 | 20 | 48 | 107 |
| Surgery: paediatric | 28 | 31 | 10.71 | 63.5 | 4 | 45 | 16 |
| Surgery: plastic | 89 | 108 | 21.35 | 56.2 | 17 | 42 | 62 |
| Surgery: urology | 82 | 80 | -2.44 | 50.5 | 11 | 47 | 62 |
| Surgery: vascular | 51 | 39 | -23.53 | 55.7 | 4 | 45 | 32 |
| Not answered[7] | 30 | - | - | - | - | - | - |
| Other | 165 | 196 | 18.79 | 35.7 | 17 | 50 | 25 |
| **Total** | **12,371** | **12,827** | **3.69** | | **2,322** | | **9,190** |

[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 2016 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 indicate 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).

[6] In previous years, surgery: oral and maxillofacial has been presented as part of surgery: other, but from 2016, this will be presented as its own category.

[7] With the survey now being completed electronically, it is no longer possible to complete the survey without answering each question. Therefore, the not answered category will have no results from 2016 onwards.

The overall number of doctors excluding house officers or those working in house officer rotations increased by 3.7 percent in 2016. Looking at individual categories with more than 50 doctors, there were notable increases in surgery: plastic (24 percent), rural hospital medicine (18 percent) and dermatology (15 percent).

Areas that decreased in 2016 included medical administration (down 14 percent), occupational medicine (down 11 percent) and general surgery (down 8 percent).

The primary care category dropped by 43 percent (from 181 in 2015 to 104 in 2016), but as with the primary care other than GP work role category, this decrease should be viewed in conjunction with the 4.9 percent increase in the general practice category. If these two categories are combined, there is an overall increase of just under 3 percent (from 4,171 to 4,298), which is comparable to the increase in the overall number of doctors excluding house officers or those working in house officer rotations.

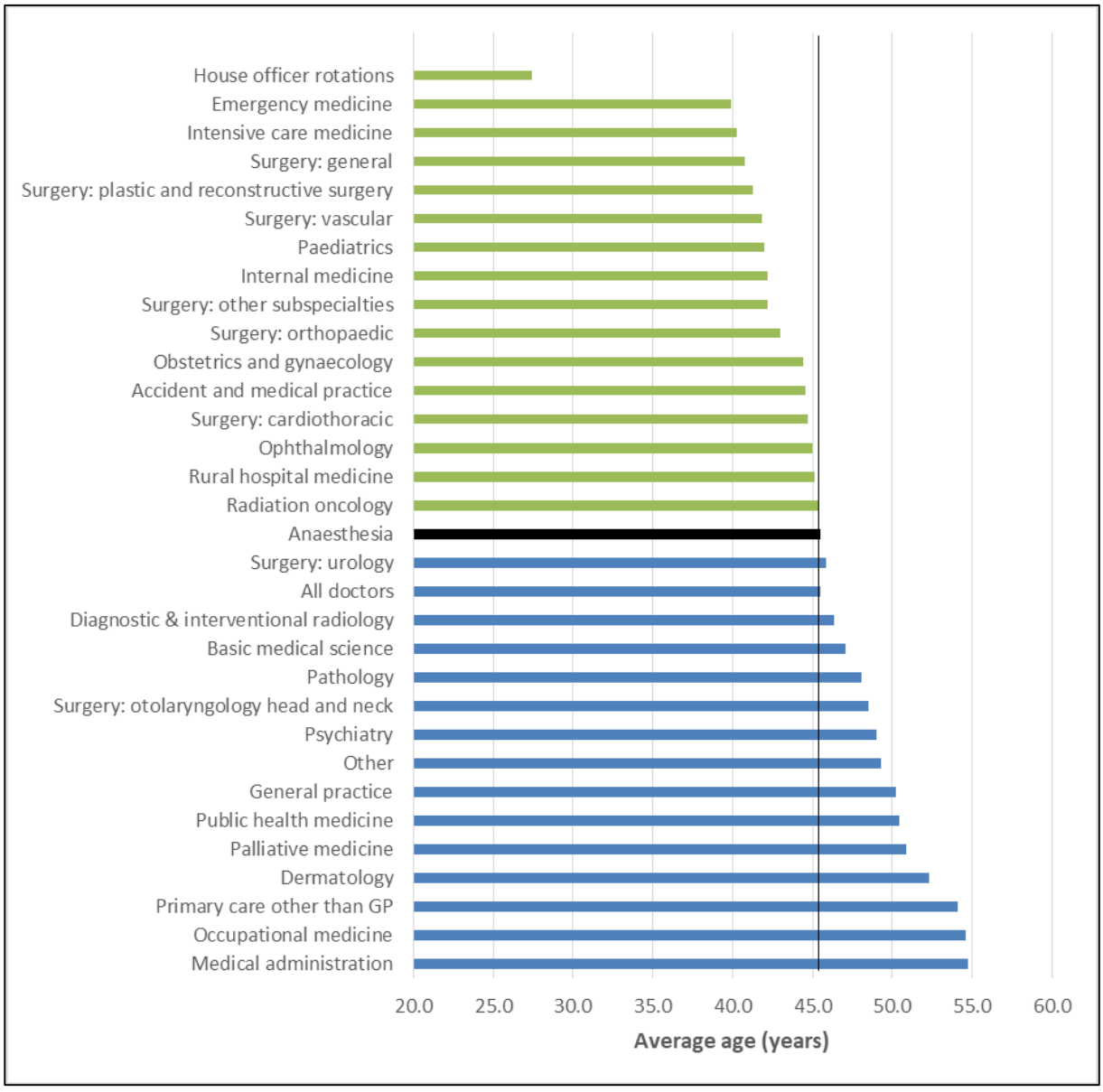
## Work type and age

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 (54.7 years), primary care (54.1 years), dermatology (52.3 years) and palliative medicine (50.9 years).

As expected, the average age was lowest by a significant amount for those in house officer rotations (27.5 years), with the next lowest being emergency medicine (39.9 years), intensive care medicine (40.3 years) and general surgery (40.8 years).

Other work types with an average age around that of the overall average for the workforce (45.5 years) were diagnostic and interventional radiology (46.4 years), surgery: urology (45.9 years) and anaesthesia (45.5 years).

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



## Note regarding internal medicine

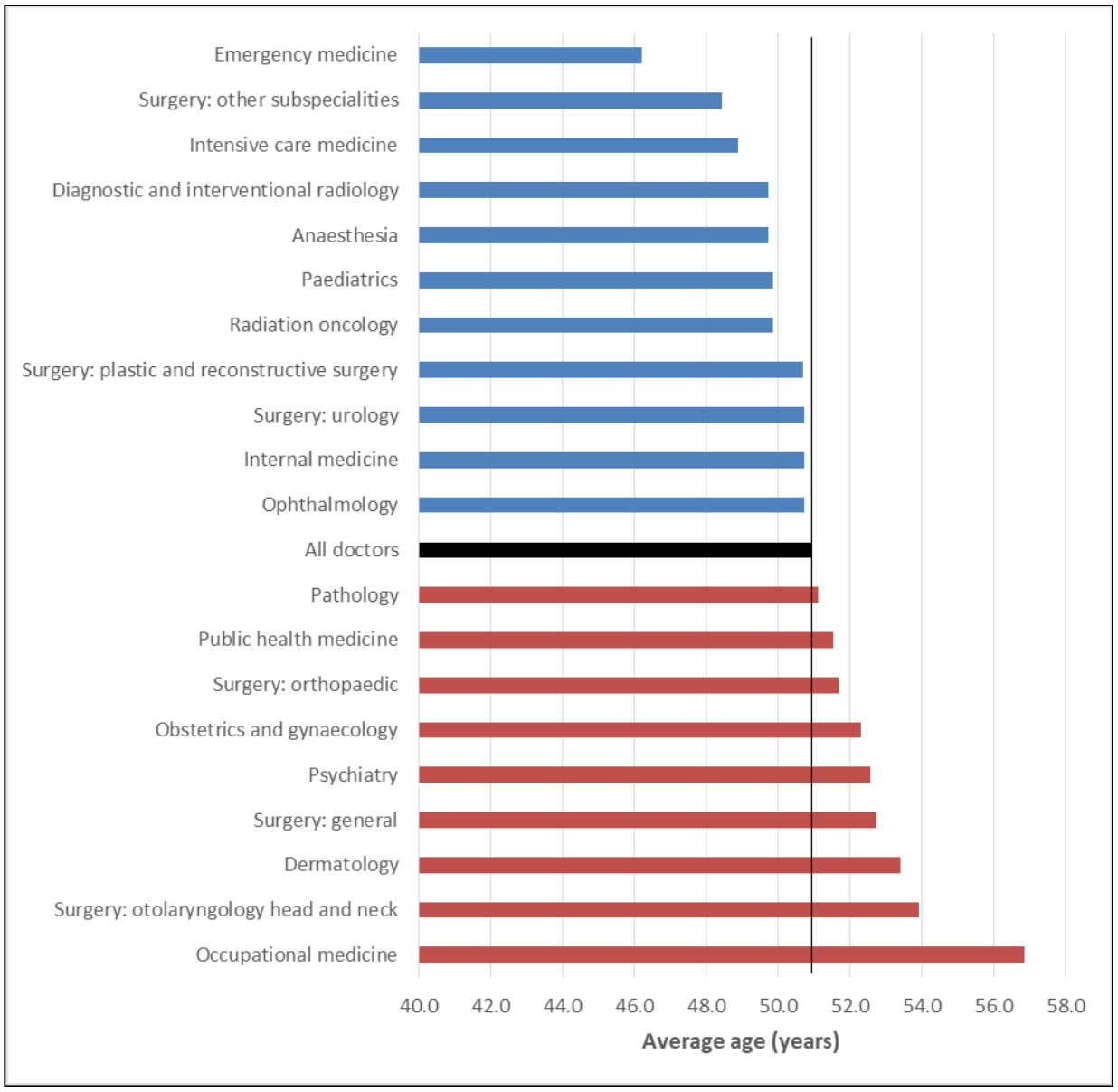
Internal medicine had an average age of 42.2 years. However, this will be in part because of doctors who have reported a work role of house officer and a work type of internal medicine. If the work type of house officer is excluded, the average age for doctors working in internal medicine is 43.9 years, just under the overall average age of the workforce.

## Average age of specialists by work type

Figure 6 looks at the average age of doctors who reported working as specialists.

The average age was highest in occupational medicine (56.9 years), followed by surgery: otolaryngology head and neck (53.9 years) and dermatology (53.4 years). The average age of specialists was lowest in emergency medicine (46.2 years).

**Figure 6: Average age of specialists by work type at main work site**



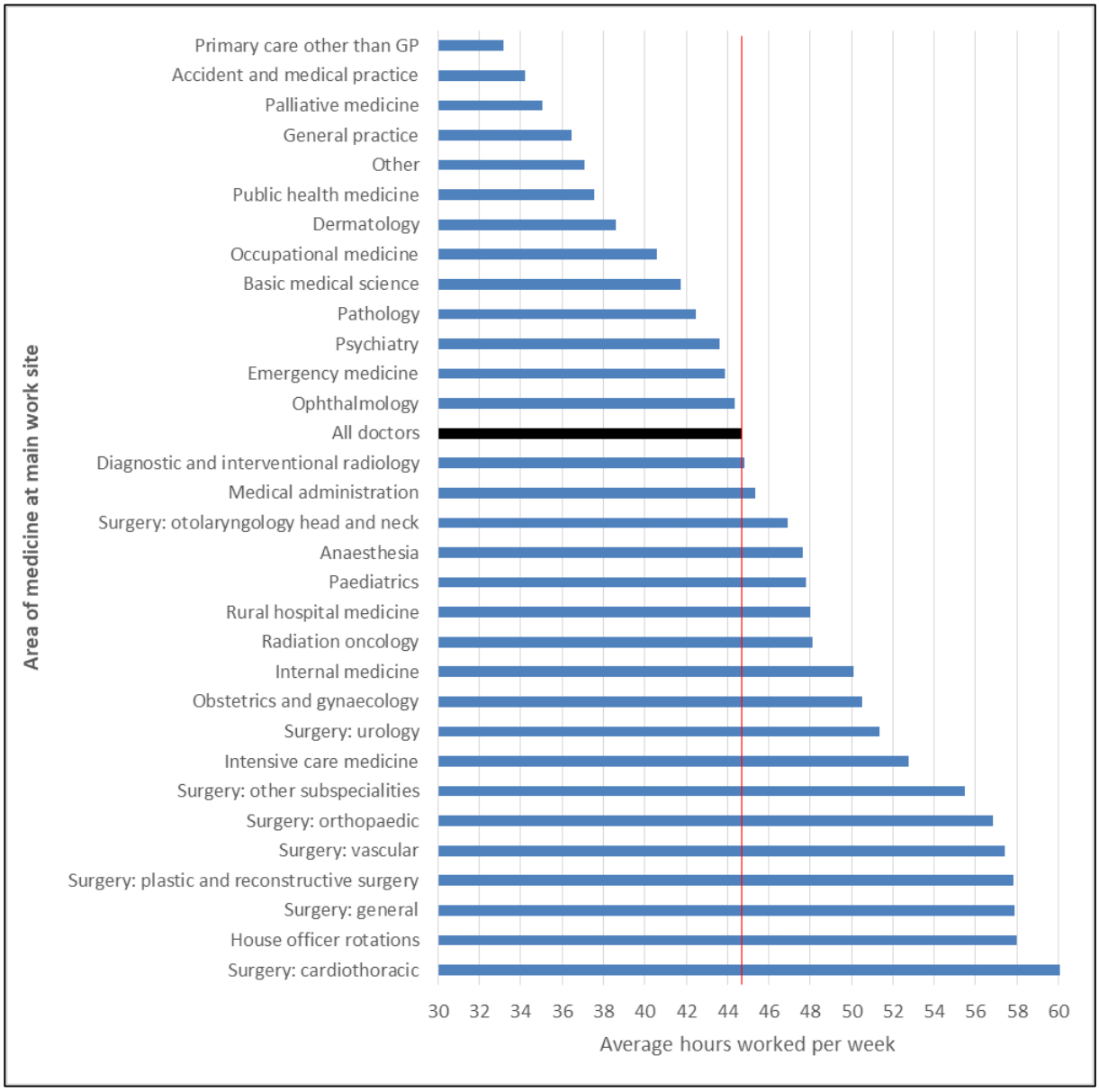
## Work type and hours worked

Figure 7 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 (60.7 hours per week), house officer rotations (57.98 hours), followed by general surgery (57.89 hours) and plastic and reconstructive surgery (57.81 hours).

The average hours worked per week was lowest in primary care (33.2 hours), accident and medical practice (34.2 hours) and palliative medicine (35.0 hours).

Areas with average hours worked around the overall average (44.7 hours) were ophthalmology (44.3 hours) and diagnostic and interventional radiology (44.8 hours).

**Figure 7: Average hours worked by work type (areas with more than 50 doctors)**



# Workloads

## Hours worked by work role

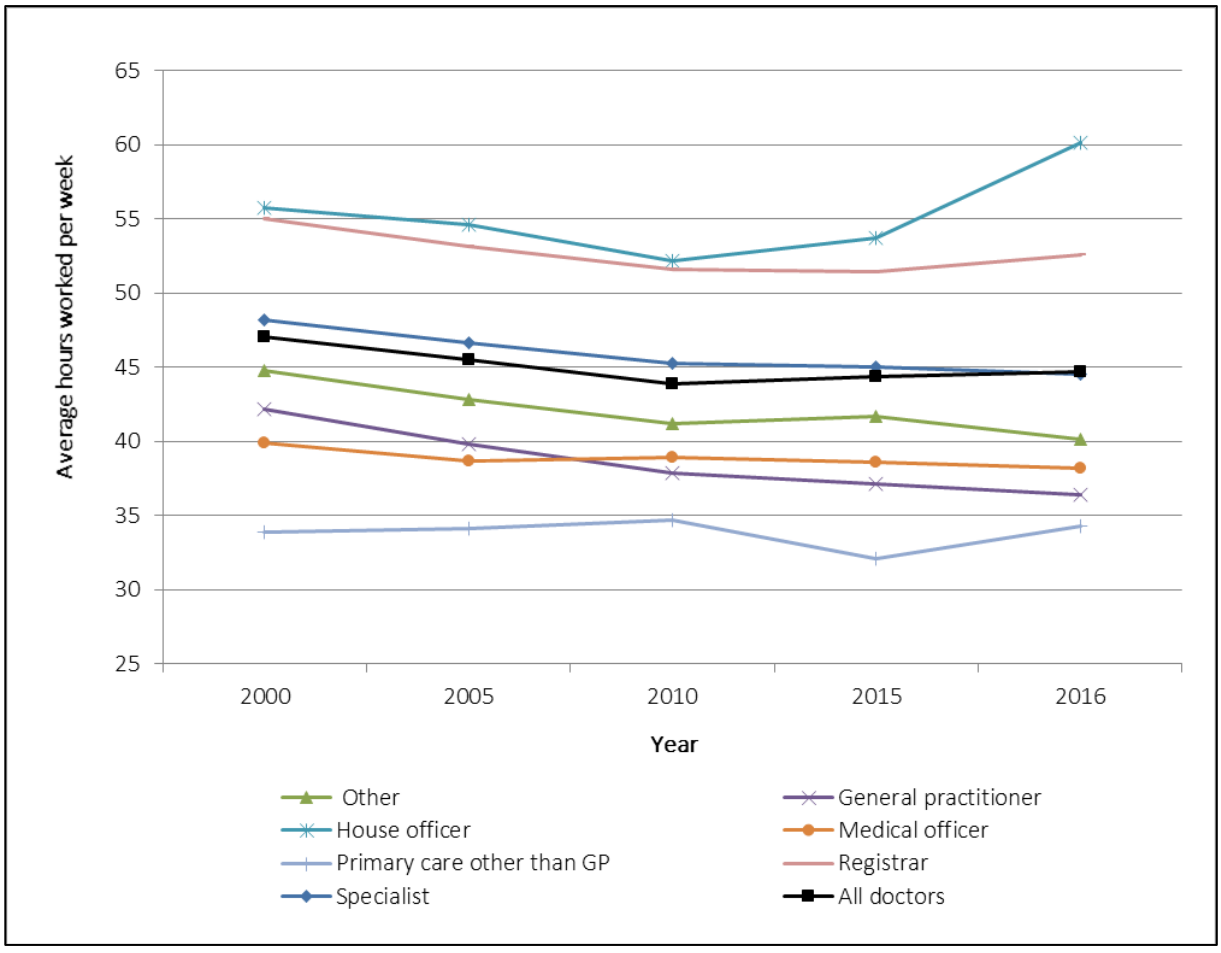
Figure 8 shows the changes over time in the average number of hours worked each week, by work role, at the doctor's main work site.

Overall, the average number of hours doctors have reported working had been decreasing since 2000 but increased in 2015 to 44.4 hours and increased again in 2016 to 44.7 hours.

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

Average hours worked by specialists and GPs have continued to decrease over time, with GPs down to 37.1 hours (from 42.1 in 2000) and specialists down to 44.5 hours (from 48.1 in 2000).

**Figure 8: 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 44.7 per week in 2016. Table 4 shows that doctors aged in their 20s worked the most hours each week on average.

Figure 9 shows average hours worked by gender. Females work a similar number of hours to males during their early 20s. This used to be also true for doctors aged 25–29, but for the first time in 2016, females in this age group reported working more hours than male doctors (58.0 hours versus 56.4 hours).

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 continues to remain 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 | 58.1 | 58.0 | 46.5 | 39.0 | 36.6 | 35.5 | 36.6 | 36.9 | 36.8 | 34.8 | 30.5 | 41.8 |
| Male | 59.2 | 56.4 | 52.4 | 47.7 | 47.2 | 47.1 | 46.0 | 46.4 | 43.7 | 39.5 | 31.0 | 47.0 |
| **All doctors** | **58.6** | **57.2** | **49.2** | **43.1** | **41.9** | **41.6** | **42.3** | **42.9** | **41.8** | **38.6** | **30.9** | **44.7** |

**Figure 9: Average hours worked each week and headcount, by gender**

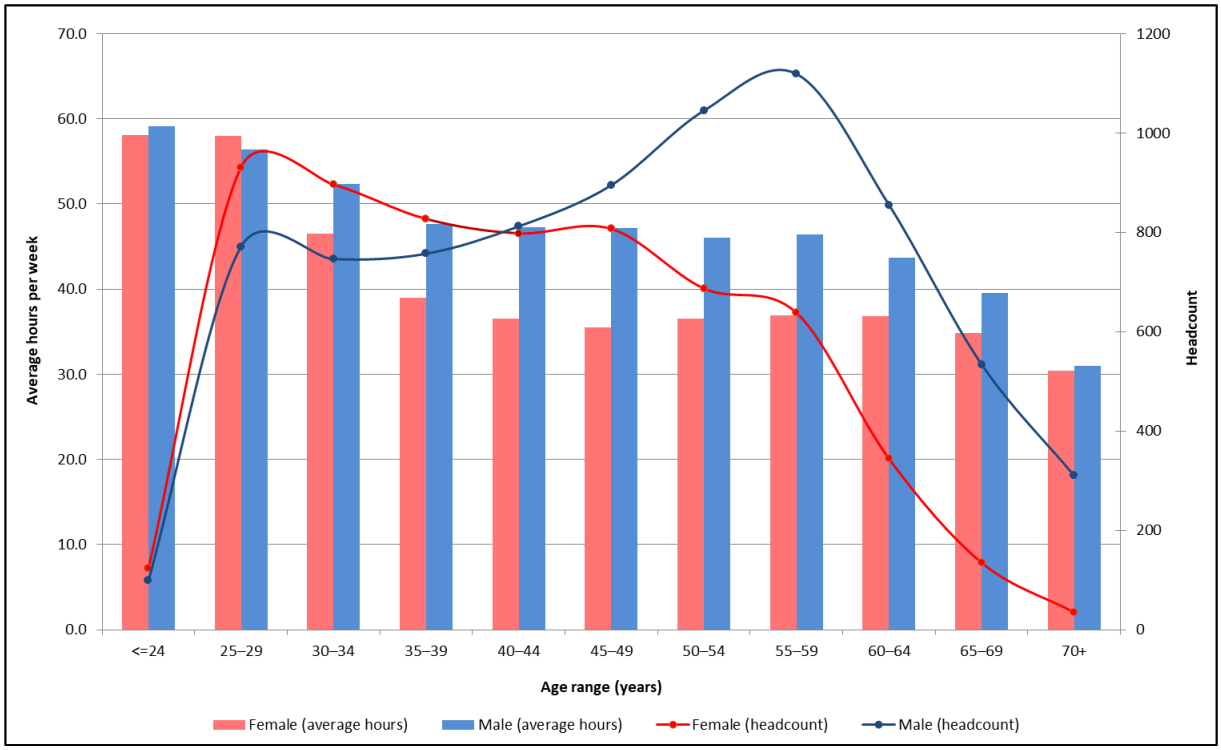


Table 5 shows that the average number of hours worked per week for females increased in 2016 to 41.8. The average number of hours worked per week for males also increased in 2016, albeit by a smaller amount to 47.0.

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 (2005–2016)**

| Gender | Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| Female | 40.6 | 40.9 | 40 | 40.3 | 39.9 | 39.8 | 39.8 | 40.3 | 40.0 | 40.1 | 41.2 | 41.8 |
| Male | 48.3 | 47.9 | 47.7 | 47.4 | 46.9 | 46.6 | 46.4 | 46.4 | 46.3 | 46.1 | 46.8 | 47.0 |
| **All doctors** | **45.5** | **45.3** | **44.8** | **44.7** | **44.2** | **43.9** | **43.7** | **43.9** | **43.7** | **43.6** | **44.4** | **44.7** |

## 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 measures 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 over 80 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 over 37 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 | 75.0 | 77.4 | 95.0 | 83.8 | 72.8 | 43.7 | 81.5 |
| 1–4 | 7.1 | 3.4 | 0.5 | 1.8 | 3.0 | 6.6 | 2.1 |
| 5–9 | 4.9 | 4.1 | 1.8 | 4.0 | 3.8 | 12.4 | 4.3 |
| 10–19 | 5.6 | 4.1 | 2.2 | 5.9 | 9.3 | 19.5 | 4.3 |
| 20–49 | 4.8 | 8.2 | 0.4 | 4.0 | 8.5 | 14.2 | 4.3 |
| 50 and over | 2.6 | 2.7 | 0.1 | 0.5 | 2.7 | 3.6 | 3.6 |
| **Total**[1] | **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 (61.9), followed by specialists (60.9) and then registrars (60.6).

House officers were least likely to be on call, with only 5 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**

| | Measure | | | |
|---|---|---|---|---|
| **Work role** | **Average hours worked** | **Average hours on call** | **Average total hours (worked and on-call hours combined)** | **Proportion of doctors on call** |
| General practitioner | 36.4 | 12.4 | 48.8 | 25.0 |
| Primary care other than GP | 34.3 | 13.0 | 47.3 | 22.6 |
| House officer | 60.1 | 1.8 | 61.9 | 5.0 |
| Registrar | 52.6 | 8.0 | 60.6 | 16.2 |
| Medical officer | 38.2 | 16.4 | 54.6 | 27.2 |
| Specialist | 44.5 | 16.4 | 60.9 | 56.3 |
| Other | 40.1 | 13.7 | 53.8 | 18.5 |

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 – 86 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 under 41 percent worked in public hospitals.

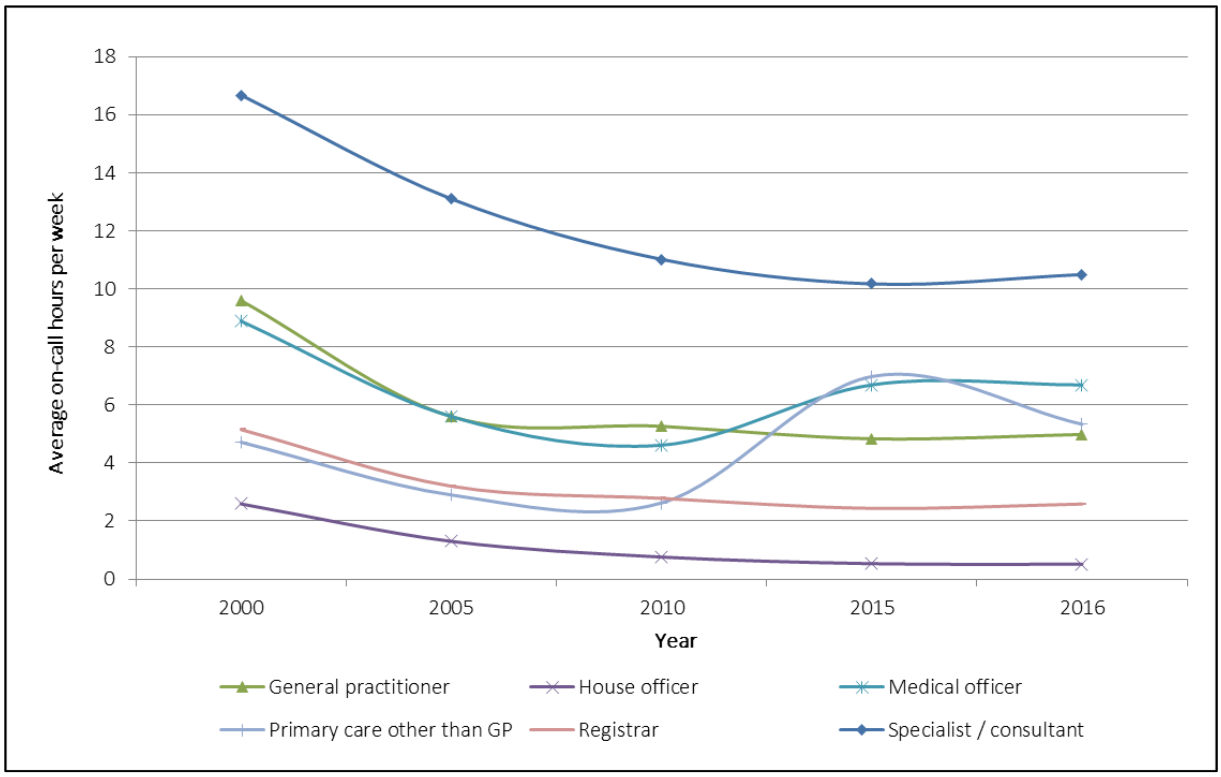
**Table 8: Proportion of doctors on call for 10 or more hours each week, by employer**

| **Main employer** | **Specialist** | **Other work roles** | **Total** |
|---|---|---|---|
| Commercial company | 1.2 | 2.6 | 1.7 |
| Government department/agency | 2.6 | 2.7 | 2.6 |
| Professional body | 0.0 | 0.3 | 0.1 |
| Group private practice | 4.4 | 43.0 | 17.1 |
| Private hospital | 2.3 | 1.4 | 2.0 |
| Public hospital | 86.0 | 40.9 | 71.1 |
| Solo private practice | 2.8 | 7.7 | 4.4 |
| University/polytechnic | 0.7 | 1.4 | 0.9 |
| Other | 2.0 | 5.7 | 3.2 |
| **Total**[1] | **100.0** | **100.0** | **100.0** |

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

Figure 10 shows the average weekly on-call hours, by work role at main work site, at 5-yearly intervals back to 2000.

**Figure 10: 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.

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 caution is used 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.

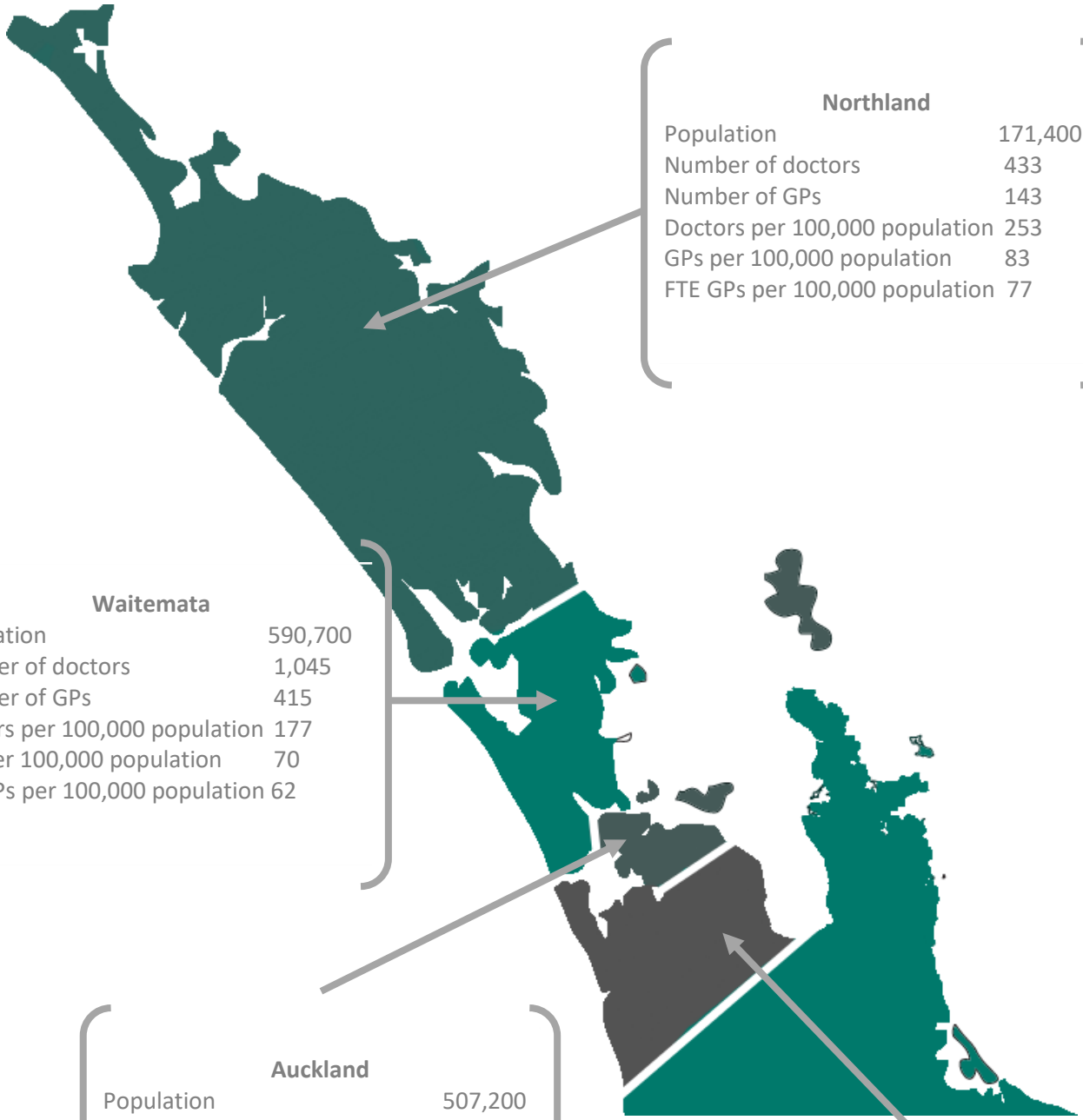
Auckland combined into a single TLA region – the Auckland 'Super City' – in November 2010. In the years that followed, we continued to report the separate regions from before the merger to allow comparison with previous years. Unfortunately, because this has now become unmanageable, from 2015 onwards, 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 2016. 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 68.

Population figures presented here for each DHB are based on Statistics New Zealand's estimated residential population as at 30 June 2016.

## Northern/Auckland region



**Northland**

| | |
|---|---|
| Population | 171,400 |
| Number of doctors | 433 |
| Number of GPs | 143 |
| Doctors per 100,000 population | 253 |
| GPs per 100,000 population | 83 |
| FTE GPs per 100,000 population | 77 |

**Waitemata**

| | |
|---|---|
| Population | 590,700 |
| Number of doctors | 1,045 |
| Number of GPs | 415 |
| Doctors per 100,000 population | 177 |
| GPs per 100,000 population | 70 |
| FTE GPs per 100,000 population | 62 |

**Auckland**

| | |
|---|---|
| Population | 507,200 |
| Number of doctors | 3,102 |
| Number of GPs | 502 |
| Doctors per 100,000 population | 612 |
| GPs per 100,000 population | 99 |
| FTE GPs per 100,000 population | 86 |

**Counties Manukau**

| | |
|---|---|
| Population | 534,200 |
| Number of doctors | 868 |
| Number of GPs | 346 |
| Doctors per 100,000 population | 162 |
| GPs per 100,000 population | 65 |
| FTE GPs per 100,000 population | 63 |

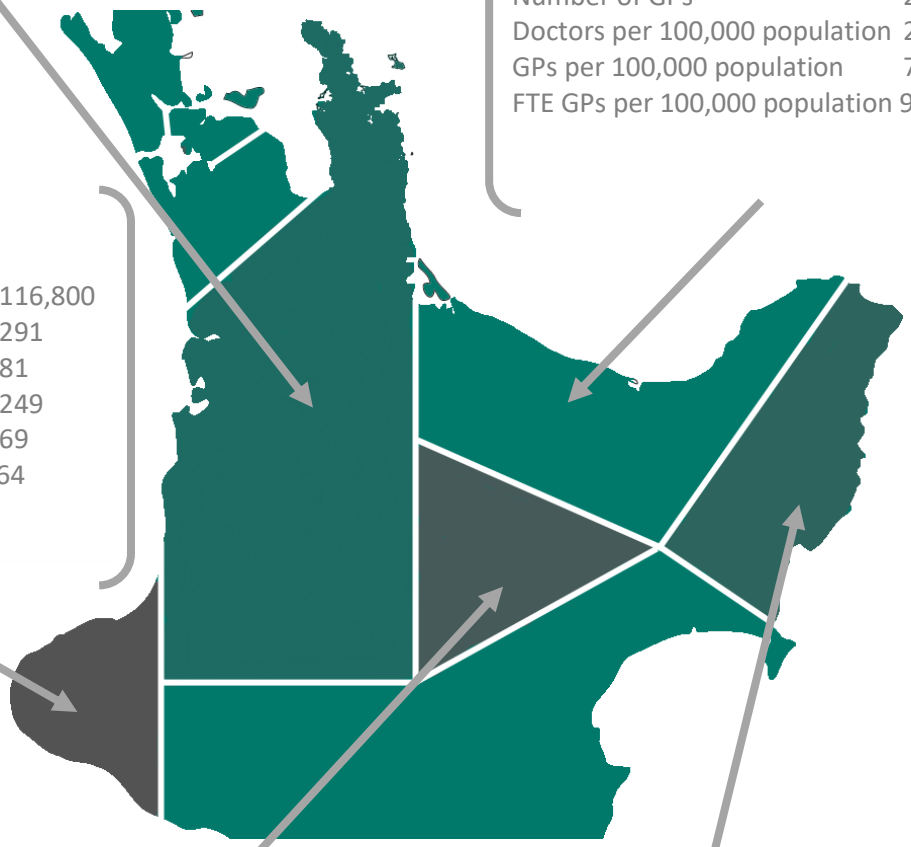
## Central North Island

**Waikato**

| | |
|---|---|
| Population | 399,500 |
| Number of doctors | 1,170 |
| Number of GPs | 316 |
| Doctors per 100,000 population | 293 |
| GPs per 100,000 population | 79 |
| FTE GPs per 100,000 population | 73 |

**Bay of Plenty**

| | |
|---|---|
| Population | 226,700 |
| Number of doctors | 663 |
| Number of GPs | 220 |
| Doctors per 100,000 population | 292 |
| GPs per 100,000 population | 79 |
| FTE GPs per 100,000 population | 97 |



**Taranaki**

| | |
|---|---|
| Population | 116,800 |
| Number of doctors | 291 |
| Number of GPs | 81 |
| Doctors per 100,000 population | 249 |
| GPs per 100,000 population | 69 |
| FTE GPs per 100,000 population | 64 |

**Lakes**

| | |
|---|---|
| Population | 106,600 |
| Number of doctors | 275 |
| Number of GPs | 93 |
| Doctors per 100,000 population | 258 |
| GPs per 100,000 population | 87 |
| FTE GPs per 100,000 population | 77 |

**Tairawhiti**

| | |
|---|---|
| Population | 47,800 |
| Number of doctors | 128 |
| Number of GPs | 36 |
| Doctors per 100,000 population | 268 |
| GPs per 100,000 population | 75 |
| FTE GPs per 100,000 population | 68 |

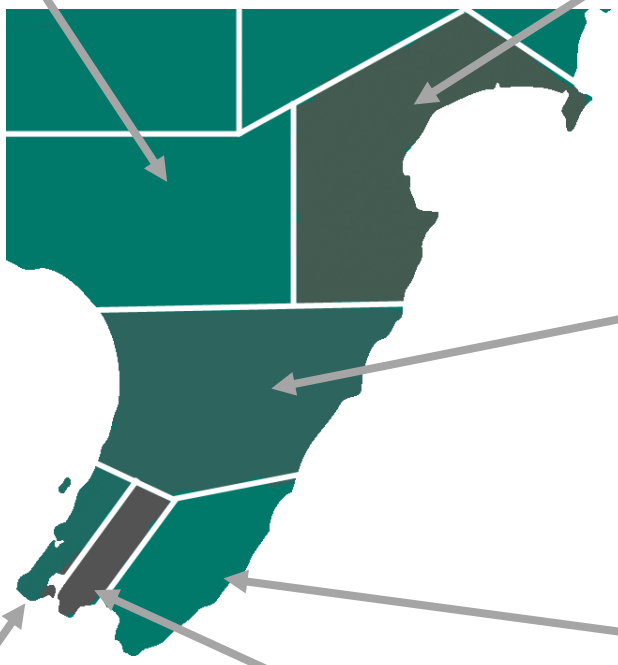
## Lower North Island

**Whanganui**

| | |
|---|---|
| Population | 63,000 |
| Number of doctors | 143 |
| Number of GPs | 48 |
| Doctors per 100,000 population | 227 |
| GPs per 100,000 population | 76 |
| FTE GPs per 100,000 population | 82 |

**Hawke's Bay**

| | |
|---|---|
| Population | 161,400 |
| Number of doctors | 446 |
| Number of GPs | 155 |
| Doctors per 100,000 population | 276 |
| GPs per 100,000 population | 96 |
| FTE GPs per 100,000 population | 90 |



**MidCentral**

| | |
|---|---|
| Population | 174,200 |
| Number of doctors | 455 |
| Number of GPs | 103 |
| Doctors per 100,000 population | 261 |
| GPs per 100,000 population | 59 |
| FTE GPs per 100,000 population | 60 |

**Wairarapa**

| | |
|---|---|
| Population | 43,600 |
| Number of doctors | 74 |
| Number of GPs | 35 |
| Doctors per 100,000 population | 170 |
| GPs per 100,000 population | 80 |
| FTE GPs per 100,000 population | 74 |

**Capital & Coast**

| | |
|---|---|
| Population | 306,600 |
| Number of doctors | 1,401 |
| Number of GPs | 329 |
| Doctors per 100,000 population | 457 |
| GPs per 100,000 population | 107 |
| FTE GPs per 100,000 population | 91 |

**Hutt**

| | |
|---|---|
| Population | 145,900 |
| Number of doctors | 280 |
| Number of GPs | 108 |
| Doctors per 100,000 population | 192 |
| GPs per 100,000 population | 74 |
| FTE GPs per 100,000 population | 64 |

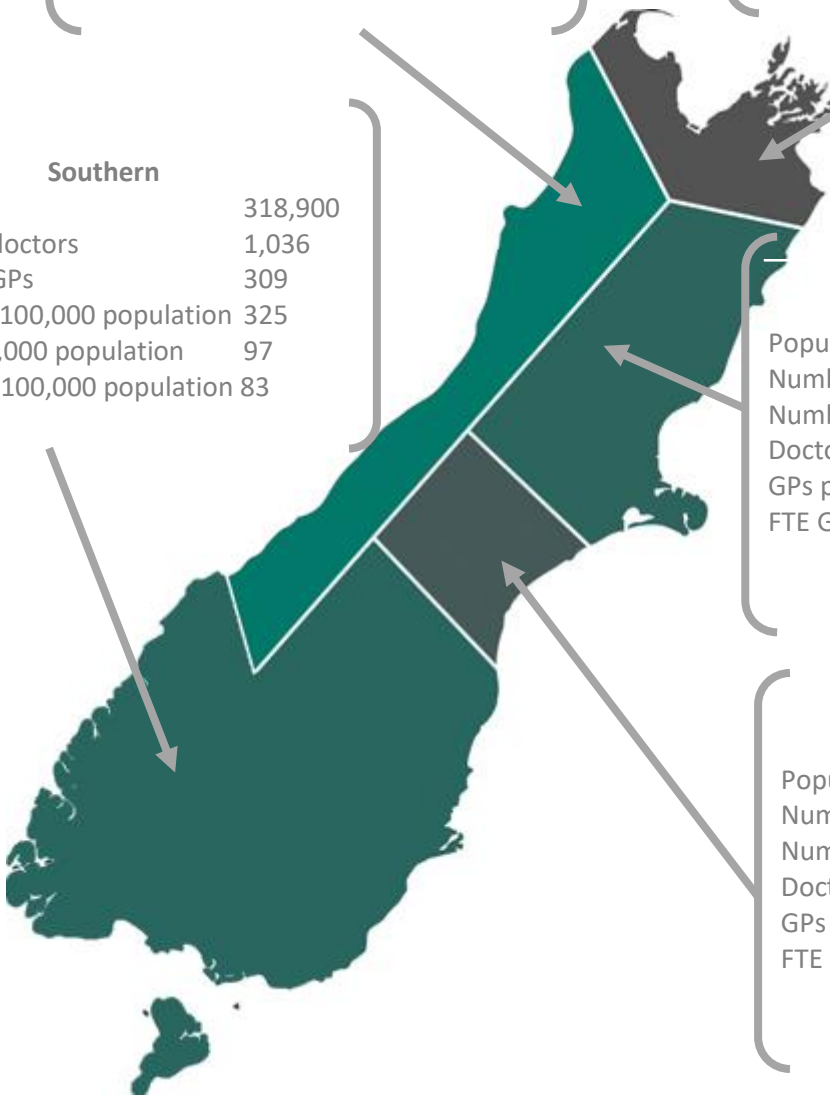
## South Island

**West Coast**

| | |
|---|---|
| Population | 32,500 |
| Number of doctors | 55 |
| Number of GPs | 19 |
| Doctors per 100,000 population | 169 |
| GPs per 100,000 population | 58 |
| FTE GPs per 100,000 population | 64 |

**Nelson/Marlborough**

| | |
|---|---|
| Population | 146,400 |
| Number of doctors | 402 |
| Number of GPs | 160 |
| Doctors per 100,000 population | 275 |
| GPs per 100,000 population | 109 |
| FTE GPs per 100,000 population | 89 |



**Southern**

| | |
|---|---|
| Population | 318,900 |
| Number of doctors | 1,036 |
| Number of GPs | 309 |
| Doctors per 100,000 population | 325 |
| GPs per 100,000 population | 97 |
| FTE GPs per 100,000 population | 83 |

**Canterbury**

| | |
|---|---|
| Population | 539,600 |
| Number of doctors | 1,774 |
| Number of GPs | 490 |
| Doctors per 100,000 population | 329 |
| GPs per 100,000 population | 91 |
| FTE GPs per 100,000 population | 78 |

**South Canterbury**

| | |
|---|---|
| Population | 59,200 |
| Number of doctors | 124 |
| Number of GPs | 42 |
| Doctors per 100,000 population | 206 |
| GPs per 100,000 population | 71 |
| FTE GPs per 100,000 population | 77 |

## 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 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 $km^2$).

As an example, Wellington City, an urban area, is listed as having an area of 290 $km^2$ and a population of 207,900, giving it an average population density of 717 people per square kilometre. South Wairarapa District, generally considered a rural area, is listed as having an area of 2,387 $km^2$ and a population of 10,100, 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 (all doctors)**

| 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] | 10,675 | 1,852 | 1,638 |
| Total GPs[2] | 2,687 | 579 | 826 |
| Population[3] | 2,904,900 | 648,700 | 1,138,620 |
| Doctors per 100,000 population | 367.5 | 285.5 | 143.9 |
| GPs per 100,000 population | 92.5 | 89.3 | 72.5 |
| Average hours worked | 45.2 | 43.9 | 42.4 |
| Average hours worked by GPs | 33.7 | 33.1 | 37.2 |
| Average on-call hours | 5.6 | 7.7 | 8.9 |
| Average age | 44.9 | 45.8 | 48.6 |
| Proportion of female doctors (%) | 44.7 | 43.0 | 39.7 |
| Proportion of IMGs (%) | 37.5 | 44.0 | 55.3 |

1 Represents all active doctors who responded to the survey.

2 Represents active doctors who reported working as a GP 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 2016.

[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 367.5 doctors per 100,000 population, slightly higher than secondary urban areas (285.5 doctors per 100,000 population), with both significantly higher than rural areas (143.9 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 (89.3), with rural areas significantly lower (72.5).

## Combined Auckland region

With Auckland being presented as a combined region for the first time in the previous report, we have also continued to look at this region by itself. As expected, the combined region is categorised as a main urban area with its population of 1,614,400 and land area of 4,938 $km^2$, giving it a population density of 327 people per square kilometre.

Presented as a combined region, Auckland represents over a third of New Zealand's population and has 35.4 percent of all doctors and 32.0 percent of all GPs. Compared with other main urban areas, it has a slightly lower concentration of doctors and GPs (310.6 doctors and 81.2 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 (all doctors)**

| Workforce measure | Auckland City |
|---|---|
| Total doctors[1] | 5,015 |
| Total GPs[2] | 1,311 |
| Population[3] | 1,614,400 |
| Doctors per 100,000 population | 310.6 |
| GPs per 100,000 population | 81.2 |
| Average hours worked | 45.5 |
| Average hours worked by GPs | 34.6 |
| Average on-call hours | 5.0 |
| Average age | 45.6 |
| Proportion of female doctors (%) | 45.6 |
| Proportion of IMGs (%) | 35.1 |

1 Represents all active doctors who responded to the survey.

2 Represents active doctors who reported working as a GP 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 2016.

## 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 8.9 hours per week compared with 5.6 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 48.6 years in rural areas compared with 44.9 years in main urban areas.

One reason for this is likely to be that most house officers, who tend to be on average much younger, will work in training centres in urban areas. Table 11 compares the average age of doctors by work role and population density group, focusing on GPs, registrars and specialists.

**Table 11: Average age by work role and population density group**

| Workforce measure | Population density | | |
|---|---|---|---|
| | Main urban 100+ people per $km^2$ | Secondary urban 21–99 people per $km^2$ | Rural 0–20 people per $km^2$ |
| Average age (GPs)[1] | 51.3 | 51.4 | 51.7 |
| Average age (registrars)[1] | 33.0 | 33.5 | 33.5 |
| Average age (specialists)[1] | 50.6 | 51.8 | 53.3 |

[1] Based on work role at main employer.

Table 11 shows that the average age of GPs is actually very similar across the population density groups – 51.3 years in urban areas compared with 51.7 years in rural areas.

The same is true for registrars, where the average age is 33.0 years in urban areas and only slightly more in rural areas (33.5 years).

However, specialists in urban areas are, on average, younger than those in rural areas – 50.6 years in urban areas compared with 53.3 years in rural areas.

## Distribution by age group

Figure 11 shows the distribution of doctors by age group and population density group.

Figure 11 and Table 12 highlight that a large proportion of doctors working in rural areas are aged 45–64. The total proportion of doctors aged over 45 was 63.9 percent compared with 50.4 percent in urban areas.

Only 25 percent of doctors in rural areas were aged 39 and under compared with 37 percent of doctors in urban areas and 32.3 percent in secondary urban areas. As noted earlier in this section, this reflects that younger doctors will be working in training centres in urban areas and not yet available to work in more rural areas.

**Figure 11: Distribution of doctors by age group and population density of area**

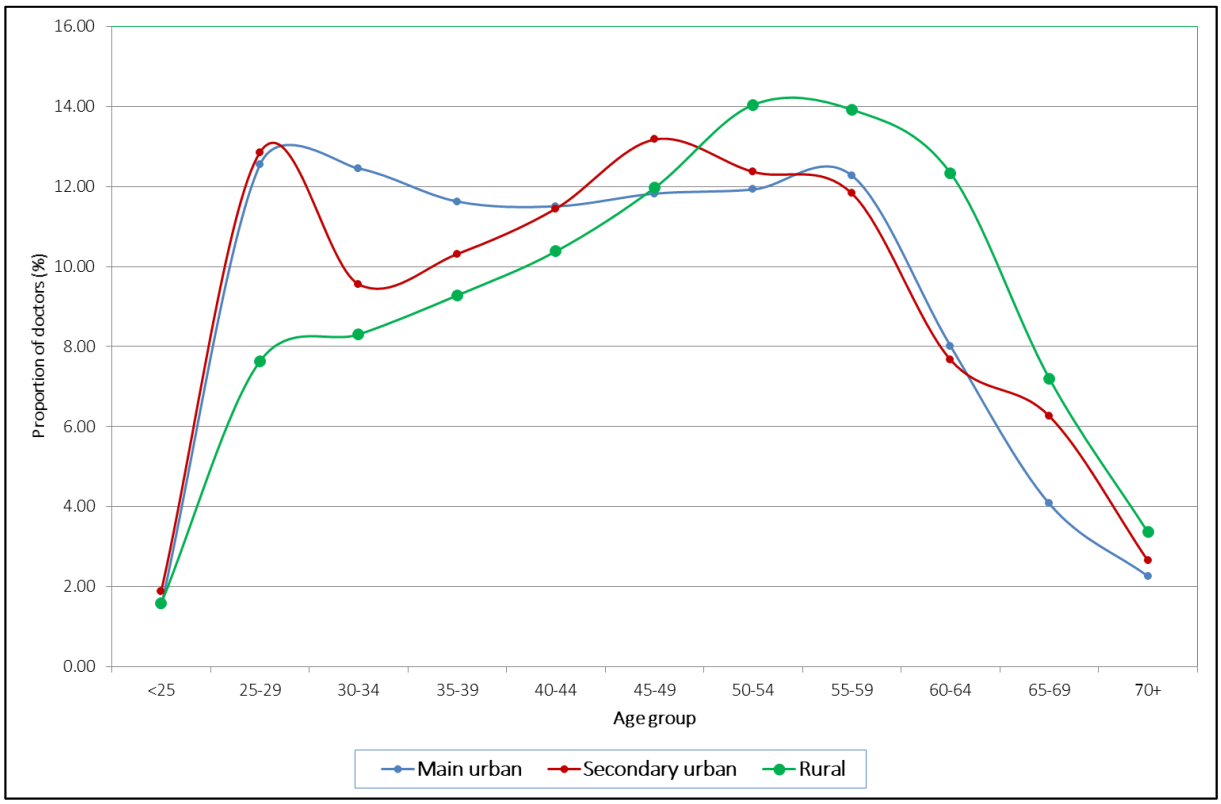


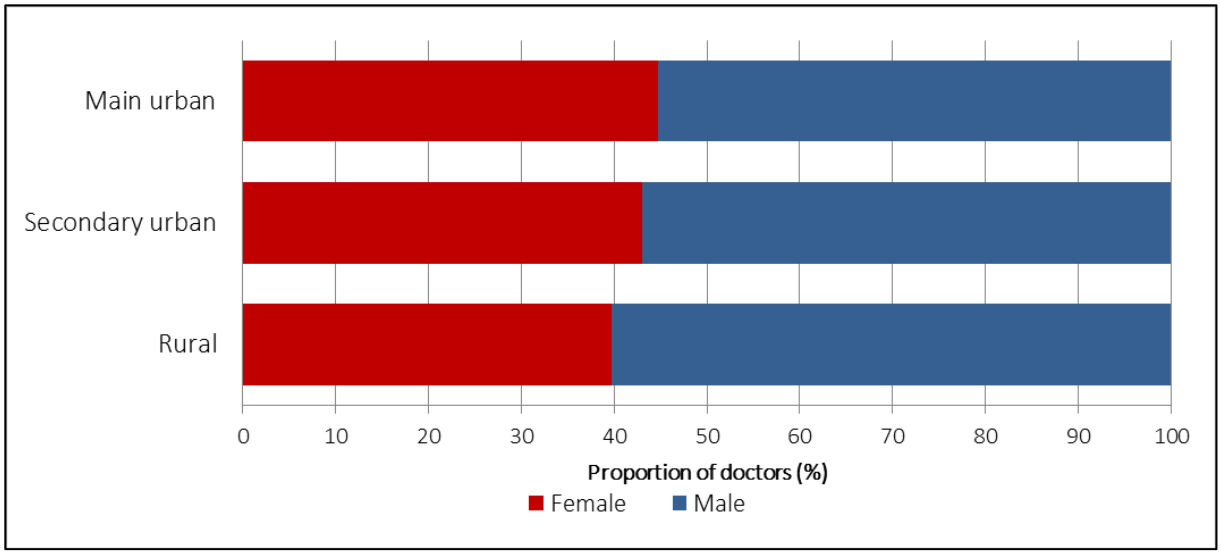
**Table 12: Doctors by population density and age group**

| Age group | Population density | | | | | |
|---|---|---|---|---|---|---|
| | Main urban 100+ people per km² | | Secondary urban 21–99 people per km² | | Rural 0–20 people per km² | |
| | Doctors | Average hours | Doctors | Average hours | Doctors | Average hours |
| <25 | 162 | 55.7 | 35 | 53.6 | 26 | 55.6 |
| 25–29 | 1,339 | 53.4 | 238 | 51.5 | 125 | 51.0 |
| 30–34 | 1,329 | 47.8 | 177 | 45.1 | 136 | 43.3 |
| 35–39 | 1,241 | 43.6 | 191 | 41.3 | 152 | 41.3 |
| 40–44 | 1,228 | 41.3 | 212 | 40.6 | 170 | 40.6 |
| 45–49 | 1,262 | 42.8 | 244 | 40.9 | 196 | 40.4 |
| 50–54 | 1,273 | 43.1 | 229 | 42.6 | 230 | 44.3 |
| 55–59 | 1,310 | 43.8 | 219 | 43.9 | 228 | 42.8 |
| 60–64 | 855 | 42.7 | 142 | 43.3 | 202 | 42.0 |
| 65–69 | 435 | 36.4 | 116 | 40.2 | 118 | 35.6 |
| 70+ | 241 | 27.8 | 49 | 29.5 | 55 | 31.8 |
| **Total** | **10,675** | **45.2** | **1,852** | **43.9** | **1,638** | **42.4** |

## Gender

Figure 12 shows there is a higher proportion of female doctors in urban areas compared with rural areas – 44.7 percent of doctors in main urban areas are female compared with 39.7 percent of doctors in rural areas.

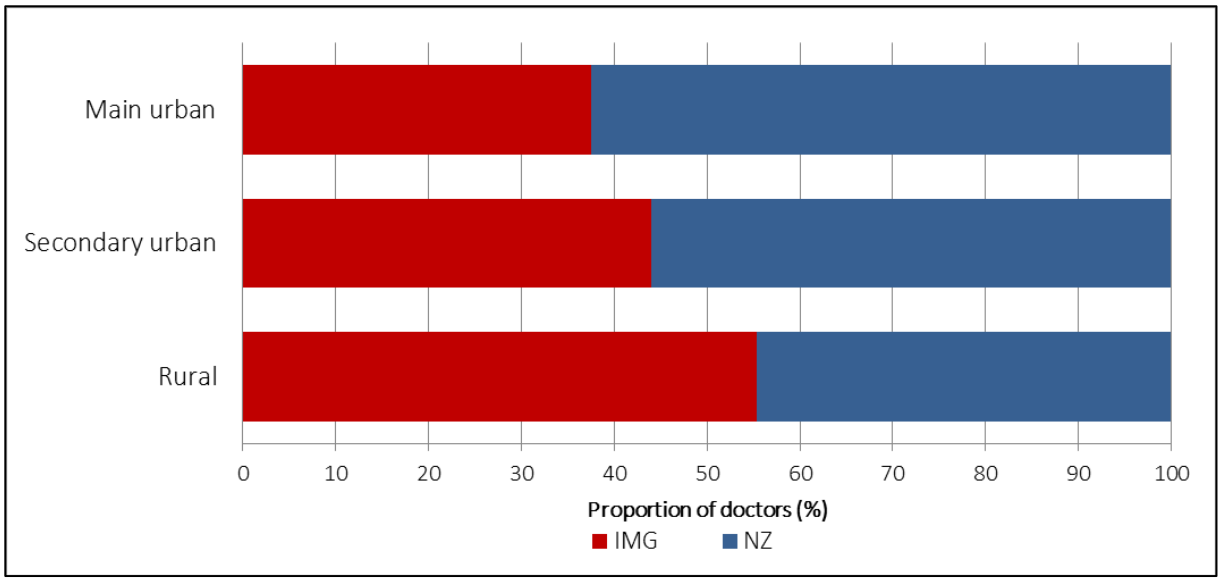
**Figure 12: Proportion of doctors by gender and population density of area**




## International medical graduates

Figure 13 shows there is a higher proportion of international medical graduates (IMGs) in rural areas compared with urban areas – 55.3 percent of doctors in rural areas are IMGs compared to 37.5 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 13: Proportion of IMGs by population density of area**



# Ethnicity

## Changes in ethnicity of the workforce over time

Table 13 shows the ethnicities of doctors over time. The proportion of doctors who identified themselves as Māori decreased slightly in 2016 (from 3.4 percent to 3.3 percent), as did the proportion of Pasifika doctors (from 2.0 percent to 1.8 percent).

This does not mean that the number of doctors identifying as Māori decreased. The actual number of doctors who responded to the survey and identified as Māori increased from 454 in 2015 to 465 in 2016. However, because the equivalent increase in the overall number of responses to the survey was greater, the size of this group as a proportion of the total response decreased slightly.

The relatively small size of the groups of doctors identifying as Māori and Pasifika also mean that they are more susceptible to survey limitations like non-response.

The proportion of doctors identifying as Chinese again increased (to 6.0 percent) after previously increasing in 2015. However, the proportion of doctors identifying as Indian decreased slightly (from 6.0 percent to 5.9 percent).

The proportion of doctors identifying as other European dropped to 19.5 percent, after increasing to 20.5 percent in 2014 and holding this level in 2015.

The proportion of doctors identifying as NZ European/Pākehā resumed its downward trend (to 49.0 percent) after increasing in 2015 for the first time in a number of years. This is the first time the proportion of doctors identifying as NZ European/Pākehā has dropped below 50 percent.

**Table 13: Proportion of doctors by ethnic group**

| Ethnicity | % 2005 | % 2010 | % 2011 | % 2012 | % 2013 | % 2014 | % 2015 | % 2016 |
|---|---|---|---|---|---|---|---|---|
| Māori | 2.6 | 3.0 | 2.8 | 2.9 | 2.7 | 3.2 | 3.4 | 3.3 |
| Pacific Island (Pasifika) | 1.5 | 1.3 | 1.6 | 1.8 | 1.8 | 2.0 | 2.0 | 1.8 |
| Chinese | 5.4 | 5.3 | 5.1 | 5.3 | 5.1 | 4.9 | 5.9 | 6.0 |
| Indian | 5.1 | 5.9 | 5.8 | 5.8 | 5.2 | 5.7 | 6.0 | 5.9 |
| Other non-European | 10.8 | 9.9 | 11.6 | 12.9 | 14.4 | 11.5 | 11.9 | 11.2 |
| Other European | 15.4 | 19.7 | 18.2 | 16.9 | 16.7 | 20.5 | 20.5 | 19.5 |
| NZ European/Pākehā | 57.5 | 53.3 | 53.2 | 52.7 | 51.6 | 50.8 | 51.4 | 49.0 |
| Not answered | 1.5 | 1.5 | 1.7 | 1.6 | 2.3 | 1.2 | 2.4 | - |
| Refused[2] | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 3.0 |
| **Total[1]** | **100.0** | **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.

2 From 2016, not answered is no longer an available option. The ethnicity question can only be answered or refused.

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

Table 14 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. This is still the 2013 Census – although there was a Census conducted in March 2018, the results will not be available until at least October 2018.

**Table 14: Proportion of doctors and New Zealand population by ethnic group**

| Ethnicity | % Proportion of doctors (2016) | % Proportion of New Zealand population (2013 Census)[2] |
|---|---|---|
| Māori | 3.3 | 14.7 |
| Pacific Island (Pasifika) | 1.8 | 6.6 |
| Chinese | 6.0 | 3.6 |
| Indian | 5.9 | 3.2 |
| Other non-European | 11.2 | 4.9 |
| Other European | 19.6 | 6.5 |
| NZ European/Pākehā | 49.1 | 60.5 |
| Not answered/refused | 3.0 | - |
| **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 62), 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.

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

However, the proportion of Māori doctors is higher amongst newer doctors, especially house officers (see Table 16 on page 32). In the previous report we highlighted that there had been significant progress at graduate level, noting that, in December 2016, a record number of Māori and Pasifika doctors graduated from both New Zealand medical schools.[2]

We followed up with the medical schools to see if the 2017 graduate classes had similar representation of Māori and Pasifika doctors. Otago University advised that, in 2017, they had 27 Māori graduates out of a total of 249 graduates (10.8 percent). This is higher than the 3.3 percent of Māori amongst the overall workforce but lower than the proportion of Māori amongst the New Zealand population (14.7 percent).

At the time of publication we had not received a response from Auckland University, so unfortunately we do not know whether their 2017 graduate class achieved the same level of representation observed in 2016.

[2] *The New Zealand Medical Workforce in 2015*, p28, Medical Council of New Zealand, 11 April 2018.

## Ethnicity by age

Table 15 shows the average age of doctors by ethnic group. Māori, Pasifika, 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 – 35.4 years and 39.9 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 (51.3 years).

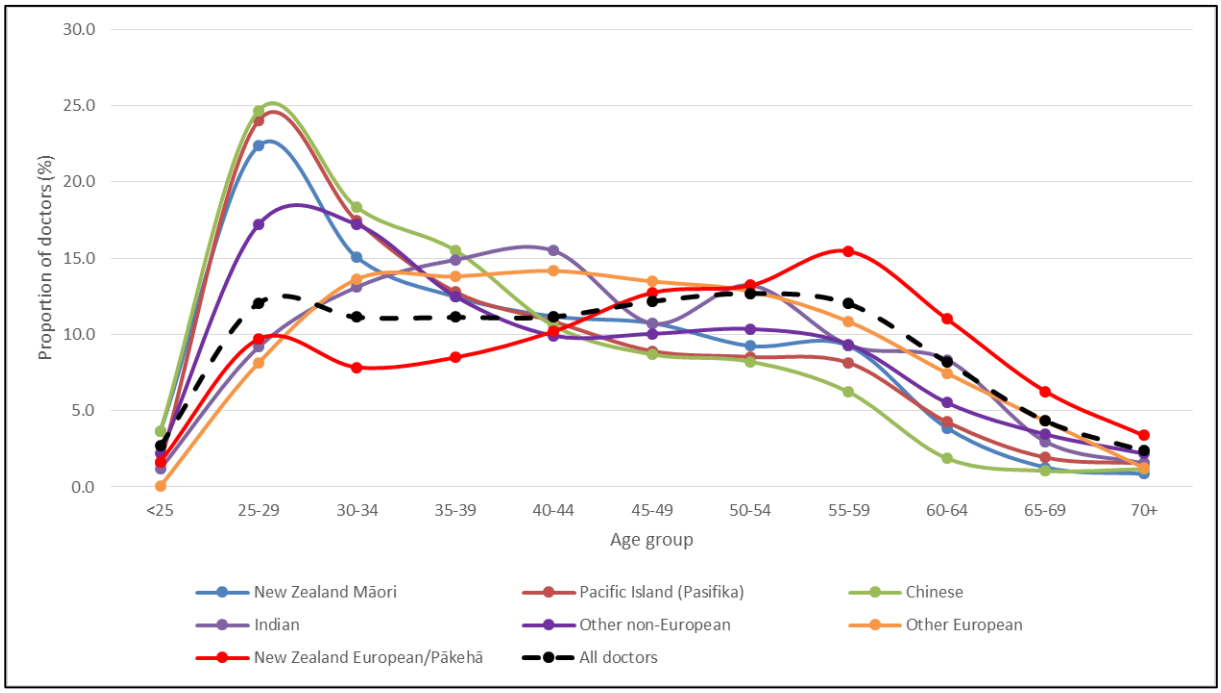
**Table 15: Average age of doctors by ethnicity and gender**

| | Average age | | |
|---|---|---|---|
| **Ethnicity** | **Female** | **Male** | **Overall** |
| Māori | 38.1 | 41.8 | 39.9 |
| Pacific Island (Pasifika) | 37.7 | 41.9 | 40.0 |
| Chinese | 35.4 | 39.9 | 38.1 |
| Indian | 42.5 | 45.6 | 44.5 |
| Other non-European | 42.9 | 47.5 | 45.3 |
| Other European | 44.1 | 51.3 | 48.1 |
| NZ European/Pākehā | 39.8 | 44.0 | 42.3 |
| Refused | 39.5 | 43.7 | 42.2 |
| **All doctors** | **42.4** | **47.9** | **45.5** |

Figure 14 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 55–59.

**Figure 14: Distribution of doctors by ethnic group and age group**



## Ethnicity by work role

Table 16 shows the distribution of each ethnic group by work role at their main work site.

**Table 16: Proportion of ethnic groups by work role at main work site**

| Ethnicity | Refused | GP | HO | MO | PC | R | S | Total[1] |
|---|---|---|---|---|---|---|---|---|
| Māori | 3.7 | 25.8 | 19.4 | 5.4 | 0.9 | 22.8 | 22.2 | 100.0 |
| Pacific Island (Pasifika) | 1.6 | 26.7 | 21.7 | 3.1 | 0.8 | 26.0 | 20.2 | 100.0 |
| Chinese | 1.2 | 23.0 | 19.0 | 2.2 | 0.7 | 27.7 | 26.1 | 100.0 |
| Indian | 1.8 | 27.2 | 7.9 | 5.4 | 0.6 | 22.9 | 34.3 | 100.0 |
| Other non-European | 1.5 | 24.1 | 13.4 | 5.5 | 1.3 | 27.3 | 26.9 | 100.0 |
| Other European | 2.7 | 28.9 | 4.5 | 6.1 | 0.7 | 19.1 | 38.0 | 100.0 |
| NZ European/Pākehā | 2.4 | 29.9 | 8.1 | 3.3 | 1.2 | 12.6 | 42.5 | 100.0 |

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

Almost three-quarters of doctors identifying as NZ European/Pākehā reported working either as a specialist (42.5 percent) or general practitioner (29.9 percent) at their main work site compared with 48.0 percent of doctors identifying as Māori and 46.9 percent of doctors identifying as Pasifika.

Figure 15 shows the work roles of ethnic groups. The proportion of doctors who reported working as either a house officer or registrar was 47.7 percent amongst Pasifika and 42.2 percent for Māori compared to only 20.7 percent for NZ European/Pākehā.

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

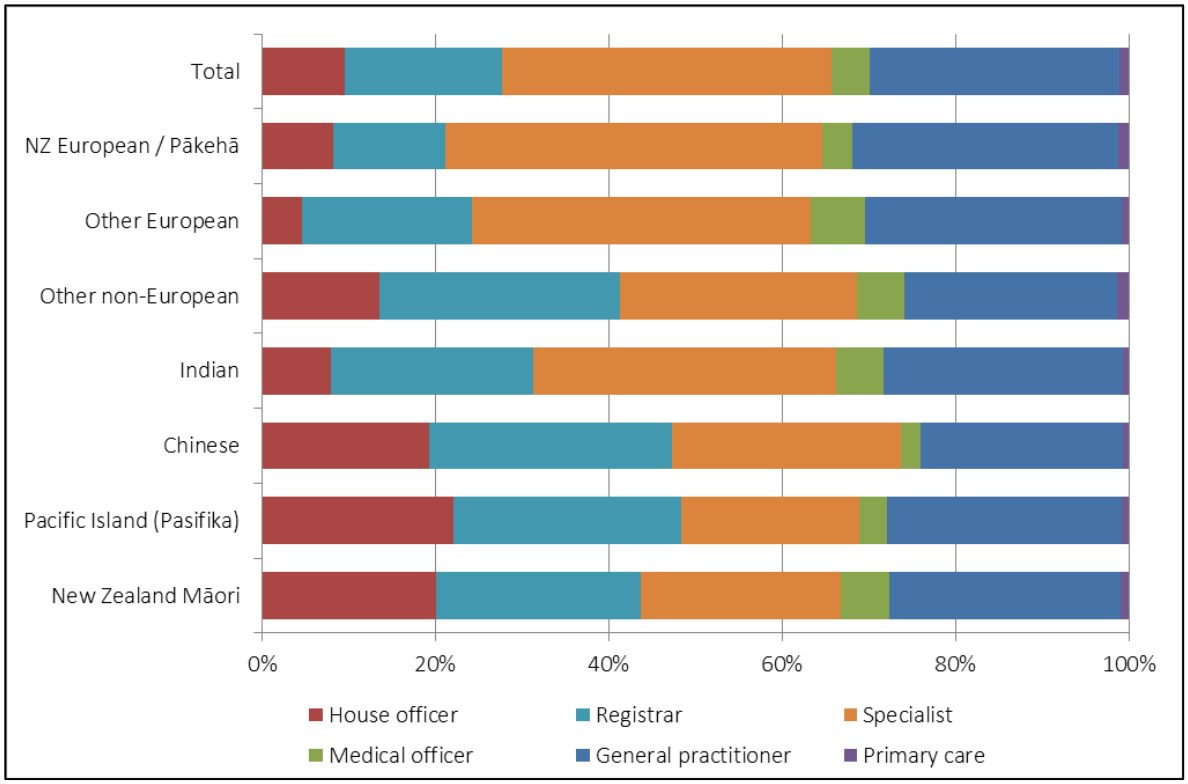


Table 17 represents the proportion of each work role made up by each ethnicity.

Doctors identifying as Māori made up 3.3 percent of all doctors but were more highly represented amongst house officers (6.8 percent) and registrars (4.2 percent). As noted in previous years' reports, this suggests that, although they are currently under-represented amongst specialists (2.0 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 Māori. They make up 1.8 percent of all doctors but 4.2 percent of house officers and 2.6 percent of registrars.

Like doctors identifying as Māori and Pasifika, those identifying as Chinese are also highly represented amongst house officers and registrars (12.2 and 9.2 percent respectively) compared to their overall proportion (6.0 percent).

**Table 17: Proportion of each work role at main work site by ethnicity**

| | Work role | | | | | | |
|---|---|---|---|---|---|---|---|
| **Ethnicity** | **General practitioner** | **Primary care other than GP** | **Medical officer special scale** | **House officer** | **Registrar** | **Specialist** | **All doctors** |
| Māori | 3.0 | 2.7 | 4.2 | 6.8 | 4.2 | 2.0 | 3.3 |
| Pacific Island (Pasifika) | 1.7 | 1.4 | 1.3 | 4.2 | 2.6 | 1.0 | 1.8 |
| Chinese | 5.0 | 4.1 | 3.2 | 12.2 | 9.2 | 4.2 | 6.0 |
| Indian | 5.8 | 3.4 | 7.5 | 5.0 | 7.5 | 5.5 | 5.9 |
| Other | 9.7 | 14.4 | 14.5 | 16.0 | 17.0 | 8.1 | 11.2 |
| Other European | 20.3 | 13.7 | 27.9 | 9.4 | 20.8 | 20.1 | 19.6 |
| NZ European/Pākehā | 52.6 | 58.2 | 38.5 | 42.1 | 34.4 | 56.2 | 49.1 |
| Refused | 1.9 | 2.1 | 3.0 | 4.5 | 4.3 | 2.9 | 3.0 |
| **Total[1]** | **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 49.1 percent of all doctors but continue to be more highly represented amongst specialists (56.2 percent) and GPs (56.2 percent). They are less represented amongst house officers (42.1 percent) and registrars (34.4 percent).

## Ethnicity by work type

Table 18 represents the proportion of each work type made up by each ethnicity.

**Table 18: Distribution of ethnicity by work type at main work site**

| Work type | Refused | Māori | Pacific Island (Pasifika) | Chinese | Indian | Other | Other European | NZ European/Pākehā | Total |
|---|---|---|---|---|---|---|---|---|---|
| House officer rotations | 3.7 | 6.9 | 4.8 | 11.8 | 6.1 | 15.1 | 6.2 | 45.4 | 100.0 |
| Other | 3.7 | 4.7 | 1.4 | 1.9 | 4.2 | 7.4 | 22.3 | 54.4 | 100.0 |
| Accident and medical practice | 2.0 | 1.4 | 2.0 | 4.8 | 4.8 | 15.0 | 23.8 | 46.3 | 100.0 |
| Anaesthesia | 4.0 | 2.2 | 0.8 | 6.5 | 4.2 | 8.1 | 22.3 | 51.9 | 100.0 |
| Basic medical science | 4.5 | 0.0 | 0.0 | 5.6 | 4.5 | 14.6 | 22.5 | 48.3 | 100.0 |
| Clinical genetics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.2 | 81.8 | 100.0 |
| Dermatology | 6.0 | 0.0 | 0.0 | 7.2 | 3.6 | 2.4 | 18.1 | 62.7 | 100.0 |
| Diagnostic and interventional radiology | 4.1 | 1.0 | 0.8 | 7.2 | 6.4 | 9.5 | 16.5 | 54.4 | 100.0 |
| Emergency medicine | 3.8 | 3.2 | 1.1 | 4.2 | 4.1 | 9.5 | 38.9 | 35.3 | 100.0 |
| Family planning | 0.0 | 3.6 | 0.0 | 3.6 | 0.0 | 17.9 | 25.0 | 50.0 | 100.0 |
| General practice | 2.0 | 3.3 | 1.9 | 5.2 | 6.0 | 10.3 | 19.7 | 51.6 | 100.0 |
| Intensive care medicine | 3.3 | 3.9 | 0.7 | 4.6 | 2.6 | 7.8 | 27.5 | 49.7 | 100.0 |
| Internal medicine | 3.6 | 2.6 | 0.9 | 8.6 | 6.8 | 15.3 | 17.2 | 44.9 | 100.0 |
| Medical administration | 1.5 | 6.2 | 0.0 | 0.0 | 0.0 | 3.1 | 15.4 | 73.8 | 100.0 |
| Musculoskeletal medicine | 4.3 | 0.0 | 0.0 | 8.7 | 8.7 | 0.0 | 17.4 | 60.9 | 100.0 |
| Obstetrics and gynaecology | 2.3 | 4.3 | 2.5 | 5.8 | 7.4 | 13.8 | 21.4 | 42.6 | 100.0 |
| Occupational medicine | 0.0 | 2.9 | 1.4 | 0.0 | 2.9 | 7.1 | 17.1 | 68.6 | 100.0 |
| Ophthalmology | 1.6 | 2.6 | 1.6 | 10.4 | 4.2 | 13.5 | 15.1 | 51.0 | 100.0 |
| Paediatrics | 2.3 | 3.9 | 2.2 | 5.0 | 5.0 | 10.7 | 17.1 | 53.8 | 100.0 |
| Palliative medicine | 1.1 | 1.1 | 0.0 | 2.2 | 2.2 | 4.5 | 39.3 | 49.4 | 100.0 |
| Pathology | 5.9 | 0.9 | 1.4 | 7.7 | 5.9 | 10.0 | 19.0 | 49.3 | 100.0 |
| Primary care | 1.9 | 2.9 | 3.8 | 1.0 | 3.8 | 8.7 | 11.5 | 66.3 | 100.0 |
| Psychiatry | 2.8 | 3.6 | 1.8 | 2.6 | 8.9 | 13.1 | 27.0 | 40.2 | 100.0 |
| Public health medicine | 2.0 | 7.6 | 2.5 | 1.5 | 4.0 | 3.0 | 9.1 | 70.2 | 100.0 |
| Radiation oncology | 6.0 | 1.2 | 2.4 | 8.3 | 11.9 | 16.7 | 21.4 | 32.1 | 100.0 |
| Rehabilitation medicine | 2.9 | 2.9 | 0.0 | 11.8 | 8.8 | 17.6 | 20.6 | 35.3 | 100.0 |
| Rural hospital medicine | 5.6 | 0.0 | 1.4 | 1.4 | 5.6 | 9.7 | 27.8 | 48.6 | 100.0 |
| Sexual health medicine | 6.3 | 0.0 | 0.0 | 3.1 | 6.3 | 6.3 | 21.9 | 56.3 | 100.0 |
| Sports medicine | 0.0 | 11.4 | 0.0 | 0.0 | 0.0 | 14.3 | 2.9 | 71.4 | 100.0 |
| Surgery: cardiothoracic | 3.7 | 1.9 | 1.9 | 1.9 | 18.5 | 14.8 | 11.1 | 46.3 | 100.0 |
| Surgery: general | 4.4 | 3.1 | 4.7 | 6.0 | 6.5 | 15.3 | 12.5 | 47.5 | 100.0 |
| Surgery: neurosurgery | 4.3 | 0.0 | 2.1 | 21.3 | 10.6 | 12.8 | 21.3 | 27.7 | 100.0 |
| Surgery: other | 3.0 | 4.0 | 1.0 | 3.0 | 8.1 | 17.2 | 14.1 | 49.5 | 100.0 |
| Surgery: orthopaedic | 3.4 | 6.2 | 2.5 | 7.4 | 4.9 | 8.5 | 14.0 | 53.1 | 100.0 |
| Surgery: oral and maxillofacial | 10.3 | 0.0 | 0.0 | 10.3 | 0.0 | 6.9 | 20.7 | 51.7 | 100.0 |

| Work type | Refused | Māori | Pacific Island (Pasifika) | Chinese | Indian | Other | Other European | NZ European/Pākehā | Total |
|---|---|---|---|---|---|---|---|---|---|
| Surgery: otolaryngology | 4.7 | 2.0 | 1.3 | 6.7 | 6.0 | 9.4 | 17.4 | 52.3 | 100.0 |
| Surgery: paediatric | 5.9 | 0.0 | 11.8 | 2.9 | 11.8 | 5.9 | 35.3 | 26.5 | 100.0 |
| Surgery: plastic | 5.1 | 2.5 | 1.7 | 8.5 | 4.2 | 12.7 | 14.4 | 50.8 | 100.0 |
| Surgery: urology | 4.5 | 1.1 | 2.3 | 6.8 | 5.7 | 6.8 | 15.9 | 56.8 | 100.0 |
| Surgery: vascular | 4.0 | 6.0 | 4.0 | 4.0 | 14.0 | 22.0 | 14.0 | 32.0 | 100.0 |
| **Total** | 3.0 | 3.3 | 1.8 | 6.0 | 5.9 | 11.2 | 19.6 | 49.1 | 100.0 |

Looking at those work types with more than 100 doctors, doctors identifying as Māori are more highly represented in public health medicine (7.6 percent) and house officer rotations (6.9 percent, up from 6.1 percent in 2015) 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 (1.4 percent) and diagnostic and interventional radiology (1.0 percent).

Similarly, those doctors identifying as Pasifika (1.8 percent overall) are most highly represented in house officer rotations (4.8 percent), public health medicine (2.5 percent), general surgery (4.7 percent) and orthopaedic surgery (2.5 percent) and are less highly represented in intensive care medicine (0.7 percent), anaesthesia (0.8 percent), diagnostic and interventional radiology (0.8 percent), internal medicine (0.9 percent) and emergency medicine (1.1 percent).

Doctors identifying as NZ European/Pākehā (49.1 percent overall) are most highly represented in public health medicine (70.2 percent), primary care (66.3 percent), diagnostic and interventional radiology (54.4 percent) and paediatrics (53.8 percent). These doctors are less highly represented in emergency medicine (35.3 percent), psychiatry (40.2 percent) and obstetrics and gynaecology (42.6 percent).

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

Almost 39 percent of doctors working in emergency medicine reported themselves as other European (38.9 percent). These doctors were also more highly represented in accident and medical practice (22.3 percent) compared with their proportion of the workforce as a whole (19.6 percent).

## Ethnicity by vocational training area

Table 19 represents the proportion of doctors in vocational training by ethnicity for each training area with more than 20 trainees.

**Table 19: Proportion of doctors in training by ethnicity and area of training**

| Training area | Refused | Māori | Pacific Island (Pasifika) | Chinese | Indian | Other | Other European | NZ European/Pākehā | Total (headcount) |
|---|---|---|---|---|---|---|---|---|---|
| Urgent care | 1.4 | 3.6 | 5.0 | 9.4 | 7.2 | 24.5 | 20.1 | 28.8 | 139 |
| Anaesthesia | 4.4 | 5.2 | 1.6 | 10.0 | 6.0 | 11.2 | 23.9 | 37.8 | 251 |
| Diagnostic radiology | 5.9 | 3.5 | 0.0 | 15.3 | 8.2 | 22.4 | 3.5 | 41.2 | 85 |
| Emergency medicine | 4.5 | 3.5 | 2.5 | 5.0 | 5.5 | 10.6 | 40.7 | 27.6 | 199 |
| General practice | 3.4 | 6.5 | 3.7 | 8.7 | 7.2 | 17.3 | 12.5 | 40.6 | 734 |
| Intensive care medicine | 4.9 | 3.3 | 1.6 | 8.2 | 3.3 | 8.2 | 39.3 | 31.1 | 61 |
| Internal medicine | 5.6 | 1.3 | 1.3 | 13.3 | 10.7 | 22.7 | 16.3 | 28.8 | 234 |
| Obstetrics and gynaecology | 2.8 | 7.5 | 2.8 | 6.5 | 5.6 | 15.0 | 14.0 | 45.8 | 107 |
| Occupational medicine | 10.0 | 0.0 | 0.0 | 0.0 | 10.0 | 20.0 | 10.0 | 50.0 | 10 |
| Ophthalmology | 0.0 | 3.8 | 7.7 | 15.4 | 11.5 | 19.2 | 7.7 | 34.6 | 26 |
| Paediatrics | 3.3 | 4.4 | 3.3 | 7.7 | 4.4 | 12.1 | 15.4 | 49.5 | 91 |
| Pathology | 5.8 | 0.0 | 1.9 | 15.4 | 9.6 | 17.3 | 19.2 | 30.8 | 52 |
| Psychiatry | 4.1 | 8.8 | 4.1 | 6.1 | 6.8 | 15.5 | 25.0 | 29.7 | 148 |
| General surgery | 4.2 | 2.8 | 4.2 | 2.8 | 9.9 | 19.7 | 15.5 | 40.8 | 71 |
| Orthopaedic surgery | 5.9 | 5.9 | 3.9 | 13.7 | 3.9 | 21.6 | 13.7 | 31.4 | 51 |
| Surgery: other[1] | 7.1 | 2.9 | 4.3 | 17.1 | 7.1 | 18.6 | 24.3 | 18.6 | 70 |
| **All doctors in training** | **4.1** | **4.8** | **2.9** | **9.1** | **7.0** | **16.7** | **18.9** | **36.5** | **2,385** |
| **Doctors not in training** | **2.8** | **3.0** | **1.6** | **5.4** | **5.7** | **10.1** | **19.7** | **51.7** | **11,780** |
| **All doctors** | **3.0** | **3.3** | **1.8** | **6.0** | **5.9** | **11.2** | **19.6** | **49.1** | **14,165** |

1 Represents other training areas of surgery with fewer than 20 trainees.

Doctors identifying as 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.

Doctors identifying as Māori were most highly represented in psychiatry (8.8 percent of those in training in that area), obstetrics and gynaecology (7.5 percent), general practice (6.5 percent) and orthopaedic surgery (5.9 percent).

No doctors training in pathology identified as Māori. Other areas where they were less represented included internal medicine (1.3 percent) and general surgery (2.8 percent).

Doctors identifying as Pasifika were most highly represented in ophthalmology (7.7 percent) and accident and medical practice (5.0 percent). No doctors training in diagnostic and

interventional radiology identified as Pasifika. Other areas where they were less represented included internal medicine (1.3 percent) and intensive care medicine (1.6 percent).

Over 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 intensive care medicine (70.5 percent) and emergency medicine (68.3 percent). This same group of doctors was least represented in ophthalmology (42.3 percent), orthopaedic surgery (45.1 percent) and internal medicine (45.1 percent).

# Gender

## Vocational trainees

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

In 2016, slightly more women than men reported they were in vocational training (54.2 percent).

The largest group of trainees are in general practice, making up 36.7 percent of female doctors and 23.8 percent of male doctors in vocational training. The next largest group of trainees are those training in internal medicine, making up 8.6 percent of women and 11.3 percent of men in training.

**Table 20: 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] | 53 | 86 | 139 | 38.1 | 4.1 | 7.9 |
| Anaesthesia | 120 | 131 | 251 | 47.8 | 9.3 | 12.0 |
| Clinical genetics | * | * | * | 50.0 | 0.1 | 0.1 |
| Dermatology | 8 | 0 | * | 100.0 | 0.2 | 0.0 |
| Diagnostic radiology | 36 | 49 | 85 | 42.4 | 2.8 | 4.5 |
| Emergency medicine | 103 | 96 | 199 | 51.8 | 8.0 | 8.8 |
| Family planning and reproductive health | 8 | 0 | 8 | 100.0 | 0.6 | 0.0 |
| General practice | 474 | 260 | 734 | 64.6 | 36.7 | 23.8 |
| Intensive care medicine | 22 | 39 | 61 | 36.1 | 1.7 | 3.6 |
| Internal medicine | 111 | 123 | 234 | 47.4 | 8.6 | 11.3 |
| Medical administration | * | 7 | * | 30.0 | 0.2 | 0.6 |
| Musculoskeletal medicine | * | * | * | 50.0 | 0.1 | 0.1 |
| Obstetrics and gynaecology | 88 | 19 | 107 | 82.2 | 6.8 | 1.7 |
| Occupational medicine | * | 8 | * | 20.0 | 0.2 | 0.7 |
| Ophthalmology | 8 | 18 | 26 | 30.8 | 0.6 | 1.6 |
| Paediatrics | 65 | 26 | 91 | 71.4 | 5.0 | 2.4 |
| Pain medicine | * | * | * | 66.7 | 0.2 | 0.1 |
| Palliative medicine | 9 | * | * | 90.0 | 0.7 | 0.1 |
| Pathology | 29 | 23 | 52 | 55.8 | 2.2 | 2.1 |
| Psychiatry | 71 | 77 | 148 | 48.0 | 5.5 | 7.1 |
| Public health medicine | 12 | 6 | 18 | 66.7 | 0.9 | 0.5 |
| Radiation oncology | * | 17 | 19 | 10.5 | 0.2 | 1.6 |
| Rehabilitation medicine | 4 | * | * | 66.7 | 0.3 | 0.2 |
| Rural hospital medicine | 24 | 17 | 41 | 58.5 | 1.9 | 1.6 |
| Sexual health medicine | 4 | 0 | 4 | 100.0 | 0.3 | 0.0 |
| Sports medicine | 4 | 5 | 9 | 44.4 | 0.3 | 0.5 |
| Surgery: cardiothoracic | * | * | * | 25.0 | 0.1 | 0.3 |
| Surgery: general | 24 | 47 | 71 | 33.8 | 1.9 | 4.3 |
| Surgery: neurosurgery | * | 4 | * | 20.0 | 0.1 | 0.4 |
| Surgery: oral and maxillofacial | * | * | * | 25.0 | 0.1 | 0.3 |
| Surgery: orthopaedic | 9 | 42 | 51 | 17.6 | 0.7 | 3.8 |

| 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: otolaryngology head and neck surgery | 6 | 13 | 19 | 31.6 | 0.5 | 1.2 |
| Surgery: paediatric | 4 | * | * | 66.7 | 0.3 | 0.2 |
| Surgery: plastic and reconstructive | 11 | 6 | 17 | 64.7 | 0.9 | 0.5 |
| Surgery: urology | * | 8 | * | 27.3 | 0.2 | 0.7 |
| Surgery: vascular | 0 | 4 | 4 | 0.0 | 0.0 | 0.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **All doctors in training** | **1,293** | **1,092** | **2,385** | **54.2** | **100.0** | **100.0** |
| **All doctors not in training** | **4,929** | **6,851** | **11,780** | **41.8** | | |

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:

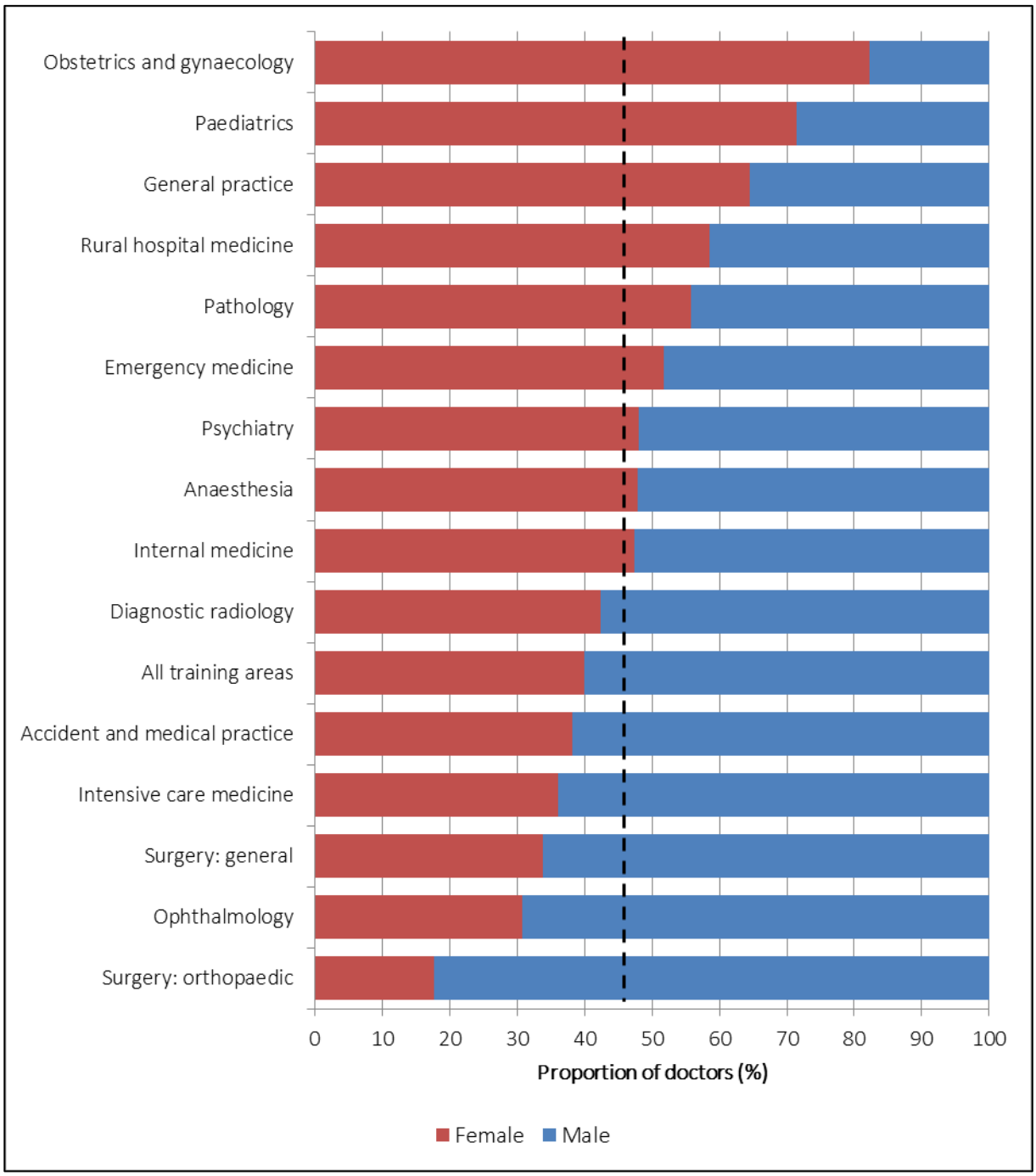
- orthopaedic surgery (17.6 percent, up from 12.2 in 2015)
- ophthalmology (30.8 percent, up slightly from 29.2 percent in 2015)
- general surgery (33.8 percent, up from 32.4 percent in 2015)
- intensive care medicine (36.1 percent, down from 42.9 in 2015).

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

Females outnumbered males in vocational training in:

- obstetrics and gynaecology (82.2 percent, up from 80.6 percent in 2015)
- paediatrics (71.4 percent)
- general practice (64.6 percent, up slightly from 62.6 percent in 2015)
- rural hospital medicine (58.5 percent, up from 52.9 percent in 2015)
- pathology (55.8 percent, down from 68.9 in 2015)
- emergency medicine (51.8 percent, down slightly from 52.2 percent in 2015).

**Figure 16: Vocational training area by gender (areas with more than 20 trainees)**



## Work role

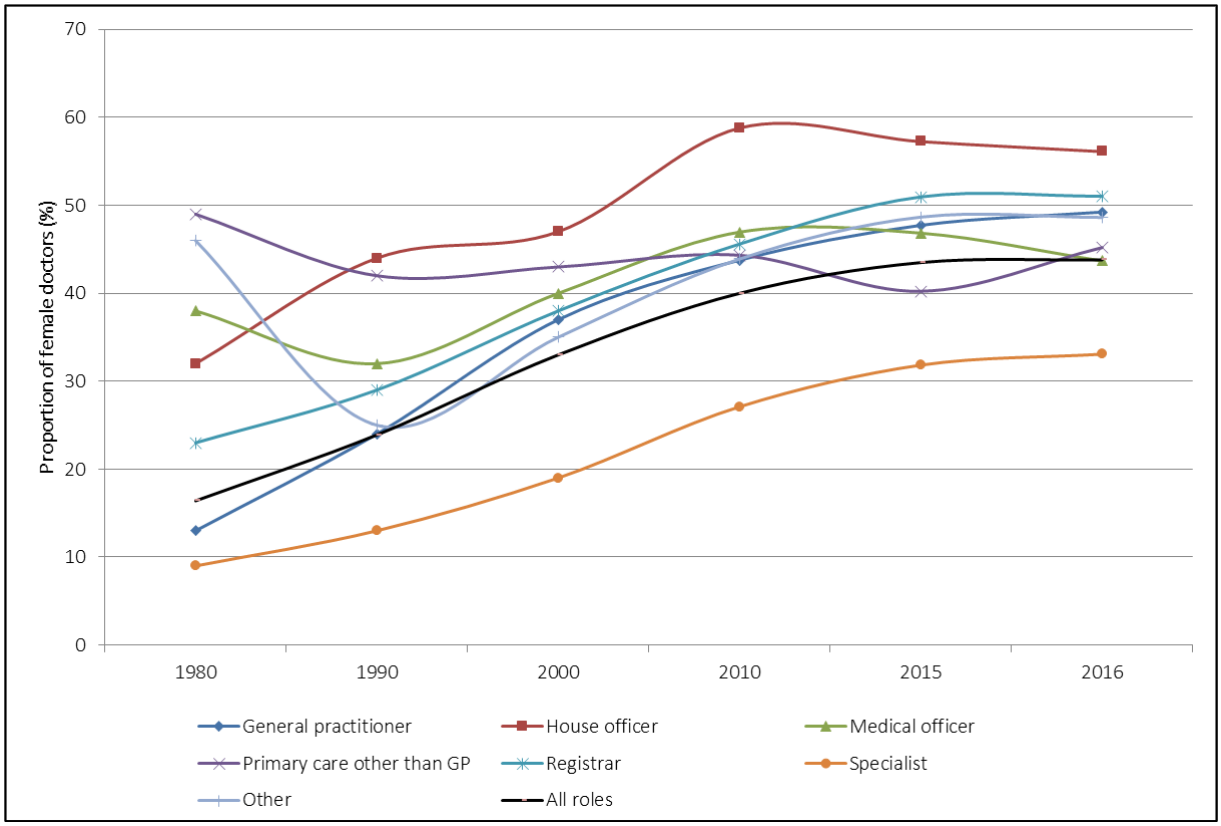
Table 21 and Figure 17 show the proportion of females in the workforce by work role at their main work site. The overall proportion of females in the workforce (based on survey responses) increased slightly to 43.8 percent in 2016, up from 43.5 percent in 2014. Females continue to outnumber males in house officer roles, making up 56 percent (although this figure has decreased from 59 percent in 2010), and continue to outnumber males in registrar roles (51 percent – unchanged from 2015).

The proportion of females in the role of GP increased again in 2016 to 49 percent (from 48 percent). There was also a slight increase in the role of specialist to 33 percent, continuing a slow but steady upward trend.

**Table 21: Proportion of females by work role at main work site**

| | Percentage female | | | | | |
|---|---|---|---|---|---|---|
| **Role at main work site** | **1980** | **1990** | **2000** | **2010** | **2015** | **2016** |
| General practitioner (GP) | 13 | 24 | 37 | 44 | 48 | 49 |
| House officer | 32 | 44 | 47 | 59 | 57 | 56 |
| Medical officer | 38 | 32 | 40 | 47 | 47 | 44 |
| Primary care other than GP | 49 | 42 | 43 | 44 | 40 | 45 |
| Registrar | 23 | 29 | 38 | 46 | 51 | 51 |
| Specialist | 9 | 13 | 19 | 27 | 32 | 33 |
| Other | 46 | 25 | 35 | 44 | 49 | 49 |

**Figure 17: Proportion of females by work role at main work site**



## Work types

Table 22 shows the proportion of females working as specialists or GPs by work type 10-yearly from 1980, 5-yearly from 2000 to 2015 and then yearly for the last 2 years.

### Table 22: Proportion of females by work type (specialists and GPs)

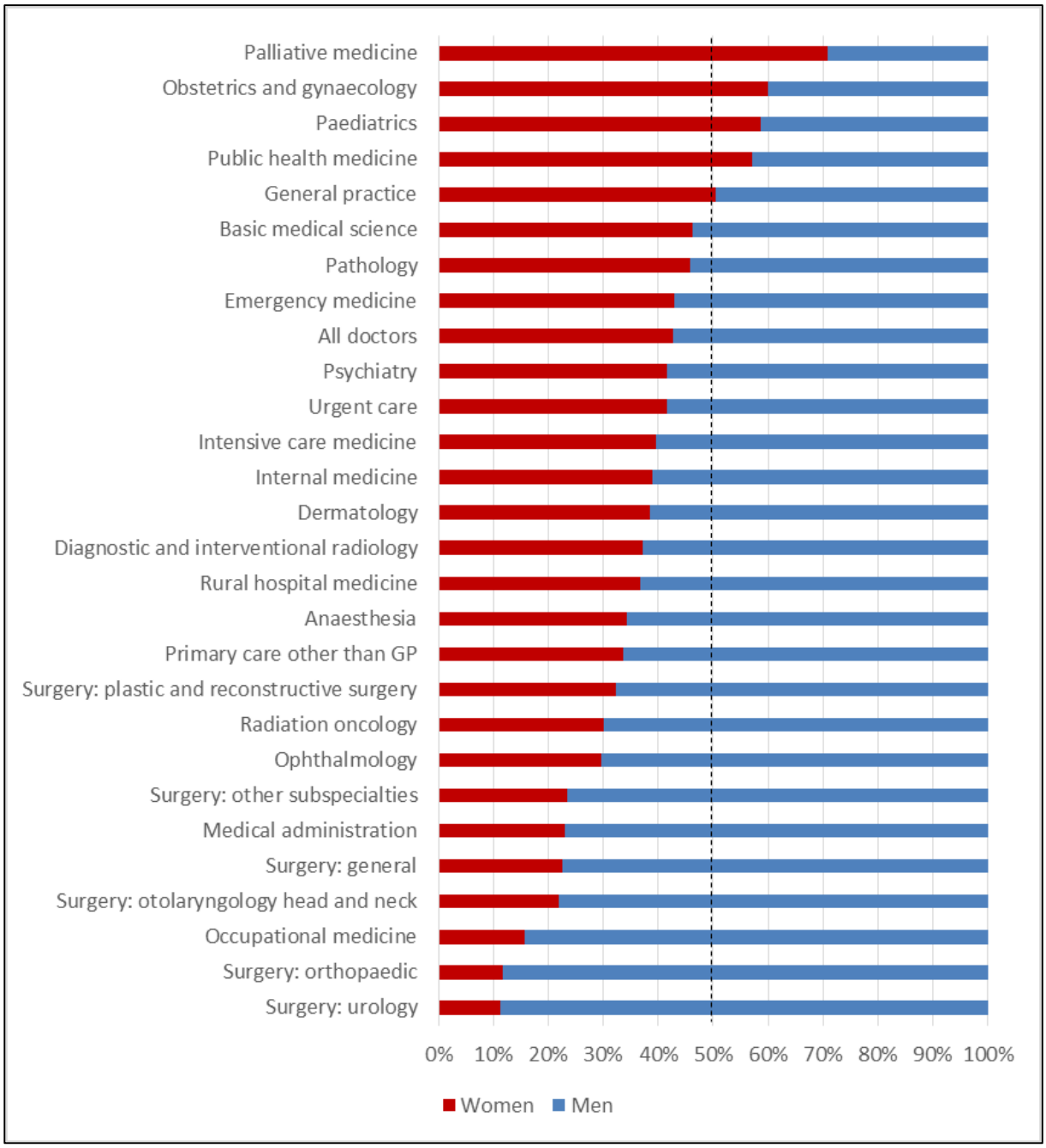
| | Percentage female | | | | | |
|---|---|---|---|---|---|---|
| **Work type** | **1980** | **1990** | **2000** | **2010** | **2015** | **2016** |
| Accident and medical practice | -[1] | - | - | 34 | 26 | 48 |
| Anaesthesia | 19 | 16 | 20 | 31 | 31 | 31 |
| Basic medical science | 12 | 16 | 7 | 27 | 49 | 50 |
| Clinical genetics | - | - | - | 67 | 83 | 70 |
| Dermatology | 3 | 17 | 19 | 24 | 31 | 36 |
| Diagnostic and interventional radiology | 8 | 14 | 23 | 31 | 34 | 36 |
| Emergency medicine | - | 0 | 26 | 41 | 40 | 37 |
| Family planning and reproductive health | - | - | - | 93 | 67 | 100 |
| General practice | 13 | 24 | 38 | 44 | 48 | 49 |
| Intensive care medicine | - | - | 18 | 27 | 22 | 29 |
| Internal medicine | 4 | 7 | 15 | 32 | 31 | 32 |
| Medical administration | - | - | - | 30 | 23 | 26 |
| Musculoskeletal medicine | - | - | 0 | 12 | 10 | 11 |
| Obstetrics and gynaecology | 10 | 17 | 29 | 54 | 45 | 50 |
| Occupational medicine | - | 5 | 17 | 16 | 14 | 12 |
| Ophthalmology | 6 | 11 | 12 | 24 | 22 | 24 |
| Paediatrics | 21 | 23 | 30 | 53 | 47 | 49 |
| Palliative medicine | - | - | - | 52 | 55 | 56 |
| Pathology | 15 | 22 | 30 | 39 | 40 | 43 |
| Primary care | 0 | - | 30 | 44 | 45 | 44 |
| Psychiatry | 19 | 28 | 33 | 43 | 40 | 41 |
| Public health medicine | 12 | 23 | 28 | 47 | 56 | 57 |
| Radiation oncology | - | 5 | 15 | 31 | 31 | 36 |
| Rehabilitation medicine | - | - | 0 | 46 | 31 | 38 |
| Rural hospital medicine | - | - | - | - | 29 | 35 |
| Sexual health medicine | 17 | - | 50 | 80 | 81 | 87 |
| Sports medicine | - | - | 25 | 21 | 12 | 17 |
| Surgery: cardiothoracic | - | - | 6 | 13 | 12 | 7 |
| Surgery: general | - | - | 6 | 19 | 14 | 13 |
| Surgery: neurosurgery | - | - | 7 | 5 | 9 | 4 |
| Surgery: orthopaedic | - | - | 3 | 7 | 5 | 8 |
| Surgery: other | - | - | 3 | 11 | 14 | 19 |
| Surgery: otolaryngology | 0 | 2 | 5 | 13 | 15 | 17 |
| Surgery: paediatric | - | - | 15 | 17 | 12 | 22 |
| Surgery: plastic | - | - | 3 | 22 | 17 | 18 |
| Surgery: urology | - | - | 3 | 9 | 10 | 8 |
| Surgery: vascular | - | - | 0 | 5 | 10 | 7 |
| **Specialists and GPs[2]** | **-** | **-** | **29** | **34** | **39** | 40 |

1 A dash means data were not available.

2 Specialists and GPs exclude not answered and other.

Figure 18 shows only those work types with a total of 50 or more doctors. Men outnumbered women in all work types with a total of 50 or more doctors except for palliative medicine, obstetrics and gynaecology, paediatrics, public health medicine and general practice.

**Figure 18: Proportion of doctors by work type and gender**




The work types with the highest proportions of female doctors were palliative medicine (70.8 percent), obstetrics and gynaecology (59.9 percent), paediatrics (58.6 percent), public health medicine (57.1 percent) and general practice (50.5 percent).

# International medical graduates

In this survey, international medical graduates (IMGs) are doctors who obtained their primary medical qualification in a country other than New Zealand. This includes doctors who qualified in Australia, as well as doctors who qualified outside of New Zealand but have worked in New Zealand for a long time. 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 40.4 percent, down from 40.5 percent in 2015. This is reasonably consistent with registration data, which indicate that the proportion of IMGs in the workforce as at 30 June 2016 was around 42.3 percent, also down in 2016 from 42.4 percent in 2015, 43.0 percent in 2014 and 43.5 percent in 2013.

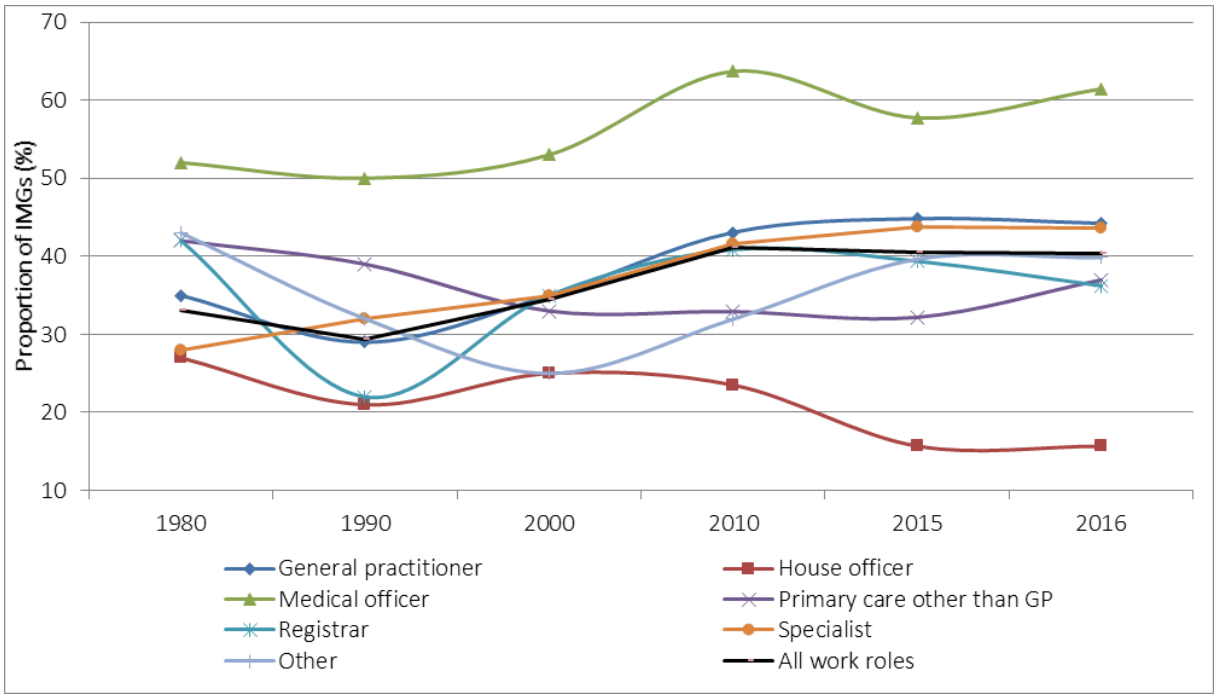
## Work role

Table 23 and Figure 19 show that the medical officer work role again had the highest proportion of IMGs, at 61.5 percent (up from 57.7 percent in 2015). The proportion of IMGs in most other work roles was only slightly changed compared to previous years.

**Table 23: Proportion of IMGs by work role at main work site**

| | Percentage of IMGs | | | | | |
|---|---|---|---|---|---|---|
| **Role at main work site** | **1980** | **1990** | **2000** | **2010** | **2015** | **2016** |
| General practitioner | 35.0 | 29.0 | 35.0 | 43.1 | 44.8 | 44.2 |
| House officer | 27.0 | 21.0 | 25.0 | 23.5 | 15.7 | 15.7 |
| Medical officer | 52.0 | 50.0 | 53.0 | 63.7 | 57.7 | 61.5 |
| Primary care other than GP | 42.0 | 39.0 | 33.0 | 32.9 | 32.2 | 37.0 |
| Registrar | 42.0 | 22.0 | 35.0 | 40.9 | 39.4 | 36.2 |
| Specialist | 28.0 | 32.0 | 35.0 | 41.6 | 43.7 | 43.6 |
| Other | 43.0 | 32.0 | 25.0 | 32.0 | 39.6 | 39.8 |
| **All work roles** | **33.1** | **29.3** | **34.5** | **41.1** | **40.5** | **40.4** |

**Figure 19: Proportion of IMGs by work role at main work site (1980–2016)**




## Work type

Figure 20 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, emergency medicine and radiation oncology.

**Figure 20: Proportion of IMGs by vocational scope (areas with more than 50 doctors)**

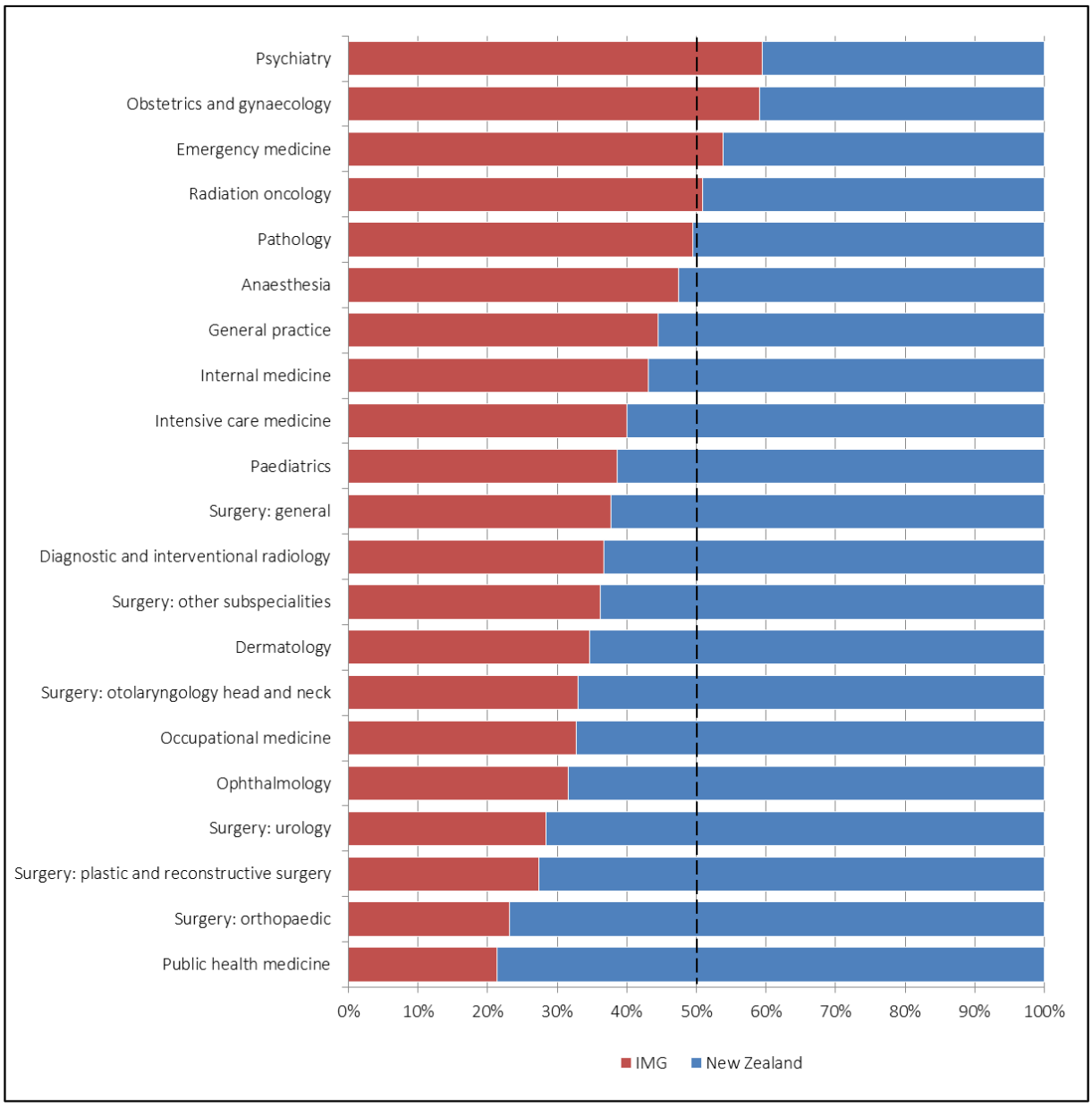



Table 24 shows the proportion of IMGs working as specialists or GPs in vocational scopes 10-yearly from 1980–2010 and then yearly for the last 2 years.

Looking only at those areas with more than 50 doctors, the proportion of IMGs increased in dermatology (from 27 percent to 35 percent) and intensive care medicine (from 34 percent to 40 percent).

There were no notable decreases in the proportion of IMGs in areas with more than 50 doctors. The largest decrease was internal medicine (from 45 percent to 43 percent), with similar decreases observed in ophthalmology and otolaryngology head and neck surgery.

**Table 24: Proportion of IMGs by vocational scope[1] (specialists and GPs)**

| Vocational scope[1] | Percentage IMGs |
|---|---|

| | 1980 | 1990 | 2000 | 2010 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| Accident and medical practice | -[2] | - | - | 50 | 52 | 48 |
| Anaesthesia | 41 | 39 | 45 | 46 | 49 | 47 |
| Basic medical science | 31 | 42 | 20 | 24 | 62 | 57 |
| Clinical genetics | - | - | - | 22 | 17 | 30 |
| Dermatology | 30 | 20 | 23 | 31 | 27 | 35 |
| Diagnostic and interventional radiology | 24 | 27 | 32 | 26 | 35 | 37 |
| Emergency medicine | - | 50 | 48 | 51 | 52 | 54 |
| Family planning and reproductive health | - | - | - | 36 | 67 | 75 |
| General practice | 35 | 30 | 35 | 40 | 45 | 45 |
| Intensive care medicine | - | - | 18 | 32 | 34 | 40 |
| Internal medicine | 24 | 34 | 33 | 40 | 45 | 43 |
| Medical administration | - | - | - | 36 | 42 | 30 |
| Musculoskeletal medicine | - | - | 40 | 29 | 29 | 32 |
| Obstetrics and gynaecology | 24 | 28 | 45 | 50 | 60 | 59 |
| Occupational medicine | - | 41 | 31 | 33 | 33 | 33 |
| Ophthalmology | 18 | 16 | 22 | 23 | 33 | 32 |
| Paediatrics | 38 | 39 | 32 | 40 | 38 | 39 |
| Palliative medicine | - | - | - | 59 | 60 | 66 |
| Pathology | 21 | 26 | 38 | 44 | 47 | 49 |
| Primary care | 0 | - | 38 | 45 | 34 | 26 |
| Psychiatry | 41 | 50 | 57 | 59 | 60 | 59 |
| Public health medicine | 44 | 36 | 20 | 22 | 22 | 21 |
| Radiation oncology | - | 55 | 62 | 54 | 51 | 51 |
| Rehabilitation medicine | - | - | 29 | 64 | 69 | 69 |
| Rural hospital medicine | - | - | - | - | 57 | 55 |
| Sexual health medicine | 33 | 50 | 33 | 37 | 25 | 33 |
| Sports medicine | - | - | 4 | 29 | 8 | 13 |
| Surgery: cardiothoracic | - | - | 28 | 55 | 50 | 46 |
| Surgery: general | - | - | 30 | 32 | 38 | 38 |
| Surgery: neurosurgery | - | - | 50 | 64 | 61 | 65 |
| Surgery: oral and maxillofacial | - | - | - | - | - | 32 |
| Surgery: orthopaedic | - | - | 13 | 28 | 24 | 23 |
| Surgery: other | - | - | 21 | 36 | 35 | 36 |
| Surgery: otolaryngology | 31 | 24 | 28 | 35 | 35 | 33 |
| Surgery: paediatric | - | - | 31 | 50 | 41 | 50 |
| Surgery: plastic | - | - | 19 | 27 | 25 | 27 |
| Surgery: urology | - | - | 29 | 23 | 25 | 28 |
| Surgery: vascular | - | - | 11 | 35 | 37 | 37 |
| **All specialists and GPs[3]** | **-** | **-** | **35** | **41** | 44 | 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 25 and Figure 21 compare the retention rates at each year after graduation for successive classes of graduates from 1995 to 2016.

### Table 25: Graduate retention of class years 1995–2016

| 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 | 22 |
| **1995** | 275 | 257 | 96 | 85 | 74 | 76 | 81 | 75 | 72 | 69 | 66 | 66 | 68 | 67 | 70 | 68 | 68 | 68 | 68 | 69 | 67 | 67 | 68 | 68 |
| **1996** | 275 | 266 | 97 | 88 | 79 | 80 | 78 | 78 | 77 | 75 | 68 | 64 | 64 | 61 | 64 | 66 | 67 | 67 | 66 | 68 | 67 | 67 | 66 | |
| **1997** | 284 | 268 | 97 | 85 | 74 | 68 | 72 | 72 | 72 | 70 | 67 | 64 | 65 | 61 | 63 | 62 | 63 | 63 | 64 | 64 | 64 | 65 | | |
| **1998** | 288 | 251 | 96 | 80 | 70 | 77 | 77 | 77 | 73 | 70 | 66 | 61 | 61 | 59 | 58 | 60 | 62 | 65 | 62 | 61 | 61 | | | |
| **1999** | 305 | 271 | 99 | 78 | 75 | 76 | 77 | 77 | 72 | 70 | 66 | 58 | 56 | 58 | 59 | 59 | 60 | 61 | 61 | 62 | | | | |
| **2000** | 323 | 285 | 94 | 82 | 75 | 78 | 78 | 78 | 79 | 76 | 75 | 67 | 61 | 60 | 56 | 60 | 62 | 64 | 65 | | | | | |
| **2001** | 297 | 271 | 95 | 79 | 78 | 81 | 80 | 80 | 78 | 74 | 72 | 65 | 63 | 59 | 59 | 58 | 59 | 60 | | | | | | |
| **2002** | 308 | 284 | 94 | 81 | 76 | 79 | 82 | 82 | 79 | 76 | 73 | 71 | 65 | 64 | 62 | 63 | 65 | | | | | | | |
| **2003** | 329 | 302 | 94 | 81 | 80 | 78 | 79 | 79 | 75 | 74 | 71 | 69 | 66 | 63 | 61 | 65 | | | | | | | | |
| **2004** | 342 | 297 | 97 | 83 | 81 | 84 | 81 | 81 | 78 | 76 | 73 | 65 | 65 | 64 | 64 | | | | | | | | | |
| **2005** | 318 | 303 | 98 | 82 | 76 | 77 | 75 | 75 | 73 | 72 | 69 | 67 | 66 | 64 | | | | | | | | | | |
| **2006** | 322 | 291 | 97 | 88 | 84 | 79 | 79 | 79 | 77 | 74 | 72 | 67 | 68 | | | | | | | | | | | |
| **2007** | 323 | 282 | 97 | 83 | 79 | 78 | 73 | 73 | 72 | 73 | 72 | 70 | | | | | | | | | | | | |
| **2008** | 356 | 319 | 98 | 90 | 86 | 84 | 81 | 81 | 81 | 81 | 78 | | | | | | | | | | | | | |
| **2009** | 389 | 346 | 98 | 90 | 84 | 83 | 82 | 82 | 83 | 80 | | | | | | | | | | | | | | |
| **2010** | 382 | 326 | 98 | 94 | 91 | 90 | 90 | 90 | 87 | | | | | | | | | | | | | | | |
| **2011** | 400 | 369 | 99 | 95 | 91 | 90 | 89 | 89 | | | | | | | | | | | | | | | | |
| **2012** | 372 | 371 | 100 | 94 | 91 | 89 | 89 | | | | | | | | | | | | | | | | | |
| **2013** | 424 | 396 | 99 | 95 | 93 | 94 | | | | | | | | | | | | | | | | | | |
| **2014** | 441 | 404 | 99 | 97 | 93 | | | | | | | | | | | | | | | | | | | |
| **2015** | 455 | 430 | 100 | 99 | | | | | | | | | | | | | | | | | | | | |
| **2016** | 468 | 468 | 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 and Table 26 show that, on average, 87 percent of graduates are retained 2 years after graduation, and by the third year, 82 percent are retained.

Figure 21 shows that retention continues to drop, gradually decreasing to 70 percent 9 years after graduation before bottoming out at 62 percent in year 12 before beginning to increase again.

This continues to show 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 26 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 21: Graduate retention of class years 1995–2016**

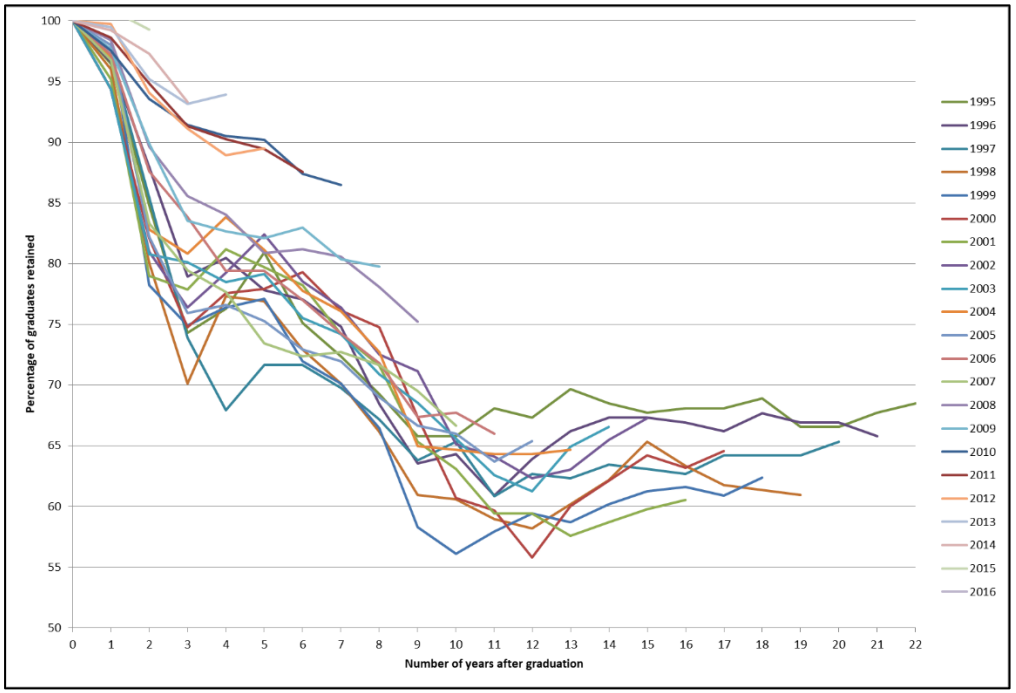


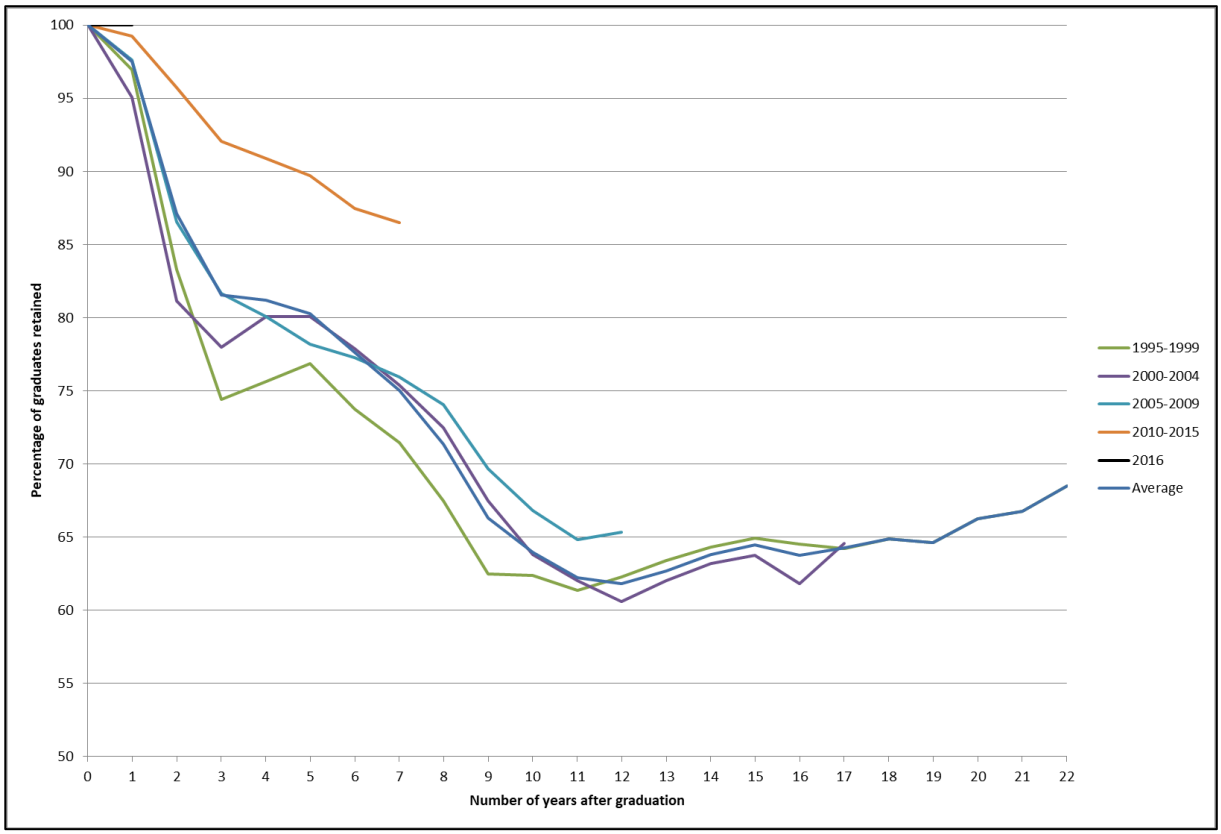

**Table 26: Average percentage of registered graduates retained by postgraduate year**

| | Postgraduate year | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** |
| **Average percentage of registered graduates retained** | 98 | 87 | 82 | 81 | 80 | 79 | 77 | 74 | 70 | 66 | 64 | 62 | 62 | 62 | 63 | 64 | 64 | 65 | 65 | 66 | 67 | 68 |
| **Standard deviation** | 2.0 | 6.5 | 7.3 | 6.3 | 5.2 | 4.9 | 4.5 | 3.5 | 3.6 | 3.5 | 3.4 | 2.9 | 3.9 | 3.6 | 3.3 | 3.0 | 2.7 | 3.3 | 2.7 | 0.8 | 1.4 | |

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 22 presents the same information as Figure 21 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 22: Graduate retention of class years 1995–2016 (5-year cohorts)**




## 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 27 and Figure 23 compare the retention rates of IMGs at each year after initial registration for successive years from 2000 to 2016. 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, 2016 was the most recent cohort that could be analysed at the time of publishing. The 2017 cohort will be included in the next report.

### Table 27: Retention rates for IMGs, 2000–2016

| 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 | 17 |
| 2000 | 924 | 47 | 38 | 35 | 31 | 28 | 27 | 27 | 25 | 23 | 22 | 22 | 20 | 20 | 20 | 20 | 20 | 19 |
| 2001 | 932 | 47 | 36 | 32 | 31 | 30 | 29 | 29 | 26 | 26 | 25 | 23 | 23 | 23 | 23 | 23 | 22 | |
| 2002 | 1,073 | 49 | 37 | 32 | 31 | 28 | 27 | 27 | 27 | 26 | 25 | 25 | 24 | 23 | 23 | 23 | | |
| 2003 | 1,092 | 45 | 33 | 30 | 29 | 28 | 27 | 26 | 26 | 25 | 25 | 25 | 23 | 24 | 24 | | | |
| 2004 | 1,014 | 48 | 32 | 29 | 27 | 26 | 26 | 25 | 24 | 23 | 22 | 22 | 22 | 22 | | | | |
| 2005 | 1,131 | 54 | 36 | 33 | 31 | 30 | 29 | 27 | 26 | 26 | 25 | 25 | 24 | | | | | |
| 2006 | 967 | 51 | 35 | 32 | 31 | 29 | 28 | 27 | 25 | 24 | 24 | 23 | | | | | | |
| 2007 | 1,105 | 62 | 46 | 40 | 38 | 37 | 35 | 34 | 32 | 31 | 31 | | | | | | | |
| 2008 | 1,096 | 57 | 37 | 30 | 29 | 26 | 25 | 23 | 23 | 23 | | | | | | | | |
| 2009 | 1,163 | 59 | 35 | 31 | 28 | 26 | 26 | 25 | 24 | | | | | | | | | |
| 2010 | 1,194 | 61 | 34 | 29 | 27 | 26 | 25 | 24 | | | | | | | | | | |
| 2011 | 1,255 | 62 | 38 | 31 | 29 | 28 | 28 | | | | | | | | | | | |
| 2012 | 1,195 | 66 | 38 | 32 | 31 | 30 | | | | | | | | | | | | |
| 2013 | 1,138 | 67 | 38 | 33 | 31 | | | | | | | | | | | | | |
| 2014 | 1,008 | 65 | 39 | 36 | | | | | | | | | | | | | | |
| 2015 | 950 | 70 | 44 | | | | | | | | | | | | | | | |
| 2016 | 1,081 | 71 | | | | | | | | | | | | | | | | |

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 23: Retention rate for IMGs, 2000–2016

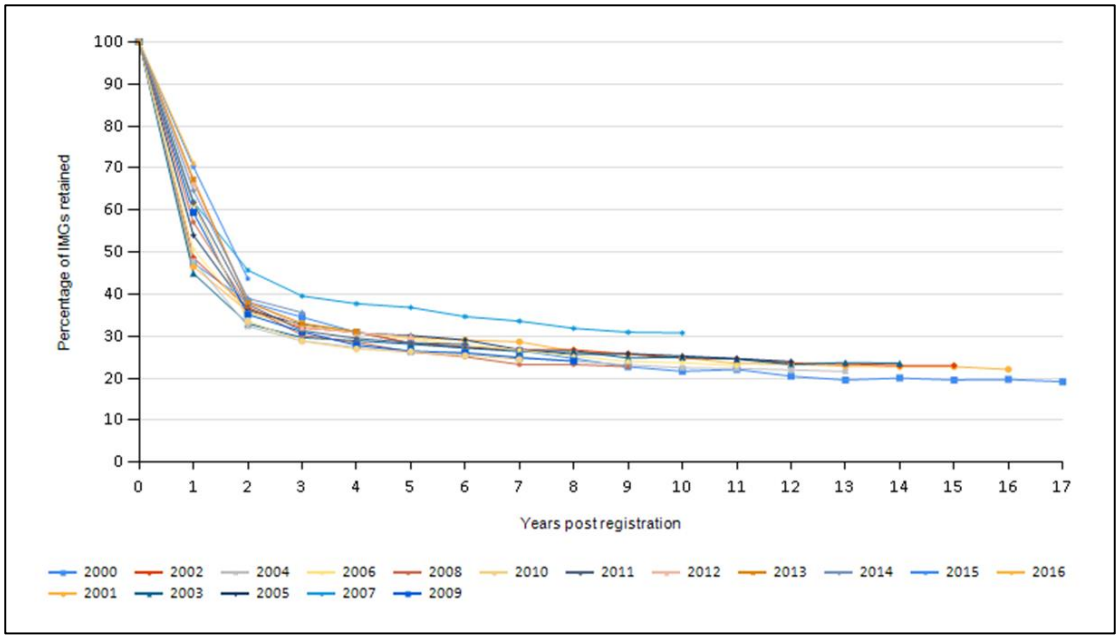


Table 28 shows that, on average, 58 percent of IMGs are retained in the year immediately after initial registration, dropping to 37 percent after 2 years.

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 28: 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 | 17 |
| **Average percentage of IMGs retained** | 58 | 37 | 32 | 30 | 29 | 28 | 27 | 26 | 25 | 25 | 24 | 23 | 22 | 22 | 22 | 21 | 19 |
| **Standard deviation** | 8.8 | 3.5 | 2.8 | 2.6 | 2.8 | 2.5 | 2.7 | 2.4 | 2.5 | 2.7 | 1.1 | 1.3 | 1.7 | 1.6 | 1.9 | 1.7 | - |

## 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.

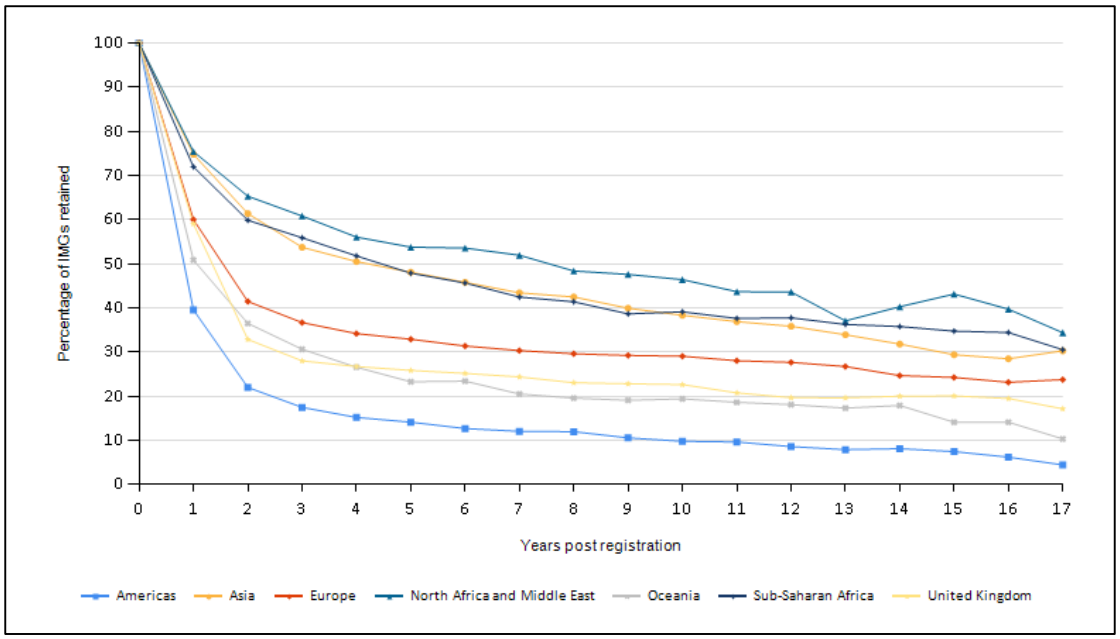
These groups are based on the level 1 major groups of the New Zealand Standard Classification for countries,[3] although some groups have been combined and others split to make the figures easier to read:

- 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.

[3] Statistics New Zealand – Country – Classifications and related statistical standards http://archive.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards.aspx

Figure 24 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 are presented in table form in Appendix 2 on page 69.

**Figure 24: Retention rate for IMGs by country, 2000–2016**




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 40 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 under 33 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.

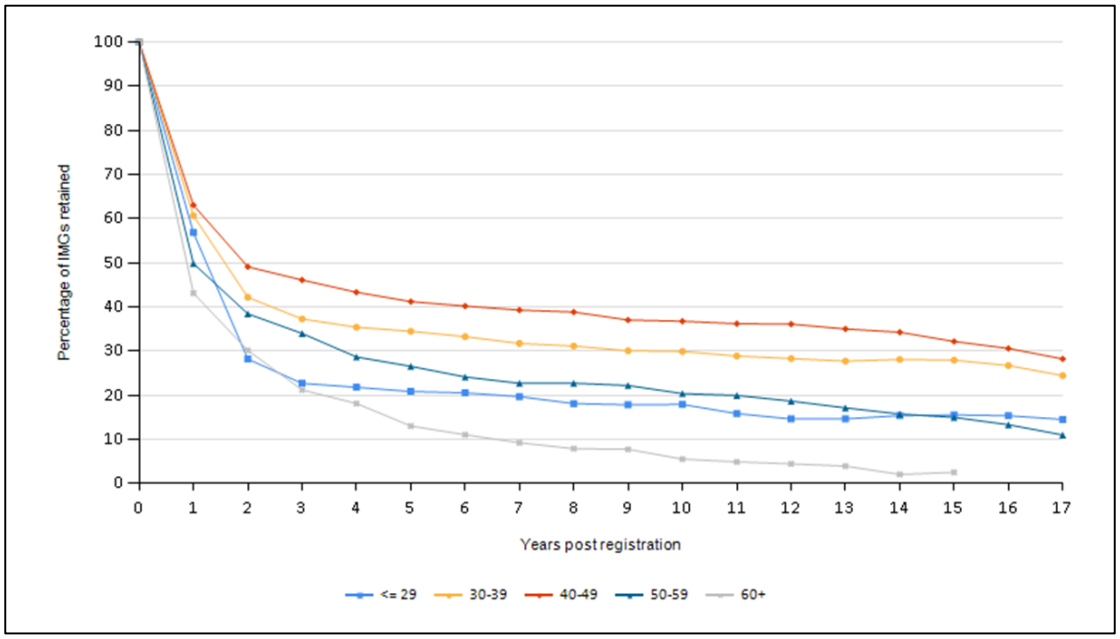
## Retention of international medical graduates – by age group

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 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 3 on page 76.

**Figure 25: Retention rate for IMGs by age group, 2000–2016**




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

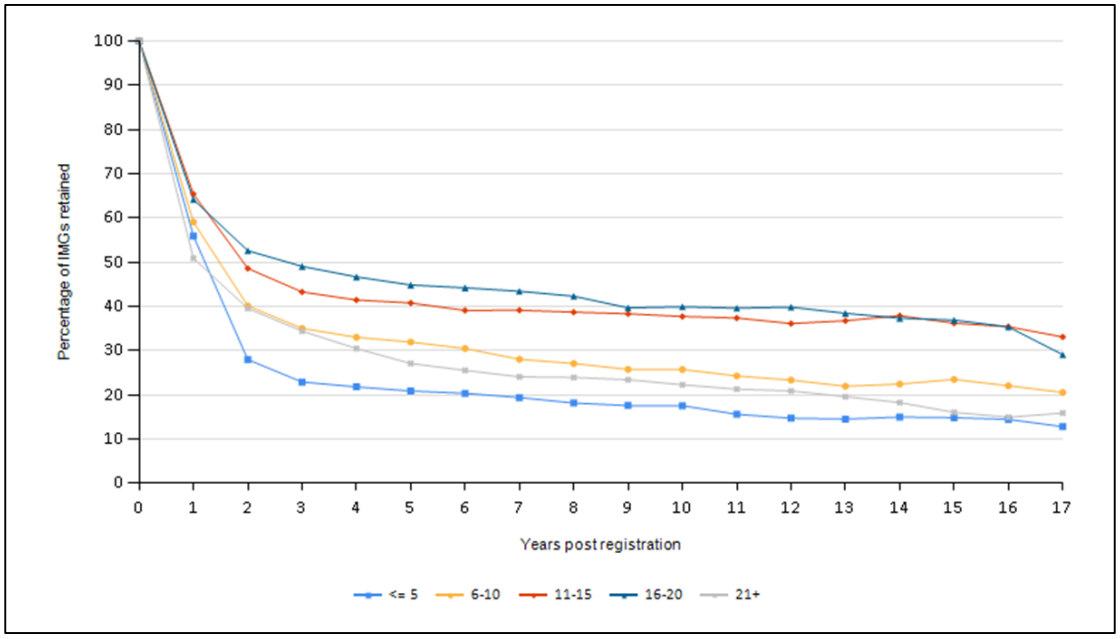
## Retention of international medical graduates – by time since qualification

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 26 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 81.

**Figure 26: 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 28 percent after 2 years and then dropping to just under 21 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).

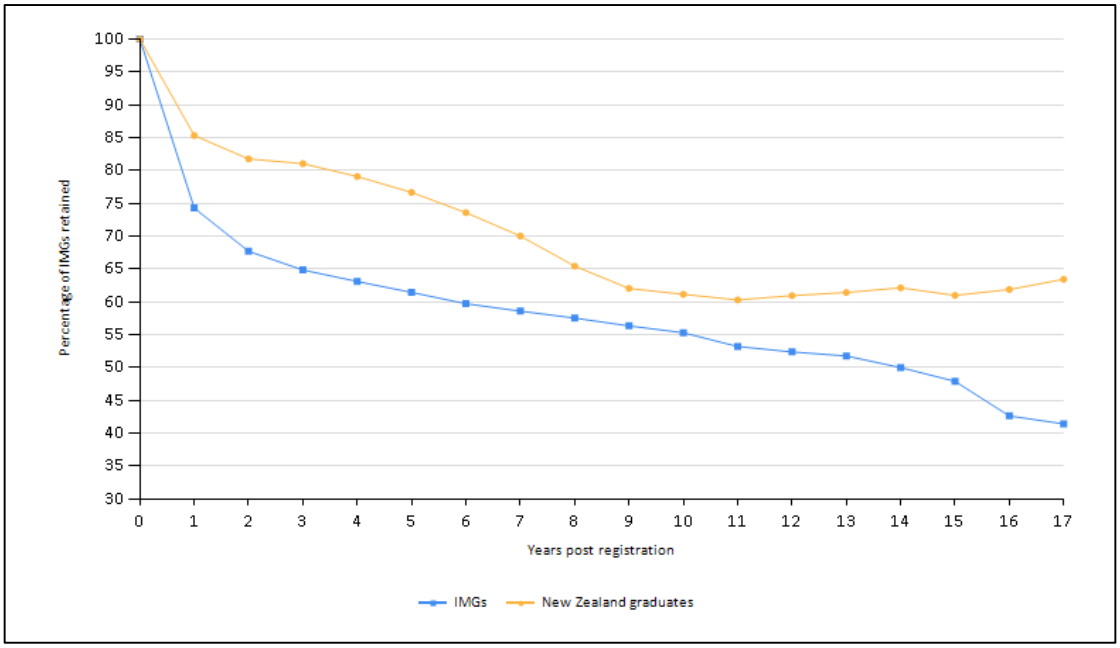
### General scope

Figure 27 and Table 29 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 61 percent after 5 years.

The number of IMGs who obtained a general scope increased after 2009, peaking at 574. However, the trend of reduced retention of IMGs who gained a general scope after 1 and 2 years since 2009 has continued in 2016.

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 27: Retention rates for IMGs and New Zealand graduates after general scope obtained, 2000–2016**



## Table 29: 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 | 17 |
| 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 | 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 | 43.8 | |
| 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 | 54.8 | | |
| 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 | 55.9 | | | |
| 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 | 52.7 | | | | |
| 2005 | **323** | 77.4 | 72.8 | 68.7 | 64.7 | 65.6 | 64.4 | 62.8 | 60.1 | 58.5 | 57.0 | 54.5 | 54.5 | | | | | |
| 2006 | **284** | 80.6 | 76.1 | 69.4 | 67.6 | 65.5 | 60.9 | 60.9 | 60.9 | 59.2 | 58.8 | 57.7 | | | | | | |
| 2007 | **331** | 82.5 | 76.7 | 75.2 | 71.0 | 67.4 | 62.8 | 60.1 | 60.1 | 61.0 | 58.0 | | | | | | | |
| 2008 | **384** | 74.7 | 70.8 | 65.1 | 61.7 | 57.6 | 55.5 | 50.3 | 49.5 | 48.7 | | | | | | | | |
| 2009 | **470** | 79.6 | 69.8 | 65.7 | 61.9 | 59.8 | 55.1 | 54.9 | 53.2 | | | | | | | | | |
| 2010 | **574** | 69.0 | 63.6 | 59.6 | 56.4 | 54.9 | 52.6 | 50.3 | | | | | | | | | | |
| 2011 | **567** | 61.2 | 54.3 | 50.3 | 49.2 | 47.1 | 46.2 | | | | | | | | | | | |
| 2012 | **473** | 64.9 | 55.0 | 53.5 | 52.0 | 49.9 | | | | | | | | | | | | |
| 2013 | **538** | 63.6 | 52.8 | 51.9 | 48.3 | | | | | | | | | | | | | |
| 2014 | **538** | 58.7 | 50.7 | 46.5 | | | | | | | | | | | | | | |
| 2015 | **407** | 60.4 | 54.8 | | | | | | | | | | | | | | | |
| 2016 | **540** | 64.1 | | | | | | | | | | | | | | | | |

| | Post-registration year | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 74.3 | 67.7 | 64.8 | 63.1 | 61.4 | 59.7 | 58.6 | 57.5 | 56.3 | 55.3 | 53.2 | 52.4 | 51.7 | 50.0 | 47.9 | 42.6 | 41.4 |
| **Standard deviation** | 10.4 | 10.6 | 10.1 | 8.6 | 7.2 | 6.3 | 5.2 | 5.2 | 4.7 | 3.9 | 4.3 | 4.3 | 5.4 | 6.8 | 6.2 | 1.7 | |

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

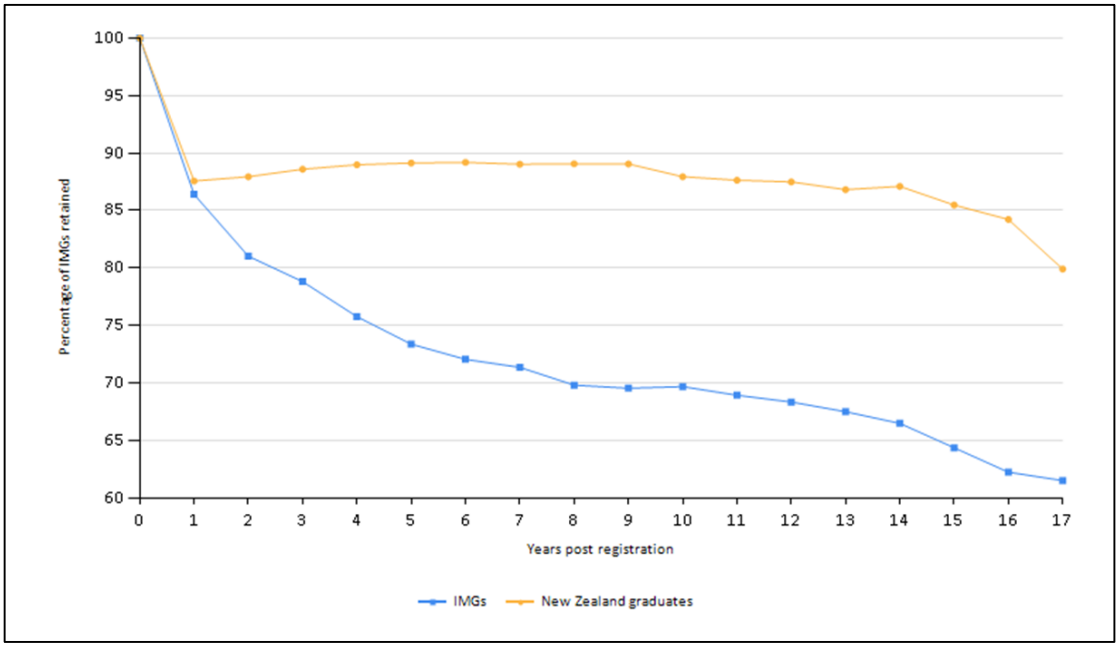
Table 30 and Figure 28 show the retention rate for IMGs in the years after they obtained a vocational scope of practice. Table 31 shows the equivalent figures for New Zealand graduates, and Figure 28 compares the rates for IMGs and New Zealand graduates. The vertical axis starts at 60 percent to better show the difference in retention for the two groups.

One year after obtaining a vocational scope, 86.4 percent of IMGs are retained. This decreases gradually to 72 percent after 6 years.

The number of IMGs who obtained a vocational scope rebounded in 2016 after dropping in 2015 for the first time in a number of years.

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 28: 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 just under 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 2016, the average age of doctors at the time they gained their vocational scope was 38.8 years for New Zealand graduates and 42.1 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 few years ago, 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 30: 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 | 17 |
| 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 | 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 | 62.9 | |
| 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 | 63.9 | | |
| 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 | 68.6 | | | |
| 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 | 65.0 | | | | |
| 2005 | **206** | 89.3 | 83.0 | 79.6 | 77.7 | 74.3 | 75.2 | 72.8 | 72.3 | 70.9 | 69.9 | 68.9 | 68.4 | | | | | |
| 2006 | **206** | 86.4 | 84.0 | 79.6 | 76.2 | 74.3 | 72.3 | 72.3 | 68.9 | 69.9 | 69.4 | 68.4 | | | | | | |
| 2007 | **223** | 78.9 | 75.3 | 74.4 | 73.1 | 68.2 | 66.4 | 64.6 | 62.8 | 65.0 | 64.1 | | | | | | | |
| 2008 | **229** | 82.5 | 79.0 | 72.1 | 70.3 | 66.8 | 65.1 | 63.8 | 62.9 | 62.4 | | | | | | | | |
| 2009 | **239** | 82.8 | 76.2 | 72.4 | 69.9 | 68.2 | 66.9 | 67.8 | 66.1 | | | | | | | | | |
| 2010 | **241** | 84.6 | 77.2 | 75.1 | 73.9 | 73.4 | 71.4 | 71.4 | | | | | | | | | | |
| 2011 | **327** | 84.1 | 78.0 | 76.1 | 71.6 | 70.0 | 70.3 | | | | | | | | | | | |
| 2012 | **354** | 84.5 | 75.4 | 73.2 | 72.0 | 68.9 | | | | | | | | | | | | |
| 2013 | **398** | 87.4 | 82.9 | 80.4 | 75.9 | | | | | | | | | | | | | |
| 2014 | **403** | 86.6 | 78.9 | 78.9 | | | | | | | | | | | | | | |
| 2015 | **308** | 87.0 | 79.9 | | | | | | | | | | | | | | | |
| 2016 | **332** | 84.9 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 86.4 | 81.0 | 78.8 | 75.8 | 73.4 | 72.0 | 71.3 | 69.8 | 69.5 | 69.7 | 68.9 | 68.3 | 67.5 | 66.5 | 64.3 | 62.2 | 61.5 |
| **Standard deviation** | 3.4 | 4.3 | 4.8 | 4.4 | 4.9 | 4.7 | 5.1 | 5.3 | 4.5 | 4.4 | 2.0 | 2.1 | 2.2 | 1.7 | 1.3 | 1.0 | |

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

### Table 31: 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 | 17 |
| 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 | 79.9 |
| 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 | 84.9 | |
| 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 | 84.1 | | |
| 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 | 88.4 | | | |
| 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 | 84.4 | | | | |
| 2005 | **235** | 87.7 | 87.2 | 90.6 | 89.8 | 88.1 | 88.5 | 88.1 | 88.1 | 88.9 | 88.1 | 87.7 | 86.8 | | | | | |
| 2006 | **226** | 85.8 | 90.3 | 89.4 | 87.2 | 88.9 | 88.9 | 88.1 | 88.1 | 87.2 | 86.3 | 85.8 | | | | | | |
| 2007 | **215** | 85.6 | 83.3 | 85.1 | 87.0 | 84.7 | 86.5 | 84.7 | 85.6 | 85.1 | 85.1 | | | | | | | |
| 2008 | **220** | 85.0 | 90.0 | 90.0 | 88.6 | 90.5 | 89.1 | 90.0 | 90.0 | 90.5 | | | | | | | | |
| 2009 | **223** | 87.0 | 87.9 | 89.7 | 91.0 | 90.1 | 89.7 | 88.8 | 89.2 | | | | | | | | | |
| 2010 | **212** | 86.3 | 88.2 | 90.1 | 90.1 | 88.7 | 88.2 | 87.3 | | | | | | | | | | |
| 2011 | **265** | 81.5 | 81.5 | 81.1 | 81.5 | 82.6 | 81.9 | | | | | | | | | | | |
| 2012 | **232** | 82.8 | 80.2 | 82.8 | 84.1 | 84.9 | | | | | | | | | | | | |
| 2013 | **277** | 84.1 | 82.3 | 83.4 | 84.1 | | | | | | | | | | | | | |
| 2014 | **327** | 82.6 | 85.6 | 87.8 | | | | | | | | | | | | | | |
| 2015 | **289** | 87.9 | 90.7 | | | | | | | | | | | | | | | |
| 2016 | **342** | 89.2 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 87.6 | 87.9 | 88.6 | 89.0 | 89.1 | 89.2 | 89.0 | 89.1 | 89.1 | 87.9 | 87.6 | 87.5 | 86.8 | 87.1 | 85.5 | 84.2 | 79.9 |
| **Standard deviation** | 4.1 | 4.3 | 3.9 | 4.0 | 3.4 | 3.2 | 2.3 | 1.9 | 2.0 | 1.7 | 1.6 | 1.6 | 1.7 | 1.4 | 1.3 | 0.9 | |

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

Council is now delivering the survey questionnaire entirely 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 the first done entirely electronically, with the previous survey in 2015 being a hybrid (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 than in previous years where the data was collected on paper forms.

## 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 2016, February 2017, May 2017 and August 2017.

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 2016 workforce survey, survey forms were sent out to 15,604 doctors with 14,556 responding (an overall response rate of 96.3 percent).

Please note that this does not mean that 96.3 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 2016 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.

## Active doctors

The results in this report include only the responses from the 14,165 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 2016.[4]

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.

[4] Statistics New Zealand: Estimated Resident Population as at 30 June 2016. http://archive.stats.govt.nz/browse_for_stats/population/estimates_and_projections/NationalPopulationEstimates_HOTPAt30Jun16.aspx

## 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. Māori
2. Pacific Island (Pasifika)
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 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 Multi Employer Collective Agreement (MECA) between the Association of Salaried Medical Specialists (ASMS) and DHBs[5] 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).

[5] https://www.asms.org.nz/wp-content/uploads/2017/10/2017-2020-DHB-MECA-Signed.pdf

### Registered within a vocational scope of practice

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

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

### Specialist

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

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

### Work role

Work role category options in the survey were:

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

### Work type

This is the category of work at main work site from the options shown in Table 3 on page 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 32 shows the distribution of all doctors and GPs by the DHB locality at the doctor's main work site for 2016.

**Table 32: 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 | 433 | 143 | 171,400 | 253 | 131 | 77 | 83 |
| Waitemata | 1045 | 415 | 590,700 | 177 | 364 | 62 | 70 |
| Auckland | 3,102 | 502 | 507,200 | 612 | 436 | 86 | 99 |
| Counties-Manukau | 868 | 346 | 534,200 | 162 | 335 | 63 | 65 |
| Waikato[4] | 1170 | 316 | 399,500 | 293 | 290 | 73 | 79 |
| Lakes | 275 | 93 | 106,600 | 258 | 82 | 77 | 87 |
| Bay of Plenty | 663 | 220 | 226,700 | 292 | 179 | 79 | 97 |
| Tairawhiti | 128 | 36 | 47,800 | 268 | 32 | 68 | 75 |
| Taranaki | 291 | 81 | 116,800 | 249 | 75 | 64 | 69 |
| Hawkes Bay | 446 | 155 | 161,400 | 276 | 145 | 90 | 96 |
| Whanganui | 143 | 48 | 63,000 | 227 | 52 | 82 | 76 |
| MidCentral | 455 | 103 | 174,200 | 261 | 104 | 60 | 59 |
| Hutt | 280 | 108 | 145,900 | 192 | 93 | 64 | 74 |
| Capital and Coast[5] | 1401 | 329 | 306,600 | 457 | 278 | 91 | 107 |
| Wairarapa | 74 | 35 | 43,600 | 170 | 32 | 74 | 80 |
| Nelson-Marlborough | 402 | 160 | 146,400 | 275 | 131 | 89 | 109 |
| West Coast | 55 | 19 | 32,500 | 169 | 21 | 64 | 58 |
| Canterbury | 1,774 | 490 | 539,600 | 329 | 419 | 78 | 91 |
| South Canterbury | 124 | 42 | 59,200 | 209 | 45 | 77 | 71 |
| Southern | 1036 | 309 | 318,900 | 325 | 266 | 83 | 97 |
| **Total** | **14,165** | **3,950** | **4,692,200** | **307** | **3,512** | **75** | **84** |

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 2016.

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 33 to Table 39 show the cohort retention rate at each year after initial registration for successive years of IMG registrants from each group, as described on page 52. The footnotes referred to in these tables are detailed on page 75 following Table 39 and are the same for all tables in this section.

### Table 33: Retention rate for graduates from the Americas, 2000–2016

| 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 | 17 |
| 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 | 4.4 |
| 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 | 7.0 | |
| 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 | 8.3 | | |
| 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 | 11.0 | | | |
| 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 | 8.7 | | | | |
| 2005 | **178** | 39.9 | 23.6 | 21.9 | 19.1 | 21.3 | 18.0 | 15.7 | 15.7 | 14.6 | 14.0 | 14.0 | 12.9 | | | | | |
| 2006 | **150** | 34.7 | 20.7 | 19.3 | 16.7 | 19.3 | 18.7 | 15.3 | 15.3 | 14.7 | 12.7 | 12.7 | | | | | | |
| 2007 | **200** | 43.0 | 21.0 | 16.0 | 16.0 | 15.5 | 14.5 | 14.5 | 15.0 | 12.5 | 11.5 | | | | | | | |
| 2008 | **225** | 37.8 | 21.3 | 16.4 | 16.0 | 12.4 | 10.7 | 9.8 | 11.6 | 11.1 | | | | | | | | |
| 2009 | **238** | 39.9 | 21.4 | 20.2 | 15.5 | 15.1 | 14.7 | 15.1 | 14.3 | | | | | | | | | |
| 2010 | **249** | 44.2 | 19.3 | 14.9 | 14.5 | 12.9 | 10.4 | 10.4 | | | | | | | | | | |
| 2011 | **239** | 46.4 | 23.4 | 17.6 | 17.6 | 15.9 | 15.1 | | | | | | | | | | | |
| 2012 | **239** | 48.5 | 27.2 | 23.0 | 22.2 | 21.8 | | | | | | | | | | | | |
| 2013 | **234** | 52.6 | 25.6 | 21.4 | 21.4 | | | | | | | | | | | | | |
| 2014 | **193** | 48.7 | 29.5 | 25.4 | | | | | | | | | | | | | | |
| 2015 | **172** | 55.8 | 32.0 | | | | | | | | | | | | | | | |
| 2016 | **178** | 51.7 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 39.5 | 22.0 | 17.5 | 15.2 | 14.1 | 12.7 | 12.0 | 11.9 | 10.5 | 9.8 | 9.6 | 8.6 | 7.9 | 8.1 | 7.4 | 6.2 | 4.4 |
| **Standard deviation** | 10.9 | 4.8 | 4.2 | 4.1 | 4.6 | 3.5 | 3.0 | 3.0 | 3.1 | 2.8 | 3.1 | 3.2 | 2.7 | 2.2 | 1.1 | 1.2 | |

## Table 34: Retention rate for graduates from Asia, 2000–2016

| 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 | 17 |
| 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 | 30.3 |
| 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 | 25.8 | |
| 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 | 31.0 | | |
| 2003 | **125** | 69.6 | 65.6 | 59.2 | 56.0 | 52.0 | 50.4 | 48.0 | 47.2 | 42.4 | 43.2 | 41.6 | 40.0 | 40.8 | 40.0 | | | |
| 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 | 38.9 | | | | |
| 2005 | **100** | 78.0 | 68.0 | 62.0 | 57.0 | 54.0 | 53.0 | 45.0 | 44.0 | 44.0 | 42.0 | 42.0 | 40.0 | | | | | |
| 2006 | **109** | 68.8 | 54.1 | 45.9 | 43.1 | 40.4 | 38.5 | 35.8 | 33.0 | 33.9 | 32.1 | 30.3 | | | | | | |
| 2007 | **149** | 78.5 | 59.7 | 53.0 | 51.7 | 52.3 | 47.7 | 46.3 | 45.0 | 40.9 | 39.6 | | | | | | | |
| 2008 | **103** | 76.7 | 58.3 | 43.7 | 39.8 | 38.8 | 34.0 | 29.1 | 31.1 | 30.1 | | | | | | | | |
| 2009 | **99** | 76.8 | 59.6 | 56.6 | 52.5 | 51.5 | 50.5 | 44.4 | 44.4 | | | | | | | | | |
| 2010 | **85** | 74.1 | 55.3 | 45.9 | 44.7 | 47.1 | 43.5 | 41.2 | | | | | | | | | | |
| 2011 | **99** | 68.7 | 54.5 | 40.4 | 40.4 | 40.4 | 39.4 | | | | | | | | | | | |
| 2012 | **97** | 70.1 | 54.6 | 48.5 | 48.5 | 46.4 | | | | | | | | | | | | |
| 2013 | **87** | 86.2 | 74.7 | 65.5 | 60.9 | | | | | | | | | | | | | |
| 2014 | **73** | 80.8 | 57.5 | 57.5 | | | | | | | | | | | | | | |
| 2015 | **74** | 79.7 | 59.5 | | | | | | | | | | | | | | | |
| 2016 | **65** | 75.4 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 74.8 | 61.4 | 53.7 | 50.5 | 48.1 | 45.8 | 43.4 | 42.5 | 39.9 | 38.3 | 36.9 | 35.8 | 33.9 | 31.8 | 29.4 | 28.5 | 30.3 |
| **Standard deviation** | 5.0 | 6.2 | 7.6 | 6.6 | 5.5 | 6.0 | 6.3 | 5.9 | 5.0 | 4.0 | 5.4 | 4.7 | 5.8 | 6.0 | 2.1 | 3.7 | |

## Table 35: Retention rate for graduates from Europe, 2000–2016

| 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 | 17 |
| 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 | 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 | 22.5 | |
| 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 | 25.0 | | |
| 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 | 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 | 37.4 | | | | |
| 2005 | **116** | 64.7 | 43.1 | 39.7 | 34.5 | 35.3 | 34.5 | 34.5 | 31.9 | 31.9 | 31.0 | 30.2 | 27.6 | | | | | |
| 2006 | **127** | 44.9 | 31.5 | 28.3 | 30.7 | 26.8 | 26.0 | 25.2 | 23.6 | 21.3 | 20.5 | 19.7 | | | | | | |
| 2007 | **131** | 66.4 | 49.6 | 42.7 | 38.2 | 38.2 | 35.1 | 33.6 | 32.8 | 34.4 | 33.6 | | | | | | | |
| 2008 | **174** | 58.6 | 42.5 | 35.6 | 33.3 | 31.6 | 29.9 | 27.6 | 27.6 | 26.4 | | | | | | | | |
| 2009 | **201** | 58.2 | 40.3 | 36.3 | 33.3 | 29.4 | 28.9 | 27.9 | 27.9 | | | | | | | | | |
| 2010 | **163** | 61.3 | 33.1 | 28.8 | 26.4 | 24.5 | 26.4 | 23.3 | | | | | | | | | | |
| 2011 | **175** | 59.4 | 41.1 | 37.1 | 34.9 | 32.6 | 31.4 | | | | | | | | | | | |
| 2012 | **190** | 66.3 | 42.6 | 35.8 | 34.2 | 33.2 | | | | | | | | | | | | |
| 2013 | **199** | 64.8 | 38.7 | 36.2 | 32.7 | | | | | | | | | | | | | |
| 2014 | **138** | 71.0 | 42.8 | 39.1 | | | | | | | | | | | | | | |
| 2015 | **182** | 70.9 | 44.5 | | | | | | | | | | | | | | | |
| 2016 | **173** | 72.3 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 60.0 | 41.4 | 36.7 | 34.2 | 32.9 | 31.3 | 30.3 | 29.6 | 29.2 | 29.0 | 28.0 | 27.6 | 26.7 | 24.6 | 24.2 | 23.1 | 23.7 |
| **Standard deviation** | 9.1 | 5.7 | 4.8 | 4.5 | 5.8 | 5.2 | 5.5 | 4.3 | 5.1 | 5.6 | 5.2 | 4.9 | 6.3 | 2.5 | 0.7 | 0.8 | |

## Table 36: Retention rate for graduates from North Africa and the Middle East, 2000–2016

| 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 | 17 |
| 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 | 34.4 |
| 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 | 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 | 50.0 | | |
| 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 | 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 | 25.0 | | | | |
| 2005 | **22** | 81.8 | 81.8 | 77.3 | 72.7 | 68.2 | 68.2 | 68.2 | 68.2 | 63.6 | 68.2 | 63.6 | 63.6 | | | | | |
| 2006 | **12** | 66.7 | 75.0 | 58.3 | 50.0 | 41.7 | 33.3 | 33.3 | 33.3 | 33.3 | 25.0 | 25.0 | | | | | | |
| 2007 | **11** | 72.7 | 63.6 | 54.5 | 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 | 53.3 | | | | | | | | |
| 2009 | **15** | 86.7 | 73.3 | 60.0 | 53.3 | 53.3 | 53.3 | 53.3 | 53.3 | | | | | | | | | |
| 2010 | **22** | 86.4 | 63.6 | 63.6 | 63.6 | 68.2 | 68.2 | 68.2 | | | | | | | | | | |
| 2011 | **18** | 77.8 | 66.7 | 66.7 | 55.6 | 50.0 | 50.0 | | | | | | | | | | | |
| 2012 | **24** | 66.7 | 54.2 | 54.2 | 41.7 | 41.7 | | | | | | | | | | | | |
| 2013 | **15** | 73.3 | 60.0 | 53.3 | 53.3 | | | | | | | | | | | | | |
| 2014 | **17** | 76.5 | 58.8 | 58.8 | | | | | | | | | | | | | | |
| 2015 | **20** | 75.0 | 60.0 | | | | | | | | | | | | | | | |
| 2016 | **10** | 60.0 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 75.4 | 65.3 | 60.8 | 56.0 | 53.8 | 53.6 | 51.9 | 48.4 | 47.6 | 46.4 | 43.7 | 43.6 | 37.1 | 40.3 | 43.1 | 39.7 | 34.4 |
| **Standard deviation** | 6.9 | 7.5 | 7.4 | 8.4 | 9.2 | 9.7 | 11.6 | 12.1 | 11.0 | 13.7 | 13.3 | 14.8 | 11.5 | 12.7 | 10.3 | 11.9 | |

## Table 37: Retention rate for graduates from Oceania, 2000–2016

| 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 | 17 |
| 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 | 10.3 |
| 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 | 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 | 14.1 | | |
| 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 | 26.2 | | | |
| 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 | 11.8 | | | | |
| 2005 | **74** | 45.9 | 32.4 | 27.0 | 21.6 | 20.3 | 23.0 | 18.9 | 17.6 | 18.9 | 17.6 | 16.2 | 18.9 | | | | | |
| 2006 | **70** | 38.6 | 35.7 | 22.9 | 22.9 | 21.4 | 18.6 | 18.6 | 17.1 | 20.0 | 20.0 | 21.4 | | | | | | |
| 2007 | **77** | 44.2 | 29.9 | 28.6 | 27.3 | 24.7 | 23.4 | 20.8 | 20.8 | 24.7 | 26.0 | | | | | | | |
| 2008 | **80** | 41.3 | 28.8 | 20.0 | 18.8 | 10.0 | 12.5 | 11.3 | 12.5 | 12.5 | | | | | | | | |
| 2009 | **78** | 35.9 | 24.4 | 17.9 | 17.9 | 15.4 | 12.8 | 12.8 | 12.8 | | | | | | | | | |
| 2010 | **82** | 46.3 | 36.6 | 29.3 | 25.6 | 26.8 | 30.5 | 26.8 | | | | | | | | | | |
| 2011 | **116** | 52.6 | 44.0 | 38.8 | 33.6 | 30.2 | 32.8 | | | | | | | | | | | |
| 2012 | **87** | 69.0 | 41.4 | 35.6 | 34.5 | 28.7 | | | | | | | | | | | | |
| 2013 | **84** | 58.3 | 40.5 | 38.1 | 28.6 | | | | | | | | | | | | | |
| 2014 | **126** | 58.7 | 42.1 | 41.3 | | | | | | | | | | | | | | |
| 2015 | **98** | 63.3 | 44.9 | | | | | | | | | | | | | | | |
| 2016 | **102** | 67.6 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 50.8 | 36.5 | 30.6 | 26.5 | 23.3 | 23.4 | 20.5 | 19.6 | 19.1 | 19.4 | 18.6 | 18.1 | 17.3 | 17.9 | 14.1 | 14.1 | 10.3 |
| **Standard deviation** | 9.8 | 6.5 | 7.5 | 5.9 | 6.1 | 7.2 | 6.6 | 6.5 | 4.1 | 4.9 | 3.9 | 4.2 | 6.2 | 5.7 | 2.3 | 3.3 | |

## Table 38: Retention rate for graduates from Sub-Saharan Africa, 2000–2016

| 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 | 17 |
| 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 | 30.5 |
| 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 | 36.2 | |
| 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 | 33.6 | | |
| 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 | 37.2 | | | |
| 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 | 36.7 | | | | |
| 2005 | **75** | 62.7 | 52.0 | 52.0 | 53.3 | 50.7 | 50.7 | 45.3 | 40.0 | 38.7 | 41.3 | 41.3 | 38.7 | | | | | |
| 2006 | **96** | 56.3 | 46.9 | 45.8 | 43.8 | 38.5 | 34.4 | 34.4 | 33.3 | 29.2 | 30.2 | 28.1 | | | | | | |
| 2007 | **90** | 72.2 | 65.6 | 58.9 | 58.9 | 54.4 | 54.4 | 54.4 | 50.0 | 44.4 | 43.3 | | | | | | | |
| 2008 | **41** | 73.2 | 51.2 | 51.2 | 46.3 | 43.9 | 43.9 | 39.0 | 36.6 | 31.7 | | | | | | | | |
| 2009 | **47** | 66.0 | 53.2 | 48.9 | 40.4 | 36.2 | 36.2 | 36.2 | 36.2 | | | | | | | | | |
| 2010 | **36** | 75.0 | 61.1 | 44.4 | 47.2 | 38.9 | 33.3 | 33.3 | | | | | | | | | | |
| 2011 | **35** | 82.9 | 74.3 | 71.4 | 62.9 | 60.0 | 57.1 | | | | | | | | | | | |
| 2012 | **35** | 82.9 | 62.9 | 65.7 | 54.3 | 54.3 | | | | | | | | | | | | |
| 2013 | **29** | 82.8 | 62.1 | 55.2 | 55.2 | | | | | | | | | | | | | |
| 2014 | **20** | 75.0 | 70.0 | 70.0 | | | | | | | | | | | | | | |
| 2015 | **27** | 81.5 | 55.6 | | | | | | | | | | | | | | | |
| 2016 | **29** | 86.2 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 72.0 | 59.8 | 55.9 | 51.8 | 47.9 | 45.6 | 42.4 | 41.4 | 38.6 | 39.1 | 37.6 | 37.7 | 36.2 | 35.8 | 34.7 | 34.4 | 30.5 |
| **Standard deviation** | 9.2 | 7.8 | 8.5 | 6.5 | 7.3 | 7.7 | 6.6 | 5.5 | 5.4 | 4.1 | 4.8 | 2.7 | 2.9 | 3.6 | 3.9 | 2.5 | |

## Table 39: Retention rate for graduates from the United Kingdom, 2000–2016

| 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 | 17 |
| 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 | 17.1 |
| 2001 | **445** | 41.3 | 28.8 | 24.0 | 24.7 | 24.9 | 24.3 | 23.4 | 21.6 | 22.7 | 21.8 | 19.8 | 21.1 | 22.0 | 21.3 | 21.6 | 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 | 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 | 20.3 | | | |
| 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 | 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 | 21.0 | | | | | |
| 2006 | **403** | 53.6 | 33.3 | 32.8 | 30.8 | 29.5 | 29.3 | 28.3 | 26.6 | 24.8 | 25.6 | 24.8 | | | | | | |
| 2007 | **447** | 64.4 | 49.2 | 42.3 | 39.8 | 38.9 | 36.7 | 35.3 | 32.4 | 32.7 | 33.3 | | | | | | | |
| 2008 | **458** | 62.4 | 37.1 | 30.8 | 29.7 | 28.4 | 28.2 | 26.6 | 25.8 | 25.3 | | | | | | | | |
| 2009 | **485** | 68.2 | 33.6 | 28.5 | 26.2 | 25.8 | 25.6 | 24.3 | 22.9 | | | | | | | | | |
| 2010 | **557** | 67.5 | 33.4 | 30.0 | 27.5 | 27.1 | 26.0 | 25.9 | | | | | | | | | | |
| 2011 | **573** | 67.9 | 35.1 | 28.6 | 27.2 | 27.4 | 27.1 | | | | | | | | | | | |
| 2012 | **523** | 72.5 | 36.3 | 28.1 | 27.5 | 27.5 | | | | | | | | | | | | |
| 2013 | **490** | 72.4 | 34.7 | 28.8 | 28.2 | | | | | | | | | | | | | |
| 2014 | **441** | 67.8 | 35.8 | 31.3 | | | | | | | | | | | | | | |
| 2015 | **377** | 75.6 | 43.5 | | | | | | | | | | | | | | | |
| 2016 | **524** | 76.9 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 59.0 | 32.8 | 28.0 | 26.7 | 25.8 | 25.2 | 24.4 | 23.0 | 22.8 | 22.6 | 20.7 | 19.6 | 19.6 | 20.0 | 20.0 | 19.5 | 17.1 |
| **Standard deviation** | 13.9 | 7.3 | 5.4 | 4.9 | 5.2 | 4.9 | 4.6 | 4.2 | 4.6 | 5.0 | 2.4 | 1.7 | 2.5 | 2.0 | 2.3 | 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 40 to Table 44 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 54). The footnotes referred to in these tables are detailed on page 80 following Table 44 and are the same for all tables in this section.

### Table 40: Retention rate for IMGs aged 29 or younger, 2000–2016

| 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 | 17 |
| 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 | 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 | 16.2 | |
| 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 | 16.8 | | |
| 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 | 14.1 | | | |
| 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 | 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 | 16.3 | | | | | |
| 2006 | **291** | 45.4 | 32.6 | 29.6 | 28.9 | 27.8 | 26.1 | 25.1 | 22.0 | 21.0 | 21.0 | 20.3 | | | | | | |
| 2007 | **336** | 67.9 | 45.5 | 37.5 | 36.3 | 36.6 | 35.1 | 33.3 | 28.9 | 29.2 | 29.2 | | | | | | | |
| 2008 | **382** | 57.9 | 29.8 | 22.3 | 20.7 | 19.6 | 19.6 | 17.8 | 16.0 | 16.2 | | | | | | | | |
| 2009 | **420** | 60.0 | 26.0 | 21.0 | 19.0 | 18.1 | 18.6 | 17.6 | 17.4 | | | | | | | | | |
| 2010 | **474** | 65.8 | 27.2 | 23.8 | 22.4 | 22.6 | 22.2 | 20.5 | | | | | | | | | | |
| 2011 | **453** | 65.6 | 28.3 | 20.8 | 21.0 | 20.1 | 20.8 | | | | | | | | | | | |
| 2012 | **436** | 68.6 | 31.9 | 22.5 | 22.2 | 21.8 | | | | | | | | | | | | |
| 2013 | **430** | 71.9 | 29.5 | 23.5 | 23.7 | | | | | | | | | | | | | |
| 2014 | **322** | 67.7 | 29.5 | 26.1 | | | | | | | | | | | | | | |
| 2015 | **343** | 79.6 | 44.3 | | | | | | | | | | | | | | | |
| 2016 | **397** | 76.3 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 56.8 | 28.2 | 22.7 | 21.8 | 20.8 | 20.5 | 19.7 | 18.1 | 17.8 | 17.9 | 15.8 | 14.6 | 14.6 | 15.4 | 15.5 | 15.3 | 14.5 |
| **Standard deviation** | 15.1 | 8.2 | 5.6 | 5.5 | 6.0 | 5.6 | 5.4 | 4.5 | 4.9 | 5.3 | 2.9 | 1.9 | 2.4 | 1.5 | 1.3 | 1.2 | |

## Table 41: Retention rate for IMGs aged 30–39, 2000–2016

| 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 | 17 |
| 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 | 24.4 |
| 2001 | **341** | 56.6 | 46.9 | 42.8 | 41.9 | 39.6 | 38.7 | 36.4 | 34.9 | 34.6 | 33.1 | 32.3 | 32.3 | 29.9 | 30.2 | 31.1 | 29.3 | |
| 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 | 28.9 | | |
| 2003 | **379** | 50.7 | 39.3 | 35.9 | 35.9 | 35.4 | 33.0 | 32.2 | 32.2 | 31.1 | 31.4 | 30.6 | 29.6 | 29.6 | 29.3 | | | |
| 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 | 25.8 | | | | |
| 2005 | **360** | 57.5 | 39.2 | 35.0 | 33.1 | 33.3 | 31.7 | 29.2 | 28.9 | 28.9 | 28.3 | 28.1 | 27.8 | | | | | |
| 2006 | **380** | 58.2 | 37.4 | 33.4 | 31.8 | 31.6 | 30.5 | 29.5 | 28.4 | 27.6 | 28.2 | 27.1 | | | | | | |
| 2007 | **448** | 64.7 | 47.3 | 43.1 | 39.7 | 38.6 | 36.2 | 35.7 | 34.6 | 32.8 | 33.5 | | | | | | | |
| 2008 | **415** | 61.0 | 41.9 | 34.9 | 33.3 | 31.1 | 29.4 | 28.0 | 29.6 | 28.2 | | | | | | | | |
| 2009 | **387** | 62.8 | 41.1 | 37.0 | 34.6 | 32.6 | 31.3 | 30.0 | 29.2 | | | | | | | | | |
| 2010 | **369** | 62.1 | 39.0 | 33.6 | 30.6 | 31.7 | 30.4 | 29.8 | | | | | | | | | | |
| 2011 | **411** | 63.3 | 44.5 | 37.5 | 36.0 | 36.0 | 35.5 | | | | | | | | | | | |
| 2012 | **366** | 66.9 | 40.7 | 34.7 | 33.9 | 35.2 | | | | | | | | | | | | |
| 2013 | **373** | 67.0 | 41.8 | 37.3 | 34.6 | | | | | | | | | | | | | |
| 2014 | **350** | 63.7 | 40.6 | 36.0 | | | | | | | | | | | | | | |
| 2015 | **330** | 63.6 | 40.9 | | | | | | | | | | | | | | | |
| 2016 | **340** | 71.2 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 60.7 | 42.2 | 37.3 | 35.4 | 34.5 | 33.3 | 31.7 | 31.1 | 30.1 | 29.9 | 28.9 | 28.3 | 27.7 | 28.1 | 27.9 | 26.7 | 24.4 |
| **Standard deviation** | 5.6 | 3.4 | 3.5 | 3.5 | 2.8 | 2.8 | 2.8 | 2.5 | 2.6 | 2.5 | 2.0 | 2.6 | 2.6 | 2.5 | 3.8 | 3.7 | |

## Table 42: Retention rate for IMGs aged 40–49, 2000–2016

| 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 | 17 |
| 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 | 28.2 |
| 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 | 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 | 35.9 | | |
| 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 | 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 | 39.2 | | | | |
| 2005 | **196** | 66.8 | 55.6 | 52.6 | 49.5 | 49.0 | 48.5 | 44.9 | 41.8 | 42.3 | 40.8 | 40.3 | 39.3 | | | | | |
| 2006 | **150** | 50.7 | 36.0 | 35.3 | 35.3 | 32.7 | 30.0 | 28.7 | 29.3 | 28.0 | 28.0 | 28.0 | | | | | | |
| 2007 | **164** | 64.6 | 51.8 | 45.7 | 43.9 | 41.5 | 40.2 | 38.4 | 39.0 | 37.8 | 37.2 | | | | | | | |
| 2008 | **144** | 58.3 | 45.1 | 42.4 | 40.3 | 37.5 | 36.8 | 34.0 | 33.3 | 32.6 | | | | | | | | |
| 2009 | **169** | 65.1 | 46.7 | 45.0 | 40.8 | 40.2 | 41.4 | 39.1 | 39.6 | | | | | | | | | |
| 2010 | **163** | 65.0 | 43.6 | 41.1 | 38.0 | 34.4 | 36.2 | 36.2 | | | | | | | | | | |
| 2011 | **199** | 62.8 | 45.7 | 42.7 | 39.7 | 37.7 | 36.7 | | | | | | | | | | | |
| 2012 | **194** | 74.2 | 51.5 | 49.5 | 45.4 | 42.8 | | | | | | | | | | | | |
| 2013 | **165** | 68.5 | 50.9 | 47.9 | 43.6 | | | | | | | | | | | | | |
| 2014 | **164** | 68.9 | 49.4 | 50.0 | | | | | | | | | | | | | | |
| 2015 | **152** | 68.4 | 47.4 | | | | | | | | | | | | | | | |
| 2016 | **186** | 72.0 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 63.1 | 49.1 | 46.1 | 43.3 | 41.2 | 40.2 | 39.3 | 38.8 | 37.0 | 36.7 | 36.2 | 36.1 | 35.0 | 34.2 | 32.2 | 30.6 | 28.2 |
| **Standard deviation** | 6.7 | 5.0 | 4.6 | 4.1 | 5.2 | 4.9 | 4.8 | 4.2 | 4.9 | 4.2 | 4.3 | 3.1 | 3.2 | 2.1 | 3.3 | 0.3 | |

## Table 43: Retention rate for IMGs aged 50–59, 2000–2016

| 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 | 17 |
| 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 | 11.0 |
| 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 | 12.9 | |
| 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 | 13.7 | | |
| 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 | 21.3 | | | |
| 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 | 17.8 | | | | |
| 2005 | **93** | 45.2 | 34.4 | 32.3 | 25.8 | 25.8 | 25.8 | 22.6 | 24.7 | 22.6 | 21.5 | 22.6 | 21.5 | | | | | |
| 2006 | **88** | 45.5 | 36.4 | 37.5 | 31.8 | 30.7 | 30.7 | 27.3 | 25.0 | 20.5 | 18.2 | 17.0 | | | | | | |
| 2007 | **108** | 37.0 | 32.4 | 27.8 | 28.7 | 28.7 | 25.9 | 25.0 | 25.9 | 25.9 | 24.1 | | | | | | | |
| 2008 | **92** | 46.7 | 37.0 | 28.3 | 28.3 | 25.0 | 21.7 | 19.6 | 22.8 | 21.7 | | | | | | | | |
| 2009 | **115** | 49.6 | 37.4 | 30.4 | 25.2 | 23.5 | 21.7 | 20.9 | 17.4 | | | | | | | | | |
| 2010 | **110** | 54.5 | 36.4 | 27.3 | 28.2 | 21.8 | 20.9 | 20.9 | | | | | | | | | | |
| 2011 | **100** | 50.0 | 39.0 | 38.0 | 31.0 | 27.0 | 26.0 | | | | | | | | | | | |
| 2012 | **111** | 64.0 | 43.2 | 41.4 | 36.9 | 34.2 | | | | | | | | | | | | |
| 2013 | **97** | 56.7 | 42.3 | 39.2 | 30.9 | | | | | | | | | | | | | |
| 2014 | **111** | 55.0 | 44.1 | 41.4 | | | | | | | | | | | | | | |
| 2015 | **73** | 65.8 | 53.4 | | | | | | | | | | | | | | | |
| 2016 | **83** | 55.4 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 49.8 | 38.4 | 34.0 | 28.6 | 26.5 | 24.1 | 22.7 | 22.7 | 22.2 | 20.4 | 19.9 | 18.6 | 17.1 | 15.7 | 15.0 | 13.3 | 11.0 |
| **Standard deviation** | 8.1 | 5.4 | 5.9 | 3.5 | 4.0 | 4.4 | 3.3 | 3.5 | 3.1 | 4.0 | 3.1 | 4.2 | 4.4 | 3.9 | 1.2 | 0.6 | |

## Table 44: Retention rate for IMGs aged 60 or older, 2000–2016

| 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 | 17 |
| 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 | 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 | 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 | 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 | 2.2 | | | |
| 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 | 4.8 | | | | |
| 2005 | **46** | 34.8 | 21.7 | 15.2 | 17.4 | 15.2 | 15.2 | 13.0 | 8.7 | 8.7 | 6.5 | 8.7 | 6.5 | | | | | |
| 2006 | **58** | 34.5 | 34.5 | 25.9 | 22.4 | 10.3 | 12.1 | 10.3 | 10.3 | 10.3 | 5.2 | 5.2 | | | | | | |
| 2007 | **49** | 42.9 | 40.8 | 26.5 | 28.6 | 24.5 | 18.4 | 18.4 | 16.3 | 14.3 | 10.2 | | | | | | | |
| 2008 | **63** | 39.7 | 30.2 | 22.2 | 19.0 | 11.1 | 7.9 | 6.3 | 3.2 | 4.8 | | | | | | | | |
| 2009 | **72** | 40.3 | 26.4 | 26.4 | 16.7 | 15.3 | 11.1 | 12.5 | 9.7 | | | | | | | | | |
| 2010 | **78** | 33.3 | 21.8 | 12.8 | 12.8 | 12.8 | 5.1 | 3.8 | | | | | | | | | | |
| 2011 | **92** | 47.8 | 33.7 | 23.9 | 18.5 | 17.4 | 14.1 | | | | | | | | | | | |
| 2012 | **88** | 39.8 | 27.3 | 19.3 | 20.5 | 14.8 | | | | | | | | | | | | |
| 2013 | **73** | 53.4 | 34.2 | 26.0 | 28.8 | | | | | | | | | | | | | |
| 2014 | **61** | 60.7 | 42.6 | 34.4 | | | | | | | | | | | | | | |
| 2015 | **52** | 63.5 | 32.7 | | | | | | | | | | | | | | | |
| 2016 | **75** | 58.7 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 43.1 | 30.1 | 21.2 | 18.1 | 13.0 | 11.0 | 9.2 | 7.9 | 7.7 | 5.5 | 4.9 | 4.4 | 3.9 | 2.0 | 2.5 | | |
| **Standard deviation** | 10.4 | 6.1 | 6.1 | 6.4 | 6.0 | 4.9 | 5.3 | 4.5 | 3.8 | 3.1 | 3.2 | 2.5 | 2.1 | 0.2 | | | |

[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 45 to Table 49 shows 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 55). The footnotes referred to in these tables are detailed on page 85 following Table 49 and are the same for all tables in this section.

### Table 45: Retention rate for IMGs 5 years or less post-qualification, 2000–2016

| 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 | 17 |
| 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 | 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 | 16.1 | |
| 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 | 15.9 | | |
| 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 | 14.6 | | | |
| 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 | 13.7 | | | | |
| 2005 | **499** | 49.1 | 27.3 | 24.2 | 22.8 | 21.6 | 20.6 | 19.6 | 18.6 | 19.0 | 19.0 | 17.6 | 17.2 | | | | | |
| 2006 | **337** | 43.6 | 30.9 | 27.3 | 26.4 | 25.5 | 24.0 | 22.8 | 20.5 | 19.0 | 19.3 | 18.7 | | | | | | |
| 2007 | **416** | 66.6 | 42.3 | 35.6 | 34.1 | 34.4 | 32.5 | 31.5 | 28.1 | 27.2 | 28.4 | | | | | | | |
| 2008 | **466** | 55.8 | 28.3 | 22.5 | 20.6 | 19.1 | 19.1 | 17.6 | 17.2 | 16.7 | | | | | | | | |
| 2009 | **499** | 59.1 | 25.1 | 21.2 | 18.6 | 17.6 | 17.8 | 16.6 | 16.6 | | | | | | | | | |
| 2010 | **564** | 64.7 | 27.1 | 23.8 | 22.2 | 22.3 | 22.2 | 20.7 | | | | | | | | | | |
| 2011 | **529** | 65.6 | 30.4 | 23.3 | 23.6 | 22.9 | 23.3 | | | | | | | | | | | |
| 2012 | **525** | 66.3 | 31.4 | 22.3 | 22.3 | 22.7 | | | | | | | | | | | | |
| 2013 | **502** | 70.9 | 29.1 | 24.3 | 24.5 | | | | | | | | | | | | | |
| 2014 | **400** | 65.8 | 29.8 | 27.5 | | | | | | | | | | | | | | |
| 2015 | **419** | 76.6 | 43.4 | | | | | | | | | | | | | | | |
| 2016 | **481** | 73.6 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 55.9 | 28.0 | 22.9 | 21.8 | 20.8 | 20.3 | 19.4 | 18.1 | 17.5 | 17.5 | 15.6 | 14.7 | 14.5 | 15.0 | 14.8 | 14.4 | 12.8 |
| **Standard deviation** | 14.1 | 7.3 | 4.9 | 4.7 | 5.3 | 4.8 | 4.6 | 3.9 | 4.2 | 5.0 | 2.4 | 1.7 | 2.0 | 1.5 | 1.8 | 2.3 | |

## Table 46: Retention rate for IMGs 6–10 years post-qualification, 2000–2016

| 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 | 17 |
| 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 | 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 | 23.5 | |
| 2002 | **217** | 51.2 | 42.4 | 39.2 | 35.5 | 33.2 | 33.6 | 30.9 | 30.9 | 27.6 | 28.1 | 27.2 | 26.7 | 25.8 | 25.3 | 26.3 | | |
| 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 | 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 | 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 | 25.1 | | | | | |
| 2006 | **241** | 58.9 | 35.7 | 32.8 | 30.7 | 29.5 | 27.8 | 26.6 | 25.3 | 24.5 | 24.5 | 24.1 | | | | | | |
| 2007 | **256** | 62.1 | 48.8 | 44.9 | 41.4 | 39.8 | 37.1 | 35.5 | 33.6 | 32.8 | 32.4 | | | | | | | |
| 2008 | **222** | 65.3 | 44.6 | 35.6 | 35.1 | 32.9 | 30.6 | 27.5 | 27.9 | 26.6 | | | | | | | | |
| 2009 | **205** | 65.9 | 46.3 | 38.5 | 37.1 | 34.1 | 33.2 | 31.7 | 29.8 | | | | | | | | | |
| 2010 | **184** | 63.0 | 39.1 | 33.2 | 29.9 | 30.4 | 29.3 | 28.3 | | | | | | | | | | |
| 2011 | **230** | 63.9 | 44.3 | 34.8 | 32.6 | 33.0 | 32.2 | | | | | | | | | | | |
| 2012 | **180** | 68.9 | 43.9 | 37.2 | 36.7 | 37.2 | | | | | | | | | | | | |
| 2013 | **218** | 64.2 | 39.9 | 36.2 | 30.7 | | | | | | | | | | | | | |
| 2014 | **161** | 65.8 | 41.6 | 34.2 | | | | | | | | | | | | | | |
| 2015 | **166** | 57.8 | 34.9 | | | | | | | | | | | | | | | |
| 2016 | **184** | 73.9 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 59.1 | 40.1 | 35.0 | 33.0 | 31.9 | 30.5 | 28.0 | 27.1 | 25.7 | 25.7 | 24.2 | 23.3 | 21.9 | 22.4 | 23.4 | 22.0 | 20.5 |
| **Standard deviation** | 9.0 | 5.3 | 4.9 | 4.8 | 4.5 | 4.0 | 4.2 | 3.7 | 3.6 | 3.6 | 2.7 | 2.6 | 2.4 | 2.3 | 3.2 | 2.1 | |

## Table 47: Retention rate for IMGs 11–15 years post-qualification, 2000–2016

| 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 | 17 |
| 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 | 33.1 |
| 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 | 38.5 | |
| 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 | 35.6 | | |
| 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 | 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 | 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 | 32.1 | | | | | |
| 2006 | **126** | 61.1 | 42.9 | 38.9 | 38.1 | 38.1 | 38.9 | 38.1 | 37.3 | 37.3 | 38.1 | 35.7 | | | | | | |
| 2007 | **159** | 68.6 | 47.2 | 42.1 | 39.6 | 37.7 | 36.5 | 35.8 | 35.8 | 35.8 | 35.2 | | | | | | | |
| 2008 | **156** | 64.1 | 50.6 | 40.4 | 37.8 | 36.5 | 33.3 | 34.0 | 35.3 | 35.3 | | | | | | | | |
| 2009 | **152** | 63.8 | 43.4 | 42.1 | 40.1 | 39.5 | 36.8 | 36.8 | 36.8 | | | | | | | | | |
| 2010 | **141** | 62.4 | 45.4 | 39.7 | 36.9 | 37.6 | 35.5 | 34.0 | | | | | | | | | | |
| 2011 | **146** | 61.0 | 40.4 | 37.0 | 34.9 | 34.9 | 34.2 | | | | | | | | | | | |
| 2012 | **152** | 71.7 | 46.7 | 44.1 | 40.8 | 41.4 | | | | | | | | | | | | |
| 2013 | **145** | 69.7 | 49.0 | 40.0 | 39.3 | | | | | | | | | | | | | |
| 2014 | **154** | 67.5 | 44.2 | 39.0 | | | | | | | | | | | | | | |
| 2015 | **133** | 69.9 | 47.4 | | | | | | | | | | | | | | | |
| 2016 | **130** | 72.3 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 65.4 | 48.6 | 43.3 | 41.4 | 40.8 | 39.1 | 39.1 | 38.7 | 38.3 | 37.7 | 37.4 | 36.1 | 36.7 | 37.9 | 36.2 | 35.4 | 33.1 |
| **Standard deviation** | 3.9 | 5.4 | 5.4 | 5.6 | 5.0 | 5.1 | 5.3 | 4.6 | 4.7 | 4.9 | 5.3 | 5.7 | 5.2 | 5.2 | 5.0 | 4.4 | |

## Table 48: Retention rate for IMGs 16–20 years post-qualification, 2000–2016

| 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 | 17 |
| 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 | 29.1 |
| 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 | 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 | 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 | 34.0 | | | |
| 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 | 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 | 43.3 | | | | | |
| 2006 | **82** | 56.1 | 41.5 | 39.0 | 39.0 | 39.0 | 34.1 | 32.9 | 31.7 | 30.5 | 29.3 | 29.3 | | | | | | |
| 2007 | **76** | 61.8 | 59.2 | 50.0 | 50.0 | 48.7 | 48.7 | 47.4 | 46.1 | 43.4 | 43.4 | | | | | | | |
| 2008 | **69** | 55.1 | 44.9 | 43.5 | 39.1 | 37.7 | 37.7 | 31.9 | 30.4 | 30.4 | | | | | | | | |
| 2009 | **87** | 70.1 | 54.0 | 50.6 | 47.1 | 47.1 | 47.1 | 46.0 | 44.8 | | | | | | | | | |
| 2010 | **93** | 65.6 | 46.2 | 41.9 | 43.0 | 39.8 | 40.9 | 43.0 | | | | | | | | | | |
| 2011 | **107** | 58.9 | 44.9 | 44.9 | 40.2 | 39.3 | 40.2 | | | | | | | | | | | |
| 2012 | **97** | 73.2 | 47.4 | 43.3 | 42.3 | 38.1 | | | | | | | | | | | | |
| 2013 | **82** | 70.7 | 57.3 | 52.4 | 48.8 | | | | | | | | | | | | | |
| 2014 | **97** | 63.9 | 51.5 | 50.5 | | | | | | | | | | | | | | |
| 2015 | **82** | 70.7 | 48.8 | | | | | | | | | | | | | | | |
| 2016 | **96** | 71.9 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 64.2 | 52.6 | 49.0 | 46.7 | 44.8 | 44.2 | 43.4 | 42.3 | 39.7 | 39.9 | 39.6 | 39.8 | 38.4 | 37.3 | 36.9 | 35.4 | 29.1 |
| **Standard deviation** | 6.2 | 6.7 | 5.4 | 5.2 | 6.0 | 5.7 | 6.6 | 6.9 | 7.2 | 5.8 | 5.7 | 5.2 | 5.1 | 4.7 | 6.8 | 7.2 | |

## Table 49: Retention rate for IMGs 21 or more years post-qualification, 2000–2016

| 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 | 17 |
| 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 | 15.9 |
| 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 | 10.9 | |
| 2002 | **196** | 48.5 | 37.8 | 30.1 | 28.6 | 22.4 | 20.4 | 20.9 | 19.4 | 20.9 | 19.9 | 18.4 | 17.3 | 16.3 | 16.3 | 15.8 | | |
| 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 | 23.8 | | | |
| 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 | 20.5 | | | | |
| 2005 | **196** | 48.0 | 37.2 | 35.2 | 31.6 | 30.1 | 31.1 | 28.1 | 26.5 | 25.5 | 24.5 | 25.5 | 24.0 | | | | | |
| 2006 | **181** | 42.5 | 35.9 | 34.3 | 30.9 | 25.4 | 25.4 | 23.2 | 22.7 | 20.4 | 18.2 | 17.7 | | | | | | |
| 2007 | **198** | 47.0 | 42.4 | 34.8 | 34.3 | 32.8 | 29.3 | 28.3 | 28.8 | 27.8 | 25.3 | | | | | | | |
| 2008 | **183** | 45.4 | 35.5 | 29.5 | 29.0 | 23.5 | 21.9 | 20.2 | 20.2 | 19.7 | | | | | | | | |
| 2009 | **220** | 46.8 | 34.5 | 30.9 | 24.1 | 22.3 | 21.8 | 20.5 | 18.6 | | | | | | | | | |
| 2010 | **212** | 48.6 | 32.5 | 25.5 | 23.6 | 19.8 | 17.0 | 16.5 | | | | | | | | | | |
| 2011 | **243** | 53.5 | 42.0 | 36.2 | 31.3 | 27.6 | 25.5 | | | | | | | | | | | |
| 2012 | **241** | 58.9 | 41.1 | 37.8 | 34.0 | 29.9 | | | | | | | | | | | | |
| 2013 | **191** | 58.1 | 42.9 | 38.7 | 35.1 | | | | | | | | | | | | | |
| 2014 | **196** | 59.7 | 45.4 | 43.4 | | | | | | | | | | | | | | |
| 2015 | **150** | 66.7 | 48.0 | | | | | | | | | | | | | | | |
| 2016 | **190** | 61.1 | | | | | | | | | | | | | | | | |

| | | Post-registration year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| **Average percentage of IMGs retained** | 50.9 | 39.5 | 34.4 | 30.5 | 27.1 | 25.5 | 24.1 | 23.9 | 23.4 | 22.2 | 21.3 | 20.9 | 19.6 | 18.2 | 16.0 | 14.9 | 15.9 |
| **Standard deviation** | 7.5 | 4.2 | 4.4 | 3.7 | 4.4 | 5.1 | 4.3 | 4.2 | 3.7 | 3.4 | 4.0 | 4.0 | 4.7 | 4.5 | 4.0 | 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.

# Appendix 5 – List of tables and figures

## Tables

## Figures