Chapter 1: The changing shape of the profession and medical education

This chapter gives a picture of the medical profession, drawing primarily on our data from January to December 2012. Where the data are available, we have also looked at how the profile of doctors has changed between 2007 and 2012. For the first time this year, we have analysed the distribution of doctors across the four countries of the UK. We have been able to do this because we now gather data on where doctors with a licence to practise are employed.

Who are the doctors on the medical register?

The medical register in 2012

14,024 doctors joined the medical register in 2012, bringing the total to 252,553 doctors. Of these, 16,315 did not hold a licence to practise, meaning they could not work as doctors in the UK.

The 252,553 doctors fall into five categories:

- 73,481 on the Specialist Register*
- 61,062 on the GP Register†
- 1,382 on both the GP and Specialist Registers
- 59,535 in approved postgraduate training programmes‡
- 57,093 other doctors who were not in approved postgraduate training programmes or on the GP or Specialist Register.

In 2012, 11,378 doctors left the medical register or gave up their licence to practise. 7,288 told us why they were leaving:

- 49% said they were planning to go overseas
- 40% were retiring
- 3% indicated that they did not want to take part in revalidation.§

Notable changes since 2011

During 2012, the medical register grew slightly by about 3%.

This change does not include the 843 doctors from more than 140 countries who were temporarily registered to support their athletes during the 2012 Olympic and Paralympic Games.

* Doctors on the Specialist Register have been awarded a Certificate of Completion of Training (CCT) or joined the Specialist Register through the Certificate of Eligibility for Specialist Registration (CESR) equivalence process. Specialist doctors can work as consultants in the NHS.

† Doctors on the GP Register have been awarded a CCT or joined the GP Register through the Certificate of Eligibility for GP Registration (CEGPR) equivalence process. GPs can be added to an NHS performers list and work as GPs in the NHS.

‡ Doctors are either in the two-year Foundation Programme or in an approved GP or specialist training programme. The number excludes 505 doctors who were on the GP or Specialist Register but might be completing postgraduate training in a second specialty or sub-specialty.

§ Revalidation is the process by which all licensed doctors have to regularly demonstrate to us that they are keeping their skills and knowledge up to date and are fit to practise medicine. 8% gave us other reasons for leaving.

The medical register in more detail

We have analysed the profile of doctors in three age groups: under 30 years, 30–50 years and over 50 years. Table 1 sets out the gender, place of primary medical qualification and ethnicity of doctors on the medical register in these age groups.

The demographic characteristics of doctors on the GP and Specialist Registers, and other doctors who were not in training or on either the GP or Specialist Register, can be found in tables 1–3 in appendix 1 of this report.

TABLE 1: Demographic characteristics of doctors on the medical register in 2012

	<30 years (n=36,584)	30–50 years (n=148,318)	>50 years (n=67,651)	Total (n=252,553)
GENDER				
Male	14,298 (39%)	80,520 (54%)	48,661 (72%)	143,479 (57%)
Female	22,286 (61%)	67,798 (46%)	18,990 (28%)	109,074 (43%)
PLACE OF PRIMARY MEDICAL QUALIFICATION				
UK graduate	32,989 (90%)	84,903 (57%)	42,006 (62%)	159,898 (63%)
EEA graduate*	1,788 (5%)	17,764 (12%)	5,978 (9%)	25,503 (10%)
International medical graduate†	1,807 (5%)	45,651 (31%)	19,667 (29%)	67,125 (27%)
ETHNICITY				
White‡	17,853 (49%)	68,396 (46%)	36,914 (55%)	123,163 (49%)
BME§	9,463 (26%)	45,395 (31%)	14,227 (21%)	69,085 (27%)
Unknown	9,268 (25%)	34,527 (23%)	16,510 (24%)	60,305 (24%)

The majority of doctors under 30 years old were female, but this pattern reversed for doctors aged 30–50 years and over 50 years old.

90% of doctors under 30 years old were UK graduates, but this percentage was much smaller in older doctors. For example, 29% of doctors over 50 years old were international medical graduates.

We did not know the ethnicity of 24% of the register.

* European Economic Area (EEA) graduates are doctors who gained their primary medical qualification in the EEA, but outside the UK, and who are EEA nationals or have European Community rights to be treated as EEA nationals.

† International medical graduates are doctors who gained their primary medical qualification outside the UK, EEA and Switzerland, and who do not have European Community rights to work in the UK.

‡ White includes white British, white Irish and other white.

§ Black and minority ethnic (BME) includes Asian or Asian British, black or black British, other ethnic groups or mixed ethnic groups.

Doctors on the GP and Specialist Registers

69% of doctors on the Specialist Register, but only 53% of those on the GP Register, were male.

On the Specialist Register, 61% of doctors were UK graduates, 24% were international medical graduates and 15% were EEA graduates. By contrast, 77% of doctors on the GP Register were UK graduates, 17% were international medical graduates and 6% were EEA graduates.

Other doctors on the register

There are a further 57,093 doctors on the medical register who were not in approved postgraduate training programmes or on either the GP or the Specialist Register. 37,138 of these doctors had a licence to practise and were registered at a UK address, suggesting that they were working as doctors in the UK.

The medical register does not include information about what positions these doctors held. We do know that they did not form a homogeneous group – they may have been working as specialty doctors* or locum doctors, in private practice or academic research, or under one of several other titles designated by employers.

41% of this group were female but, in the youngest cohort (<30 years), this rose to 58%, which is in line with the overall population of doctors on the medical register in this age group.

52% of these doctors were international medical graduates. However, in the youngest cohort (<30 years), only 17% were international medical graduates and 65% were UK graduates.

* Previously known as staff grade doctors or as staff and associate specialist (SAS) grade doctors.

Where are doctors working?

The data we collect give a picture of where doctors are employed in the UK (box 1).

Figure 1 shows that there is substantial variation across the UK in the number of doctors per 100,000 people.

The number is highest in London and Scotland and is lowest in the East Midlands and in the east and southeast of England.

A more detailed breakdown of the distribution of doctors across the UK is set out in the next section.

BOX 1: Analysing data on where doctors are employed across the UK

With the introduction of revalidation in December 2012, we are now able to show where doctors with a licence to practise are employed across the UK.

Under revalidation, every doctor has to be connected to an organisation, such as the NHS trust or board where they work.

This information tells us where doctors are likely to be working. There are limitations with these data. For example, a locum GP may be connected to an area of the country but carry out most of their work elsewhere. A doctor might also be working predominantly in the private sector but be connected to an NHS organisation. There are also some national organisations that may have connections with doctors who work around the UK.

We have attempted to address these limitations by removing around 7% of the 662 designated bodies that are national organisations – such as medical royal colleges, UK-wide locum agencies and the Departments of Health in each of the four countries – but there will still be some imprecision.

At this stage, there are also 42,106 doctors who do not yet have a connection to an organisation.*

As a result, the number of doctors we have recorded per 100,000 people may be substantially lower than from other data sources. We are working to collect this information for all doctors working in the UK.

We believe this information will prove valuable, both for us and for other organisations. It should lead to a better understanding of where doctors are working, and in which settings.

In this chapter, we have linked characteristics – such as gender and place of primary medical qualification – with these connection data to identify where different groups of doctors are based.

* This number was accurate as of 12 August 2013. Only 20% of doctors in this group have not yet engaged with us. Most doctors without a prescribed connection either are new to the register or do not have a connection in their current position.

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FIGURE 2: Changes in the UK medical register between 2007 and 2012

Changes are shown by gender and place of primary medical qualification for three age groups.

GENDER

Age group	2007	% change	2012
<30 years	Number of doctors		Number of doctors
Male	14,476	–1%	14,298
Female	18,819	+18%	22,286
30–50 years			
Male	79,089	+2%	80,520
Female	54,540	+24%	67,798
>50 years			
Male	58,391	–17%	48,661
Female	19,225	–1%	18,990
Total	**244,540**		**252,553**

More female doctors entering the medical profession
The number of female doctors under 30 years old increased by 18%, whereas the number of male doctors decreased by 1%. By 2012, this meant that 61% of doctors under 30 years old were women and only 39% were men.

Women now make up a large proportion of doctors in their middle years
In the age group 30–50 years, the number of female doctors increased by nearly a quarter. However, men still outnumbered women in 2012: 54% of doctors in this age group were male.

Older generation of male doctors retires
The number of doctors over 50 years old decreased, mainly as a result of male doctors leaving the register to retire. However, in 2012, men still made up 72% of doctors in this age group – the majority of female doctors were aged 50 years or under.

PRIMARY MEDICAL QUALIFICATION

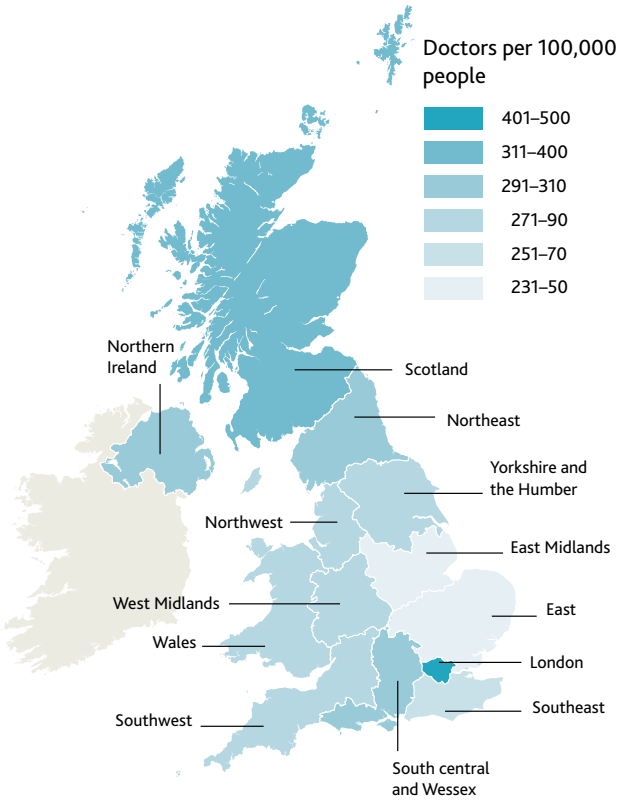
IMG = international medical graduate

Age group	2007	% change	2012
<30 years	Number of doctors		Number of doctors
IMG	4,590	–61%	1,807
EEA	1,524	+17%	1,788
UK	27,181	+21%	32,989
30–50 years			
IMG	43,043	+6%	45,651
EEA	15,373	+16%	17,764
UK	75,213	+13%	84,903
>50 years			
IMG	20,885	–6%	19,667
EEA	5,856	+2%	5,978
UK	50,875	–17%	42,006
Total	**244,540**		**252,553**

Number of young IMGs decreasing
There were fewer IMGs on the register in 2012 than in 2007. This is particularly apparent with the youngest generation of doctors, where the number of IMGs decreased by 61%. New immigration policies introduced in 2010 make it harder for doctors outside the EEA to get a visa to work and access specialist training in the UK.

Older generation of UK graduates retires
The number of UK graduates and IMGs over 50 years old decreased by 17% and 6% respectively. The number of EEA graduates increased, but only slightly.

FIGURE 1: Where doctors are employed across the UK



Part of the UK	Doctors per 100,000 people
London	452
Scotland	323
South central and Wessex	299
Northern Ireland	298
Northeast	297
Northwest	289
Yorkshire and the Humber	280
Wales	279
West Midlands	278
Southwest	271
Southeast	263
East Midlands	248
East	248
UK average	**302**

Changes in the medical register over five years

In this year's report, we have sought to show how the shape of the profession changed between 2007 and 2012. Figure 2 shows the demographic characteristics of doctors in the three age groups.*

Some of the changes can be explained by external developments and changes to our policy (figure 3).

Gender

Overall the most significant change in this period has been the growth in the number and proportion of female doctors. From a profession once dominated by men, the past six years have seen a further step towards medicine being increasingly female.

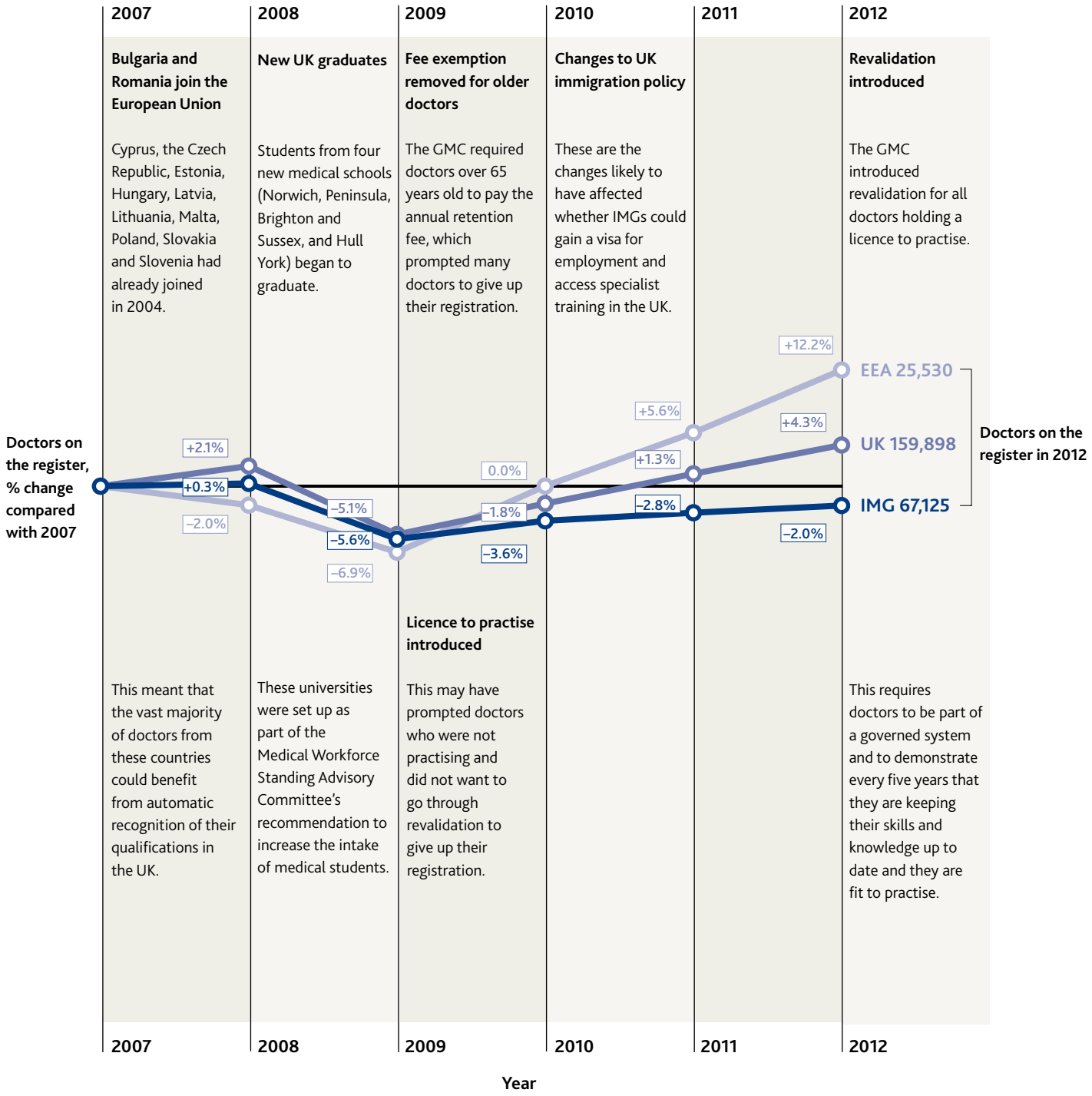
Primary medical qualification

The number of international medical graduates on the medical register declined by 2% between 2007 and 2012. This is mainly due to fewer international medical graduates joining the medical register early in their careers.

* We have not been able to analyse ethnicity because these data were not available for a large proportion of the medical register during this six-year period. We are working to improve the quality of the data we hold about doctors' ethnicities. In 2012, we did not have these data for 24% of the medical register – an improvement from 31% in 2007 – which is because doctors do not have to tell us their ethnicity when they apply for registration.

FIGURE 3: Major changes affecting the make-up of the medical register during 2007–12

IMG = international medical graduate



Notable breaks in trend during 2007–12

Most of the trends have been continuing year on year, but there was a notable fall in the number of UK graduates, EEA graduates and international medical graduates on the medical register in 2009, reflecting two key policy changes set out in figure 3.

Since then, new registrations from UK and EEA graduates have been steadily increasing, but the number of international medical graduates has remained constant and the group is ageing. Again, as noted in figure 3, this may be the result of changes in UK immigration policy.

Specialists and GPs

- On the Specialist Register, the number of female doctors increased by 41% and male doctors by 16% (although the increase in the actual number of male doctors was greater than that of female doctors).
- EEA graduates and international medical graduates made up a substantial and growing proportion of the Specialist Register, accounting for 61% of the increase.
- The number of doctors in different specialties has changed.
  - Paediatrics grew by 35%, becoming the fourth largest specialty.
  - The proportion of female doctors in all specialties grew, some more than others (figure 4). Female doctors were still underrepresented in several specialties, including general surgery, and trauma and orthopaedics.
  - General practice, anaesthetics and general psychiatry remained the largest specialties.
- There was a 10% rise in the number of GPs – with female doctors accounting for most of the increase. The number of female GPs under 30 years old did fall by 23%, but in absolute numbers this decrease was very small.

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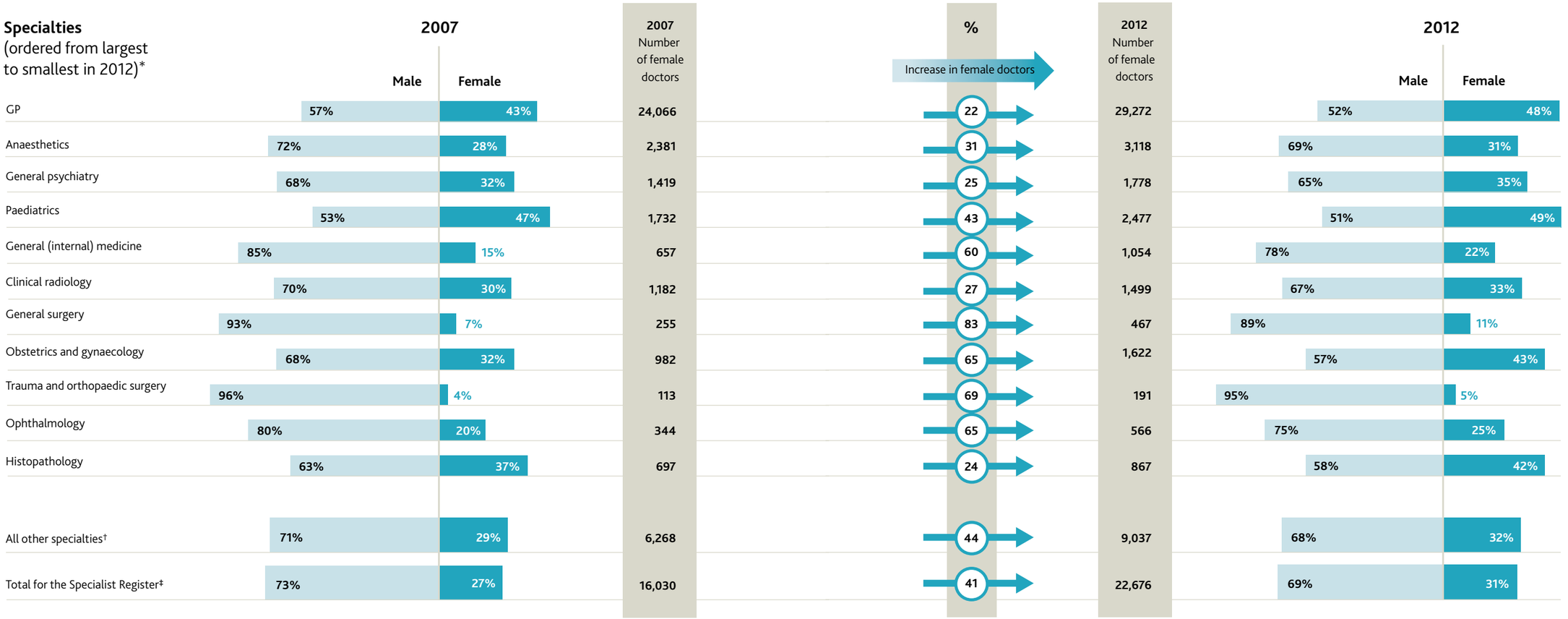
FIGURE 4: The changing profile of male and female doctors in the largest specialties between 2007 and 2012



* For GPs we used data from the GP Register and for all other specialists we used data from the Specialist Register (according to the doctor's primary specialty). We excluded doctors who were on both the GP and the Specialist Registers.

† All specialties on the Specialist Register excluding all those listed above.

‡ Excludes data for the GP Register.

What do these trends mean for the make-up of the profession?

The supply of international medical graduates is decreasing

In 2012, only one in 20 doctors under 30 years old was an international medical graduate, whereas they made up a third of all other doctors.

This has not always been the case. In 2007, international medical graduates made up one in seven doctors under 30 years old. Although the proportion of international medical graduates aged 30–50 years has increased over six years, the decrease in the number under 30 years old means that there were fewer international medical graduates on the medical register in 2012 than in 2007.

UK and EEA graduates may now be filling part of this gap. In particular, in 2012, nine out of ten doctors under 30 years old graduated from the UK. As the European Union has enlarged, an increasing number of European doctors have joined the medical register, benefiting from automatic recognition of their qualifications.

What might have caused this change in the balance of younger doctors?

First, the national expansion of medical schools in England[30] has led to an increase in home-grown doctors. In 2000, the intake of medical students was just over 5,600 across the UK but, by 2012, it had risen to around 8,000, with most expected to do their postgraduate training in the UK. Although it has been suggested that there has been an exodus of doctors out of the UK after graduating here, only one in 20 doctors under 30 years old went overseas to work between 1999 and 2005.[31, 32] This indicates that most doctors who graduated in the UK during that period did stay here to work.

Second, new immigration rules were introduced in 2010, making it harder for doctors outside the EEA to get a visa to work and to access specialist training in the UK. Employers can now recruit international medical graduates into posts only where there are shortages. For all other posts, they must be able to prove that no EEA or UK graduate is qualified to fill them.

It is possible that international medical graduates may be coming to work in the UK later in their careers, once they have completed GP or specialist training. However, since 2007, the increase in the proportion of doctors aged 30–50 years has actually been lower for international medical graduates than for UK and EEA graduates, and we've seen a decline in the number of international medical graduates over 50 years old.

International medical graduates are concentrated in a few specialties

International medical graduates are less likely to be on the Specialist Register than UK doctors, but their number still grew by 45% between 2007 and 2012, and most notably in the 30–50-year age group. This is likely to be because those who came to the UK in earlier years had completed their specialist training here. In the second largest specialty after general practice – anaesthetics – the percentage increase for international medical graduates was three times more than for UK graduates.

In some specialties, the UK has been reliant on doctors trained abroad. International medical graduates are now overrepresented (compared with their number on the register) in obstetrics and gynaecology, general psychiatry, paediatrics and histopathology. EEA graduates are overrepresented in general surgery and ophthalmology. In fact, half the growth in ophthalmology was from EEA graduates alone (234 doctors out of 466), although the specialty is relatively small.

International medical graduates appear to choose different specialties from UK graduates. For example, in histopathology, the number of UK graduates decreased by 1% between 2007 and 2012, whereas the number of international medical graduates increased by 33%. The pattern is the same in the larger specialty of obstetrics and gynaecology (1% decrease in UK graduates, 70% increase in international medical graduates).

Other areas of the health service might rely heavily on international medical graduates

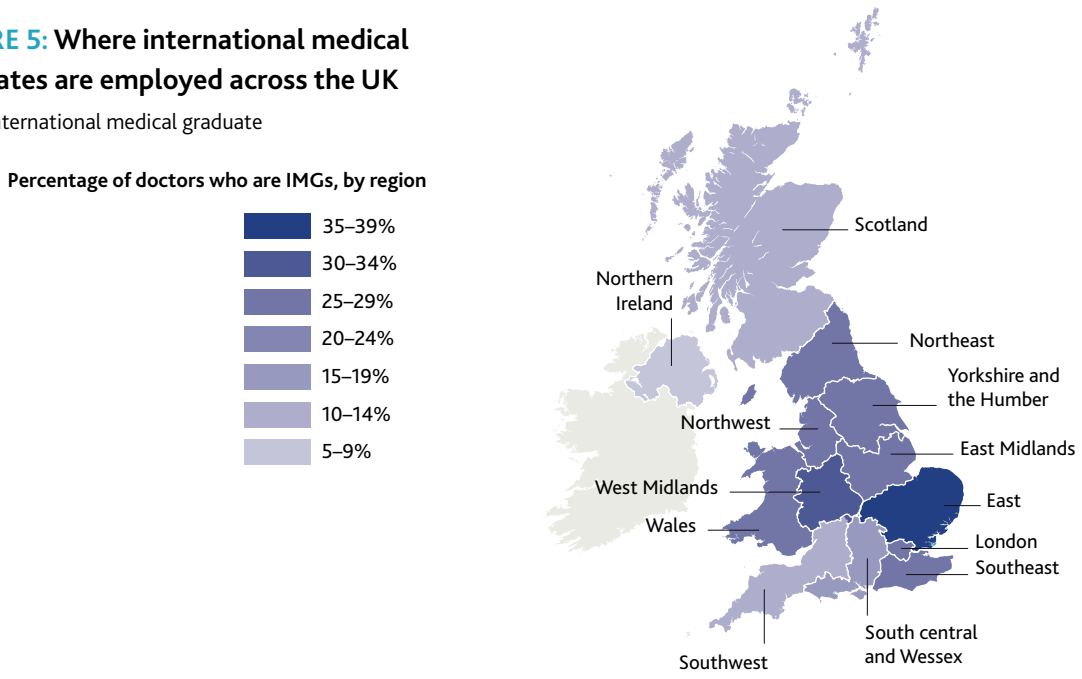
52% of the other doctors on the medical register – those who were not in postgraduate training programmes and were not on either the GP or the Specialist Register – were international medical graduates.

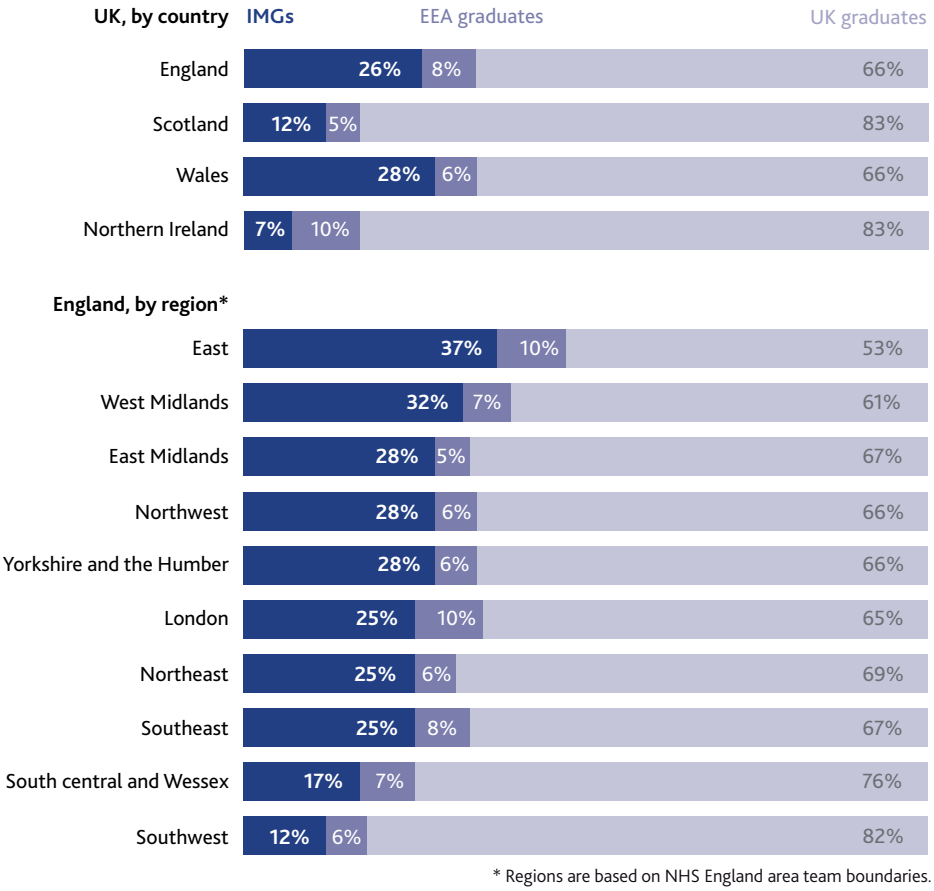
Again the age profile shows how patterns in the profession are changing – international medical graduates represented only 17% of these doctors under 30 years old in 2012. However, the UK graduates who represented 65% of this group under 30 years old in 2012 may only be working in these positions for a short period before doing further postgraduate training.[33]

Although not a homogeneous group, it is clear that the majority of these doctors substantially contribute to providing NHS services. Their time commitment to teaching and management is generally less than that of consultants, meaning that almost all of their contracted time is devoted to direct clinical care. Some will be included in the rotas with doctors in postgraduate training to provide out-of-hours cover.

FIGURE 5: Where international medical graduates are employed across the UK

IMG = international medical graduate





* Regions are based on NHS England area team boundaries.

Some parts of the UK have a high proportion of international medical graduates

The east of England and the West Midlands have the highest proportion of international medical graduates (over 32%) compared with the UK national average of 25% (figure 5).* Northern Ireland, Scotland and the southwest of England have the lowest.

We've been able to separate out primary and secondary care for each of the NHS regions in our analysis for England.† In primary care, the proportion of international medical graduates is close to the national average of one in five GPs in most regions.

But, in London and the West Midlands, one in four GPs is an international medical graduate, compared with only one in 21 in the southwest. In secondary care, there are proportionally more international medical graduate specialists in the east of England and the West Midlands. By contrast, in the southwest, only a fifth of specialists are international medical graduates.

These patterns broadly reflect the demographic make-up of these local populations, as reported by the Office of National Statistics.[34]

It is clear that parts of the UK have relied, and continue to rely, on international medical graduates, and research suggests that they have often ended up working in less popular areas in the UK.[35] Ageing of these doctors raises concerns about who will work in these areas when they retire.

There are a number of recruitment campaigns to attract new doctors to parts of the UK where there are shortages. For example, the Work for Wales campaign (www.medicalcareerswales.com) aims to attract doctors from elsewhere by highlighting the opportunities available, particularly in the rural and coastal regions of Wales.

Several other countries have sought to tackle workforce shortages by requiring international medical graduates to work in certain areas. For example, in Australia, some international medical graduates are encouraged to work in rural or remote areas as a condition of their registration.[36]

* 27% of doctors on the medical register were international medical graduates in 2012. This national average is lower because, as explained in box 1, not all doctors have a connection to a designated body.

† These regions are based on NHS England area team boundaries. In this analysis we have not separated out primary and secondary care when analysing data from Scotland, Wales and Northern Ireland.

The rapid rise in the proportion of female doctors now seems to be slowing

Our data show that women are still entering the medical profession in high numbers. Female doctors represented 61% of doctors under 30 years old and 46% of those aged 30–50 years in 2012. But the increase has not yet affected the oldest age group – in 2012, well under a third of doctors over 50 years old were female. This will rise in future years as the population of female doctors grows older.

The increase in the proportion of female doctors does appear to be slowing: 55% of medical students were female in 2012, compared with 61% in 2003 and 57% in 2007. There are also some indications that female doctors are beginning to choose different roles, although there are still distinct patterns differentiating male and female career paths.

More female doctors in primary care

Primary care has traditionally been a popular career choice for female doctors. The 10% growth in the overall size of the GP Register between 2007 and 2012 was almost entirely due to female doctors and, in 2012, the split between male and female GPs was nearly equal (figure 4). Since 2007, the number of female GPs aged 30 years and over increased by 23%.

This supports the Centre for Workforce Intelligence's estimate that female doctors will represent most GPs in England by 2030, although they are forecasting an undersupply of GPs overall.[37]

These trends reflect patterns across other parts of the UK – Wales, Northern Ireland and Scotland have all reported increases in the number of female doctors in recent years,[38, 39, 40] but there are still challenges in recruiting sufficient numbers of GPs in some parts of the country.

The UK Government is now looking to recruit more doctors into GP training in the short term and has set up a task force to consider how to improve planning for the GP workforce in the long term.

The proportion of female specialists is increasing

Although female doctors were still underrepresented on the Specialist Register in 2012 (69% male versus 31% female doctors), the number of female specialists increased by 18% between 2007 and 2012, compared with a 6% decrease for male doctors.

There were notable changes in some specialties (figure 4).

The Royal College of Physicians reported in its 2011 census that 48% of female specialists work part time, compared with 6% of male specialists.[41] This trend has prompted discussions about female doctors being underrepresented in certain specialties, possibly because some specialties are less conducive to part-time working.[42]

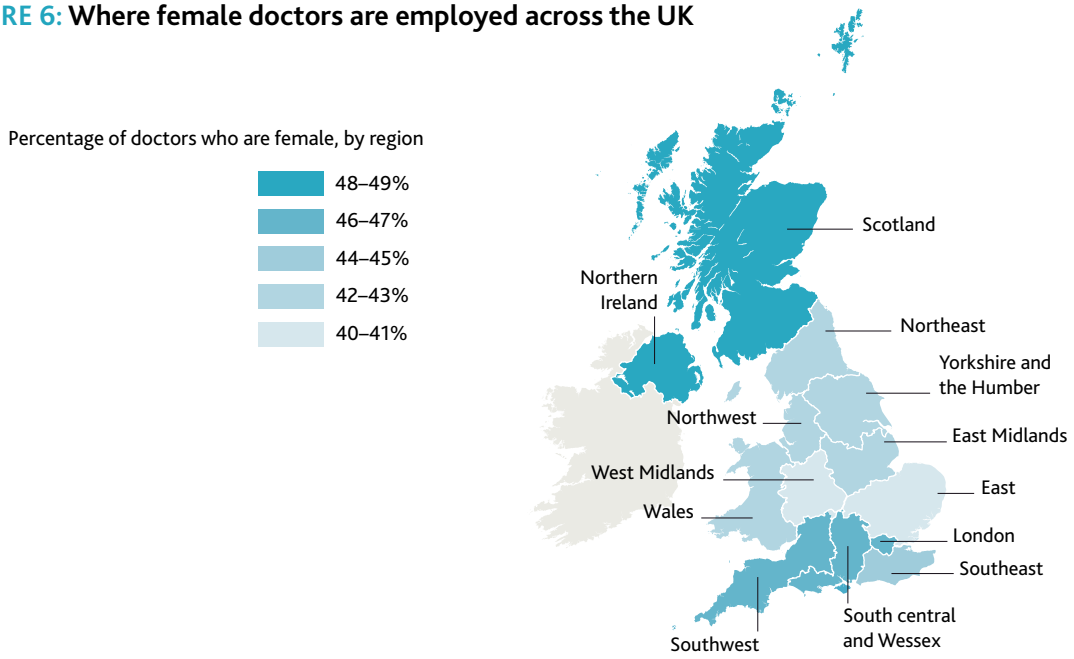
The difference between male and female working patterns also raises issues about the total number of doctors that will be required in the future if the proportion of those working part time continues to grow.

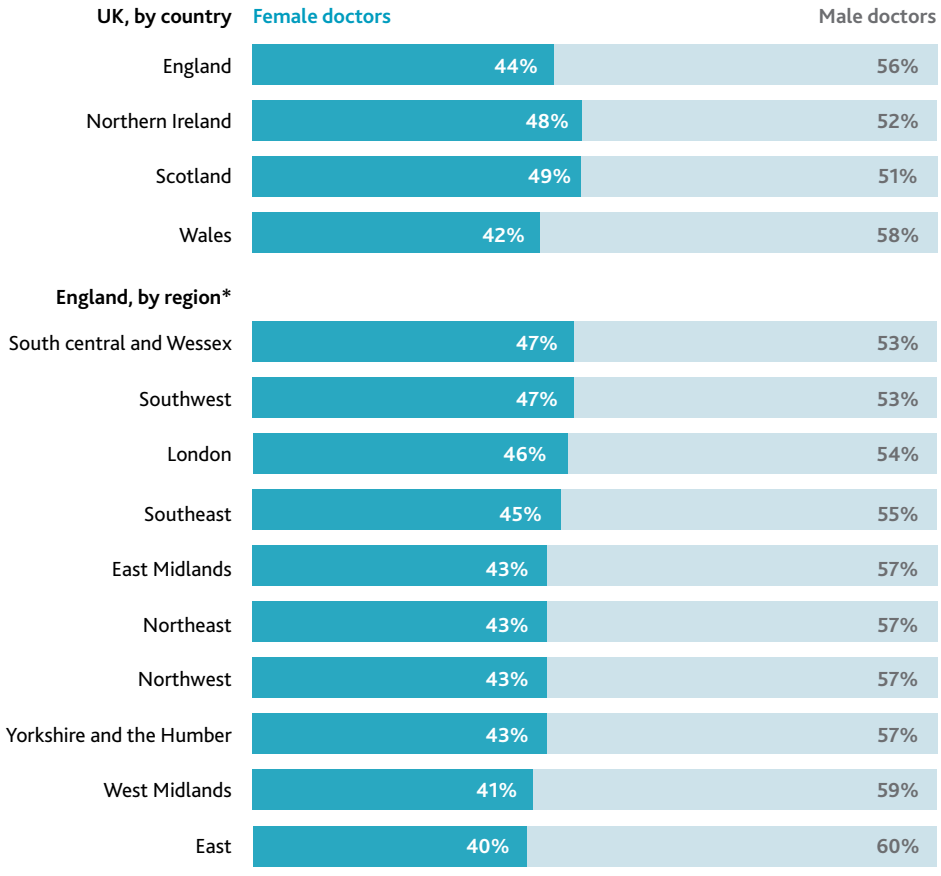
Some areas of the UK have a high proportion of female doctors

Overall, Northern Ireland and Scotland have the highest proportion of female doctors (48% or higher), compared with the UK average of 44% (figure 6). The east of England and the West Midlands have the lowest (41% or less).

In secondary care, the proportion of women is highest in London and is lowest in the West Midlands. This pattern is similar for primary care, with the lowest proportion of women in the West Midlands, but in this case the highest proportion of women is in south central and Wessex.

FIGURE 6: Where female doctors are employed across the UK





* Regions are based on NHS England area team boundaries

Medical education and training

The profile of medical students

In the academic year 2012–13, there were 41,422 medical students studying at 32 medical schools in the UK:

- 33,127 in England
- 5,156 in Scotland
- 1,786 in Wales
- 1,353 in Northern Ireland.

More than half of all medical students in the UK were female, with the percentage ranging from 46% at the University of Edinburgh to 62% at Cardiff University.

Some parts of the UK retain more doctors after graduation

In 1997, the Medical Workforce Standing Advisory Committee recommended increasing the intake of medical students.[43] Four new medical schools were set up – Norwich Medical School at the University of East Anglia, Peninsula College of Medicine and Dentistry, Brighton and Sussex Medical School and Hull York Medical School – to address shortages of doctors in these regions.[31] Graduates were expected to complete their foundation and specialty training at the local deanery, thereby contributing to delivering health services in these regions.

Our data suggest that some areas of the UK retain more doctors after graduation (figure 7). Between 2009 and 2012, Queen's University Belfast had by far the highest retention rates, followed by the University of Glasgow and the University of Birmingham. The new medical schools set up after the 1997 expansion fall somewhere in the middle.

Following a long-established pattern, a large number of medical students want to continue their training in London after graduation – the London Deanery is the most oversubscribed in the country and places are very competitive.[44,*] During 2009–12, 21% of medical students from Bristol, Oxford and Cambridge subsequently did their postgraduate training in the London Deanery.

So why do some areas retain more newly qualified doctors? First, young doctors are likely to want to work in large cities, which may explain the high retention rates in London, Birmingham, Newcastle and Leeds.

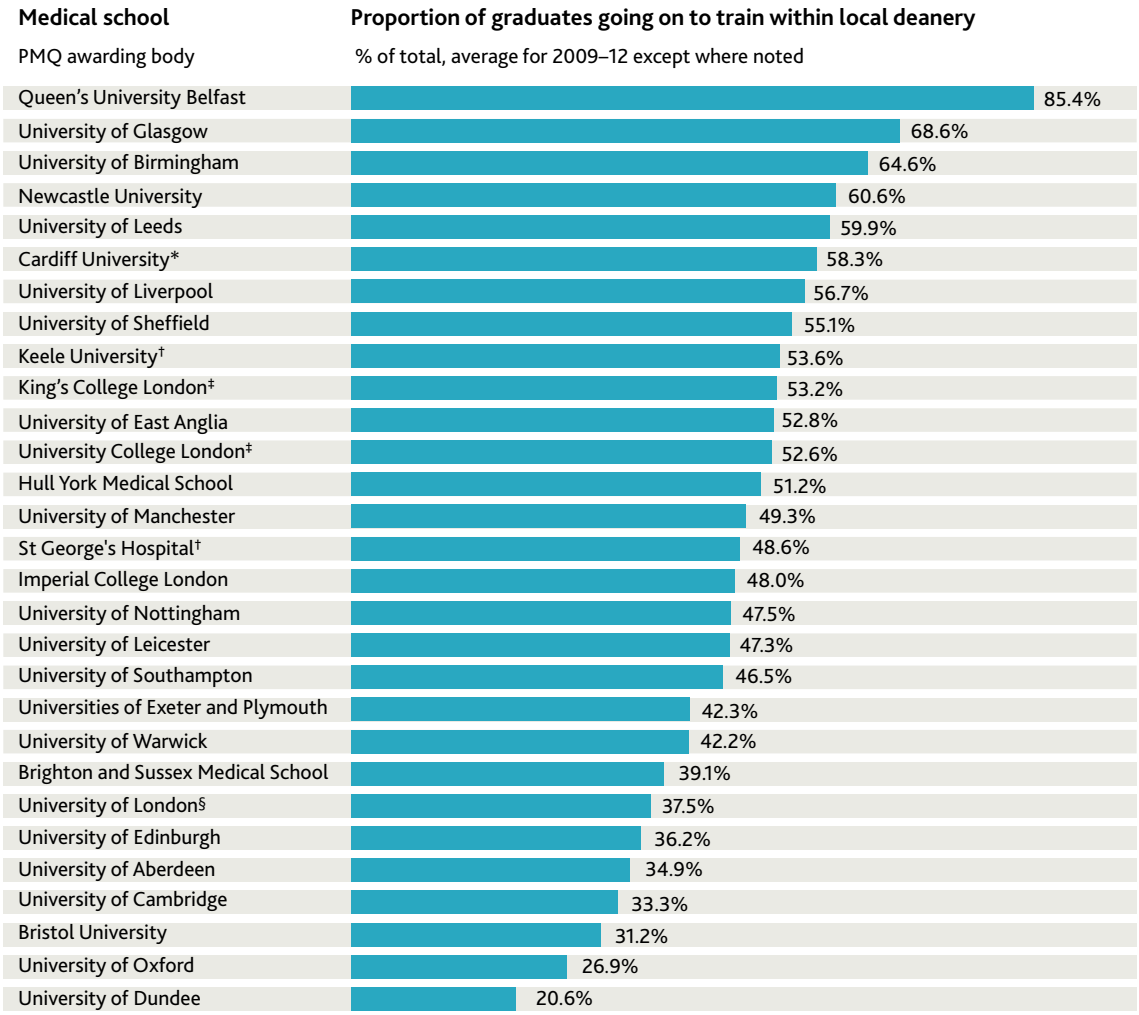
Some doctors might want to train in specialties not offered across all parts of the UK or to experience a more varied caseload, which is more likely to be achieved in large urban settings.

* This report refers to deaneries because these were the organisations responsible for postgraduate medical education and training at the start of the academic year 2012–13. In England, this responsibility has now moved to the local education and training boards.

FIGURE 7: Which deaneries retain the most medical graduates?

PMQ = primary medical qualification

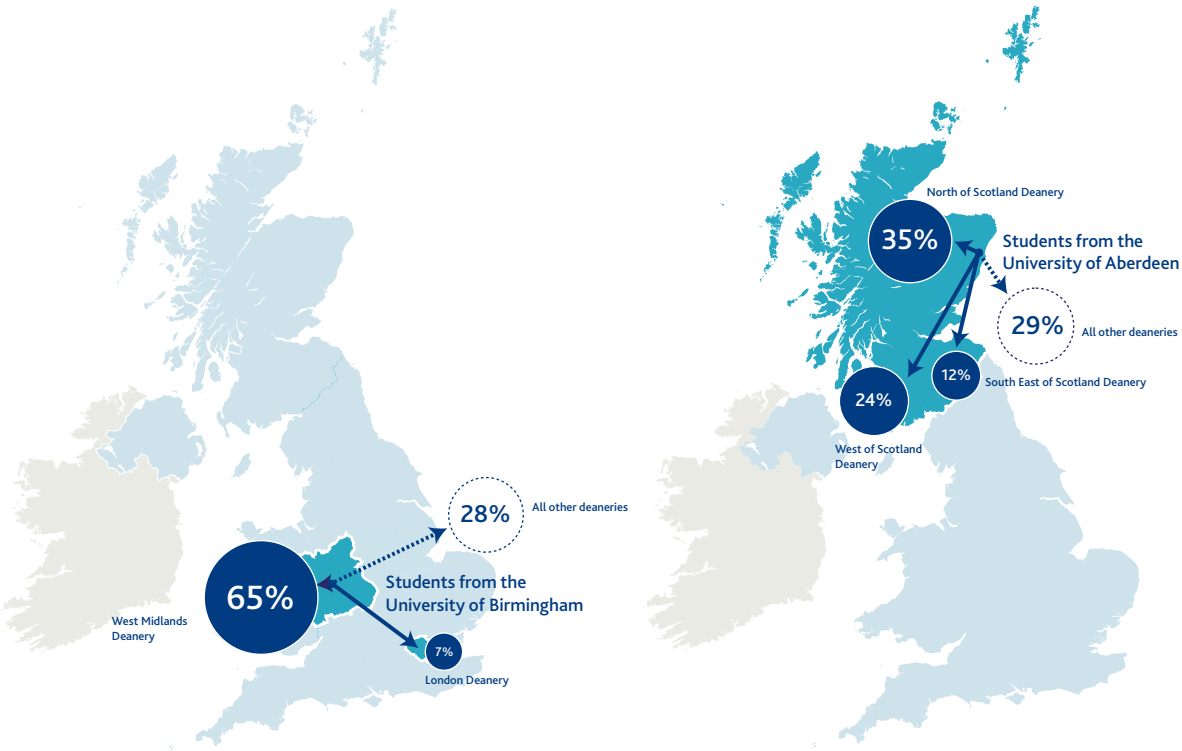
Two medical schools are not included in this figure: students at the University of St Andrews School of Medicine are included with the numbers for the University of Manchester because the students transfer for their final year and are awarded their degree by the University of Manchester; and, until July 2011, students at Swansea University School of Medicine were transferred to Cardiff University School of Medicine for their final year so they are included with the numbers for Cardiff University.



* Includes degrees awarded by the University of Wales.
† Data are for 2012 only.
‡ Data are for 2010–12 only.
§ Degrees awarded by the University of London, rather than its constituent institutions (St George's Hospital, University College London and King's College London).

Training destinations

There is a strong tendency for medical students to progress on to postgraduate training within either their local deanery or a neighbouring one.



Second, some medical schools attract local students who are happy to continue their postgraduate training in the same area.

Third, there may be factors inherent to the medical schools themselves. In the GMC annual national training survey, we ask postgraduate doctors in the first year of the Foundation Programme how well their medical school prepared them for practice.

Our data show a very weak association between universities where students felt that their medical school had prepared them well for practice and retention to the local deanery.

The profile of doctors in training

There were 59,820 doctors in postgraduate training programmes in the year 2012–13:*

- 50,043 in England
- 5,540 in Scotland
- 2,451 in Wales
- 1,786 in Northern Ireland.

These doctors were concentrated in certain areas of the UK, relative to the general population (figure 8). For example, London had the largest deanery with 11,632 doctors in training, which equates to 146 doctors per 100,000 people.†

Over half of doctors in postgraduate training were female – the proportion varied slightly across the UK, from just over 53% in the East Midlands Healthcare Deanery and NHS West Midlands Workforce Deanery and up to 63% in the Severn Deanery.

There are clear demands for flexible working patterns during training – just over one in ten doctors are training part time in the Severn Deanery, compared with one in 20 in the Kent, Surrey and Sussex Deanery.

There are also differences across specialties: 17% of doctors training in paediatrics and general practice work part time, compared with only 3% in surgical posts. There are inevitable challenges emerging in some areas and specialties in reconciling individuals' preferences to work flexibly with the need to maintain sustainable services for patients. Training programmes and employers will need to explore these implications.

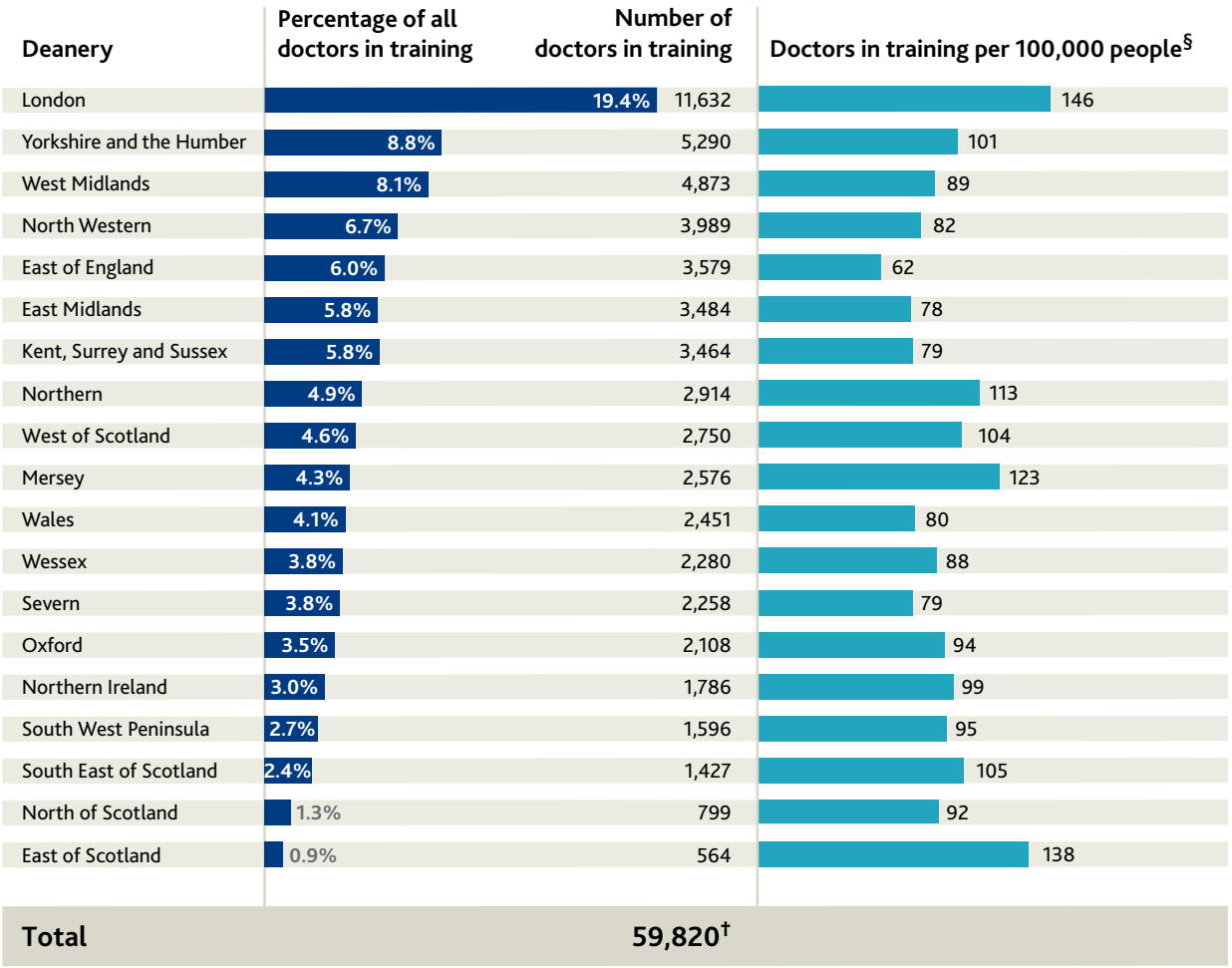
Doctors are satisfied with their training but are working beyond agreed hours

Although the average overall satisfaction with training is high, scoring 80.8 on a 100 point scale in the GMC's latest national training survey, almost 60% reported that they worked beyond their agreed hours on a daily or weekly basis. High workloads can lead to doctors in training and their supervisors focusing on providing services, potentially at the expense of learning opportunities. Although the health service is currently facing considerable financial pressure, employers and supervisors need to ensure that doctors in training are given protected time to train.

* The training year began in August 2012. These data are taken from the national training survey census date of 26 March 2013. We have excluded doctors training in pharmaceutical medicine (123 doctors) and those from the Defence Postgraduate Medical Deanery (118 doctors).

† Not all doctors training with the London Deanery are placed in London. Some will do part of their training in neighbouring deaneries.

FIGURE 8: Where doctors in training are working in the UK*



Deanery	Percentage of all doctors in training	Number of doctors in training	Doctors in training per 100,000 people§
London	19.4%	11,632	146
Yorkshire and the Humber	8.8%	5,290	101
West Midlands	8.1%	4,873	89
North Western	6.7%	3,989	82
East of England	6.0%	3,579	62
East Midlands	5.8%	3,484	78
Kent, Surrey and Sussex	5.8%	3,464	79
Northern	4.9%	2,914	113
West of Scotland	4.6%	2,750	104
Mersey	4.3%	2,576	123
Wales	4.1%	2,451	80
Wessex	3.8%	2,280	88
Severn	3.8%	2,258	79
Oxford	3.5%	2,108	94
Northern Ireland	3.0%	1,786	99
South West Peninsula	2.7%	1,596	95
South East of Scotland	2.4%	1,427	105
North of Scotland	1.3%	799	92
East of Scotland	0.9%	564	138
Total		**59,820†**	

* Data were correct on 26 March 2013.

† Data exclude doctors training in pharmaceutical medicine (123 doctors) and those from the Defence Postgraduate Medical Deanery (118 doctors) because their training can take place throughout the UK. Including these doctors, the total number of doctors in training was 60,061.

§ Deanery boundaries are not precisely fixed, so the area on which the population is based may vary slightly from that used in other analyses.

Training in emergency medicine is facing challenges

Whereas some specialties are struggling to attract sufficient numbers of doctors after the Foundation Programme – such as GP and psychiatry training – emergency medicine is struggling to retain doctors in specialty training.

Our data suggest that while many doctors are keen to experience emergency medicine during the two-year Foundation Programme, many do not go on to apply for the next stage: three years' core training in acute care common stem (ACCS). Even those who do decide to pursue ACCS often do not continue for the three years' higher specialty training needed to become an emergency medicine specialist – instead they attempt to change to one of the other component specialties: acute medicine, anaesthesia or intensive care medicine.

1,400 doctors in foundation training were holding a post in emergency medicine in our 2013 national training survey, but only 500 of those were recorded in core training. Furthermore, 65% of doctors who applied for an emergency medicine ACCS training position in England and Wales were offered one, but only 35% accepted – the second lowest acceptance rate across all specialties.

Overall, emergency medicine lost 12% of its doctors in training between 2012 and 2013 (from 665 doctors to 587).* When compared with other training specialties, emergency medicine proportionally lost the most doctors in training between 2012 and 2013.

The annual review of competence progression (ARCP) provides an overall assessment of the progress a doctor in postgraduate training is making. The process is intended to scrutinise the doctors' suitability to progress to the next stage of, or to complete, a training programme. Our data indicate that doctors in emergency medicine are struggling to progress – the proportion who received an unsatisfactory outcome in the ARCP more than doubled between 2010 and 2012. Low recruitment and retention rates may explain some of these changes, but more research is needed to understand the causes and the impact it may have on frontline services.

The GMC's work in assuring the quality of medical education and training has also identified issues with emergency medicine. In our national training survey in 2012, we found an increasing number of concerns about recently qualified doctors working unsupervised at night.[45] In 2012, we undertook an audit of emergency department rotas across 20 sites, which showed that there was often insufficient supervision from a senior doctor.[45]

* This analysis does not take into account the fact that some doctors in training would have left because they had been awarded their CCT.

The GMC's national survey also found that concerns about patient safety in emergency medicine tended to be raised by doctors at a higher grade. This was notably different from all other specialties where doctors in foundation training raise proportionally more concerns. We will be publishing an analysis of patient safety concerns raised in the 2013 survey later this year.

The struggle to recruit and retain doctors training in emergency medicine also appears to be contributing to the strain under which emergency departments are working. According to the College of Emergency Medicine, doctors and other staff are having to cope with a rising number of patients, with more severe and complex conditions, without adequate resources to assess and admit them.[46] Emergency departments saw 17.6 million patients in 2011–12, up from 14 million in 2003–04.[47, 48]

An interim report from the Emergency Medicine Taskforce, which was set up last year to tackle the growing mismatch between supply and demand in the specialty, suggested that moving the emergency medicine component of ACCS from year three to year one would help curb the attrition rates.[49] The report noted that this could encourage commitment to the specialty and boost the pass rate for the College of Emergency Medicine's membership exams.

Emergency medicine is not the only specialty struggling to recruit sufficient doctors – competition for training places varies significantly across specialties.[50]

In 2012, the range of applicants per vacant post was:

- 0.5 applications in higher specialty emergency medicine training
- 1.4 applications in core psychiatry training
- 1.8 applications in GP training.

By comparison, more popular specialties such as neurosurgery had 15.9 applications per post, and obstetrics and gynaecology had 2.9 applications per post.

There is a need to understand how to attract more doctors to train as GPs or in specialties such as emergency medicine and psychiatry. Our data suggest that doctors' experience of GP and psychiatry posts during the Foundation Programme is weakly associated with the subsequent uptake of training in these areas. This suggests that if a doctor has a more positive experience of GP and psychiatry posts during the Foundation Programme, they may be more likely to pursue training in these areas. It is also important that medical students understand the range of opportunities that will be available to them when they graduate and that most of them may be needed in generalist roles.

The Shape of Training review will help to consider these questions in more detail

This independent review of postgraduate training – set up by the four parts of the UK together with the GMC, the Academy of Medical Royal Colleges, Health Education England and the Medical Schools Council – will also report this year. It is aiming to ensure that doctors receive high-quality training that supports patients' needs. A key theme is to examine how current training structures could be made more flexible – for example, enabling doctors in training to move between specialties more easily once they have entered postgraduate training. This could prove crucial in addressing some of the challenges facing emergency medicine and other specialties.

Conclusion

The composition of the medical profession in the UK continues to change. We are seeing fewer young doctors coming to the UK from outside the EEA, a profession that will soon become predominately female (although the growth in the number of women now entering medicine has begun to slow down) and changing expectations among doctors themselves. The effect will be felt in the years ahead, not least in the numbers of doctors that will be required. The profile of doctors on the GP and Specialist Registers is also changing, as is the composition of different specialties.

These changes also have consequences for undergraduate and postgraduate medical education and training. As a result of fewer overseas graduates, the NHS is becoming increasingly reliant on doctors who have graduated from UK medical schools.

Our data show that there are still significant challenges. The decline in the number of international medical graduates will have a substantial impact on areas of the UK that have been particularly reliant on them, especially as they try to meet the growing demand for healthcare. Furthermore, some areas of the UK continue to find it difficult to retain new doctors out of medical school. Some specialties are also having difficulty recruiting and retaining doctors in training.

These issues are bound to have a direct impact on the quality of services and patient care and we and others need to do more to address them. The Shape of Training review will consider many of these issues but there are still important questions to be resolved about how to ensure doctors in training are going into specialties where patients' needs are greatest.

Chapter 1: A note on data

Data in this chapter were primarily drawn from the information we collect when registering doctors and assuring the quality of medical education and training.

Registration and revalidation data

Data for the analysis of the profession in 2012 refer to the List of Registered Medical Practitioners, the Specialist Register and the GP Register on 31 December 2012. Data for the analysis of the change between 2007 and 2012 refer to the registers on 31 December 2007 and 31 December 2012.

Some doctors have multiple specialties recorded on the Specialist Register. For the analysis used in this chapter, we have used their primary specialty although a small number of doctors will have trained in multiple specialties. General practice is included in our analysis of specialties but the data were extracted from the GP Register.

There is a small group of doctors on the register with no date of birth recorded (4% in 2007 and 2.5% in 2012). In these cases, age was approximated by taking their time since qualification plus 23 years.

For the analyses in this chapter, we grouped doctors on the register into three distinct groups:

- under 30 years old
- 30–50 years old (inclusive)
- over 50 years old.

The analysis of joiners and leavers was based on our records of doctors who joined or left the medical register between 1 January 2012 and 31 December 2012 inclusive.

We used revalidation data to analyse where doctors have a prescribed connection to a designated body. Data were drawn from the GMC's database on 14 August 2013. For analysis of the geographical distribution of doctors, we excluded 7% of designated bodies that are national organisations.

The number of doctors per 100,000 people was derived using a denominator based on mid-2012 population estimates from the Office for National Statistics in England and Wales, the General Register Office for Scotland and the Statistics and Research Agency in Northern Ireland.

Education data

Data about medical students in the academic year 2012–13 came from the medical schools' annual return from 2012.

The number of doctors in postgraduate training programmes was estimated using data that deaneries provided in the 2013 national training survey and was accurate on 26 March 2013. It included doctors who were not in a training post on 26 March 2013 and therefore included those taking a career break or maternity leave.

The number of doctors in training per 100,000 people by deanery was derived from the mid-2010 population estimates from the Office for National Statistics in England and Wales, the General Register Office for Scotland and the Statistics and Research Agency in Northern Ireland.