



Clinical radiology UK workforce census 2016 report



Foreword

The Royal College of Radiologists (RCR) has once again achieved a 100% response rate for this census covering all NHS radiology departments in the UK. This highly detailed information on the radiology workforce and workload of imaging departments allows the RCR to influence healthcare policy. The ongoing, severe shortage of radiologists in the face of ever increasing clinical demands has been highlighted to the Government and regulatory bodies via the output of this and previous censuses on many occasions, sadly without any proportionate response. The information also feeds into policy initiatives, for example, early diagnosis of cancer, seven-day NHS services and stroke thrombectomy. All of these will fail if an urgent solution to the workforce crisis is not put in place.

The format and scope of this report closely follows those published since the first RCR workforce census in 2008. For the 2016 report, we have included information on radiology training numbers and projected numbers of training completions, while continuing to highlight the marked workload/workforce mismatch, huge extra costs of outsourcing and insourcing and the international nature of the workforce.

I would like to thank all clinical directors and workforce leads who submitted information for 2016, and the RCR Regional Chairs who have been particularly helpful in encouraging departments to submit their census forms.

Dr Andrew Smethurst
Medical Director, Professional Practice, Clinical Radiology

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Radiology workforce crisis still not being addressed by Government: patients will continue to suffer

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1. Main findings from the 2016 census

Severe shortage of radiologists in the UK

The consultant radiology workforce in the UK has increased at an average rate of 3% per annum over the past six years (when measured in terms of whole-time equivalents [WTEs]). However, this workforce growth has not kept pace with the increase in clinical demand made on radiology services. In England, between 2013 and 2016 the number of computed tomography (CT) scans increased by 33% and magnetic resonance imaging (MRI) scans by 31%, equating to a mean annual growth of just over 10%.¹ The mismatch between the growth in workforce and demand is even more marked in Scotland where the consultant workforce grew by 7% between 2010 and 2016 (reflecting a mean annual growth of just over 1%), contrasted against a mean annual increase in CT and MRI scans of just over 10%.

Nearly all (97%) radiology departments in the UK stated that they were unable to meet their diagnostic reporting requirements in 2016 within their radiology staff's contracted hours. This points to an insufficient number of radiologists to meet the increasing demand for imaging and diagnostic services. When consultants, trainees and other grades are taken into account, the UK has 7.5 radiologists per 100,000 people, which is the third lowest of 31 European countries for which the 2015 data is available.² Greece is top of the list with 31 radiologists per 100,000 people (four times the UK ratio). The median number of radiologists per 100,000 is 12.7.

Recruitment difficulties – vacant consultant posts have become the norm

The UK 2016 consultant radiologist vacancy rate is 8.5%. The vacancy rate has been persistently high (mean just under 10%) over the past six years. This consistently high vacancy rate is likely to continue over the next few years given the high numbers of consultant radiologists approaching retirement.

Vacancy rates are likely to be an underestimate of the extent of vacant positions as some trusts do not actively recruit when they predict that a vacant post will be very difficult to fill.

In 2016, less than half (43%) of advertised consultant radiology posts resulted in successful appointment. In the majority of cases no suitable candidates were identified. Nearly two-thirds (61%) of unfilled posts have been vacant for a year or longer.

Replenishment and sustainability of the consultant workforce

Radiology has the second lowest proportion of trainees to consultants when compared to other hospital-based specialty groups (psychiatry being the only specialty with a lower proportion). In radiology, there are 26 trainees for every 74 consultants. The average across all specialties is 40 trainees for every 60 consultants.³ This raises questions about the future replenishment and sustainability of numbers in the consultant workforce.

Sustainability of future delivery of radiology services

Insufficient numbers of consultants, the recruitment crisis and expected retirement of a large proportion of the existing workforce (22% by 2021) call into question the sustainability of radiology services in the near future. Unless the situation is addressed urgently, there is a clear risk that patient care will be significantly affected.

International recruitment – not an easy option, but increasingly used to fill vacancies

Radiology in the UK is provided by a mixed UK and international workforce. At least a quarter of consultant radiologists are international medical graduates (IMGs) from one of 55 countries.

Just over 50% of IMGs gained their primary medical qualification from a medical school in Asia (most commonly India and Pakistan), just under 10% from Ireland and 40% from elsewhere (primarily other European countries).

Nearly half (43%) of radiology departments in the 2016 census had tried to recruit from outside of the UK (during the past year), an increase from the third (34%) reporting attempting overseas recruitment in the 2015 census. Of those who attempted overseas recruitment, just under half were successful in filling one or more posts. Radiology departments reported that potential difficulties with overseas recruitment include language difficulties, visa requirements, the quality of applicants, time and costs.

Increased expenditure on outsourcing to manage workload

Insufficient radiologists, substantial growth in the numbers of imaging tests (CT and MRI in particular) and the increased complexity of imaging have resulted in nearly all radiology departments (97%) in the UK having been unable to meet their reporting requirements within contractual hours in 2016. To manage shortfalls, 92% of radiology departments paid radiologists overtime to report (outside of contracted hours), 78% outsourced reporting to independent companies and 52% employed *ad hoc* locums. Many radiology departments used all three methods. In total, spending on these activities was an estimated £88 million in the 2015–2016 financial year, a very similar level of expenditure to the 2014–2015 financial year (expenditure in both years being much higher than the estimated £58 million expenditure in the 2013–2014 financial year). To put this into perspective, the £88 million spent on outsourcing/insourcing in the UK is equivalent to the combined salaries of 1,028 full-time radiology consultants (based on point 5 of the 2016–17 NHS consultant pay scale for England).⁴

Other mechanisms which radiology departments used to manage workloads were; reporting by radiographers (78%), unpaid additional work undertaken by radiologists (72%) and leaving images unreported or auto-reported (46%).

Use of all the above mechanisms to manage radiology workload has increased since 2015.

2. Overview of the UK radiology workforce

Headcount of radiologists

As of 31 March 2016, there were 3,482 consultant radiologists working in NHS posts in the UK, 3,387 (97%) of which were working in substantive consultant posts and 95 (3%) of which were working in locum consultant posts (as shown in Table 1). 3,482 represents an increase of 164 (5%) on the 2015 census figure of 3,318. The 5% increase in the headcount of the consultant radiologist workforce is slightly higher than the mean annual increase of 3.6% over the past six years (2010–2016). However, it should be noted that the increase in WTEs (a better indicator of workforce capacity) between 2015 and 2016 is 3% (that is, 2% lower than headcount increase – please see Figure 3, on page 12, for details). WTE figures are a more accurate indicator of workforce capacity than headcount as they take into account whether workers are full or less than full time.

Table 1. Headcount of radiology staff by UK country, 2016*

| | England | Northern Ireland | Scotland | Wales | UK total |
|----------------------------------------|--------------|------------------|------------|------------|--------------|
| Consultants (substantive posts) | 2,802 | 118 | 304 | 163 | 3,387 |
| Locum consultants | 68 | 4 | 17 | 6 | 95 |
| Trainees | 1,076 | 40 | 117 | 41 | 1,274 |
| Other grades** | 185 | 7 | 16 | 6 | 214 |
| Total | 4,131 | 169 | 454 | 216 | 4,970 |

*Please note that this table shows the headcount. The total number of consultant posts is 3,503 (21 consultants are employed in two part-time posts concurrently).

**Other grades includes associate specialists, specialty doctors, trust grade staff and clinical assistants.

All UK countries/regions reported an increase in consultant headcount between 2015 and 2016; however, as shown in Table 2, the increase is variable across UK countries and regions; South East England reported a 15% increase, whereas South Central England and Northern Ireland reported a 1% increase.

Table 2. Headcount of consultant radiologists by UK country/region, 2010–2016

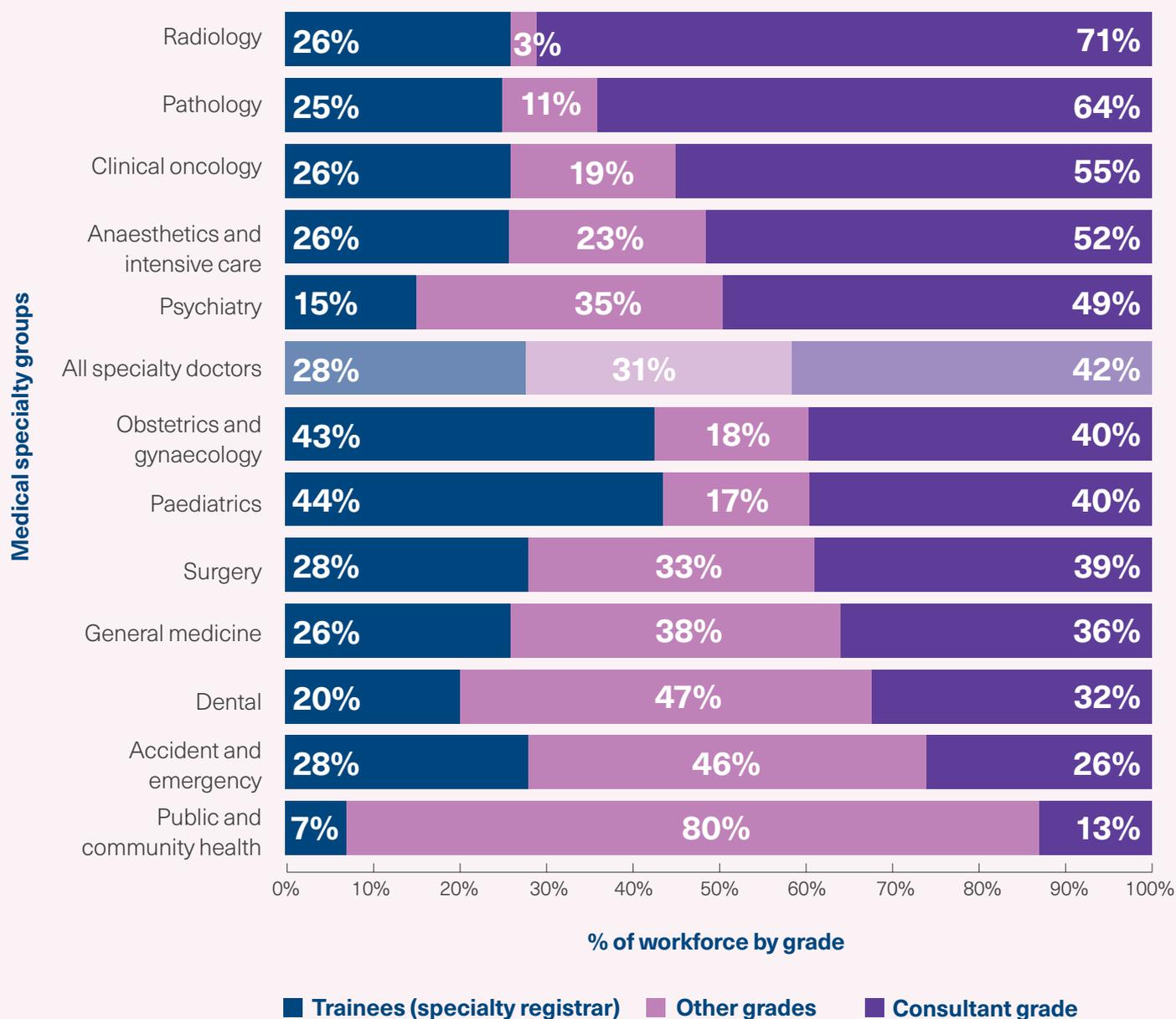
| | 2010 headcount | 2014 headcount | 2015 headcount | 2016 headcount | % change 2015–2016 | % change 2010–2016 |
|-------------------------------|-------------------|-------------------|-------------------|-------------------|-----------------------|-----------------------|
| England – East Midlands | 142 | 170 | 168 | 171 | 2% | 20% |
| England – East of England | 221 | 240 | 247 | 252 | 2% | 14% |
| England – London | 470 | 539 | 555 | 587 | 6% | 25% |
| England – North East | 108 | 138 | 146 | 156 | 7% | 44% |
| England – North West | 349 | 374 | 389 | 408 | 5% | 17% |
| England – South Central | 170 | 214 | 208 | 211 | 1% | 24% |
| England – South East | 127 | 165 | 190 | 218 | 15% | 72%* |
| England – South West | 240 | 278 | 288 | 294 | 2% | 23% |
| England – West Midlands | 245 | 277 | 278 | 293 | 5% | 20% |
| England – Yorks and Humber | 251 | 268 | 265 | 280 | 6% | 12% |
| England – total | 2,323 | 2,663 | 2,733 | 2,870 | 5% | 24% |
| Northern Ireland | 108 | 119 | 121 | 122 | 1% | 13% |
| Scotland | 291 | 307 | 304 | 321 | 6% | 10% |
| Wales | 147 | 150 | 160 | 169 | 6% | 15% |
| United Kingdom – total | 2,869 | 3,239 | 3,318 | 3,482 | 5% | 21% |

* The large South East England increase can be attributed in part to the reconfiguration of some NHS trusts.

Proportion of trainees to consultants

As demonstrated in Figure 1, NHS workforce data shows that compared to other hospital medical specialty groups, radiology has the highest proportion of consultants (71%) and the lowest proportion of 'other grades', which includes associate specialists and specialty doctors (3%).

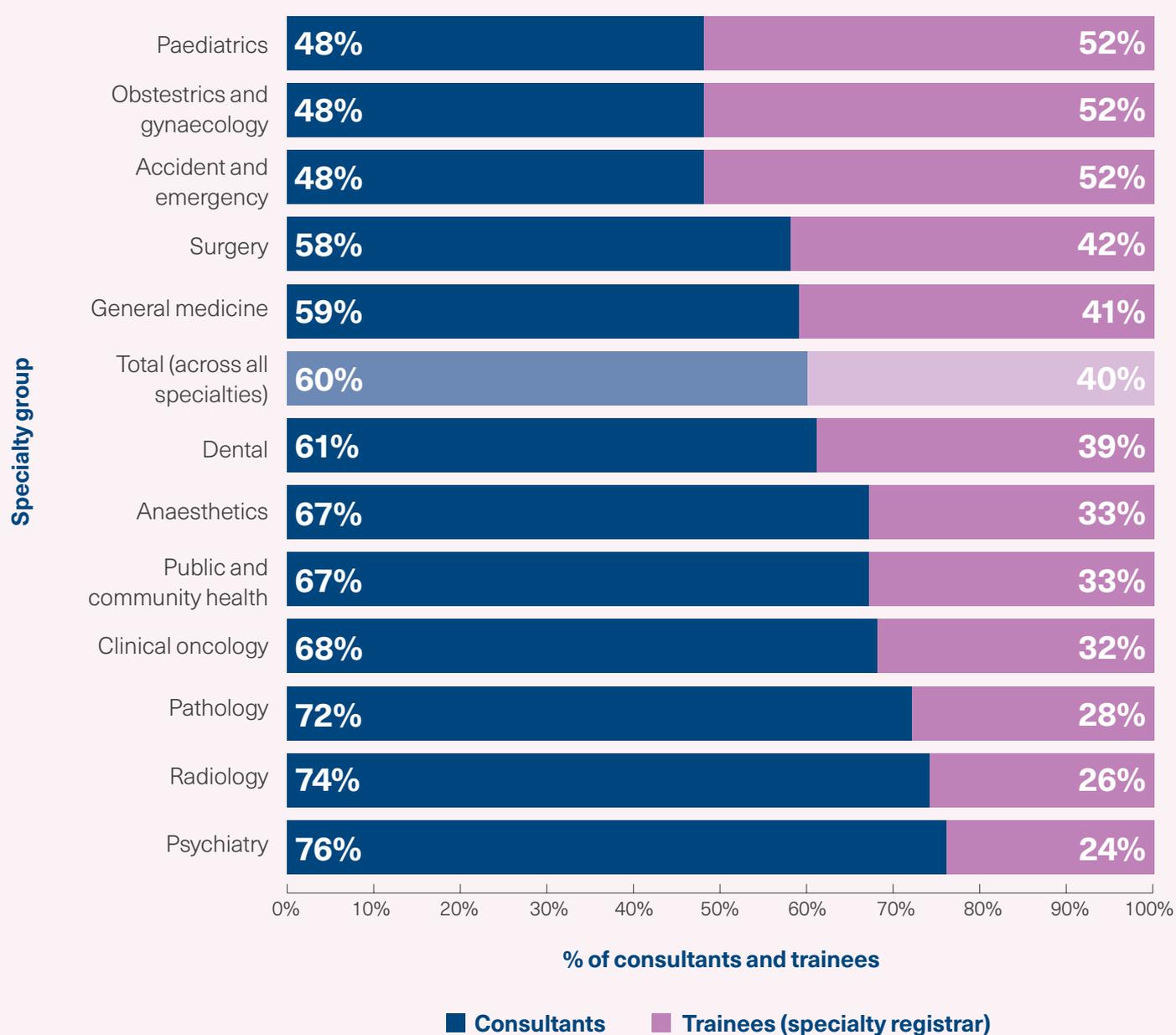
Figure 1. Percentage of NHS consultants, trainees and other grades across specialty groups – England, 2016³



'Other grades' includes associate specialists, specialty doctors and those undertaking foundation and core medical training.

Figure 2 presents the same data, but excludes 'other grades', that is, it shows the percentage of consultants compared to trainees. Compared to other medical specialty groups, radiology has the second lowest proportion of trainees to consultants – 26% compared to the mean of 40%. This raises the question of whether there are sufficient trainees to replenish the radiology consultant workforce.

Figure 2. Ratio of NHS consultants to trainees across specialty groups in England, 2016³



Workforce participation rates

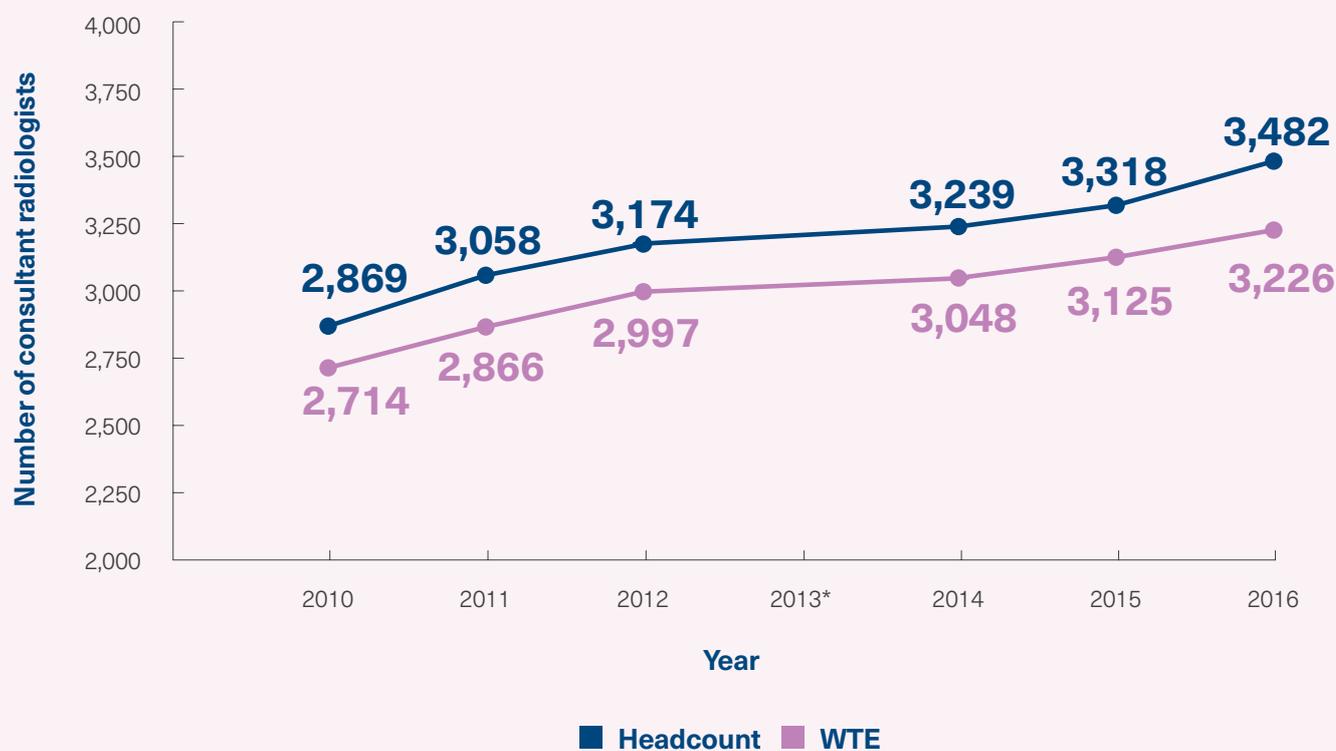
Less than full-time (LTFT) working can be measured using the workforce participation rate, which is determined by the WTE number of consultants (see below for definition) divided by the headcount number of consultants. The participation rate for the 2016 radiology census is 0.92, a slight decrease from the 2015 participation rate of 0.94, indicating an increase in part-time working. Limitations of this method include the fact that the WTE number does not capture contracted work above the cap of ten programmed activities (so, for example, a consultant contracted to work 12 programmed activities [PAs] has a WTE figure of 1.0, which is the same as a consultant contracted to work ten PAs).

Whole-time equivalent consultants

Definition of whole-time equivalent (WTE):

A standard full-time or WTE NHS consultant contract includes ten PAs, which is equivalent to 40 hours of work per week (or 37.5 hours in Wales). While many consultants are contracted to work more than ten PAs, to calculate WTE values this report conforms to the NHS convention of calculating one WTE as ten PAs meaning it excludes programmed activities that exceed ten (for all consultants who are contracted to work above ten PAs). As in previous census reports, the calculation of WTE numbers takes into account a consultant's direct clinical care (DCC) and supporting professional activities (SPA), but excludes their research and additional responsibility PAs.

Figure 3. UK consultant radiologist headcount and WTEs, 2010–2016



*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

Table 3. WTE consultant radiologists by UK country and region, 2010–2016

| | 2010 WTEs | 2014 WTEs | 2015 WTEs | 2016 WTEs | % change 2015–2016 | % change 2010–2016 |
|-------------------------------|--------------|--------------|--------------|--------------|-----------------------|-----------------------|
| England – East Midlands | 139 | 163 | 160 | 163 | 2% | 17% |
| England – East of England | 210 | 225 | 236 | 238 | 1% | 13% |
| England – London | 435 | 496 | 509 | 522 | 3% | 20% |
| England – North East | 102 | 130 | 136 | 144 | 6% | 41% |
| England – North West | 328 | 359 | 371 | 380 | 3% | 16% |
| England – South Central | 161 | 199 | 195 | 194 | -1% | 20% |
| England – South East | 120 | 156 | 181 | 205 | 13% | 71%* |
| England – South West | 228 | 263 | 272 | 277 | 2% | 22% |
| England – West Midlands | 233 | 261 | 262 | 276 | 5% | 18% |
| England – Yorks and Humber | 239 | 251 | 253 | 265 | 5% | 11% |
| England – total | 2,195 | 2,503 | 2,575 | 2,664 | 3% | 21% |
| Northern Ireland | 101 | 114 | 114 | 112 | -2% | 11% |
| Scotland | 279 | 288 | 288 | 298 | 4% | 7% |
| Wales | 140 | 143 | 147 | 152 | 3% | 8% |
| United Kingdom – total | 2,714 | 3,048 | 3,125 | 3,226 | 3% | 19% |

* The large South East England increase can be attributed in part to the reconfiguration of some NHS trusts.

In 2016, there were 3,226 WTE consultant radiologists in the UK. Figure 3 and Table 3 show that the overall number has risen by 101 since 2015 – a 3% increase, in line with the 3% mean annual increase between 2010 and 2016.

The extent of increases and, in some cases, decreases in the number of WTE consultant radiologists is quite variable across UK countries and regions.

Between 2015 and 2016, Northern Ireland and South Central England saw WTE numbers decline by 2% and 1% respectively. Conversely, in South East England there was a 13% increase.

Over the six-year period from 2010 to 2016 the increase in WTEs in Scotland (7%), Wales (8%) and Northern Ireland (11%) was much smaller than in England (21%).

Uncapped WTEs

1,748 consultant radiologists (66% of the full-time total) are contracted to work in excess of ten PAs (a 40-hour working week). The 'excess' worked (over and above ten PAs) is the equivalent to an additional 242 WTE consultants (or 7.5% of the WTE workforce). These figures do not take into account hours worked over and above contracted hours. Consultant radiologists working long hours are likely to be at increased risk of stress and burnout.

WTE consultant radiologists per 100,000 people

According to the Office of National Statistics (ONS), the UK population grew to an estimated 65.6 million in 2016 – the largest ever – an increase of 1.5 million people since 2014.⁵ The growth rate over the past year has been approximately 0.8% (a similar rate since 2005). Net international migration continued to be the main driver, but there was also an increase in births and fewer deaths than in 2015. The annual population growth varied across the UK – in England it was 0.9%, Wales 0.5%, Scotland 0.6% and Northern Ireland 0.6%.

As shown in Table 4, the number of WTE consultant radiologists per 100,000 people in the UK is 4.9, a very small (2%) increase from the 4.8 figure reported in the 2014 and 2015 censuses (this calculation excludes trainees and other grades, hence is lower than the 7.5 radiologists per 100,000 population reported in Section 1). There is significant variation between UK countries and regions in terms of the consultant radiologist to population ratio, with consultants in Northern Ireland and London having populations below 17,000 per consultant and consultants in the East Midlands and the East of England having populations over 25,000 per consultant.

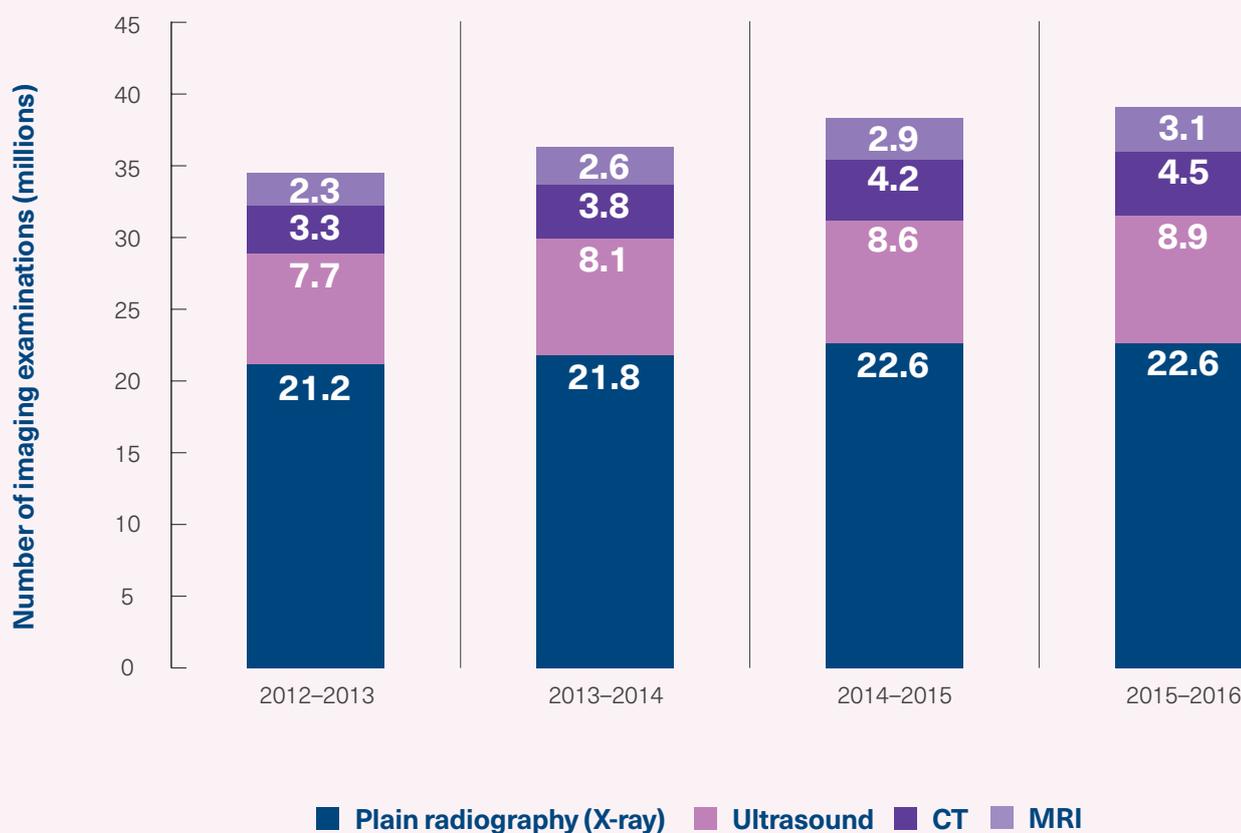
Table 4. WTE consultant radiologists per 100,000 people by UK country and region, 2016

| | Population | WTE consultant radiologists | WTE per 100,000 | Population per WTE consultant |
|------------------------------------------------|-------------------|-----------------------------|-----------------|-------------------------------|
| England – East Midlands | 4,724,437 | 163 | 3.5 | 28,984 |
| England – East of England | 6,130,542 | 238 | 3.9 | 25,759 |
| England – London | 8,787,892 | 522 | 5.9 | 16,835 |
| England – North East | 2,636,848 | 144 | 5.5 | 18,311 |
| England – North West | 7,219,623 | 380 | 5.3 | 18,999 |
| England – South East (including South Central) | 9,026,297 | 399 | 4.4 | 22,622 |
| England – South West | 5,515,953 | 277 | 5.0 | 19,913 |
| England – West Midlands | 5,800,734 | 276 | 4.8 | 21,017 |
| England – Yorkshire and Humber | 5,425,741 | 265 | 4.9 | 20,474 |
| England – total | 55,268,067 | 2,664 | 4.8 | 20,746 |
| Northern Ireland | 1,862,137 | 112 | 6.0 | 16,626 |
| Scotland | 5,404,700 | 298 | 5.5 | 18,137 |
| Wales | 3,113,150 | 152 | 4.9 | 20,481 |
| UK – total | 65,648,054 | 3,226 | 4.9 | 20,350 |

Workload – imaging tests and examinations

There has been a steady increase in imaging examinations in England between 2012 and 2016. In the 2015–2016 financial year there were just under 40 million imaging examinations undertaken in England (see Figure 4).¹

Figure 4. Number of imaging examinations in England, 2012–2016¹



As shown in Figure 5, the mean 3% annual increase in WTE consultants in recent years is substantially less than the increase in imaging examinations. In particular, there has been a substantial growth in both CT and MRI scans; the mean annual growth over the past three years for these scans has been over 10%.¹ It must be remembered that, as well as the increase in volumes, these advanced medical technologies add to the extent and complexity of diagnostic reporting demands on radiologists, factors which also need to be considered when workforce planning.

Figure 5. Percentage growth in the number of WTE consultant radiologists and imaging examinations in England, 2013–2016¹

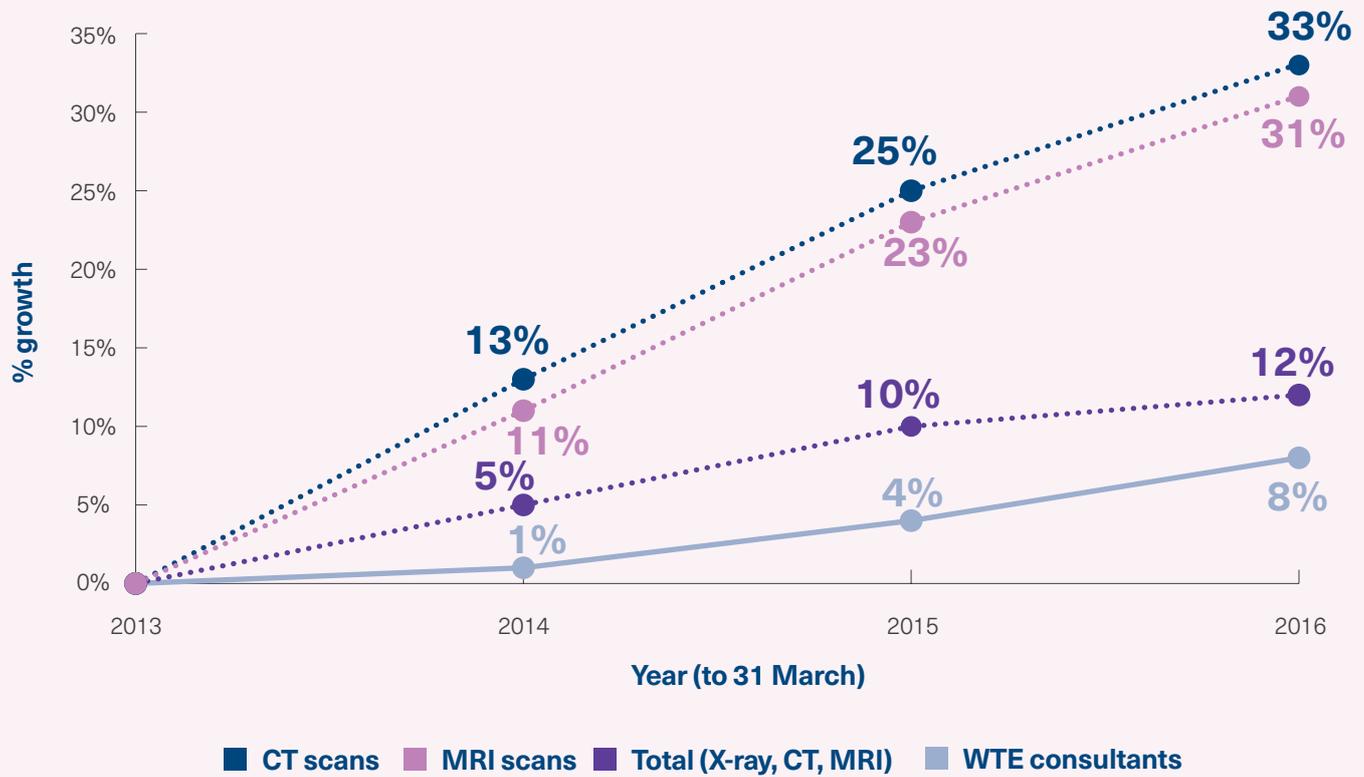


Table 5. Number of imaging examinations and consultant radiologists in England, 2012–2016

| | 2012–2013 | 2013–2014 | 2014–2015 | 2015–2016 |
|----------------------------------------------|---------------|--------------|--------------|--------------|
| Plain film (X-ray) | 21,174,005 | 21,832,985 | 22,576,785 | 22,570,870 |
| CT | 3,346,840 | 3,780,405 | 4,199,515 | 4,461,650 |
| MRI | 2,349,160 | 2,614,865 | 2,890,310 | 3,084,815 |
| Total (X-ray, CT, MRI) | 26,870,005 | 28,228,255 | 29,666,610 | 30,117,335 |
| WTE consultant radiologists (England) | 2,473* | 2,503 | 2,575 | 2,664 |

*This figure is unavailable. The figure shown is the mean of the 2012 and 2014 equivalent.

Figure 6. Percentage growth in the number of WTE consultant radiologists and imaging examinations in Scotland, 2010–2016⁶

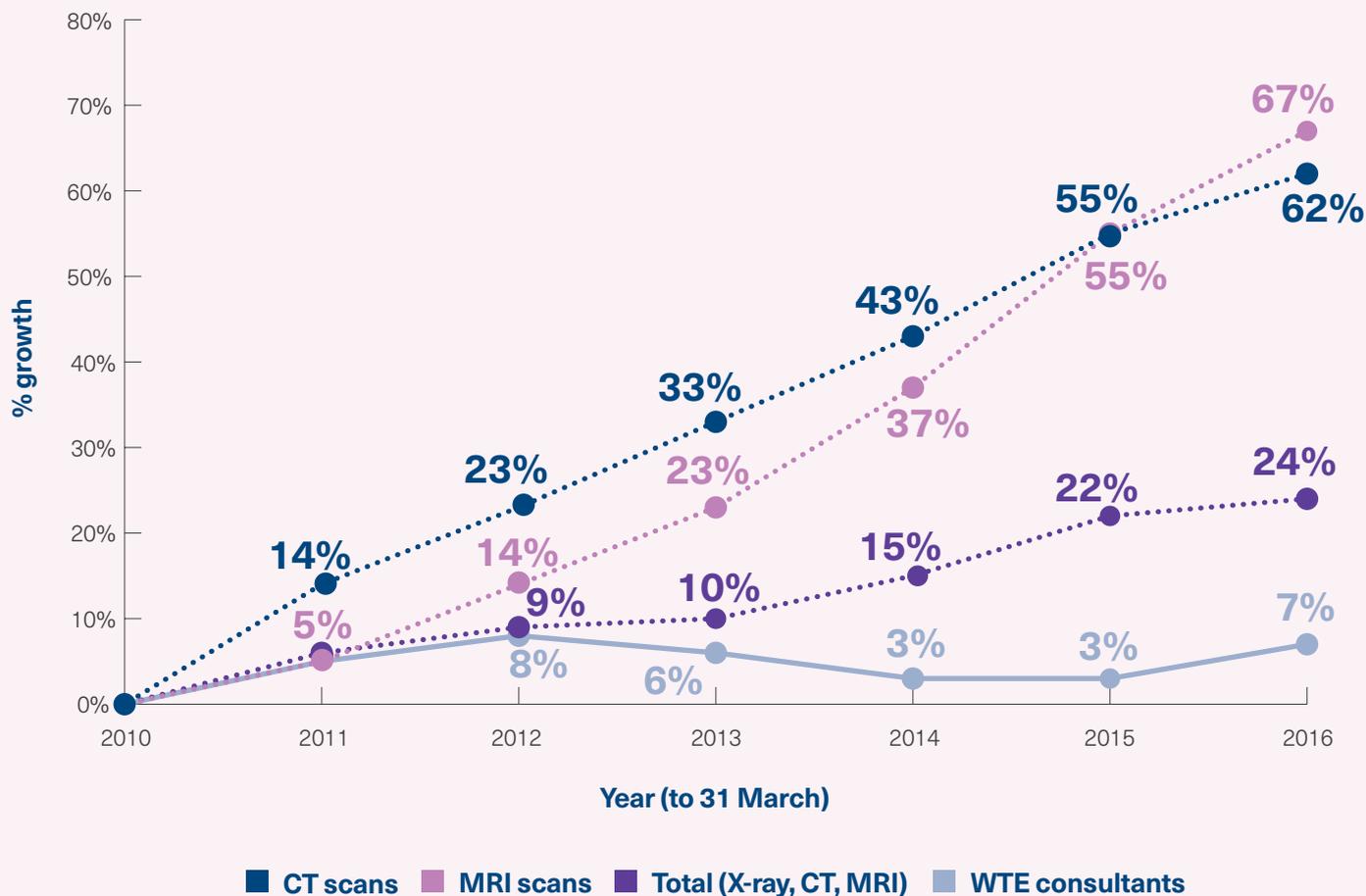


Table 6. Number of imaging examinations and consultant radiologists in Scotland, 2010–2016

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-----------------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Plain film (X-ray) | 2,212,377 | 2,314,068 | 2,351,545 | 2,340,035 | 2,427,513 | 2,553,395 | 2,562,660 |
| CT | 325,064 | 372,160 | 400,068 | 431,436 | 465,247 | 502,485 | 527,842 |
| MRI | 148,793 | 156,409 | 169,394 | 182,621 | 203,363 | 230,961 | 248,442 |
| Total (X-ray, CT, MRI) | 2,686,234 | 2,842,637 | 2,921,007 | 2,954,092 | 3,096,123 | 3,286,841 | 3,338,944 |
| WTE consultant radiologists (Scotland) | 279 | 292 | 302 | 295* | 288 | 288 | 298 |

*This figure is unavailable. The figure shown is the mean of the 2012 and 2014 equivalent.

3. NHS consultant radiologists – gender, age, nationality and specialisms

Gender

Of the 3,456 (out of 3,482) consultant radiologists where gender is known, just over a third are female (36%) and just under two-thirds are male (64%). As a comparator, the Royal College of Physicians 2015–2016 census reported the consultant population as being 34% female and 66% male (with considerable inter-specialty variation) indicating that the gender breakdown of consultant radiologists is broadly comparable to that of other specialties.⁷ As shown in Figure 7, the percentage of females in the consultant radiologist workforce has increased by 1 percentage point between 2015 and 2016 (this graph excludes those where gender is not known). This gradual trend of an increasing number and proportion of females in the consultant radiologist workforce is likely to continue as 543 (43%) trainees are female and 731 (57%) trainees are male.

The ratio of female to male consultant radiologists is quite variable by UK country and region. The highest percentage of females is reported in London (45%), the lowest is reported in Northern Ireland (28%) (see Figure 8).

As female consultant clinical radiologists are more likely to work LTFT than male consultant clinical radiologists (and frequency and duration of maternity leave significantly outweighs frequency and duration of paternity leave among the UK workforce as a whole), the increasing percentage of female consultant clinical radiologists has implications that need to be taken into account when workforce planning.

Figure 7. Percentage of female and male UK consultant radiologists, 2010–2016

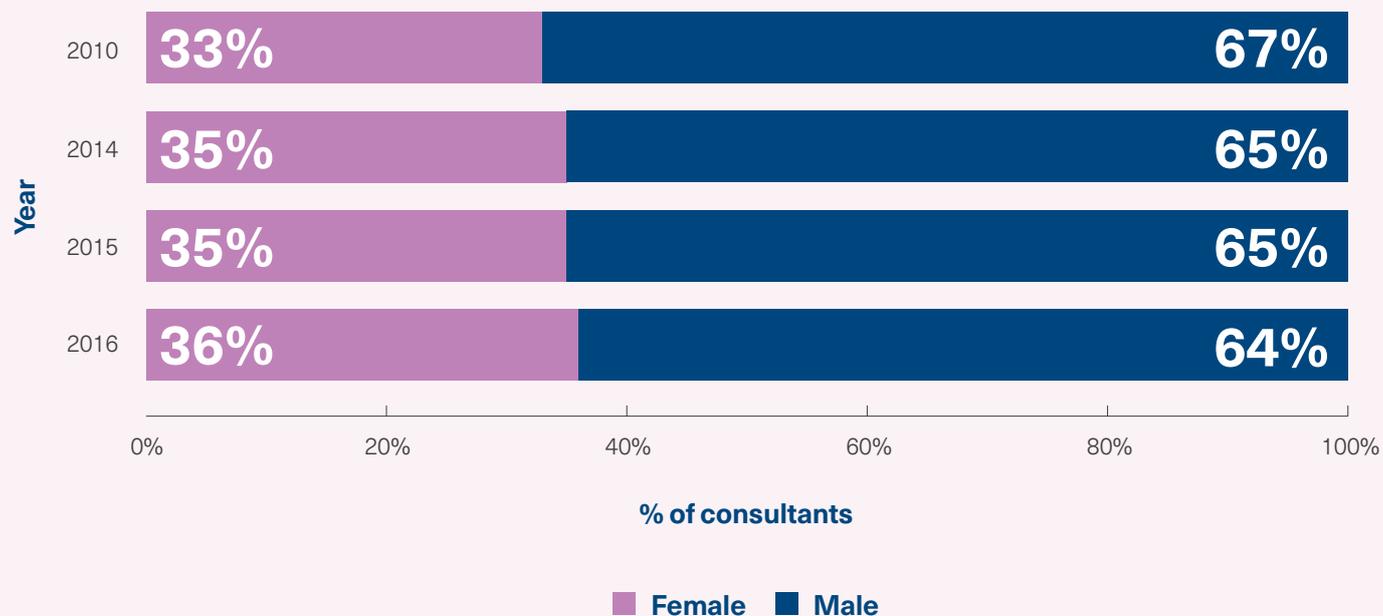
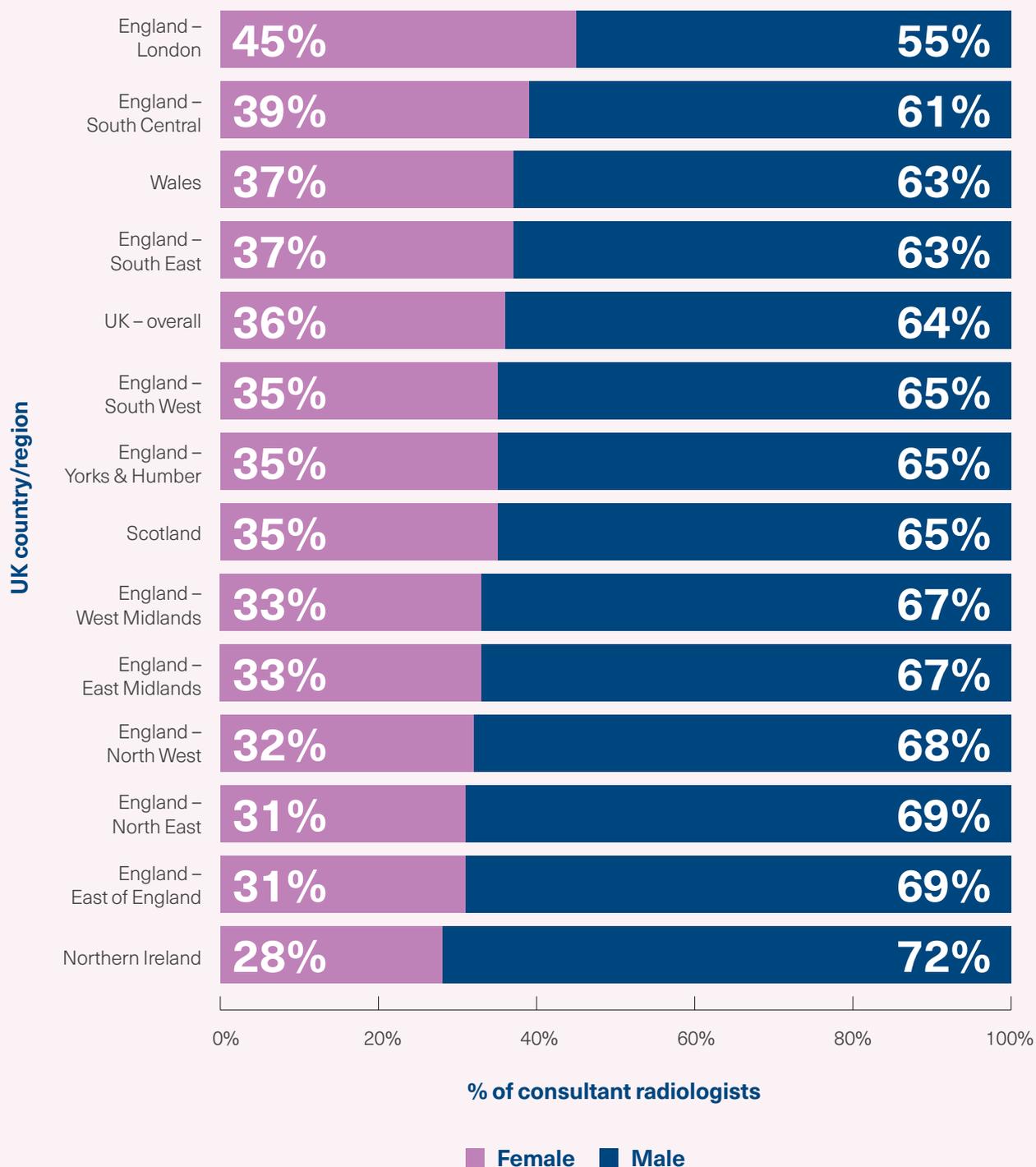


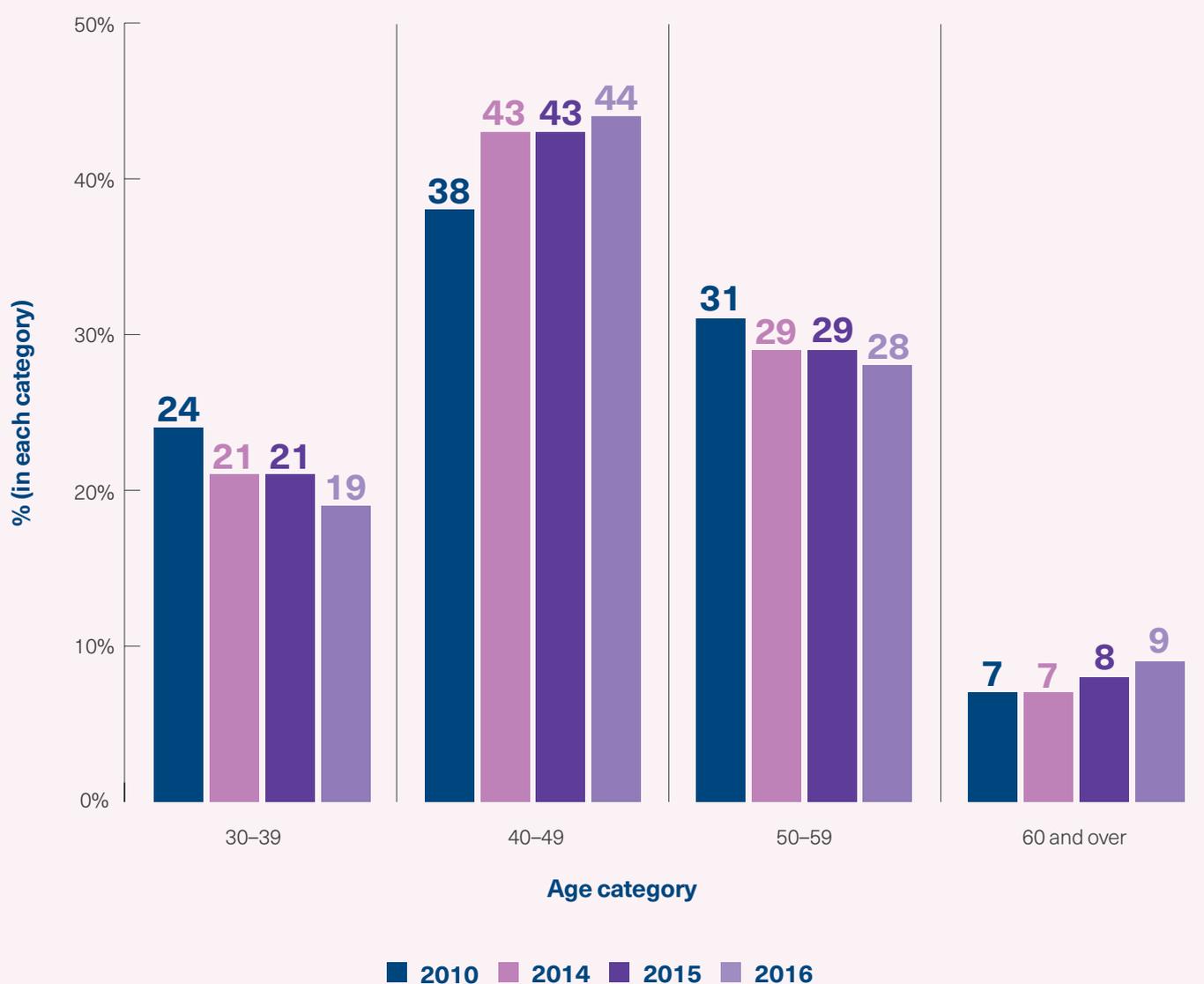
Figure 8. Percentage of female and male consultant radiologists by UK country and region, 2016



Age

The mean age of consultant clinical radiologists is 47. Figure 9 shows the age profile of the UK consultant radiology workforce. There has been a decrease since 2010 in the proportion of young consultant radiologists in the 30–39 year old age category (from 24% to 19%) and a slight increase in the proportion of consultant radiologists in the 60 and over age category who are approaching retirement (from 7% to 9%).

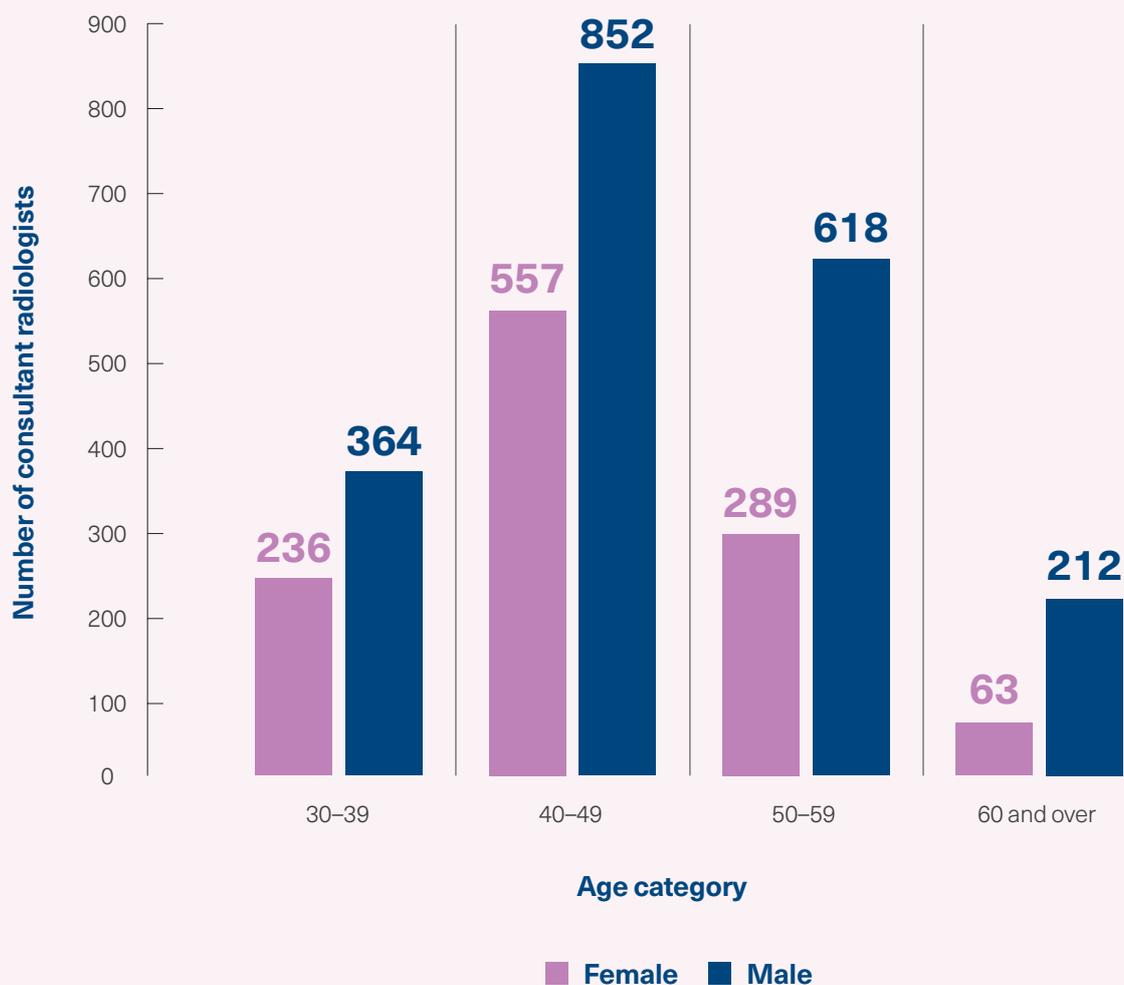
Figure 9. Percentage of consultant radiologists in each age group, 2010–2016*



*Figure 9 excludes consultants where age is not known.

Figure 10 shows the age categories of consultant radiologists, split by gender. Females make up a higher proportion of the 30–39 years age category (39%) than the 60 and over age category (23%).

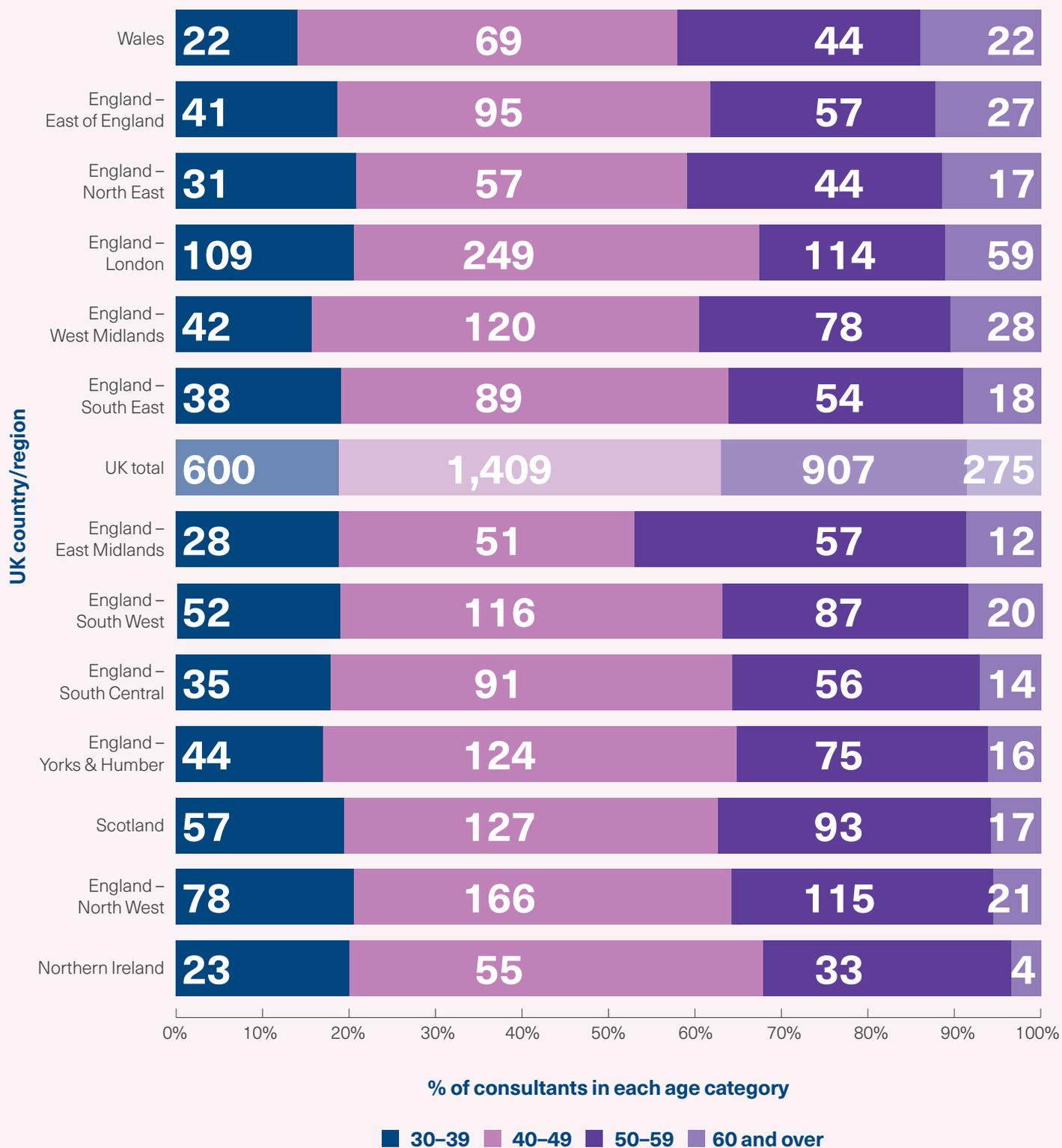
Figure 10. Headcount of female and male consultant radiologists by age category, 2016*



*Please note this chart excludes consultants where the age and/or gender are not known (291 consultants/8%).

Figure 11 shows the percentage of consultant radiologists in each age category by UK country and region. Wales has the highest percentage (14%) of consultant radiologists who are 60 and over; Northern Ireland has the fewest (3%).

Figure 11. Headcount and percentage of consultant radiologists by age category split by UK country/region, 2016*



*Please note this chart excludes consultants where the age is not known (291 consultants/8%).

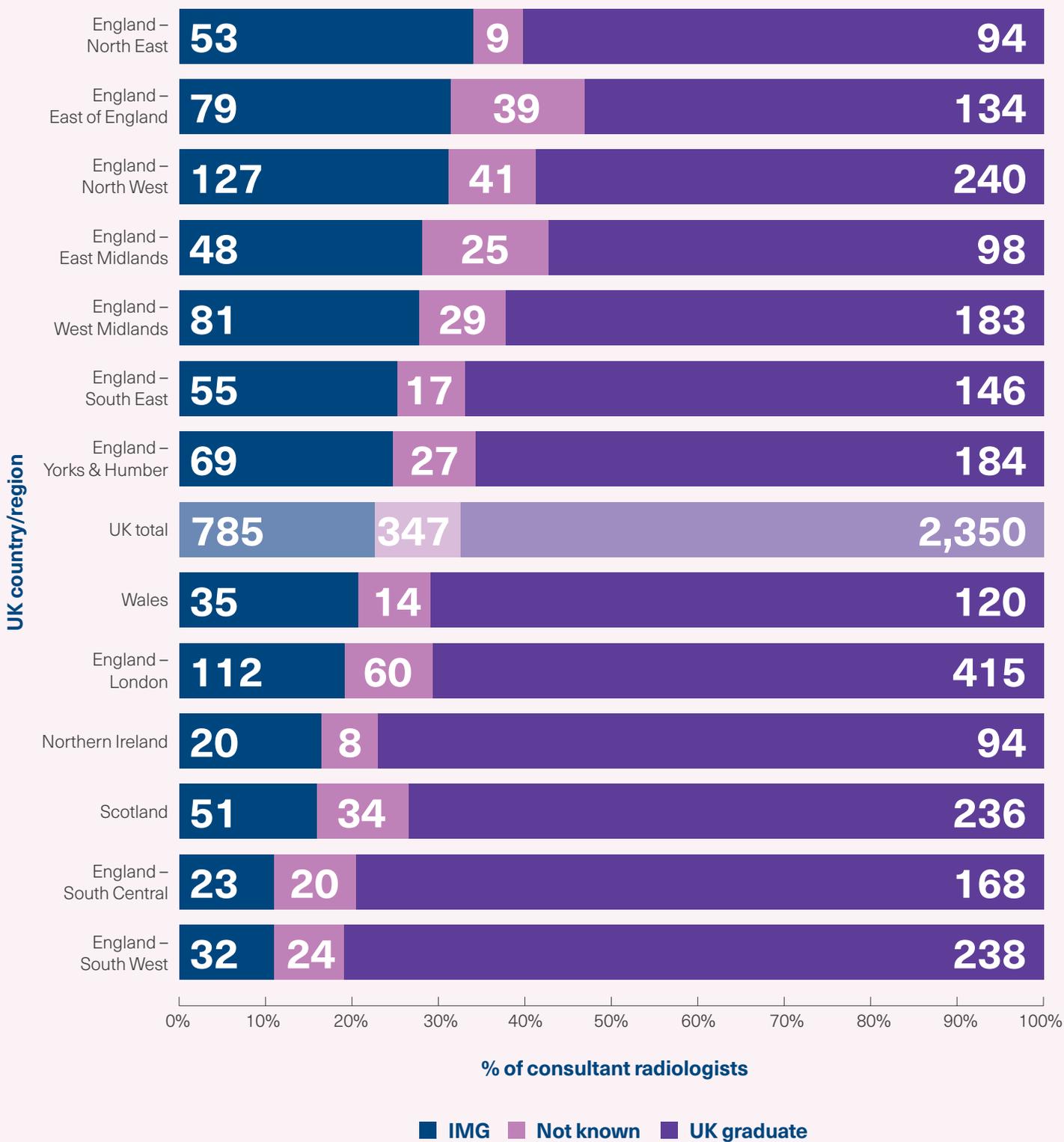
Country of primary medical qualification

Radiology in the UK is provided by both a UK and international workforce. At least a quarter of consultant radiologists are international medical graduates (IMGs) from one of 55 countries.

Just over 50% of IMGs gained their primary medical qualification from a medical school in Asia (most commonly India and Pakistan), just under 10% from Ireland and 40% from elsewhere (primarily other European countries).

Figure 12 shows that the proportion of consultants who are IMGs varies significantly by UK country and region. In North East England, at least 34% of consultants are IMGs compared to approximately 11% in South West and South Central England. (For 10% of consultants, the country of primary medical qualification is not known.)

Figure 12. Headcount and percentage of consultant radiologists who are international medical graduates by UK country/region, 2016*

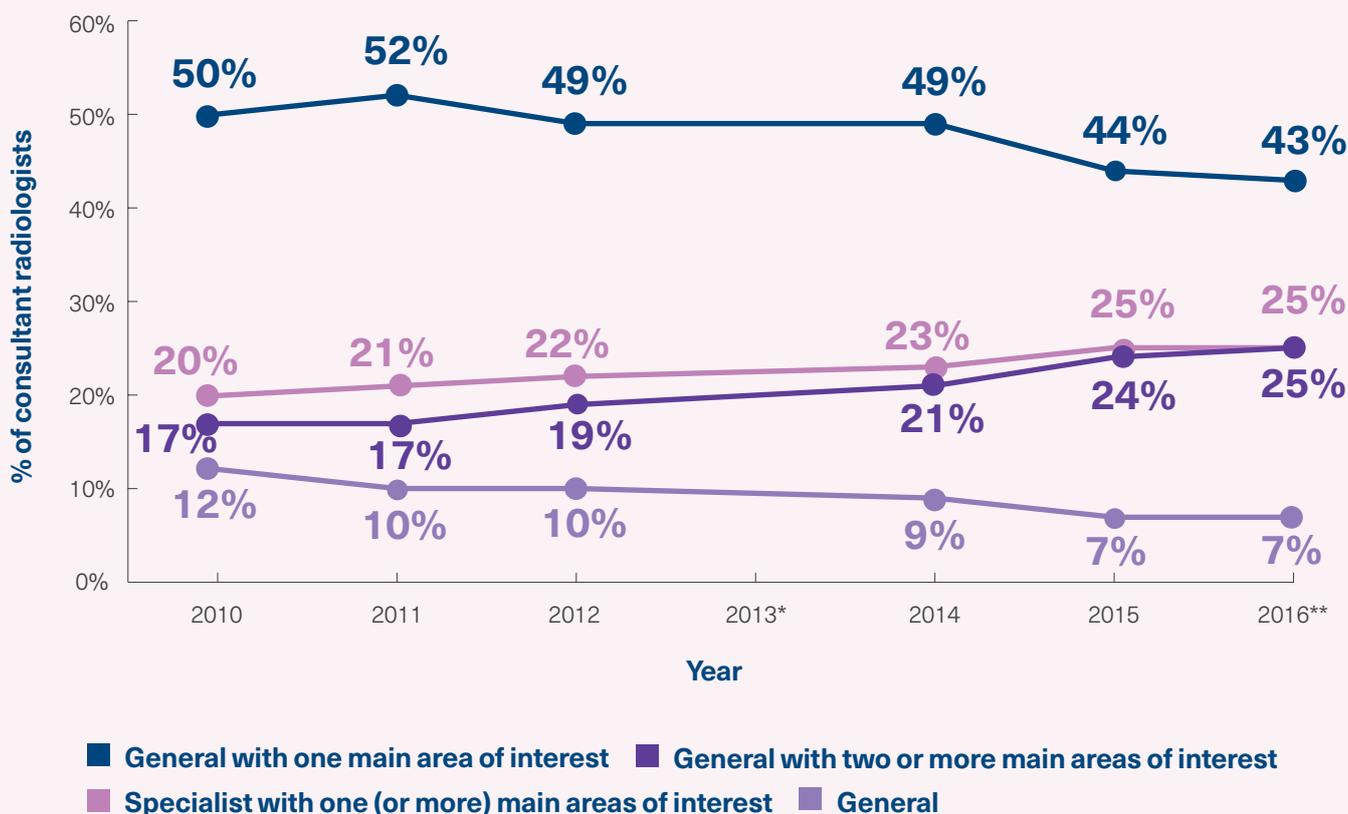


Types of radiologists

General and specialist interests

Respondents to the census were asked to categorise radiologists according to whether they are generalists or specialists with or without one or more areas of interest. As shown in Figure 13, in 2016 the largest category was 'general with one main area of interest' accounting for 43% of consultants in the UK. However, there has been a noticeable decline in consultant radiologists in this category, which accounted for 50% of consultant radiologists in 2010. There has also been a decrease in the percentage of wholly 'general' radiologists, from 12% in 2010 to 7% in 2016. There has been an increase in those categorised as specialists, or generalists with two or more main areas of specialist interest. These trends point to a shift away from generalists to more specialist consultant radiologists.

Figure 13. Type of radiologists (generalist and specialist) as a percentage of the UK consultant workforce, 2010–2016



*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

**35 consultant radiologists (1%) are excluded from the 2016 percentages in the above table, as their type (generalist/specialist) is not known.

Full-time and less than full-time (LTFT) working

As shown in Figure 14, just under a quarter (24%) of consultant radiologists work LTFT. LTFT is defined as working less than ten contracted PAs per week. There has been a gradual increase in the percentage of consultant radiologists working LTFT over the past six years (from 18% in 2010), which has implications for workforce planning.

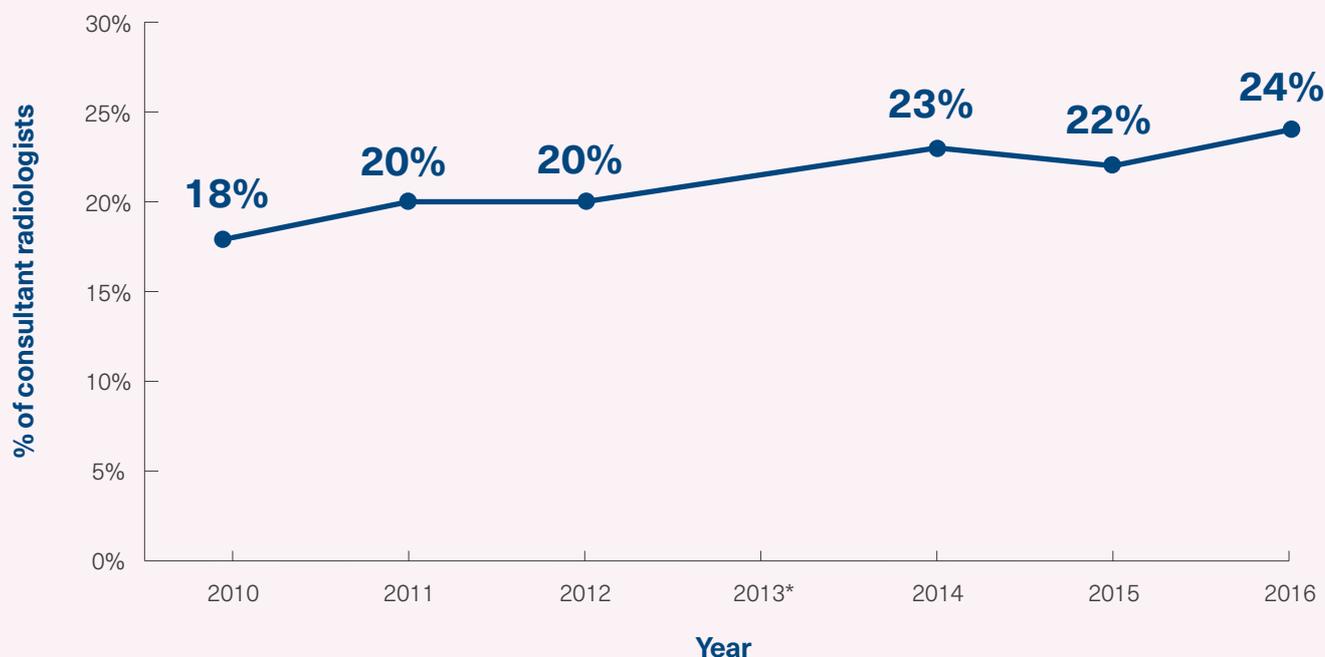
Female consultants are more likely to work LTFT (41%) than male consultants (15%).

For younger consultants, family and childcare commitments are likely to be a key factor influencing LTFT working. Seeking a good work–life balance may also be an influencing factor; from 2014 UK employees have the legal right to request flexible working.⁸

Age is also a factor influencing the likelihood of working LTFT. Older consultants are more likely to work LTFT than younger consultants. Only 16% of consultant radiologists in the 30–39 age group worked LTFT compared to 57% of the 60 and over age group. The cut in the lifetime allowance (the overall amount of pension savings a person can have at retirement without incurring a tax charge) from £1.25 million to £1 million could be a factor influencing LTFT working among older consultant clinical radiologists.

There is also some variation across UK countries (and regions) in terms of LTFT working. For example, 29% of consultants work LTFT in Wales, compared to 21% in Northern Ireland.

Figure 14. Percentage of UK consultant radiologists working LTFT, 2010–2016



*Information for 2013 is not available due to the timing of the RCR census being altered from calendar to financial year.

Contracted programmed activities (PAs)

The census collected information on the number of contracted PAs worked per week for consultant radiologists, subdivided into DCC and SPA. As shown in Table 7, for full-time consultant radiologists, the average total number of PAs has remained stable between 2010 and 2016.

In 2016, the mean total PAs is 10.9 for full-time consultant radiologists (the median is 11).

Table 7 also shows that there has been a slight increase in the number of DCC PAs from 8.6 in 2010 to 8.8 in 2016 and a slight decrease in the number of SPA PAs from 2.4 in 2010 to 2.1 in 2016.

Table 7. Mean contracted programmed activities (PAs) per week for full-time consultant radiologists in the UK, 2010–2016

| | 2010 | 2014 | 2015 | 2016 |
|------------------|------|------|------|------|
| DCCs | 8.6 | 8.7 | 8.8 | 8.8 |
| SPAs | 2.4 | 2.2 | 2.2 | 2.1 |
| Total PAs | 11.0 | 10.9 | 11.0 | 10.9 |

Some consultant radiologists have high contracted workloads. One in five (20%, n=538) full-time consultant radiologists is contracted to work 12 or more PAs each week, equivalent to a 48-hour or more working week (or 45-hour plus working week in Wales).

For LTFT workers, the number of contracted PAs varies by age. As shown in Table 8, the mean contracted PAs for LTFT workers in the 60 and over age group is 5.9 (roughly equivalent to a 24-hour working week), whereas the mean contracted PAs for the younger 30–39 LTFT workers is 7.3 (roughly equivalent to a 29-hour working week). In summary, consultant radiologists approaching retirement (in the '60 and over' age category) are more likely to work LTFT than their younger counterparts and when they do, they are likely to work fewer hours than their younger counterparts.

Table 8. Mean contracted PAs per week for LTFT UK consultant radiologists by age category

| Age category | Mean PAs (DCC + SPA) | Headcount |
|--------------|----------------------|------------|
| 30–39 | 7.3 | 93 |
| 40–49 | 7.2 | 314 |
| 50–59 | 7.1 | 217 |
| 60 and over | 5.9 | 156 |
| Not known | 5.2 | 51 |
| Total | 6.8 | 831 |

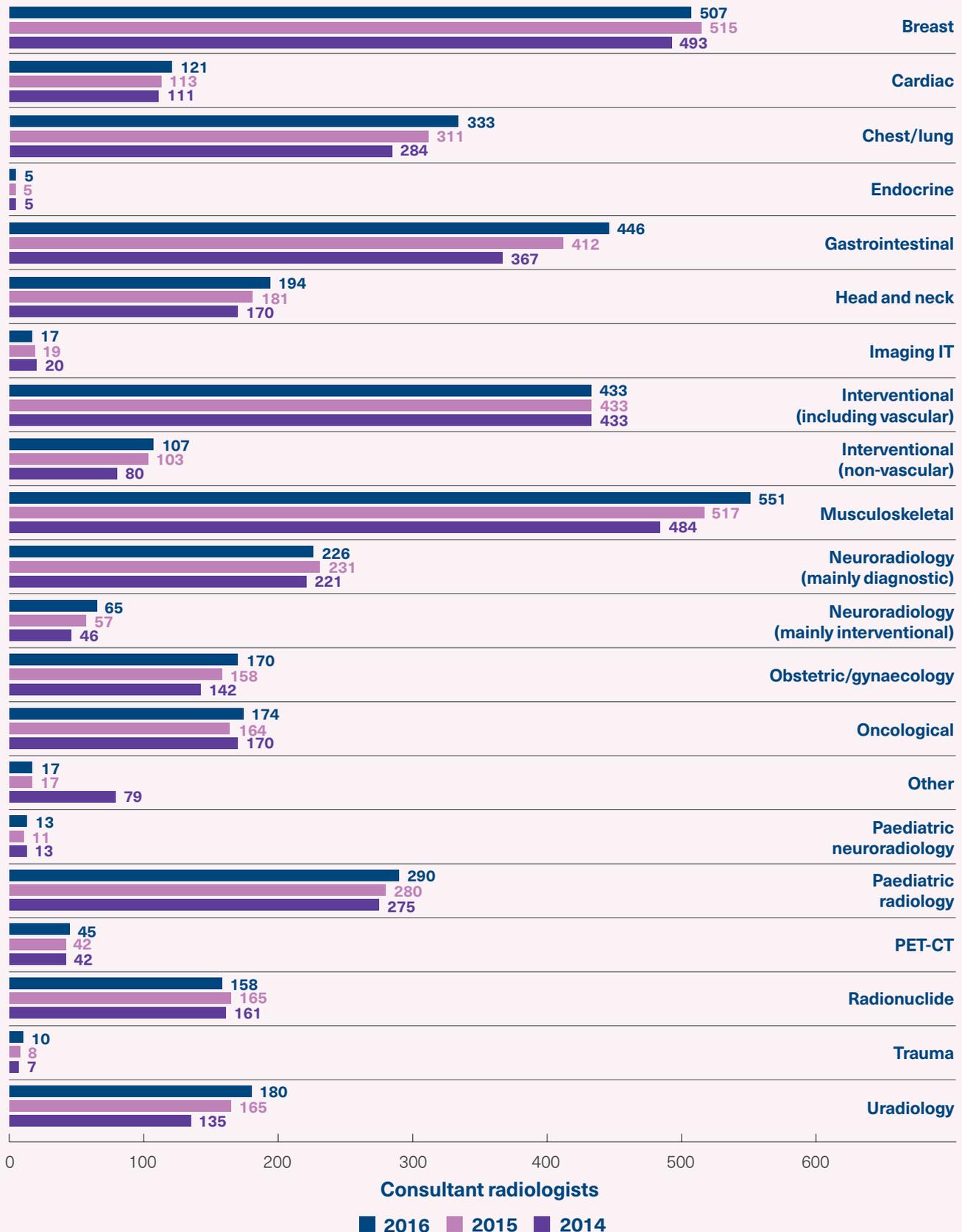
Consultant specialty areas of practice

Information on areas of specialty interest is collected through the census. The census allows for up to two interests to be entered against each consultant radiologist.

In 2016, 4,508 areas of specialty interest were reported for the 3,482 consultant radiologists (an average of just over one area per consultant). In 2016, the most common specialties reported were musculoskeletal (551 equating to 16% of consultants) and breast (507 equating to 15% of consultants). As shown in Figure 15, for most specialty areas of practice there has been an increase in the number of consultants specialising in the area. There are a few areas where there have been small decreases since 2014 including radionuclide and imaging information technology (IT).

When looking at Figure 15, the sum of consultant radiologists reported against each interest exceeds the UK total of 3,482 as consultant job plans may encompass more than one interest/subspecialty. For example, it should not be interpreted that there are 507 consultants solely specialising in breast radiology, rather that there are 507 consultants whose job plan includes breast radiology.

Figure 15. UK consultant radiologist specialty interests, 2014–2016



Primary or secondary specialty interest

4. Consultant workforce attrition

Consultants leaving the NHS

Between 1 April 2015 and 31 March 2016, 192 consultant radiologists left the workforce, an attrition rate of 6%. The primary reason for leaving is retirement, however, in many cases the reason for leaving is not known.

Retirement

As shown in Table 9, where the reason for leaving was reported as retirement (n=29), the mean (and median) age was 60. As a comparator, the Royal College of Physicians 2015–2016 census reported the mean age of retirement of consultant physicians as 62.2, the mean age for males being 62.7 and the mean age for females being 61.4.⁷

Table 9 shows an important decrease in the mean retirement age from 62 in 2014 to 60 in 2016, possibly indicating a trend towards earlier retirement. The cut in the lifetime allowance (the overall amount of pension savings a person can have at retirement without incurring a tax charge) from £1.25 million to £1 million could be a factor incentivising early retirement among older consultant radiologists.

Table 9. Mean and median ages of consultant radiologists at retirement, 2014–2016

| | 2014 | 2015 | 2016 |
|------------------------------------|-------|-------|-------|
| Number reported as retiring | 34 | 24 | 29 |
| Mean age | 62 | 61 | 60 |
| Median age | 61 | 60 | 60 |
| Range (youngest–oldest) | 41–73 | 57–67 | 49–68 |

Estimated retirement rates – next five years

Using the 2016 mean (and median) age of retirement (60 years), Table 10 shows 22% of the consultant radiologist workforce (698 consultants) are estimated to retire in the next five years. This is an increase from the 669 consultants, representing 20% of the workforce at the time, reported in the 2015 census as estimated to retire in the five years between 2015 and 2020.

Table 10. Estimated number (headcount) of consultant radiologists expected to retire, next five-years – by UK country/region

| UK country/region | Headcount | % of current workforce* |
|--------------------------------|------------|-------------------------|
| England – East Midlands | 42 | 28% |
| England – East of England | 58 | 26% |
| England – London | 104 | 20% |
| England – North East | 37 | 25% |
| England – North West | 75 | 20% |
| England – South Central | 40 | 20% |
| England – South East | 40 | 20% |
| England – South West | 60 | 22% |
| England – West Midlands | 71 | 26% |
| England – Yorkshire and Humber | 52 | 20% |
| England – total | 579 | 22% |
| Northern Ireland | 15 | 13% |
| Scotland | 57 | 19% |
| Wales | 47 | 30% |
| UK – total | 698 | 22% |

*Calculation excludes those where 'age not known'.

Table 10 shows that the percentage of the workforce due to retire over the next five years (by 2021) is highly variable by UK country/region, the highest being 30% in Wales, the lowest being 13% in Northern Ireland.

Census respondents were asked to indicate those consultants who were expected to retire in the next year and their intentions post-retirement. Responses identified 121 consultants expected to retire by the end of March 2017 (mean age of 61). This is higher than the 98 reported as expected to retire in the 2015 census. [The number of consultants reported as 'expecting to retire' in the next year tends to be lower than the number of actual retirees reported the following year. Under-reporting in this context is understandable as consultants may not formulate firm retirement plans, or share those plans with their employers a year ahead (and retirement plans may change).] Census respondents were asked to indicate the post-retirement intentions of those consultants identified as expected to retire in the next year. Over half (57%) of the 121 consultants intending to retire stated their intentions are to return to LTFT work/reduced PAs.

5. Consultant radiologist vacancy rates

Consultant vacancy rates

NHS Improvement defines the vacancy rate as a percentage of WTE staff in post against planned workforce levels.⁹

The UK 2016 consultant radiologist vacancy rate is 8.5%. The vacancy rate has been persistently high (the mean being just under 10%) over the past six years. It is likely to remain high over the next few years, given the large number of consultant radiologists approaching retirement.

Table 11 shows that the highest number of vacancies as of March 2016 was in Scotland and the North West of England.

Table 11. Numbers of unfilled consultant radiologist posts (WTEs) by UK country/region, 2016

| UK country/region | In post (WTEs) | Unfilled posts (WTEs) | Vacancy rate* |
|---------------------------|----------------|-----------------------|---------------|
| England – East Midlands | 163 | 12 | 6.9% |
| England – East of England | 238 | 24 | 9.2% |
| England – London | 522 | 22 | 4.0% |
| England – North East | 144 | 18 | 11.0% |
| England – North West | 380 | 40 | 9.5% |
| England – South Central | 194 | 17 | 8.1% |
| England – South East | 205 | 12 | 5.5% |
| England – South West | 277 | 23 | 7.7% |
| England – West Midlands | 276 | 24 | 8.1% |
| England – Yorks & Humber | 265 | 22 | 7.7% |
| England – total | 2,664 | 214 | 7.4% |
| Northern Ireland | 112 | 28 | 20.0% |
| Scotland | 298 | 33** | 10.0%** |
| Wales | 152 | 23 | 13.1% |
| UK – overall | 3,226 | 298 | 8.5% |

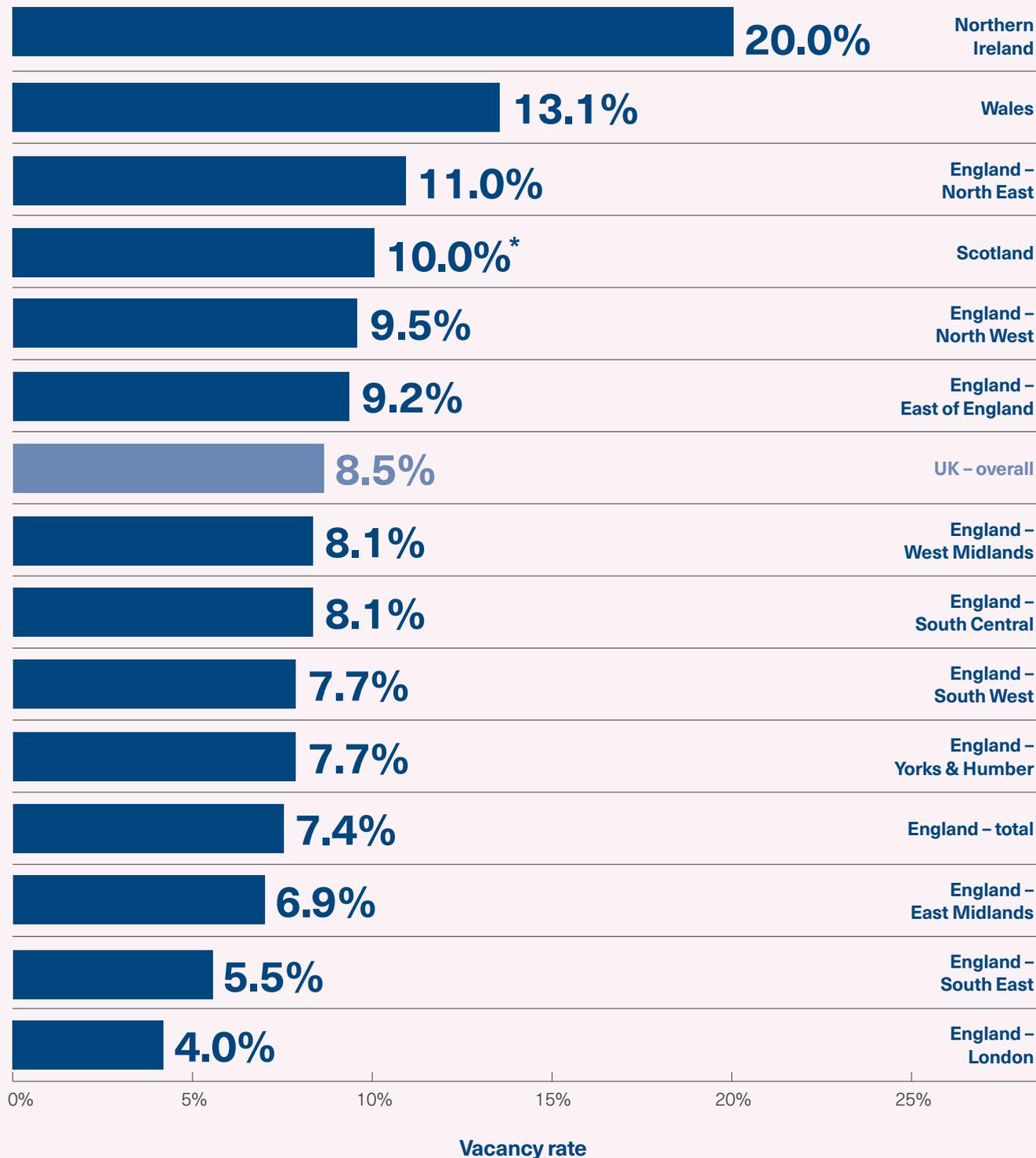
*Vacancy rates are calculated using number of vacancies (WTEs) as a percentage of number of staff in post (WTEs) + vacant posts (WTEs).

**A subsequent data collection exercise conducted in 2016 by the Information Services Department (ISD)¹⁰ showed a significant increase in the number of vacant posts in Scotland to 13%, highlighting the scale of the challenge facing the radiology workforce in Scotland in maintaining the delivery of safe and effective patient care.

The vacancy rates reported through the census are likely to be an underestimate of the true number; many trusts do not actively recruit when they predict that a vacant post will be very difficult to appoint.

As shown in Figure 16, the highest vacancy rate in 2016 is in Northern Ireland (20%); the lowest in London (4.0%) and the South East (5.5%).

Figure 16. Vacancy rates by UK country/region, 2016



*A subsequent data collection exercise conducted in 2016 by the Information Services Department (ISD)¹⁰ showed a significant increase in the number of vacant posts in Scotland to 13%, highlighting the scale of the challenge facing the radiology workforce in Scotland in maintaining the delivery of safe and effective patient care.

Status of unfilled consultant posts

There has been a rise in the number and percentage of unfilled posts that were 'advertised but failed to appoint' (shown in Table 12), demonstrating the shortage of suitable candidates and recruitment difficulties that radiology departments across the UK have been facing.

Of the 308 unfilled posts (headcount) recorded through the census on 31 March 2016, more than half (57%, n=177) had been advertised but the recruitment effort resulted in a failure to appoint.

Table 12. Status of unfilled consultant radiologist posts, 2014–2016

| | 2014 unfilled posts | 2014 % unfilled posts | 2015 unfilled posts | 2015 % unfilled posts | 2016 unfilled posts | 2016 % unfilled posts |
|-------------------------------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|
| Advertised but failed to appoint | 174 | 41% | 166 | 51% | 177 | 57% |
| Advertised but not yet interviewed | 36 | 9% | 28 | 9% | 35 | 11% |
| Appointed but not yet taken up | 84 | 20% | 45 | 14% | 20 | 6% |
| Funded but not yet advertised | 82 | 19% | 64 | 20% | 56 | 18% |
| Funded but not yet appointed | 45 | 11% | 21 | 6% | 20 | 6% |

Length of time consultant posts left vacant and locum cover

The radiologist workforce crisis has meant that many consultant vacancies remain unfilled for considerable periods of time. Figure 17 shows that almost two-thirds of vacancies (61%) have been unfilled for a year or longer. This is a marked increase on the 41% unfilled for this period of time reported in the 2015 census.

Of the total UK vacancies, 20% are reported as being temporarily covered by locums, down from the 30% reported through the 2015 census.

Figure 17. Unfilled consultant radiologist posts – period unfilled, 2016

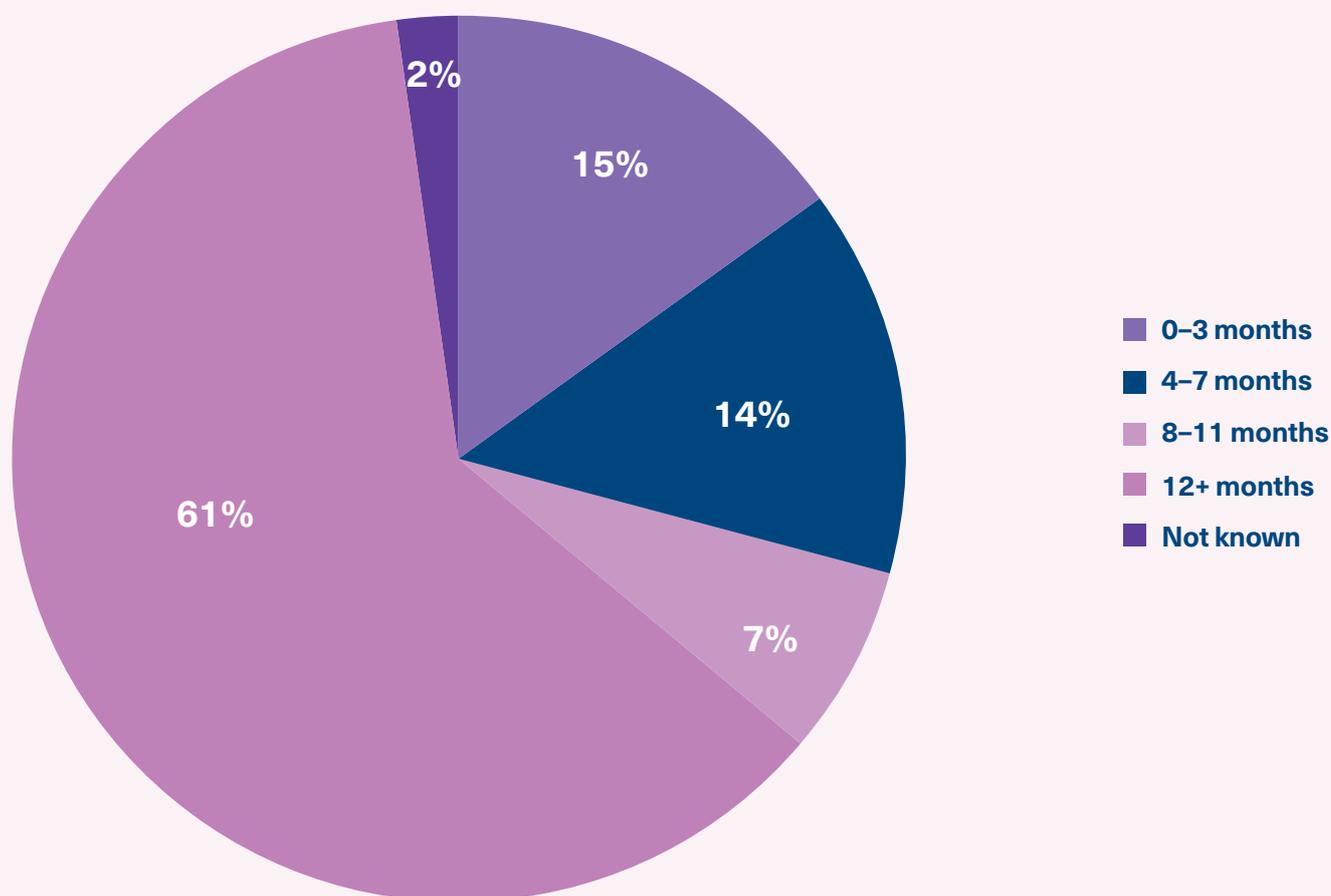
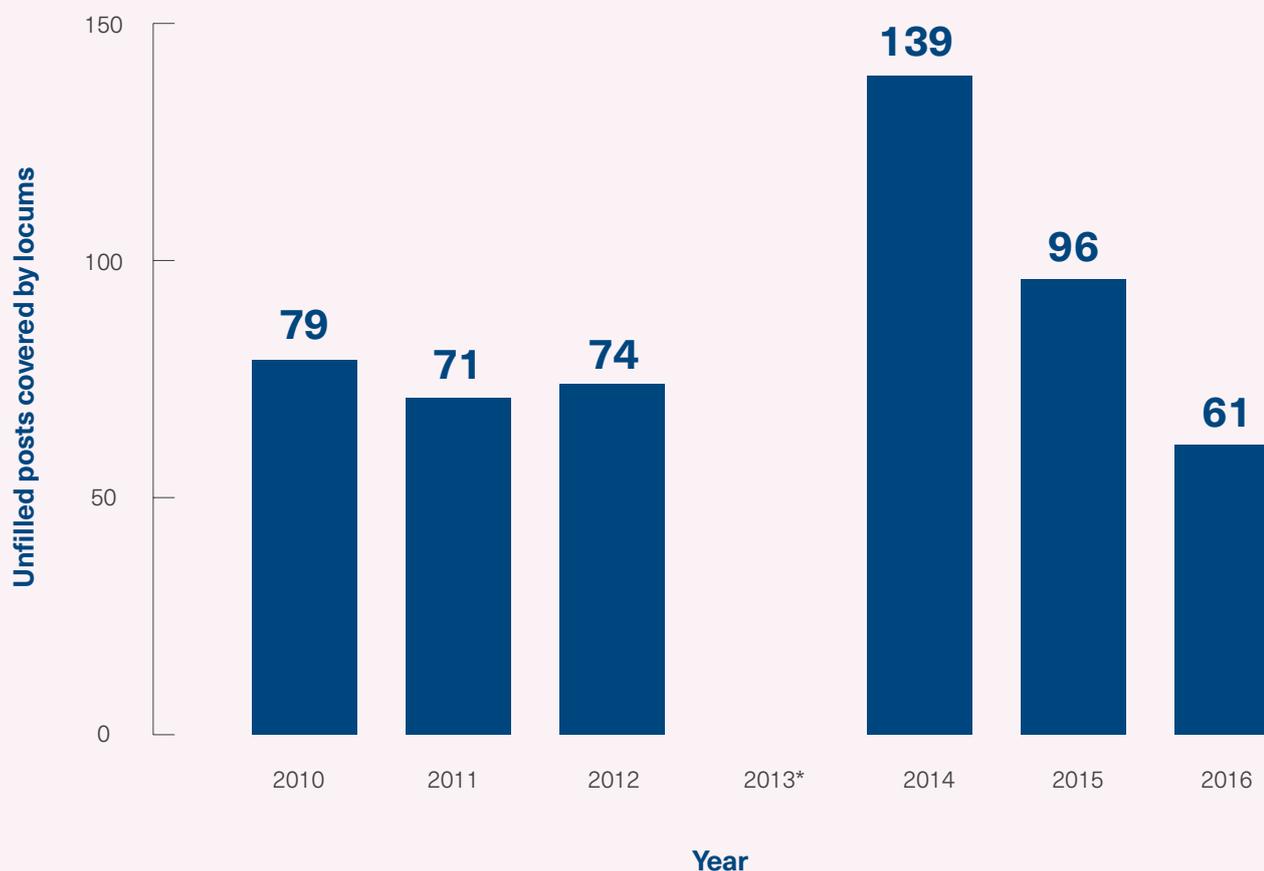


Figure 18. Number of unfilled consultant radiologist posts covered by locums, 2010–2016



*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

Figure 18 shows that there has been a steady decrease in the numbers of locums covering vacant posts since 2014. Price caps for agency staff introduced in 2015 is one factor which likely accounts for some of the decrease. Difficulty recruiting suitable locums is likely another factor.¹¹

International recruitment

When asked if they have tried to recruit radiologists from outside of the UK during the 12-month period ending 31 March 2016, 86 out of the 202 radiology departments (43%) said yes. This is higher than the 34% (n=69) who indicated yes in the 2015 census showing there has been an increase in attempts to use overseas recruitment to fill vacant positions.

Of the 86 departments who attempted to recruit overseas (in the year ending 31 March 2016), 55% (n=47) successfully recruited to at least one of the positions advertised, a similar success rate to that reported in the 2015 census.

There was some variation between UK countries, with 56% of Northern Ireland radiology departments trying to recruit from outside the UK, compared to 30% of Welsh departments. The figure in England was 42% and in Scotland it was 45%.

International recruitment difficulties

Some of the departments who were not successful in their international recruitment efforts outlined the following difficulties encountered:

- Language issues – unsatisfactory level of English/failure to meet the General Medical Council's (GMC) English language requirements
- Lack of suitable applicants/poor quality applicants
- Visa difficulties and other work-permit hurdles
- Time-consuming and competitive (good candidates sometimes take up other offers).

6. Activities and spending of radiology departments

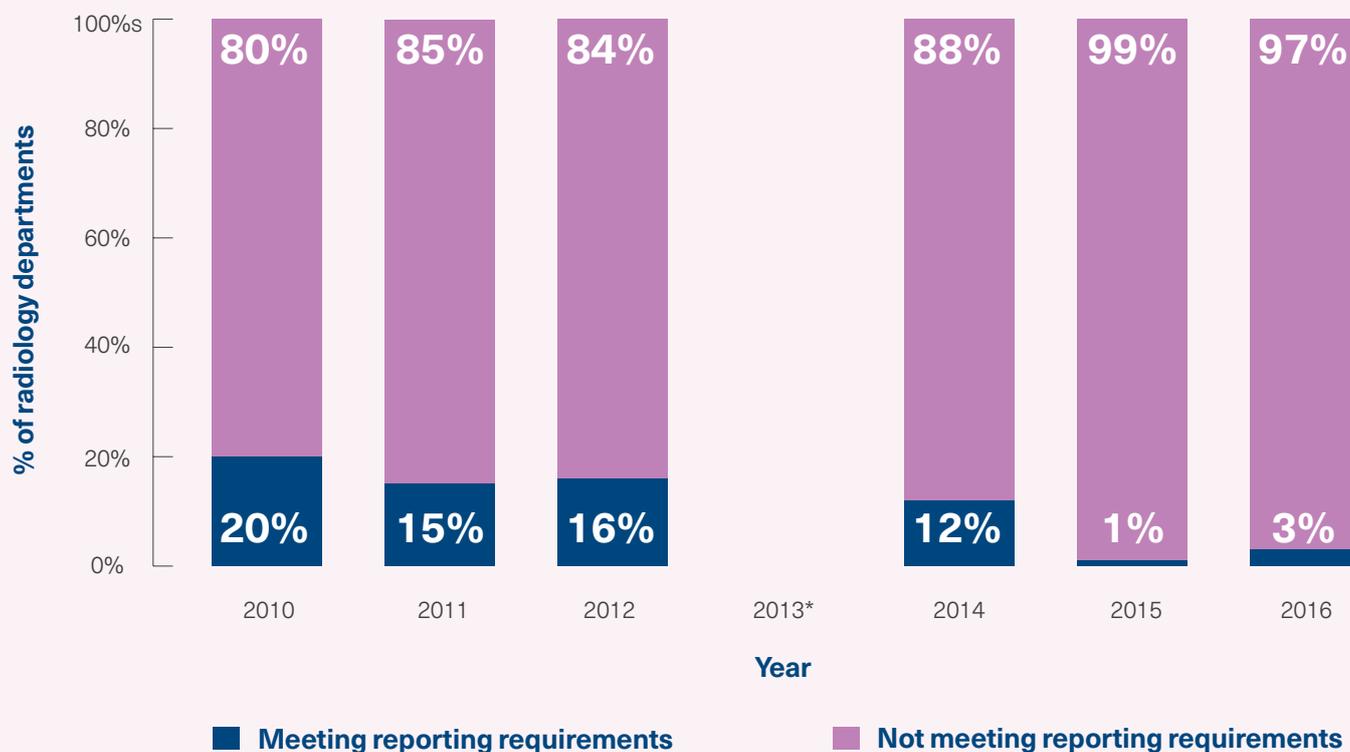
Methods used in meeting departmental reporting requirements

Respondents were asked the following question:

For the 12-month period ending 31 March 2016, was the full reporting requirement met by the department's consultant, trainee radiologists and staff grade staff within their contractual hours?

Nearly all (97%) stated 'no'. Figure 19 shows the decline in the percentage of departments meeting their reporting requirements from 20% of departments in 2010.

Figure 19. Percentage of UK radiology departments meeting and not meeting their reporting requirements within contractual hours, 2010–2016

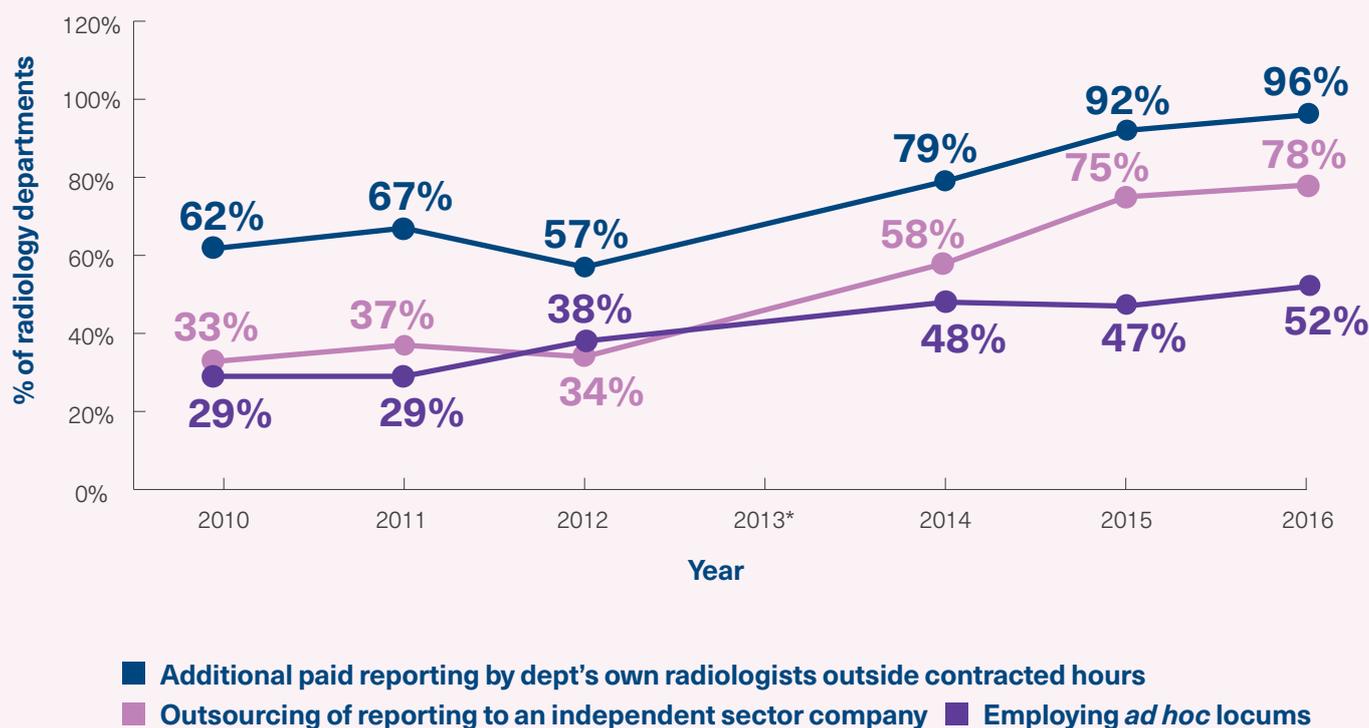


*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

The majority of radiology departments are incurring significant additional costs in addressing shortfalls in their reporting requirements. Most departments use a variety of methods to manage shortfalls in reporting. Figure 20 shows that 96% of departments in 2016 made additional payments to their employed radiologists to report outside of contracted hours, 78% outsourced reporting to an independent sector company and 52% employed *ad hoc* locums. Figure 20 also shows a steady increase (since 2012) in the use of these mechanisms to manage reporting requirements.

Departments also made use of methods involving no or indirect additional costs in meeting shortfalls in their reporting requirements (Figure 21). 78% used radiographers to report on radiology images and 72% relied on radiologist 'goodwill', that is working additional unpaid time to report images.

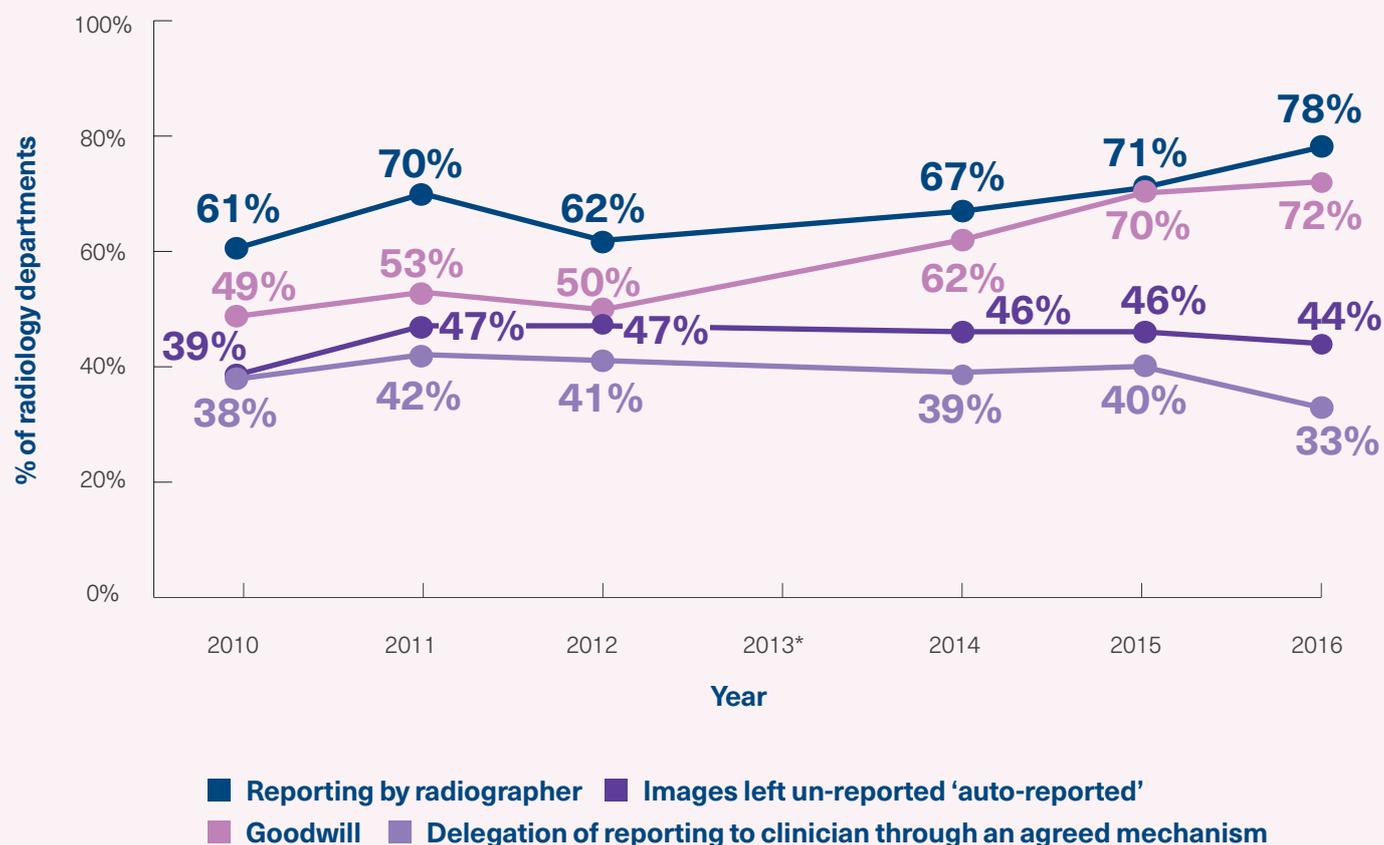
Figure 20. Percentage of radiology departments employing stated methods (at cost) in meeting shortfalls in reporting requirements, 2010–2016**



*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

**Nine radiology departments have been excluded from the 2016 percentages as the methods used (to manage reporting requirements) are not known.

Figure 21. Percentage of radiology departments employing stated methods (involving no or indirect additional costs) in meeting shortfalls in reporting requirements, 2010–2016**



*Information for 2013 is not provided due to the timing of the RCR census being altered from calendar to financial year.

**Nine radiology departments have been excluded from the 2016 percentages as the methods used (to manage reporting requirements) are not known.

Additional expenditure to fulfil reporting requirements (outsourcing/insourcing)

Based on responses from 163 radiology departments to the census, the total estimated additional expenditure by UK radiology departments to fulfil reporting requirements in 2016 was £88million (see Table 13). Included in this spending is both outsourcing (e.g. overnight and daytime outsourcing payments made to teleradiology companies) and insourcing (e.g. additional payments to radiologists already contracted to the department/trust).

Table 13. Additional expenditure to fulfil reporting requirements (outsourcing/insourcing), year to 31 March 2016 by UK country/region

| UK country/region | Mean expenditure per department* | Estimated total expenditure** |
|--------------------------------|----------------------------------|-------------------------------|
| England – East Midlands | £383,396 | £3,833,960 |
| England – East of England | £436,337 | £7,417,725 |
| England – London | £364,316 | £9,107,888 |
| England – North East | £760,527 | £7,605,266 |
| England – North West | £508,046 | £13,209,206 |
| England – South Central | £513,462 | £4,621,154 |
| England – South East | £524,191 | £5,766,098 |
| England – South West | £311,089 | £5,288,508 |
| England – West Midlands | £372,207 | £6,327,516 |
| England – Yorkshire and Humber | £567,081 | £8,506,220 |
| England – overall | £453,451 | £71,191,752 |
| Northern Ireland | £727,151 | £6,544,356 |
| Scotland | £241,823 | £4,594,631 |
| Wales | £500,280 | £4,502,517 |
| UK total | £452,841 | £87,851,065 |

* Expenditure data submitted by 163 (out of 194) UK radiology departments that outsource/insource

** Calculated as mean expenditure per department x no. of UK radiology departments that outsource/insource (194)

To put the expenditure into perspective, the £88 million spent on outsourcing/insourcing in the UK is equivalent to the combined salaries of 1,028 full-time radiology consultants (based on point 5 of the 2016–17 NHS consultant pay scale for England).⁴

7. Trainee clinical radiologists – numbers and trends

Figure 22 shows the number of UK clinical radiology specialist training places available and the number of those places filled between 2013 and 2016. The fill rate from 2013 to 2016 was 100%. Figure 22 shows that there has been an increase of 37 training places (17%) from 2013 to 2016.

Figure 22. Available training places and places filled in clinical radiology, 2013–2016*



*This graph shows the number of training places available and filled by new trainees per annum

Table 14. Training places filled by UK country, 2013–2016

| UK country | 2013 | 2014 | 2015 | 2016 |
|------------------|------------|------------|------------|------------|
| England | 185 | 192 | 212 | 210 |
| Scotland | 21 | 20 | 25 | 26 |
| Wales | 8 | 12 | 10 | 13 |
| Northern Ireland | 7 | 9 | 8 | 9 |
| Total | 221 | 233 | 255 | 258 |

Table 14 shows the same data, broken down by UK country. All four UK countries have seen a growth in clinical radiology training places between 2013 and 2016.

The mean time taken to undertake a clinical radiology training programme in the UK is just over 5.5 years. (Women take on average eight months longer than men, in part due to some women taking maternity leave during their training.)

The number of trainees due to complete their training in the next five years is estimated to be around 220 per annum. This is higher than recent years (approx 185 per annum) due to an increase in training places awarded from 2013 onwards.

Despite the recent increase in training numbers, the growth in overall numbers of the consultant-grade radiology workforce is predicted to continue to slow due to attrition levels and rise in LTFT working. Future growth from 2019 is estimated to be closer to 1% per annum, reduced from approximately 3% per annum seen in recent years.

References

1. www.england.nhs.uk/statistics/statistical-work-areas/diagnostic-imaging-dataset/ (last accessed 24/08/2017)
 2. <http://ec.europa.eu/eurostat/web/health/health-care/data/database> (last accessed 24/08/2017)
 3. <https://data.gov.uk/dataset/nhs-hospital-and-community-health-doctors-by-grade-and-specialty> (last accessed 15/07/2017)
 4. www.bma.org.uk/support-at-work/pay-fees-allowances/pay-scales/consultants-pay-england (last accessed 15/07/2017)
 5. www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/latest (last accessed 24/08/2017)
 6. www.isdscotland.org/Health-Topics/Finance/Costs/Detailed-Tables/Radiology.asp (last accessed 24/8/2017)
 7. www.rcplondon.ac.uk/projects/outputs/2015-16-census-uk-consultants-and-higher-specialty-trainees (last accessed 09/05/2017)
 8. www.gov.uk/flexible-working (last accessed 25/09/2017)
 9. NHS Improvement. *Technical guidance for NHS planning 2017/18 – workforce planning. Workforce insight team*. London: NHS Improvement, 2016.
 10. www.isdscotland.org/health-topics/workforce/publications/data-tables2017.asp (25/09/2017)
 11. <https://improvement.nhs.uk/resources/reducing-expenditure-on-nhs-agency-staff-rules-and-price-caps/> (last accessed 25/09/2017)
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Appendix A. Background and methodology

Background

The RCR first carried out the annual UK radiology workforce census in 2008 and has repeated the exercise each year since. This report contains the results of the 2016 census. This report compares the 2016 results to previous years to outline trends where relevant.

Survey methods

Standardised questions have been used year on year to allow for comparison of information and identify trends over time. To facilitate data collection (and data accuracy), 2015 staff data was sent to radiology clinical directors in all NHS radiology departments in the UK. They were asked to update the staff details, providing details of leavers, new starters and staff changes as of 31 March 2016.

Collection of information and response rate

Data was collected through a web survey. Clinical directors were provided with unique logins and passwords. The 2016 census achieved a 100% response rate, with all NHS radiology departments in the UK submitting information.

Presentation of results

The workforce figures in this report are given as headcount, unless otherwise stated. Where a member of staff works part-time across two regions, they will count as a headcount of one in each of the regions and as one in the UK total therefore the sum of the regional headcounts in some tables and graphs may be slightly higher than the UK headcount.

Queries

Queries regarding this report should be sent to: census@rcr.ac.uk

Appendix B.
Census questions**Section 1: Data protection**

I have read and accept The Royal College of Radiologists' Data Protection Guidelines in respect of the census data.

Section 2: Organisational details

- 2.1 Hospitals covered in submission
- 2.2 Trust or health board
- 2.3 Census contact
- 2.4 Contact details

Section 3: Staff details

Please update the data in the table below to provide details of all consultant and staff grade clinical radiologists employed in your radiology department(s), as of 31 March 2016.

Please include consultants, associate specialists, specialty doctors, trust grades and clinical assistants.

Please include locums.

Please include those on long-term leave (for example maternity or sick leave).

Please do not include trainees.

- 3.1 Name (forenames and surname)
 - 3.2 Gender
 - 3.3 Grade
 - NHS consultant (NHS contract)
 - Academic post (university contract)
 - Mixed NHS/academic – part NHS/research-funded (NHS contract)
 - Staff grade or equivalent
 - Other
 - 3.4 Total PAs
 - DCC PAs
 - SPA PAs
 - Training only PAs
 - 3.5 Employment type
 - Full-time
 - Part-time
 - 3.6 Type of radiologist
 - General
 - General with one main area of interest
 - General with two main areas of interest
 - Specialist with one main area of interest
-

- Specialist with two main areas of interest
- 3.7 Area(s) of interest
 - Primary area of interest (drop-down list)
 - Secondary area of interest (drop-down list)
- 3.8 Employed as a locum
 - Obtained primary medical qualification in the UK (yes/no/unknown)
 - Completed a UK radiology training programme (yes/no/unknown)
 - Previously been in a substantive consultant post (yes/no/unknown)
 - Period employed as locum up to 31 March 2016
 - Expected duration of locum period from 31 March 2016
 - Reason for locum position:
 - *Ad hoc* reporting for excess workload
 - Cover for long-term (>1 month) sickness
 - Currently employed to fill vacant/unfilled post
 - Maternity cover
 - Other
- 3.9 Expected to retire by 31 March 2017
- 3.10 Left since 31 March 2015
 - Reason for leaving:
 - Moved to another NHS post
 - Resigned from the NHS
 - Retired from the NHS
 - Other

Section 4: Unfilled permanent posts

- 4.1 Unfilled post status
 - Advertised but failed to appoint
 - Advertised but not yet interviewed
 - Appointed but not yet taken up
 - Funded but not yet advertised
 - Funded but not thought worth advertising
- 4.2 Grade
 - Academic post (University contract)
 - Mixed NHS/academic – part NHS/research-funded (NHS contract)
 - NHS consultant (NHS contract)
 - Staff grade or equivalent
 - Other
- 4.3 Total PAs

- 4.4 Employment type
- Part-time
 - Full time
- 4.5 Type of radiologist
- Primary and secondary areas of interest
- 4.6 Locum filled
- 4.7 Unfilled period (to the nearest month)
- 4.8 Has your department tried to recruit candidates from overseas in the 12-month period ending 31 March 2016?
- If yes, was this successful?
 - Yes
 - Yes but not in all instances
 - No
 - Don't know
- 4.9 Please make any additional comments relating to recruitment from in the last 12-months in the box below.

Section 5: Department activity and spending

- 5.1 For the 12-month period ending 31 March 2016, was the full reporting requirement met by the department's consultant, trainee radiologists and staff grade staff within their contractual hours?
- Please indicate how your department addressed any shortfalls in reporting requirements – check all that apply:
- Additional paid reporting by the department's own radiologists outside their contracted hours
 - Delegation of reporting to clinicians through an agreed mechanism
 - Employing *ad hoc* locums
 - Goodwill by radiologists
 - Images left unreported or auto-reported
 - Outsourcing of reporting to an independent sector company
 - Reporting by radiographers
 - Other (please specify).
- 5.2 What was the total department spend on additional radiology service costs including formal outsourcing for the 12-month period ending 31 March 2016? (This includes overnight and daytime outsourcing to teleradiology companies and additional payments to radiologists (and others) already contracted to the trust or health board).
- 5.3 What was the total department spend to provide out of hours radiology for the 12-month period ending 31 March 2016?

- 5.4 Approximately how many of the consultant clinical radiologists included in your census submission regularly provide a general out-of-hours service? (Headcount)
- 5.5 In an average week, approximately how many sessions (direct or SPA) are lost due to compensatory arrangements following out of hours working?
- 5.6 In total, how many radiologist sessions were lost in your department due to illness during the 12-month period ending 31 March 2016?
- 5.7 In an average week, approximately how much radiologist time in total (measured in PAs) does your department spend on preparing and attending multidisciplinary team meetings? (For example, 12 consultants spending one PA per week = 12.)

Section 6: Additional questions

- 6.1 How many Administration of Radioactive Substances Advisory Committee (ARSAC) license holders currently work for your institution?
- Number of radiologists:
 - Number of nuclear medicine physicians:
- 6.2 Please use the space below to enter any further workforce or workload details you feel are relevant to your census submission but have not already been captured and/or provide general feedback to the College regarding the census.

Appendix C. Census completions

Thank you to the radiology departments in the following trusts and health boards for completing the 2016 census.

England – East Midlands

Chesterfield Royal Hospital NHS Foundation Trust
Derby Hospitals NHS Foundation Trust
Kettering General Hospital NHS Foundation Trust
Northampton General Hospital NHS Trust
Nottingham University Hospitals NHS Trust
Sherwood Forest Hospitals NHS Foundation Trust
United Lincolnshire Hospitals NHS Trust
University Hospitals of Leicester NHS Trust

England – East of England

Basildon and Thurrock University Hospitals NHS Foundation Trust
Bedford Hospital NHS Trust
Cambridge University Hospitals NHS Foundation Trust
Colchester Hospital University NHS Foundation Trust
East and North Hertfordshire NHS Trust
Hinchingbrooke Health Care NHS Trust
Ipswich Hospital NHS Trust
James Paget University Hospitals NHS Foundation Trust
Luton and Dunstable University Hospital NHS Foundation Trust

Mid-Essex Hospital Services NHS Trust
Norfolk and Norwich University Hospital NHS Foundation Trust
Papworth Hospital NHS Foundation Trust
Peterborough and Stamford Hospitals NHS Foundation Trust
Southend University Hospital NHS Foundation Trust
The Princess Alexandra Hospital NHS Trust
The Queen Elizabeth Hospital King's Lynn NHS Trust
West Hertfordshire Hospitals NHS Trust
West Suffolk NHS Foundation Trust

England – London

Barking, Havering and Redbridge University Hospitals NHS Trust
Barts Health NHS Trust
Chelsea and Westminster Hospital NHS Foundation Trust
Croydon Health Services NHS Trust
Epsom and St Helier University Hospitals NHS Trust
Great Ormond Street Hospital for Children NHS Foundation Trust
Guy's and St Thomas' NHS Foundation Trust
Homerton University Hospital NHS Foundation Trust
Imperial College Healthcare NHS Trust
King's College Hospital NHS Foundation Trust
Kingston Hospital NHS Foundation Trust
Lewisham and Greenwich NHS Trust
London North West Healthcare NHS Trust
Moorfields Eye Hospital NHS Foundation Trust
North Middlesex University Hospital NHS Trust
Royal Brompton and Harefield NHS Foundation Trust
Royal Free London NHS Foundation Trust
Royal Marsden NHS Foundation Trust
Royal National Orthopaedic Hospital NHS Trust
St George's University Hospitals NHS Foundation Trust
The Hillingdon Hospitals NHS Foundation Trust
University College London Hospitals NHS Foundation Trust
Whittington Hospital NHS Trust

England – North East

City Hospitals Sunderland NHS Foundation Trust
County Durham and Darlington NHS Foundation Trust
Gateshead Health NHS Foundation Trust
Newcastle upon Tyne Hospitals NHS Foundation Trust
North Cumbria Acute Hospitals NHS Trust
North Tees and Hartlepool NHS Foundation Trust
Northumbria Healthcare NHS Foundation Trust
South Tees Hospital NHS Trust
South Tyneside NHS Foundation Trust

England – North West

Aintree University Hospital NHS Foundation Trust
Alder Hey Children's NHS Foundation Trust
Blackpool Teaching Hospitals NHS Foundation Trust
Bolton Hospital NHS Foundation Trust
Central Manchester University Hospitals NHS Foundation Trust
Countess of Chester Hospital NHS Foundation Trust
East Cheshire NHS Trust
East Lancashire Hospitals NHS Trust
Lancashire Teaching Hospitals NHS Trust
Liverpool Heart and Chest NHS Foundation Trust
Mid-Cheshire Hospitals NHS Foundation Trust
Pennine Acute Hospitals NHS Trust
Royal Liverpool and Broadgreen University Hospitals Trust
Salford Royal NHS Foundation Trust
Southport and Ormskirk Hospital NHS Trust
St Helens and Knowsley Teaching Hospitals NHS Trust
Stockport NHS Foundation Trust
Tameside and Glossop Integrated Care NHS Foundation Trust
The Christie NHS Foundation Trust
The Clatterbridge Cancer Centre NHS Foundation Trust
The Walton Centre HNS Foundation Trust
University Hospital of South Manchester NHS Foundation Trust
University Hospitals of Morecambe Bay NHS Foundation Trust
Warrington and Halton Hospitals NHS Foundation Trust
Wirral University Teaching Hospital NHS Foundation Trust
Wrightington, Wigan and Leigh NHS Foundation Trust

England – South Central

Buckinghamshire Healthcare NHS Trust
Hampshire Hospitals NHS Foundation Trust
Isle Of Wight NHS Trust
Milton Keynes University Hospital NHS Foundation Trust
Oxford University Hospitals NHS Foundation Trust
Portsmouth Hospitals NHS Trust
Royal Berkshire NHS Foundation Trust
University Hospital Southampton NHS Foundation Trust

England – South East

Ashford and St Peter's Hospitals NHS Foundation Trust
Brighton and Sussex University Hospitals NHS Trust
Dartford and Gravesham NHS Trust
East Kent Foundation Hospitals University NHS Trust
East Sussex Healthcare NHS Trust
Frimley Health NHS Foundation Trust

Maidstone and Turnbridge Wells NHS Trust
Medway NHS Foundation Trust
Queen Victoria Hospitals NHS foundation Trust
Royal Surrey County Hospital NHS Foundation Trust
Surrey and Sussex Healthcare NHS Trust
Western Sussex Hospitals NHS Foundation Trust

England – South West

Dorset County Hospital Foundation Trust
Gloucestershire Hospitals NHS Foundation Trust
Great Western Hospitals NHS Foundation Trust
North Bristol NHS Trust
Northern Devon Healthcare NHS Trust
Plymouth Hospitals NHS Trust
Poole Hospital NHS Foundation Trust
Royal Bournemouth and Christchurch Hospitals NHS Foundation Trusts
Royal Cornwall Hospitals Trust
Royal Devon and Exeter NHS Foundation Trust
Royal United Hospitals Bath NHS Trust
Salisbury NHS Foundation Trust
Taunton and Somerset NHS Foundation Trust
Torbay and South Devon Healthcare NHS Foundation Trust
University Hospitals Bristol NHS Foundation Trust
Weston Area Health NHS Trust
Yeovil District Hospital NHS Foundation Trust

England – West Midlands

Birmingham Children's Hospital NHS Foundation Trust
Birmingham Women's Healthcare NHS Trust
Burton Hospitals NHS Foundation Trust
Dudley Group of Hospitals NHS Foundation Trust
George Eliot Hospital NHS Trust
Heart of England NHS Foundation Trust
Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Trust
Royal Orthopaedic Hospital NHS Foundation Trust
Royal Wolverhampton Hospitals NHS Trust
Sandwell and West Birmingham Hospitals NHS Trust
Shrewsbury and Telford Hospital NHS Trust
South Warwickshire NHS Foundation Trust
University Hospital Birmingham NHS Foundation Trust
University Hospital of North Midlands NHS Trust
University Hospitals Coventry and Warwickshire NHS Trust
Walsall Healthcare NHS Trust
Worcestershire Acute Hospitals NHS Trust
Wye Valley NHS Trust

England – Yorkshire and the Humber

Airedale NHS Foundation Trust
Barnsley Hospital NHS Foundation Trust
Bradford Teaching Hospitals NHS Foundation Trust
Calderdale and Huddersfield NHS Foundation Trust
Doncaster and Bassetlaw Hospitals NHS Foundation Trust
Harrogate and District NHS Foundation Trust
Hull and East Yorkshire Hospitals NHS Trust
Leeds Teaching Hospitals NHS Trust
Mid-Yorkshire Hospitals NHS Trust
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust
Sheffield Children's NHS Foundation Trust
Sheffield Teaching Hospitals NHS Foundation Trust
The Rotherham NHS Foundation Trust
York Teaching Hospital NHS Foundation Trust

Northern Ireland

Belfast Health and Social Care Trust
Northern Health and Social Care Trust
South Eastern Health and Social Care Trust
Southern Health and Social Care Trust
Western Health and Social Care Trust

Scotland

NHS Ayrshire and Arran
NHS Borders
NHS Dumfries and Galloway
NHS Fife
NHS Forth Valley
NHS Grampian
NHS Greater Glasgow and Clyde
NHS Highland
NHS Lanarkshire
NHS Lothian
NHS Tayside
NHS Western Isles

Wales

Abertawe Bro Morgannwg University Local Health Board
Aneurin Bevan Health Board
Betsi Cadwaladr University Health Board
Cardiff and Vale University Health Board
Cwm Taf Health Board
Hywel Dda Health Board
Velindre NHS Trust



The Royal College of Radiologists
63 Lincoln's Inn Fields
London WC2A 3JW

+44 (0)20 7405 1282
enquiries@rcr.ac.uk
www.rcr.ac.uk
 @RCRadiologists

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