Clinical Radiology

Workforce Census 2024

The Royal College of Radiologists

Foreword

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Whilst this report rightly makes the case for urgently needed workforce growth, we also need to think about how we make best use of our consultant radiologists.

This year's clinical radiology census once again lays bare the scale of the challenge we face, with chronic problems such as workforce shortages, reporting backlogs, and staff vacancies remaining too high. But, in a year of significant change to the political and policy environment, one thing remained constant: the hard work, commitment and dedication of radiologists across the country, all of whom are doing their level best for patients.

Many policymakers do not know what a radiologist is and does. This is unfortunate, because we are central to the NHS's ability to diagnose and treat patients safely and in good time. Any non-clinician reading this report should know that radiologists are expert doctors who lead imaging services, interpreting scans like CT and MRI and writing reports that make diagnostic determinations to guide other clinicians' decision making. Many of us also perform interventional treatments.

As a country, we need to think deeply about how we can deliver the best possible care for our patients. **Whilst this report rightly makes the case for urgently needed workforce growth, we also need to think about how we make best use of our consultant radiologists.** The system is not currently enabling us to work at our best – indeed, it is actively driving many of us away. Working conditions and ways of working need to change if we are to address this problem and meet the growing demand for our expertise.

As the experts on the ground, radiologists are best placed to rethink and re-engineer services to improve patient care and patient outcomes. Radiologists 'conduct the orchestra', linking all the specialties together, communicating with them, interpreting ever-more complex data, and putting the findings in the context of a real patient. We oversee the whole imaging service, including the many other staff groups who make valuable contributions. To do this, we need the headspace to bring our clinical expertise and management skills to bear. This is partly about growing the workforce, but it is also about ensuring we have sufficient time for non-clinical tasks and providing working conditions that incentivise good radiologists to take up leadership roles. It is also about getting the basics right: good IT systems, enough kit, rational funding structures, the time to teach and train, and an NHS that makes radiologists feel valued.

The reorganisation of the NHS in England presents an opportunity to bring clinical leadership to the forefront of any new structures. For example, it gives us an opportunity to rethink how to organise multidisciplinary team meetings to make best use of consultant time and deliver best care for patients. Likewise, the second iteration of the Long-Term Workforce Plan is an excellent opportunity for the government to take on board the recommendations presented in this report.

I would like to thank all the radiology Clinical Directors who completed the census this year. Once again, thanks to you, we received a 100% response rate, which means our data and case for change are incredibly strong. We know it adds to your already hectic schedules, but I feel the time invested is well worth it. Many of you tell us how helpful you find the census in developing business cases in your workplace. I hope you find this year's report as useful.

Executive summary

Throughout 2024, clinical radiologists played an essential role in millions of patients' care, enabling them to begin treatment and start their recoveries.

However, it remained a challenging year. Though the workforce grew by 4.7% in 2024, the demand for CT and MRI imaging grew by 8%, leaving diagnostic services falling further behind. The shortfall in clinical radiology is forecast to rise to 39% by 2029, which means that the pressure on radiologists is only set to increase.

It is important that governments across the UK do not lose sight of the central importance of radiology to patients and the wider NHS. **Delays and problems at diagnosis mean that the whole system works more slowly**. Patients wait longer to learn about their condition and begin their treatment, and potentially suffer poorer outcomes as a result. Conversely, fast and accurate diagnoses make for better patient care and more positive outcomes, with all the consequent benefits these bring to individuals and to society.

There is a **pressing need to grow the radiology workforce** by recruiting more radiologists and by expanding the training pipeline. Doing so will help us to meet demand for imaging and diagnostics that we expect to see in the coming decades, given the forecast increased incidence for cancer, stroke and other major conditions. Retention is also a problem that must be addressed. Staff shortages and high turnover lead to inefficiencies, worse patient outcomes, and staff burnout. Poor IT systems and working conditions, along with unreasonable workload demands and the micro-management of radiologists' time, create perverse incentives for radiologists to reduce their working hours or leave the NHS altogether.

Fundamentally, we must **ensure that radiologists are empowered to do the work they were trained to do**. This will entail adopting new ways of working and new technologies. Radiologists must be given sufficient clinical leadership time and the space to deliver service improvement projects, such as pathway redesign and the deployment of cutting-edge technologies. They must have the time to lead multidisciplinary teams and train the future workforce.[1] Service improvement projects like artificial intelligence could, if implemented effectively, reduce the workforce shortfall we forecast by boosting radiologists' productivity. These productivity gains will not be unlocked, however, unless clinicians are enabled to drive forward the necessary changes.

29%
Workforce shortfall, 2024

39%
Workforce shortfall, 2029

↑ **4.7%**
Radiology (consultant and SAS) workforce growth, 2024

[1] In this report, 'resident (doctor)' refers only to those in specialty training, and not to those in foundation training, unless otherwise stated.

Recommendations

A three-point plan to improve radiology services

01 Recruit

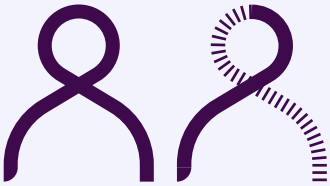
The NHS in each nation should increase the baseline number of specialty training posts for clinical radiology to maintain strong workforce growth and progressively eliminate the shortfall. This should happen in line with national workforce planning initiatives, such as the second iteration of the Long-Term Workforce Plan in England, as more medical students begin to graduate.

Trusts or hospitals not meeting national diagnostic waiting times targets should not adopt nor be placed under recruitment freezes affecting clinical radiology consultants or other staff groups involved in diagnostics.

The NHS in each nation should support hospitals health boards or integrated care boards (in England) to develop local and regional, long-term workforce plans to meet the demand they face, which should include consideration of factors like the impact of less than full time working, demographic change and training requirements on capacity.

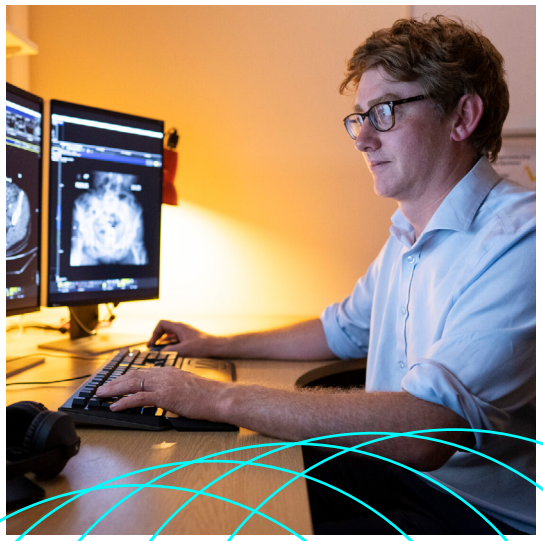
The NHS in each nation should work with trusts/health boards to agree multi-year plans for the number of new consultant posts they each commit to. Trusts/health boards should act to ensure timely confirmation of appointments to consultant positions so newly qualified doctors can begin consultant work without delay.

Radiology networks across the UK should redouble their efforts to ensure radiology departments are able to work more innovatively and collaboratively to ensure the provision of continuous care. This would serve to support those smaller radiology departments which are struggling to recruit and retain staff.



The NHS in England should fund 100% of clinical radiology residents' training for the first two years, dropping to the standard 50% thereafter, to encourage trusts to take up these posts.

Recommendations



02 Retain

Trusts/health boards must create working environments that support radiologists to feel valued, remain in the NHS, and work to the best of their ability. These would feature supportive leadership, greater staff autonomy, and a strong culture of teamwork.

Trusts/health boards should ensure basic staff support and wellbeing measures are in place, including but not limited to adequate break times, the ability to book leave, access to staff rest areas, access to food and drink, adequate transport and parking facilities, modern efficient and effective computer hardware and software which meets professional standards, and administrative and clerical support.

The NHS in each nation should monitor hospitals' performance against providing these basic wellbeing measures, and this data should be made publicly available. Hospitals struggling to provide these measures should receive targeted support.

Trusts/health boards should ensure all doctors, including SAS doctors and those working LTFT, have sufficient SPAs protected in their job plans for their work in delivering training, clinical leadership, audit and service improvement, CPD and revalidation. The number of SPAs must realistically reflect individuals' roles and responsibilities. The Workforce planning should reflect this, and should be reviewed regularly.

Hospitals should conduct exit interviews with all doctors leaving the NHS to understand their reasons for departure. They should also collect structured feedback on doctors' reasons for reducing their working hours. This data should be compiled nationally and used to inform workforce planning and policies to boost retention.

The NHS in each nation must ensure that their long-term workforce planning includes actions to preserve radiology expertise across all special interest areas, so that patients in all regions can access the care they need quickly and easily.

Recommendations

03 Train

The NHS in each nation should explore the allocation of specialty training places by WTE numbers, rather than by headcount. This would enable any funding surplus from residents working LTFT to be reinvested in the provision of further training posts.

Trusts/health boards must ensure there is sufficient time in consultants' job plans to deliver training to junior staff. Those consultants who wish to dedicate more time to teaching and training should be enabled and assisted to do so, wherever possible.

Training should be delivered in all settings and at every opportunity, including in hospitals and community diagnostic centres. The NHS should require that all diagnostic reporting and interventional lists be considered a training list.

Where their skills and experience allow, staff groups including SAS and locally employed doctors, senior residents, and advanced health practitioners should be deployed enabled and encouraged to assist consultants in the delivery of specialty training. They will require time in their job plans to do this work.

Trusts/health boards should ensure sufficient space for radiology training, including sufficient office spaces, radiology workstations and PACS access. The government should ensure the funding for this is made available.

To mitigate the cost associated with NHS-trained doctors pursuing careers in teleradiology, the NHS should explore how teleradiology could contribute to specialty training of radiology resident doctors. Teleradiology companies could make a financial contribution to the costs of training, or else deliver some training themselves.

Introduction to the workforce census

The Royal College of Radiologists is proud to present the 17th annual clinical radiology (CR) workforce census, which offers an in-depth snapshot of the specialty, as of September 2024. The census boasts a 100% completion rate from all 159 radiology departments around the UK.

Clinical radiologists are specialist doctors who use medical imaging to diagnose and monitor benign and malignant diseases and injuries, and perform minimally invasive procedures. They are the backbone of the NHS, responsible for the majority of diagnoses made and for driving forward innovations in the modern management of patients. Diagnostic activity forms part of over 85% of all patient pathways;[i] over 47 million diagnostic imaging examinations were conducted in 2023/24.

The clinical radiology census report includes data on both diagnostic and interventional radiology (IR). IR data is presented in its own section (see page 32). Outside of this IR section, all data refers to both diagnostic and interventional radiology, unless otherwise specified.

The RCR encourages governments and NHS leaders in all four UK nations to engage with the findings of this report.

We have very little time to develop services and end up firefighting / reacting much of the time. This isn't where we want to be.

Challenge 01
Growing the workforce

Size of the shortfall

The UK has a 29% shortfall of consultant clinical radiologists. This is projected to rise to 39%, should no action be taken.[2] As of September 2024, the UK needs 1,953 more clinical radiology consultants to provide the level of care that is required (within contracted hours and adjusted to meet demand, given the population size).[3]

Northern Ireland has a 27% workforce shortfall, Scotland a 25% shortfall, England a 30% shortfall and Wales a 32% shortfall. There are also variations at the regional level. Some areas have below-average shortfalls, such as the 6% shortfall in South East Scotland. Some regions' shortfalls are significantly higher; North and West Wales' workforce is almost half of what it should be, with a 46% shortfall.

[2] For methodology, please consult this year's census methodology worksheet, which can be found on the RCR website.

[3] Throughout this report, unless otherwise stated, all numbers refer to WTE consultants, rather than headcount, as this more accurately reflects capacity within systems.

Urgent scans can wait for months. [There is] significant risk of patient harm secondary to this and a linked increase in complaints and litigation, which further increases pressure on already stretched staff.

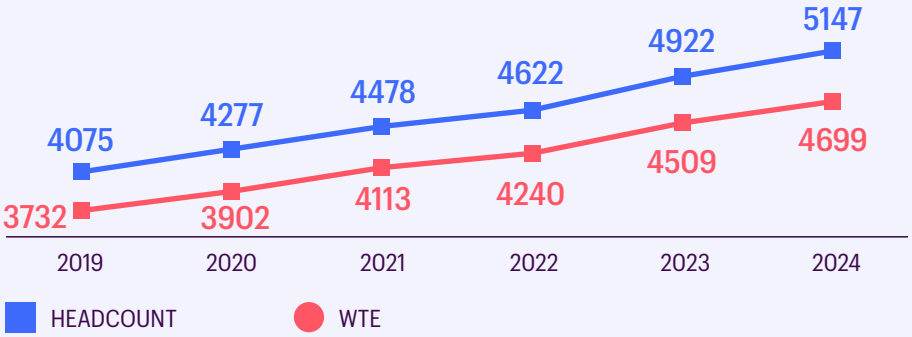
Workforce growth

The CR workforce **grew by 4.7%** in 2024.[4] This is less than the five-year average annual growth rate of 5%. It is also less than the growth seen in 2023. In September 2024, there were 4,699 consultant clinical radiologists in the UK (Whole Time Equivalent, WTE), compared with 4,509 in 2023.

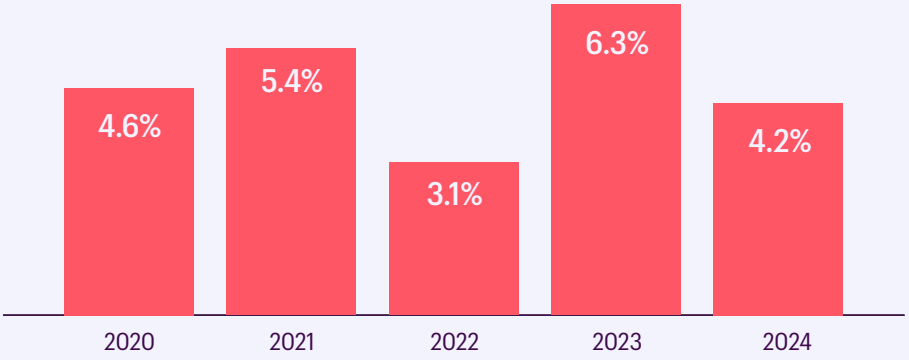
In England, the workforce grew by 5.2%. The other nations saw less growth: 1.6% in Northern Ireland, 2.2% in Scotland, and 1.1% in Wales. Workforce growth was also strongest in large radiology departments, in which it was 5.7%, versus 3.1% in small radiology departments.[5]

The RCR estimates that demand for imaging increases by approximately 7% each year. However, based on current trends, we forecast just 3.9% annual workforce growth over the next five years. This means patients will continue to experience delays and potentially poor outcomes. We can and must do more to boost radiologists' productivity by adopting new ways of working (see page 30); doing so may help to close some of this gap between demand and capacity. But there is no escaping the fact that the NHS needs to recruit more radiologists.

CR CONSULTANT WORKFORCE — PAST SIX YEARS



ANNUAL GROWTH RATES, CR CONSULTANTS — PAST FIVE YEARS



[4] Note this comprises both substantive and locum consultants, as well as SAS-grade radiologists.

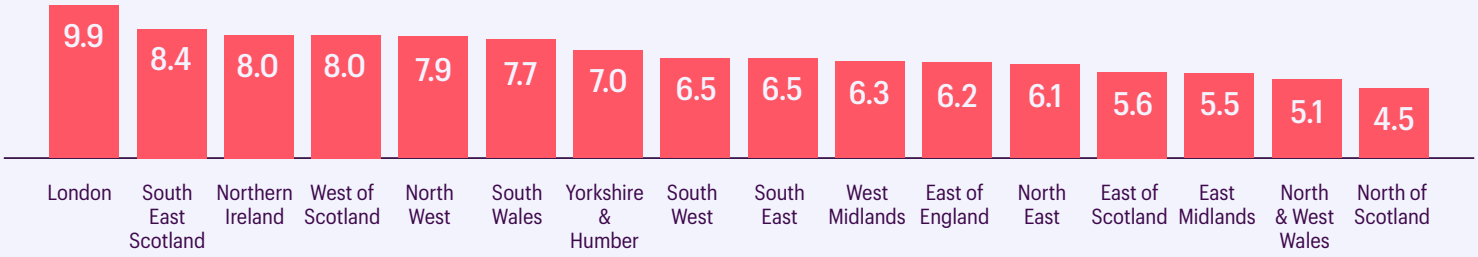
[5] 'Large' here is defined as the top 25% of departments by number of employed clinical radiology consultants. Likewise 'small' refers to the bottom 25% on this metric.

Radiologists per 100,000 population

The UK has 10.1 radiologists (consultant and resident doctors) per 100,000 population. Looking at this metric helps to understand workforce capacity with respect to demand for diagnostics.

Radiological expertise is not distributed evenly across regions. London has 9.9 radiologists per 100,000 population, whereas the East Midlands has 5.5, and the North of Scotland has only 4.5.

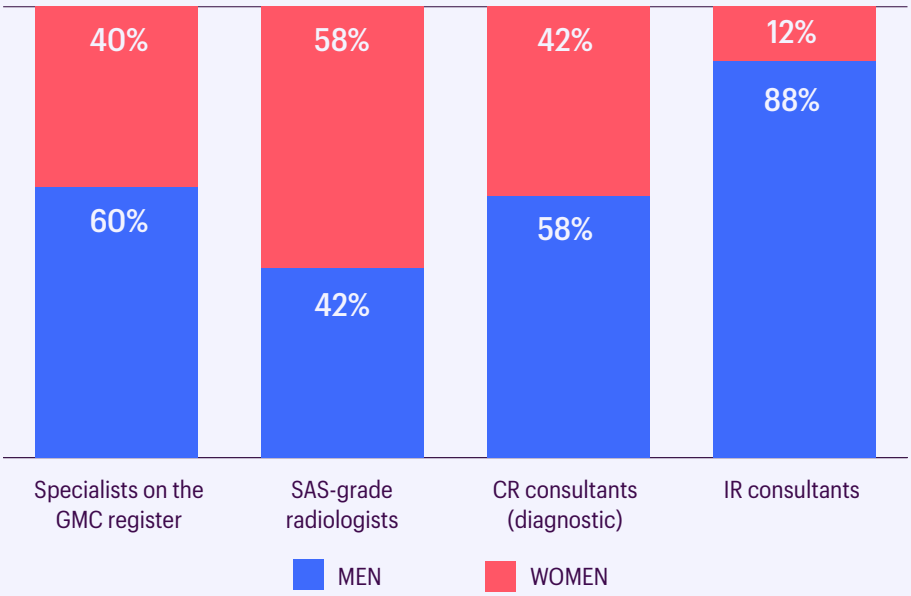
RADIOLOGISTS PER 100,000 POPULATION, 2024



Demographics

42% of diagnostic clinical radiology consultants are women. By way of contrast, 40% of specialists on the General Medical Council (GMC) register are women (as of January 2025). Over the past decade there has been a gradual increase in the proportion of CR consultants (diagnostic and interventional) who are women, from 33% in 2015 to 37% in 2024.

MALE/FEMALE GENDER RATIOS, 2024



The median age of a CR consultant is 47 years. SAS-grade radiologists are generally younger, with a median age of 41 years, and a greater proportion of them are women (58%).

We have employed 8.5 WTE long term locums to cover long term vacancies in diagnostic radiology... We do not have recurrent funding to fill up these vacancies.

Other groups of radiologists

Specialty and Specialist (SAS) doctors

There are 115 SAS-grade radiologists in the UK (109 WTE, excluding locums). In the past year, their number has grown by 13.2%.[6] 88% of SAS doctors in radiology gained their primary medical qualification (PMQ) outside the UK, and 78% gained their PMQ in a non-European Economic Area (EEA) country. Since 2020, there has been an increase of four percentage points in the number of SAS radiologists whose PMQ was gained in the UK.

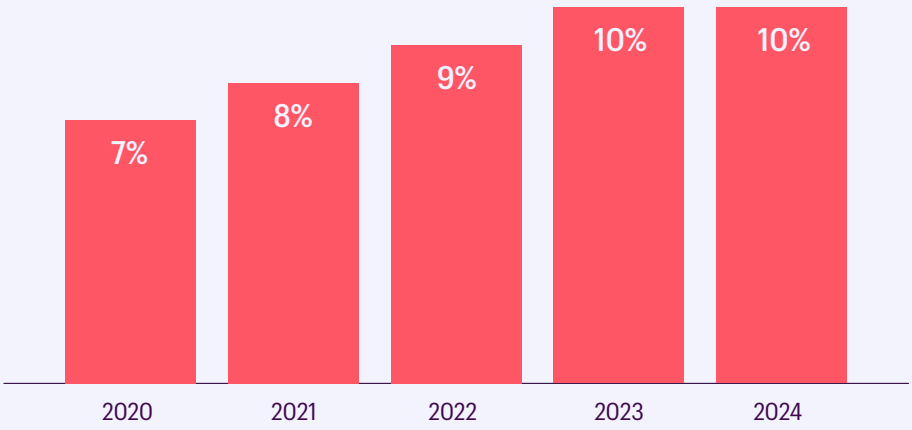
SAS doctors comprise 2.4% of the combined UK radiology (SAS and consultant) workforce. They comprise 2.8% of the combined workforce in Wales, but just 0.3% in Scotland. There are no substantive SAS radiologists in Northern Ireland.

Locums

There are 506 locum radiology consultants in the UK (459 WTE). The locum radiology workforce grew by 1.9% in 2024, versus 17.7% average growth each year across the 2020–24 period. This shift may be the result of NHS England 2024/25 operational planning guidance, which directed NHS organisations to reduce their agency spending.[ii] The balance may have instead shifted towards outsourcing (see page 28).

Locums comprise 10% of the UK's radiology consultant workforce; this is unchanged since 2023, but is higher than the 7% figure in 2020. An increasing number of locums are international medical graduates (IMG), i.e. they gained their PMQ outside the UK. In 2024, this group comprised 86% of all locum consultants in radiology, versus 81% in 2020.

LOCUMS AS PROPORTION OF CONSULTANT CR WORKFORCE, PAST FIVE YEARS



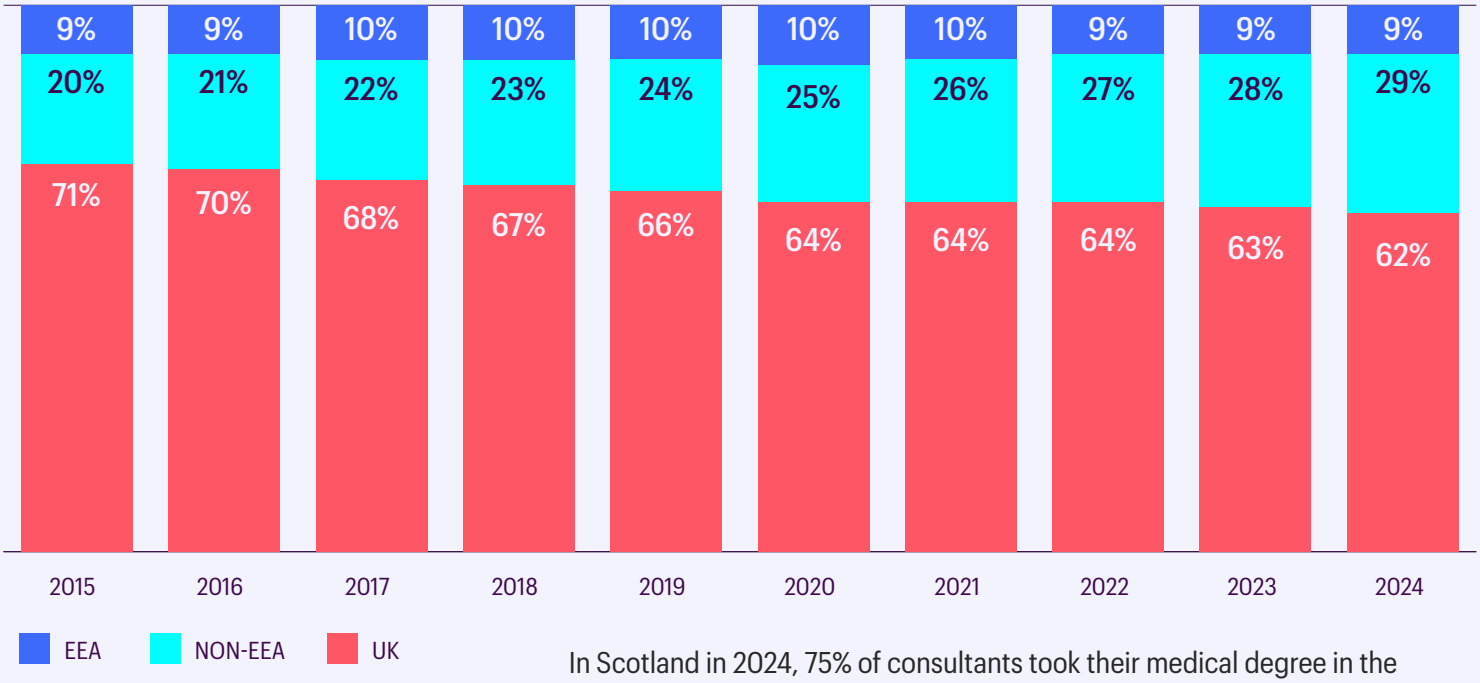
Locums comprise 13% of the consultant workforce in Scotland, 15% in Wales, and 16% in Northern Ireland. Locums comprise 20% of the consultant workforce in small radiology departments, versus just 5% in large departments. Locum staff generally do not remain in an individual site for very long; this means that sites more heavily reliant on locums can experience disruption, with more frequent staffing changes.

[6] When locum SAS doctors are included, this figure rises to 24%.

Global recruitment

Radiology services continue to rely on recruiting staff trained outside the UK. In 2024, just under two-fifths (38%) of CR consultants gained their PMQ outside the UK. Over the past ten years, the proportion of consultants who gained their PMQ outside the UK has risen from 29% to 38%. Most of this has been driven by staff whose PMQ was gained in non-EEA countries (from 20% in 2015 to 29% in 2024). This mirrors a trend observed across all specialties. Seventy percent of doctors newly registered with the GMC in 2024 were non-UK graduates.[iii]

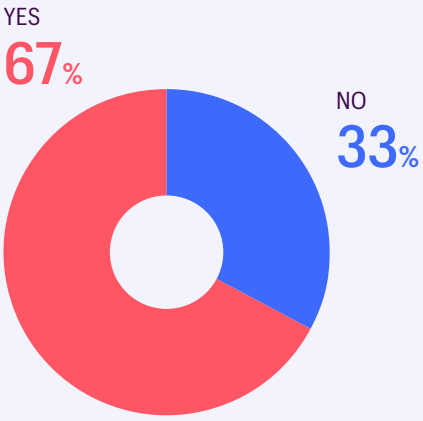
CR CONSULTANTS, REGION OF PMQ — PAST TEN YEARS



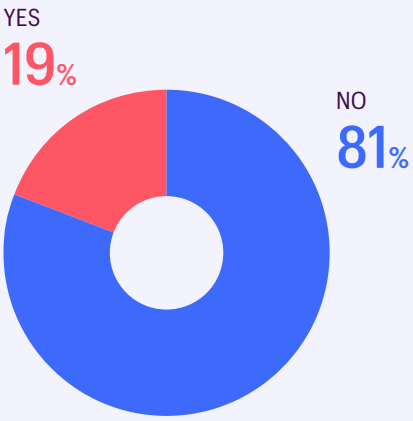
In Scotland in 2024, 75% of consultants took their medical degree in the UK, compared to 56% in Wales. Smaller radiology departments have fewer consultants who gained their PMQ in the UK (47%) than larger departments (69%), indicating a greater reliance on international recruitment.

Consultants who join the workforce from abroad bring invaluable skills and experience and should be made to feel welcome and supported. Nonetheless, international recruitment is not a straightforward and sustainable solution to workforce shortages. This is because, across all grades, attrition rates for clinicians who trained overseas are higher than those trained domestically (see page 15). Moreover, there is a global shortage of healthcare workers, particularly of radiologists, meaning this method of recruitment may yield diminishing returns over time.[iv] There are also ethical implications of recruiting staff from countries which themselves may be struggling with medical workforce shortages.

VACANCIES UNFILLED FOR 12+ MONTHS, 2024



RECRUITMENT FREEZES IN RADIOLOGY DEPARTMENTS, 2024



We keep recruiting, but demand and scanning activity continues to increase... so staff who have been here throughout are tired of the same situation with backlog reporting despite the efforts and work to recruit.

Vacancies and recruitment freezes

The vacancy rate for CR consultant posts in 2024 was 9%, down one point since 2023. In total, there were 470 WTE vacancies for these posts. Large radiology departments had the lowest vacancy rates, at 6%. Medium-sized departments had a vacancy rate of 11%, and small departments had a vacancy rate of 20%.

67% of trusts/health boards had at least one radiology vacancy (consultant and SAS) unfilled for a year or more, at the time of data collection.

The number of vacant posts on offer is significantly lower than the 1,953 radiologists required to close the workforce shortfall and offer an adequate radiology service for the whole UK. This does not reflect a lack of demand for radiology posts, which are highly sought-after by resident doctors. (see page 23). Rather it is due to a combination of factors, including financial constraints, which limit the number of posts that trusts/health boards feel able to finance, hence the number of vacancies they advertise.

Indeed, nearly one-fifth (19%) of radiology departments reported experiencing a recruitment freeze in 2024. National and regional vacancy rates would likely have been higher but for recruitment freezes; hospitals where these are in place may not advertise for vacant posts that in other circumstances they would have attempted to fill.

By preventing workforce growth, freezes undermine efforts to reduce delays for patients. Such caps are usually counter-productive to the service as a whole, and are therefore a false economy.[v]

Rising demand for imaging and diagnoses

The demand for medical imaging, and the demand for radiologists to interpret these images, continues to rise. In England in 2023–24, the number of CT and MRI examinations grew by 8%.[vi] Over the past five years, growth in annual imaging demand has averaged at 5%. Much of this rising demand is unscheduled, coming from emergency settings. In 2019, 24% of CT and MRI scans were unscheduled; this rose to 33% in 2024. In England in 2023/24, the number of referrals from emergency departments for CT and MRI scans rose by 13% (compared to the prior financial year). There is now a greater reliance on emergency imaging, interpreted by radiologists, than previously – but there has not been appropriate planning for the additional capacity required to manage this shift. The target in England is that all CT and MRI scans from emergency departments be reported within four hours, which exacerbates the pressure radiology departments are under.

Over the past five years, average annual CR consultant workforce growth was 3.7% (excluding locums). The data shows that **demand for imaging persistently exceeds the rate of workforce growth**. Despite their dedication and hard work, radiologists are struggling to keep on top of diagnostic waiting lists because demand for their expertise is growing more rapidly than the workforce itself. Despite radiologists working more productively than ever before, the radiology workforce shortfall has not fallen, because there are not enough radiologists to meet the demand they face.

[Our] trust has supported the recruitment process, with some additional funding enabling us to recruit a good number of staff last year. This has [led to] significant improvement in our turnaround times and reducing the waiting list and backlog.

Recruitment: what needs to happen?

To bring down the workforce shortfall, recruitment into clinical radiology must increase. The rate at which demand for medical imaging is rising is consistently outpacing workforce growth. This, alongside stubborn vacancy rates and the advent of recruitment freezes, prevents a reduction of the workforce shortfall. Unless this situation is turned around, patients will continue to suffer long, uncertain waits for diagnosis, with real implications for their health outcomes.

Economic modelling commissioned by the RCR proves the value of investing in CR workforce growth. A 50% uplift in the baseline number of CR specialty training places (i.e. 180 more each year) would, compared to relying on outsourcing and overtime, deliver an additional 907 CR consultants (WTE) after ten years. This would fill 74% of the forecast workforce shortfall by that time and would deliver cumulative cost savings totalling £460 million in the tenth year.

Challenge 01

Growing the workforce

Recommendations

The NHS in each nation should increase the baseline number of specialty training posts for clinical radiology to maintain strong workforce growth and progressively eliminate the shortfall. This should happen in line with national workforce planning initiatives, such as the second iteration of the Long-Term Workforce Plan in England, as more medical students begin to graduate.

Trusts or hospitals not meeting national diagnostic waiting times targets should not adopt nor be placed under recruitment freezes affecting clinical radiology consultants or other staff groups involved in diagnostics.

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Radiology networks across the UK should redouble their efforts to ensure radiology departments are able to work more innovatively and collaboratively to ensure the provision of continuous care. This would serve to support those smaller radiology departments which are struggling to recruit and retain staff.

The NHS in England should fund 100% of clinical radiology residents' training for the first two years, dropping to the standard 50% thereafter, to encourage trusts to take up these posts.

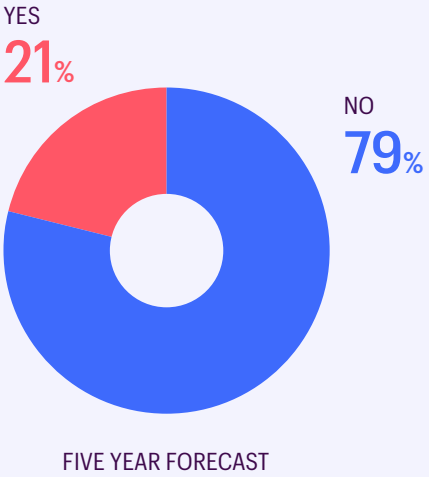
Challenge 02
Tackling attrition and boosting retention

Forecast retirements

As of 2024, 21% of all CR consultants (excluding locums) are forecast to retire within five years (up two points since 2019). The proportion forecast to retire within ten years is 39%.

SAS radiologists have lower forecast retirement rates over this timespan than consultants (because they are generally younger – see page 8). The five-year forecast retirement rate for SAS radiologists is 13%, and the ten-year figure is 24%.

FORECAST RETIREMENTS CR CONSULTANTS, 2024

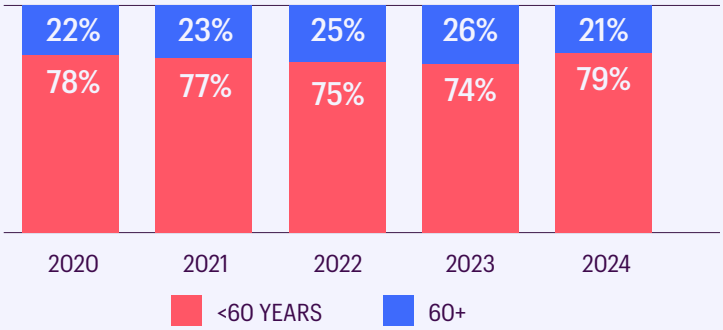


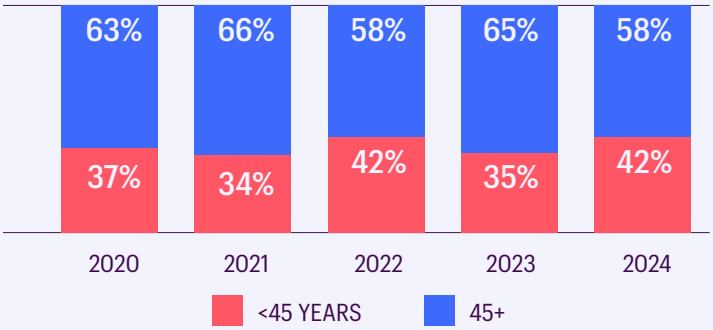
CR consultant attrition

In 2024, consultant attrition (excluding locums) fell to 2.6%, the second consecutive year in which this figure has declined. Leavers have various destinations: some retire, some leave to practise medicine abroad, and some leave to work in other sectors.[7]

Though headline attrition decreased, those who leave the workforce are doing so at a younger age than previously. Four-fifths (79%) of leavers in 2024 were under the age of 60. Over two-fifths (42%) of leavers were under the age of 45. The median age of leavers was 50 years; this figure has fallen over time, from 55 years in 2020. This trend represents a worrying loss of accumulated knowledge and experience from the NHS.

AGE OF CR CONSULTANT LEAVERS, PAST FIVE YEARS





SAS-grade attrition

Attrition amongst SAS radiologists in 2024 was 4.6% (excluding locums).[8] This is far below the 2023 figure of 16.6% and the five-year average figure of 9.7%.

The higher turnover amongst SAS doctors is an issue across all specialties. Causes may include fewer continuous development (CPD) opportunities and a feeling of exclusion from the multidisciplinary team.[vii] For some, a SAS post was always intended to be a temporary measure before they left the NHS or whilst they trained for another position.

The RCR is working to tackle these issues with an active SAS network, SAS representation on committees and in leadership roles, and guidance in development focusing on progression from the specialty to specialist grade.

[7] Leavers are defined as any individual no longer present in the census data, regardless of grade.

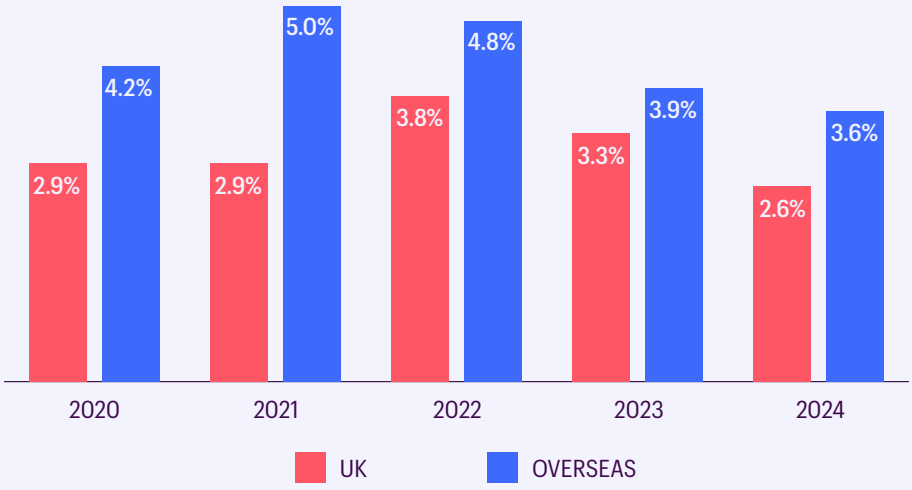
[8] Differential attrition rates are not likely to be due to grade changes. These are excluded from the data, given the definition of a 'leaver'.

Global recruitment and attrition

There are two routes to work as a substantive consultant radiologist in the NHS: completion of UK specialty training (CCT) or the Portfolio Pathway (formerly known as CESR).

The attrition rate over the past five years for CR consultants who completed their specialty training in the UK was 2.8%, compared to 4.2% for those trained overseas. Over the past decade, 73% of all CR consultants who were in the 2015 RCR census are still in post. 74% of those who were UK-trained remain in post, compared to 70% of those trained overseas.

ANNUAL ATTRITION RATE, CR CONSULTANTS — PAST FIVE YEARS



This data also demonstrates the importance of UK specialty training. Individuals may be more likely to remain in or return to the country in which they completed their specialty training (as is the case for UK-trained radiologists (see page 24).

UK specialty training is not only bespoke to UK medical practice. It is also associated with greater retention and avoids ethical dilemmas associated with recruiting staff from countries with their own workforce shortages. Doctors recruited from overseas are hugely valued and appreciated. But, when planning for the clinical radiology workforce in the long term, the limitations of global recruitment need to be accounted for. UK radiology specialty training should be the predominant means of growing the future radiology workforce.

We have had to take drastic measures recently, as we quickly fell from five to two diagnostic neuroradiologists. This is due to consultants going back overseas to look after family: we have had to recruit three locum consultants, at high cost to the trust.

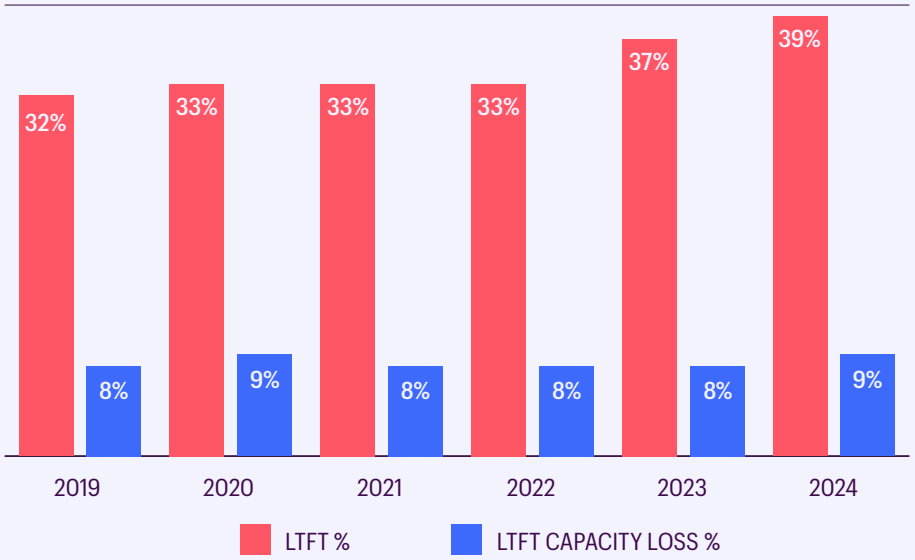
Working patterns

LTFT working

LTFT working is open to all postgraduate doctors in the UK, either during or after specialty training. The doctor works fewer than the standard number of working hours for their employer. Many people use this time to pursue activities such as further education or research outside their clinical role, to balance childcare or other family commitments, or for wellbeing reasons. Some may be working LTFT in order to work part time for a teleradiology company, though we cannot quantify how common this would be (see page 28).

The prevalence of LTFT working rose to 39% in 2024, continuing the trend seen in previous years. LTFT working is most common in older cohorts of CR consultants; 26% of those aged under 40 work LTFT, compared to 41% of those aged 50–59. Nonetheless, prevalence has risen across all age cohorts over the past six years.[9]

PROPORTION OF CR CONSULTANTS WORKING LTFT, PAST SIX YEARS



The workforce is operating at 91% of total potential capacity, once LTFT working is accounted for. Over time, the reduction in total potential capacity due to LTFT working has risen less slowly than the prevalence of LTFT working itself. This is because, as the number of doctors working LTFT has risen steadily, so too have doctors' total average working hours. Nonetheless, LTFT working does clearly reduce the system's overall capacity to deliver care. While it is good practice to offer LTFT working to staff, a larger workforce is required to accommodate this practice without impacting patient care. Future workforce plans should be based on WTE, rather than headcount, to make clear the actual capacity of the workforce.

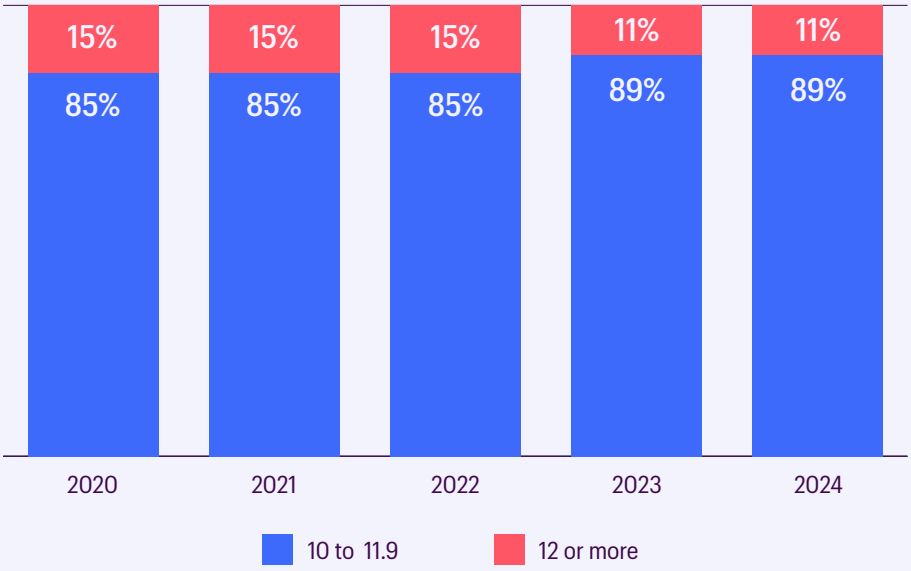
[9] 2024 LTFT data looks only at clinical work (DCCs and SPAs). It does not consider teaching or academic/research PAs.

Professional Activities (PAs)

PAs are four-hour units of time (or 3.75-hour units in Wales) used to structure NHS staff job plans. Overall, the average CR consultant now has fewer programmed activities (DCC+SPA) than ten years ago. In 2024, 11% of full-time consultants had 12 or more PAs in their job plan. In 2020, 18% of CR consultants did. This decline is associated with the rise in LTFT working, alongside a range of other factors, including pension tax arrangements and the stress associated with a continuously rising workload.

Older consultants are more likely to have 12+ PAs; 4% of those aged under 40 have 12 or more, versus 17% of those aged 60+. In small radiology departments, consultants are more likely to have 12+ PAs than those working in large departments (15% versus 11%).

TOTAL PAs, CR CONSULTANTS, PAST FIVE YEARS

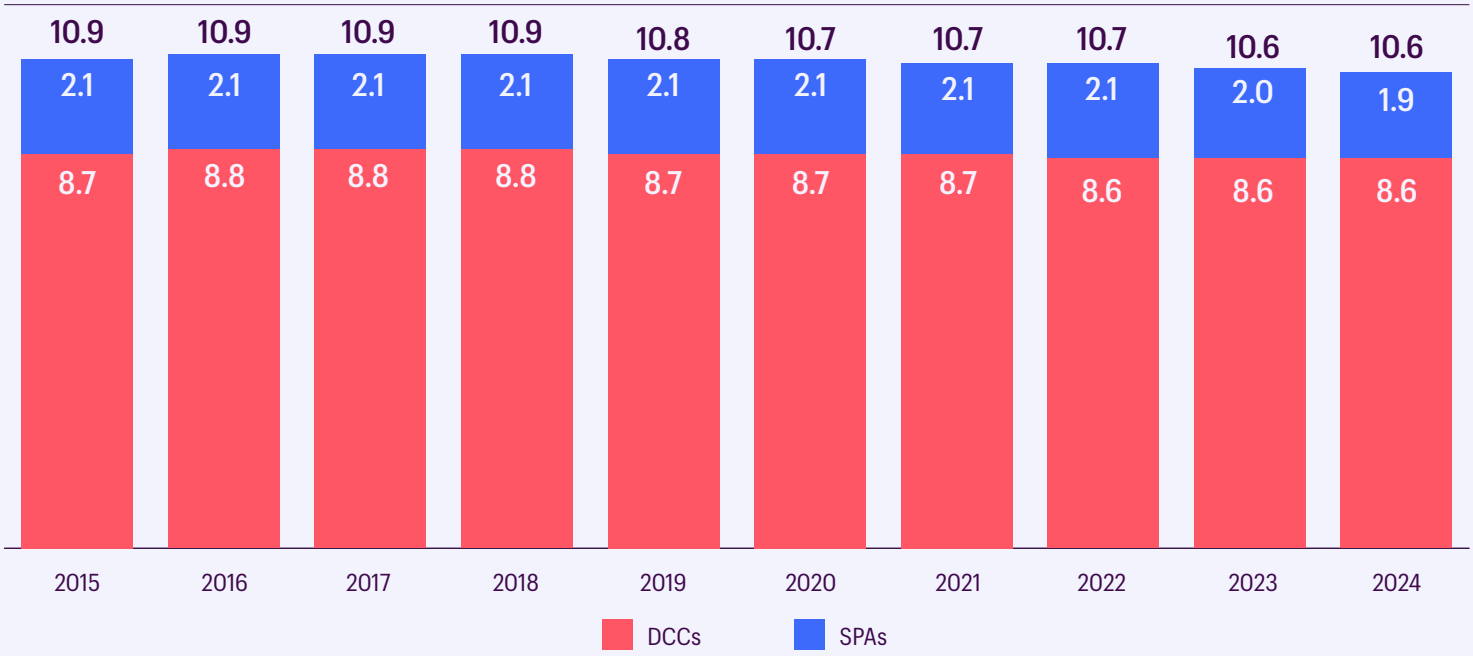


Supporting professional activities (SPAs)

SPAs are non-clinical activities formally worked into consultants' job plans, including teaching, CPD, leadership, service improvement and preparation for appraisal or revalidation. They underpin clinical care and contribute to the quality of the individual clinician's practice and of the service.

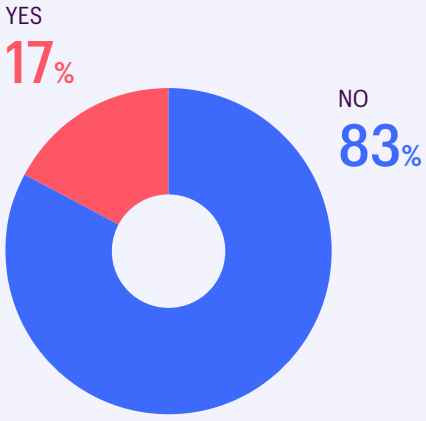
The RCR recommends that consultants should have at least 1.5 SPAs in their job plan to meet their own basic requirements.[viii] But if radiologists are to make a meaningful contribution in the areas mentioned above, they will need more than this minimum. In 2024, there were 1.9 SPAs in the average CR consultant's job plan; this suggests most radiologists are largely doing clinical work and are not able to contribute to medical education and other areas of running the service. 17% of CR consultants have fewer than 1.5 SPAs, as of 2024. Many have fewer than this and, over time, there has been an erosion of consultants' SPA time, from 2.1 SPAs on average in 2015. This is a 12% decrease in ten years. This decline in SPA time is partly due to newly-appointed consultants having disproportionately fewer SPA in their job plans. Many SAS radiologists also lack sufficient SPA time, with 34% having fewer than 1.5 SPAs.

AVERAGE PAS, FULL-TIME CR CONSULTANTS, PAST TEN YEARS



SPA time is crucial for service improvement and delivering training; both these crucial activities rely on clinically-driven leadership. The erosion of SPA time compounds the effect of workforce shortfalls, preventing improvements that would benefit patients. Non-clinical work needs to be valued as much as clinical work is valued.

PROPORTION OF CR CONSULTANTS WITH FEWER THAN 1.5 SPAS, 2024



Clinical Director turnover

In 2024, one-quarter (26%) of radiology Clinical Directors left their posts. A quarter (24%) of those vacated posts were left vacant, leaving the department without clinical leadership. This high turnover is likely related to insufficient time in their job plans and insufficient admin support for these important leadership roles. Radiologists typically have as few as one or two PAs (four or eight hours) per week dedicated to clinical leadership. This involves line managing up to 50 or more radiologists, alongside leading service development work, fielding queries, organising recruitment and other vital but time-consuming activities. It is often not possible to complete all this work in the allocated time.

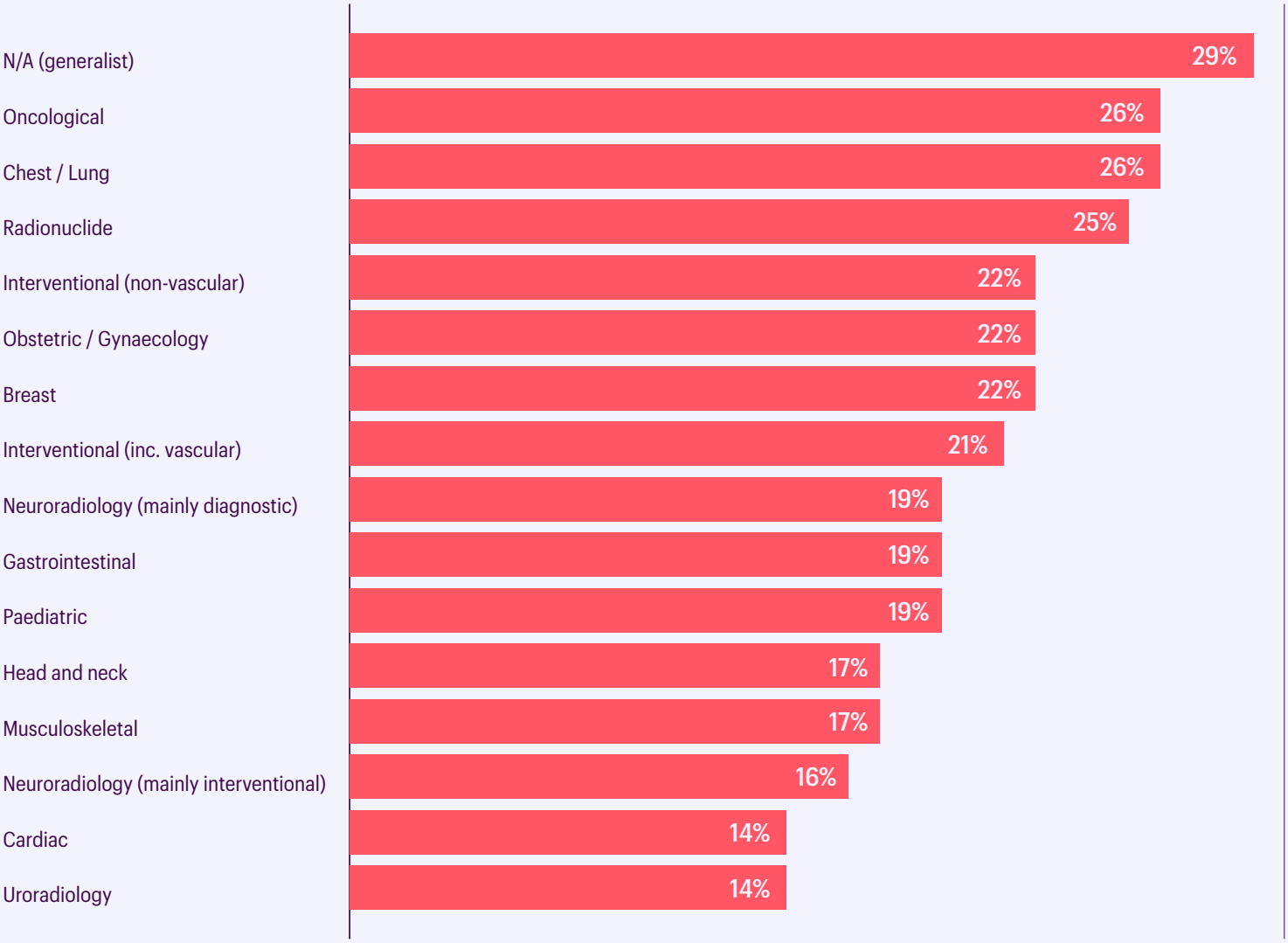
Staff morale is extremely low and it is difficult to get people to take up other roles in the department.

Though most demitting Clinical Directors remain practising clinicians, the disruption and lost clinical leadership has a knock-on effect for patients, staff and services. It is highly concerning that workforce conditions are such that many radiologists are actively discouraged from taking up leadership positions.

Special interests

Clinical radiologists further specialise their practice to focus on certain body systems, owing to the complexity of disease and diagnostic skill required at each site. This specific expertise is essential for a comprehensive, modern radiology service; a gastrointestinal radiologist is unlikely to be able to provide cover for a neuroradiologist, and vice versa. The most common special interests amongst CR consultants (excluding interventional radiology, which is its own subspecialty) are gastrointestinal, musculoskeletal and breast.

FORECAST FIVE-YEAR RETIREMENT RATES BY CR SPECIAL INTEREST, 2024



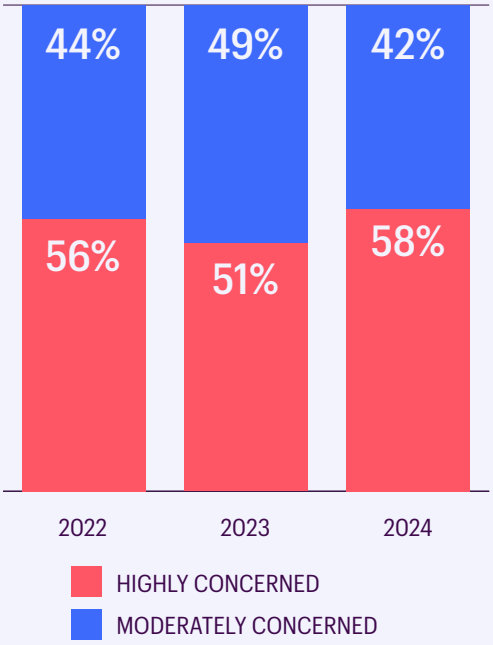
The breast service is compromised by inability to employ a breast radiologist.

Some special interests are at greater risk of workforce shortages than others. Excluding general radiologists, the groups with the highest forecast retirement rates are chest/lung radiology (26% within five years), oncological radiology (26%), and breast radiology (22%).

Attrition rates also vary with special interests. Breast radiology has seen 4.8% average annual attrition over the past five years (versus 3.8% averaged across all special interests), compared to 1.4% for cardiac radiology. Other special interests with higher relative attrition rates include musculoskeletal radiology (3.5%) and radionuclide imaging (4.6%).

By contrast, certain special interests have grown more rapidly than others over the past five years. Uroradiology has grown by 8.3%, cardiac radiology by 7.4%, head and neck radiology by 7.1% and gastrointestinal radiology by 6.7%.

MORALE, STRESS AND BURNOUT CONCERN, CR CLINICAL DIRECTORS, PAST THREE YEARS



Morale and staff wellbeing

It is likely that rising workloads are a significant causal factor in staff attrition. Workforce shortfalls mean that fewer staff are expected to deliver the same level of service. Despite working harder than ever, radiologists' efforts are often unable to reduce waiting lists and improve patient experiences; this can have a serious impact on their wellbeing and morale. Every Clinical Director in the UK said they were concerned about the effect of workforce shortfalls on the morale or levels of stress and burnout amongst their staff. This is the third consecutive year in which every Clinical Director reported concern.

Retention: what needs to happen?

Workforce growth cannot benefit patients unless the drivers of attrition are also tackled. Though attrition rates in CR are low, so too are the number of PAs per consultant.

There are still worrying signs that staff are leaving the NHS earlier than they would if conditions were ideal. The average leaving age of consultants continues to drop, and LTFT working is growing in prevalence.

Workforce shortages create a vicious cycle. With fewer staff to provide care, remaining staff must take on more work, which increases the likelihood they will experience low morale or stress and burnout. They may then be more likely to work LTFT or leave the NHS altogether, thereby causing the workforce shortfall to increase further. It also has serious impacts on patients. High staff turnover can make effective team working harder, which in turn can mean patients do not receive the highest possible standard of care.[ix]

Low morale [amongst] all levels of staff including clinical and non-clinical leaders, as despite working very hard, we are always trying to catch up.

Measures to improve staff wellbeing and boost retention across all staff groups and grades are essential.

Challenge 02
Tackling attrition and boosting retention
Recommendations

Trusts/health boards must create working environments that support radiologists to feel valued, remain in the NHS, and work to the best of their ability. These would feature supportive leadership, greater staff autonomy, and a strong culture of teamwork.

Trusts/health boards should ensure basic staff support and wellbeing measures are in place, including but not limited to adequate break times, the ability to book leave, access to staff rest areas, access to food and drink, adequate transport and parking facilities, modern efficient and effective computer hardware and software which meets professional standards, and administrative and clerical support.

The NHS in each nation should monitor hospitals' performance against providing these basic wellbeing measures, and this data should be made publicly available. Hospitals struggling to provide these measures should receive targeted support.

Trusts/health boards should ensure all doctors, including SAS doctors and those working LTFT, have sufficient SPAs protected in their job plans for their work in delivering training, clinical leadership, audit and service improvement, CPD and revalidation. The number of SPAs must realistically reflect individuals' roles and responsibilities. The Workforce planning should reflect this, and should be reviewed regularly.

Hospitals should conduct exit interviews with all doctors leaving the NHS to understand their reasons for departure. They should also collect structured feedback on doctors' reasons for reducing their working hours. This data should be compiled nationally and used to inform workforce planning and policies to boost retention.

The NHS in each nation must ensure that their long-term workforce planning includes actions to preserve radiology expertise across all special interest areas, so that patients in all regions can access the care they need quickly and easily.

Challenge 03:
Training the radiology workforce

Large backlogs mean [there are a] large number of patients waiting well outside the NHSE targets for report turnaround times. This causes challenges with delivering optimal resident doctor training.

Clinical radiology training

In 2024, 344 individuals started CR specialty training and 265 people completed their training. CR specialty training residents comprise 29% of the total CR workforce. There has been a significant increase in the number of starts each year in the ten years since 2015.

Over the past five years, there has been an average annual increase in radiology resident headcount of 4.8%. However, some areas have seen little or no tangible growth in their resident cohort in that time, such as Northern Ireland (0.4%) or North and West Wales (1.9%). In South-East Scotland, the resident cohort has shrunk by an average of 3.7% each year since 2019.

Time to train

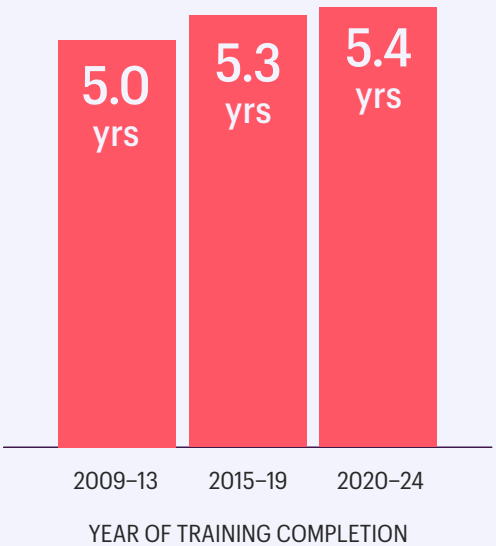
CR specialty training in the UK follows at least two years of foundation training, and comprises five stages, ST1-5. Training is expected to take five years. Alongside demand trends, the fact that specialty training requires several more years atop medical school and foundation training goes some way towards explaining why the increased number of resident doctors in radiology in recent years have not yet had an impact on the radiology workforce shortfall. It takes time for these increases to feed through the system.

Indeed, the time taken to complete CR specialty training has been growing over time, from a median average of 5 years in 2009–13, to 5.3 years in 2015–19, and to 5.4 years in 2020–24.

Drivers of this trend include a greater prevalence of LTFT working (see page 16). More residents working LTFT means that funding is absorbed that could otherwise go towards an additional resident. This is because funding is allocated by headcount, rather than by WTE.

Another potential cause of this increasing time to train is people taking 'out of programme activities' (OOPA) to conduct medical research or take up Fellowships abroad. It is important to recognise the value of research conducted or other expertise gained during OOPA to services and patients. The time required should be factored into workforce planning and radiology specialty training.

AVERAGE LENGTH OF CR SPECIALTY TRAINING OVER TIME



Clinical radiology competitiveness

In England in 2024, 100% of CR specialty training posts were filled at the first round of recruitment. CR specialty training fill rates have been 99–100% every year for the past five years. Fill rates are also consistently high in Scotland, Wales and Northern Ireland.[x] The competition ratio – number of applicants versus number of places – in 2024 was 12:1.[xi] This is up from 9:1 in 2023, 6:1 in 2022, and 5:1 in 2021. This rising demand underlines the popularity of radiology as a specialty.

Despite this popularity, trusts in England do not always take up expansion specialty training posts (i.e., additional posts above the annual baseline) in radiology when they are made available. First and second-year residents are seen as less valuable than senior residents or consultant staff. This is true across specialties, including radiology. This discourages uptake, especially in a context of trusts facing extreme financial constraints. However, the RCR has evidence that shows the financial value of radiology residents and proves that they represent a good investment (see page 12).

In England, a trust must pay 50% of the annual cost of a specialty training post. Whereas in the devolved nations, the statutory education bodies pay 100% of the costs. 100% funding from NHSE of the first two years' radiology residents training would go a long way towards addressing this problem. An additional solution would be to align the timelines for national recruitment to those for trusts' financial decision-making; the current misalignment makes workforce planning incredibly difficult and means that some trusts are unable to take the opportunity when it is made available.

With such small consultant numbers, it becomes very challenging keeping the acute daytime service running when people are on leave. It also impacts our ability to train residents because we are doing acute work all the time.

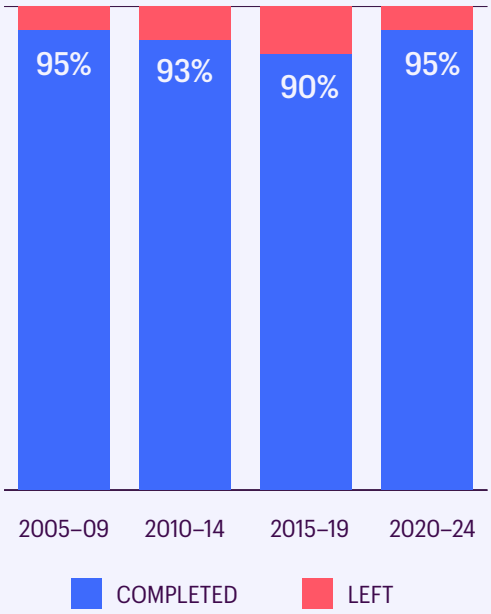
Training capacity

Workforce shortfalls also affect the NHS's ability to train the next generation of consultants. As consultant PA and SPA time has decreased (see page 18) and as demand for diagnostics has risen, the time available for training has fallen.

Though training is often delivered in what SPA time is available, consultants also need to supervise residents during DCC time. However, this can make it difficult for departments to meet productivity targets that do not account for the fact that it takes longer to deliver a service when resident doctors are being trained. It takes additional time to talk them through processes and procedures and their rationale, until they can become independently productive. These contrasting demands lead to a split between radiology "training lists", in which residents are supervised, and "service lists", in which they are not; this bifurcation erodes overall training capacity, since there is less time overall in which training can be delivered.

A lack of time to deliver radiology specialty training risks future workforce growth, as well as current and future patient care. Training capacity must increase to meet demand for training, as both the number of radiology residents and the demand for imaging increase. With adequate structures and a sufficient number of residents, it is possible to increase the overall efficiency of a radiology department.

CR SPECIALTY TRAINING ATTRITION, 2005–2024



Training attrition

Attrition during CR specialty training remains low. In 2020–24, just 5% of residents did not complete their training.

Comparing census data with the GMC specialty register for 2017–24 shows that, within three years of completing specialty training, 86% of radiologists have taken up a consultant post. Twenty years after completing their training, 76% of UK-trained radiologists remain in consultant posts. This reinforces the value of CR specialty training; the vast majority of those trained remain, and deliver excellent care for patients for multiple decades. Economic analysis demonstrates that radiology residents are a worthwhile investment (see page 12).

Recruitment freezes and training

Recruitment freezes (see page 11) have implications for radiology specialty training. 79% of radiology residents become consultants in the region in which they were trained, which demonstrates a strong tendency to remain in the same region. During training, residents may start families, obtain mortgages, and make other decisions that tie them to a particular place.

Recruitment freezes in areas with significant consultant workforce shortfalls will mean those areas risk losing the people they have invested in training, and who wish to work there, which would exacerbate the existing challenges.

[There is a] lack of support from upper management… [and] lots of delays trying to advertise with new changes that include review by divisional director, medical director, care group director, vacancy control panel etc. This leads to loss of candidates, as it usually takes 4–5 months to get things through.

Training: what needs to happen?

Demand for radiology expertise is rising with the disease burden in the UK, with more imaging investigations being requested. So too is there a greater demand for radiology specialty training. The NHS needs to begin now to train the workforce of the future. However, capacity to deliver training is low, and increasingly constrained. Workforce plans need to address and reverse this. They must also accommodate trends such as LTFT working and OOPA, amongst others.

Resident doctors are the future leaders of multidisciplinary teams. Their training must be prioritised in accordance with the important role they play. **Radiology specialty training is the single most important investment that can be made in NHS diagnostic services**.

Challenge 03
Training the radiology workforce
Recommendations

The NHS in each nation should explore the allocation of specialty training places by WTE numbers, rather than by headcount. This would enable any funding surplus from residents working LTFT to be reinvested in the provision of further training posts.

Trusts/health boards must ensure there is sufficient time in consultants' job plans to deliver training to junior staff. Those consultants who wish to dedicate more time to teaching and training should be enabled and assisted to do so, wherever possible.

Training should be delivered in all settings and at every opportunity, including in hospitals and community diagnostic centres. The NHS should require that all diagnostic reporting and interventional lists be considered a training list.

Where their skills and experience allow, staff groups including SAS and locally employed doctors, senior residents, and advanced health practitioners should be deployed enabled and encouraged to assist consultants in the delivery of specialty training. They will require time in their job plans to do this work.

Trusts/health boards should ensure sufficient space for radiology training, including sufficient office spaces, radiology workstations and PACS access. The government should ensure the funding for this is made available.

To mitigate the cost associated with NHS-trained doctors pursuing careers in teleradiology, the NHS should explore how teleradiology could contribute to specialty training of radiology resident doctors. Teleradiology companies could make a financial contribution to the costs of training, or else deliver some training themselves.

Impact of workforce shortfalls in radiology

Patients are waiting longer than they should have to for their reports and we have had several delayed cancer diagnoses as a result.

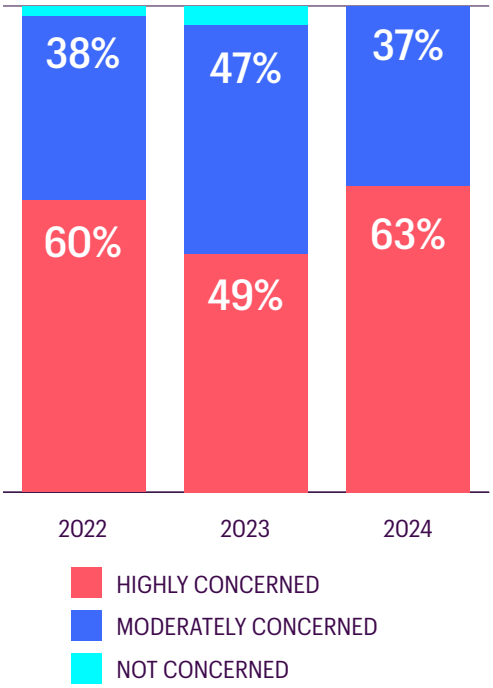
Patient impact concerns

In 2024, over three-fifths (63%) of radiology Clinical Directors said they did not have sufficient consultant clinical radiologists to deliver safe and effective levels of patient care.

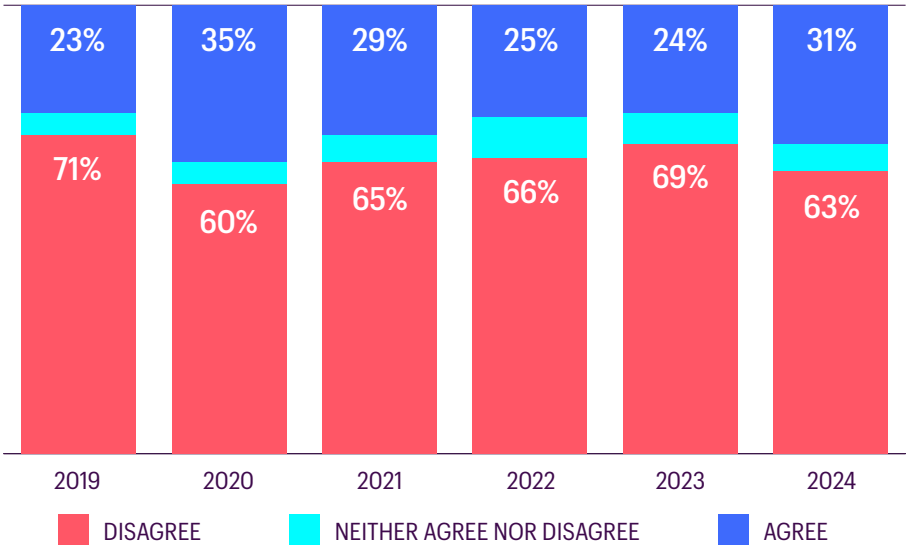
Clinical Directors at smaller radiology departments are more likely to report having insufficient clinical radiologists than larger departments, by a margin of ten percentage points (74% versus 64%).

Clinical Directors also reported specific concerns about the effects of workforce shortages. Alongside those concerned about morale and levels of stress (see page 20), 100% of Clinical Directors reported concerns about backlogs and delays becoming worse. 93% reported concerns about a lack of time for service improvements.

CONCERNS OVER BACKLOGS AND DELAYS, CR CLINICAL DIRECTORS, PAST THREE YEARS

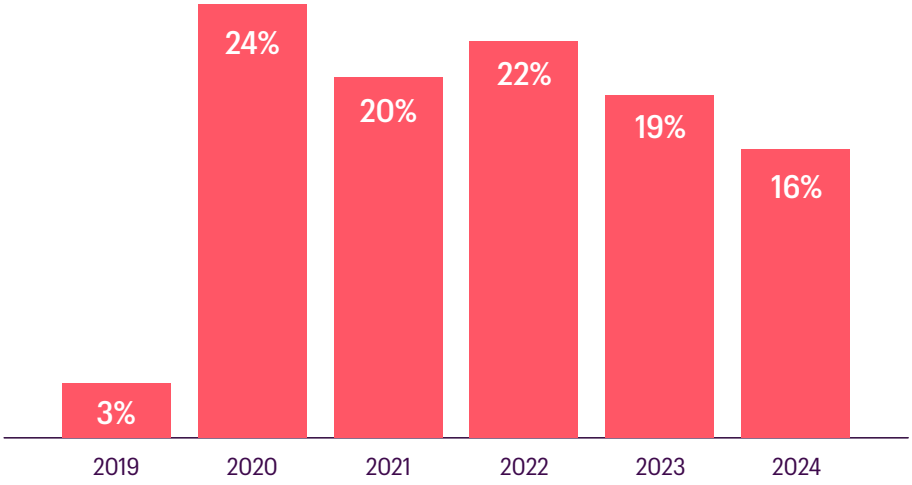


SAFE AND EFFECTIVE PATIENT CARE, CR CLINICAL DIRECTOR VIEWS, PAST SIX YEARS



Radiology Clinical Directors' concerns are reflected in diagnostic waiting times data collected by the NHS in England. In the vast majority of cases, for a patient to know they have cancer, or another serious disease, they must have a scan, and that scan must be interpreted. NHSE's target is that no more than 1% of patients wait for over six weeks to receive a scan; in 2024, 16% of patients waited for longer than this. Another target states that all scans be reported within 28 days. In 2024, 3.4% of CT and MRI scans – over 434,000 investigations – were not reported within four weeks, with the affected patients waiting for over a month to learn their diagnosis.

PROPORTION OF PATIENTS WAITING 6+ WEEKS FOR A CT OR MRI SCAN, PAST SIX YEARS

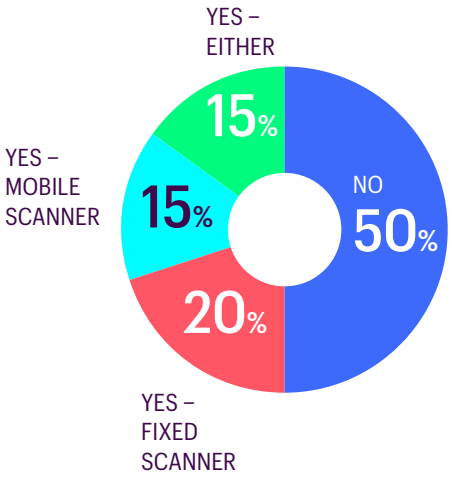


Accommodating new scanners

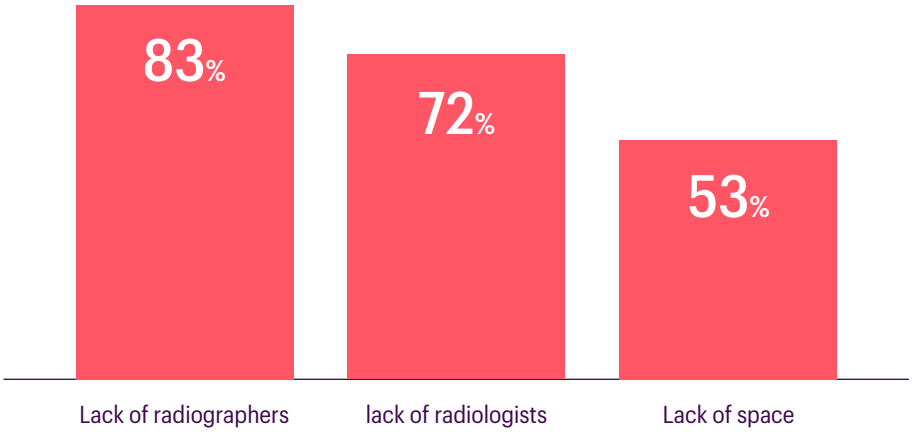
To determine to what extent capital equipment is a limiting factor for radiology services, Clinical Directors were asked whether they could accommodate additional, fully-funded CT or MRI scanner. Half of all Clinical Directors said they could not do so.

Of these, 83% said they lacked sufficient radiographers to operate the scanner and 72% said they lacked sufficient radiologists to report on the images it would generate. 53% indicated they lacked sufficient space to house an additional scanner. There is greatest capacity to accommodate an additional scanner(s) in Wales (57% affirmative), and least capacity in Northern Ireland (40% affirmative). These figures exclude the 10% of respondents who responded with 'don't know'.

COULD YOU ACCOMMODATE AN EXTRA CT OR MRI SCANNER AND FULLY STAFF IT WITHIN THE NEXT YEAR (IF THE SCANNER WERE FULLY FUNDED)?



BARRIERS TO ACCOMMODATING ADDITIONAL CT/MRI SCANNERS



This data comes in the context of the government's commitment to double the number of CT and MRI scanners in the NHS.[xii] It underlines the fact that capital is just one component of a well-run, sustainable radiology service, the other being the workforce required.[10]

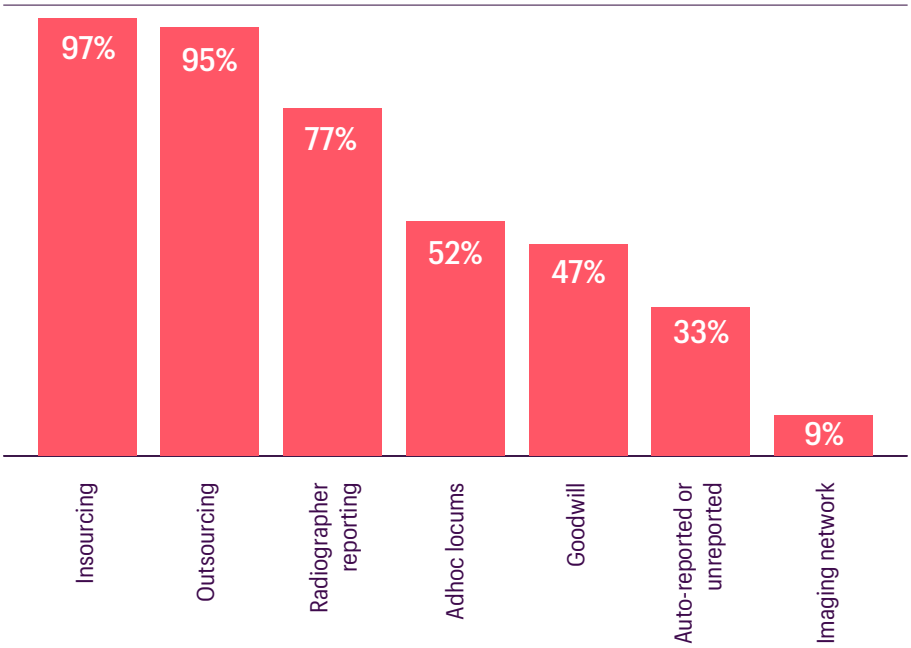
We have too many scanners. We can scan patients very quickly but there is a huge discrepancy in scan to reporter ratio. We can never keep up with reporting, despite outsourcing. Today, we have about 1,000 CTs and 2,000 plain films waiting to be reported.

[10] Note that Clinical Directors were not asked whether they have too few scanners. Even those departments which cannot accommodate additional scanners might, in an ideal world, require more scanners to meet the demand for imaging that they are experiencing.

The rising cost of workforce shortfalls

For the first time, **not one radiology department in the UK is able to meet its reporting requirements within staff contracted hours**. Every single department is incurring additional costs, leaving imaging examinations unreported or relying on unpaid overtime. Departments are increasingly turning to costly alternatives. The prevalence of both insourcing (paid staff overtime) and outsourcing (i.e. paying teleradiology companies to conduct some reporting) rose to 97% and 95%, respectively.

METHODS USED BY RADIOLOGY DEPARTMENTS TO MANAGE EXCESS REPORTING, 2024

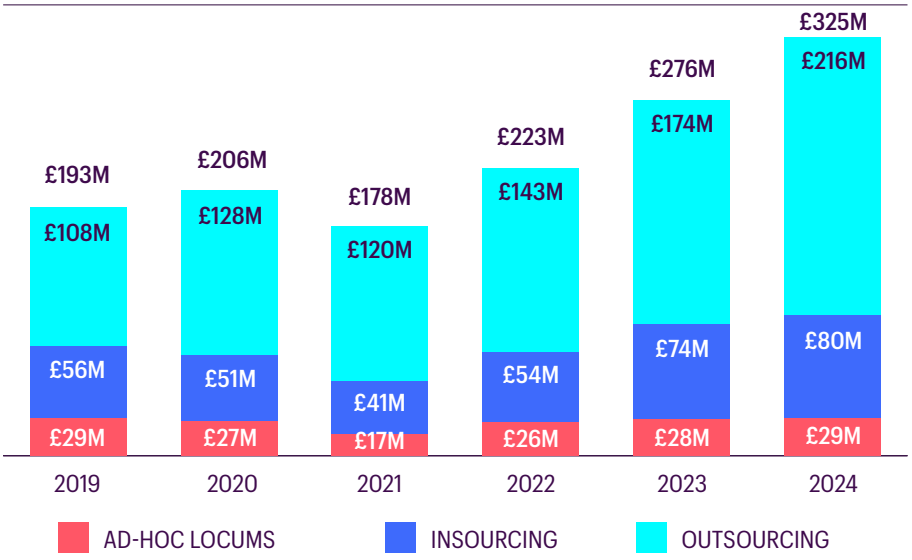


We use a teleradiology service to help us 24 hrs a day. If it was not for their covering during normal working hours as well as out of hours, I would have [significant concerns] about patient safety.

Larger radiology departments rely more heavily on insourcing (100% use this method), whereas smaller departments rely more heavily on outsourcing (95% use this method).

In 2024, in total trusts and health boards spent £325 million on these alternatives. This represents a 16% increase on 2023 expenditure. It is **equivalent to the cost of 2,910 CR consultant salaries**. The RCR forecasts an expenditure of £547 million in five years' time if current trends continue.

COST OF MANAGING IMAGING REPORTING SHORTFALLS, UK, PAST SIX YEARS



The bulk of this expenditure goes towards outsourcing, which rose by over £42 million between 2023 and 2024. The teleradiology companies engage radiologists to provide these reports. Most radiologists doing teleradiological work also work for the NHS directly. The reasons for taking up teleradiological work are various, but many radiologists value the independence and flexibility it offers.

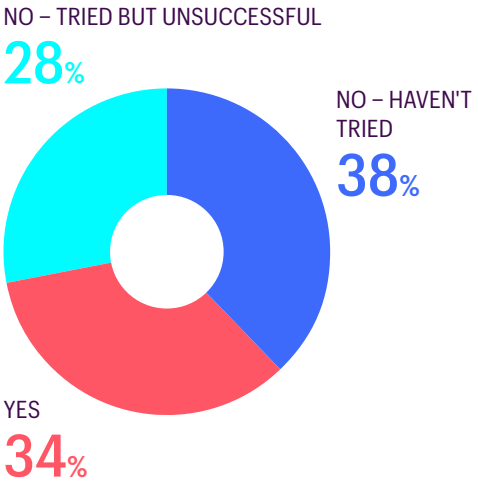
Increased outsourcing leads to increased administrative time by consultant workforce to manage fallout, add addendums etc. [We see] more discrepancies than we would expect in outsourced versus insourced work.

At the time of writing, there were over 600 radiology consultants on the GMC register whose designated body (typically, a doctor's primary employer) was a teleradiology company. There were approximately 200 radiologists who had their designated body as a teleradiology company and who no longer appear in the RCR census data, implying they work almost exclusively in teleradiology. This is a small fraction of all those who do some teleradiology work, most of whose designated employers are NHS trusts/health boards. Nonetheless there is some degree of 'loss' from the NHS to the teleradiology sector, though it is difficult to quantify.

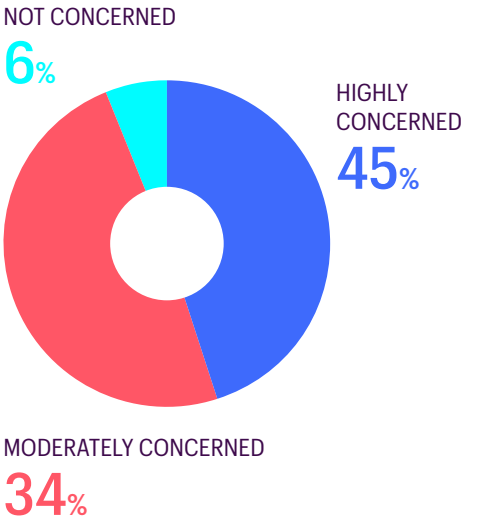
There are concerns about the NHS's growing reliance on outsourcing. Most outsourced reports are of good quality. However, problems can arise because teleradiology reporters often lack access to patients' previous imaging examinations and electronic patient records, and they can lack the ability to converse with each patient's overseeing clinician. This in turn can mean outsourced reports can omit important information, which can result in these investigations being re-reviewed by the local team.

Moreover, outsourcing affects the workload of NHS radiologists. Radiologists working for teleradiology companies do not have, when doing their teleradiology work, any additional clinical roles such as service development or governance. Moreover, teleradiology companies typically do not provide any specialty training in radiology, which means the burden of training provision falls on 'in-house' consultants. Of those scans which have to be re-reported, it is usually the most complex, requiring significant time and effort. The cognitive load on NHS radiologists may therefore be rising with the increased use of outsourcing.

HAS YOUR TRUST/HEALTH BOARD BEEN ABLE TO CONVERT OUTSOURCING EXPENDITURE TO FUND NEW SUBSTANTIVE POSTS OVER THE PAST YEAR?



CONCERN FOR CLINICAL LEADERSHIP TIME, CR CLINICAL DIRECTORS, 2024



Implementation of a fit-for-purpose voice recognition software has improved productivity by 12%. But the road to getting the trust to agree to funding this IT improvement was many years.

It may be the case that with innovative tools to better manage demand for diagnostics, such as artificial intelligence (see page 32), in future the NHS may not need to rely on teleradiology to the same extent as it does currently.

Converting outsourcing expenditure

Across the UK, one-third (34%) of Clinical Directors were able to convert expenditure previously used for outsourcing into the funding of new, substantive radiology posts. Most of these posts (74%) were consultants. This may be desirable for a trust because it could help them develop a more robust local team, with stronger working relationships, a greater capacity to deliver training, and so on.

38% of Clinical Directors reported that they had not attempted to convert expenditure in this way, and the remaining 28% said that, despite attempting, they had been unsuccessful. These mixed results may reflect local NHS leaders' propensity or reticence to approve such business cases.

Clinical leadership

In 2024, just 6% of radiology Clinical Directors said they had sufficient time for clinical leadership, as a result of workforce shortages in their trust/health board. Clinical leadership could comprise activities such as serving as a role model, fostering a positive working culture and team dynamics, setting expectations of care standards, holding responsibility for safety and operational performance, fielding colleagues' queries, improving patient pathways and being a source of advice or guidance for junior staff.

Productivity initiatives

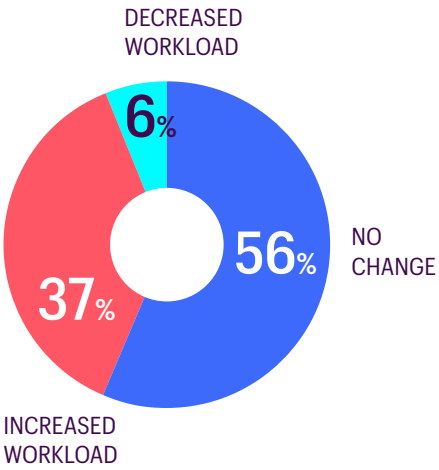
A challenging environment has not stopped radiologists across the UK from making attempts to improve the services they provide in creative and innovative ways. Common initiatives pursued included introducing AI tools, altered or extended service hours, new scanning equipment, mobile scanning equipment, and the use of skill mix.

For some radiology departments, initiatives such as these have resulted in improved workflows, increased patient throughput, lower backlogs and improvements to efficiency. However, success has not been uniform. Other departments reported challenges and barriers to implementing service improvements, including staff shortages, financial constraints, IT challenges and logistical difficulties.

Another potential productivity initiative would be to reform multidisciplinary team meetings (MDTMs). Many Clinical Directors reported the growing and excessive burden of MDTMs. Multidisciplinary care is vital for many patients, and radiologists are at the heart of providing this care. However, MDTMs in their current form are inefficient and time-consuming; most patients do not benefit from having their cases discussed at MDTM because their care is comparatively routine. MDTMs need to be refocused onto those patients where an in-depth team approach can actively improve decisions and treatment plans. This would have the added benefit of releasing time back to radiologists to spend delivering patient care or service improvements, and as such would boost their productivity in a positive way.

We have used AI in MRI, which has made quite a bit difference getting patients through the scanner by reducing scan time.

IMPACT OF IMPLEMENTING AI TOOLS, 2024



Artificial intelligence

AI is now a more common feature in clinical radiology. AI tools can be clinical, used to process medical images or analyse scans to identify abnormalities, or administrative, such as intelligent speech recognition that automatically records and transcribes conversations into specific formats. The hope for AI tools is that they improve radiologists' ability to diagnose illnesses early, either by increasing their accuracy or their efficiency, thus giving them more time for patient care. AI is hoped also to assist with resource management and to improve patient experience, e.g. by enabling flexible booking of scans and appointments.

In 2024, 44% of Clinical Directors reported some effect of AI usage or implementation on their workload.[11] However, impact of these initiatives has been mixed. Over half (56%) reported no significant change to their workloads as a result of adopting AI tools. Concerningly, over one-third (37%) reported an increase in their workload directly as a result of implementing and/or using AI tools. (These figures exclude the three in ten Clinical Directors who reported not using AI tools whatsoever in their department.)

This is somewhat to be expected. Large IT deployments are complex and time consuming, both in the actual implementation process and also in the aftermath, with staff having to adapt to new systems and ways of working.[xiii] It may be that these results are due to an inevitable time lag in any productivity improvements appearing. However, another potential cause is the effect AI tools have on radiologists' behaviour; it may be the case that AI tools present radiologists with more specific information to be reviewed, which means the radiologist spends longer reporting each image.[xiv] Indeed, this may be desirable insofar as it may help more diseases be diagnosed at a very early stage. But if this is the case, the workforce implications must be accounted for. Moreover, basic IT systems must be adequate for AI tools to be impactful.

AI has significant potential for improving patient care, but more work and refinement is needed for this potential to be realised in clinical practice. Radiologists are leading the way in the adoption of AI in diagnostics. The RCR is producing clinical guidance, educational resources and analyses on the use and deployment of AI.

Workforce shortfalls continue to have a major impact on the NHS's ability to diagnose and treat patients as quickly as possible, before they come to greater harm. To accelerate progress on diagnostic waiting times and patient outcomes, urgent action is needed to grow the radiology workforce, boost retention, remove obstacles to training, and deliver innovations that can boost radiologists' capacity to deliver care.

[11] Excludes those who did not report the use of any AI tools

Interventional radiology in 2024

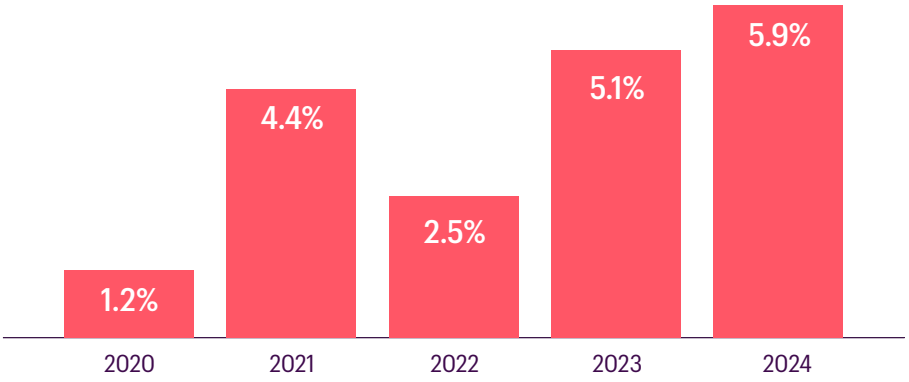
Interventional radiology (IR) is a subspecialty discipline in which radiologists conduct a wide range of innovative image-guided treatments, often in emergency settings, for both adults and children. Interventional radiologists perform these often lifesaving procedures. IR procedures are often preferable to traditional surgery because they are minimally invasive, which means patients recover more quickly and spend less time in hospital. Many patients treated via IR do not have to be admitted as inpatients, but rather can leave the hospital that same day.

IR procedures can be used to treat patients with active bleeding, sepsis, aneurysms, fibroids, as well as curative and adjuvant treatments for cancer. A major improvement in patient care has been the development of mechanical thrombectomy for acute stroke, whereby an interventional neuroradiologist removes a blood clot in an artery supplying the brain to restore blood flow; this procedure is proven to prevent or reduce lifelong disability. Most clinical radiologists practice at least some interventional radiology work, such as biopsies, without considering themselves as IRs.[12]

Snapshot of the IR workforce

In 2024, there were 782 WTE interventional radiology consultants in the UK – up from 738 in 2023 (excluding locums). These figures represent a 5.9% growth rate, the strongest yearly rate observed since 2018. The average annual growth rate from 2019–24 is 3.8%. The IR consultant workforce grew most strongly in Wales (23% in 2024).

IR WORKFORCE GROWTH RATES, PAST FIVE YEARS

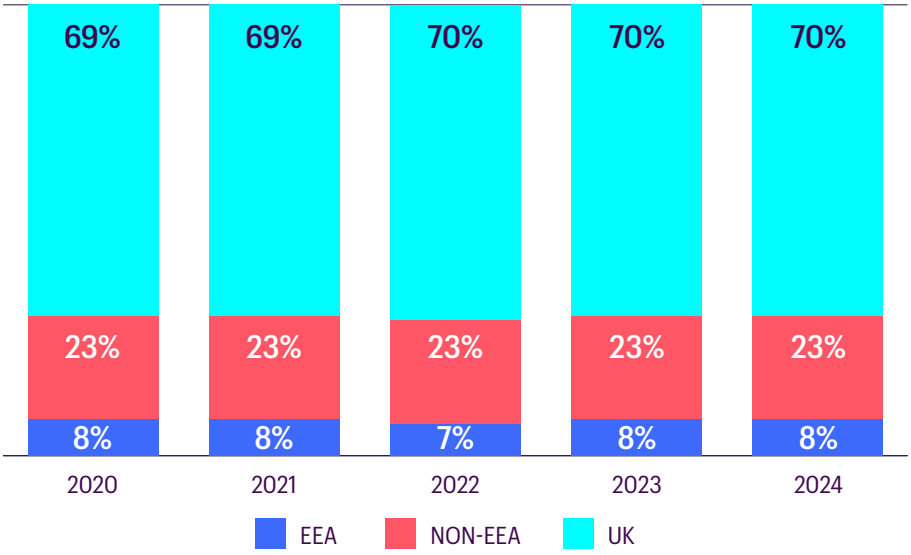


[12] In the census, clinical directors are asked to define the primary and secondary special interests of their colleagues. Interventional radiologists in the data are therefore those who have self-identified as such.

The median average age of an IR consultant is 47 years. Just 12% of IR consultants are women (compare this to clinical radiology – see page 8). This figure is unchanged since at least 2021.[xv] By contrast, 16% of individuals with a surgical specialty on the GMC specialty register are female.

In proportions largely stable over the past five years, 70% of IR consultants gained their PMQ in the UK, 8% in the EEA, and 23% in other countries.

IR CONSULTANTS BY REGION OF PMQ, PAST FIVE YEARS

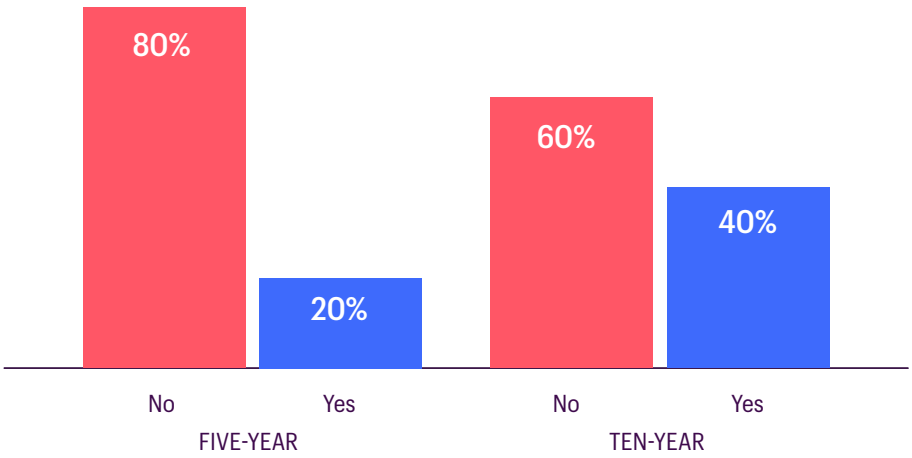


[We have] limited mentorship and training time as a result of limited consultant numbers.

There are 12.3 IR consultants (WTE) per million population in the UK. England has the most IR consultants on this metric, whereas Wales has the fewest. There is also significant regional variation, with fewer IR consultants present in rural areas. The North of Scotland has just 4.2 IR consultants per million population, compared to 10.4 in South East Scotland. London has 17.6 per million population.

IRs are a diverse group and many focus on specific body systems. The major division is between vascular IR, which focuses treatment within the blood vessels (for conditions such as blocked arteries or aneurysms); non-vascular IR, which covers a wide range of interventions in other body systems, including biopsies, drain placements, and tumour ablation; and interventional neuroradiology (INR), which involves treatment of the central nervous system and spine. 64% of IR consultants are primarily vascular IRs, 21% are non-vascular IRs, and 14% are INRs. A small fraction, 2%, are paediatric IRs. Over the past five years, the vascular IR workforce has grown by 2.9%, whereas non-vascular IR has grown by 5.5% and interventional neuroradiology by 7.9%.

FIVE- AND TEN-YEAR FORECAST RETIREMENT RATES, IR CONSULTANTS



Across IR, there is a 20% forecast retirement rate by 2029, and a 40% retirement rate by 2034.

In 2024, there were 37.5 WTE IR consultant vacancies, equivalent to a 5% national vacancy rate. This is compared to an 8% rate in 2023 and an average rate of 7.5% over the past five years. This may be a result of recruitment freezes (see page 11).

The median average age of leavers in 2024 was 43 years – below that of diagnostic radiologists (see page 8). 90% of IR consultants who left in 2024 were under 60 years old; in 2023, 75% of leavers were under 60.

Challenges in providing IR services

IR services face challenges to provide safe and effective care to all patients. There is a **28% consultant workforce shortfall in vascular and non-vascular interventional radiology.**[13] This means the UK is 272 WTE IR consultants short of providing an adequate service. Wales (16%) and Northern Ireland (22%) have smaller shortfalls, whereas England (28%) and Scotland (29%) have larger shortfalls.

Across the UK, **one-quarter (26%) of trusts/health boards do not have an adequate IR service in place**. This is because they either do not have a 24/7, 365-day service, or they do not have a sufficient on-call rota in place,[xvi] or they do not have agreed pathways for transferring patients when the IR service is not available.

Nearly one-fifth (17%, n=27) trusts/health boards do not run an IR service whatsoever. Of these, just seven are specialist trusts in which an IR service may be unnecessary.

We struggle to provide a five-day intervention service, mostly due to lack of nursing, but also due to a shortage of consultants... Patients can wait for weeks for their procedure or have to be referred to the tertiary centre.

A lack of Neuro-IR consultants and support staff means we still don't have a 24/7 stroke thrombectomy service

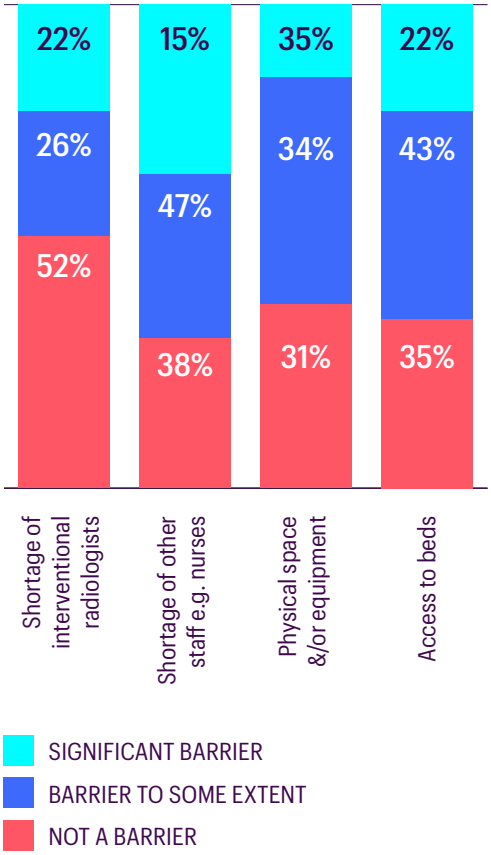
[13] Paediatric IR and interventional neuroradiology are excluded from this calculation.

We have outgrown our IR and thrombectomy theatre space, meaning we cannot deliver our vascular work, despite having nine vascular radiologists.

Demand for IR services is, however, continuing to rise. Including all imaging modalities, there was a 3% growth in the number of IR procedures in 2023–24. The number of procedures involving computerised axial tomography grew by 7.5% in this time; this modality is used to perform mechanical thrombectomy to treat stroke. Average annual growth for all IR procedures over the past two years was 4.7%. **Rising demand is therefore outpacing IR workforce growth**.

In 2024, over half (56%) of Clinical Directors said that they did not have sufficient interventional radiologists to deliver safe and effective patient care. Moreover, 78% of Clinical Directors reported that a shortage of IR staff is a barrier to providing an effective IR service in 2024. Additionally, 85% reported a shortage of other staff, such as nurses; 78% said they lacked sufficient access to inpatient or day case beds to accommodate patients awaiting IR procedures; and 65% reported insufficient access to physical space and/or equipment in and with which to conduct their work.

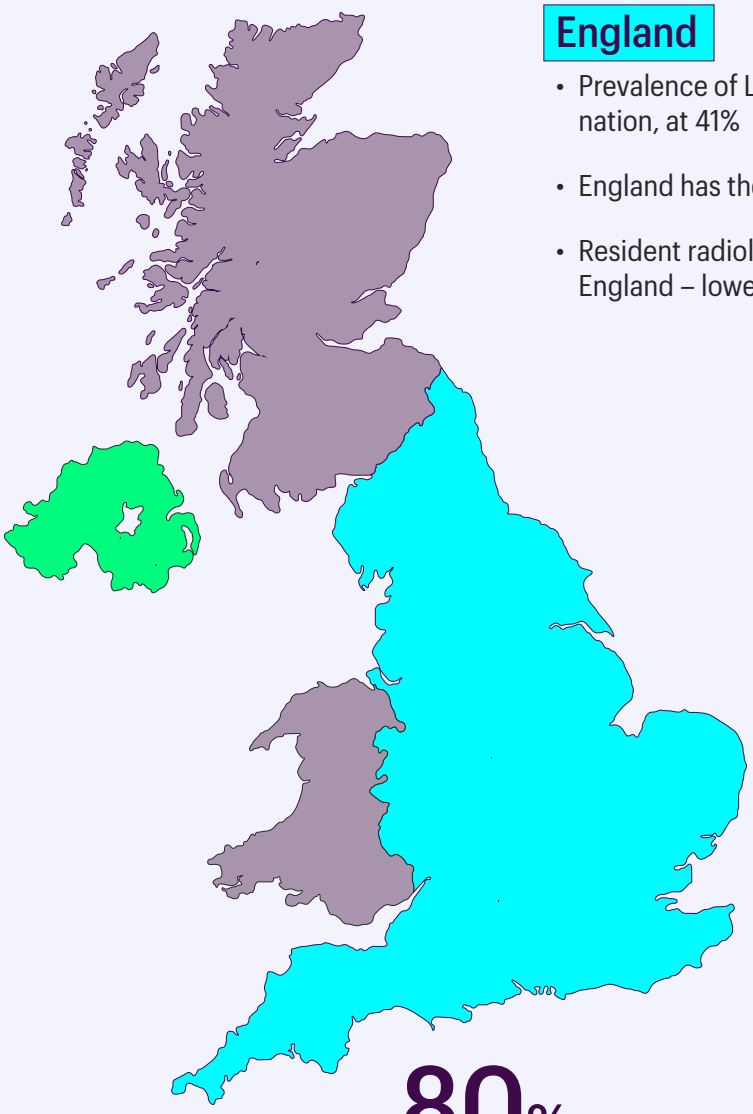
BARRIERS TO PROVIDING AN EFFECTIVE IR SERVICE, 2024



Interventional radiologists deliver life-saving care for many patients across the UK. But IR services face significant challenges, such as insufficient staff to meet demand and inadequate access to equipment and care facilities to carry out cutting-edge procedures. IR will continue to be an increasingly important and valuable discipline, at the forefront of 21st century practice. Policymakers must recognise its immense value to patients and the NHS, and act to champion IRs and the work they do.

The national picture

Radiology in England, Northern Ireland Scotland and Wales



80%

England makes up over 80% of the data submitted to the census. Its results therefore trend very closely to those of the whole UK.

England

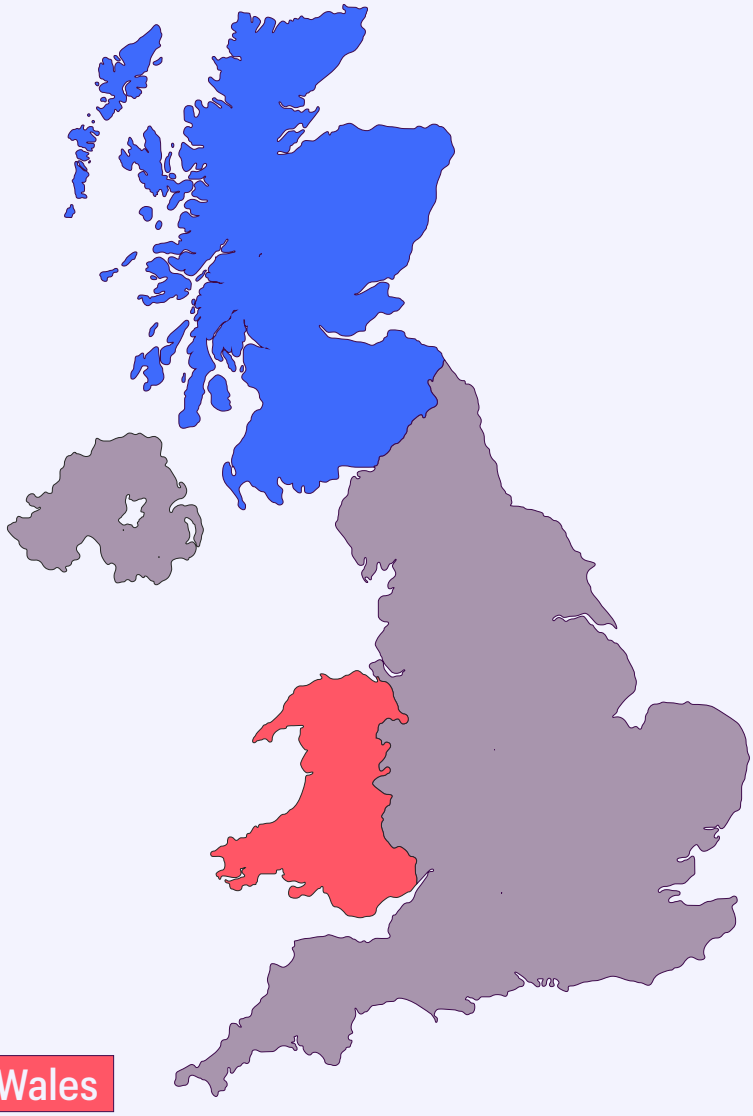
- Prevalence of LTFT working is higher in England than in any other UK nation, at 41%
- England has the most trusts with inadequate IR provision, at 27%
- Resident radiologists comprise 28% of the radiology workforce in England – lower than the UK average.

Northern Ireland

- Northern Ireland has the highest forecast workforce shortfall – 41% by 2029
- At 2% over the past five years, Northern Ireland has the lowest average annual workforce growth of any UK nation
- Resident doctors comprise just 24% of Northern Ireland's radiology workforce – which is the smallest training pipeline of any UK nation
- At 19%, Northern Ireland has the UK's highest CR consultant vacancy rate
- Over one-fifth of Northern Ireland's CR consultants are forecast to retire within five years, the highest in the UK
- Northern Ireland spends the most on managing excess reporting requirements of any UK nation, at £5.72 per capita.

The national picture

Radiology in England, Northern Ireland Scotland and Wales



Scotland

- The Scottish consultant workforce (WTE) hardly grew in 2024 (by 0.2%)
- Scotland's workforce shortfall is 25%, the smallest of the four nations, but still a significant shortage
- Every Scottish Clinical Director reports not having sufficient radiologists to deliver safe and effective patient care
- Scotland spends the least of any UK nation on managing excess reporting requirements, at £3.69 per capita
- The number of locums in Scotland declined by 18% in 2023–24
- Residents comprise 31% of the Scottish CR workforce – above the UK average
- Scotland has 10.2 IR consultants per million population – lower than the UK average.

Wales

- Wales has a 32% consultant workforce shortfall, the highest of any UK nation
- 57% of Welsh health boards leave reports unreported, the highest of any UK nation
- Wales has 9.7 radiologists per 100,000 population, the fewest of the four nations
- With 5% forecast annual growth to 2029, the Welsh consultant workforce is expected to grow more rapidly than the other UK nations. This is due to the strength of Wales' training pipeline
- Wales spends the most on insourcing, at £20,824 per CR consultant
- The number of locums in Wales grew by 57% from 2023–24
- Residents comprise 32% of the CR workforce in Wales – the highest proportion in the UK
- Welsh full-time CR consultants have 2.3 SPAs on average, which is the highest figure in the UK
- Wales has 9.9 IR consultants per million population – the fewest in the UK.

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