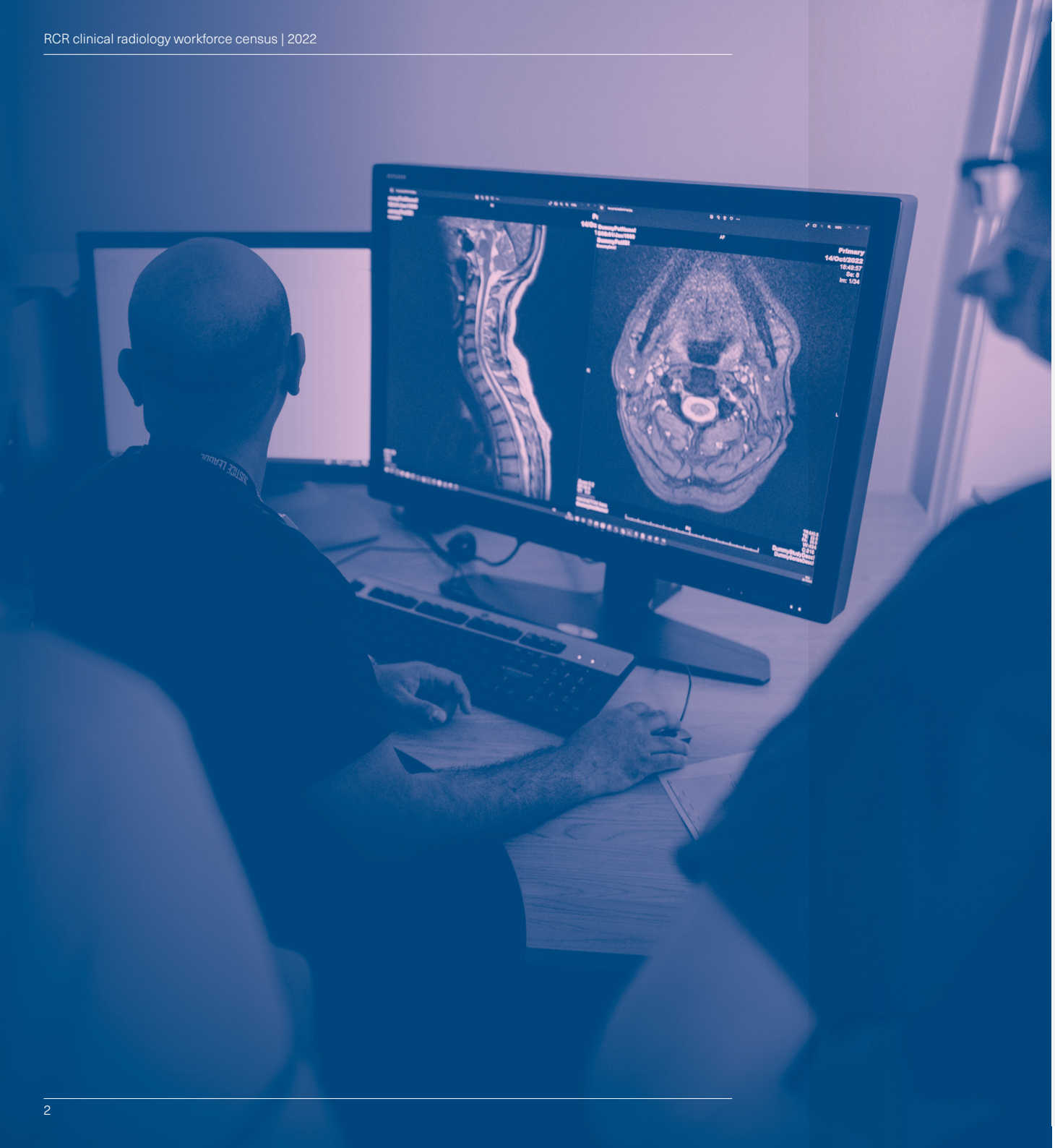
Clinical Radiology

The Royal College of Radiologists

# Clinical Radiology Workforce Census 2022







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# Foreword

Clinical radiology is at the heart of modern medical treatments, impacting virtually every aspect of medical healthcare.

Diagnostic activity in the NHS has soared in recent years, with demand for CT and MRI scans in particular growing by over 5% each year.[1] The UK's growing and ageing population means a greater number of people are living with a health condition; to best support our patients and reduce pressure on the NHS, conditions need to be detected and treated at the earliest stage.

Recognition that early diagnosis is critical to improving patient outcomes, coupled with the need to catch up with the post-COVID backlog, means that we will continue to see a higher demand for imaging services and radiologists in the future. These unprecedented levels of activity are having a major impact on our services, particularly on waiting times for appointments and delays in diagnoses, resulting in delayed treatments.

Similarly, shortages in interventional radiologists, who provide vital lifesaving treatments which are much less invasive than traditional surgical procedures, means that many departments are unable to deliver interventional radiology (IR) interventions or provide 24/7 lifesaving cover, creating a postcode lottery of care across the UK.

Put quite simply, we do not have the workforce to manage the level of demand we are seeing today. In 2022, as waiting lists for scans rocketed, the clinical radiology (CR) workforce grew by just 3%. While the number of consultants joining the workforce has remained in line with the five-year average, the number of consultants leaving is considerably higher. Concerningly, 76% of consultants (whole time equivalent (WTE)) who left the workforce in 2022 were under the age of 60.

There is an urgent need to invest in the radiology workforce with a targeted workforce plan. This should involve recruiting and training more radiologists,

> The current situation is unsustainable, putting patients and healthcare staff under considerable strain.





as well as improving working conditions and offering career development opportunities to retain senior colleagues and other professionals involved in imaging services.

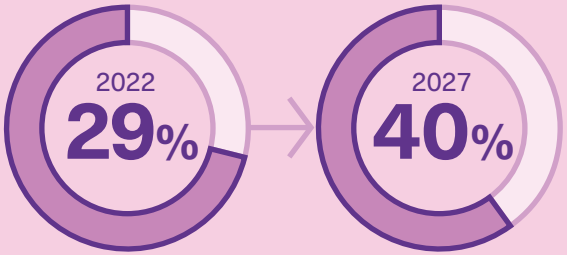
The future of radiology is an exciting one. Innovations in artificial intelligence (AI) and IR present an important opportunity to provide exceptional patient care, improving outcomes for those being treated as well as the wider health system. However, these technologies will not replace the radiology workforce, but require even more highly skilled professionals. Failing to invest in the workforce today will doom to failure any benefits of future innovations.

The NHS in each UK nation is at a critical turning point. If governments want to achieve their ambitions of bringing waiting lists down, diagnosing health conditions at an earlier stage and discharging patients from hospital sooner, the radiology workforce must be a priority.

**Dr Raman Uberoi,**
Medical Director for Professional Practice, Clinical Radiology

# Key statistics

The UK has a 29% shortfall of clinical radiologists, which will rise to 40% in five years without action.




By 2027, an additional

**3,365**

clinical radiologists will be needed to keep up with demand for services.

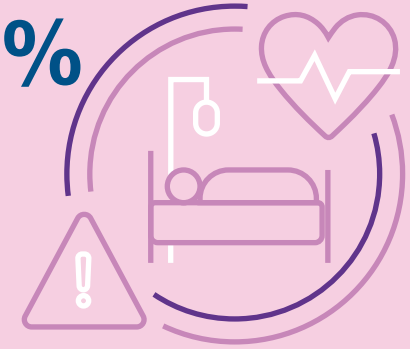
Health systems spent

**£223m**

managing excess reporting demand – equivalent to **2,309** full time consultant positions.

**90%**

of clinical directors are concerned that workforce shortages will impact patient safety.



**100%**

of clinical directors are concerned about staff morale and burnout in their department.

**90%**

of clinical directors who work with local diagnostic centres said that reporting scans for local diagnostic centres had increased their workload.





**79%**

of clinical directors are concerned that shortages in IR consultants are causing patients to receive more invasive treatment.

**Only 48%**

of trusts can provide adequate 24/7 interventional radiology services.

**Workforce**

- The UK has a 29% shortfall of clinical radiologists, which will rise to 40% in five years without action.
- By 2027, an additional 3,365 clinical radiologists will be needed to keep up with demand for services.
- The workforce grew by just 3% in 2022.
- In 2022, the radiology workforce grew by 113 WTE CR consultants and 15 IR consultants.
- 183 consultants (WTE) left the workforce in 2022, above the five-year average of 151.
- 76% of consultants (WTE) who left in 2022 were under 60.
- The average age of those leaving has dropped from 58 in 2020 to 51 in 2022.
- Across the UK, there is a 9% vacancy rate but a 29% shortfall, meaning not enough training posts are being funded to meet demand.
- 52% of vacancies have been open for 12 months or more.

**Impact of workforce shortages**

- 98% of clinical directors are concerned about the impact of shortages on backlogs and delays.
- 90% are concerned that workforce shortages will impact patient safety.
- Only one in four (24%) said they had enough staff to deliver safe and effective patient care.
- 100% of clinical directors (CDs) are concerned about staff morale and burnout in their department.
- 79% of CDs are concerned that shortages in IR consultants are causing patients to receive more invasive treatment.
- Only 48% of trusts can provide adequate 24/7 interventional radiology services.

**Cost implications**

- Health systems spent £223 million on managing excess reporting in 2022, equivalent to 2,309 full-time consultant positions.
- 94% of departments outsource scans to private providers.

**Local Diagnostic Centres (including Community Diagnostic Centres (CDCs))**

- 90% of clinical directors (who work with CDCs) said that reporting scans for local diagnostic centres had increased their workload.
- Almost half (48%) said the increase in their workload was unmanageable.

**Inequalities in care**

- While London has a 13% shortfall of consultant clinical radiologists, the North of Scotland has a 44% shortfall, and North and West Wales has a 51% shortfall.

# Summary of recommendations

## Recruiting more doctors into the system

1. To keep pace with the rising demand for radiology services, the NHS in each nation should introduce and sustain medical school and post-graduate training places and clinical radiology specialty training posts, targeted in areas with the greatest shortages and long-standing vacancies. These must be matched with a rise in training capacity to accommodate training, and measures should be funded accordingly.
2. The Department of Health and Social Care, and equivalent bodies in each nation, should review the funding of these posts. Ideally in the future, these should be fully funded directly to make it attractive for centres to train. In the interim, NHS trusts and health boards should continue to fund the remaining 50% of training post costs.
3. Health services in each nation should work with The Royal College of Radiologists (RCR) to develop a toolkit to support radiology departments in making business cases to their trust or health board to secure funding for training posts and communicate the benefits of taking on trainees.
4. NHS trusts and health boards should utilise the Global Radiologists Programme to employ international staff on an 'earn, learn and return' basis, to manage demand in the short term and expand capacity within departments.
5. The General Medical Council (GMC), in line with the Health and Social Care Committee's recommendation, should undertake a review of the Certificate of Eligibility for Specialist Registration (CESR) process, to enable international recruitment where appropriate.





## Expanding training capacity and professional development

6. Trusts and health boards should ensure that every doctor, including specialty and specialist (SAS) doctors and those working less than full time (LTFT), has 1.5 supporting professional activities (SPAs) protected in their job plan for non-clinical commitments.
7. Health services in each nation should work with the RCR to develop pilot training programmes for healthcare professionals to upskill in areas identified as having significant capacity shortages and where the backlog of care is high. The RCR's Credential in Breast Disease Management and Credential in Interventional Neuroradiology (Acute Stroke) are important examples of this.
8. Health services in each nation should promote the greater use of consultant team working and skill mix within radiology departments and consider what mechanisms can be put in place for local systems to share examples of best practice across the country.
9. NHS England and the RCR should co-develop a flexible portfolio training (FPT) programme, which protects 20% of time in a doctor's job contract for non-clinical development, for clinical radiology which should be made available in areas with long-standing vacancies or low staff retention rates and be embedded in each nation's health system.

## Retaining existing clinicians and healthcare professionals

10. Radiology departments should support the greater use of LTFT working to provide a more supportive working environment and to help minimise early retirement. However, the impact of work capacity loss must be factored into future workforce planning.
11. The RCR should develop guidance on how job plans can be adapted for those nearing retirement, including by reducing on-call commitments, and radiology departments should promote this approach to senior consultants.
12. NHS trusts and health boards should fund, and hospitals make available, a range of measures for staff to feel supported at work, including effective IT infrastructure and pastoral care initiatives.

## Securing infrastructure which supports staff to carry out their work

13. The UK government should commission the National Institute for Health and Care Research (NIHR) to fund research on the potential role of AI, including on health economics, and how it will support clinicians and reduce workload pressures.
14. Imaging networks should accelerate their work to date on developing IT systems and image-sharing technologies which underpin their capability to share digital images in real-time.
15. Health services in each nation should urgently audit relevant equipment, and ringfence capital resources, to invest in newer, faster equipment when required.

## Investing in interventional radiology (IR)

16. NHS England should streamline the process for how IR data is collected and recorded, and invest in this to enable accurate data collection. This will support radiology departments in making the case for prioritisation of IR interventions within their trust.
17. Trusts and health boards should urgently expand access to day case facilities for IR procedures to work through the backlog and deliver less invasive care for patients.





# Introduction

This is the 15th annual RCR clinical radiology census report - presenting a comprehensive picture of the clinical and interventional radiology workforce as it stood in October 2022.

We are hugely grateful to all those who took the time to provide this information. Once again, we had a 100% response rate, enabling us to speak decisively about the state of the radiology workforce across the UK.

This data has been analysed and presented to highlight key challenges, trends, and opportunities for supporting the workforce today and in the future. Given the predominance of data from England, some of the recommendations in this report have been tailored towards the government and NHS in England, however, they should be applicable across all four nations in the UK.

The data shows a stark state of affairs but with sufficient forward planning, ambition, collaboration and funding, it can be resolved. The RCR is calling on the government and NHS in each of the four nations to take control of the workforce crisis, support our doctors, and strive for better patient care.

# Workforce growth is not keeping pace with demand

Diagnostic services now form part of 85% of clinical pathways.[2] The NHS in England spends over £6 billion on diagnostic services and carries out an estimated 1.5 billion diagnostic tests each year.[2]

## Levels of diagnostic activity have risen substantially in recent years

- In recent years, CT and MRI scanning activity has risen by over 5% per annum.[3]
- Demand for diagnostics is rising faster than that for healthcare services as a whole, typically rising at between 2-3% per annum.[1]

Rising demand can be explained by the UK's growing and ageing population living with more complex health conditions, national ambitions for the earlier diagnosis of cancer and other conditions and increasing numbers of clinical guidelines being updated to include scanning and new innovations.

As a result, the number of patients waiting for a scan has grown substantially, many of whom are waiting more than six weeks, the operational standard set by NHS England. The target of 99% of patients being seen within this timeframe has not been met since February 2017.

- In December 2022, there were 104,000 people waiting over six weeks for a CT or MRI scan.[4]
- 23% of the total number of people waiting for a test were waiting over six weeks. This compares to 3% of patients waiting pre-pandemic, in December 2019.[4]

This trend is reflected across the devolved nations. In December 2022:

- In Wales, 34% of those waiting for a CT or MRI scan had been waiting over the operational standard of eight weeks.[5]
- In Scotland, 48% of those waiting for a radiology test had been waiting longer than six weeks.[6]
- In Northern Ireland, 27% of those waiting for a CT scan had been doing so for between 9-26 weeks. 8% had been waiting over 26 weeks.[7]
  - 41% of those waiting for an MRI scan had done so for between 9-26 weeks, and 12% over 26 weeks.[7]

The increased emphasis on early detection means that more population-level screening programmes are being introduced, meaning a surge in initial imaging services and further interventions as a result of their findings.





**183** consultants (WTE) left the workforce in 2022.

**76%** of consultants (WTE) who left the workforce in 2022 were under 60

We are **1,774** consultant clinical radiologists short of meeting demand for services.

In 2022, the consultant workforce grew by just **3%**

## Service demand consistently exceeds workforce capacity

- Across the UK, there are 4,745 WTE consultant and SAS-grade radiologists working in the NHS.
- In 2022, the consultant workforce grew by 113 consultants (WTE), a growth of 3%.
- The CR workforce has a 29% shortfall, meaning we are 1,774 consultant clinical radiologists short of meeting demand for services.
- Without action, there will be a 40% shortfall of radiologists by 2027.

Slow workforce growth can be explained by a surge in consultants leaving the NHS, which is not being matched by a sufficient increase in consultants joining to meet demand.

- 183 consultants (WTE) left the workforce in 2022, above the five-year average of 151.
- 76% of consultants (WTE) who left the workforce in 2022 were under 60.

The 3% growth of the workforce is notably below the average annual growth of 5% over the last five years.

Within the next five years:

- One in five of the total CR workforce (WTE) is expected to retire
  - Nearly 1 in 3 (29%) chest/lung radiologists are expected to retire
  - 1 in 4 (24%) oncological radiologists are expected to retire

In most NHS trusts and health boards vacancies exist, but they are unable to fill these positions.

- There are 427 vacancies (WTE) across the UK, representing a 9% vacancy rate.
- 52% of vacancies have been open for over a year.

Not enough doctors are being trained to meet future demand for imaging services, and there is an insufficient number of training posts available across the country. Trusts are often unwilling to fund the 50% of costs for these posts.

Trainees bring significant benefits to trusts. They contribute vital reporting and interventional capacity, saving money which would previously go to outsourcing companies. In addition, they participate in audits, research, teaching and support quality improvement projects. By 2030, investing in clinical radiology and oncology trainees across the UK could save the NHS £420 million.[8]

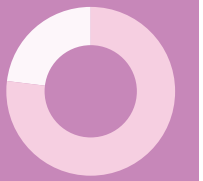
Further work is needed to promote the value of bringing new trainees into the system, and departments should be supported in making this case to their health system board. While it is difficult to hire qualified radiologists, this does not reflect a lack of interest in the career path. For every CR training post, there are approximately ten applicants. In 2021, Health Education England (HEE) part-funded 100 additional training posts. However, 16 of these posts are yet to be taken up by NHS trusts, either due to lack of capacity to train, or the inability of health boards and trusts to fund the remaining 50% of these posts.

**20%**

Vacancy rate in Northern Ireland, up 7% in 2022.

**77%**

of vacancies in Scotland have been open for over a year.



## Role of artificial intelligence (AI) in meeting demand for services

AI brings immense opportunity for the radiology workforce. It will play an important role in supporting the radiology workforce, enabling higher standards of care, increasing efficiency and consistency, and giving access to increasingly complex data to support clinical decisions.

To reap the benefits and avoid expensive pitfalls, staff must be trained in the implementation and use of these new technologies which may enable the detection of more pathologies, more accurate diagnosis, a reduction in routine, repetitive tasks, and more streamlined workflows. Failing to invest in the staff that will work with this technology would be short-sighted, making it more likely that the opportunities afforded by AI are not seized.

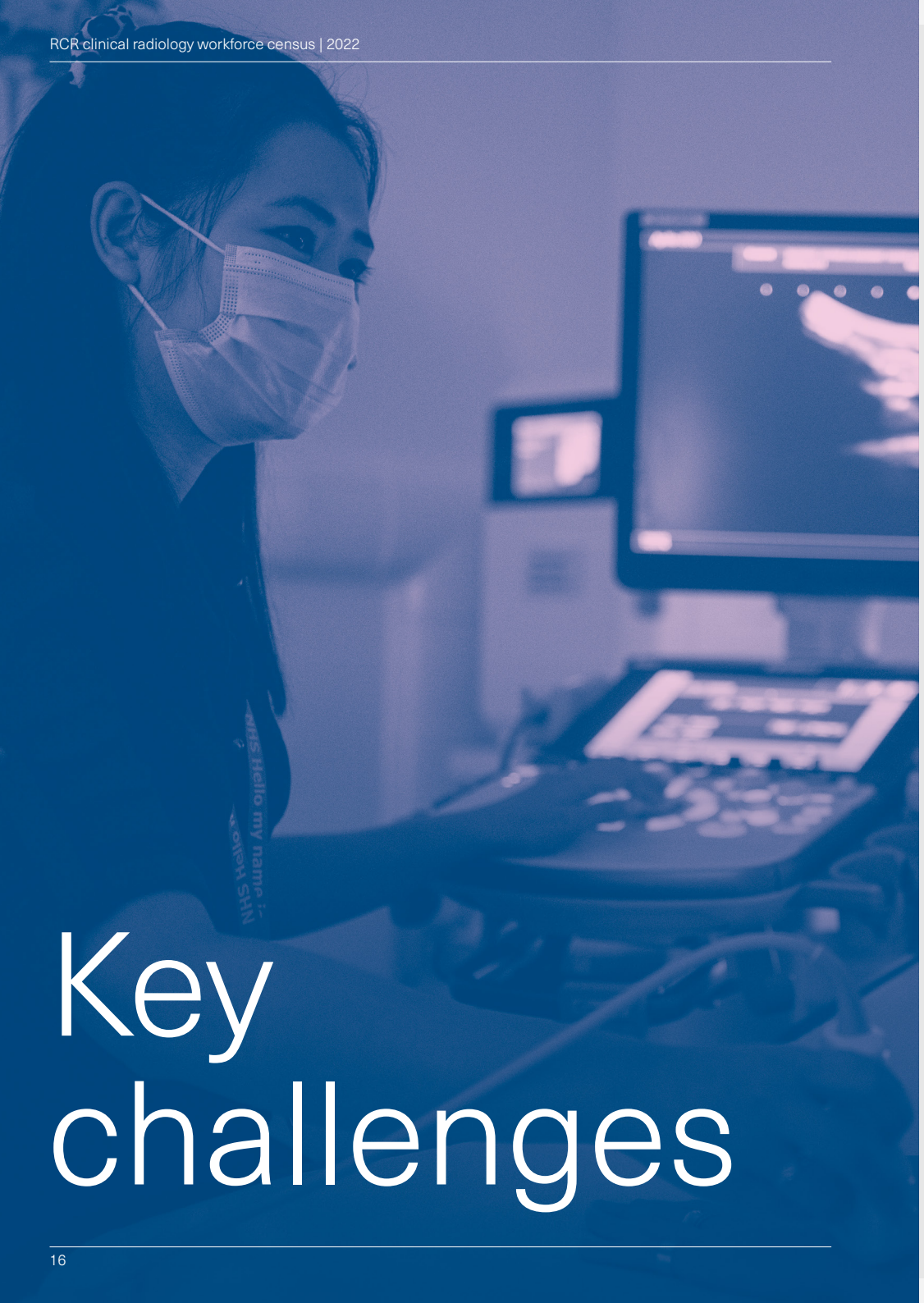
> We have no radiologist vacancies [but] have a significant shortfall in radiologists, and plenty of trainees we would employ if we had the posts.





By 2030, investing in clinical radiology and oncology trainees across the UK could save the NHS [8]

**£420m**




# Key challenges





# Impact on patients

All patients requiring treatment need a diagnosis. Shortages mean that doctors are struggling to keep on top of reporting the high volume of scans on time, leading to delays in patients receiving their initial diagnosis and subsequently, specialist care and treatment.

98% of clinical directors are concerned about workforce shortages impacting backlogs and delays. 60% said this was a high concern, a 13 percentage point increase since 2021. 90% of clinical directors are concerned that workforce shortages will patient safety.

All patients requiring treatment need a diagnosis. Shortages mean that doctors are struggling to keep on top of reporting the high volume of scans on time, leading to delays in patients receiving their initial diagnosis and subsequently, specialist care and treatment. Delays in starting treatment can have a direct impact on patient outcomes. For each month a patient is delayed in starting cancer treatment, the risk of death increases by 10%.[9] The increasing pressure may lead to an increase in reporting errors, risking patient safety.

*"Demand and expectations grow but workforce does not match this. The result is longer waiting times for scans/reports and increased unhappiness from patients and clinicians. We are expected to do more in the same time and this can only lead to fatigue, errors and burnout".*

*"Patients experience longer waits for scan appointments and reporting times are longer. The pressure of the workload means there is a risk reports are rushed and errors occur."*

**Only 24% of clinical directors**

said that their radiology department had sufficient consultant clinical radiologists to deliver safe and effective levels of patient care.

**2020 → 36%**

**2021 → 30%**

**2022 → 24%**

## Lack of sub-specialty expertise

Sub-specialisation enables a radiologist to become an expert in one or two specialist areas, leading to deeper knowledge and experience, and better care. Over the past five years there has been a rise in consultants in nearly all sub-specialities (aside from imaging IT). However, the growth has not been distributed equally; the average growth of oncological radiologists over the past five years has been 1% compared to 11% for uroradiologists.

This has a potentially major impact on patients. Over the past five years, the breast radiology workforce has grown by just 2.7%, meaning that services will be unlikely to cope with any increase in demand for mammograms. Breast cancer patients are more likely to face a delay in finding out their results, preventing them from starting treatment as a result.

**9 in 10**

clinical directors said they were concerned about shortages impacting sub-specialty expertise.





# Impact on staff

A major consequence of workforce shortages is its impact on the staff delivering services.

*"Morale is poor throughout the department and staff are burning out with the expectation to do more and more with no extra resources."*

- Almost half (49%) of clinical radiologists feel burnt out.
- 100% of clinical directors are concerned about morale, stress and burnout among their workforce.

Burnout contributes to fatigue, and there is evidence to suggest fatigue, especially visual and physical, is relatively common among radiologists, and could result in medical errors.[10]

*"Radiologists are feeling burnt out and stressed...many are retiring early due to the exponential increases in imaging without a corresponding increase in workforce."*

The impact of burnout and fatigue may be reflected in higher consultant attrition rates.

- In 2022, 183 WTE CR consultants left the workforce, compared to the five-year average of 151.
- The average (median) age of those leaving has also dropped significantly – from 58 in 2020 to 51 in 2022.

Without change, higher attrition rates will become more likely. When consultants leave, their workload is often redistributed among the remaining staff, compounding pressure on doctors.

Home reporting may be a useful tool in managing burnout, allowing greater flexibility for where work is carried out. Over the past two years, the ability to report from home has risen from 50% in 2020 to 80% in 2022. Nearly one in five reporting sessions are now done so remotely.

However, there need to be clear boundaries within departments to ensure that doctors are not taking on additional, unpaid work out of hours, to the detriment of their wellbeing.

The average (median) age of those leaving has also dropped significantly:

2020 **58** → 2022 **51**

**61%**

of radiologists are considering leaving the NHS or reducing their hours

Home reporting sessions should be fairly distributed among radiologists, and there should be a consideration of the effect of home reporting on training capacity.

Many CRs believe that being valued by the health systems they deliver for is important for the situation to improve.

Currently, just

**57%**

of NHS staff in England would recommend their organisation as a place to work, and approximately one in five (21%) said that every working hour is tiring for them. [11]

Health services must ensure that they are looking after their employees.

Radiologists critically need reliable and fast IT systems, physical equipment, and supportive infrastructure to carry out their jobs. A lack of investment in diagnostic imaging equipment has resulted in disparities across the UK. While some providers have the latest equipment, others have apparatus that is over ten years old. Slow and cumbersome IT systems and networks can be frustrating, increasing stress on doctors, reducing workload capacity and efficiency, and producing poorer patient outcomes due to delayed diagnosis.

Health services should also consider the environment in which staff are working – people value having places to rest and relax, share time with colleagues, and access food and drinks in a workplace.






# Impact on the service

As doctors take on more clinical responsibilities to manage waiting lists, service development is often deprioritised.

*"Service improvements are ad-hoc, minor and occasional when time allows."*

98% of clinical directors said workforce shortages were limiting service improvements. In doctors' contracts, time should be protected for supporting professional activities (SPAs), which cover time for medical training, clinical research and embedding new innovations and national policies. Even for those who do, this time is often overridden by direct clinical commitments.

*"We have so little time (and other specialties are similarly constrained) that we cannot make any improvements. The system cannot cope with any changes as alterations downstream can't be accommodated."*

## Less than full time (LTFT) contracts

Many doctors work less than the traditional 40 hour (or 10 programmed activities (PAs)) working week. The ability to flex hours is often considered a high priority to improve the working environment, and the RCR strongly supports hospitals in enabling LTFT working to offer more flexible job patterns and minimise early retirement.

However, employers also need to consider the associated capacity loss on the rest of the department. 33% of clinical radiologists work on a less than full time basis, representing an 8% loss in workforce capacity.

Often those working LTFT have fewer SPAs in their job contracts, meaning the responsibility of service development is placed on full-time staff.

- In 2022, 44% of doctors working LFTT did not have 1.5 SPAs in their job plan.

This also limits the capacity within departments to train the next generation of doctors. All doctors should have a minimum of 1.5 SPAs in their contract, although the RCR suggests a typical job plan should include 2.5 SPAs. We would encourage employers to protect more time within job plans for SPAs to support

**19%**

of consultants do not have the recommended 1.5 SPAs in their job contracts.

medical training, service improvement, clinical research and quality standards – all of which are central to ensuring patient safety. Employers should also consider the potential to expand the role of older consultants in medical training and other non-clinical roles, who may otherwise be considering leaving the profession due to the pressure and overwhelming demand of clinical care.

## Specialty and specialist (SAS) doctors

Specialty and specialist (SAS) doctors differ from consultants in the sense that they have not chosen to progress into higher specialty training, however, they still have at least four years of postgraduate training, two of which are in a relevant specialty.

Most SAS doctors (90%) are trained outside the UK and UK health services, which means they may have different priorities for development compared to UK-trained doctors. A major reason cited by SAS doctors for why they leave the NHS is due to barriers in career development and a lack of opportunity to progress.[12] SAS doctors are contractually entitled to a minimum of 1 SPA, however, the RCR actively encourages NHS trusts and employers to give SAS doctors greater SPA time to support with non-clinical commitments as with consultants.

The SAS radiologist workforce has grown by an average of 13% per year over the last five years. The growth of this group represents an important opportunity for SAS doctors to further support radiology departments in service development and medical training, while enhancing their own careers. However, comparative to other specialities, SAS doctors still make up a relatively small proportion of the total workforce. SAS staff make up 20% of the total NHS workforce in England and only 3% of the clinical radiology workforce.[13]

There were **116** WTE SAS radiologists in 2022, equivalent to 3% of the total workforce.

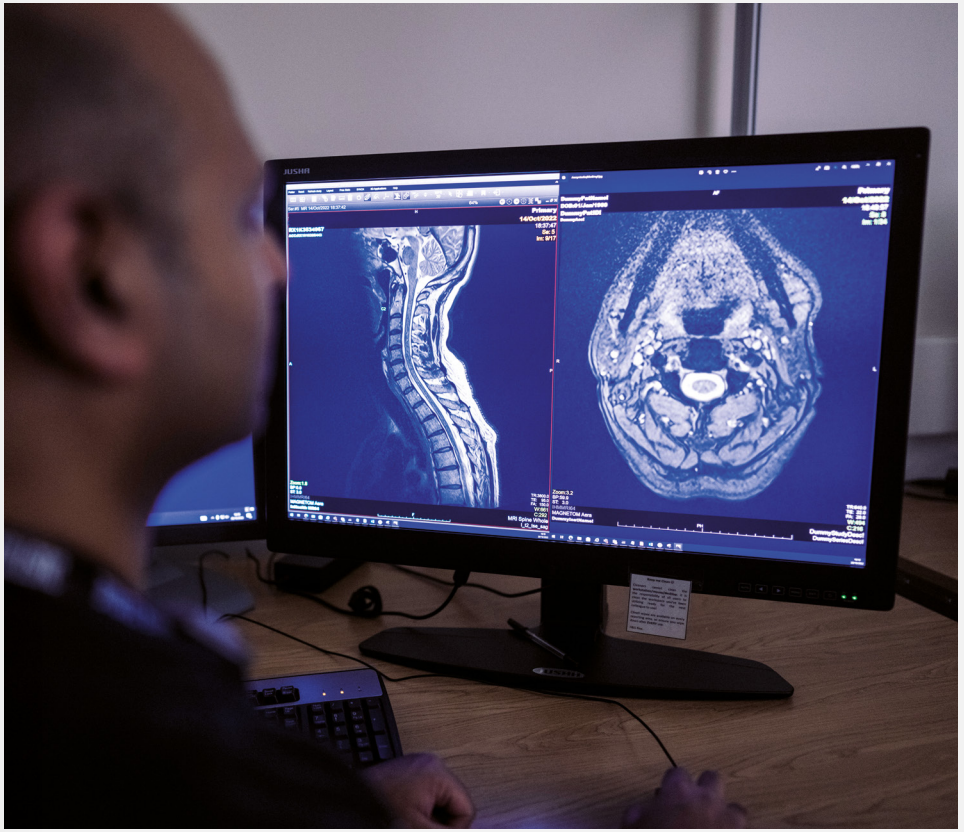


The SAS radiologist workforce grew by **21** doctors (WTE) in 2022.

Given the potential to expand the role of SAS doctors in service development, more work needs to be done to position clinical radiology as an attractive career path for this group of staff, such as the development of a flexible portfolio training (FPT) programme for clinical radiology.







The FPT initiative was initially launched in 2016 following a working group in which medical registrars reported that protected time for professional development could improve the quality of specialty training.[14] This scheme protects one day a week (or 20% time equivalent) within training contracts for professional development. FPT manages to meet the demand for flexible working, while also supporting hard to recruit specialities in hard-to-fill areas. Given the high prominence of international medical graduates (IMGs) in the SAS workforce (90% are trained outside the UK), the CESR process should be reviewed by the General Medical Council (GMC) with the intention to simplify the procedure, to attract more SAS doctors to the profession and within a shorter time scale to traditional training routes.

# Widening inequalities

Across the UK, there are clear disparities in the number of radiologists per 100,000 of the population, as well as in vacancies, use of locum staff, and projected shortfalls.

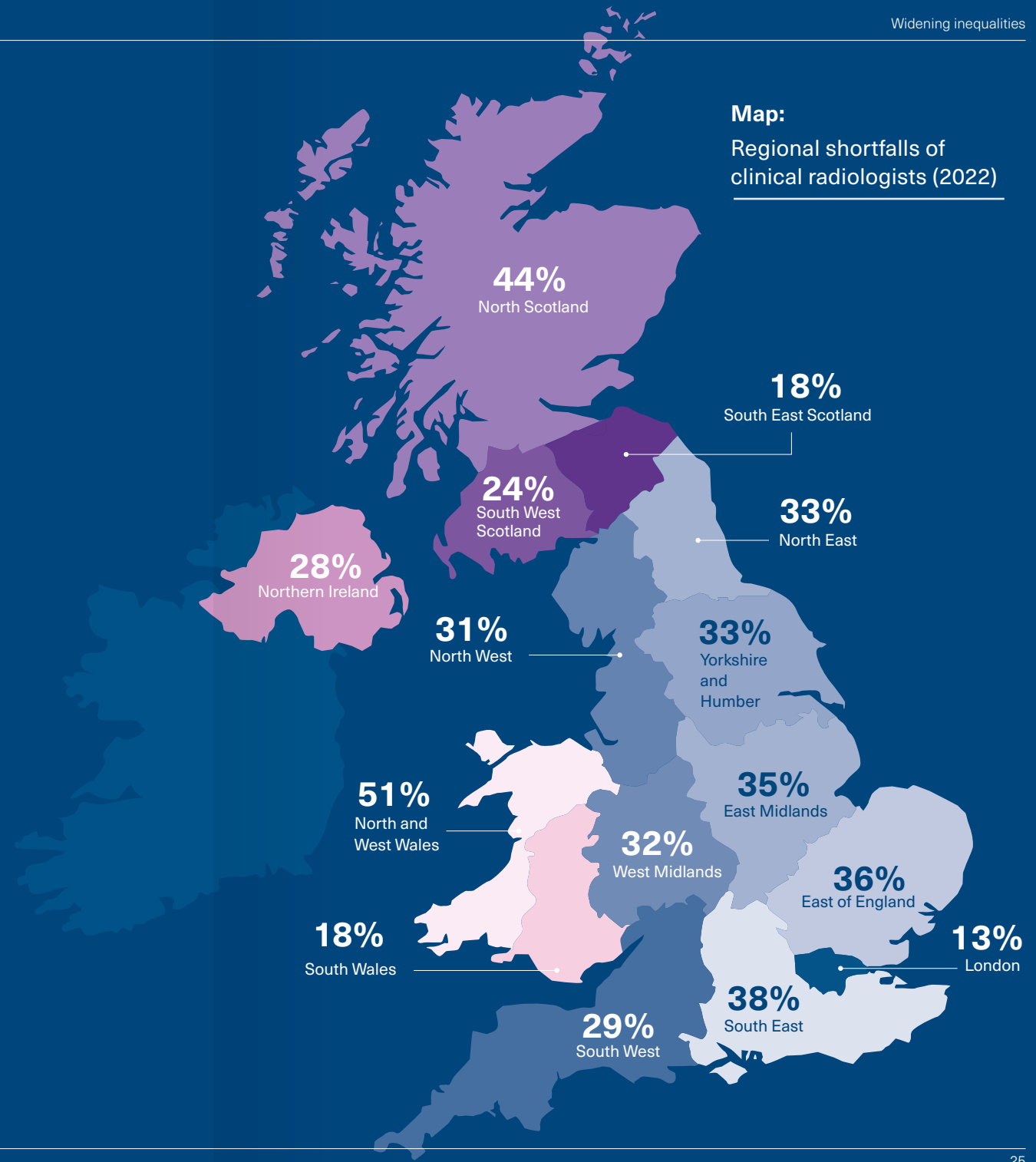
By 2027, it is projected that:

- The South West will have a 45% shortfall of CR consultants, compared to 27% in London.
- North Scotland will have a 53% shortfall of CR consultants, compared to 28% in South East Scotland.
- North and West Wales will have a 59% shortfall of CR consultants, compared to 21% in South Wales.

> We have chronic shortages of radiologists and a chronic shortage of money to appoint radiologists, while in other trusts there are always satisfactory numbers of radiologists. Why?







# Local diagnostic centres

In recent years, governments in each of the four nations have introduced diagnostic centres to bring services closer to the community, meaning people no longer need to travel to hospitals to receive a scan.

These scans are separate from urgent referrals, meaning shorter waiting times for non-urgent cases, and a reduced risk of appointments being cancelled at the last minute.[15] New centres are designed to detect a greater number of conditions at an earlier stage and increase capacity in acute diagnostic departments by undertaking elective imaging elsewhere. Many of these diagnostic centres are still in the early stages of development. For Scotland and Northern Ireland in particular, these centres are in their infancy and the governments have plans to roll them out further in upcoming years. Across the UK, 38% of trusts and health boards are working with a local diagnostic centre.

In England, trusts are more likely to be working with a diagnostic centre than in the other nations.

| ENGLAND | WALES | NORTHERN IRELAND | SCOTLAND |
|---|---|---|---|
| **41%** working with a Community Diagnostic Centre (CDC) | **14%** working with a Rapid Diagnostic Centre | **20%** working with a specialist clinic | **25%** working with an Early Cancer Diagnostic Centre |





## Impact of diagnostic centres on the workforce

While diagnostic centres have increased the physical capacity to deliver more imaging services, there has not been a similar expansion of the workforce to meet the rise in reporting demand.

*"[There are] clear concerns that it cannot or will not be staffed appropriately and that the limited workforce will be moved or stretched to cover this."*

*"CDCs have created a significant amount of extra work without the additional resource to report."*

The efficacy of diagnostic centres will ultimately rely on sustained funding for equipment, a robust and well-resourced infrastructure (including IT) and sufficient staff, both clinical and non-clinical.

**89%** of local diagnostic centres are staffed with existing trust employees.

**90%** of services said that reporting scans for CDCs had increased their workload.

**48%** said the increase was unmanageable.

# The cost of workforce shortages



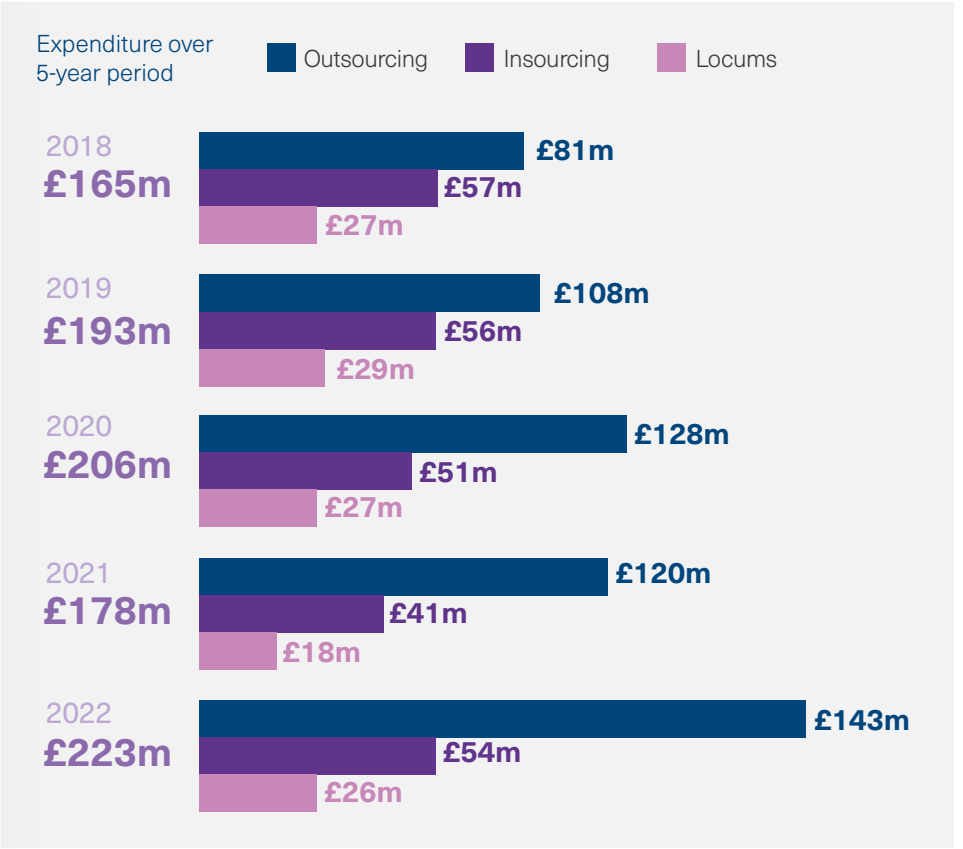


## Overview

Due to significant capacity constraints, trusts and health boards are having to rely upon expensive alternatives to cope with the increased demand for reporting scans.

**99% of clinical directors have been unable to meet reporting requirements in their departments without incurring additional costs.**

In 2022, managing excess reporting demand cost the NHS £223 million. £45 million more was spent in 2022 than in 2021 on short-term solutions.



## Outsourcing 1

Most radiology departments rely on external companies to report scans.

Outsourcing has become integral to delivering radiology reporting. Although welcome, this does not cover many other aspects of the work undertaken within departments by NHS consultants. It may also increase workload due to high levels of re-reporting and reduces training opportunities for trainees.[16]

Increasingly, trusts and health boards are being turned away by outsourcing companies, who no longer have the capacity to report the volume of scans being shared by NHS departments.

*"Outsourcing is costing us a small fortune. In addition to the usual negatives about using outsourcing, we are now finding that our outsourced service is itself maxed out in capacity."*

Outsourcing is not a long-term solution for the NHS, but trusts are often unwilling to fund additional trainee posts due to high outsourcing budgets.

*"We are sending over 100 scans a day to outsourcing companies which should be able to fund 5-7 further consultants. I'm told that this outsourcing money cannot be switched to funding posts."*

**£143m** was spent on outsourcing.

**93%** of departments relied on outsourcing to manage excess demand for reporting.





## Insourcing 2

Insourcing supports radiologists employed within a trust to report images outside of their core hours, which otherwise would have been outsourced to a third party at a higher cost.[17]

- £54 million was spent on insourcing across the UK in 2022.
- £49 million of this was spent in England, and £2 million each by the other three UK nations.
- 94% of trusts and health boards relied on insourcing to manage excess reporting demand.

However, doctors are increasingly hesitant to take on additional insourcing work – high levels of overall workload mean many cannot commit additional time. Poor IT and equipment can also limit home reporting and cause frustrations for staff.

## Ad-hoc locums 3

There are 422 CR locum consultants across the UK, making up 9% of the total workforce.

Locums are an expensive alternative. Despite the welcome increase in capacity, the growing reliance on locums in the workforce may place NHS staff under greater obligation to take on non-clinical commitments, since agency staff are not required to do so.

> We would rather be using this money to invest in our workforce, including training for the future generation of radiologists which are currently woefully under-supported.

## Radiographer reporting 4

While radiographers are trained primarily to carry out image acquisition, with additional training, some can also report on these images. Radiographer reporting is an important tool for managing demand and is associated with a range of service delivery improvements and enhanced team working.[18]

- 81% of radiology departments used reporting radiographers to report images.

However, chronic shortages also exist among the radiographer workforce too, limiting the use of effective skill mix.

*"There are consistently six WTE radiographer vacancies... [we are] struggling to find suitable candidates [and] consistently now using international recruitment".*

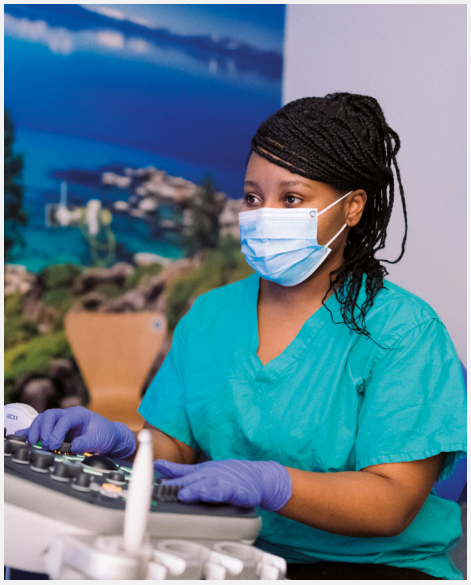
## Goodwill 5

**66%**

of radiology departments relied on staff goodwill to manage excess reporting.

However, relying on goodwill inevitably leads to low staff morale, increased burnout and fatigue, which may lead to accidental errors being made.

*"Goodwill is less [common] now. [There is a] palpable sense of individuals needing to protect themselves (fatigue/reporting errors) and not wanting to do more".*







## Imaging networks 6

Imaging networks were introduced to address workforce shortages, reduce the cost of outsourcing, and utilise reporting capacity. While imaging networks are in the early stages of development, fewer trusts and health boards have used them to manage excess reporting in 2022 compared to the previous year.

Imaging networks are most useful when neighbouring departments have excess reporting capacity and can support their local area. However, given the widespread staff shortages and rise in demand for services, very few departments have spare capacity to offer elsewhere. It is "difficult in practice for local imaging networks to help each other, as the peaks in demands of the service as well as the troughs of local reporting capacity are identical across sites."

Due to their infancy, IT systems may not be ready to facilitate a full service. Imaging networks should prioritise efforts to develop IT systems and technologies which underpin their capability to share digital images in real-time.

Decrease in departments using imaging networks to manage excess reporting demand:

2021 **13%** → 2022 **9%**

## Auto or unreported images 7

When radiology departments decide not to, or are unable to, provide referrers with a formal report, this is known as auto-reporting. The referrer then takes on responsibility for providing a report, or no report is produced.

- 52% of departments had auto reported or left scans unreported in 2022, compared to 40% in 2021.

When non-expert staff report images, patients are put at potential risk. According to the Care Quality Commission (CQC), this is especially a risk for chest and abdomen X-rays, where general medical training does not constitute adequate training.[18]

# Interventional radiology





## Overview

Interventional radiology (IR) procedures are image-guided surgical treatments, often performed on a day-case basis. IR procedures can replace many traditional open surgical procedures.

They are less invasive, reduce morbidity and mortality, and as they are performed under local anaesthesia, allow for more rapid patient recovery and hospital discharge.[20]

IR plays an important role in elective and emergency treatment, encompassing a range of procedures including stroke thrombectomy, haemorrhage control, venous access for chemotherapy, and interventional oncology surgery for solid tumours. [20]

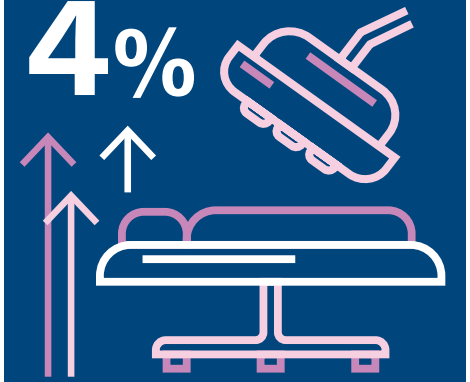
IR is difficult to code and there are many more errors in IR coding than in other medical areas. Hospital Episodes Statistics (HES) data, despite likely underestimating the number of procedures, shows that IR interventions have had an annual growth of 4% over the last four years (2018/19 – 2021/22).

However, the Diagnostic Imaging Dataset (DID) suggests there has been no increase in IR activity over the past two years, making it difficult to ascertain accurate levels across the nation.

There are several reasons why IR interventions may not be growing at the anticipated rate. These include the slow growth of the workforce, limited access to day case facilities, and a lack of ringfenced capital to quickly replace equipment when it fails, which all limit a department's ability to carry out procedures in a timely manner.

Over the last four years, IR interventions have had an annual growth of

**4%**



Shortages in the IR workforce limits the growth of the specialty. In 2022, the total IR workforce grew by 15 consultants (WTE) – a 2% growth. The growth of the workforce varies considerably between different IR sub-specialties. The Vascular IR workforce grew by 16 WTE consultants whereas the Neuro and Non-vasular IR workforce saw no growth and the Paediatric IR workforce shrank by one consultant.

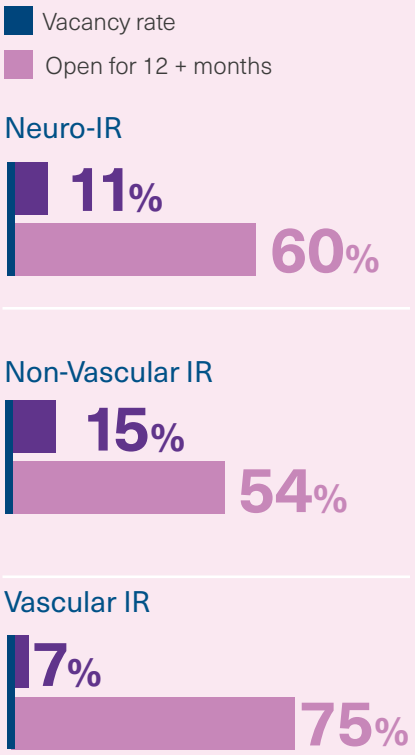
*"The main constraint on our IR service is the fact that we do not have enough IR consultants to match the demand for services."*

The number of consultants leaving the service has also risen considerably over the last five years. In 2022, 39 WTE consultants left the IR workforce, compared to 18 in 2021.

Finding well-trained IR consultants is a major challenge for many departments. The RCR recommends that a service needs six or more IR consultants to provide an effective and sustainable service, aiming for a 1:6 rota or 1:8 for health systems representing populations greater than one million. However, this is unachievable through existing staff alone. Job plans also need to reflect the needs of interventional radiologists in undertaking necessary clinical work such as ward care, outpatient clinics and data collection.

*"We have only one IR radiologist who is working on a goodwill basis for emergencies. [There is] no appetite from the trust to improve the service."*

Vacancies rates in IR are high and long-standing.




Shortages in the supporting nursing and radiographer workforce further limit an IR department's ability to undertake procedures.

**Finding available bed space within hospitals presents a further challenge**

Pressure in acute services means that finding bed space for IR procedures is not always possible. Hospitals rarely have dedicated IR beds.

- 17% of departments with IR services still do not have access to inpatient or day case beds.
- In Wales, 40% of IR teams do not have access to beds to perform procedures.

Many clinical directors said the limited access to beds prevents services from catching up with the backlog of services. IR procedures are often considered a low priority within hospitals due to a lack of understanding of the value of image-guided interventions, resulting in repeated cancellations.

**As a result, many services are not operating at the advised standard.**

- Nearly half (48%) of trusts and health boards have inadequate IR services – *Less than the required 1:6 rota or no 24/7 transfer procedures in place.*

IR is widely considered a vital clinical service in the management of emergency patients.[21] The inability of trusts to provide an adequate 24/7 service means that many sick patients are left at risk because there is no access to IR procedures out of hours.

- Only 1/3 (34%) of clinical directors felt they had enough interventional radiologists to deliver safe and effective patient care.
- 79% of clinical directors felt workforce shortages had caused patients to receive more invasive treatment.

Across the UK, there are 11.1 WTE IR consultants per million population. However, this varies significantly when looking at regional figures.

- In London, there are 16.2 IR consultants per million population, compared to 7.6 in the East of England.
- In the North of Scotland, there are 1.9 IR consultants per million population, compared to 12.2 in the East of Scotland.

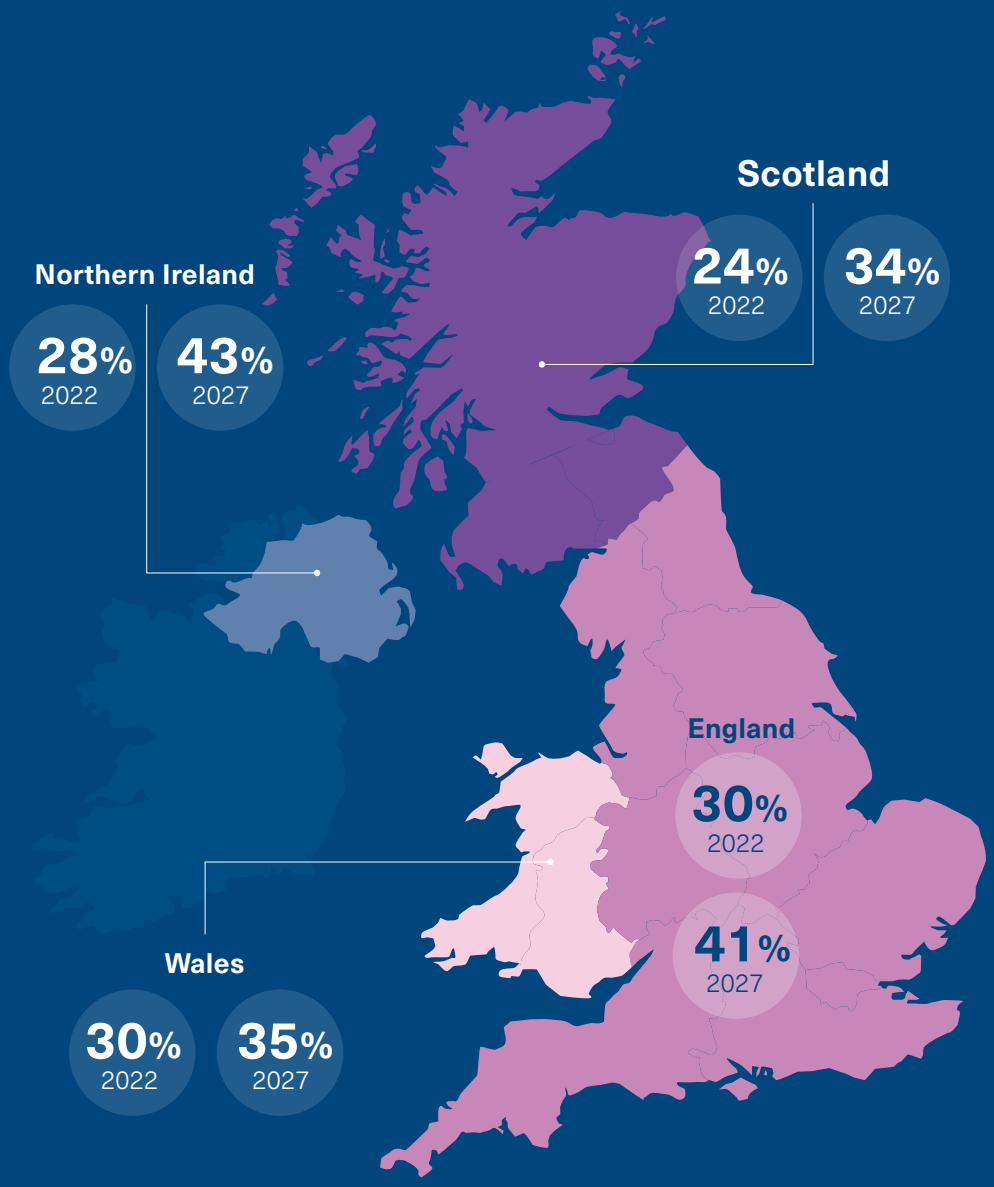
*"[The] constant stumbling block is money. [It] hampers patient care...there have been very significant near misses, and I am surprised a patient has not died as a result of the lack of cover out of hours. I suspect it is only a matter of time."*

Departments need more support from national healthcare bodies and royal colleges to make the case for prioritisation of IR procedures.

Median age of IR consultants leaving the service over a 5-year period

# The national picture

Estimated shortfalls of clinical radiologists – 2022 and 2027








## Wales

- There are 183 CR consultants (WTE) in the Welsh NHS. Compared to 2021 this is a rise of 3%.
- Wales saw a large rise in both the CR consultant vacancy rate – up by 6% to 14% – and in the proportion of vacancies unfilled for 12 months or more – up by 24% to 57% since 2021.
- Wales has fewer specialist CR consultants in 2022 than in 2021, with a drop from 33 to 30 specialists.
- Wales is the only nation for which there was an appreciable drop in LTFT working. 31% of CR consultants worked LTFT in 2021, compared to 26% in 2022.
- The number of SAS doctors in Wales has almost doubled in the past year from six to 11.
- Every single Welsh trust or health board relies on outsourcing to manage its excess reporting.

## Scotland

- There are 366 CR consultants (WTE) working in Scotland. This is a rise of 4% compared to 2021.
- Within Scotland, regional disparities can be stark. In the North of Scotland, the CR consultant workforce shrank by 2% in the same period.
- Scotland's CR consultant vacancy rate remains at 8%, but the proportion of vacancies open for 12 months has increased to 77%.
- Scotland is the only nation where fewer consultants left the workforce in 2022 than in the five-year average.
- Locums in Scotland make up 11% of the CR consultant workforce, which is the largest proportion of any nation.
- SAS doctors make up only 1% of the combined SAS and consultant CR workforce in Scotland, which is the lowest of any nation.
- No Scottish health board was able to meet its reporting requirements within staff contracted hours in 2022.
- As of 2022, all clinical directors in Scotland are concerned or highly concerned that patient safety will suffer due to workforce shortages.
- Scotland has the lowest coverage of homeworking capability, with only 42% of CR consultants and SAS doctors able to work remotely.

## Northern Ireland

- Northern Ireland is the only nation in which the CR consultant workforce shrank in 2021-22, falling by 11%. There are now 145 WTE CR consultants in the country.
- By 2027, it is projected that Northern Ireland will have a 43% shortfall of CRs, which is the highest rate in the UK.
- The vacancy rate for CR consultants in Northern Ireland rose sharply to 20% in 2022.
- However, the proportion of vacancies unfilled for 12 or more months fell by 6% to 50%.
- There was a large rise in the number of CR consultants leaving the workforce in Northern Ireland, with 15 leaving in 2022. This is an increase of 9 on the previous year.
- Northern Ireland is the only nation in which the number of locums fell since last year; they now comprise 10% of the consultant workforce, compared to 14% in 2021.
- None of Northern Ireland's trusts were able to meet their reporting requirements within staff contracted hours.
- The prevalence of auto-reporting and leaving examinations unreported has doubled in Northern Ireland since 2021, with 80% of trusts now using this method.
- Meanwhile, none of Northern Ireland's trusts in 2022 made use of imaging networks to manage reporting shortfalls. This is down from the 40% who did so in 2021.

## England

England makes up over 85% of the data submitted in the census reports, and therefore the trends closely reflect those highlighted in the UK's summary.





# So, what needs to happen?

The RCR is calling for each nation to implement a long-term, fully funded workforce plan, which includes independently verified workforce projections. Any strategy must include measures to address recruitment, training and retention.

# Recruiting more doctors into the system

## Expanding the UK workforce

To fill vacancies, fix the shortfall, work through the backlog of scans, and manage future demand for radiology services, more radiologists are needed in the health system. To achieve this, we need to train more doctors at every level, from medical school, postgraduate and specialty training.

We know that there are approximately ten applicants for each clinical radiology training post. Immediately expanding the number of specialty training posts is crucial for growing the radiology workforce in the short term.

Trainees are the doctors of the future. They also contribute huge amounts to departments, reporting scans, increasing capacity, and senior trainees can even assume insourcing responsibilities. Investing in trainees will save departments and governments money in the long run, by avoiding high costs spent on outsourcing, insourcing and locums.[9]

**1** To keep pace with the rising demand for radiology services, the NHS in each nation should introduce and sustain medical school and post-graduate training places, and clinical radiology specialty training posts, targeted in areas with the greatest shortages and long-standing vacancies. These must be matched with a rise in training capacity to accommodate training, and measures should be funded accordingly.

**2** The Department of Health and Social Care, and equivalent bodies in each nation, should review the funding of these posts. Ideally in the future, these should be fully funded directly to make it attractive for centres to train. In the interim, NHS trusts and health boards should continue to fund the remaining 50% of training post costs.

**3** Health services in each nation should work with the RCR to develop a toolkit to support radiology departments in making business cases to their trust or health board to secure funding for training posts and communicate the benefits of taking on trainees.





## Opportunities for international recruitment

Reliance on global recruitment should not be a long-term solution to the radiology workforce crisis, given higher IMG attrition rates and ethical concerns. 89% of the UK graduates who took up a licence to practice in 2015 were still licensed in 2021 – this was only the case for 66% of IMGs. [22]

However, in the short term there is scope to bolster the quality and volume of the UK healthcare workforce through global education and workplace exchanges.

In these programmes, IMGs are recruited for a short period of time (i.e., three years) on an 'earn, learn and return' basis. The UK's health systems can benefit from a global perspective and additional capacity to deliver services. International doctors can develop new knowledge and skills in the UK, before returning to implement positive developments in healthcare systems in their home country. To enable quicker international recruitment, the long and complex CESR process should be reformed.

**4** NHS trusts and health boards should utilise the Global Radiologists Programme to employ international staff on an 'earn, learn and return' basis, to manage demand in the short term and expand capacity within departments.

**5** The General Medical Council (GMC), in line with the Health and Social Care Committee's recommendation, should undertake a review of the Certificate of Eligibility for Specialist Registration (CESR) process, to enable international recruitment where appropriate.

# Expanding training capacity and professional development

To facilitate the increase in training posts, doctors will need the capacity to train these staff and departments will need the physical and technological capital.

Lack of capacity to train, both in terms of SPA time for delivery of training and physical capacity, is one of the major barriers to training posts being taken up by NHS trusts and health boards. In 2021, HEE part-funded 100 expansion posts to meet demand for scanning. 16 of these posts are yet to be taken up by NHS trusts, either due to a lack of capacity to train or unwillingness among trusts to fund these posts.

Similarly, doctors currently do not have the capacity for service development, clinical research and embedding change into the system, meaning that national-level ambitions will not be achieved.

**6** Trusts and health boards should ensure that every doctor, including SAS doctors and those working less than full time (LTFT), has 1.5 supporting professional activities (SPAs) protected in their job plan for non-clinical commitments.

**7** Health services in each nation should work with the RCR to develop pilot training programmes for healthcare professionals to upskill in areas identified as having significant capacity shortages and where the backlog of care is high. The RCR's Credential in Breast Disease Management and Interventional Neuroradiology (Acute Stroke) are important examples of this.

**8** Health services in each nation should promote the greater use of consultant team working and skill mix within radiology departments and consider what mechanisms can be put in place for local systems to share examples of best practice across the country.

**9** NHS England and the RCR should co-develop a flexible portfolio training (FPT) programme, which protects 20% of time in a doctor's job contract for non-clinical development, for clinical radiology which should be made available in areas with long-standing vacancies or low staff retention rates and be embedded in each nation's health system.





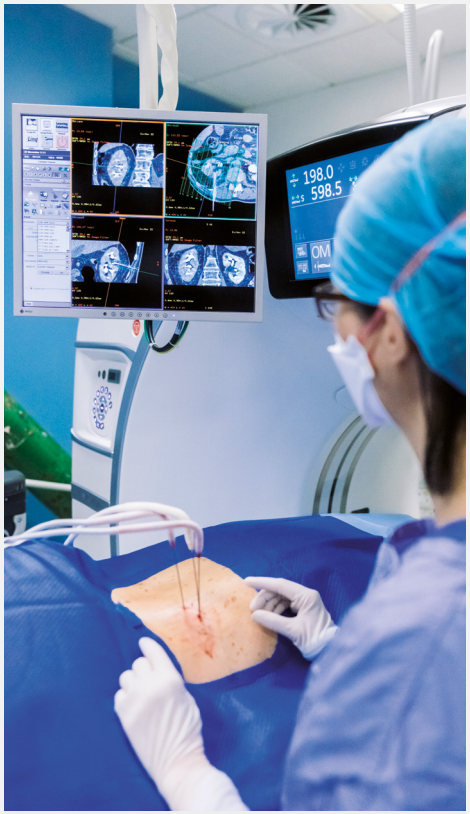
# Retaining existing clinicians and healthcare professionals

Training new staff will not solve the immediate problems national health services are facing. Existing staff need to be persuaded of the value of working in the NHS and feel empowered to stay.

**10** Radiology departments should support the greater use of LTFT working to provide a more supportive working environment and to help minimise early retirement. However, the impact of work capacity loss must be factored into future workforce planning.

**11** The RCR should develop guidance on how job plans can be adapted for those nearing retirement, including by reducing on-call commitments, and radiology departments should promote this approach to senior consultants.

**12** NHS trusts and health boards should fund, and hospitals make available a range of measures for staff to feel supported at work, including effective IT infrastructure and pastoral care initiatives.



# Securing infrastructure

For radiologists to be able to carry out their jobs effectively and without friction, additional supportive measures are required. In turn, these should help with staff retention by making staff feel valued within their organisation.

**13** The UK government should commission NIHR to fund research on the potential role of AI, including on health economics, and how it will support clinicians and reduce workload pressures.

**14** Imaging networks should accelerate their work to date on developing IT systems and image-sharing technologies which underpin their capability to share digital images in real-time.

**15** Health services in each nation should urgently audit relevant equipment, and ringfence capital resources to invest in newer, faster equipment when required.





# Investing in interventional radiology (IR)

National health systems should offer more support to radiology departments so that they can grow the IR workforce, make the case for prioritisation of IR interventions within their trust, and provide 24/7 IR cover for patients.

**16** NHS England should streamline the process for how IR data is collected and recorded, and invest in this to enable accurate data collection. This will support radiology departments in making the case for prioritisation of IR interventions within their trust.

**17** Trusts and health boards should urgently expand access to day case facilities for IR procedures to work through the backlog and deliver less invasive care for patients.

# Conclusion

The state of the radiology workforce in 2022 is particularly concerning. The trends over the last few years show a deteriorating and unsustainable landscape.

Clinical directors have expressed their increasing concerns that workforce shortages are preventing safe and effective patient care, damaging staff wellbeing, and denying national health systems of a successful future. Costs spent on alternative methods to manage excess reporting demand are skyrocketing and will continue to do so. Without action from governments and national health systems in each of the four nations, there will be a 40% shortfall of radiologists by 2027.

The answers to the workforce crisis are not easy, but we hope that the recommendations in this report go some way in supporting the radiology workforce – now and in the future. More trainees need to be bought into the system to support demand, the capacity to train these doctors must be established, and proactive and immediate work is needed to prevent an exodus of burnout and exhausted staff. Now, more than ever, is the time to act.

> The answers to the workforce crisis are not easy, but we hope that the recommendations in this report go some way in supporting the radiology workforce.

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