

Retention of radiographers: A qualitative exploration of factors influencing decisions to leave or remain within the NHS

NIGHTINGALE, Julie <<http://orcid.org/0000-0001-7006-0242>>, BURTON, Maria <<http://orcid.org/0000-0002-5411-8181>>, APPLEBYARD, Robert <<http://orcid.org/0000-0002-8882-6813>>, SEVENS, Trudy and CAMPBELL, S.

Available from Sheffield Hallam University Research Archive (SHURA) at:

<https://shura.shu.ac.uk/27928/>

This document is the Accepted Version [AM]

Citation:

NIGHTINGALE, Julie, BURTON, Maria, APPLEBYARD, Robert, SEVENS, Trudy and CAMPBELL, S. (2021). Retention of radiographers: A qualitative exploration of factors influencing decisions to leave or remain within the NHS. Radiography. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

Retention of radiographers: a qualitative exploration of factors influencing decisions to leave or remain within the NHS

Prof Julie Nightingale¹, Dr Maria Burton¹, Dr Rob Appleyard¹, Dr Trudy Sevens¹, Stella Campbell²

1 - Dept of Allied Health Professions, Sheffield Hallam University; 2 - Breast Imaging Department, Yeovil District Hospital NHS Foundation Trust

Abstract

Introduction: In many countries a widening imbalance exists between radiographer workforce supply and demand. Improving retention is a rapid method of workforce expansion which is gaining importance with policy makers and providers. To better understand the current leaver profile, this study aimed to identify why radiographers leave the NHS early, and what incentives are important in their decision to stay.

Methods: A qualitative framework methodology used semi-structured telephone interviews to explore the perspectives of radiography managers, radiographers who have left the NHS, and those considering leaving. Purposive sampling ensured representation across radiography professional groups, geographical and organisational diversity, and stages of career.

Results: Three over-arching themes were identified across all radiographer professional groups (n=44): 1) Challenging working patterns and the impact on employee health and wellbeing; 2) Lack of flexibility in working terms and conditions; 3) Lack of timely career progression and access to CPD, and the need to feel valued. Radiographers were keen to express how they 'loved being a radiographer'; small concessions and changes to workplace culture might be the incentive to remain in radiography that some were clearly searching for. Manager participants recognised the need to offer greater flexibility in working patterns but this was challenging within financial and service delivery constraints.

Conclusions: While some influencing factors varied between radiographer professional groups, the three themes were consistent across participants. Failure to address these concerns will exacerbate the loss of experienced and highly trained staff from the NHS at a time when demand for services continues to rise.

Impact on Practice: Recommendations are presented related to three primary themes which will be a catalyst for sharing of best practice between radiology and radiotherapy centres.

Introduction

In the United Kingdom (UK), as in many other countries, there is a growing imbalance between radiographer workforce supply and demand.^{1,2} To meet an ambitious 45% growth target by 2029,^{2,3} a further 4000 radiographers are required in addition to the planned growth targets.^{4,5} This aspirational growth is compounded by high UK radiographer vacancy rates,^{6,7} alongside significant workforce challenges in some disciplines including breast imaging and sonography.⁸⁻¹⁰ Ambitious workforce transformation strategies have been implemented, though some are contentious and none deliver a 'quick fix' to address current workforce deficits.¹⁰⁻¹⁴

These workforce deficits cannot be addressed by recruitment initiatives alone; retention of the current workforce is vital. Alarming, 28% of the National Health Service (NHS) workforce are predicted to leave for non-retirement reasons,² with attrition from the registered therapeutic radiographer workforce higher than many other professions (28% over five years).³ Retention strategies must be based upon a sound understanding of factors influencing the decision to leave or remain. Previous UK research in therapeutic radiography suggests a worrying correlation between radiographer burnout, emotional exhaustion, job dissatisfaction and intention to leave,¹⁵⁻¹⁸ with international therapeutic¹⁹⁻²⁰ and diagnostic²¹⁻²⁷ radiography studies citing pressure at work, large workloads and long shifts impacting on radiographers' intentions to stay. Probst and Griffiths⁹ highlighted two primary moderators for radiographer retention: the importance of mental challenge and access to personal development; and the essential role of managers in moderating burnout and improving retention. However most previous research is focused on single departments and individual radiography professions, with several published nearly a decade ago. The pressures on the radiography workforce will have changed over time and therefore the motivations for remaining within the NHS will also change. This research explores why diagnostic and therapeutic radiographers may consider leaving NHS employment and how they might be incentivised to stay.

Methods

A qualitative research design employed semi-structured interviews (Figure 1) within a pragmatic framework methodology.²⁸ Framework analysis is well suited to applied research with specific questions, multiple researchers, a pre-designed sample and *a priori* issues.

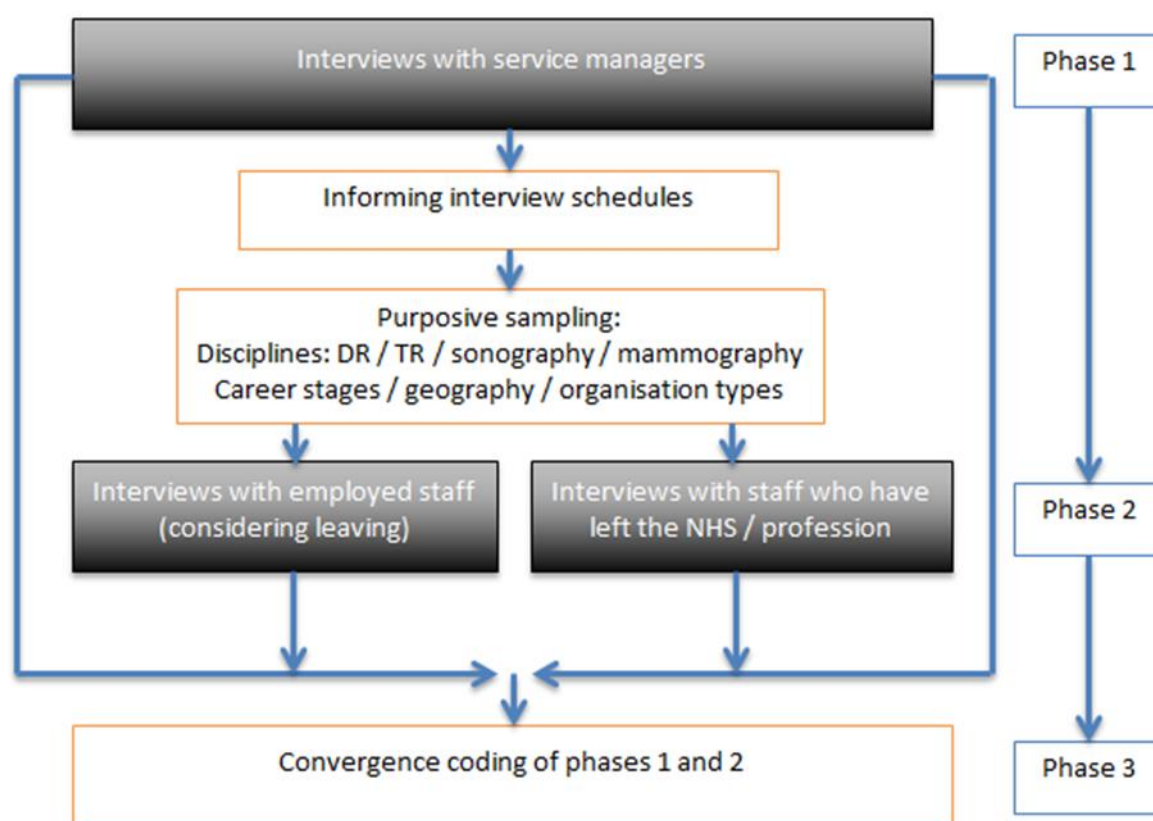


Figure 1: Qualitative study design. DR= diagnostic radiography; TR = therapeutic radiography

Ethical approval of the study was acquired via Sheffield Hallam University Research Ethics Committee [no. ER15453637]. Participant Information Sheets were provided and signed consent acquired prior to each interview. As some of the conversations were potentially sensitive in nature, all participants were assured of anonymity. Recruitment was via advertisements in a professional journal and professional social media. Purposive, maximum variation sampling was adopted to ensure adequate representation across disciplines, career stages, geography and organisational types (Figure 1).

Semi-structured interviews followed a literature-informed topic guide based around six exploratory questions (Figure 2). Telephone interviews of 30-40 minutes duration were audio recorded to facilitate professional transcription. Following two pilot interviews to test understanding and question flow, the topic guide remained unchanged. The research team included four radiographers with different professional backgrounds (diagnostic radiography, therapeutic radiography, sonography and breast imaging) and one health researcher with oncology experience. Approximately 40-50 interviews were anticipated, with data collection continuing until data saturation was reached.

Exploratory questions:

1. What are the reasons for leaving / considering leaving the NHS and/or radiography?
2. Where do people go when they leave or plan to leave?
3. Are there different factors affecting radiographers at different career stages?
4. Are there different factors associated with working in different modalities?
5. What would make a difference to staff (incentives to stay)?
6. What are managers doing to address the issues?

Figure 2 - Exploratory questions within the interview topic guides which assisted in framing the analysis

A framework process was used to analyse the data.²⁸ Initial transcripts were read by each researcher and codes agreed. An analytical framework was then developed which was applied to the remaining interviews. A peer-debriefing approach to data analysis was used to enhance rigour, credibility and trustworthiness. Several participants were subsequently invited to comment on the emerging findings to further enhance credibility.

Results

The research team interviewed 44 participants prior to reaching data saturation (Table 1).

Participant groups following purposive sampling				
Interview categories (n=44)	Radiography managers	Radiographers considering leaving	Radiographers who have left in last 2 years	N/A
	12	9	23	
Radiography discipline (n=44)	Diagnostic radiography*	Therapeutic radiography**	Sonography	Mammography
	19	10	7	8
Radiographer career stages (n=32)	Early career (first 5 years)	Mid-career	Late career (last 10 years)	N/A
	7	15	10	

Table 1. Numbers of participants in each category following purposive sampling

* Includes general radiography, CT, MRI, interventional/fluoroscopy, radiographer reporting. ** Includes radiotherapy planning / pre-treatment, radiotherapy treatment roles, radiotherapy review

The over-arching positive message which emerged from all participants was that they enjoy being a radiographer, particularly the patient interactions. This is a significant finding for both recruitment of students into the diagnostic and therapeutic radiography professions, and for the potential success of any strategies to retain radiographers within the NHS.

... I couldn't bring myself to do it for many months. Because I just didn't want to stop being a radiographer [Mammo, left]

The radiographers expressed sadness in leaving the NHS, but for many the negative impacts had eventually out-weighed their love for the profession. These negative impacts are expressed to some degree across all disciplines, and are summarised in Figure 3. Each of these primary themes will be discussed using participant quotations for illustration using the following abbreviations: diagnostic radiography (DR); therapeutic radiography (TR); sonography (sonog), breast imaging (mammo); magnetic resonance imaging (MRI);

computed tomography (CT). Where relevant, any differences between the radiography professions and disciplines (modality) will be illustrated.

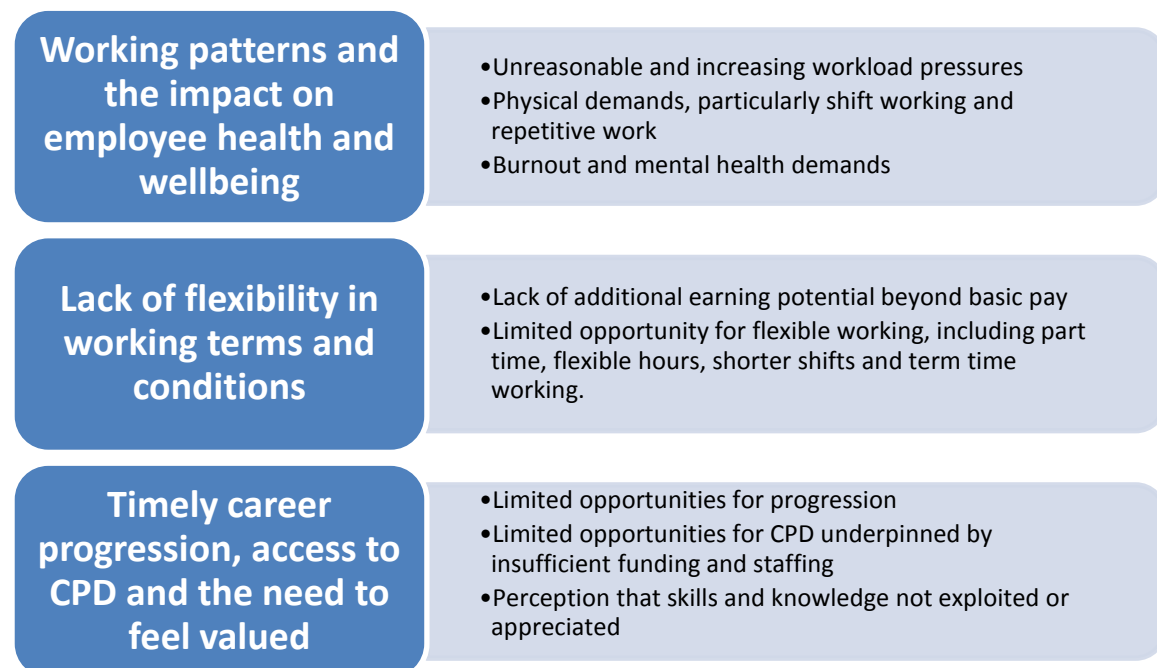


Figure 3. Three primary themes and eight sub-themes developed from the interviews

Theme 1 - Working patterns and the impact on employee health and wellbeing

Increasing workload pressures were noted by all participants. MRI services, for example, have transformed to a 'front line' modality, accommodating sicker patients and more complex time-consuming procedures. This expansion resulted in extended working days and weekend working now being the norm in many centres.

... and the other thing is the increase in the workload because I do CT and MRI, it's so much in demand. Every year was like 10% increase...But we had no more staff. [MRI/CT, late career, left]

Sonographer participants also reported increasing workloads coupled with persistent workforce deficits:

...ultrasound departments are literally run on bare minimum. So if somebody goes off, it is a big problem because there is no fill-in. So there's people doing two people's jobs at a time.

[Sonog leaving]

A lot of the ones we've trained have then decided to leave because of working conditions.

[Sonog leaving]

General and rotational radiographers often bear the brunt of staff vacancies; this 'transient' workforce provides the supply chain to other modalities.

staff don't particularly want to stay in plain film [general radiography], they want to progress to other modalities.

[DR manager]

Many diagnostic radiographer participants raised unsociable and physically challenging working patterns as a major influence on their decision to leave.

Morning and the afternoon breaks went a good 15 years ago

[Sonog, leaving]

The shifts can be quite brutal sometimes so 'institutionalised overtime' is probably the best way of describing it.

[DR, Early career, left]

They need to bring the hours of shifts down to a reasonable rate, because the younger ones are just burning out now.

[Sonog, late career, leaving]

Several managers acknowledged that the traditional 'on call' systems had worked well in their departments; those (often younger) radiographers who wanted to earn 'overtime' took the extra sessions, while those with family commitments were happy to step back. The rapid move to shift patterns required all radiographers to participate. This can be a struggle physically, particularly for older radiographers:

I think we're more prone to injury, we're more prone to slowing down, and I don't think the system allows for that at all. It doesn't accept the fact that you are getting older.

[Sonog, leaving]

...I would work 12 days in a row, probably be three or four 12 hour shifts on that as well... As soon as I'd come home I was fast asleep.. I was absolutely exhausted. Increasingly affecting my health...

[DR, Late career, left]

Physical challenges in sonography and mammography include musculo-skeletal repetitive strain injuries and pain as an 'occupational hazard'.

The physical side of it scares me. What will my shoulder be like at 68?

[Sonog, leaving]

I think mammographers' workload is quite high with repetitive strain instances... we don't get breaks morning or afternoon ... we work through them, to get through the workload

[Mammo, left]

Unrealistic appointment times with insufficient time to provide a good patient experience increasingly resulted in strain on radiographers' physical and mental health:

...they think a renal scan doesn't take 20 minutes anymore so now it's booked in to 15

[Sonog, leaving]

I'm certainly starting to see staff leaving because of the pressure of work as opposed to I've got a better opportunity if I go somewhere else

[Sonog, manager]

The Therapeutic Radiographer participants were less likely to identify physical demands or burnout as prominent reasons for leaving. Nevertheless one Therapeutic Radiography service manager noted that they had been able to retain members of staff who were intending to retire early, adjusting roles to less physically challenging ones that allowed individuals' to exploit their own specific skillsets without changing their pay banding.

Theme 2 - Lack of flexibility in working terms and conditions

Many participants described a 'one size fits all' approach, including inflexibility in financial remuneration. Managers recognised that shift systems had removed any extra earning capability, resulting in some staff signing on with an agency alongside their core employment. Ironically, the 'moonlighting' radiographers had no spare capacity to pick up additional shifts at the parent hospital if required.

we now have a more structured shift pattern of working. With that there was a loss of income for many radiographers... we have lost at least three or four really good radiographers because we've not been able to give them that monetary incentive and they've gone to work for agency companies.

[DR, Manager]

[Agency poaching] tends to be one of the things that leads to an instability in your staffing, if they feel the need to rush off and moonlight at St Elsewhere...then St Elsewhere will make them an offer they can't refuse and then you end up losing your staff that way.

[MRI, Manager]

Sonography participants expressed concerns regarding variable pay rates for similar levels of practice, not only between hospitals, but also between departments. These inequities were driven by the perpetually high vacancy rates in some centres:

The sonographers that only did obs and gynae were paid by women and children's health, and they were a band 8a and we [in radiology] were only a 7. Which we didn't feel was very fair [Sonog left]

Sonographers argued that their pay, given several years of public sector pay restrictions, was not necessarily commensurate with the responsibility:

it's quite a responsible job when you don't get recognition or payment. I'm getting paid £8 per scan when you've taken tax off for looking in detail at a foetal heart. And that could mean a big difference to a mum and a baby, but I'm paid £8. [Sonog leaving]

The most common reason for participants to leave the NHS was a lack of flexibility in working terms and conditions. Workload pressures, health problems or caring responsibilities often precipitated a request for flexible working which were often denied, leading to loss of an experienced radiographer from the service.

I loved [working there] ... but for my work-life balance and for my mental health it is better for me to do this at the moment ... I don't think that within the NHS you are supported very well in terms of flexibility. It was absolutely the reason I left. [TR left]

when I applied for flexible working at the Trust I had gone to, they said no. And at that point I just thought I'll just hand my notice in then. [Sonog leaving]

I'd applied to drop my days to three but they said, no, band 7 you've got to do four.... And, yeah, that was kind of the last straw really ... [TR, left]

Caring responsibilities were the main reasons for flexible working requests, though elderly caring responsibilities were not always recognised in the same way as childcare:

... they're not flexible with childcare, because childcare ends at half five and they still expect you to work into the evening. [Sonog leaving]

If somebody takes time off for their children... whereas I don't get that same consideration with my father or mother... I think that's where we do have problems, and they're not being addressed either. [Sonog leaving]

The manager participants recognised the value of flexible working, but the reality of already stretched and resource-poor services meant that they were not always able to facilitate flexible working requests:

there are a number of staff who are really being pushed to the edge..., most of them don't have the opportunity to do things part-time or work flexibly because it's just not, can't be done in order to keep the service running. [DR, Manager]

...the manager says if I give you part-time it's costly for the department; whereas if I let you go I can take a locum on to replace you. And that's what they did. Rather than pay me from the departmental budget, the locums are paid for by the trust budget. [DR, Late career, Left]

Several therapeutic radiographers stated that flexibility, a good work-life balance and some degree of 'freedom' was considered as important, if not more so, than pay.

I've got a huge amount of autonomy now ... very different to the radiotherapy environment where there's zero autonomy and you're not really listened to. [TR mid-career left]

Theme 3 - Timely career progression, access to CPD and the need to feel valued

Many therapeutic radiography participants highlighted limited career progression opportunities and a feeling of waiting to fill 'dead man's shoes':

...I was really career driven, and I felt very blocked at band 6 level ... people have to literally leave or come to retirement before you can get a band 7 ... so I had itchy feet ... [TR, left]

Many leavers, particularly mature entrants to the profession, expressed frustration that role progression was based upon length of service rather than capability:

I did have a lot of work experience and I felt this wasn't acknowledged in the NHS ... I've had the opposite experience working in a private centre [TR mid-career, left]

I think there was a lack of appreciation by managers with a focus on the number of years you've worked instead [TR, early career, left]

... every little avenue that I attempted to go down it was always knocked back ... which was frustrating ... but the private sector took a punt on me and it's worked out. [TR left]

Managers recognised the potential of their intermediate level radiographers (NHS Agenda for Change Band 6), yet their hands were tied with tight financial restraints limiting their capacity to be innovative. Senior staff also complained that their skills and knowledge were not exploited or appreciated; these experienced radiographers were gradually drawn to using their transferable skills in roles outside radiography.

Participants from all disciplines cited reducing opportunities for continuing professional development (CPD); insufficient funding and time release due to habitually low staffing levels were the main causes.

No one could go on any courses because there was no money... [Sonog, manager]

I don't feel there's the training or support that was available when I first went into mammography... And now the funding for that sort of education has disappeared completely. [Mammo, leaving]

The commitment to training and development is very poor. [TR left]

MRI participants highlighted a lack of educational parity between disciplines; for those specialising in MRI, postgraduate qualifications were desirable rather than essential, limiting

opportunities for career development and advanced practice. One radiographer described how she had worked in MRI/ CT for 12 years, had responsibility for junior staff training, had no access to internal or external CPD and still remained as a Band 6. While she was extremely efficient, she was bored and felt undervalued; this led to her leaving without other employment. Managers also recognised the challenges of securing funding for CPD for their staff. Increasingly they were having to 'compete' centrally within their Trust for CPD funds; Directors of Nursing often held the CPD budget.

Timely career progression and CPD opportunities assist in raising morale and helping staff to feel valued. This latter concept was raised by staff at all career levels, but particularly those in later career stages who had a wealth of experience to share. Some general radiographers described how without any CPD they felt they were on a treadmill and this became boring. Monotony was raised by other interviewees as a reason to leave to undertake other roles.

Findings Summary

Three primary themes articulate the broad factors influencing radiographer decisions to leave NHS employment: 1) Working patterns and the impact on employee health and wellbeing; 2) Lack of flexibility in working terms and conditions; 3) Timely career progression, access to CPD and the need to feel valued. These themes encompass findings which were common to all of the participant groups, however each radiography profession and discipline had particular themes which were either unique to their group or were strongly voiced within their group (Table 2).

Discipline	Group members include:	Negative Influences
Diagnostic Radiography (CT, fluoroscopy and projection radiography)	<ul style="list-style-type: none"> • 3 service leads • 1 radiology lead (NHS private wing) • 4 had left the NHS • 4 considering leaving • 2 consultant radiographers 	<ul style="list-style-type: none"> • supply chain to other modalities therefore always in deficit • 'family unfriendly' shift patterns • lack of additional earning potential • lack of less physically demanding roles (LC)
Therapeutic Radiography	<ul style="list-style-type: none"> • 1 service manager • 1 considering leaving • 7 had left the NHS • 2 had left TR but employed by NHS in a separate role • 5 EC / 4 MC 	<ul style="list-style-type: none"> • inflexible working • lack of timely progression and CPD (EC) • stagnation / under-valued (MC) • restricted hierarchy and management culture
Sonography	<ul style="list-style-type: none"> • 2 sonography managers • 3 considering leaving • 2 had left the NHS • 2 MC / 5 LC 	<ul style="list-style-type: none"> • problems retaining specialist sonographers • staff burnout • repetitive strain • pay inequity • training challenges • lack of manager support • isolation and emotional aspects
Mammography	<ul style="list-style-type: none"> • 3 Band 6 • 1 senior radiographer • 2 consultant radiographers • 1 superintendent / manager • 3 left, 4 considering • 5 LC / 2 MC 	<ul style="list-style-type: none"> • lack of flexible working • lack of CPD opportunities • health issues / repetitive strain • senior staff burnout • pay inequity and lack of role recognition • pension trap
Magnetic Resonance Imaging	<ul style="list-style-type: none"> • 4 MRI radiographers • 1 MRI manager 	<ul style="list-style-type: none"> • education and training inequity • poor CPD opportunities • lack of role recognition and advanced/consultant practice • recent move towards shifts in many centres

Table 2. Identification of negative influences on decision to leave across different disciplines [EC= early career; MC= mid-career; LC= late career]

Discussion

Demand for radiology and radiotherapy services continues to outweigh radiographer supply, characterised by high vacancy rates⁶⁻¹⁰ and high predicted shortfalls.^{1,4,5} Strategies to increase entrants to the profession have been implemented, yet reducing untimely loss of

existing radiographers from the service is rarely considered. In order to better understand this leaver profile, this study aimed to identify why radiographers leave the NHS early, and what incentives are important in their decision to stay.

Working patterns in diagnostic radiography were repeatedly highlighted as unreasonable and incompatible with a healthy work-life balance. Migrating traditional 'on call' emergency cover to 24/7 services has caused fundamental difficulties acknowledged by both radiographers and managers. Shift working was significantly related to overall job stress in a Finnish radiographer survey, particularly for mid-career radiographers.²⁵ In our study, many mid/late career diagnostic radiographers found the 12 hour shifts physically demanding. Regularly working evenings and nights can increase the risk of developing a collection of symptoms categorised as Shift Work Disorder, correlated with potential for increased errors.²⁹ Visual and mental fatigue among radiology professionals have been shown to occur towards the end of long work-days, and to have negative effects on lesion detection and decision-making.³⁰ This is important information particularly for those radiographers with reporting responsibilities.

The repetitive nature of sonography/mammography procedures caused work-related musculoskeletal disorders and pain; up to 80% of sonographers have been previously estimated to be scanning in pain.³¹ Whilst good ergonomic education and practice will reduce the incidence of such disorders, sensible workload scheduling is vitally important but is often overlooked.^{31,32} As in our research, a study of work-related stressors in radiology also cited staff shortages and heavy workload as the greatest sources of pressure at work.²⁵

Participants in senior diagnostic roles and in therapeutic radiography were more likely to highlight emotional exhaustion, often a precursor to 'burnout'.^{16,17} Burnout is a state of mental weariness which is a sustained response to chronic workplace stressors, leading to decreased effectiveness, reduced commitment, and negative effects on home life.³³ Causes of burnout include having too many bureaucratic tasks, too many work hours, and increasing levels of computerisation.³⁰ Fatigue and burnout have been flagged as a patient safety issue in radiology departments, with leaders recommended to implement strategies of restoring a sense of control, reducing out-of-hours obligations and reducing isolation.³⁰

Opportunities for earning potential beyond basic pay were scarce, attracting diagnostic radiographers and sonographers to secure additional agency or bank work, which ultimately may lead to their leaving their NHS role. Managers noted the paradox of employing agency staff when their own employees would be willing to undertake paid overtime. Requests for flexible working were traditionally from mid-career female radiographers to manage childcare, but increasingly requests were from late career radiographers of both genders who had elder caring responsibilities. The 12 hour alternating shifts were not family-friendly, and made arranging care challenging; requests for flexible working were invariably denied and the radiographer left the NHS altogether. This loss of experienced staff to the service is not only a radiography phenomenon. The 2019 'Closing the Gap' report by the King's Fund calls on the NHS to review their workforce practices to improve retention of staff, particularly for older staff.³⁴ Flexibility in working patterns is also central to the NHS People Plan, which urges flexibility of employment contracts within and between organisations.³⁵ This concept of 'shared human resource' is also gaining momentum through recent reviews of UK imaging and radiotherapy services.^{4,36}

The sampling strategy ensured that perspectives of radiographers from diagnostic and therapeutic radiography were captured. While not all modalities were included, each profession/discipline had unique perspectives on retention (Table 2). Ultrasound and breast screening services have long-standing workforce shortages,⁸⁻¹¹ translating into extensive patient lists with too little time per patient. Sonographers' work was 'not valued' by managers and clinicians; this belief was reinforced by pay inequity between different professional groups. Mammographers unanimously expressed that they loved their job, and many wished to continue working alongside caring responsibilities. Requests for flexibility had been denied, resulting in their leaving, however several expressed a desire to return to the service should flexible working be offered in the future. Recent reports encourage the NHS to consider flexible options such as 'retire and return' and 'return to practice',^{34,35} and these are currently being rolled out within the breast screening service.

General and rotational diagnostic radiographers were often working in large departments in comparison to the 'specialist' radiographers working in smaller departments. Small departments have been shown to offer a more positive experience, leading to increased levels of job satisfaction.²⁵ In a South African study of radiography workplace cultures, early

career radiographers highlighted the collegial as well as the physical environment as being of paramount importance in their transition to the workplace.²⁷ They expressed a need to feel welcomed, and 'get along' with their peers,²⁷ and this may be more easily achieved in a smaller department. In contrast, sonographers within this study who worked in small departments highlighted their relative isolation in comparison to rotational radiographers.

Radiographers of all professional groups noted poor progression/CPD opportunities, describing how they were 'stuck in a rut'. This particularly affected those in intermediate levels of practice; a study of Agenda for Change Band 5/6 therapeutic radiographers in the NHS demonstrated that the provision, relevance and quality of CPD was closely linked to perceptions of job satisfaction.²⁰ MRI radiographers were particularly dissatisfied as they perceived their modality was treated differently to others who required underpinning post-graduate education. Therapeutic radiographers were also disappointed by a lack of early career progression, criticising a restrictive and hierarchical NHS management culture. Some therapeutic radiographer and MRI participants cited this lack of CPD and career progression opportunities as a reason to move to independent sector employment.

The purposive sampling strategy ensured a good representation across diagnostic and therapeutic radiography and most diagnostic modalities, although a potential limitation relates to the geographical spread of participants. Whilst the aim was to recruit radiographers from across the UK, those responding to the adverts were predominantly from England. However the participants represented a range of different types of healthcare organisation, based in urban, semi-rural and more remote locations, providing a wide range of working environments and contexts. A second potential limitation is the recruitment method via professional social media; inevitably the project attracted radiographers with strong feelings about retention, many of whom had experienced difficult and unresolved situations, raising the potential for recruitment bias.

Conclusion

Reducing the mismatch between workforce supply and demand cannot be achieved solely by increasing the number of new entrants to the service. It is much faster and less expensive

to retain staff than it is to recruit more people; retaining staff facilitates continuity and allows improvements in experience and morale which is likely to be passed on to patients in their care.

This qualitative study aimed to identify why radiographers leave the NHS, and what might incentivise them to stay. Three factors influencing the decision to leave or remain were identified; challenging working patterns that had adverse effects on health and wellbeing, a lack of flexibility in working terms and conditions, and a lack of timely access to career progression and CPD opportunities. While some variation was noted between the two different professions and the modalities, these three themes presented a common thread that linked the experiences of the radiographers interviewed.

All radiographers interviewed were keen to confirm to the researchers that they loved 'being a radiographer' and that their interactions with patients and colleagues were rewarding. Several radiographers who had left expressed a desire to return to a more flexible role. With this in mind, small concessions and changes to workplace culture and working patterns may tempt some radiographers to remain or return to the profession.

This is the first qualitative study to investigate retention across the breadth of the radiography professions. While some of the findings are unique to diagnostic and therapeutic radiography, they nevertheless align very clearly to the wider workforce ambitions set out in recent publications including the HEE People Plan³⁵ and the King's Fund Closing the Gap³⁴ report. Recommendations relating to the findings presented in this article can be seen in Table 3.

No.	Recommendation	Details
1	Flexible working initiatives	e.g. less than full time working (reduced days or hours), term time or school hours working, phased retirement options, bank contracts. The physical demands of the job for late career staff should be reviewed, with alternative roles identified to facilitate later retirement. Post retirement contracts which have reduced requirements for registration (e.g. assistant practitioner level posts; volunteering; 'as and when' bank contracts) may provide valuable access to highly experienced staff to support new entrants to the workforce.
2	Band 6 engagement strategies to increase motivation	e.g. developing leadership and quality enhancement skills and recognition for increased responsibility. Creating novel rotational posts (e.g. through DEXA or endoscopy) and investigating opportunities for collaboration / secondments with academia or research may be beneficial. This could include engagement with the NIHR Integrated Clinical Academic training pathway.
3	Competency based linked grading system	For grades 5-6 and 6-7. To enable radiographers and supervisors to be able to better plan career development and performance management.
4	Pay innovations	Explore opportunities for system or even regional banks of staff or other innovations for radiographers to increase earning potential above basic pay rather than work for agencies or other employers. In sonography, investigate the pay and workload inequity according to roles and consider alignment to the sonography career framework.
5	Review of MRI workforce	Building on the sonography career framework and in the context of the SCoR Education and Career Framework, including recommendations for initial entry pathways, CPD and advanced clinical practice.

Table 3. Recommendations relating to the three over-arching themes influencing decision to leave or remain

References

1. Cancer Research UK. Securing a cancer workforce for the best outcomes. November 2018.
2. Health Education England. Cancer Workforce Plan phase 1 - Delivering the cancer strategy to 2021. December 2017
3. Health Education England (HEE). 2018. Strategic Framework for Cancer Workforce: interim working paper July 2018. https://www.hee.nhs.uk/sites/default/files/documents/Cancer-Workforce-Document_FINAL%20for%20web.pdf

4. Richards M. Diagnostics: Recovery and Renewal. Independent Review of Diagnostic Services for NHS England, Oct 2020. <https://www.england.nhs.uk/wp-content/uploads/2020/10/BM2025Pu-item-5-diagnostics-recovery-and-renewal.pdf> Accessed 23.10.20
5. George J, Gkousis E, Feast A, Morris S, Pollard J, Vohra J. Estimating the cost of growing the NHS cancer workforce in England by 2029. Oct 2020. https://www.cancerresearchuk.org/sites/default/files/estimating_the_cost_of_growing_the_nhs_cancer_workforce_in_england_by_2029_-_full_report.pdf Accessed 23.10.20
6. Society and College of Radiographers. Diagnostic Radiography Workforce Report 2017.
7. Society and College of Radiographers. Radiotherapy Radiographic Workforce Census. November 2017. ISBN: 978-1-909802-27-8
8. The Centre for Workforce Intelligence. Securing the future workforce supply: Sonography workforce review. March 2017. www.cfwi.org.uk
9. Society and College of Radiographers. Ultrasound Workforce UK Census 2019. July 2019. ISBN: 978-1-909802-43-8
10. The Royal College of Radiologists. The breast imaging and diagnostic workforce in the United Kingdom. 2016. BFCR(16)2
11. Harrison G. Sonographer workforce developments. *Synergy News*, August 2018:12-13
12. Sevens TJ, Reeves PJ. Professional protectionism; a barrier to employing a sonographer graduate? *Radiography* 2019; 25(1):77–82
13. Mitchell P, Nightingale J. Sonography Culture: Power and Protectionism. *Radiography* 2019; DOI: <https://doi.org/10.1016/j.radi.2019.02.004>
14. Miller PK, Waring L, Bolton GC, Sloane C. Personnel flux and workplace anxiety: Personal and interpersonal consequences of understaffing in UK ultrasound departments. *Radiography* 2018; 25(1): 46–50
15. Probst H, Griffiths S. Retaining therapy radiographers: What's so special about us? *Journal of Radiotherapy in Practice* 2007; 6(1):21-32
16. Probst H, Griffiths S. Job satisfaction of therapy radiographers in the UK: Results of a phase I qualitative study. *Radiography* 2009; 15(2):146–157
17. Probst H, Griffiths S, Adams R, Hill C. Burnout in therapy radiographers in the UK. *The British Journal of Radiology* 2012; 85: e760-e765
18. Hutton D, Beardmore C, Patel I, Massey J, Wong H, Probst H. Audit of the job satisfaction levels of the UK radiography and physics workforce in UK radiotherapy centres 2012. *The British Journal of Radiology* 2014; 83: 20130742.
19. Halkett GKB, McKay J, Hegney DG, Breen LJ, Berg M et al. Radiation therapists' and radiation oncology medical physicists' perceptions of work and the working environment in Australia: a qualitative study. *European Journal of Cancer Care* 2016;26:e12511
20. Hutton D, Eddy A. How was it for you? What factors influence job satisfaction for band 5 and 6 therapeutic radiographers. *Radiography* 2013;19(2):97-103

21. Lehmann P, Richli Meystre N, Mamboury N. Factors for lifelong job retention among Swiss radiographers. *Radiography* 2015;21:181-187
22. Williamson K, Mundy LA. Graduate radiographers' expectations for role development: The potential impact of misalignment of expectation and valence on staff retention and service provision. *Radiography* 2010; 16: 40-47
23. Johnson J, Arezina J, McGuinness A, Culpan AM, Hall L. Breaking bad and difficult news in obstetric ultrasound and sonographer burnout: Is training helpful? *Ultrasound* 2019;27(1):55–63
24. Singh N, Knight K, Wright C, Baird M, Akroyd D, Adams RD, Schneider ME. Occupational burnout among radiographers, sonographers and radiologists in Australia and New Zealand: Findings from a national survey. *Journal of Medical Imaging and Radiation Oncology* 2017;61:304–310
25. Lohikoski K, Roos M, Suominen T. Workplace culture assessed by radiographers in Finland. *Radiography* 2019; 25(4):e113-e118
26. Verrier W, Harvey J. An investigation into work related stressors on diagnostic radiographers in a local district hospital. *Radiography* 2019; 16(2):115-124
27. Chipere TGA, Motaung T, Nkosi B. Structuring improved work environments for newly-qualified radiographers. *Radiography* 2020; 26(1):e14-e17
28. Gale NK, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol*. 2013;13:117. <https://doi.org/10.1186/1471-2288-13-117>
29. Elliott J, Williamson K, The radiology impact of healthcare errors during shift work. *Radiography* 2020;61:248-253. <https://doi.org/10.1016/j.radi.2019.12.007>
30. European Society of Radiology (ESR) and European Federation of Radiographer Societies (EFRS). Patient safety in medical imaging: A joint paper of the European Society of Radiology (ESR) and the European Federation of Radiographer Societies (EFRS). *Radiography* 2019; 25(2):e26–e3
31. Harrison G and Harris A. Work-related musculoskeletal disorders in ultrasound: Can you reduce risk? *Ultrasound* 2015; 23: 224–230.
32. Public Health England Screening. Breast screening mammography: ergonomics good practice. Published 22 October 2018. <https://www.gov.uk/government/publications/breast-screening-ergonomics-in-screening-mammography>
33. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol* 2001;52:397–422
34. Beech J, Bottery S, Charlesworth A, Evans H, Gershlick B, Hemmings N et al. Closing the Gap - Key areas for action on the health and care workforce. Report by The Health Foundation, King's Fund and Nuffield Health. March 2019. <https://www.kingsfund.org.uk/publications/closing-gap-health-care-workforce>
35. NHS England. WE ARE THE NHS: People Plan for 2020/21 - action for us all. July 2020. www.england.nhs.uk/ournhspeople Publishing approval reference: 0067
36. NHS England and NHS Improvement. Transforming imaging services in England: a national strategy for imaging networks. November 2019. NHS Improvement publication code: CG 51/19.

<https://improvement.nhs.uk/resources/transforming-imaging-services-in-england-a-national-strategy-for-imaging-networks/>