

Difficulties associated with reporting radiographer working practices - a narrative evidence synthesis

MURPHY, L., NIGHTINGALE, Julie <<http://orcid.org/0000-0001-7006-0242>> and CALDER, P.

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Difficulties associated with Reporting Radiographer working practices – A narrative evidence synthesis

Lewis Murphy, Julie Nightingale and Paul Calder

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Abstract

Objectives

This narrative synthesis of evidence identifies and explores issues that impact upon the expansion or effectiveness of Reporting Radiographers working in all diagnostic modalities within the United Kingdom (UK). The publication focuses on working practices affecting trainees and qualified Reporting Radiographers.

Key findings

Fourteen studies informed the themes of this article, they were published between 2014 and 2021.

Delays to commencement of reporting roles and variance in performance monitoring was common. Lack of formalisation, overly restrictive and out of date scopes of practice were also found.

Staffing shortages contributed to underutilisation. Failure to utilise skills was most prevalent in cross sectional imaging modalities and considerable variance in practice was found between centres.

Reporting Radiographer involvement in professional development, education and research is far from universal and often dependant on individuals sacrificing their own time.

Conclusion

Governance in many centres would benefit from renewal and standardisation, particularly relating to scopes of practice and performance monitoring audits. Measures are also required to encourage compliance with guidance, address staffing issues and reduce variation between centres. Failure to address these issues has the potential to impair collaboration, delay patient care and increase economic inefficiencies whilst negatively impacting satisfaction of service users and staff.

Lack of involvement in professional development, education and research suggests Reporting Radiographers are not accomplishing their full potential, educating the next generation of the reporting workforce and driving evidence-based change for further development of the specialism.

Implications for practice

Better use of the existing workforce is essential to increase productivity, value, and security of Reporting Radiographer services, which are essential to improve patient outcomes and efficiency.

Introduction

Independent reporting by Radiographers possessing relevant post-graduate qualifications is established in the majority of Radiology departments¹. Radiographers reported 16% of in-house Radiology examinations across all modalities in 2018-2019 (n = 5.264 million)². For Projectional Radiography, this was a mean average of 28% of examinations in 2018-2019². Approximately 260,400 hours of Consultant Radiologist time was saved³. In comparison, Sonographers currently report 67% of all Ultrasound examinations². While the nature of the roles differ, if Reporting Radiographers working in Projectional Radiography verified the same proportion of examinations, this would unlock an additional 362,700 hours of Consultant Radiologist time - the equivalent of 454 Full Time Equivalent Consultant Radiologist posts⁴.

The need to improve utilisation of Reporting Radiographers has already been identified^{5,6}. The independent 'Diagnostics Recovery and Renewal' review⁷ commissioned by NHS England, made a range of recommendations including further development of regional imaging networks as outlined in 'Transforming imaging services in England'⁸. However, The Royal College of Radiologists (RCR) found such networks were used by only 2% of respondent organisations⁹.

A range of studies^{10,11,12} have reported difficulties working or training to become a Reporting Radiographer, usually as secondary findings or revealed in free text comments. Our review identifies and explores issues impacting expansion or effectiveness of Reporting Radiographer working across the United Kingdom (UK) in all diagnostic modalities. A related publication⁴² has explored accessibility of training for prospective Reporting Radiographers as well as clinical support within and beyond training. This article focuses on the issues relating to working practices affecting trainees and qualified Reporting Radiographers.

Methods

The study design follows a narrative qualitative evidence synthesis approach⁵². It integrates and compares the experiences of study participants, to broaden the knowledge base relating to Reporting Radiographer training and working¹³.

Searching, selection criteria and data analysis has been summarised in the table below, more detail is available in the accompanying publication⁴².

Figure 1 – Summary of searching, selection and data analysis

Summary of searching, selection and data analysis.		
Search Terms	Radiographer AND Reporting (TITLE AND ABSTRACT) from 2000 & English language Several scoping searches refined technique to ensure an inclusive strategy. Early scoping searches found that using more key words only served to exclude relevant papers. Final searches have been outlined in the Supplementary Material.	
Search Phases	1. <i>Database Searching</i>	AMED, BNI, CINAHL, EMBASE, EMCARE, HMIC, MEDLINE, PsycInfo and Pubmed hosted by National Institute of Clinical Excellence (NICE).
	2. <i>Grey literature search</i>	The Connecting Repositories (CORE) database.

	3. <i>Citation searching</i>	Review of the reference list of articles selected in earlier phases and citations to those selected articles.
Inclusion Criteria	Studies containing primary data relating to barriers limiting effectiveness or expansion of Diagnostic Reporting Radiographers, generated from study participants based in UK clinical practice.	All radiological modalities except ultrasound.
	Based in an academic or clinical setting.	Accessible in full text format via Athens or University logins. 19 results from databases searches were not accessible.
	Published in English language since year 2000.	
Exclusion criteria	Studies focussed on Consultant Radiographer practice or Ultrasound Sonographers	Articles not containing primary data, including systematic and narrative reviews.
	Studies based outside the UK – The UK is unique as the only country to have implemented role advancement that includes independent reporting in Radiography, studies from other countries would have lacked transferability to UK practice ⁴³ .	
Article selection process	The lead researcher undertook screening by title and then by abstract, if articles appeared to meet the inclusion criteria then full text was assessed.	'Cross check' of a minimum of 10% of decisions at each stage by 2 other researchers.
	Disagreements and borderline selections were discussed and adjudicated by an experienced researcher.	After full text assessment the final selection was proposed, discussed between the team and the final 17 articles were agreed upon by all members.
Data analysis	Consolidated Criteria for Reporting Qualitative studies (COREQ) tool formed the basis of an instrument to assess author reflexivity, methodological design, and application of each study ⁴⁴ . Aspects were added to suit the survey methodology of many of the selected studies ^{45,46} .	Thematic analysis using an inductive semantic approach ⁴⁷ .

Results

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁵¹ Flow diagram in Figure 2 demonstrates the process of literature selection.

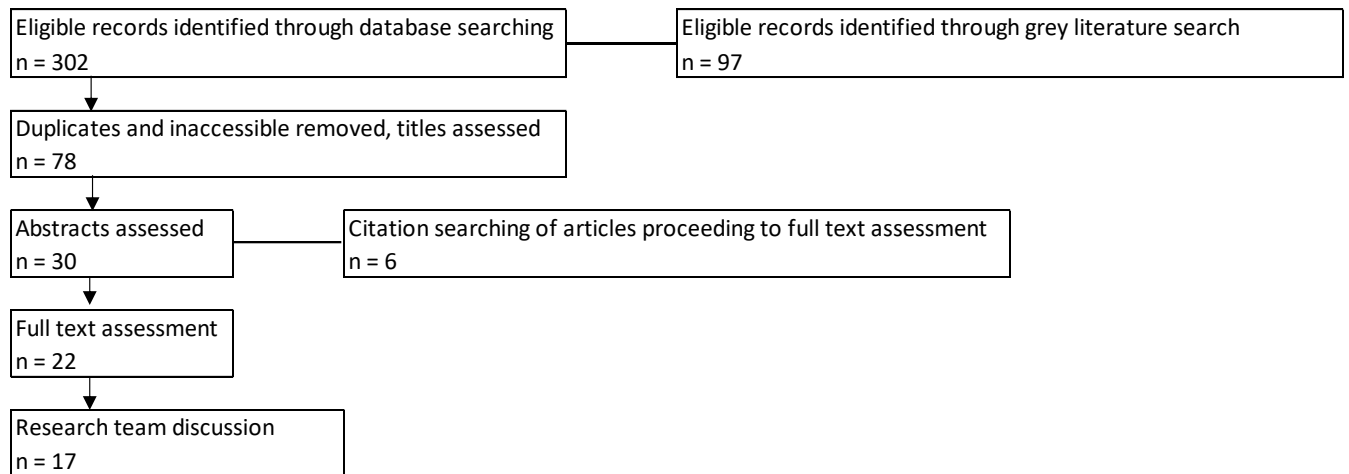
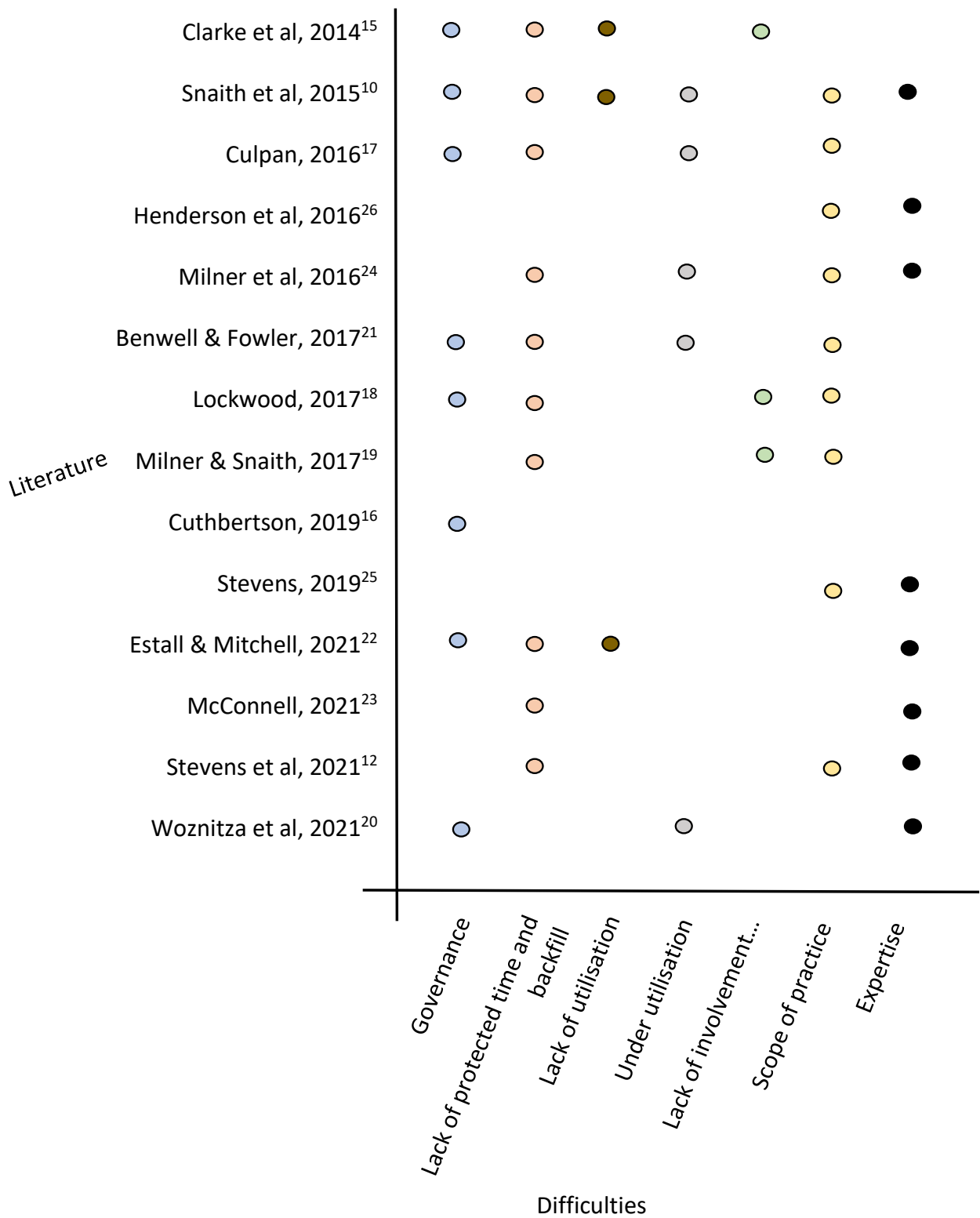


Figure 2 – PRISMA Diagram

Seventeen studies met inclusion criteria for the review but not all were relevant to the themes discussed in this article. Articles were published between 2014 and 2021, the selected studies have been outlined in the accompanying publication⁴². Studies used in this publication are summarised in Supplementary Material.

The prevalence of themes in literature relating to this aspect of the study has been represented visually in Figure 3.

Figure 3 - Prevalence of themes in literature



Governance

Clinical governance in the NHS encompasses quality assurance, quality improvement and risk/incident management¹⁴. As the Reporting Radiographer role has become integrated into imaging departments, most aspects of role design have been decided locally with guidance provided from relevant stakeholder organisations. However, in our review, respondents in three studies had to wait to practice following qualification as a Reporting Radiographer due to an absence of relevant policies^{10,15,16}; this delay varied up to a maximum of three years. In one study, some respondents were undertaking reporting practice but their interpretation was not recorded as part of the patient record because no protocol existed for Radiographer Reporting¹⁷.

One study found 26% of respondents did not have a scheme of work in their job description¹⁸, another found 40 different job titles for Radiographers who report independently¹⁹. These findings possibly indicate a lack of clarity in some centres.

In a review of monitoring processes, three London NHS Trusts (n = 3/13) were found to have systems for performance review audit that had lapsed or were in the process of being established, one of those Trusts had no current plans to introduce a system²⁰. Among NHS trusts with a system in place (n = 10/13), considerable variance existed relating to frequency, volume, reviewer role and outcome measures²⁰.

A study sampling English trusts found 84.4% (n = 65) of respondents had their work formally audited²¹. The frequency again varied and professional background of the audit reviewer was split between other Reporting Radiographers (55%, n = 39) and Consultant Radiologists (45%, n = 32)²¹. In contrast, another publication found only 36% (n=77/216) regularly audited performance, most of these respondents (68%, n = 142/209) relied solely on appraisals to review performance¹⁸. Interestingly, most managers of MRI Reporting Radiographers (89.47%, n= 34/38) expected their staff to participate in an audit of reporting competency²².

Lack of Protected Time and Backfill

Most CT trainees (72.9%, n = 35/48) expressed difficulty finding time to study and acquire their practical skills, 36% of managerial respondents (n = 8/23) acknowledged that making study time available was 'difficult'¹⁵. Trainees reported relying on annual leave and facing difficulties even on those terms. Managerial respondents in Scotland also highlighted a lack of protected reporting time for trainee Reporting Radiographers²³.

Staffing shortage was a stated reason for not employing a Chest X-Ray Reporting Radiographer at some centres¹², this suggests impediment to service expansion. It was also found to limit utilisation of qualified Reporting Radiographers¹⁰. Similarly, 65% of respondents reported gaps in MRI reporting practice; lack of staff/backfill was the most common cause (37%, n = 17/46 trusts)²². Lack of staffing and/or backfill was also cited as the reason 26.09% (6/23) of respondents in the same sample no longer report or have not reported since completing training²². It was the single most significant factor among inactive CT Reporting Radiographers¹⁵.

Most Radiographers (79%, n = 174/220) had scheduled and planned reporting sessions but only 30% (n = 65/216) felt their department had adequate staffing to provide a routine reporting service¹⁸. A third of these Reporting Radiographer respondents (33%, n = 72/219) reported occasionally being assigned to cover image acquisition duties whilst 29% (n = 64/221) said employers never planned cover for annual leave¹⁸. An English sample showed similar results, 85% (n = 69/81) of respondents had protected sessions but 56.8% (n = 46/81) were occasionally and 11.1% (n = 9/81) were regularly switched to fill other roles due to staff shortages²¹. In mammography, some participants had allocated sessions to undertake image interpretation but almost a third (28%, n = 13/46) integrated this into their image acquisition duties¹⁷.

Managerial commitments often clashed with reporting^{22,24}. Given over half (56%, n = 112/200) of one study's participants described formal leadership responsibilities and many of this group (48.2%, n = 54/112) were also involved in day-to-day managerial activities¹⁹, a considerable amount of reporting time could be lost in this way.

Lack of Utilisation

Radiographers with reporting qualifications were present but not actively reporting in some centres, a free text comment from one of these centres mentioned reporting was outsourced to private companies¹⁰.

Lack of utilisation was raised prominently in studies relating to newer Reporting Radiographer specialisms. One study found only 48.8% (n = 20/41) of respondent graduates had used their CT head reporting skills in practice, a respondent in this situation felt 'cast adrift'¹⁵. The same study found some qualified Reporting Radiographers were not reporting due to a change in role¹⁵. Similarly, 23 MRI Reporting Radiographers from 15 trusts (n = 15/46) no longer report despite being qualified - this was a personal choice in 17.39% (n = 4/23) of cases²².

Under utilisation

The most frequently stated number of allocated Reporting sessions per week was 1-4^{10,20,21,24}. This was significantly greater than comparable data collected in 2007 but 7.9% (n = 14/177) of the sample did have less than one reporting session per week, the proportion of working hours accounted for was not collected¹⁰. One NHS Trust was found to give Reporting Radiographers only 1-2 sessions per month²⁰.

One third of English respondents (n = 27/81) stated reporting accounted for 50% or more of their contracted hours but the modal average was only 20% of contracted hours²¹. Only 2.5% (n = 2/81) of respondents in this sample were not currently reporting but 7.5% (n = 5) were reporting for less than 10% of their time²¹. Studies recognised issues fulfilling allocated sessions, as mentioned earlier. Time spent reporting often varied by named role and contracted hours, particularly for those working solely as Reporting Radiographers²⁴. Free text comments frequently cited staffing levels as a limiting factor.

Almost half (44%, n = 22/50) of one sample agreed or strongly agreed they would like more sessions¹⁷; this was the only study to ask if allocated reporting time was sufficient. Interestingly, the majority of respondents in this study (73%, n = 35/48) had allocated sessions and did more to cover Radiologist vacancies¹⁷. In another publication, 34% (n = 75/221) participated in overtime to reduce backlogs¹⁸.

Scope of Practice and Expertise

Variance in scope of practice was demonstrated by several studies^{10,12,24}. Restrictions were variable but often based on examination, age of patient and/or clinical presentation. Those with a broader anatomical scope had a wider range of referral sources ($\chi^2 = 34.441$; $p < 0.001$)¹⁰. One author suggested their free text comments show role development continues to be dynamic¹⁰, but this may not be universal, another study received a comment that 'rigorous controls' had not been adapted for several years²⁶.

When asking if respondents were currently reporting images from all areas in which they were qualified, 42.5% (n = 34) of a sample with expertise across all modalities stated they were not²¹. Almost half (47%, n = 24/51) of respondents working in Mammography indicated they would like to report a wider range of examinations¹⁷.

Studies also showed considerable variance regarding expertise. Low proportions of respondents reported chest and abdominal examinations^{10,24,25}. In Musculoskeletal practice, most Reporting

Radiographers reported both appendicular and axial examinations, but considerable percentages reported appendicular examinations only^{10,24,25}. Those with paediatric examinations in their scope of practice accounted for an even lower proportion of respondents²⁵.

A geographical component to this variance was noted, for example, 89.7% (n = 443/494) of all Reporting Radiographers identified in one sample were employed by hospitals in England¹⁰. The authors stated that although the proportion of Scottish sites employing Reporting Radiographers is lower than any other UK country, the number doubled since 2007¹⁰. In the same sample, all sites with visceral expertise were in England, it was suggested this related to accessibility of post-graduate training across the UK¹⁰. Small teams were consistently found^{10,12,23}, for example just one radiographer reporting chest and abdominal examinations was found in Scotland^{24,26}, concerns were also raised regarding age profile of Reporting Radiographers working in some regions²⁴.

Despite visceral expertise being more widespread in England, regional disparities were noted. Considerably fewer chest and abdominal X-Ray Radiographer Reporting sessions existed in London Trusts in comparison to musculoskeletal, Radiographers reporting visceral examinations were also present at a smaller number of sites²⁰. Half of the respondent CXR Reporting Radiographers (n = 20/40) were based in Yorkshire or North West England whilst half (n = 10/20) of those reporting abdominal examinations were based in Yorkshire in another sample²⁴. No respondents from Northern Ireland, South West England or Wales included visceral examinations in their scope of practice and most other English regions had very few²⁴. This could be due to the snowball sampling strategy of the research team, based in Yorkshire, or representative of the proximity to educational institutions offering the relevant training²⁴. Access to training has been explored in more detail in the accompanying publication⁴².

Results relating to the West Midlands region suggest variation is evident within regions, the number of reporters employed in their eleven respondent NHS Trusts varied widely between 1 and 16 (mean = 7.82, variance = 17.85, std. dev = 4.23)²⁵.

Lack of involvement in Professional Development, Education & Research

Respondents described difficulties in relation to Continuing Professional Development (CPD) regarding; time (29%, n = 65/221), departmental support (37%, n = 78/211) and funding (44%, n = 93/210)¹⁸. Almost one third of respondents were expected to fulfil teaching/mentorship responsibilities for colleagues in their own time¹⁸.

When exploring involvement in education and research activities; 66.3% of respondents (n = 136/205) delivered tutorials within Radiology; 45.6% (n = 93/204) in the wider hospital environment and 19.4% (n = 39/201) undertake lectures at university¹⁹. Just over half (51.2%, n = 105/205) were involved in mentorship, either as a mentor or mentee¹⁹. In relation to research activity, 58.0% (119/205) had participated in departmental audit but research activity was much lower at 19.7% (n = 38/193)¹⁹. Only 12.2% (n = 25/205) of respondents had published in the preceding two years¹⁹.

A minority of respondents achieved post-graduate diploma or Masters awards¹⁹. Another study found only 45.8% (n = 22/48) of their respondents continued studies or were considering doing so¹⁵. Interestingly, scope of practice related to level of qualification for Reporting Radiographers in the West Midlands²⁵.

Discussion

Our review showed delays to commencement of reporting roles, lack of clarity in roles and variance in performance monitoring. This is likely to negatively impact Reporting Radiographer productivity, increase outsourcing and could deskill or demoralise practitioners who are qualified but waiting to practice.

Fundamental requirements of governance include the existence of 'an agreed contract of engagement', which defines areas of practice and accountability²⁷. The absence of a formal scope of practice document among some Reporting Radiographers is particularly worrying in terms of risk of litigation. There is a responsibility to audit practice as part of regular service-wide audit²⁷ but no detail is given in relation to typical referrals or the specifics of audit (in terms of frequency, volume and outcomes). More detailed and specific guidance for Reporting Radiographers does exist^{20,28,29} which could perhaps aid departments in design of roles and increase standardisation. It is perhaps time for renewal of Society of Radiographers guidance and efforts to encourage compliance.

Standardisation of Reporting Radiographer roles and performance management could facilitate utilisation of Reporting Radiographers in regional imaging networks⁸ and national projects such as Scottish National Radiology Reporting Service (SNRRS)⁴⁸.

Several issues relating to utilisation of trainee Reporting Radiographers was raised by studies across all modalities. Risks associated with failing to safeguard adequate reporting time for trainees jeopardises their ability to gain competence and potentially lengthens the training period, especially if inadequately supported⁴². Centralised trainee support models protect trainees from this by formally scheduling sessions away from the home department^{30,31}. Lack of capacity to accommodate trainees was a minority finding in one study¹², but important because it reduces the likelihood of those departments creating or expanding Reporting Radiographer services to satisfy increased demand. Given existing Reporting Radiographer teams were often found to be small, this also suggests vulnerability in terms of service expansion, sustainability, and continuity. Going forward, imaging academies and regional/national collaboration in training and recruitment planning is likely to become particularly important for training of new Reporting Radiographers and Radiologists⁴⁹.

Well documented staffing shortages were shown to impact utilisation of qualified Reporting Radiographers. This is perhaps unsurprising, but does evidence impact of Radiographer staffing issues, especially at Bands 5 & 6³². Similarly, those Reporting Radiographers with managerial responsibilities found these could reduce the proportion of time they were available to report. Radiographers in the reviewed studies were often reporting for less than half of their contracted hours, for some it was a fraction of this. Economic and clinical benefits of Radiographer Reporting^{33,34,35,36,37} are maximised when more time is spent reporting. Such inefficiency limits reporting capacity of departments whilst increasing wait times, outsourcing expenditure, and possibly leading to staff becoming deskilled or demoralised. It could also be argued that increased wait times due to staffing issues breach 'The Quality Standard for Imaging 2021'⁵⁰. These findings are important considerations in design of roles and departmental skill mix.

Qualified Reporting Radiographers whose skills were not being utilised were most prevalent in relation to CT and MRI examinations, raising the question of a link with Radiologist resistance and delays to establishing policies in these newer areas of practice. In some cases, Radiographers indicated they were leaving a reporting role, potentially indicating failure to retain staff in addition to loss of reporting and supervisory capacity. Unfortunately, researchers in the selected articles did not explore reasons for leaving. A minimum of one-half session per week to prevent deskilling has been proposed²⁰ but there is no guidance providing recommendations for the proportion of time spent reporting by Reporting Radiographers.

It was interesting to collect evidence of Reporting Radiographers working overtime to reduce backlogs, this has been found to be cheaper than outsourcing³³. Additional earning potential has also been found to be important to retaining Radiographers in NHS employment³⁸. However, if regular Reporting overtime was to become more common, guidance may be necessary to safeguard staff welfare and prevent errors due to overworking.

Many respondents highlighted lack of formalisation, underutilisation and lack of development or review of scope of practice. Such variance between centres is likely to make collaboration difficult, particularly given the notable geographical components. No studies investigated the cause of disparities, but geographic trends suggest correlation with proximity to available courses.

Despite core capabilities of an Advanced Practice role³⁹ our studies suggest involvement in professional development, education and research is far from universal for Reporting Radiographers and is often dependant on individuals sacrificing their own time. Development after qualification would increase impact of reporting staff, consistent with staff working at the 'top of their licence' as suggested by Getting It Right First Time's Radiology Report⁴⁰. It may also facilitate transition to a Consultant Radiographer role as well as helping staff feel valued and avoid boredom, factors cited by a participant who resigned their role³⁸. Producing high quality, impactful research in the specialism is particularly important to evaluate the role and represent benefits to stakeholders. Skills and experience in teaching are also vital to help develop and sustain the specialism, especially when considering the potential to protect more Consultant Radiologist time by using Reporting Radiographers in the training of both Radiographers and Radiologists. Lack of engagement in teaching and research limits transfer of knowledge to colleagues and inhibits representation of Reporting Radiographers within and outside the hospital environment. Where Reporting Radiographers are not engaging in all four pillars of practice, they may not be fulfilling current requirements for an Advanced Practice level. Society of Radiographers and Health Education England are currently working to provide guidance that will differentiate 'Enhanced' and 'Advanced' practice roles, this may provide clarification⁴¹.

Conclusion

Issues raised in the existing published literature suggest there is potential to increase effectiveness and facilitate expansion of Radiographer Reporting.

Governance in many centres would benefit from renewal and standardisation, particularly relating to scopes of practice and performance monitoring audits. Measures are also required to encourage compliance and reduce variation.

Considerable variance between centres, regions and nations of the UK is a concern in relation to collaboration, transferability of skills and equality of services. The vulnerability of some smaller Radiographer reporting teams is also a concern that should be considered when undertaking workforce planning.

Shortages of Radiographers to perform image acquisition roles was implicated in the adoption of Radiographer Reporting services and subsequent under utilisation although it is not the only factor. Scopes of practice sometimes reduced contribution of Reporting Radiographers, in terms of output or expertise. This has the potential to delay patient care and increases economic inefficiencies whilst negatively impacting satisfaction of those staff affected. Similarly, lack of involvement in professional development, education and research suggests Reporting Radiographers are not accomplishing their full potential, educating the next generation of the reporting workforce and driving evidence-based change for further development of the specialism.

Better use of the existing Reporting Radiographer workforce is essential to increase productivity, value and security of services, which are essential to improve patient outcomes and cost efficiency.

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Appendix A – Brief Summary of Selected literature

Reference	Description	Sample
<i>Clarke et al, 2014</i> ¹⁵	Cross-sectional structured survey sent to alumni Radiographers from two universities and their managers which explored factors that have influenced Radiographer role development in CT head reporting within the UK. Experiences of training and working from the perspective of current and past students as well as their managers were collected.	71 Participants – 48 students, 23 managers.
<i>Milner et al, 2016</i> ²⁴	Qualified Reporting Radiographers from every trust in the UK were invited to participate in this online cross-sectional survey. Snowball sampling of the researcher’s professional network was also employed. Data collection relating to; number of Reporting Radiographers, their personal demographics, location, time spent reporting and scope of practice in terms of both anatomical and referral types.	259 Respondents, estimated by authors to be approximately one-third of practicing UK Reporting Radiographers.
<i>Milner & Snaith, 2017</i> ¹⁹	The same sample as Milner et al 2016 was used, in this publication the roles; working practices and perceptions of Reporting Radiographers were explored and compared with each other as well as relevant guidance for Advanced Practice roles.	259 Respondents, estimated by authors to be approximately one-third of practicing UK Reporting Radiographers.
<i>Stevens et al, 2021</i> ¹²	This study collected job role information relating to Chest X-Ray reporting radiographers as well as factors their participants (role not specified) believed enabled or impaired training and employment in acute hospital sites in England. An online survey was used.	75 trusts are represented.
<i>Stevens, 2019</i> ²⁵	An online survey was used to collect Reporting Radiographer demographics, location, scope of practice and referral data in the West Midlands region of England.	40 respondents.
<i>Woznitza et al, 2021</i> ²⁰	Explored peer review systems used to monitor Reporting Radiographer performance in London. Data collected using an online survey in relation to number of Reporting Radiographers present in each trust, hours worked and time spent reporting in relation to activity of each respondent trust..	93 Reporting Radiographers were represented, they worked across 13 trusts.
<i>Estall & Mitchell, 2021</i> ²²	Data collected from qualified and training UK MRI Reporting Radiographers (active and inactive) in relation to number of staff, location, sign of criteria and governance. Factors causing inactivity were also gathered.	52 responses were received, representing 46 trusts.
<i>Lockwood, 2017</i> ¹⁸	This study collected data from Reporting Radiographer participants, across the UK using an online questionnaire, in relation to their working practices then used National guidelines and standards in Advanced Clinical Practice to assess conformity or variance with regulations.	261 respondents.
<i>Benwell & Fowler, 2017</i> ²¹	This study randomly sampled acute NHS trusts in England – data was then collected using a paper survey from Reporting Radiographers in relation to working practices and experiences.	81 respondents from 30 sites.

<i>Culpan, 2016</i> ¹⁷	This study collected data in relation to demographics, working practices and experiences of Radiographers involved in mammography image interpretation and reporting. A hardcopy survey was posted to all service managers offering breast screening services in the UK, purposive sampling of former students was also done.	66 responses.
<i>Cuthbertson 2019</i> ¹⁶	This publications explored perceptions and experiences of practitioners as they journey through training and into a skeletal reporting role. Reflective diaries from during training were analysed using interpretive phenomenological analysis, which generated themes for discussion in semi-structured interviews.	12 diaries were used, 6 of these individuals participated in interviews.
<i>Snaith et al, 2015</i> ¹⁰	This large-scale paper survey collected census data relating to presence, expertise and working practices of Reporting Radiographers working across UK. Free text comments gave insight into experiences of respondents and reference to earlier data provides a longitudinal view on development of the specialism.	325 UK sites, 179 sites had Reporting Radiographers present.
<i>Henderson et al, 2016</i> ²⁶	This project explored extended and advanced scope of practice roles in diagnostic radiography across Scotland. A paper questionnaire with a link to an online portal collected data in relation to what sort of roles existed, associated working practices and influencing factors.	42/111 sites replied. Follow up telephone interviews were then done to explore questionnaire responses in more detail (n = 8/42).
<i>McConnell, 2021</i> ²³	This study shows how Radiographer Reporting output has changed between 2015 and 2019 in Scotland for all health boards. Gap analysis survey was sent to the Scottish Radiology Managers group in 2017 & 2019.	<ul style="list-style-type: none"> • 2017 (n = 10/15 health boards). • 2019 (n = 9/15 health boards).

Appendix B – Summary of scoping searches

	1. AMED	2. BNI	3. CINAHL	4. EMBASE	5. HMIC	6. PsychINFO	7. EMCARE	8. PubMed	9. Medline
Radiographer AND reporting (TITLE AND ABSTRACT)	0	3	172	49	0	2	32	33	75
Radiographer adj3 reporting (TITLE AND ABSTRACT)	0	1	107	83	1	0	48	33	35
Radiographer near Reporting (TITLE AND ABSTRACT)	0	1	1	0	0	0	0	1	36
Radiographer AND reporting (TITLE AND ABSTRACT) from 2000 & English language	0	1	126	45	0	0	29	33	68
Proceeded to abstract assessment	0	1	51	8	0	0	4	4	7

	10. CORE
Radiographer reporting (ALL OF WORDS IN TITLE AND ABSTRACT)	196
Radiographer reporting (ALL OF WORDS IN TITLE AND ABSTRACT) 2000-2021	97

Notes...

- Articles extracted from highlighted search.
- 78 articles proceeded to assessment after duplicate removal and title assessment.
- Databases searched in sessions, numbered chronologically.
- 20 articles inaccessible with University and Athens logins.
- Duplicate and non-UK articles leading cause of rejection at this stage.
- Bank of articles extracted, duplicates removed at source.