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Journal article

**MRI reporting radiographers - A survey assessment of number and areas of practice within the United Kingdom**

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# **MRI Reporting Radiographers - A survey assessment of number and areas of practice within the United Kingdom**

## **Introduction**

Radiographer reporting was first documented in the 1960s<sup>1</sup> and according to the 2018 Royal College of Radiologists (RCR) census<sup>2</sup>, 84% of trusts now use reporting radiographers (RRs) to manage their shortfall in reporting capacity. The literature on RRs in MRI is limited and the role of radiographers providing a clinical report for MRI examinations has been a slower development. However, multiple studies have demonstrated that reports provided by radiographers including for CT and MRI are clinically relevant and equivalent to those provided by medical colleagues<sup>3-8</sup>.

The first accredited programme of post graduate study for the reporting of MRI examinations by Radiographers was available in 2003. The initial post graduate certificate (PgC) included the reporting of thoracolumbar spine (T/L), knee and internal auditory canal (IAMS)<sup>9</sup>. Modules in the reporting of MRI brain and cervical spine were available in 2007 and MRI breast in 2014.

There is currently no available data regarding the number of radiographers that have been trained in MRI reporting or the number in clinical practice. The aim of this study was to determine a baseline assessment of the national picture of MRI RRs within the United Kingdom (UK).

## **Methods**

The health research authority online tool stated that this survey was not research and so did not require NHS Research Ethics Committee approval<sup>10</sup>. The study was discussed with the Imaging Research lead for the lead author's trust and approval given.

A pilot questionnaire was trialled ( $n = 2$ ) to ensure content validity and to ensure the questions were suitably aligned to the aim of the study. Minor changes were made to a structured questionnaire with a set of twenty open and closed questions based on four main themes:

- those in training
- those trained
- those reporting
- post qualification sign off and expectations

The responders were able to give free text reasons for their numerical answers.

Demographics included the name and site of the responder to ensure that there was no data duplication.

Job titles, level of practice and scope of the responder's non-reporting role were not part of this study.

The questionnaire in Microsoft® Word format was sent out via email or through author contacts to the following groups with the aim of maximising the number of responders through forward dissemination:

- British Association of MRI Radiographers (BAMRR)
- East Midlands MRI group
- Scottish MRI Superintendent/Lead Radiographers group
- College of Radiographers MR Advisory group (MRAG)
- College of Radiographers Consultant Radiographer Advisory group (CRAG)

Contact was also made with Universities that advertised a MRI reporting course and all Universities where respondents indicated training had occurred.

All imaging department leads that had registered MRI radiographer reporting on benchmarking data held by Model Hospital (model.nhs.uk) were contacted by phone and a questionnaire sent via email if reporting or training in MRI reporting occurred.

For hospitals where it was known that MRI RRs were employed and where no response had been received, follow up phone calls or contact via NHS email was made.

All contacts were encouraged to forward the questionnaire to any other relevant hospital or radiographer.

The questionnaire included an introductory paragraph explaining the aim of the survey and how the results were to be shared. The main authors name, designation and contact NHS email address were included for queries and all responders were asked to return the completed questionnaire to the authors NHS email address. Consent was assumed by return of a completed questionnaire.

The numerical responses to each questionnaire were exported into a Microsoft® Excel spreadsheet. Free text responses were summarised and exported into the same Microsoft® Excel file. The quantitative results were displayed in Microsoft® Excel column charts. The main themes from the free text responses were summarised.

## Results

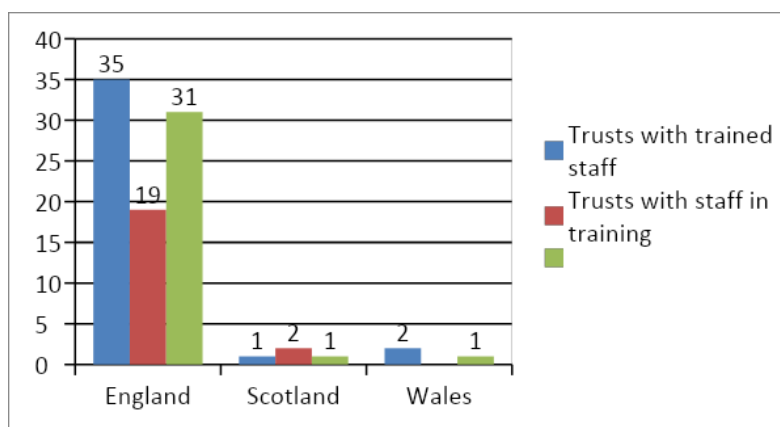
### Demographics

The total number of questionnaires received was  $n = 52$  from 46 trusts that had radiographers either trained in MRI reporting, in training or about to start. Two responses were received from 3 different trusts with multiple sites, this information was combined and any discrepancies confirmed by contacting the responders.

The final sample size was  $n = 46$ , one response from 46 different trusts. All questionnaires were received between September 2019 and May 2020. The response rate cannot be determined due to the flexible dissemination approach of the questionnaire. This was a conscious decision to attempt to capture as many radiographers as possible rather than be able to determine a response rate.

Replies were received from 40 English trusts, 4 Scottish trusts and 2 Welsh trusts. One reply received from a hospital in Northern Ireland stated that they were not aware of any MRI RRs in Northern Ireland and no other responses were received from Northern Ireland.

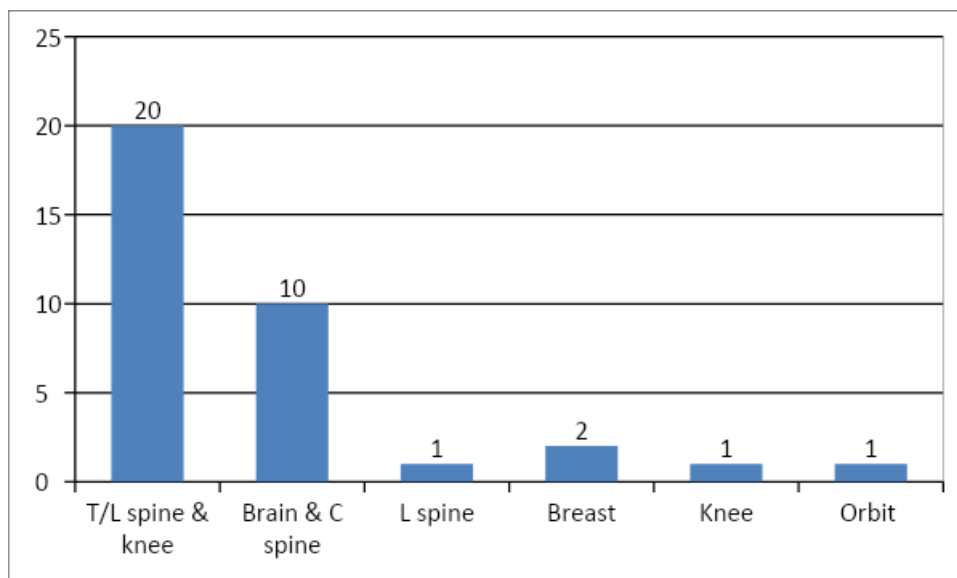
Figure 1. Number of trusts split by country where responses have been received from MRI RRs or those in training:



### *Radiographers in training*

The total number of radiographers in training was  $n = 31$  from 21 trusts. A number of staff were training in more than one area.

Figure 2. Number of radiographers in training in each anatomical area:



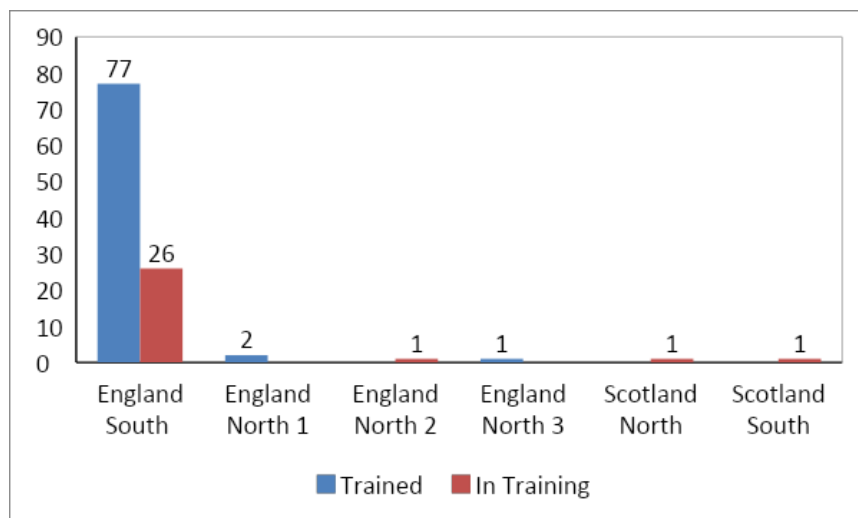
Of the 21 trusts that had radiographers in training, 80.96% ( $n = 16/21$ ) had one in training, 4.76% ( $n = 1$ ) had two in training, 4.76% ( $n = 1$ ) had three in training and 9.52% ( $n = 2$ ) had four in training.

### *Universities*

Respondents identified six universities that had provided a MRI reporting course. The type of course varied, some were specific to MRI and others were specific to reporting with the clinical element being led by the radiographer's trust.

96.25% ( $n = 77/80$ ) of the trained radiographers completed their training at a South of England university and 89.66% ( $n = 26/29$ ) of those in training were attending the same university. Two of those in training are already qualified in another anatomical area and are undergoing in house training.

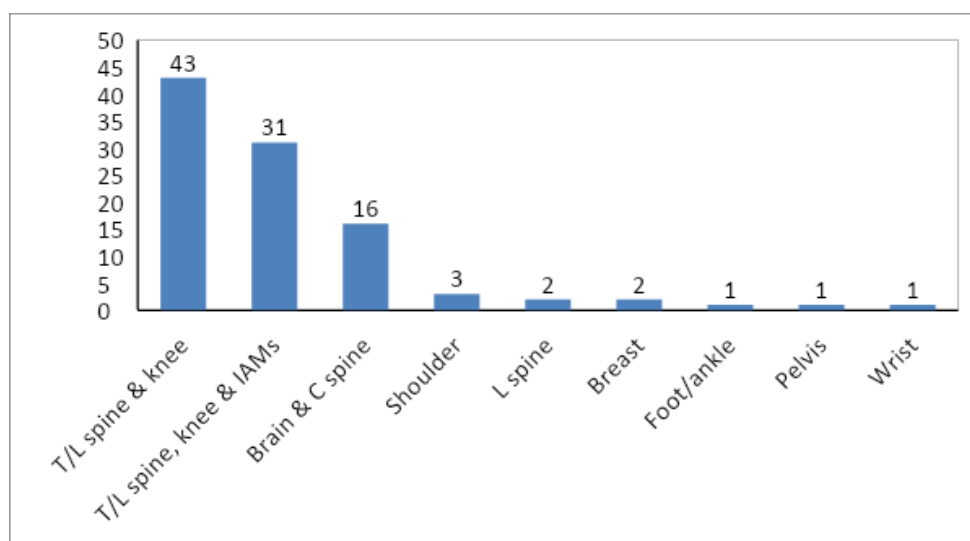
Figure 3. Number of radiographers in training and trained at the different universities:



*Radiographers who have completed training*

The total number of radiographers trained in MRI reporting was  $n = 80$  from 38 trusts, this number includes those currently not in practice. A number of respondents were qualified in more than one anatomical area.

Figure 4. Number of radiographers trained in different anatomical areas:



Replies were received from MRI RRs who were trained from 2004 to 2019. Of the 38 trusts that had staff trained, 10.53% ( $n = 4/38$ ) had four radiographers trained, 26.32% ( $n = 10/38$ ) had three trained, 21.05% ( $n = 8/38$ ) had two trained and 42.10% ( $n = 16/38$ ) had one trained. These figures include those that were no longer in practice.

Two radiographers from 2 trusts ( $n = 2/46$ ) did not complete their training, one due to a lack of radiologist support and one due to long term leave.

### Radiographers in practice

The total number of radiographers in practice was  $n = 57$  from 35 trusts. A number of the radiographers were reporting in more than one anatomical area.

Figure 5. Number of radiographers in practice in each anatomical area:

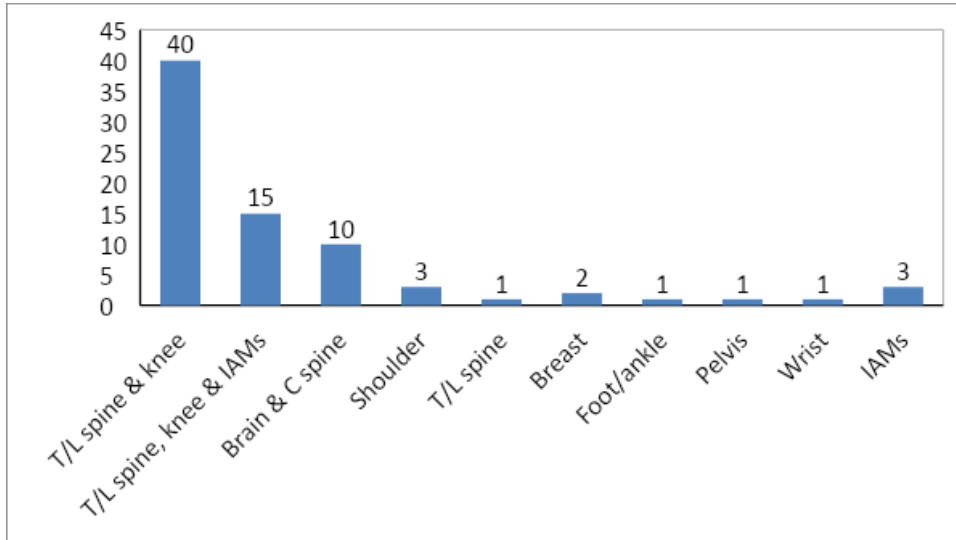
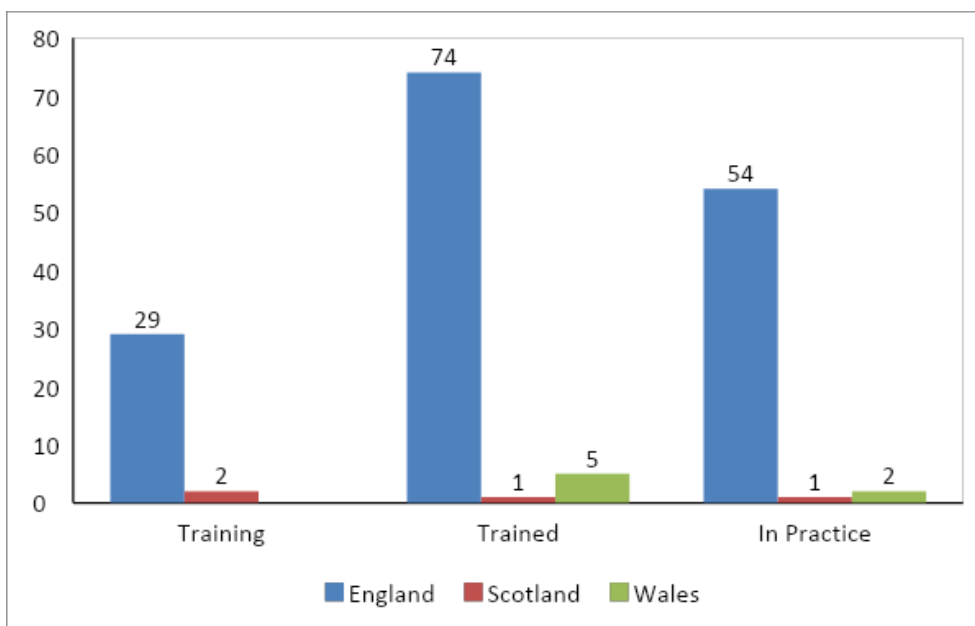


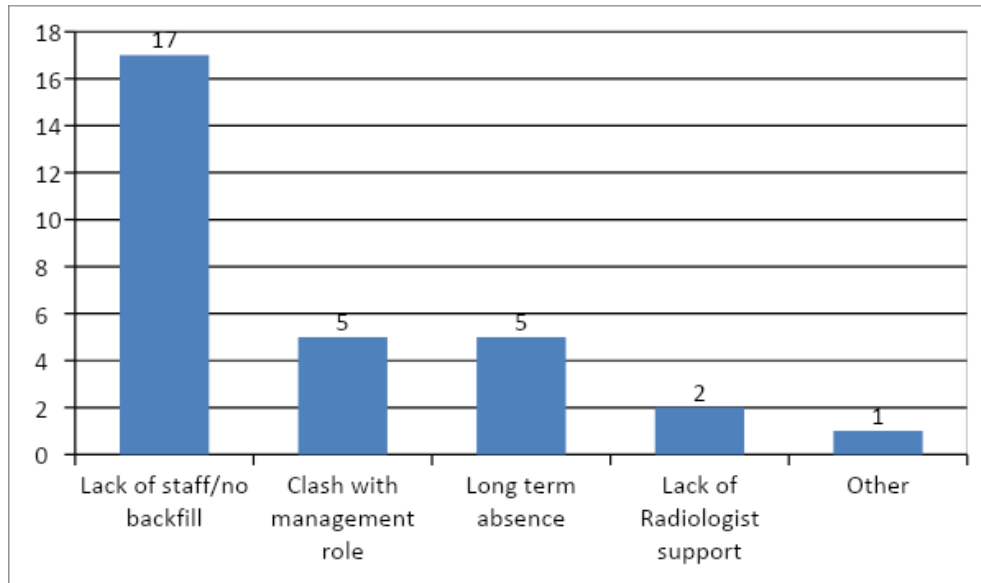
Figure 6. Number of radiographers in training at a University, trained and in practice in each country:



### Gaps in reporting practice

Radiographers from 30 trusts ( $n = 30/46$ ) reported that there had been gaps in reporting practice. The most common reason for any gap in practice was a lack of staff or a lack of backfill.

Figure 7. Reasons for gaps:

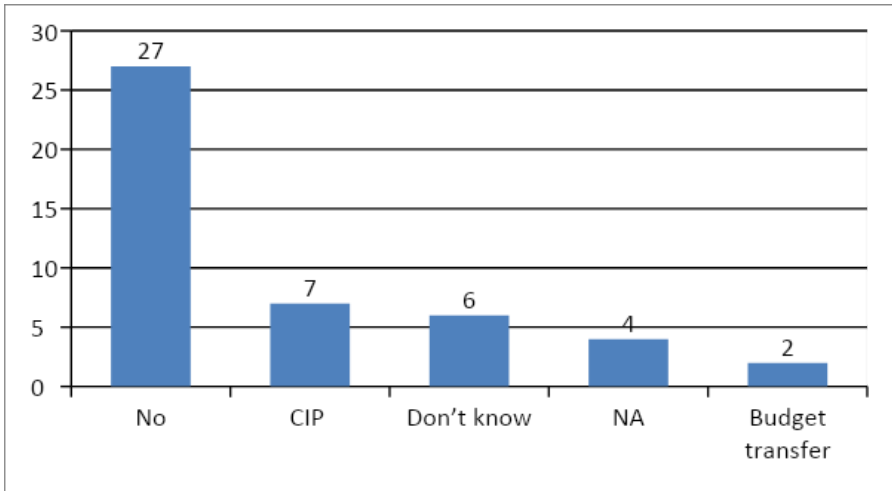


Other = due to service demands and lack of workstation  
Clash with management role indicates a radiographer lead role clashing with their reporting role.

*Reduction in radiologist posts and/or transfer of funding to a RR budget?*

Radiographers from 58.69% of trusts ( $n = 27/46$ ) reported no transfer in funding or reduction in radiologist posts, 4.35% ( $n = 2/46$ ) reported a budget transfer. 15.22% ( $n = 7/46$ ) used money from a reduction in waiting list initiative payments or outsourcing and 13.04% ( $n = 6/46$ ) of respondents did not know whether a transfer of funding had occurred.

Figure 8. Reduction in radiologist posts or transfer of funding:

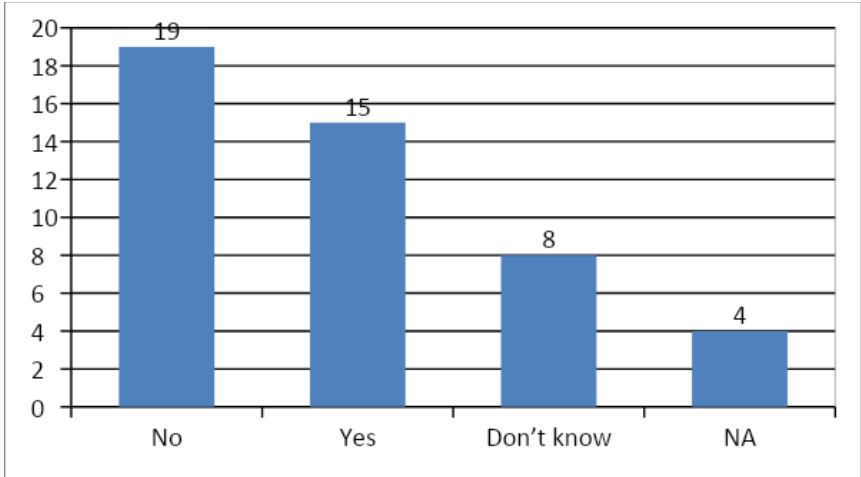


CIP (Cost improvement plan) = reduction in waiting list initiative or outsourcing.  
 Budget transfer = Transfer of funding from radiologist budget to reporting radiographer budget.  
 NA = not applicable or not answered.

*Extra funding for radiographer reporting sessions?*

41.30% of trusts ( $n = 19/46$ ) reported no extra funding with 32.61% ( $n = 15/46$ ) reporting some form of extra funding.

Figure 9. Numbers of trusts providing extra funding:



NA = not applicable or not answered.

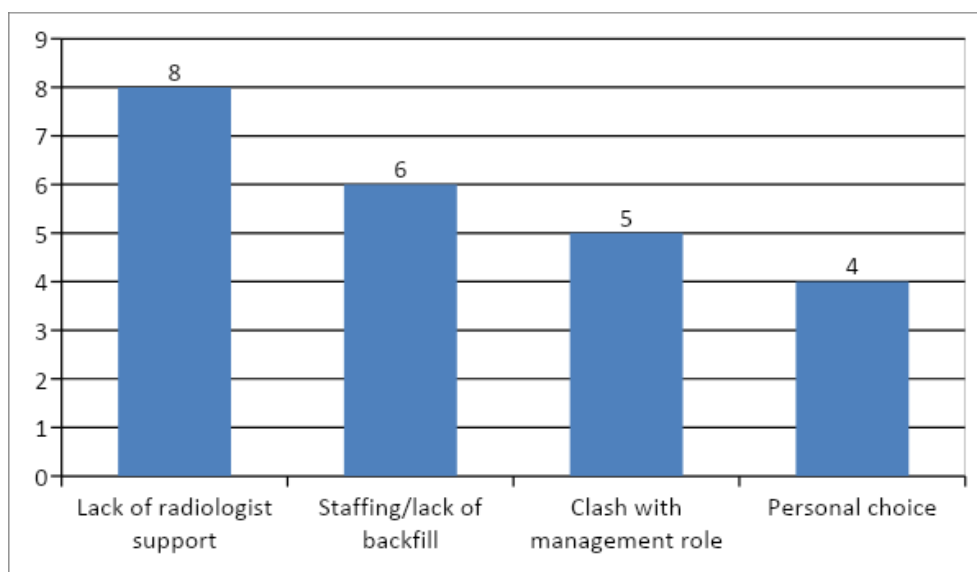
*Radiographers that completed training but have not undertaken any form of reporting or are no longer reporting*

23 radiographers from 15 trusts ( $n = 15/46$ ) no longer report MRI scans. For 34.78% ( $n = 8/23$ ), the reason was due to a lack of radiologist support, 26.09% ( $n = 6/23$ ) stated this was



due to a lack of staffing and/or backfill, 21.74% ( $n = 5/23$ ) stated this was due to a clash with their management role and 17.39% ( $n = 4/23$ ) stated it was due to personal choice.

Figure 10. Numbers of radiographers who no longer report with reasons:



### Sign off criteria

For the purposes of this study, sign off criteria was defined as criteria for ensuring acceptable competency in reporting autonomously once they had completed their training. 89.13% of trusts ( $n = 41/46$ ) stated that they had sign off criteria, however, there was significant variation. The most common sign off criteria ( $n = 9/41$ ) was a minimum of 100 cases double reported.

The breast MRI reporters were excluded from this data as their cases are double reported.

Table 1. Number of trusts and their different sign off criteria:

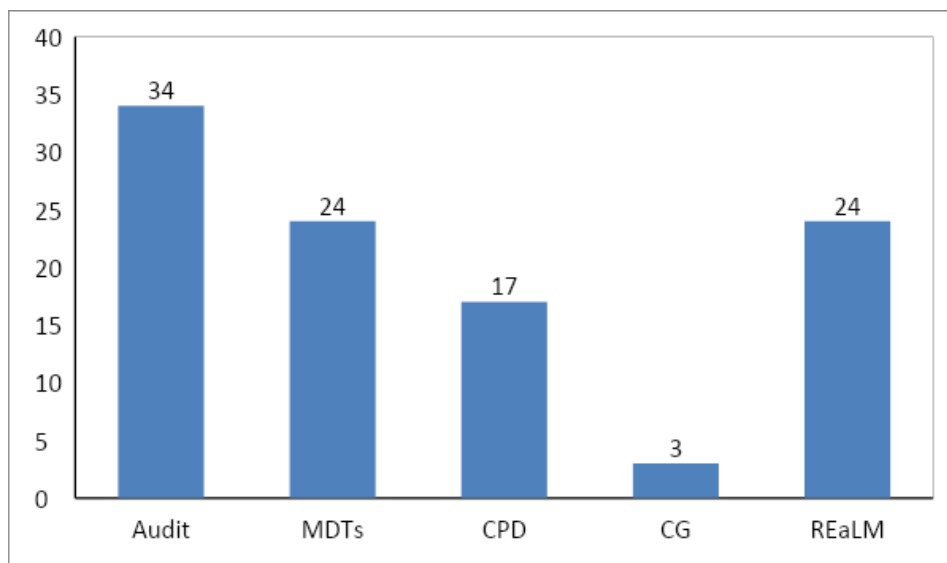
Number of trusts	Sign off criteria
9	Minimum of/approx. 100 cases double reported
6	Immediate post qualification
6	Minimum of 50 cases double reported
3	6 months post qualification
3	When radiologist felt they were competent
2	Minimum 3 months post qualification
2	In discussion/undecided
1	250 cases double reported with 95% accuracy
1	250 cases double reported
1	15 cases double reported
1	6 month period where 10% are audited
1	30 cases double reported
1	Approx. 40 cases double reported
1	6 months double reporting for T/L spines, 12 months for IAMs
1	200 cases double reported with 95% sensitivity and specificity
1	50% audited for 6 months then 10% audited

### Post qualification governance requirements

38 trusts (82.61%,  $n = 38/46$ ) had specific post qualification expectations for their reporters, many of the trusts had multiple requirements. Respondents from 6 trusts ( $n = 6/46$ ) either did not respond to the question or the answer was unknown, respondents from 2 trusts ( $n = 2/46$ ) replied that this was not applicable as they had no reporting practice at the time of the survey.

The majority of respondents (89.47%,  $n = 34/38$ ) expected their RRs to take part in an audit of reporting competency after qualification, with 63.16% ( $n = 24/38$ ) expected to attend relevant Multidisciplinary (MDT) and/or Radiology Events and Learning Meetings (REaLM).

Figure 11. Number of respondents with specific post qualification governance requirements



CPD - Continuing professional development  
CG – attendance at Clinical Governance meetings

### Discussion

The sample size of this study was small; however, it provides a baseline of the number and scope of practice of MRI RRs in training, trained and in practice within the UK. There is no evidence available from the training institutions regarding the number of radiographers that have completed a MRI reporting qualification and it is not possible to determine whether this survey has captured the majority of the MRI RRs in the UK.

There was significant variation in the number of responses from the different countries with 40 of 46 responses from English trusts and 92% of trained staff employed in English trusts. A survey of advanced practice in Scotland in 2016<sup>11</sup> showed no RRs in MRI and a RCR survey of radiologists in Scotland demonstrated that 90% did not support radiographers reporting MRI scans and 85% would not support a reporting course<sup>12</sup>. A further UK study in 2015<sup>13</sup> also reported significant geographical variation in RRs. Whether this lack of reporting practice in the other countries is a true reflection or whether this is due to an increased acceptance of practice or availability of courses within England is not known.

The results demonstrate the importance of ensuring that the many components required to set up a MRI RR service are agreed prior to commencement. From the selection of trainees to the provision of appropriate financial and mentor support and post qualification governance requirements.

Radiologist support throughout training and post qualification is vital, the main reason for RRs to no longer be in practice was due to a lack of radiologist support and the implementation and expansion of MRI RRs must be a collaborative process. The RCR and Society and College of Radiographers (SCoR) believe that reporting teams should be the result of careful and considered service development <sup>14</sup>, the results from this study suggest that this is not common practice, evidenced by the number of RRs currently not in practice. The majority of trusts with MRI RRs only have one radiographer in training or one in practice; this raises concerns over the sustainability of the service and the level of peer support.

A lack of staff, backfill and funding were strong contributory factors for gaps or a cessation of practice; this is supported by other studies on radiographer advanced practice <sup>11, 15</sup>. The Care Quality Commission (CQC) and NHS Improvement findings agreed that clinical duties often took priority and that there are trusts where RRs are not having their skills utilised <sup>16, 17</sup>.

There are no national guidelines for post qualification sign off and these results demonstrated a wide variation in practice. However, post qualification, both the SCoR and RCR state that systematic feedback from referring clinicians should form part of each reporter's clinical practice, and all reporters should be fully integrated into systems of quality assurance in reporting, through the participation in MDTs, REaLM and frequent feedback from peers <sup>18, 19</sup>.

## **Limitations**

This data may not be generalizable to all MRI RRs due to the unknown response rate. Recruitment to this study would have been more robust if a central database or voluntary register was held, this was also a contributing factor in a study on the scope of practice of CT head RRs in the UK <sup>20</sup>. It is important that the potential effects of non-response bias are taken into account; however, there appears to be no clear link between response rate and the presence or absence of non-response bias <sup>21</sup>. The survey method was reliant on the participant's honesty and an assumption was made that there were no falsified responses.

## **Conclusion**

This survey provides an insight into the current status of MRI RRs in the UK. The role of the radiographer in reporting MRI examinations is still a relatively new concept and although courses have been available since 2003, numbers are still low. There are significant geographical and working practice variations and it is essential that radiographers and radiologists work together to create a culture that enables this practice to occur when and where service requirements dictate. Defined standards of practice and the implementation of a central register would benefit both those in practice and those looking to implement a MRI reporting radiographer service.

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