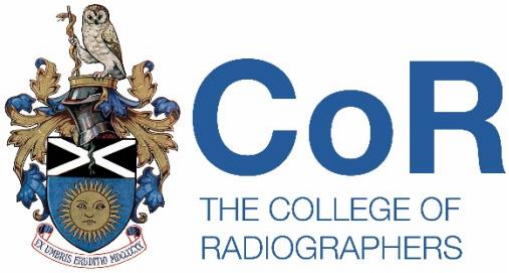
The College of Radiographers

Diagnostic Radiography Workforce UK Census 2020



Contents

1 Foreword

Each year the Society and College of Radiographers undertakes a UK-wide diagnostic radiography workforce census to gain intelligence about the clinical imaging radiography workforce.

The census collection was taken at a time during the COVID-19 pandemic when imaging services were making inroads into the significant number of imaging referrals that had built up during the first wave of the pandemic and were also faced with the knowledge of a forthcoming second surge.

We would like to express our sincere thanks to those service managers who submitted their data.

Undoubtedly, the pandemic has highlighted the vital role that imaging services play and the current focus on the imaging workforce from all governments throughout the UK should be seen as an opportunity to highlight the need for a well-resourced and well-balanced imaging workforce. This requires up-to-date data on the workforce, and we continue to reflect on how we can collect data in a way that reduces the burden on our services while allowing us as a professional body and trade union to influence and shape the future imaging workforce.

It was recognised prior to the pandemic that there was a shortage within the imaging workforce. The Richards[1] report highlighted the need for an additional 3,500 radiographers and 2,500 assistant practitioners over five years in England. We are currently still in the midst of the COVID-19 pandemic, and further implications are likely to arise for the imaging workforce. A recent report by the Institute for Public Policy Research[2] looking at the impact of COVID-19 on health and care systems states the case for additional backlog funding for imaging equipment and workforce.

The 2020 census continues to show some high vacancy rates, with an average vacancy rate from respondents of 10.5%. Of note is the high percentage of respondents utilising bank and agency staff: at 81%, this is an increase from the previous year, with many respondents commenting that this was due to the impact of COVID-19 on services. A few respondents took the opportunity to comment on the increased workload and impact from COVID-19 on services and staff, expressing praise for their responsiveness but also alluding to the physical and mental impact on staff. It is encouraging to see apprenticeship posts emerging; however, respondents highlighted the need to consider the support workforce in future census collections.

Once again, we would like to thank our service managers for submitting figures for the 2020 diagnostic workforce census.

I would personally like to thank all members of the radiographic workforce for your bravery, care, strength, professionalism and stoicism during the ongoing pandemic.

I am proud to represent you as president of the SoR.

Chris Kalinka

2 Executive summary

Between November 2020 and January 2021, the College of Radiographers (CoR) carried out a census of the diagnostic radiography workforce in the UK. The objectives were to establish the size, structure, nature and vacancy rate of the workforce. Sixty-five providers of medical imaging responded to an online questionnaire. This document presents an analysis of the census results and compares them to similar censuses carried out in 2017, 2018 and 2019 (see references). The following bullet points highlight the main findings:

- The average number of diagnostic radiography establishment staff by whole time equivalent (WTE) per respondent is 109.1.
- Of the 62 respondents to the current vacancies question, 57 (92%) report vacant diagnostic radiography workforce posts.
- The average current UK vacancy rate across respondents is 10.5% at the census date of 1 November 2020. This varies by UK country: England 10.0%, Northern Ireland 7.1% and Scotland 8.0%. No responses were received from providers in Wales this year. (A high vacancy rate at a large UK-wide provider explains the UK vacancy rate being higher than for any individual UK country.)
- The average three-month vacancy rate across all respondents is 6.6%.
- The percentage of the respondents' establishment headcount absent long term is 4.2%; this figure has been in the range 3.4% to 4.2% over the last four censuses.
- By headcount, 1.5% of respondents' diagnostic radiography workers have a definite date to retire during the coming year and 11.4% of post holders are aged 55 years or above.
- The average diagnostic radiography workforce turnover reported by respondents in the last year is 6.8%. The main reasons respondents give for post holders leaving are career development within another NHS imaging department and retirement.
- On average, respondents in NHS England report that 1.7 posts are apprenticeships (by headcount).
- Respondents report that less than 1%, by headcount, of Agenda for Change (AfC) band 5 or higher clinical staff are not registered with the Health and Care Professions Council (HCPC), Nursing and Midwifery Council (NMC), Register of Clinical Technologists (RCT) or similar body.
- 60% of respondents say the majority of their diagnostic radiography workforce work in a shift system.
- By headcount, 3.4% of diagnostic radiography workforce post holders at the respondents' organisations require a work permit to work in the UK.
- In an average working week among respondents, at AfC band 7 around 30% of time is spent on non-clinical duties which support the delivery of imaging services but are not directly

patient facing. These duties may include management, training and/or quality improvement, for example. For AfC band 8a, there appears to be a trend of an increasing proportion of time spent on non-clinical duties such as leadership and service development over the last four years among respondents, rising from 50% in 2018 to 73% in 2020.

- By headcount, 5.6% of respondents' staff are in postgraduate training. The top six postgraduate training areas in descending order are:
    - ultrasound,
    - conventional imaging reporting,
    - mammography (including reporting, biopsy etc),
    - postgraduate certificate (PgC), postgraduate diploma (PgD) or Master of Science (Masters) qualification-level courses in computed tomography (CT),
    - leadership development and
    - PgC/PgD/Masters qualification-level courses in magnetic resonance imaging (MRI).
- By headcount, 12.0% of practitioners at the respondents' organisations are in advanced practice and 0.6% are in consultant-level practice.
- As of the census date, 81% of respondents were employing some diagnostic radiography and/or sonography agency staff. This is an increase on the 72% reported in the previous census in 2019. However, it is the same level of agency staff use as in 2018.

3 Introduction

This report presents an analysis of an online census of the diagnostic radiography workforce in the UK run by the CoR between November 2020 and January 2021. It follows on from similar censuses in September 2014[3], May 2016[4], November 2017[5], November 2018[6] and November 2019[7]. The census was targeted at providers of medical imaging in England, the Channel Islands, the Isle of Man, Northern Ireland, Scotland and Wales, in the NHS and other healthcare sectors. Respondents were asked about the size and nature of their diagnostic radiography workforce. The results of this census will inform the work of professional bodies, workforce planners and commissioners/providers of radiography education.

4 Methodology

The 2020 workforce census captures data about the diagnostic radiography workforce in the UK at a census date of 1 November 2020. Radiology services managers (or equivalents) were asked to answer the census on behalf of all diagnostic radiography (medical imaging) services in their hospital/workplace or organisation. They were asked to include details of all practitioners in the career framework from assistant practitioners through to advanced and consultant practitioners plus apprenticeship posts (England only) and trainee assistant practitioners. Together they are referred to as the 'diagnostic radiography workforce' in this report. Excluded are healthcare support workers (radiographic assistants, clerical workers, helpers/healthcare support workers), clinical scientists, radiotherapy staff and third-party managed services where the staff are employed by the third party.

Respondents were asked about their:

- Contact details and details of the workplaces and medical imaging modalities on behalf of which they were responding
- Establishment figures by AfC band – WTE and headcount
- Vacancy figures by AfC band – current and three-month
- Long-term absence figures by AfC band – career break, long-term sickness and parental leave
- Definite retirements due in the coming year and numbers of staff aged 55 years or above
- Number of leavers since 1 November 2019 and reasons for leaving
- Apprenticeship posts
- Numbers of staff not registered with the HCPC, NMC, RCT or similar body.
- Use of a shift system
- Number of radiographers requiring a work permit to work in the UK and thoughts on the impact of the new points-based visa system
- Time spent on non-clinical duties and the nature of those duties
- Numbers in postgraduate training
- Numbers in advanced and consultant practice
- Use of agency diagnostic radiographers and sonographers

Both NHS and non-NHS providers were asked to supply their workforce data by AfC band. Non-NHS providers, who may not use the AfC system, were asked to refer to the NHS AfC pay bands before responding. Thus, all data could be collected and analysed by AfC band.

Data collection was carried out using an online survey tool between November 2020 and January 2021. Email invitations were sent to 198 providers of medical imaging services in the UK (often to more than one individual at the organisation). The census was also promoted via the Society and College of Radiographers' publications, website and social media. We received 65 responses, compared to 66 responses to the previous census in November 2019.

Of the 65 responses, 13 were from organisations who had not been sent an email invitation and 3 were from different sites at a single independent organisation.

Not every respondent answered every question. The 'n' number below each figure in this report indicates the number of respondents for that question in the 2020 census.

An error in Q18 (Leavers) of the questionnaire was corrected on 25 November 2020 after it was noticed by a respondent. The question erroneously asked about 'radiotherapy radiographic workforce posts' instead of 'diagnostic radiography workforce posts'. Responses to Q18 and related Q19 received before the correction are excluded from the analysis (except for the response from the provider who reported the error and said they had assumed it meant to say 'diagnostic').

Links to the full set of questions for the 2020 census and a spreadsheet of the principal background data are provided in the downloads section.

5 Profile of respondent workforce size

The NHS respondents are fairly evenly distributed in terms of the size of their diagnostic radiography workforce establishment WTE. Most non-NHS respondents are small medical imaging providers with establishments of fewer than 20 WTE. However, two non-NHS providers are in the 20–40 WTE range and one non-NHS respondent has a diagnostic radiography workforce establishment of more than 300 WTE.

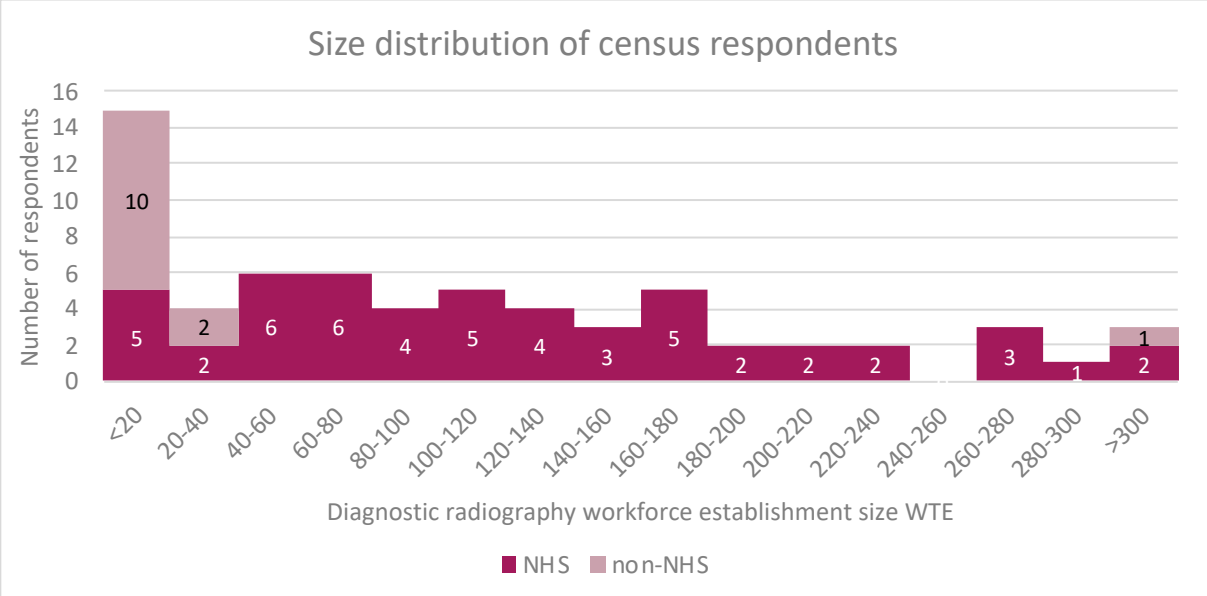


Figure 1 Diagnostic radiography workforce WTE size distribution of respondents (n=65)

6 Shape of workforce by Agenda for Change band

The mean number of diagnostic radiography establishment staff per respondent is 109.1 WTE. Figure 2 illustrates the average number of WTE staff by AfC band. The figure excludes the average of 1.1 WTE staff per respondent for whom it is reported that AfC band is not applicable to their role.

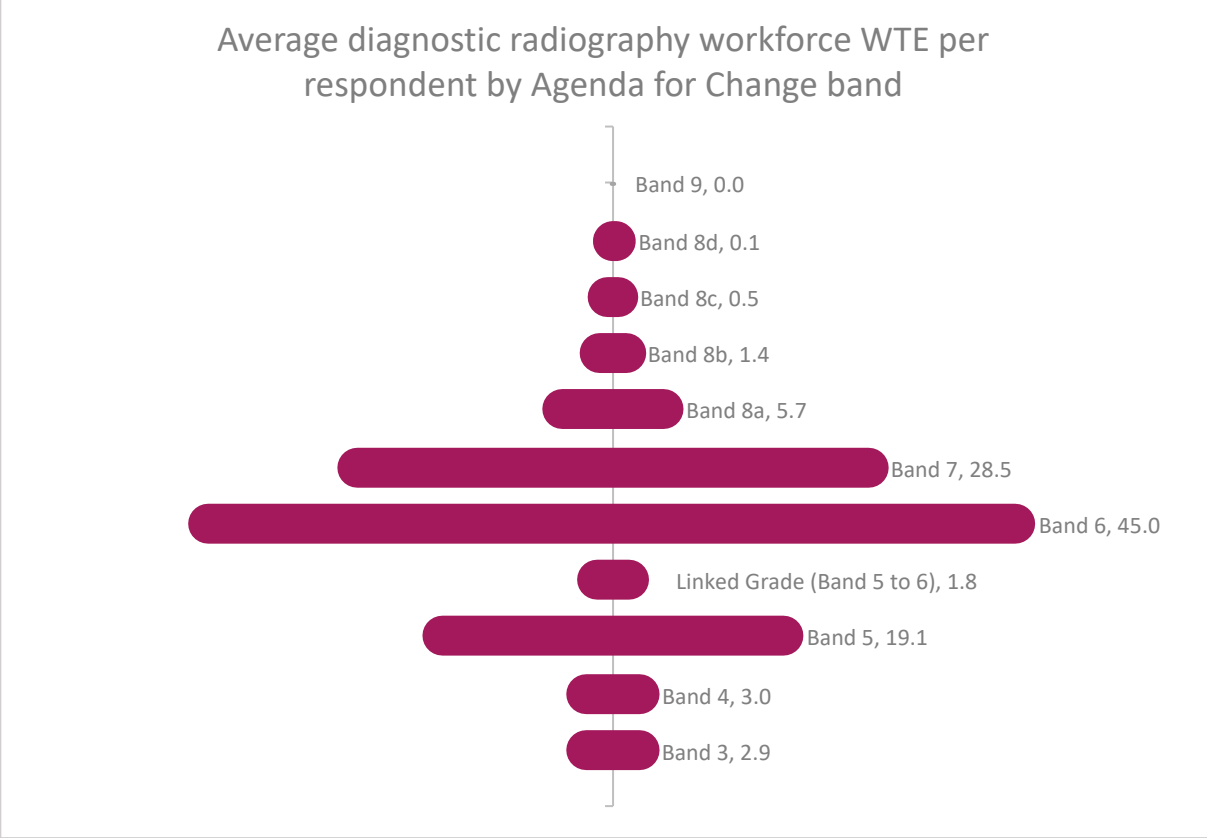


Figure 2 Average diagnostic radiography workforce WTE by AfC band (n=65)

7 Vacancy rate

7.1 Current vacancy rate

Of the 62 respondents to this question, 57 (92%) report vacant diagnostic radiography workforce posts.

The average current UK vacancy rate across respondents is 10.5% at the census date of 1 November 2020. (The current vacancy rate is defined as the total number of WTE vacancies as a percentage of the WTE establishment number of staff.) This compares to an average vacancy rate of 9.1% in November 2017, 9.0% in November 2018 and 9.6% in November 2019.

Figure 3 illustrates that the highest vacancy rate is at the linked grade (band 5 to 6). The vacancies at the linked grade are dominated by high vacancy rates at two English NHS Trust respondents.

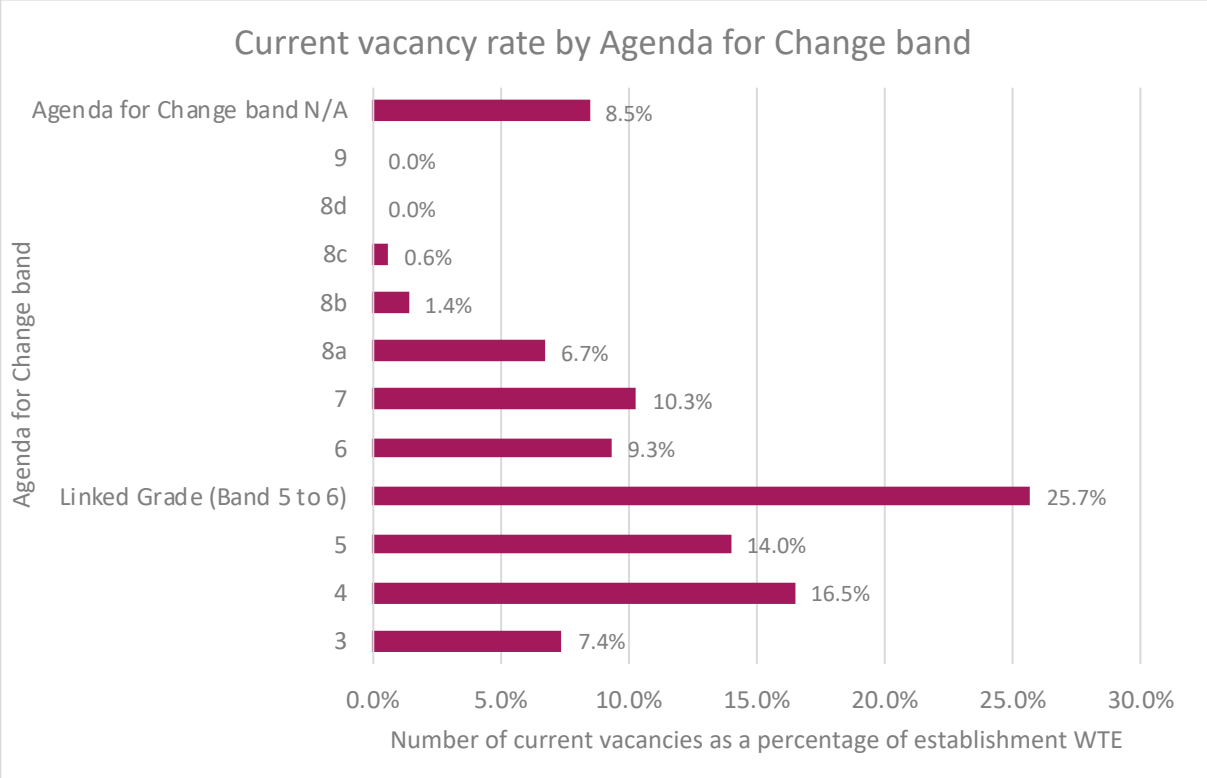


Figure 3 Current vacancy rate by AfC band (n=62)

7.2 Current vacancy rate by UK country and year

The average current respondent vacancy rate varies by UK country: England 10.0%, Northern Ireland 7.1% and Scotland 8.0%. No responses were received from Wales this year.

One response was received from a provider that operates UK-wide and one response was received from the Channel Islands; their responses are not included in this section. A high vacancy rate at the large UK-wide provider explains the UK vacancy rate (see section 7.1) being higher than for any individual UK country. This is due to the UK-wide and Channel Islands providers' vacancy numbers being included in the UK vacancy rate calculation but not in the calculations for England, Northern Ireland and Scotland.

Figure 4 shows the average current vacancy rate trend from 2017 to 2020 among respondents. England generally has the highest current vacancy rate of the UK countries.

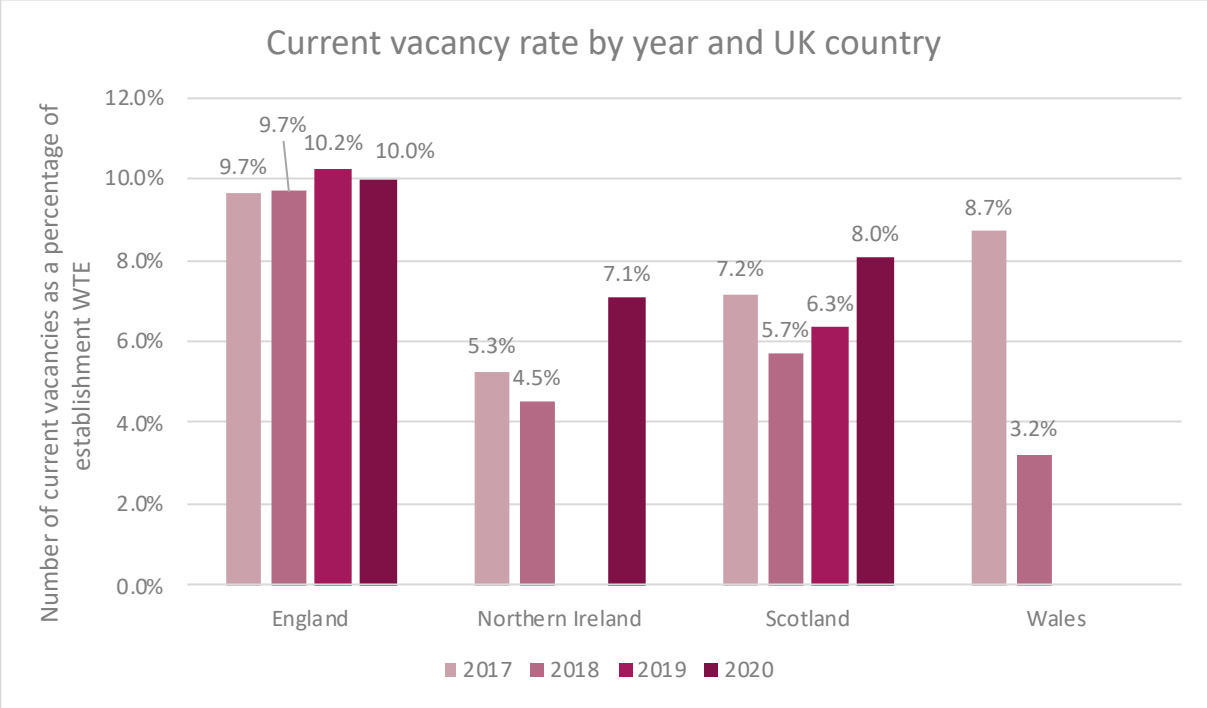


Figure 4 Current vacancy rate by UK country and year (n=60)

Figure 4 notes:

- In years when fewer than three providers responded from a UK country, their average vacancy rate is not shown in the graph: Northern Ireland (2019); Wales (2019); Wales (2020).

7.3 Three-month vacancy rate

Of the 59 respondents to this question, 47 (80%) report vacancies that have existed for three months or longer. The average three-month vacancy rate across all respondents is 6.6%.

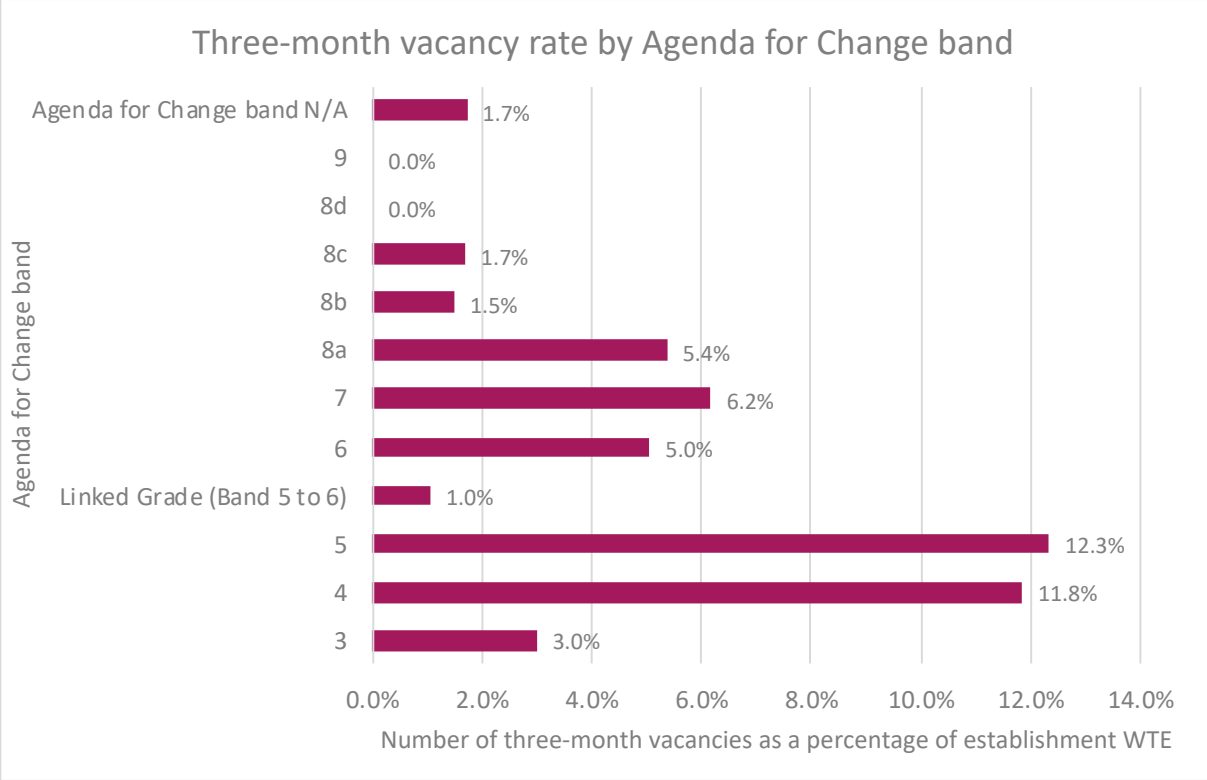


Figure 5 Three-month vacancy rate by AfC band (n=59)

8 Long-term absence rate

8.1 Long-term absence rate by Agenda for Change band

The average percentage of the respondents' diagnostic radiographic establishment headcount absent long term is 4.2% as of the census date of 1 November 2020 (comprising 0.2% on a career break, 1.9% absent due to long-term sickness and 2.1% on parental leave).

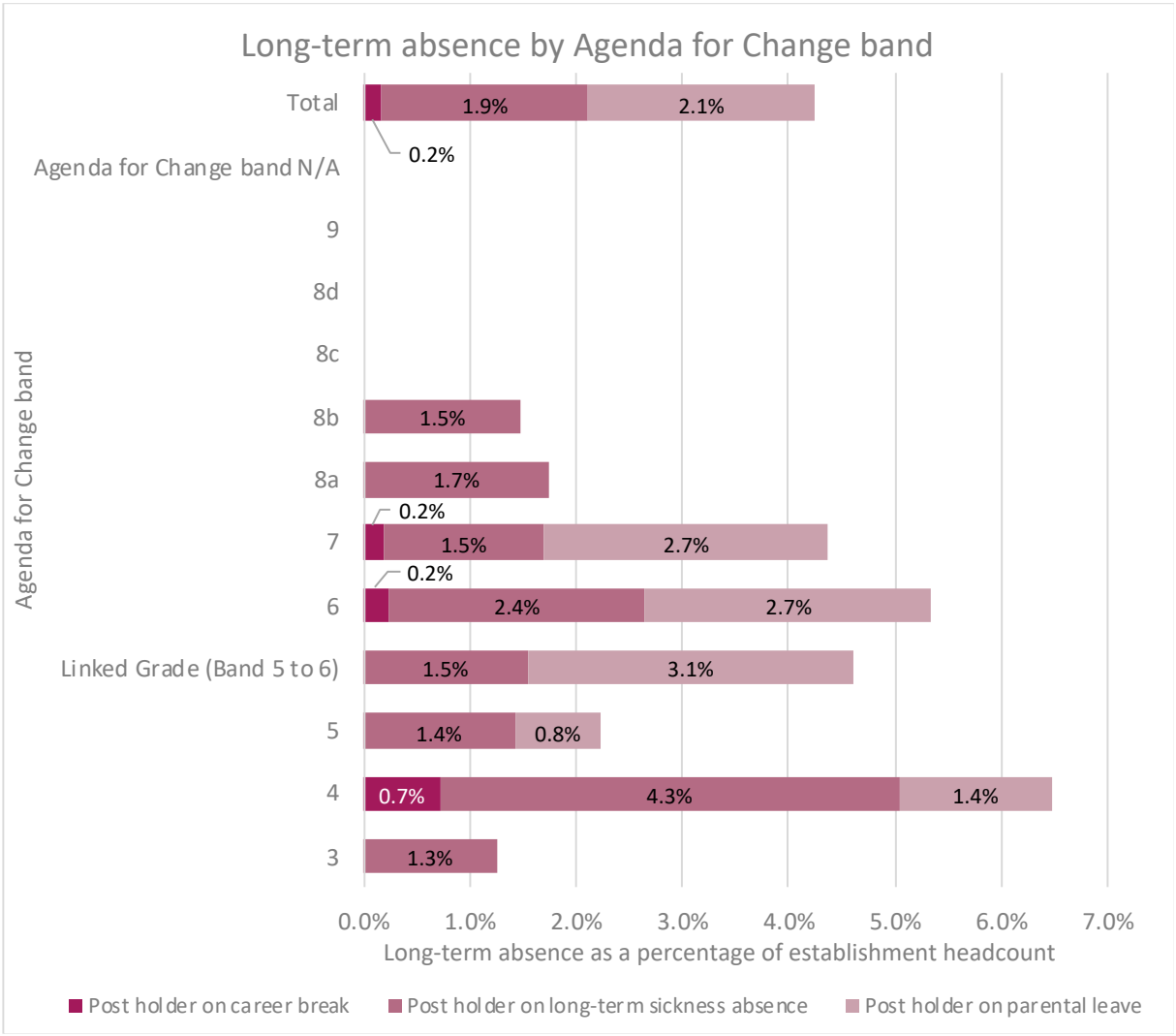


Figure 6 Long-term absence rate by AfC band (n=47)

Respondents were also asked if any other members of their diagnostic radiography workforce were on long-term absence but not included in the above figures. Five respondents mentioned additional categories of absentees: band 2 radiology department assistants; secondment with organisational development; clinically extremely vulnerable so shielding; ongoing involvement with HCPC; and long term but not reached 28 days yet.

8.2 Long-term absence rate by year

The long-term absence total of post holders on career break, long-term sickness absence and parental leave has been in the range 3.4% to 4.2% over the last four censuses.

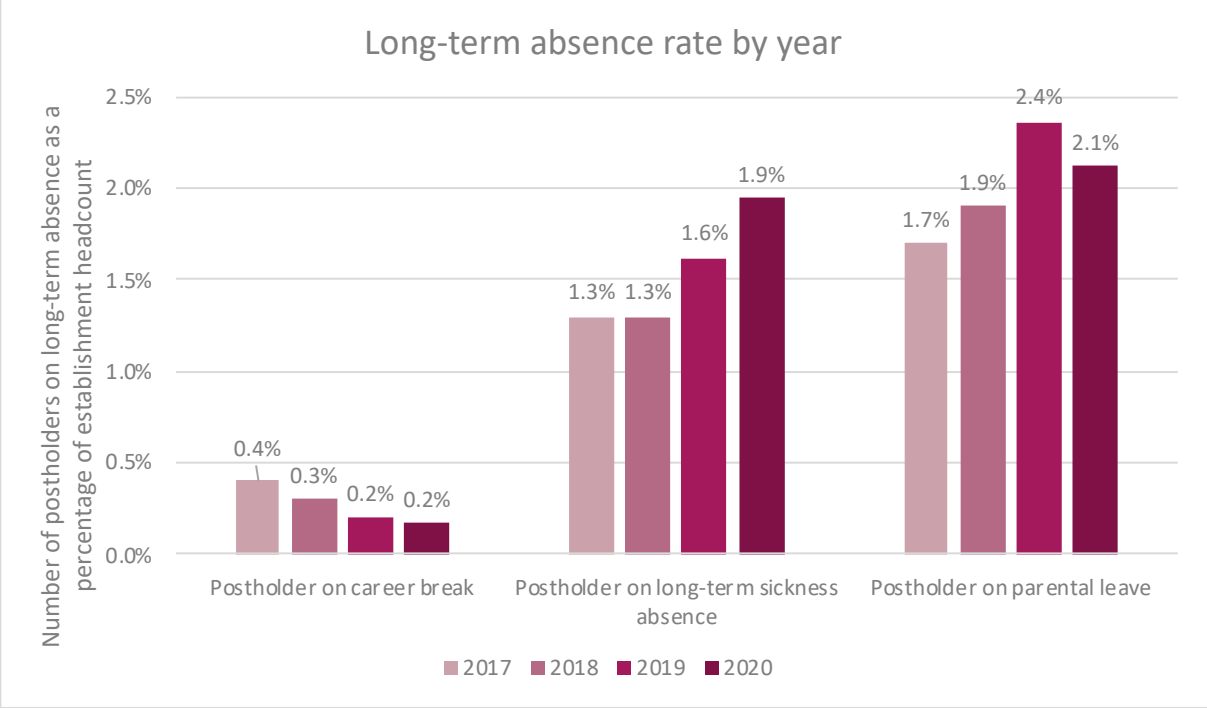


Figure 7 Long-term absence rate by year (n=47)

9 Upcoming retirements and age profile

Respondents were asked to give the number of diagnostic radiography workforce posts with a post holder with a definite date to retire in the coming year (between 1 November 2020 and 31 October 2021). In total, 1.5% of respondents' diagnostic radiography workers have a definite date to retire during the year. Respondents were also asked for the number of post holders aged 55 years or above as of the census date (1 November 2020); 11.4% of post holders are aged 55 years or above. As might be expected, the proportion of post holders aged 55 and above increases from band 6 to 8c.

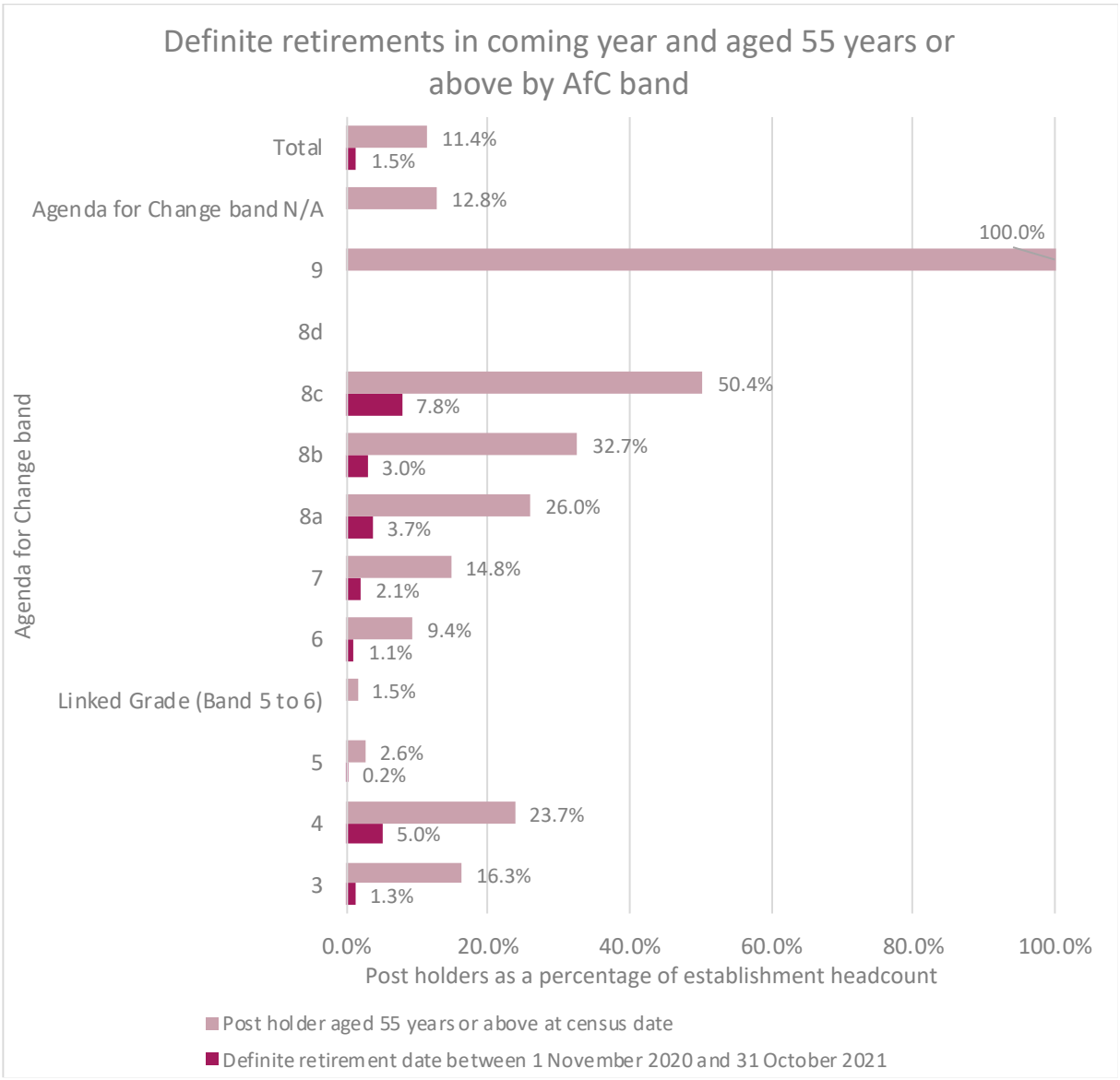


Figure 8 Definite retirements in the coming year and post holders aged 55 years or above (n=47)

10 Leavers

10.1 Turnover

Respondents were asked for the number of diagnostic radiography workforce posts where the post holder has left since the last census date (1 November 2019). These responses are used to calculate percentage turnover, defined as:

$$Turnover = 100 \times \frac{Number\ of\ leavers\ in\ previous\ 12\ month\ period\ (headcount)}{Establishment\ headcount}$$

The average turnover for the 34 respondents to this question is 6.8%. Figure 9 breaks this down by AfC band; the highest turnover rates are seen at AfC bands 5, the linked grade, 6, and 8c.

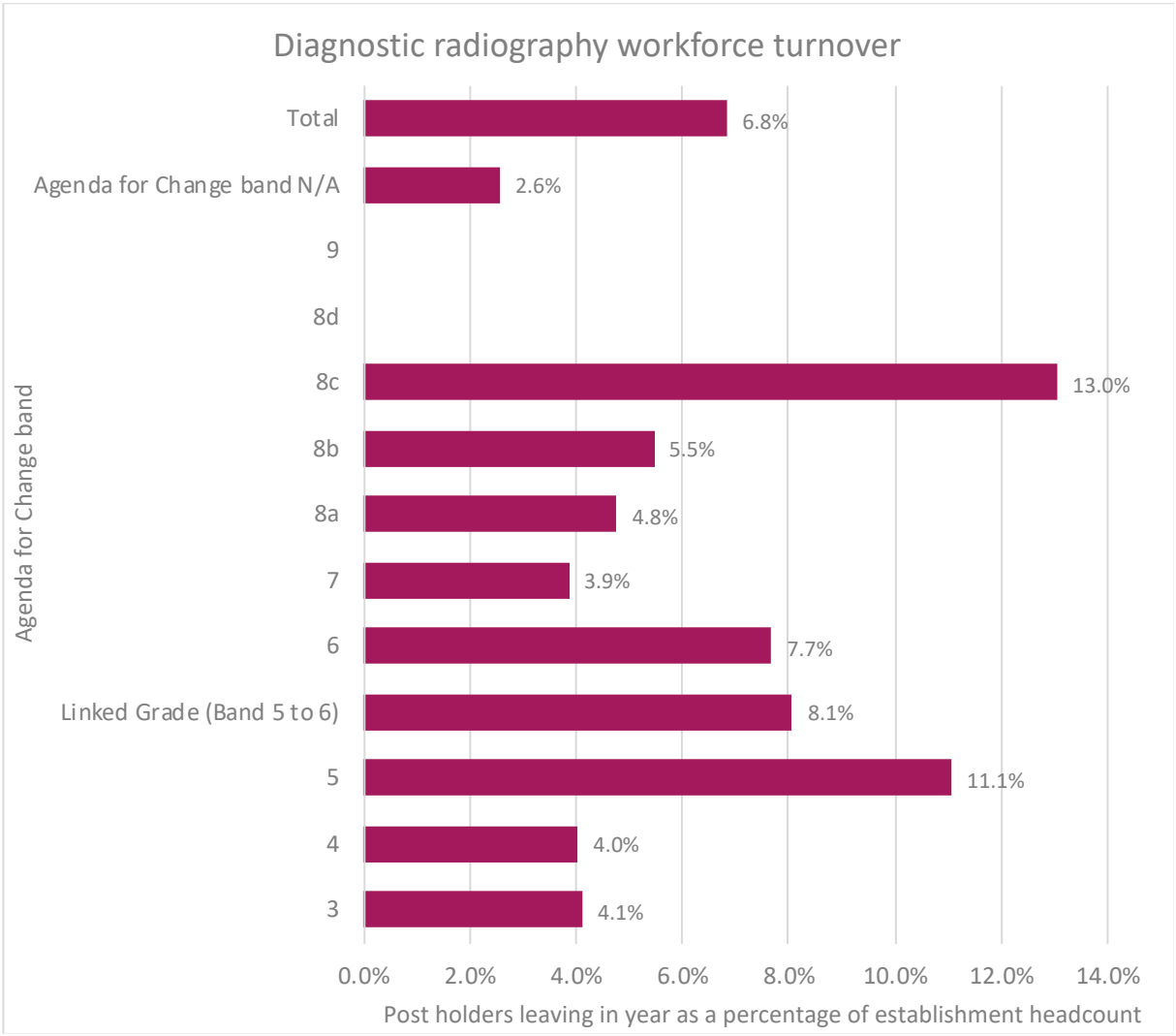


Figure 9 Diagnostic radiography workforce turnover by AfC band (n=34)

10.2 Reasons for leaving

The main reasons respondents give for post holders leaving are career development within another NHS imaging department and retirement.

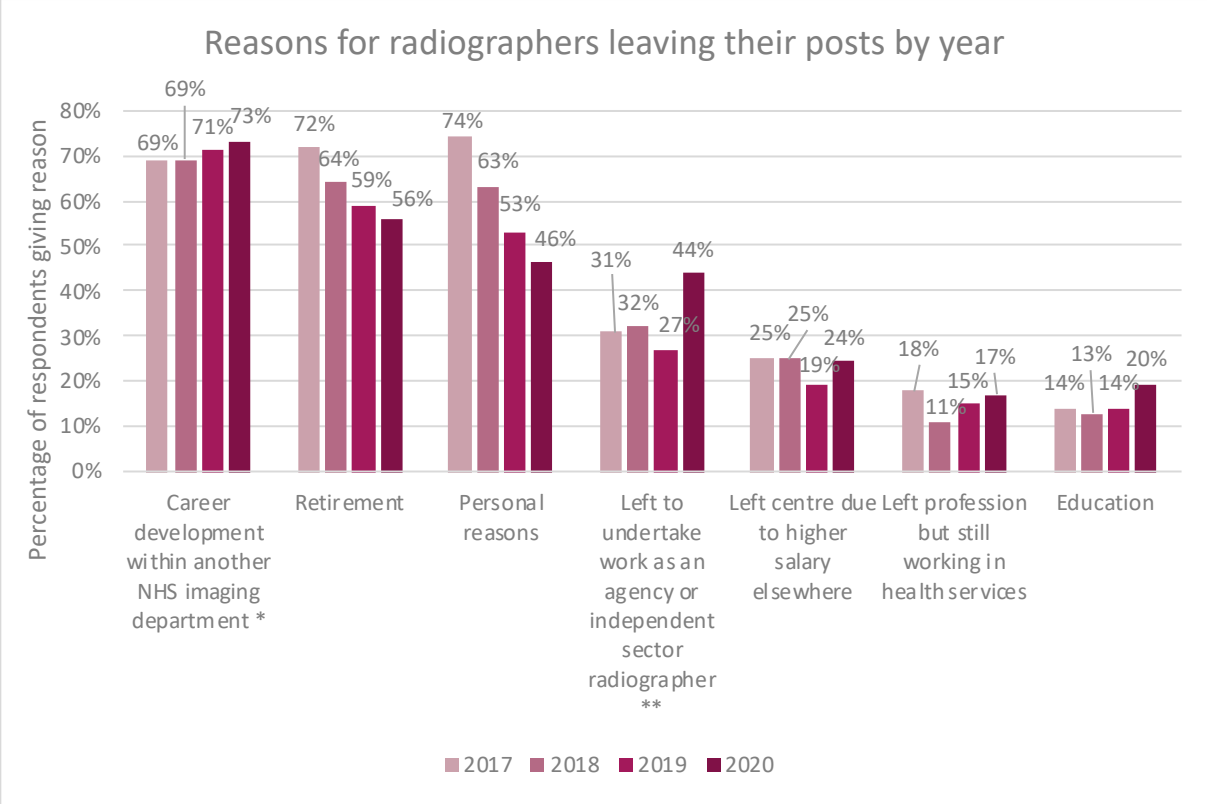


Figure 10 Reasons for post holders leaving by census year (n=41)

Figure 10 notes:

- In the 2020 census the wording of the question asking about reasons 'post holders' left their posts was changed from asking about 'radiographers'.
- * In the 2020 census the wording of option 'Career development within another NHS imaging department' was changed from 'Promotion in other centre'.
- ** In the 2020 census the wording of option 'Left to undertake work as an agency or independent sector radiographer' was changed from 'Left to undertake work as an agency radiographer'.

Other reasons for leaving given in the free text by two or more respondents are:

- relocation (six respondents)
- dissatisfaction with shift hours (two respondents)
- training opportunities (two respondents)

11 Apprenticeships (NHS England)

On average, respondents in NHS England report that 1.7 posts are apprenticeships (by headcount). The majority of healthcare assistant practitioner apprenticeships are at AfC band 3. Diagnostic radiographer integrated degree apprenticeships range from AfC band 2 to band 5 and mammography associate apprenticeships range from band 3 to band 6. Most sonography degree apprenticeships are at band 6 and advanced clinical practitioner apprenticeships range from band 6 to band 8a.

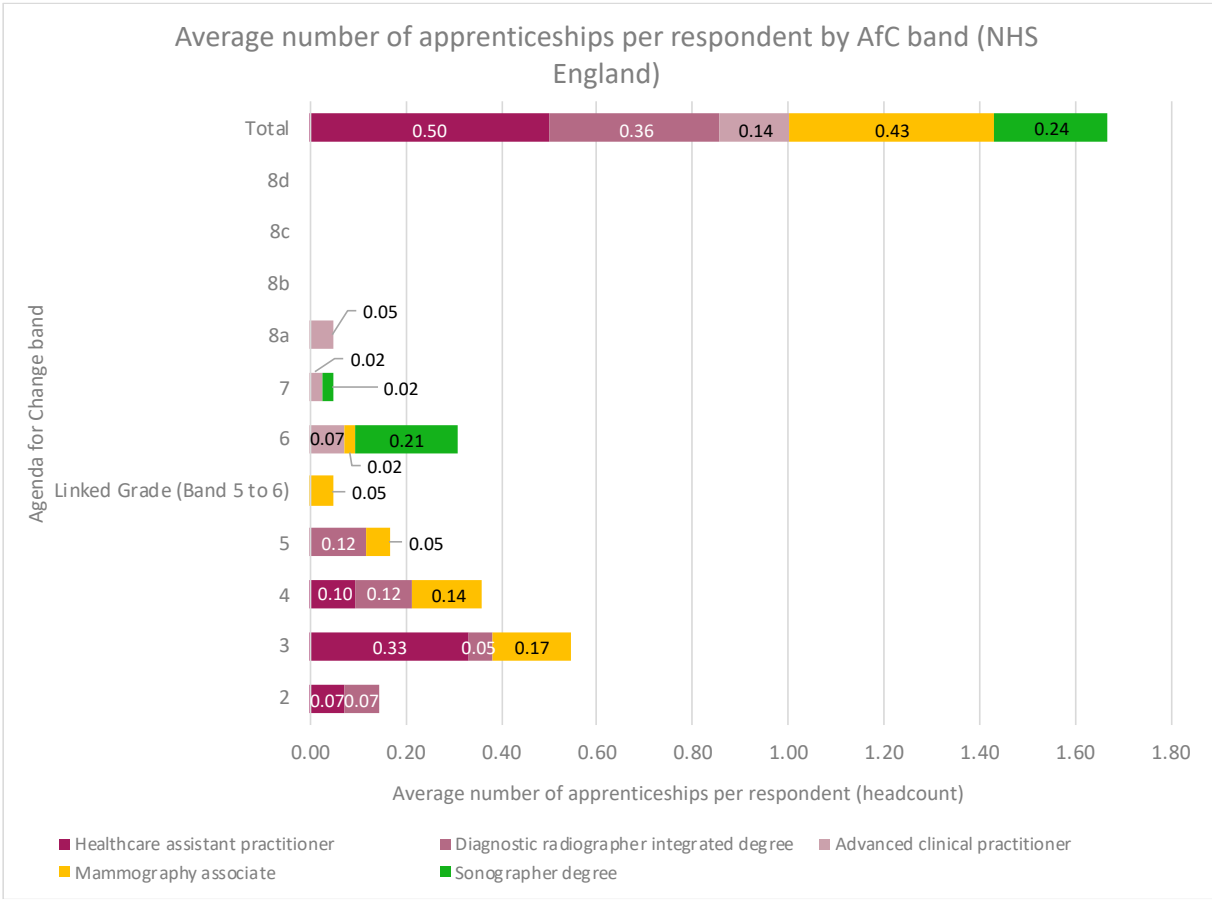


Figure 11 Average number of apprenticeships per respondent by AfC band in NHS England (n=42)

12 Registration status of band 5 or higher clinical staff

Of the 58 respondents to the registration status question, 16 (28%) have band 5 or higher clinical staff not registered with the HCPC, NMC, RCT or similar body. Of all respondents who also answered the headcount question, 0.9% by headcount of band 5 or higher clinical staff at respondents' organisations are not registered with such bodies. For comparison, in the 2019 census, 17% of respondents and 0.5% by headcount had band 5 or higher clinical staff not registered with the HCPC, NMC, RCT or similar body.

13 Shift system

Of the 58 respondents to the shift system question, 35 (60%) say the majority of their diagnostic radiography workforce work in a shift system. Five respondents selected 'Other', giving details such as: out of hours covered by additional sessions; shift systems for some modalities/sites and not others; and working eight-, ten- or twelve-hour days Monday to Sunday, depending on place of work.

14 International recruitment

Of the 58 respondents to the work permit question, 31 (53%) have diagnostic radiography workers requiring a work permit to work in the UK. By headcount, 3.4% of diagnostic radiography workforce post holders at respondents' organisations require a work permit.

Irrespective of how they answered the work permit question, all respondents were asked how they think the new points-based visa system will affect their ability to recruit to and maintain their diagnostic radiography workforce. Themes mentioned by three or more respondents are given below, with the number of respondents in brackets after the theme, followed by an illustrative comment:

- **Impact unknown** (13 respondents): "Not familiar with the points system."
- **No impact expected** (10 respondents): "Hopefully not, as radiography & sonography are on the national occupational shortage list."
- **Delays in recruitment process possible** (4 respondents): "[Our trust] has 7 EEA radiographers and 7 foreign national radiographers. Most do not require a work permit to work in the UK. The points-based system may make it difficult for radiographers not already settled in the UK to apply for posts in other trusts. EU and non-EU citizens will need to demonstrate their right to be in the UK and whilst the NHS qualifies for fast-track entry routes with reduced fees, the process may be a barrier to new non-UK applicants and lengthen the recruitment process."
- **Impact dependent on unknown factors** (3 respondents): "Minimally, if the workforce stays the same size. However, if we have to expand, as seems likely, it will be a challenge."
- **Harder to recruit internationally** (3 respondents): "I think it will make it harder to recruit internationally because it is more complicated for EU professionals than the current situation of free movement."

15 Non-clinical duties

15.1 Percentage of time spent on non-clinical duties

Respondents were asked to roughly estimate the percentage of time staff of AfC band 7 (or equivalent) and above spend on non-clinical duties in an average working week. Non-clinical duties support the delivery of imaging services but are not directly patient facing. They include management, leadership, service development, training and quality improvement.

At band 7, respondents report that around 30% of time is spent on non-clinical duties. For band 8a, there appears to be a trend among respondents of an increasing proportion of time spent on non-clinical duties over the last four years, rising from 50% in 2018 to 73% in 2020. Trends are less easy to discern at higher bands, perhaps because the smaller number of respondents with posts, particularly at 8c and above, result in the mean calculations being more easily affected by small differences year to year.

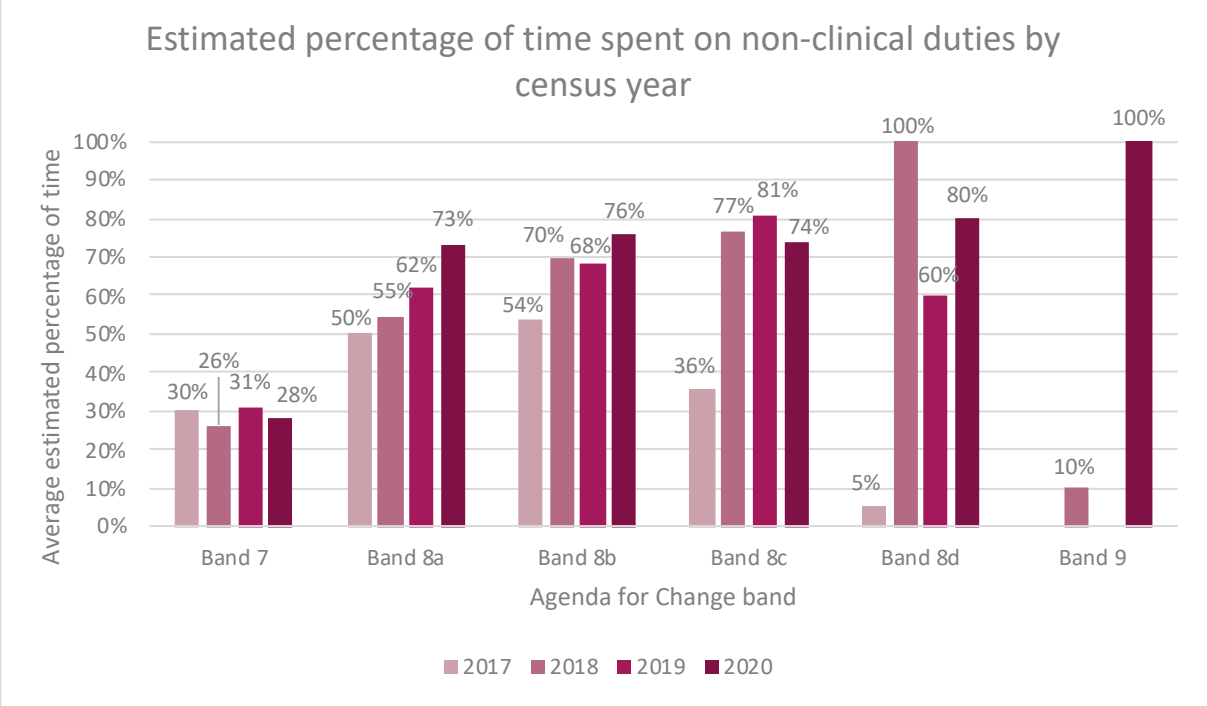


Figure 12 Estimated percentage of time spent on non-clinical duties (n=57)

15.2 Nature of non-clinical duties

The percentages of respondents reporting non-clinical duties of different types have remained largely unchanged over the last four years.

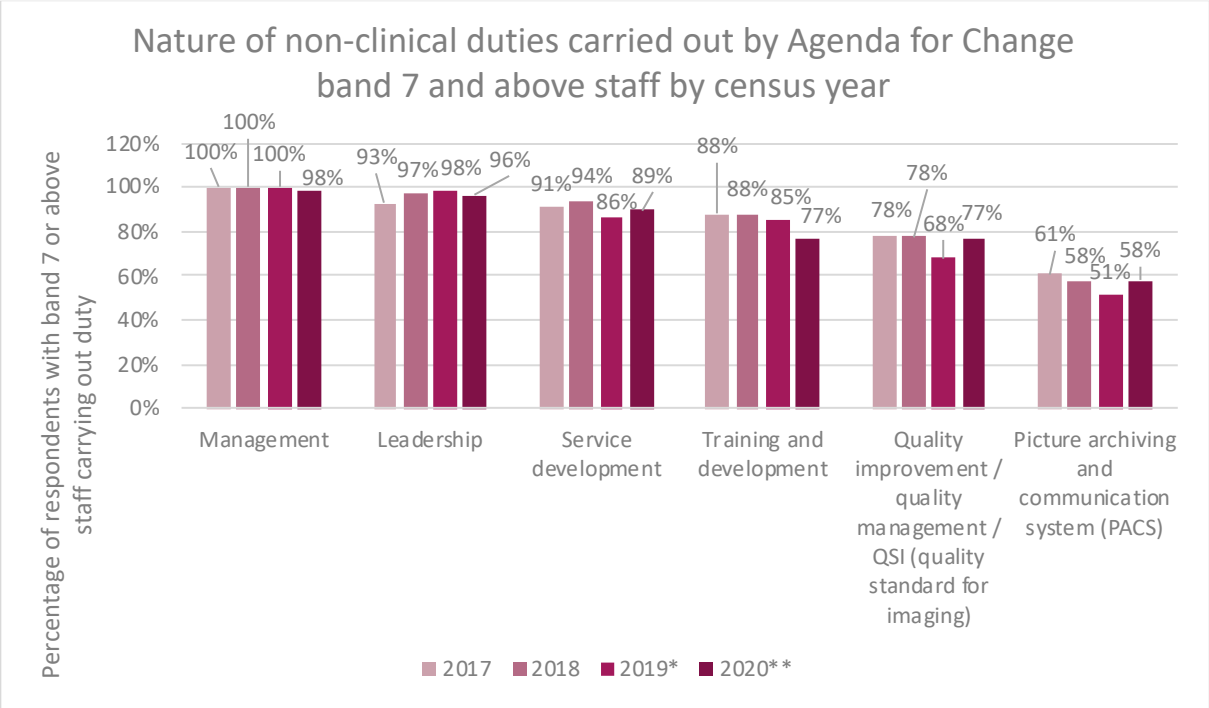


Figure 13 Nature of non-clinical duties carried out by AfC band 7 and above staff (n=57)

Figure 13 notes:

- * In the 2019 census, the 'quality management' answer option was amended to 'quality management / QSI (quality standard for imaging)'.
- ** In the 2020 census, the 'quality management / QSI (quality standard for imaging)' answer option was amended to 'quality improvement / quality management / QSI (quality standard for imaging)'.

16 Postgraduate training

Respondents were asked the number of staff (headcount) currently in postgraduate training in a set of given modalities. Overall, 5.6% of staff are in postgraduate training in one of these modalities.

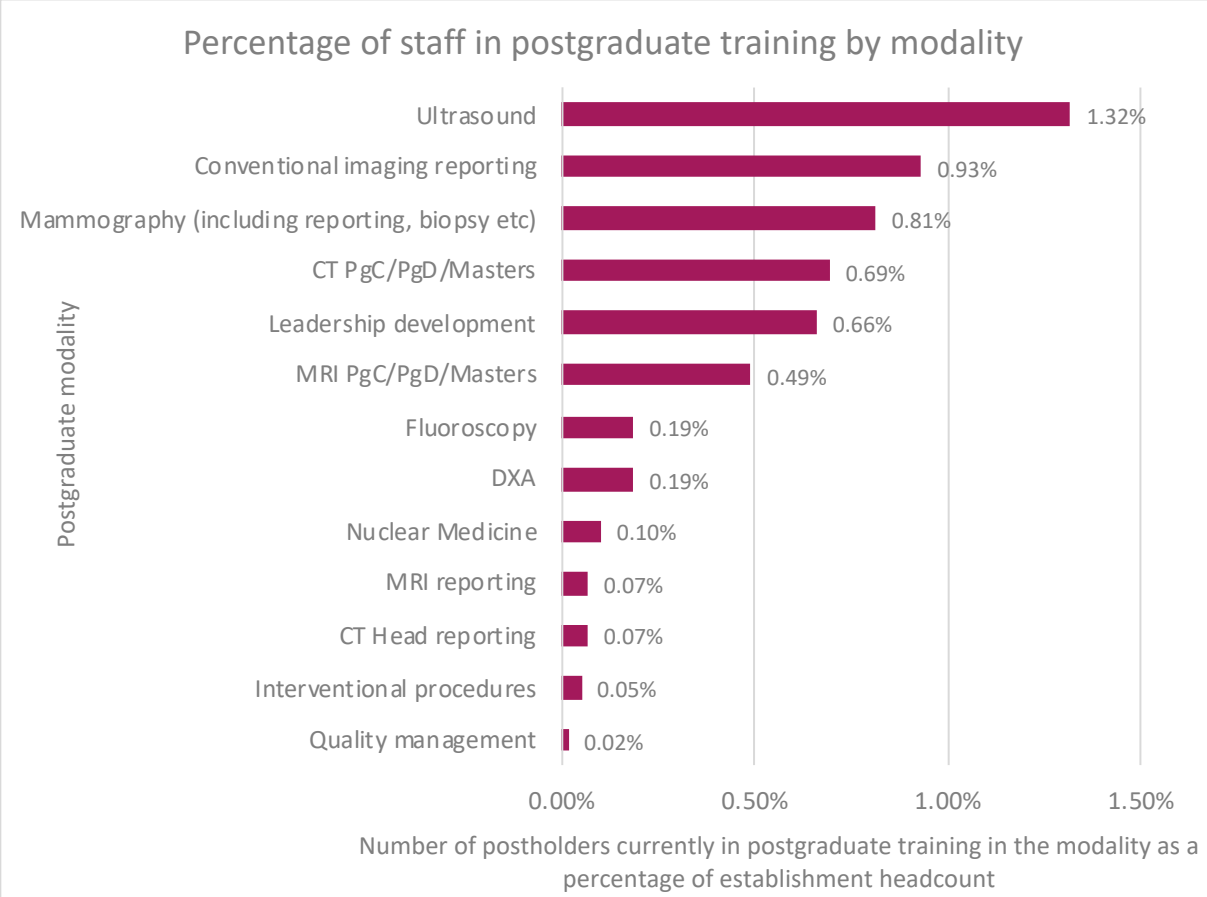


Figure 14 Percentage of staff (headcount) in postgraduate training (n=47)

Respondents also mention other members of staff in postgraduate training not included in the above figures. Comments include the following:

- "We have 15 general radiographers completing a variety of 15 credit M level modules (Fundamentals of Chest Radiographic Image Interpretation, MSK Image Interpretation, Abdominal Imaging). We also have 1 senior radiographer completing their research for practice module to complete their PgDip."
- "We have a couple of direct entry ultrasound students but these are not our employees."
- "PHD research – band 7."
- "1 Masters Criminology/Forensics and Cert ED."

17 Advanced and consultant practice

On average, each respondent has 15.0 practitioners (headcount) carrying out advanced practice and 0.7 carrying out consultant-level practice.

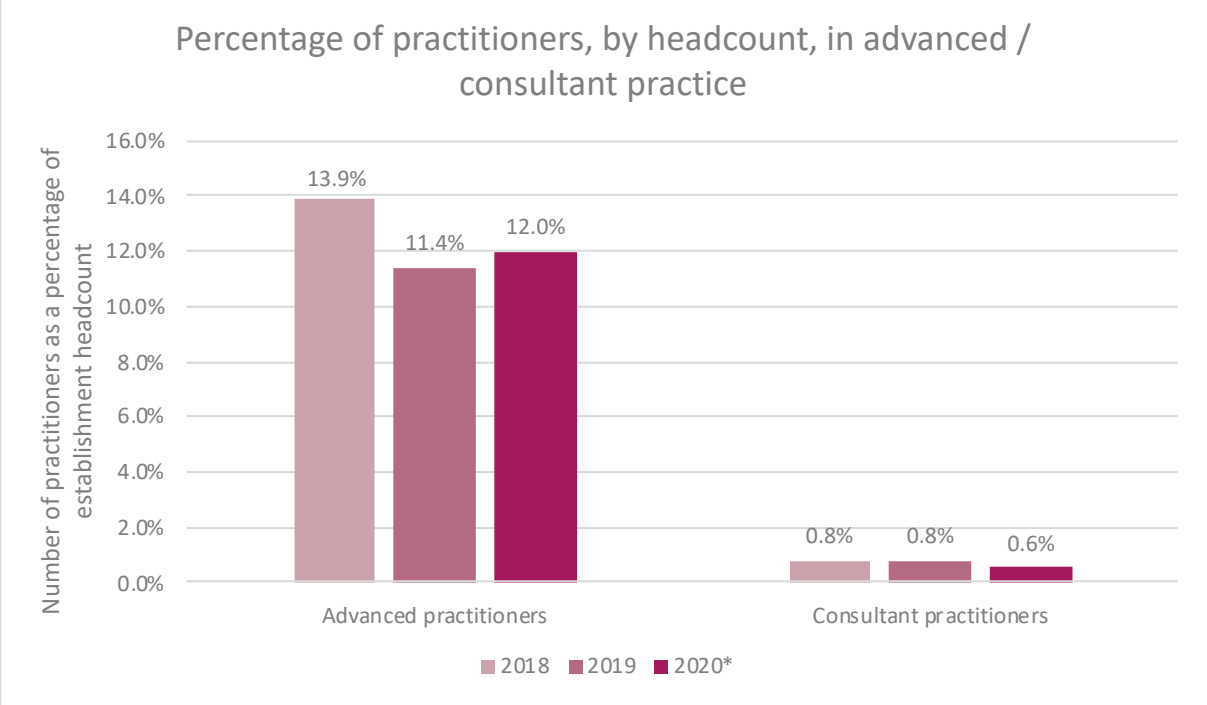


Figure 15 Number of practitioners in advanced and consultant-level practice as a percentage of establishment headcount (n=47)

Figure 15 notes:

- * In the 2020 census the wording of the question was changed from asking about 'diagnostic radiographers, sonographers and nuclear medicine technologists' to asking about 'practitioners'.

18 Agency staff

Of the 57 respondents to the questionnaire section about agency staff, 46 (81%) use either diagnostic radiography or sonography agency staff (or both) as of the census date. This is an increase over the 72% reported in 2019. However, it is the same level of agency staff use as in 2018.

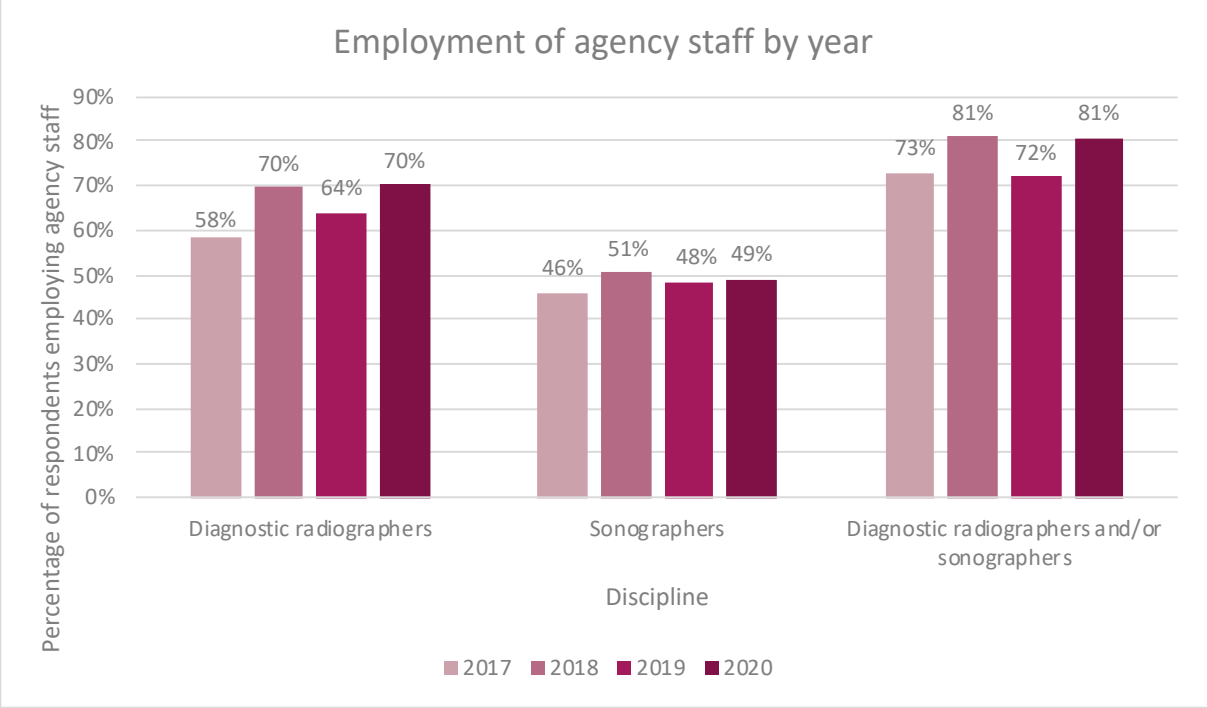


Figure 16 Employment of agency staff by census year (n=57)

Figure 17 illustrates that the main reason for using agency staff is existing vacancies.

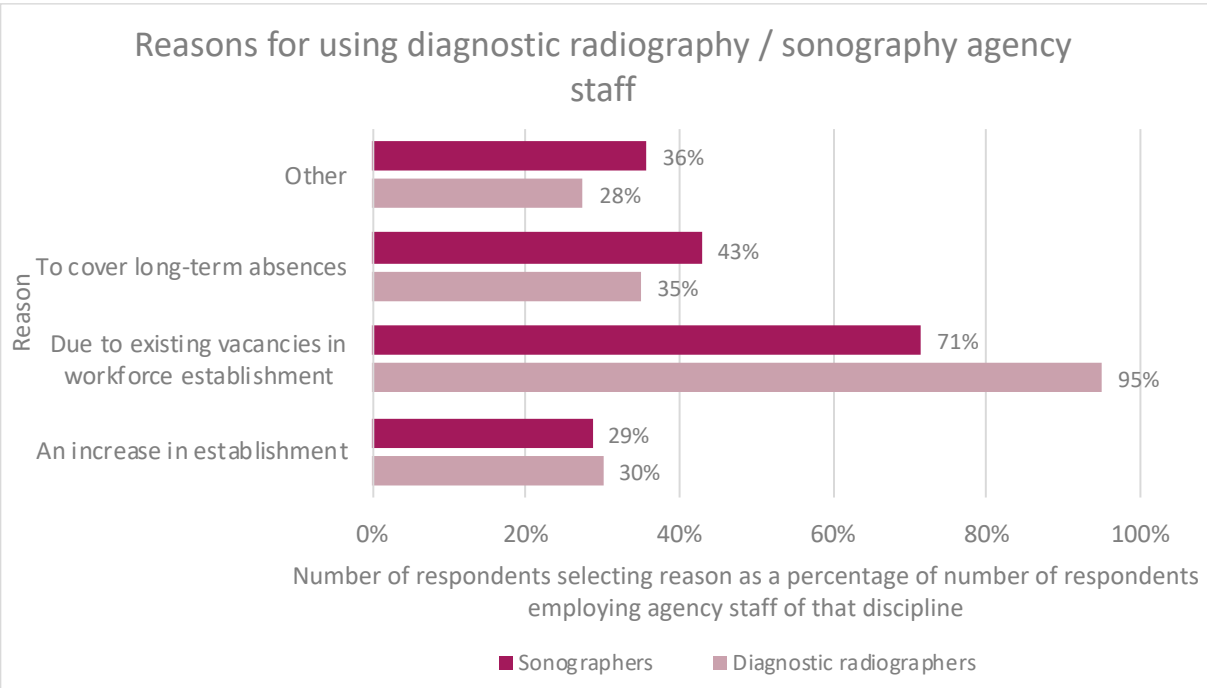


Figure 17 Reasons for using agency staff (n=46)

Other reasons for using diagnostic radiography agency staff given in the free text by two or more respondents are:

- COVID-19 response (eight respondents)
- Covering parental leave (two respondents)

Other reasons for using sonography agency staff given in the free text by two or more respondents include:

- COVID-19 response (seven respondents)
- Covering parental leave (two respondents)

19 General comments

At the end of the questionnaire, respondents were asked if they had any general comments relating to their submission. Themes mentioned by two or more respondents are given below, with the number of respondents in brackets after the theme, followed by an illustrative comment:

- **Collation of data for the census was difficult** (four respondents): "This was extremely time consuming and I am afraid I didn't have some of the answers required. It took around an hour and a half to input all the data, after several days of finding it. We are, however, a large organisation with 600 staff members in Radiology alone (plus others within the Division of Imaging), spread across two organisations and 27 budget lines. It would also be helpful to have an option to input if the data is not available, rather than just enter a zero."
- **Additional workforce required** (four respondents): "The GIRFT [Getting It Right First Time programme] report highlighted the need for additional radiographers and sonographers. We need more assistant practitioner, degree and masters level apprenticeships. We also need HCPC registration for sonographers to progress the ultrasound degree courses."
- **Feedback on the census** (three respondents): "We feel this survey needs to be revisited in light of apprentice radiographers, AP radiographers and skill within the non-registered staff establishment – such as the use of Imaging assistants to cannulate etc."
- **COVID-19 response** (two respondents): "Small workforce with heavy work load very challenging with COVID. Minority service within large trust has big challenges."
- **Training difficulties** (two respondents): "My workforce numbers were calculated by previous management. There was no uplift for training so numbers are very tight for supernumerary training in IR/Fluoro/CT/MR."
- **Heavy workload** (two respondents): "2019-2020 has been a difficult year as the workforce responded to the pandemic. Recruitment was paused. Courses, training and study leave were paused and some remain on hold. The response of the [our trust's] radiographers and others has to be applauded. General radiographers stepped up to deal with a rise of >100% in portable x-rays. Managers and staff of each modality have worked well above core hours to provide additional clinical capacity and tackle backlogs. Our radiographers remain committed, if a little weary, by the ongoing effort and adjustments. We are all hopeful that the vaccine will bring some semblance of normality in 2021-2022."
- **Challenging relationship with trust** (two respondents): "Despite providing comprehensive evidence of demand growth, my organisation is reluctant to invest in recurrent funding for

increasing establishment of radiographers. This is a very difficult situation to manage, and means we are constantly reliant on overtime for delivery of core service provision – an unsustainable and vulnerable position. Trusts must be pressured to ensure they invest in long-term sustainable growth of diagnostic teams so that we as service leads can develop and implement an efficient and effective workforce strategy that will see us able to meet future needs."

20 References

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3. College of Radiographers (2014). Diagnostic Radiography UK Workforce Report 2014. Available at: https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/diagnostic-radiography-uk-workforce-report-2014 [Accessed March 23, 2021].

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6. College of Radiographers (2019). Diagnostic Radiography Workforce UK Census 2018. Available at: https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/diagnostic-radiography-workforce-uk-census-2018 [Accessed March 23, 2021].

7. College of Radiographers (2020). Diagnostic Radiography Workforce UK Census 2019. Available at: https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/diagnostic-radiography-workforce-uk-census-2019 [Accessed March 23, 2021].

21 Downloads

Accessible from
https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/diagnostic-workforce-census-reports/or-diagnostic-radiography-workforce-uk-census-2020

- CoR diagnostic radiography workforce UK census 2020 questionnaire (PDF)
- CoR diagnostic radiography workforce UK census 2020 spreadsheet (Excel)

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