IPEM
Institute of Physics and Engineering in Medicine

Nuclear Medicine Workforce Survey Report 2023


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Contents

Introduction

In late 2023, IPEM's Workforce Intelligence Unit conducted a survey on the Nuclear Medicine workforce.

The purpose of the survey was to provide an in-depth analysis of current workforce issues, with future projections and recommendations to tackle workforce shortages.

Invitations to participate were sent to all heads of Nuclear Medicine in centres delivering a Nuclear Medicine service across the UK, whether NHS or Independent. Nuclear Medicine services have various types of service models. They may be physics-led (and these may be part of a larger medical physics service), radiographer-led, or technologist-led.

In total, 140 centres were invited to take part, from which 59 responses were received. This yields a response rate of 42%. Where appropriate, estimates of data across all departments were made on the basis of previous survey data, and data collected in collaboration with the British Nuclear Medicine Society (BNMS).

Data collection was performed for the following professional groups:

- **Clinical Scientists**
- **Clinical Technologists**
- **Radiographers**
- **Other staff, including:**
  - Nurses and healthcare assistants
  - Administrative staff
  - Radiopharmacy staff
  - Trainees
  - Imaging assistants
  - Project support officers

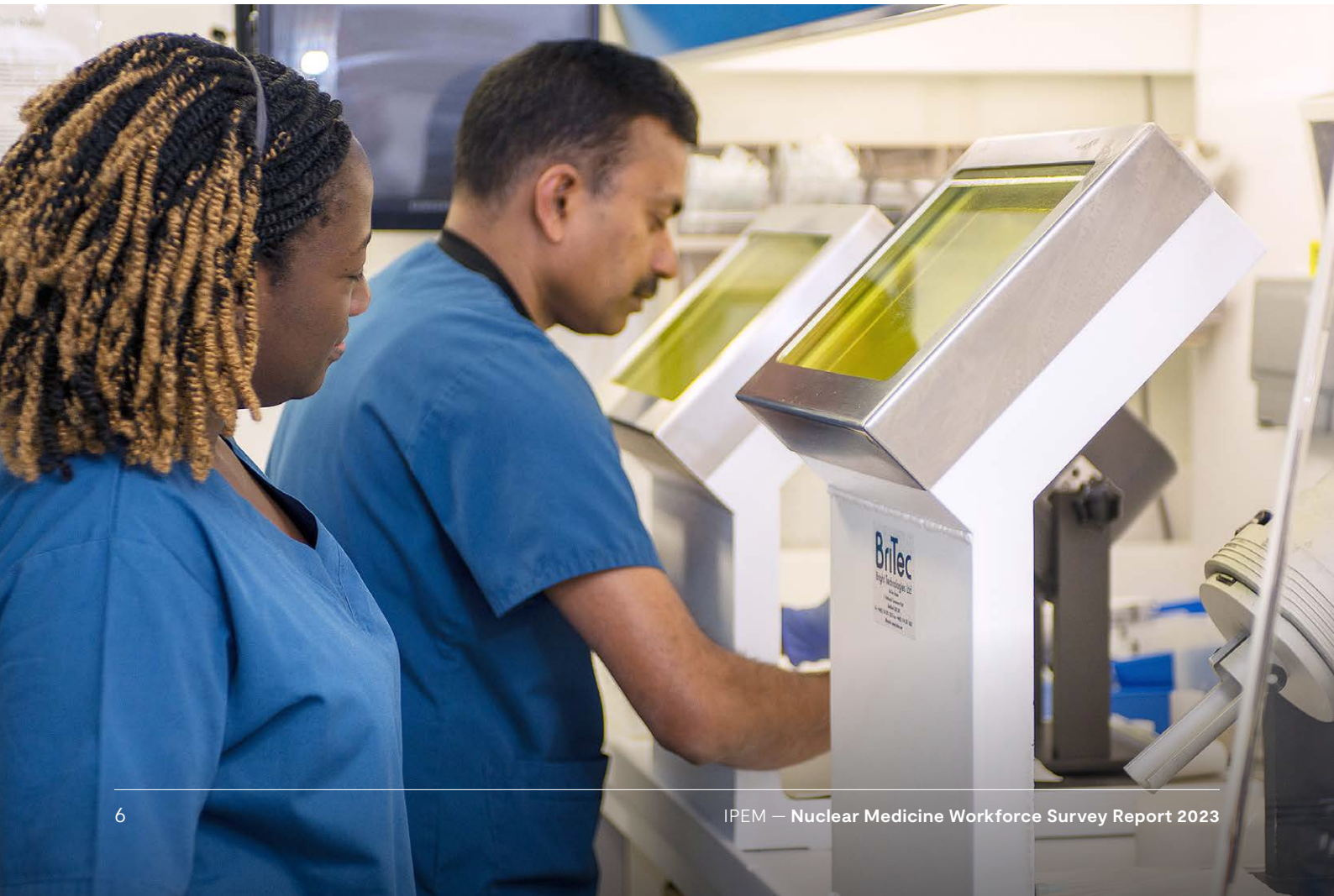
Survey data were analysed to gather information on:

- **Externally provided services**
- **Staff establishment and vacancy rates, including:**
  - Age profile within each profession
  - Vacancy rates over time
  - Vacancy rates by Agenda for Change (AfC) banding
  - Regional vacancy rates
- **Specific information on Medical Physics Expert (MPE) provision**
- **Desirable staffing levels and staffing provision satisfaction**
- **Types of therapy provision**
- **Current training levels and availability of programmes**
- **Recruitment and retention levels**

Survey respondents were asked to provide further comments on certain topics. These data were analysed in line with the thematic analysis methods used in IPEM's Workforce Intelligence Unit[1]. Where appropriate, the results of this analysis are reported alongside quantitative results.

Executive Summary

The Nuclear Medicine workforce makes up a large portion of the total Medical Physics and Clinical Engineering workforce. The survey measured a **total establishment size of 1091.1 WTE**: the estimated total establishment size may be closer to 1829.5 WTE. Across responding departments, 77% of services are Clinical Scientist-led, 14% are Clinical Technologist-led, and 9% are Radiographer-led.



Across all professional groups in Nuclear Medicine, a current overall vacancy rate of 12% was measured, representing an increase from the previous survey in 2021. This figure is 12% for Clinical Scientists, and 14% for Clinical Technologists. It is estimated that the overall vacancy rate in Nuclear Medicine across the UK is similar. Furthermore, current provision of Medical Physics staff is 64% of that which is recommended by the BNMS, and provision of MPEs is currently 46% of the recommended level.

Nuclear Medicine departments are just about managing to provide an adequate service. However, they experience difficulty with staff absences and increasing regulatory requirements. Time for necessary activities such as training, and research and development, is also limited. There is a shortage of MPEs in Nuclear Medicine, likely exacerbated by the complex and lengthy requirements for certification, and a lack of time available for training and professional development. It is currently challenging for Nuclear Medicine departments to recruit experienced staff: many need to recruit at lower bands, and train staff to the level that they require.

The current workforce climate in Nuclear Medicine is unsustainable, and must be urgently addressed. Increased support for training and apprenticeships, particularly for Clinical Technologists, is required to reduce vacancies. Local and regional training solutions, such as training consortia, should be supported. In addition, support for staff pursuing MPE certification should be prioritised, and ways to reduce the burden of time and resources in MPE certification should be explored.

IPEM counted 1091.1 staff WTE working in Nuclear Medicine.

The overall vacancy rate in Nuclear Medicine is 12%.

Medical Physics support is 64% under the recommended level.

Key Findings

Since the previous Nuclear Medicine workforce survey in 2021, the overall measured vacancy rate across all professions has risen. This is likely to increase further if urgent action is not taken.

	Headcount	In Post (WTE)	Vacancies (WTE)	Vacancy Rate	Estimated Establishment Across UK (WTE)
Clinical Scientist	265	237.3	32.1	**12%**	446.9
Clinical Technologist	485	436.2	70.3	**14%**	836.4
Radiographer	139	100.0	7.0	**7%**	209.3
Other Staff	230	184.1	24.1	**12%**	336.9
Total	**1119**	**957.6**	**133.5**	**12%**	**1829.5**

Table 1: Number of whole time equivalent (WTE) posts that are filled, and vacant, with the proportion of vacant posts relative to the establishment across each professional group. Estimates made from previous responses to workforce surveys from missing centres and scaling up by percentage of centres with no data.

Vacancy rates have risen since 2021

The largest number of vacancies were found at NHS AfC bands 6, 7, and 8a. These bands generally represent staff in the earlier stages of their careers, and are likely to reflect a shortfall in annual training posts. Although these vacancies are the most numerous, emergent themes from comments also emphasise difficulties in recruiting for experienced roles.

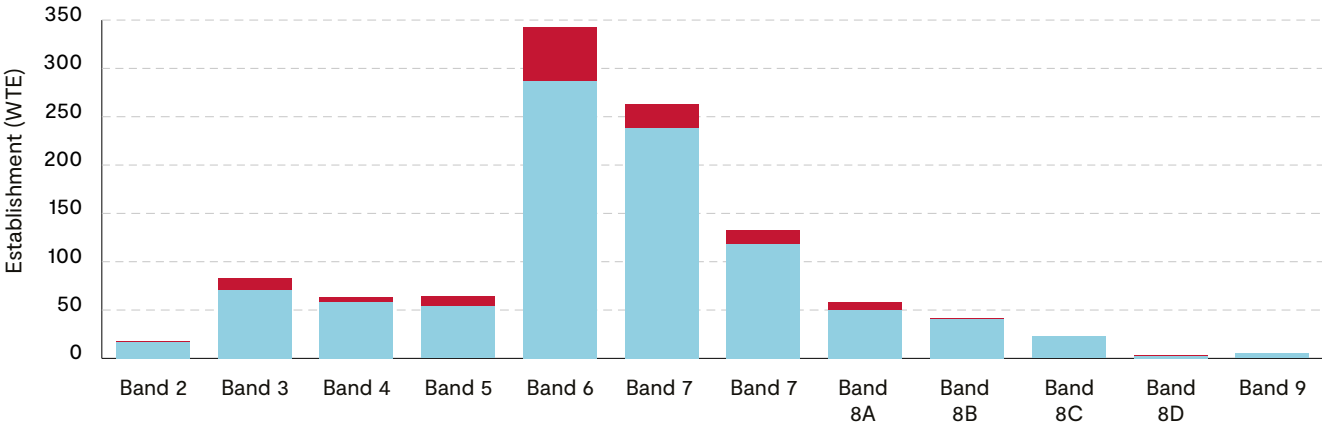
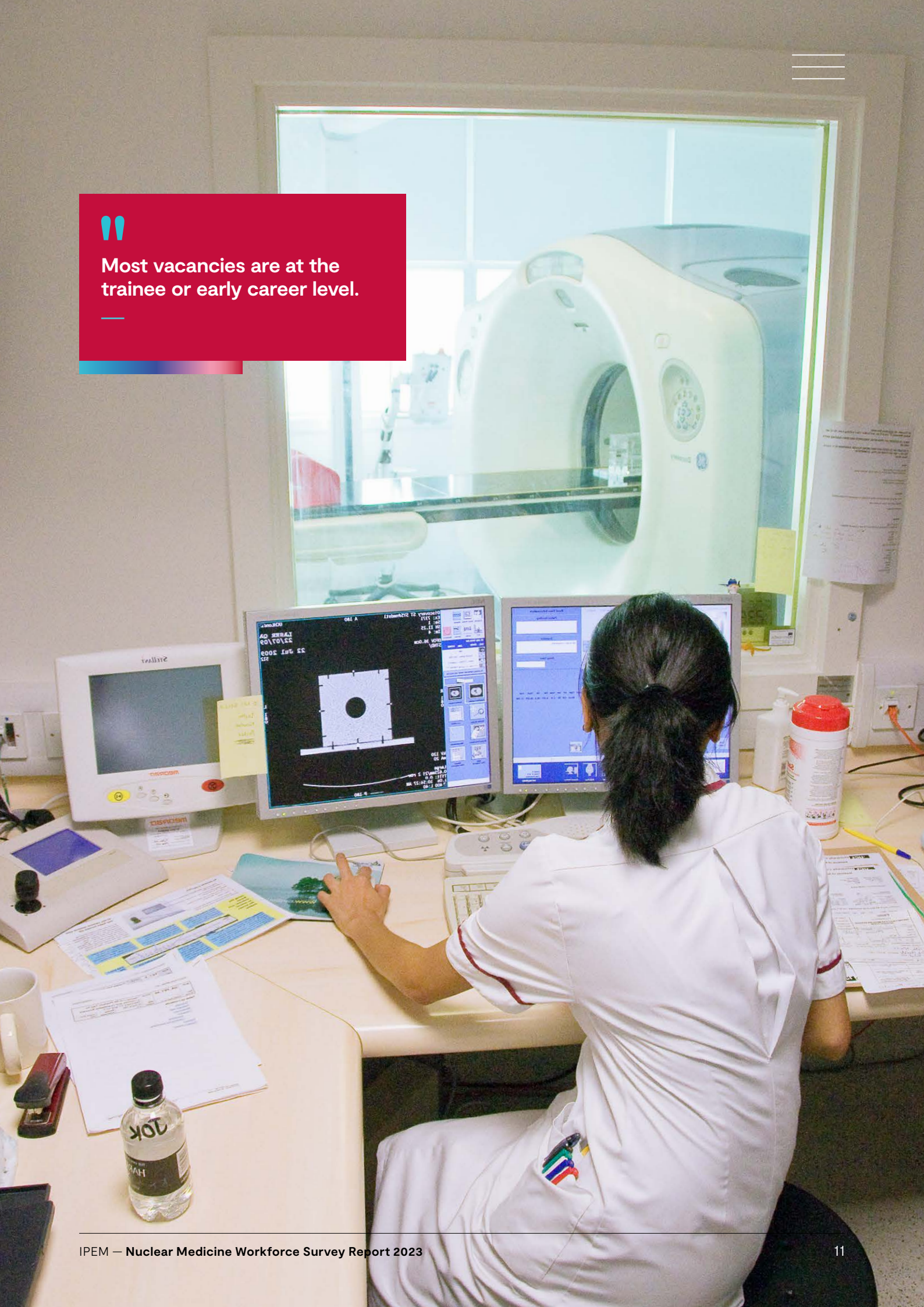


Figure 1: Workforce establishment by AfC banding.



> **Most vacancies are at the trainee or early career level.**

Establishment and Vacancies

Comparison to other specialisms

Figure 2 shows vacancy rates for Clinical Scientists and Clinical Technologists across the Medical Physics specialisms, as measured in recent workforce reports. Vacancy rates range between 7% and 14%. Nuclear Medicine has the highest vacancy rates for Clinical Scientists at 12%, and Clinical Technologists at 14%. Lowering vacancy rates in Nuclear Medicine must not be done by attracting medical physics trainees away from other sub-specialisms, as vacancy rates are unsustainably high in each category. Vacancy rates must instead be addressed by increasing the availability of training.

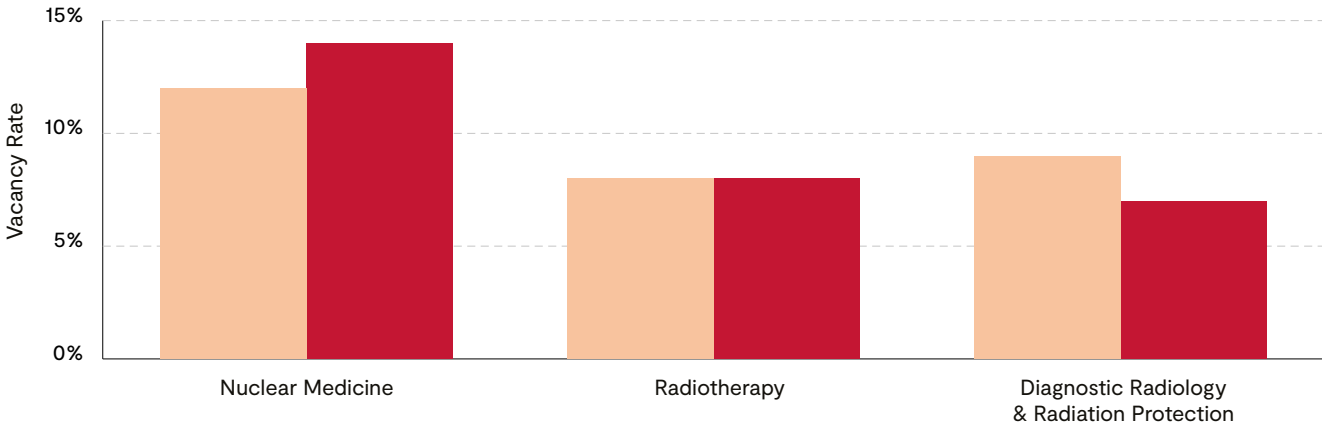


Figure 2: Vacancy rates for Clinical Scientists and Clinical Technologists across the Medical Physics sub-specialisms.

Regional establishment and vacancy rates

Response rates for Nuclear Medicine services across the UK varied by region. Centres from the South West had the highest response rate at 73%, while those from the North West had the lowest at 24%. Regional analyses do not include respondents from privately run services.

Vacancy rates were assessed relative to geographic region (Scotland, Northern Ireland, Wales, and the seven regions of NHS England). This information is shown in Figures 3–6, for Clinical Scientists and Clinical Technologists.

Region	Clinical Scientist WTE	Clinical Technologist WTE	Radiographer WTE	Other Staff WTE	Response Rate
East of England	20.3	21.1	17.5	16.2	55%
London	39.9	95.8	17.6	7.5	33%
Midlands	43.5	120.5	9.2	57.7	42%
North East and Yorkshire	36.2	89.3	23.1	22.2	47%
North West	31.2	52.2	0.0	25.8	24%
South East	33.1	15.4	9.2	17.9	44%
South West	22.1	22.6	13.7	17.2	73%
Northern Ireland	9.0	19.0	3.0	4.0	25%
Scotland	32.2	68.2	10.2	39.0	71%
Wales	2.0	2.5	3.5	0.8	33%

Table 2: Response rates, and measured establishment sizes, split by geographic region.

Clinical Scientist Establishment by Region

The East of England reported the highest vacancy rate for Clinical Scientists in Nuclear Medicine at 25%. This region retains the highest vacancy rate when results are weighted by response rate per region. An emergent theme from respondent comments was an increasingly complex establishment: training output is currently insufficient to keep up with service expansion. In addition, the establishment size in the East of England is smaller in comparison with that of the rest of the UK, while covering a wide geographic region.

The lowest vacancy rates are shown in Scotland and Wales, and this remains consistent when vacancy rates are weighted by response rate. Results for Wales must be interpreted with caution, due to the low number of responses from this region.

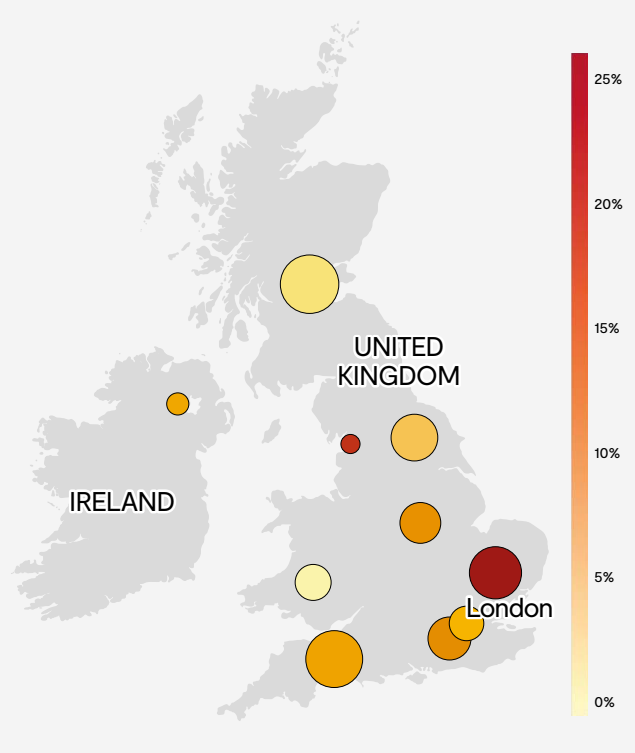


Figure 3: Regional vacancy rates for Clinical Scientists in Nuclear Medicine. Bubble size indicates response rate, while colour indicates vacancy rate.

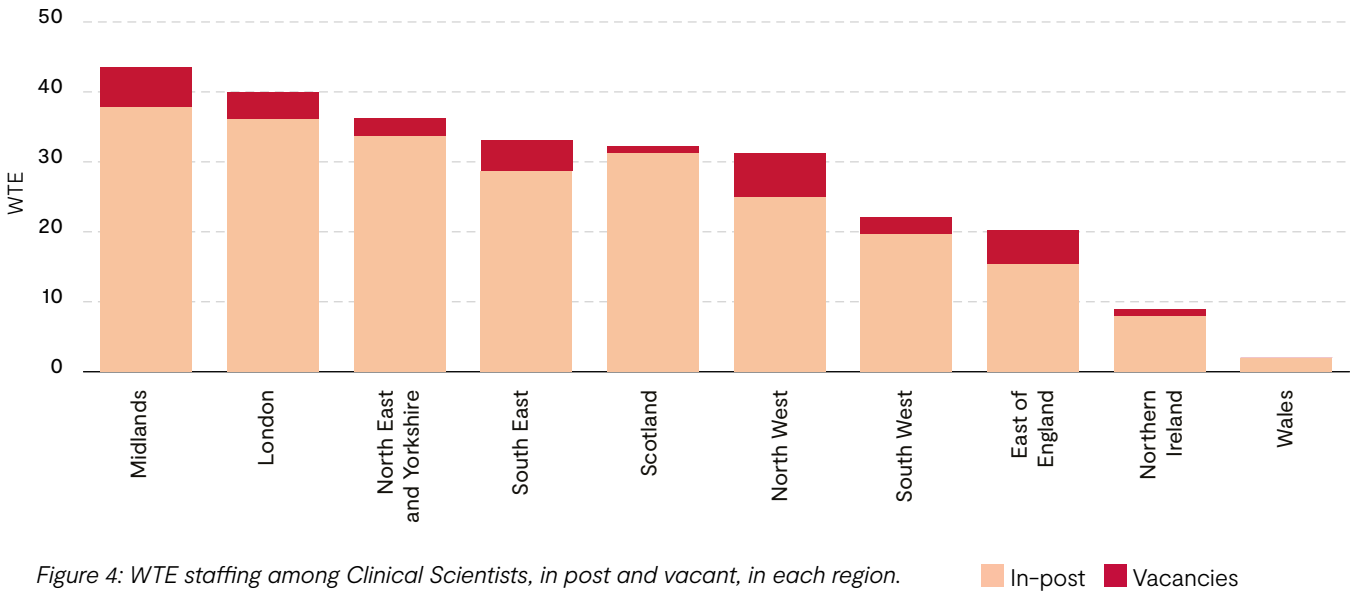


Figure 4: WTE staffing among Clinical Scientists, in post and vacant, in each region.

Clinical Technologist Establishment by Region

The East of England reported the highest vacancy rate for Clinical Technologists in Nuclear Medicine at 21%. The East of England retains the highest vacancy rate when results are weighted by response rate per region. This may also be attributable to an increasingly complex establishment, with insufficient training output to compensate. The lowest vacancy rates are shown in the South West and Wales, and this remains consistent when vacancy rates are weighted by response rate.

The theme of specific difficulty in recruiting Clinical Technologists was prevalent across comments. This is supported by the high overall vacancy rate for this group. Difficulties with Clinical Technologist recruitment may be related to insufficient training output: comments made mention of departments dealing with difficulties by training their own Clinical Technologists, for example through apprenticeships. Training opportunities for Clinical Technologists in Nuclear Medicine must therefore receive increased support as a matter of urgency.

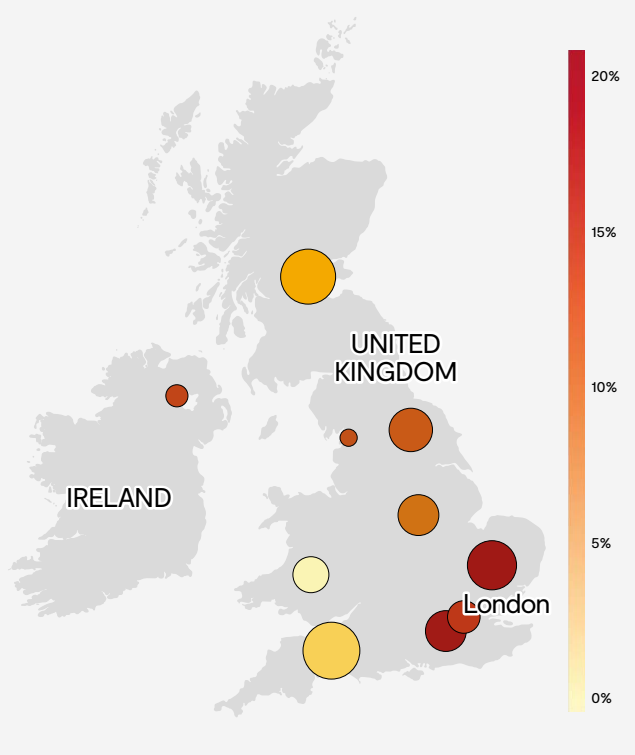


Figure 5: Regional vacancy rates of Clinical Technologists in Nuclear Medicine. Bubble size indicates response rate, while colour indicates vacancy rate.

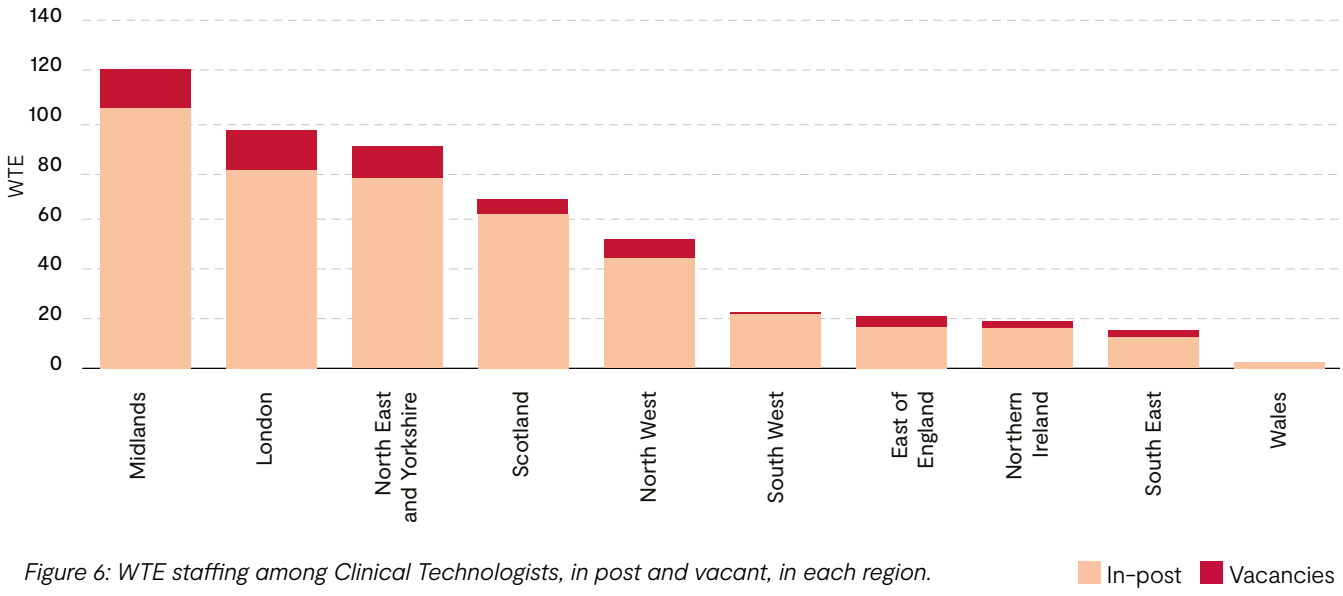


Figure 6: WTE staffing among Clinical Technologists, in post and vacant, in each region.

Radiographers and Other Staff by Region

Of the 59 survey respondents, 31 reported on radiographers within their organisation. As the survey did not separate Radiographers from Clinical Technologists by training, the distinction between groups may not have been captured. It is therefore difficult to draw conclusions on the establishment of Radiographers in Nuclear Medicine.

The largest measured establishment size of radiographers in Nuclear Medicine was found to be in the North East and Yorkshire (23.1 WTE), and the smallest was found to be in Northern Ireland (3 WTE). Only 4 respondents reported any vacancies.

In addition, 32 reported on staff other than Clinical Scientists, Clinical Technologists, and Radiographers within their organisation. Of these, the largest measured establishment size was found to be in the Midlands (57.7 WTE), and the smallest was found to be in Wales (0.8 WTE). Thirteen respondents reported vacancies in this category. Among these respondents, the highest vacancy rate was found in the East of England (25%), mainly for assistant-level posts. The lowest vacancy rate was found in Scotland (6%), mainly for administrative and assistant-level posts.

Workforce Banding Profile

Further analysis was performed to assess whether vacancy rates were primarily affected by difficulty in recruiting trainees, or due to skills gaps at higher levels. This was done by stratifying vacancy rates into NHS Agenda for Change (AfC) banding for all four professional groups (Figures 7–10).

Clinical Scientists

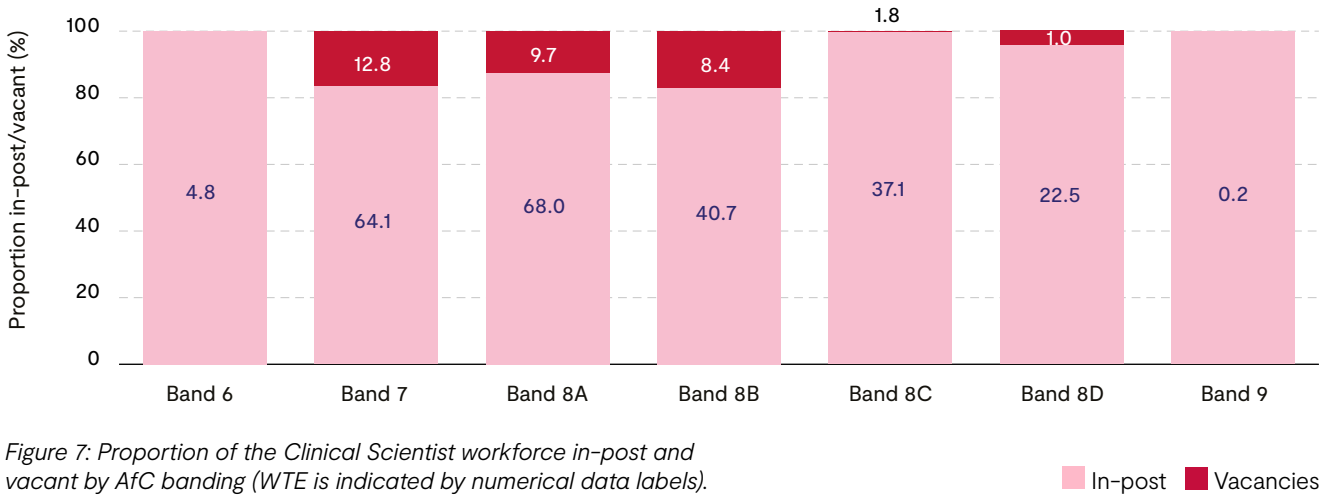


Figure 7: Proportion of the Clinical Scientist workforce in-post and vacant by AfC banding (WTE is indicated by numerical data labels).

Among Clinical Scientists, the highest proportion of vacant posts are between bands 7 and 8b. This indicates difficulties in hiring newly qualified and experienced Clinical Scientists alike. Comments on Clinical Scientist recruitment support this, showing no clear trends in career levels to which it is most difficult to recruit.

A shortfall in training output may be reflected in vacancies at lower and higher bands alike. A common theme among comments on recruitment was that vacancies at higher bands could be filled by training staff at lower bands in preparation for more senior roles. Although this is a time-consuming and costly process, adequate training to support the Clinical Scientist workforce of the future is necessary. Increased support must be provided for Clinical Scientist training, to reduce vacancies at lower bands and ensure sufficient potential applicants for posts at higher bands in the future.

> **Nuclear Medicine centres may fill senior vacancies by recruiting junior staff and training them to the right level.**

Clinical Technologists

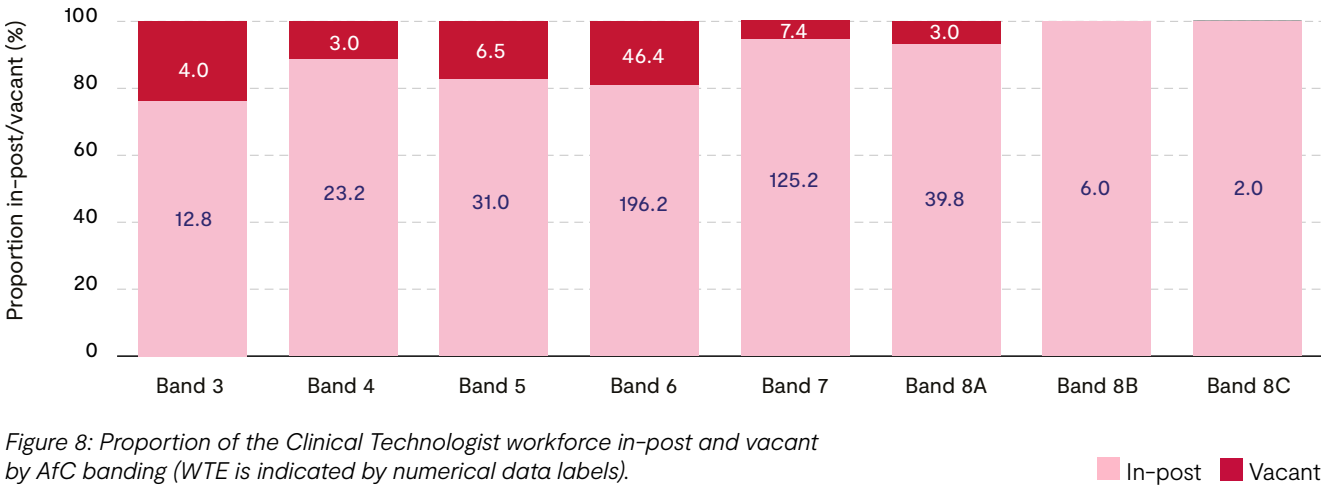
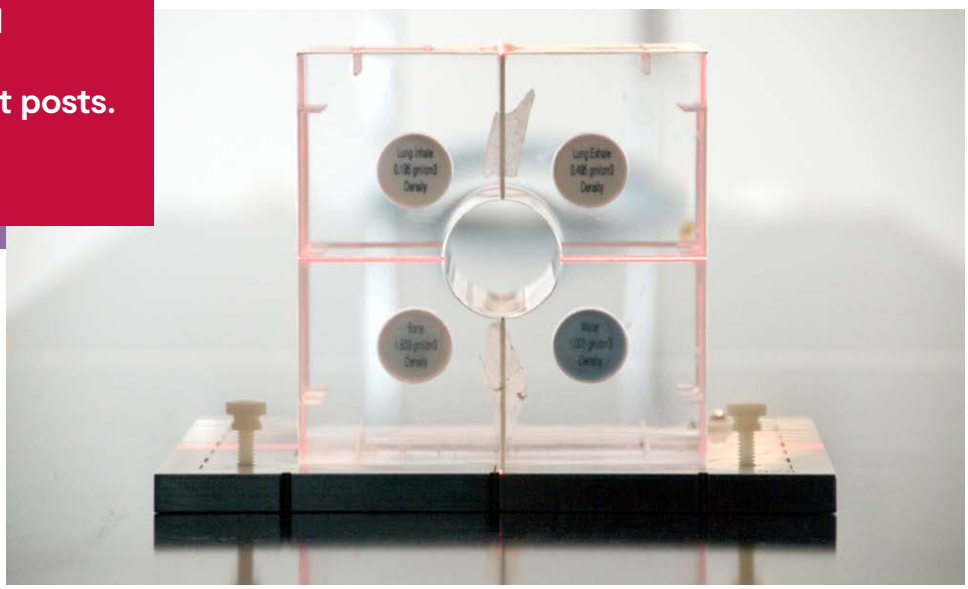


Figure 8: Proportion of the Clinical Technologist workforce in-post and vacant by AfC banding (WTE is indicated by numerical data labels).

Clinical Technologists have the highest vacancy rates at Bands 3, 5, and 6, with band 6 having the most vacancies by a wide margin. The banding profile for this profession indicates that recruitment of new Clinical Technologists remains difficult at most career levels, and particularly indicates a shortfall in training output.

A common theme across respondent comments was widespread difficulty in funding for Clinical Technologist posts. These difficulties exist both at the level of funding for training posts, and in securing funding for salaried positions. Increased support for Clinical Technologist training in Nuclear Medicine is urgently required to ensure that departments are able to provide safe, effective services.

> **There is widespread difficulty in funding Clinical Technologist posts.**



Radiographers

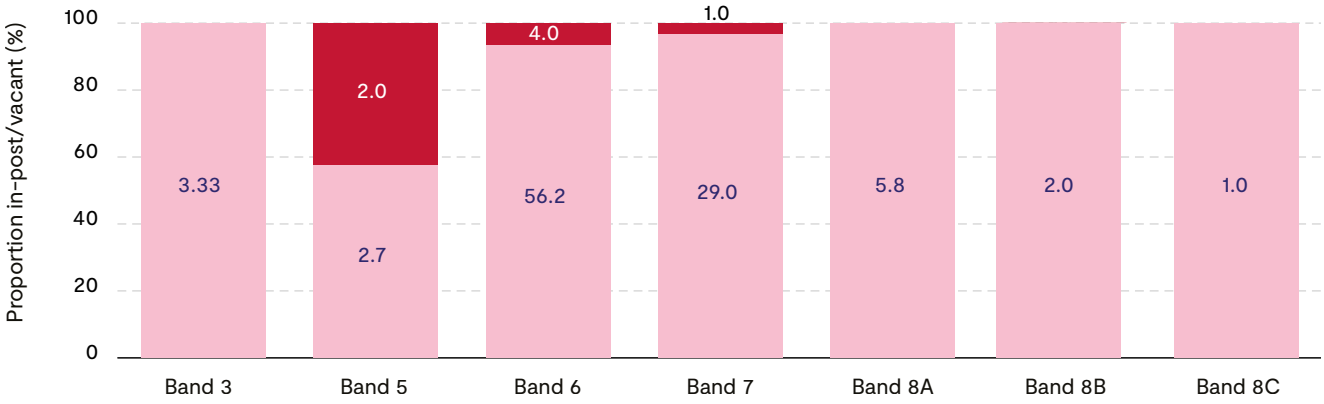


Figure 9: Proportion of the Radiographer workforce in Nuclear Medicine, in-post and vacant by AfC banding (WTE is indicated by numerical data labels).

The measured establishment for Radiographers in Nuclear Medicine is smaller than that of Clinical Scientists and Technologists, partly because not all respondents reported on staff in this profession. The highest vacancy rate among Radiographers is found at band 5, while the largest number of vacancies is found at band 6 (at which a much larger establishment is found). Nuclear Medicine is considered "advanced practice" for Radiographers, which is not the case for all specialties[2]. Vacancy rates may therefore reflect the additional educational burden for Radiographers wishing to specialise in Nuclear Medicine.

Radiographer vacancy rates reflect the additional training burden for radiographers specialising in Nuclear Medicine.

Other Staff

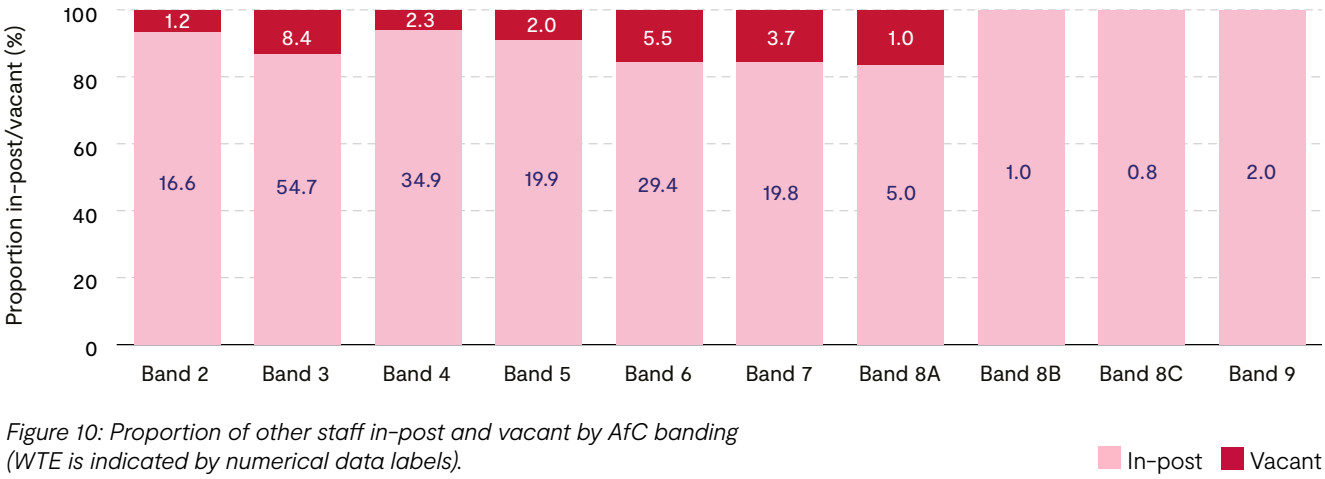


Figure 10: Proportion of other staff in-post and vacant by AfC banding (WTE is indicated by numerical data labels).

The banding profile for staff who are not Clinical Scientists, Clinical Technologists, or Radiographers shows broadly similar vacancy rates from bands 3 to 8a. According to the data from the current survey, these posts make up 19% of the current Nuclear Medicine establishment – this is estimated to be 20% across the whole workforce.

They mostly include nurses and healthcare assistants, administrative posts, trainees, and radiopharmacy staff. Given that this group covers a broad range of professions, it is not surprising to see vacancy rates spread across a wide range of AfC bands.

Workforce Age Profile

Information on the age profile of the current workforce may be used in planning for the future workforce. To this end, respondents were asked to provide information on the age ranges of staff in their departments.

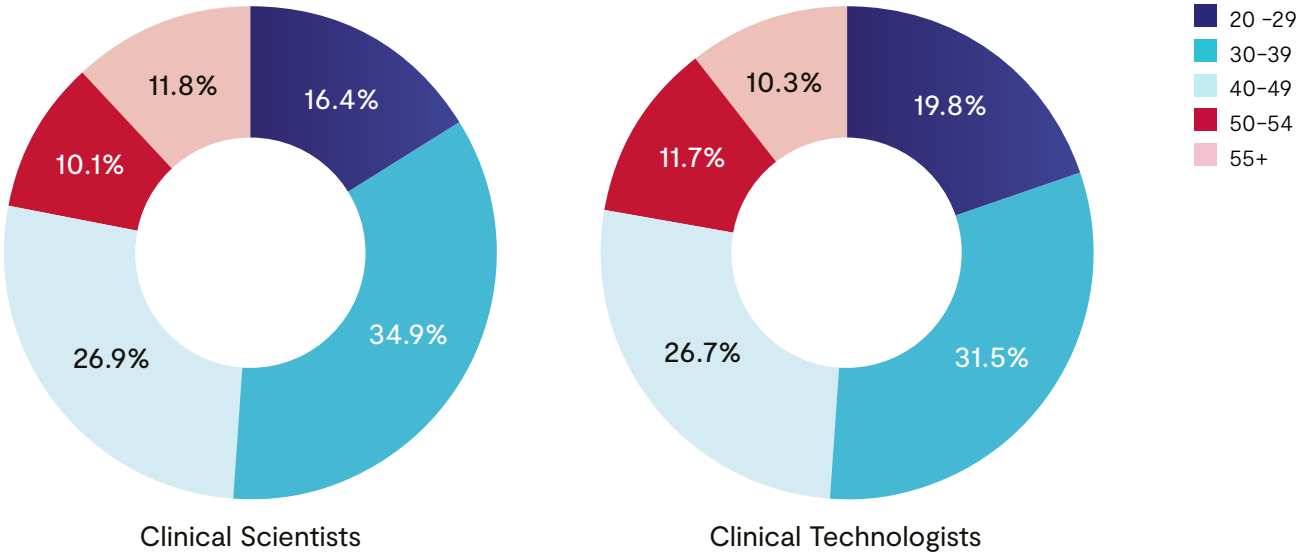


Figure 11: Age profiles of Clinical Scientists and Clinical Technologists in Nuclear Medicine.

Although most NHS employees would not be expected to retire before age 65, they become eligible to claim their pension from age 55[3]. In addition, recent reports show that across the UK, the number of workers retiring early has increased since the COVID-19 pandemic[4]. This highlights current pressures that may affect the Nuclear Medicine workforce over age 55, which accounts for slightly under 11% of staff in twhe survey data. This is lower than the current proportion of staff in this age range across the NHS[5].

Retention of experienced staff in Nuclear Medicine is a matter of current importance, given the reported difficulties in hiring experienced staff. In addition, the expertise developed by older staff over time is crucial to maintaining safe, effective services across healthcare[6]. Efforts must therefore be made to ensure that Nuclear Medicine staff in higher age brackets feel adequately supported and valued at work, in addition to increasing training throughput and attracting staff at earlier career stages.

Staffing Provision

Overall staffing provision

Respondents were asked to state their level of satisfaction with the staffing provision in their trust, by stating whether they felt that this was:

- Too much
- Sufficient
- Sufficient, with skill mix concerns
- Too little
- Too little and skill mix concerns
- Far too little

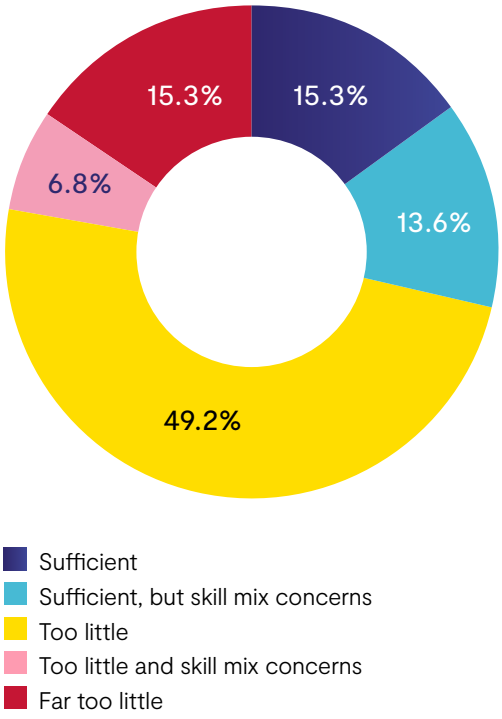


Figure 12: Overall staffing provision satisfaction across Nuclear Medicine departments.

over

70%

of respondents feel they do not have enough staff

Approximately 71% of respondents indicated insufficient staffing provision, and slightly over 20% indicated skill mix concerns. This remains unsustainably high from the previous workforce survey in 2021. According to respondent comments, staffing provision satisfaction may be influenced by staff absences, increasing establishment complexity, and capacity for research and development. Some respondents state that while they may be able to provide a safe and effective service with the number of staff that they have, this becomes difficult when staff go on maternity leave, or are absent due to sickness. Many responding centres lack staff time to devote to training new staff and developing their service. This creates particular difficulty following increases in regulatory requirements and increased complexity of equipment and therapies offered.

The regions with the highest proportion of respondents indicating sufficient staffing provision are Wales and the Southeast. The East of England had the lowest proportion. It was thought that staffing provision satisfaction may show a relationship with vacancy rate, but a Spearman correlation found no significant relationship.

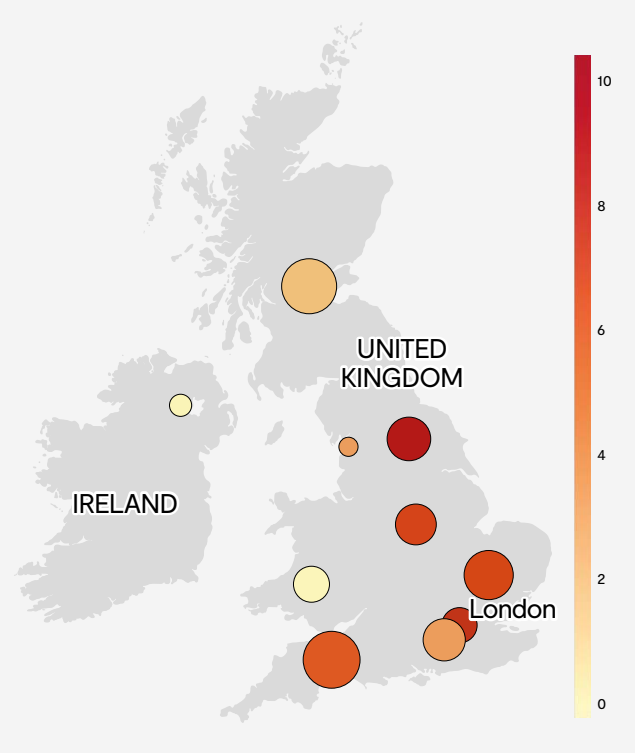


Figure 13: A regional map of respondents indicating insufficient staffing provision. Bubble size represents response rate. Bubble colour represents number indicating insufficient staffing provision.

MPE staffing provision

It is a legal requirement that Nuclear Medicine services have suitable MPE provision, dependent on the services offered[7]. The expertise of these staff is required for activity such as complex diagnostic and therapeutic procedures, or provision of advice on regulatory compliance. Overall, MPEs account for 14% of the Nuclear Medicine workforce as reported by survey respondents; 60% of Clinical Scientists in the dataset are MPEs.

Other legally required roles for Nuclear Medicine departments include Radiation Protection Advisers (RPAs), and Radiation Waste Advisers (RWAs). These individuals provide advice related to protection from exposure to radiation, and waste management for radioactive substances.

Services from MPEs, RPAs, or RWAs may be provided or received externally. Twenty two percent of respondents stated that they had at least one full time RPA, and 32% stated that they had at least one full time RWA.

Participants were asked whether they felt that their staffing provision of MPEs was sufficient. To provide context on the proportion of staff who are MPEs in each region, a map is provided. The highest proportion of MPEs is in the South West (42%), and the lowest is in Northern Ireland (14%).

Region	MPE Headcount	RPA Headcount	RWA Headcount
East of England	11	0	1
London	21	4	7
Midlands	27	3	1
North East and Yorkshire	24	2	5
North West	6	5	3
South East	15	0	1
South West	16	4	4
Scotland	22	1	1
Northern Ireland	5	1	3
Wales	2	0	0
Total	**149**	**20**	**26**

Table 3: Headcount of MPEs, RPAs, and RWAs per region, and in total, across respondents.

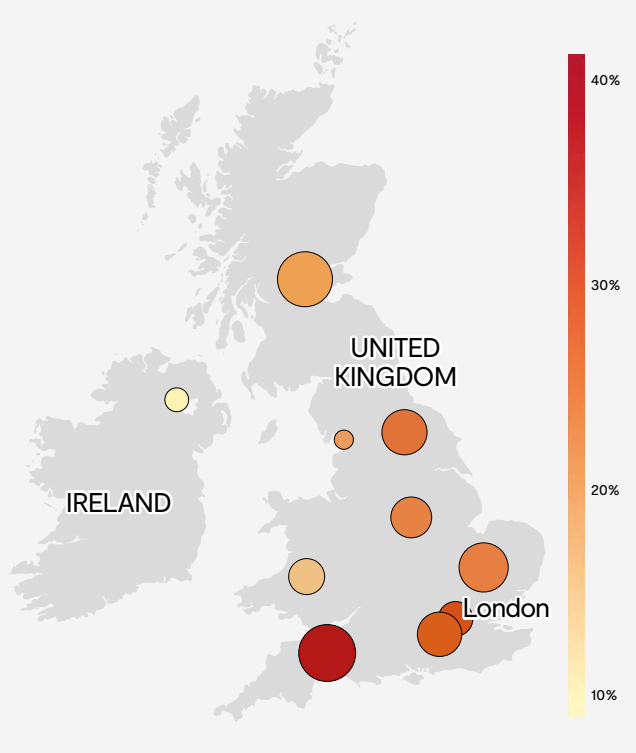


Figure 14: A map of the proportion of Nuclear Medicine staff in each region who are MPEs. Bubble size represents response rate. Bubble colour represents proportion of MPEs.

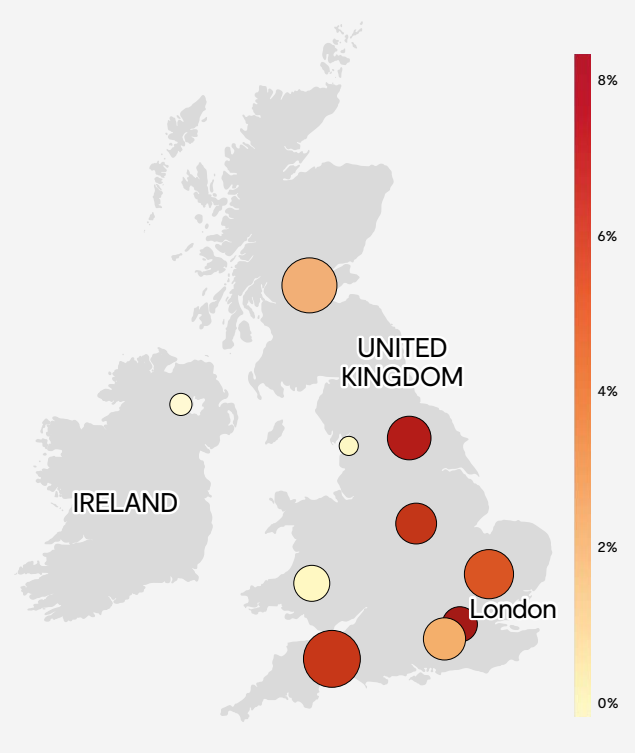


Figure 15: A regional map of respondents indicating insufficient staffing provision for MPEs. Bubble size represents response rate. Bubble colour represents number indicating insufficient MPE staffing provision.

Approximately 70% of respondents indicated insufficient MPE provision. The East of England showed the highest proportion indicating insufficient MPE provision, and the North West showed the lowest. These results indicate difficulty for Nuclear Medicine centres in ensuring sufficient MPE provision in line with legal requirements, which may risk patient safety. Reasons for insufficient MPE provision were explored in further questions.

70%

of respondents do not feel that they have enough MPE provision

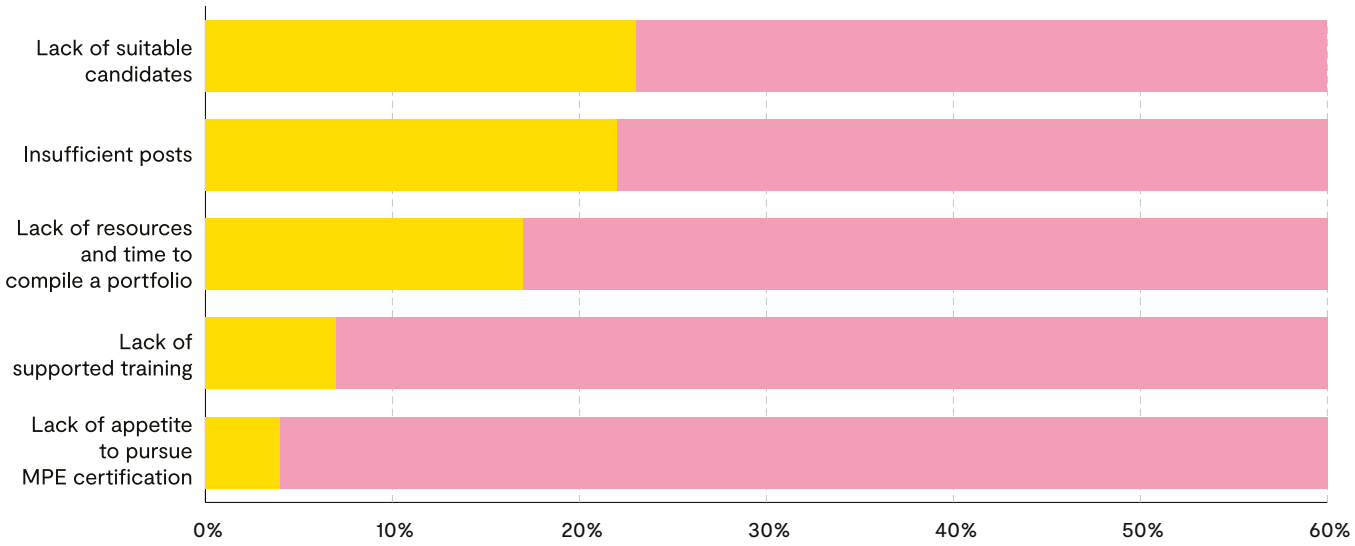


Figure 16: A bar chart indicating the number of respondents claiming certain factors as barriers to gaining sufficient MPE provision.

The most common reasons that respondents cited for insufficient staffing provision included lack of suitable candidates, insufficient posts, and lack of time and resources to complete the MPE portfolio. Comments indicated some lack of clarity in determining who is responsible for paying registration fees when an MPE portfolio is submitted. An additional consideration is that MPEs often have multiple competing responsibilities, for example as Radiation Protection Advisor or in a management capacity; this limits the time that they can devote to MPE duties.

> **There are not enough suitable staff in Nuclear Medicine to ensure adequate MPE provision.**

BNMS Staffing Recommendations and Desirable Staffing Levels

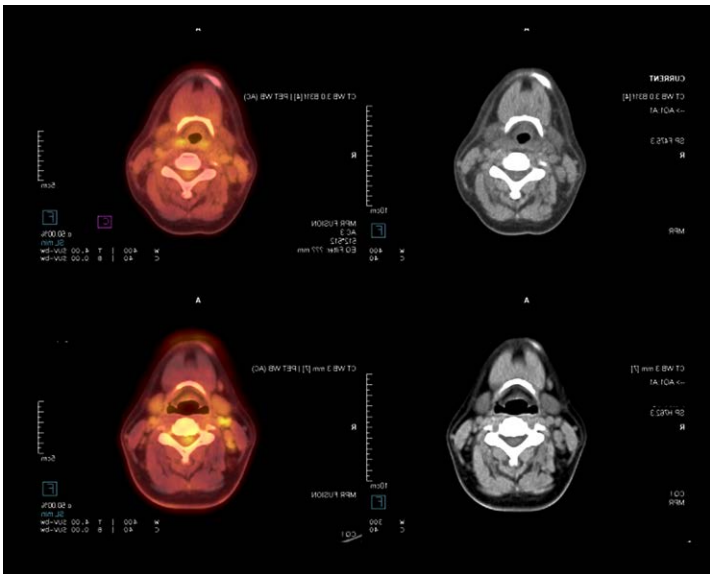
The most recent BNMS recommendations for physics provision in Nuclear Medicine departments were published in 2023[8]. Recommendations were provided, dependent on the type of equipment and services offered, regarding the level of MPS and MPE cover required to provide a safe and effective service. Both MPS and MPE refer to Clinical Scientist roles: while MPE is a legally mandated role, MPS refers to staff undertaking duties that are not legally mandated but vital to Nuclear Medicine service provision (e.g., research and development, quality assurance, complex radionuclide therapy).

The report defines separate risks associated with understaffing in MPS and MPE roles. Inadequate MPS staffing carries the risk of compromising patient safety and quality of care: this may result in sanctions from government agencies monitoring quality in healthcare settings. In addition, departments with inadequate MPE staffing may risk losing licensure from the Administration of Radioactive Substances Advisory Committee (ARSAC) to provide certain Nuclear Medicine services.

Respondents stated the types of equipment and services offered in their department, shown in Table 4. Based on this information, ranges of recommended MPS and MPE staffing levels were calculated for each responding department. Respondents were also asked to state the recommended levels of MPS and MPE staffing for their department as a single figure, to account for variation in departments' individual configurations and characteristics. (This information is not available for respondents from Wales.) Information on desirable staffing levels was also collected, to test the validity of the BNMS recommendations.

Equipment	Total Departments	Diagnostic/ Non-Imaging	Routine Therapy	Complex Therapy
No imaging equipment	1	1	0	0
Single gamma camera	12	11	5	0
2 or more gamma cameras (no PET-CT)	17	16	14	6
Nuclear medicine and fixed PET-CT	29	24	21	20
Fixed PET-CT or PET-MRI scanners (no nuclear medicine)	6	5	1	1
Mobile PET-CT services	1	1	0	0
Therapy only services	1	0	1	0

Table 4: Types of equipment specified by BNMS, listed with the total number of respondents with access to this equipment, and the number of different types of services offered per equipment type. Note that some respondents reported that their department had access to more than one type of equipment.



Validation of BNMS Recommendations

Ranges of BNMS-recommended staffing levels were compared with the self-reported recommended staffing levels, for MPS and MPE separately. For MPS staffing levels, 54% of respondents reported a recommended value within the range specified by the BNMS. For MPE staffing levels, 71% of respondents reported a recommended value within the range specified by the BNMS. Respondents who reported a level outside of the calculated range likely did so due to provision or receipt of external MPE services, which is not accounted for in the BNMS report. Approximately 51% of survey respondents stated that they provided physics services to other Nuclear Medicine departments.

Desirable staffing levels were compared with self-reported recommended staffing levels, as the latter were likely to be reflective of external physics services provided (or received). The average desirable MPS staffing level was 6.94 WTE, and the average recommended MPS staffing level was 7.01 WTE. The average desirable MPE staffing level was 4.30 WTE, and the average recommended MPE staffing level was 4.19 WTE. Pearson correlations between desirable and recommended staffing levels for each group were found to be statistically significant (MPS: $r(47) = 0.811$, $p < 0.001$; MPE: $r(47) = 0.921$, $p < 0.001$.)

In addition, 71% of respondents stated that they felt that the BNMS recommendations accurately reflect the staffing needs of their department. Reported reasons for inaccurate estimates included complexity of establishment and legal requirements, and the ability of larger establishments to take advantage of economies of scale.

The survey's findings support the validity of the BNMS staffing guidelines. Comments from respondents showed that the guidelines can be useful in creating business cases for hiring new staff. However, there is a caveat that Nuclear Medicine departments are diverse, and it is difficult to capture this diversity with a single set of guidelines. For this reason, **it is recommended that this document is best treated as a set of guidelines, rather than requirements, for Nuclear Medicine departments**.

71%

of respondents reported a recommended value within the range specified by the BNMS.

Comparison with Current Staffing Levels

Respondents were asked to state current MPS and MPE staffing levels. These were compared with the calculated BNMS staffing recommendations for each department, based on equipment and services available. Staffing recommendations are presented as single self-report figures, and calculated ranges. Comparisons of current and recommended staffing levels, for MPS and MPE, are also shown stratified by region.

	Current WTE	Desirable WTE	BNMS Recommended WTE	BNMS Recommended Minimum WTE	BNMS Recommended Maximum WTE
MPS	215.8	333.1	340.1	182.9	356.0
MPE	95.2	206.5	209.2	87.1	198.4

Table 5: Current, desirable, and recommended staffing levels for MPS and MPE.

The Nuclear Medicine workforce's MPS and MPE staffing levels are both slightly above the minimum recommended by the BNMS. Respondents indicate, however, that staffing levels closer to the higher end of the BNMS recommended range would be optimal for providing safe, effective services. To meet these levels, the MPS workforce would need to expand by 124.3 WTE (58%), and the MPE workforce would need to expand by 114 WTE (120%). These results were found to be broadly comparable to similar, previous work examining MPE support in Nuclear Medicine[9].

Respondents in the East of England, the North West, and the South West report MPS staffing levels below the minimum recommended levels by the BNMS. Respondents from all other regions reported MPS staffing levels within the recommended range. Findings are consistent with the fact that the East of England and the North West are the regions with the highest Clinical Scientist vacancy rates.

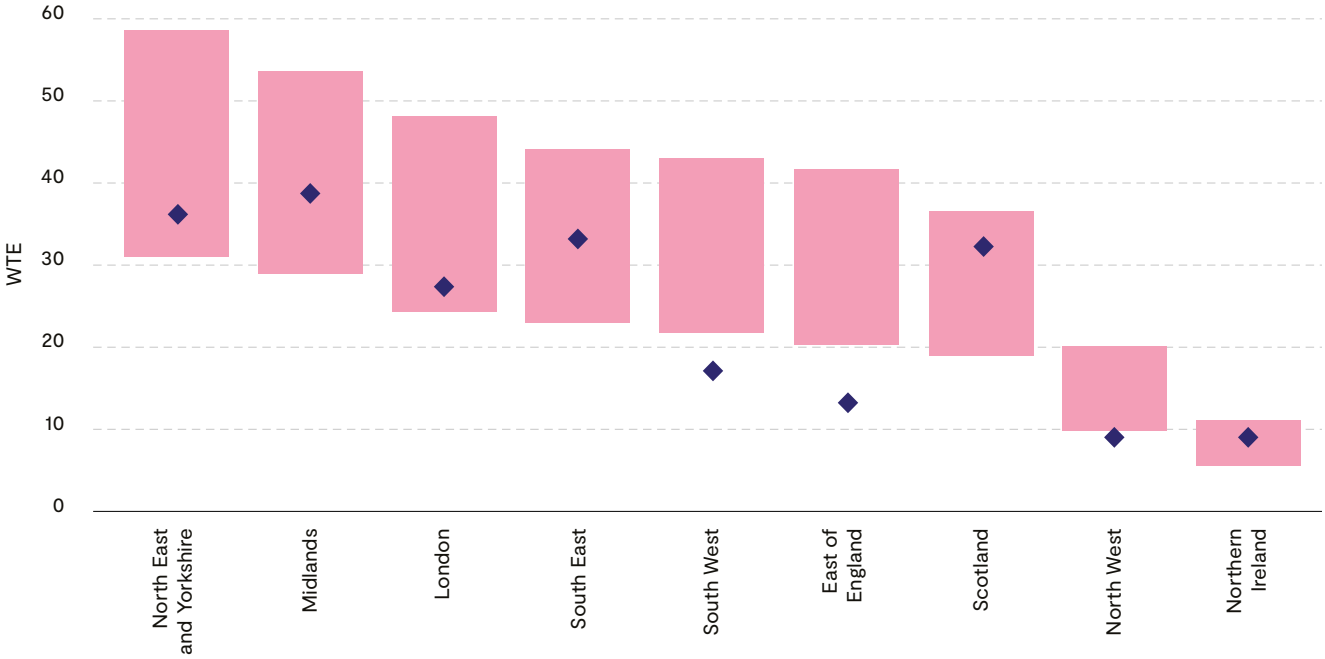


Figure 17: Current levels of MPS staffing alongside the BNMS recommended ranges for each region.

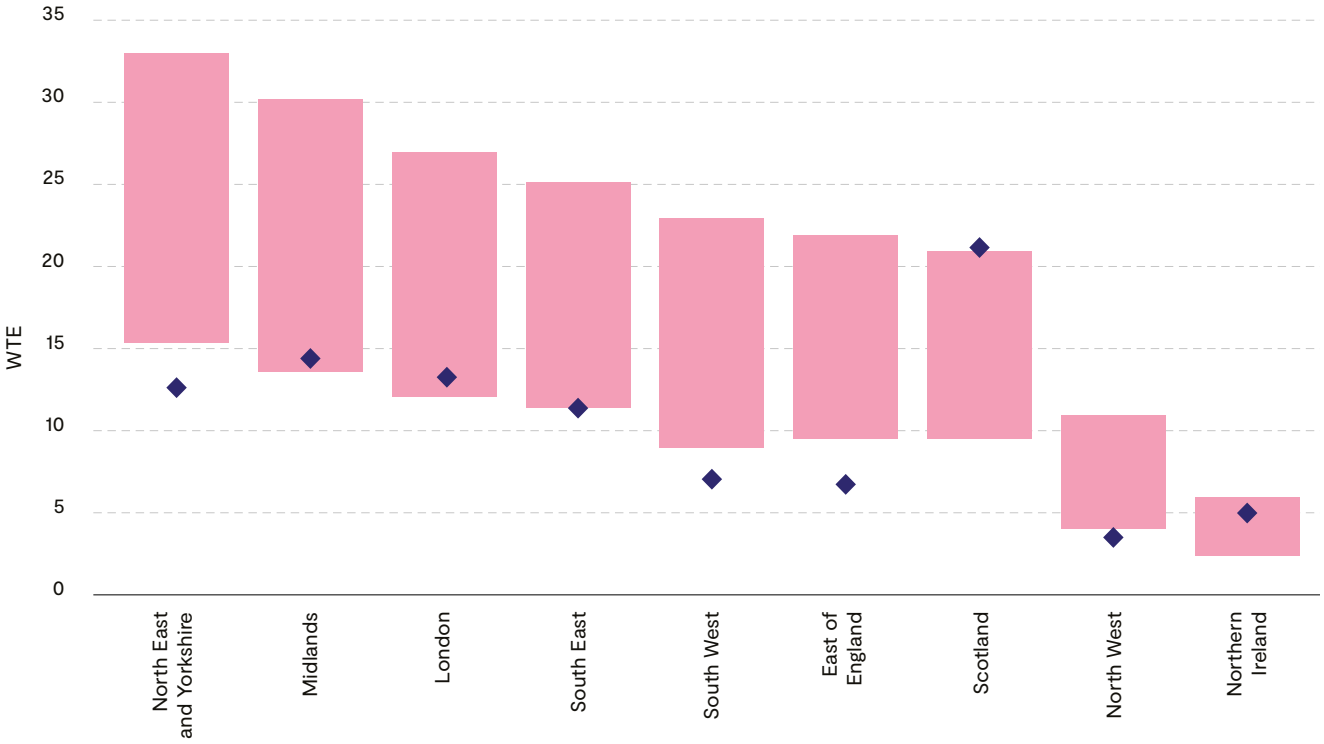


Figure 18: Current levels of MPE staffing alongside the BNMS recommended ranges for each region.

Respondents from London, the Midlands, Northern Ireland, and the South East report MPE staffing levels within the BNMS recommended range. Meanwhile, the East of England, the North East and Yorkshire, the North West, and the South West report MPE staffing levels below the BNMS recommended range. This information does not neatly correspond to the proportion of respondents from each region reporting insufficient MPE staffing provision. A likely factor to confound this relationship is the network of externally provided MPE services across Nuclear Medicine departments.

Scotland has a current MPE staffing level of 0.2 WTE over the BNMS recommended staffing level range. However, respondents across Scotland report a figure for recommended staffing level that is higher than the upper end of the range. This is likely due to MPEs in these departments providing external services to other departments; this demonstrates how the BNMS guidelines cannot account for the full range of diversity across Nuclear Medicine services.

> **Many Nuclear Medicine departments provide external services to other departments, which may not be reflected in recommendations.**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Training and Future of the Workforce

Training Schemes

Respondents answered questions regarding the training landscape within Nuclear Medicine, as this can provide useful information for future workforce planning.

Forty-eight respondents stated whether their organisation was able to support Clinical Scientist training. Of these, 65% responded that they could support this (N=31), 15% that they were capable of this provided that they had support (N=7), and 20% that they could not support this (N=10). The Scientist Training Programme (STP) is the most commonly offered training scheme for Clinical Scientists, followed by ACS Route 2. In comments on training, the most commonly cited barrier to training provision is a lack of staff time. Many Nuclear Medicine departments are understaffed, and clinical workload is too high for more experienced staff to be able to dedicate time to training new staff.

80%

of Nuclear Medicine centres can support Clinical Scientist training

Some departments cannot support training due to a lack of funding and staff time

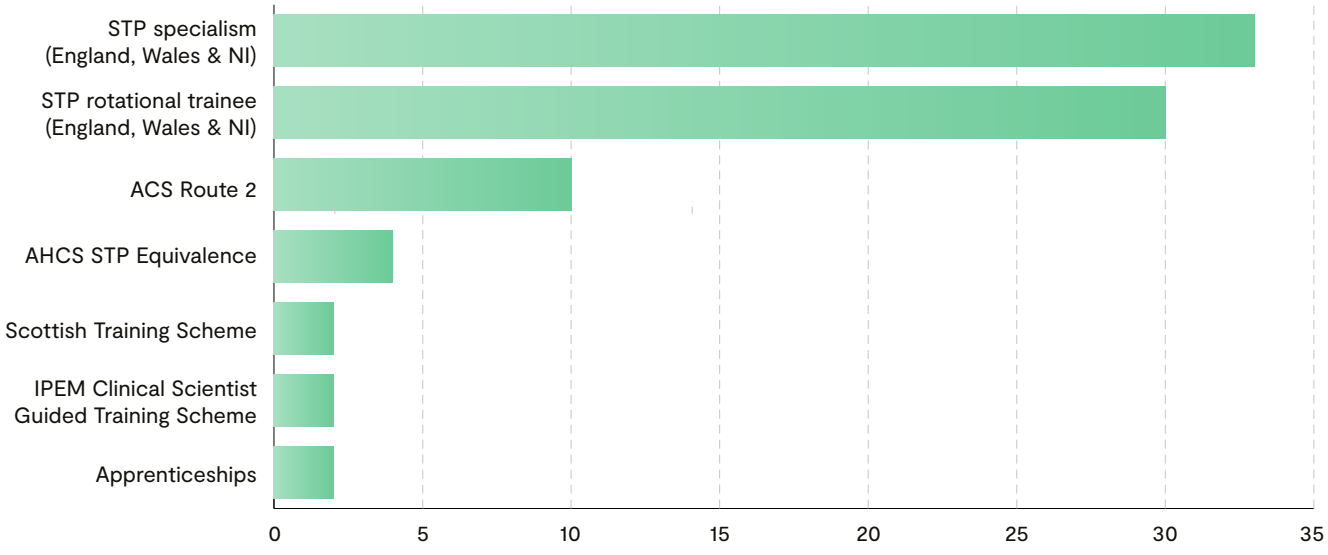

Figure 19: A bar chart displaying the Clinical Scientist training routes offered in respondents' organisations.

Forty-eight respondents answered whether their organisation was able to support Clinical Technologist training. Of these, 44% responded that they could support this (N=21), 27% that they were capable of this provided that they had support (N=13), and 29% that they could not support this (N=14). Further comments indicate that funding, particularly for Clinical Technologist training, is a significant barrier to departments being able to support training. However, respondents also state that training Clinical Technologists in-house is a primary method of recruiting new Clinical Technologists, in a time when recruiting experienced staff in this profession is very difficult. The combination of these circumstances may explain the observed Clinical Technologist vacancy rate of 14%.

71%

of Nuclear Medicine centres can support Clinical Technologist training, but many need support to do this.

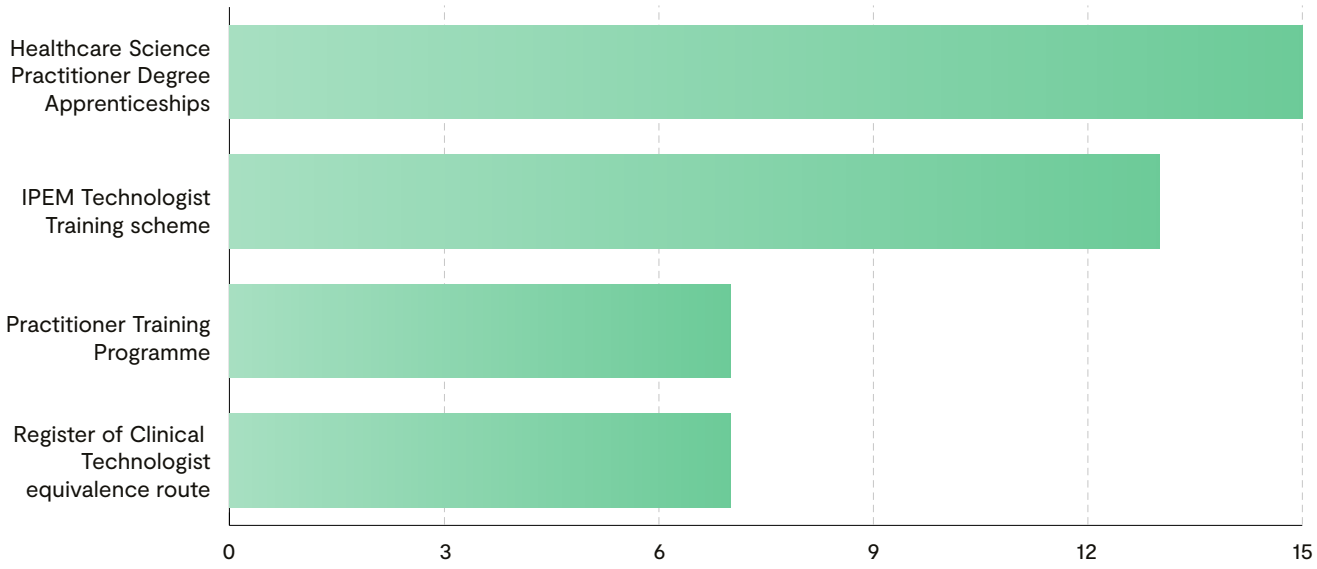

Figure 20: A bar chart displaying the Clinical Technologist training routes offered in respondents' organisations. Although the RCT Equivalence Route is not a training route, it is included because it represents an avenue through which registered Clinical Technologists are added to the workforce.

Consultant Clinical Scientists and The Higher Specialist Scientist Register

The role of Consultant Clinical Scientist (CCS) describes staff with the same level of professional competency as medical consultants, who provide valuable scientific clinical advice and care.

They are responsible for quality improvement, innovation, and research to modernise and improve care within their discipline. CCS posts are typically thought to sit at AfC bands 8c and above. Respondents were asked about banding for CCS posts at their organisation. One stated that their organisation had a strict requirement for CCS posts to be band 8c or above, and 6 stated that this was desirable: a further 24 stated that this banding level was not expected or required for these roles.

The Higher Specialist Scientist Register (HSSR) was established in 2015 to provide a standard framework for CCS posts. This involved specifying job titles, job descriptions, length of service requirements, and pay banding for these roles. To this end, the HSSR provides professional recognition for medical physicists working at a similar level to medical consultants, and some employers are beginning to require applicants for new CCS posts to be on the HSSR.

In order to be on the HSSR, one must demonstrate clinical and scientific leadership, knowledge to support consultant-level clinical advice, and strategic direction and innovation supporting service development. There are two ways to achieve this. Higher Specialist Scientist Training (HSST) is a five-year qualification that covers higher specialist knowledge, research, and service management training. Higher Specialist Scientist Equivalence (HSSE) can be applied for when an individual can demonstrate attainment of the knowledge and skills taught on the HSST, through practical work experience.

Thirteen respondents reported staff either registered on the HSSR or working toward this. Nineteen staff were counted in this group: 7 are registered already (of which 6 via HSST), and 12 are working towards registration (of which 8 via HSST). Few vacancies currently exist among Consultant-level Clinical Scientist posts, but current HSST uptake likely reflects good succession planning for future Consultant-level vacancies. In addition, continued uptake of HSSR will ensure that the Clinical Scientist workforce has the appropriate knowledge and skills to support safe, effective Nuclear Medicine services at all levels.

Recruitment and Retention

Survey respondents were asked to state whether their department had difficulty with recruitment and retention of staff.

Responses were broken down by profession. Results indicate high levels of difficulty with recruitment – and, to a lesser extent, retention – across most professional groups. Results for Radiographers and other staff should be interpreted cautiously, as fewer departments reported on staff in these groups. These findings support the high reported vacancy rates, low reported levels of sufficient staffing provision, and high reported shortfall of desirable and recommended staffing levels.

Most survey respondents reported difficulty with recruitment for at least one professional group, with 47% indicating difficulty recruiting Clinical Scientists and 57% indicating difficulty recruiting Clinical Technologists. Increased investment in training, particularly for MPEs and Clinical Technologists, will be required to address these difficulties. In addition, some respondents suggested that recruitment difficulties may be exacerbated by competition from other Medical Physics specialisms, or other industries. This may also explain the difficulties with Clinical Technologist retention reported by 23% of survey respondents.

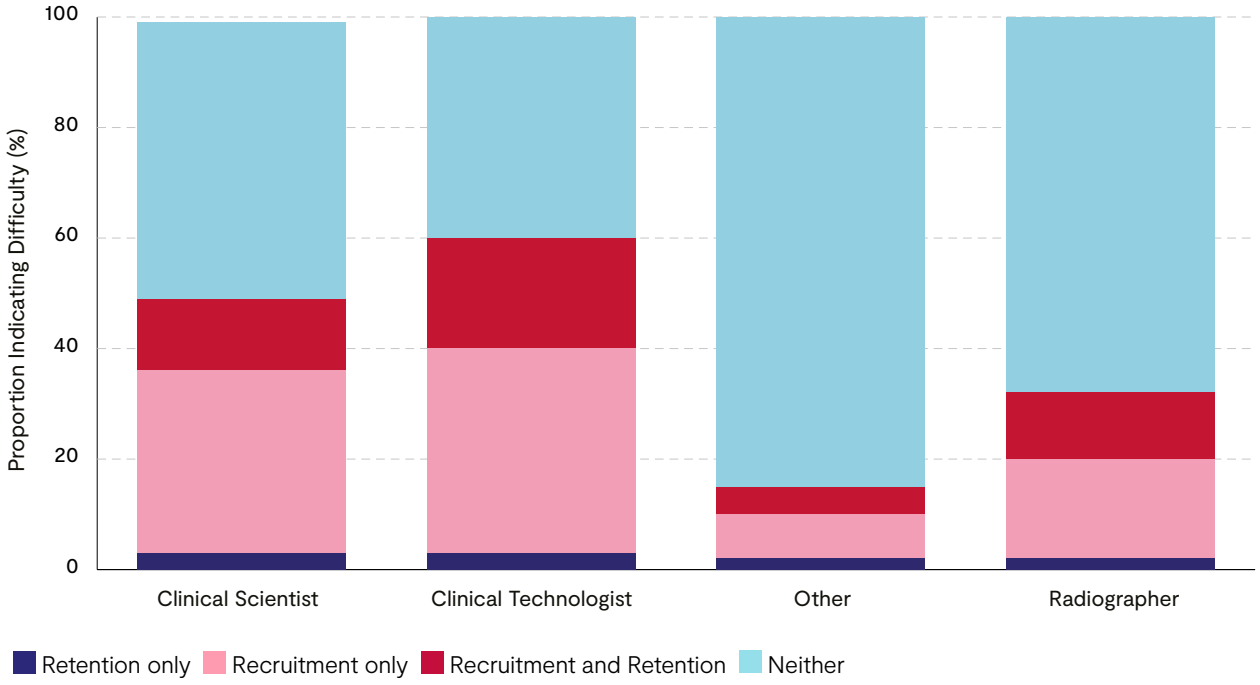

Figure 21: Proportion of respondents indicating difficulty with recruitment and retention of staff in different professions.

Recommendations

The results of this report depict a challenging landscape for the Nuclear Medicine workforce. Vacancies remain high, and the workforce falls short of requirements for providing optimal services.

IPEM offers the following recommendations for addressing current workforce challenges:

1. **Increase support for training:**
   a. Funding for commissioned training programmes
   b. Funding for individual Trusts to create training posts, achieved by lobbying influential institutions
2. **Improve efficiency of the MPE recognition process, to increase number of suitable candidates for experienced posts**
3. **Increase support for overseas recruitment:**
   a. Improve the current process for assessment of equivalence
   b. Funding support for visa costs incurred by Trusts

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