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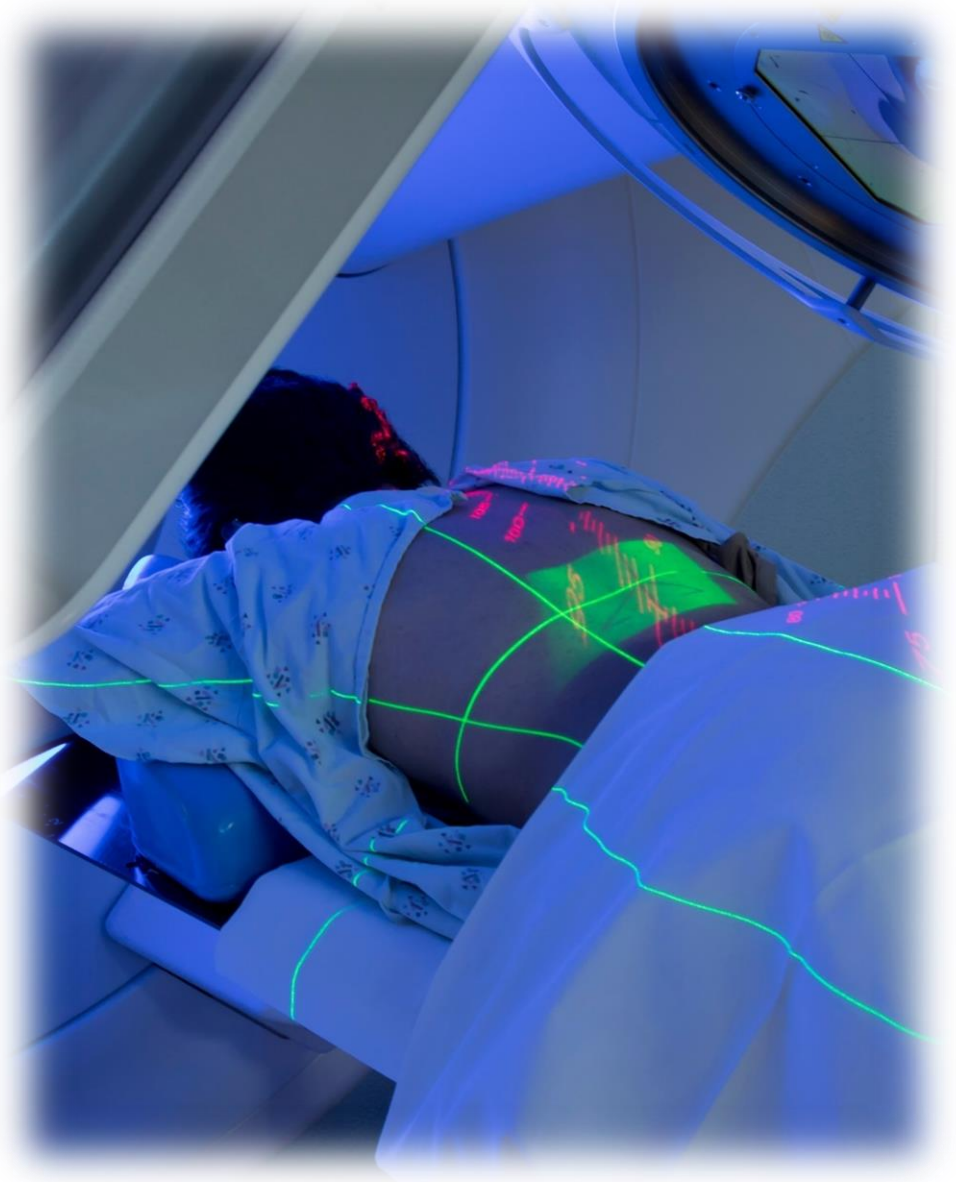

Higher Specialist Scientist Training and the Consultant Clinical Scientist Workforce

Executive Summary

In 2023, IPEM's Workforce Intelligence Unit ran a survey to determine whether Higher Specialist Scientist Training (HSST) is meeting the needs of the Medical Physics profession. This document reports on survey findings with respect to the current state of the Consultant Clinical Scientist (CCS) workforce in Medical Physics.

Survey findings showed that current CCS staffing levels fall short of service requirements, and that recruitment for these posts is infrequent and often difficult. The current number of staff working towards, or enrolled on, the Higher Specialist Scientist Register (HSSR) indicates appropriate succession planning for future CCS roles in Radiotherapy and Nuclear Medicine. However, HSSR is not currently well-utilised for this purpose in Diagnostic Radiology and Radiation Protection (DR & RP).

This is intended to support an accompanying report discussing respondents' views on HSST, and whether it meets the needs of the profession.

Background

A Consultant Clinical Scientist, for the purposes of this report, is a medical physicist who sits at Band 8c, 8d, or 9 in the NHS Agenda for Change framework. Historically, CCS roles have lacked consensus on job title, job description, length of service, or pay banding. The Higher Specialist Scientist Register was founded in 2015 to remedy this[1]. The aim of the HSST is to provide future CCS staff with the skills and expertise necessary to support the workforce of the future: clinical and scientific leadership, knowledge to support consultant-level clinical advice in the context of direct patient care, and strategic direction and innovation supporting service development.

Since 2022, all new CCS roles in Wales require applicants to be on the HSSR. This has been discussed in the other devolved nations of the UK: it would put Scotland and Northern Ireland at a disadvantage, as funding for HSST is not available in either country[2]. There are currently two routes to eligibility for the HSSR. These include HSST, a five-year, doctoral-level training program, and Higher Specialist Scientist Equivalence (HSSE), a pathway to demonstrate professional equivalence to HSST.

Our survey was sent to Heads of Medical Physics in Radiotherapy, Nuclear Medicine, Magnetic Resonance, and DR & RP. Although the scope of the survey covered these four specialisms, we acknowledge that HSST is available to staff in other specialisms of Medical Physics and Clinical Engineering. We gathered 43 responses from Radiotherapy (68% response rate), 26 from Nuclear Medicine (20% response rate), 23 from DR & RP (35% response rate), and 19 from Magnetic Resonance (26% response rate).

Consultant Clinical Scientist Recruitment

Respondents from each specialism were asked to provide information on their departments' staffing levels of consultant clinical scientists in whole-time equivalence (WTE). We also asked them what level of WTE staffing for these roles would be required to support a comprehensive clinical service. Self-reported desirable staffing levels have previously been compared with the recommendations of staffing calculators in Nuclear Medicine and DR & RP[3,4]. In each case, desirable and recommended staffing levels were broadly similar, as shown in Table 1. Although staffing calculators do not specify the recommended number of CCS staff, self-report of required staffing levels were considered likely to be accurate based on these comparisons.

Specialism	Current staffing	Desirable staffing	Recommended staffing
Nuclear Medicine (Whole Time Equivalent)	325.1	546.6	549.3
DR & RP (Headcount)	305	667	719

Table 1: A comparison of current, desirable, and recommended Clinical Scientist staffing levels from IPEM's most recent Nuclear Medicine and DR & RP workforce surveys. This information is not available for Radiotherapy or Magnetic Resonance.

Our survey results show that current CCS staffing levels fall short of what is required to run an effective service in every specialism. Across all respondents, 54% stated that their current CCS staffing level was insufficient. To meet workforce needs, CCS posts must increase by 27% in Radiotherapy, 25% in Nuclear Medicine, and 76% in DR & RP.

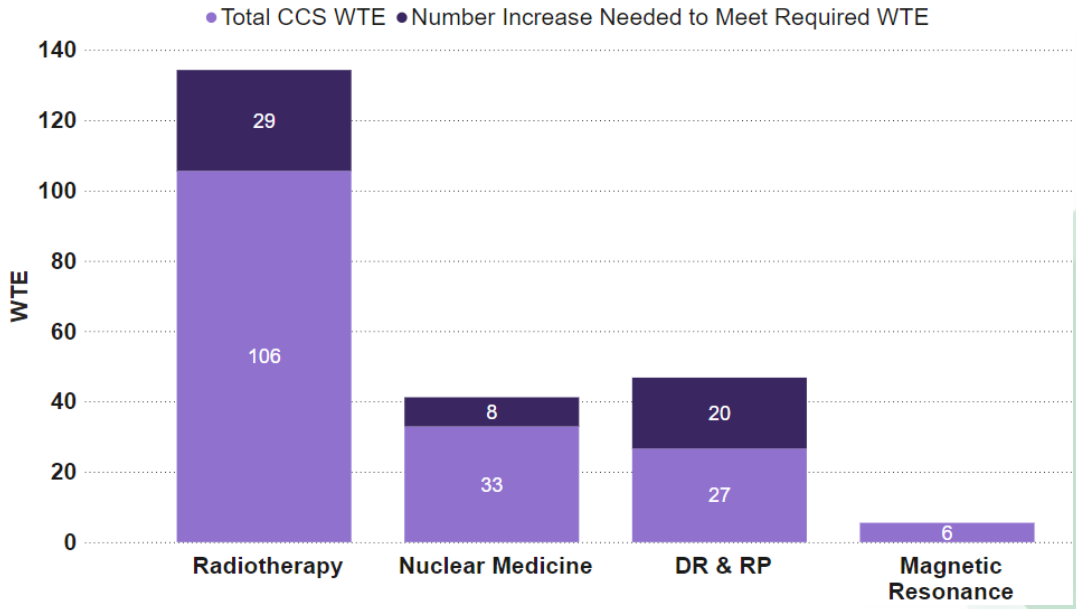

Figure 1: A stacked bar chart showing current and required WTE staffing levels for CCS roles in Radiotherapy, Nuclear Medicine, DR & RP, and Magnetic Resonance. (Information on required staffing levels is not available for Magnetic Resonance.)

Despite the shortfall of CCS posts, **only 35% of all respondents indicated that they had filled a CCS post within the last 2 years**. Those who had not filled CCS vacancies included both those that did not advertise vacancies, and those who unsuccessfully advertised vacancies, as these were not differentiated in the survey. **When asked about the difficulty of CCS recruitment, respondents were more likely to state that it was difficult**. However, a substantial proportion of respondents did not report difficulty, and no clear trends emerged indicating a relationship with specialism, or region.

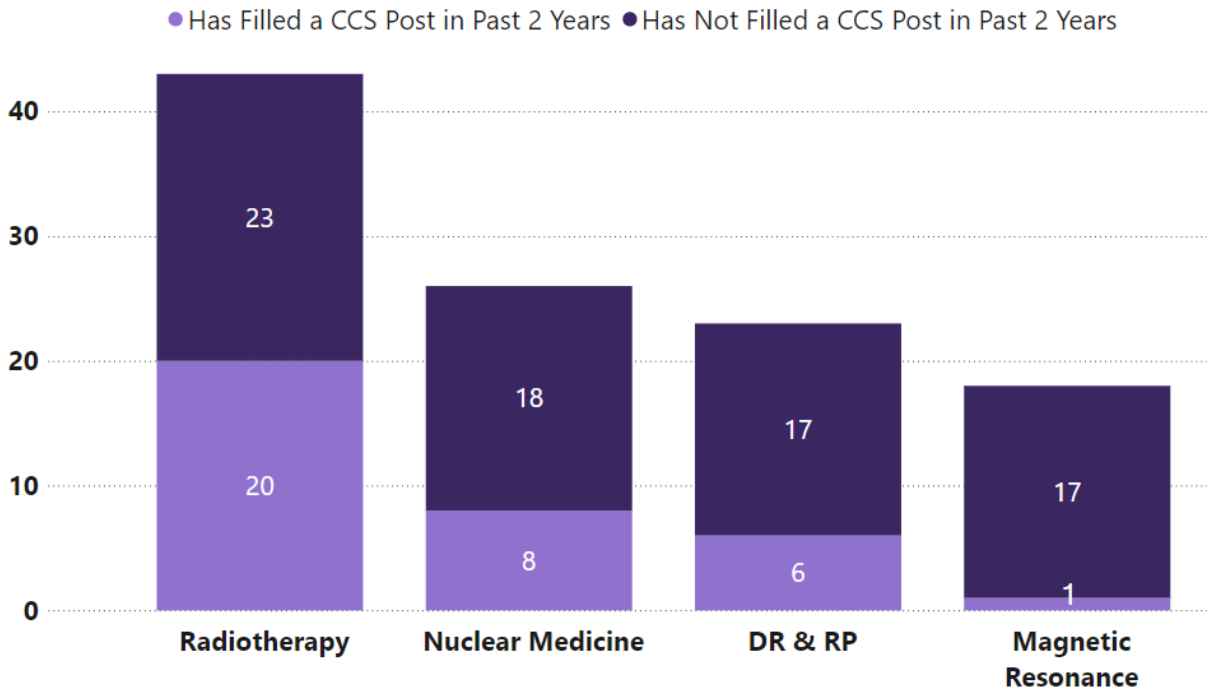

Figure 2: A stacked bar chart displaying numbers of departments across specialisms that have and have not filled a vacant CCS post in the past 2 years.

Over the last 2 years, **CCS vacancies were generally filled within three months of being advertised**, with a small number remaining vacant for six months or longer. (This information was not available for Magnetic Resonance.)

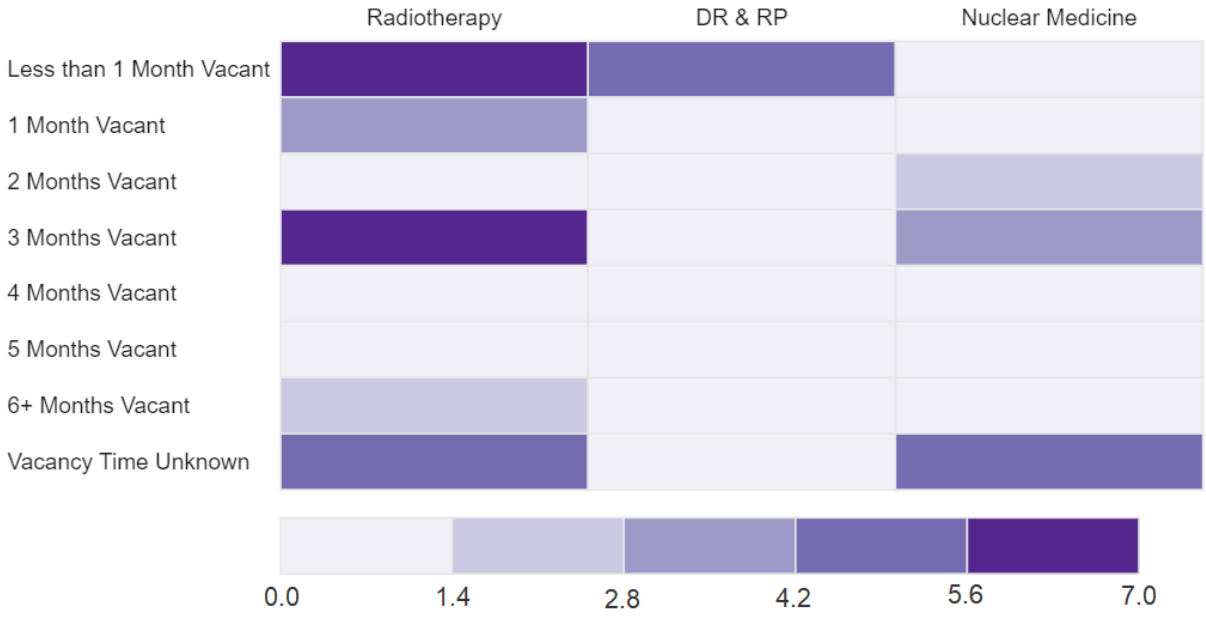

Figure 3: A heat map plotting length of vacancy against medical physics specialism.

Difficulties in meeting required WTE staffing levels for CCS roles may be related to funding constraints in specific regions. Respondents from different regions reported overall shortfalls in CCS staff ranging from 1.0 to 11.9 WTE. Further information on regional CCS staffing is available on request. Regional difficulties in recruiting CCS staff may also be related to the geographical mobility of potential applicants: as CCS is a senior role, staff at this level are more likely to have family and caring responsibilities make moving long distances for a new post more difficult.

Succession Planning and HSSR

Thirty-six percent of all CCS post holders are at least 55 years old. This likely reflects the value of plentiful working experience to the role of a consultant-level clinical scientist. It also highlights the need to consider succession planning for these posts.

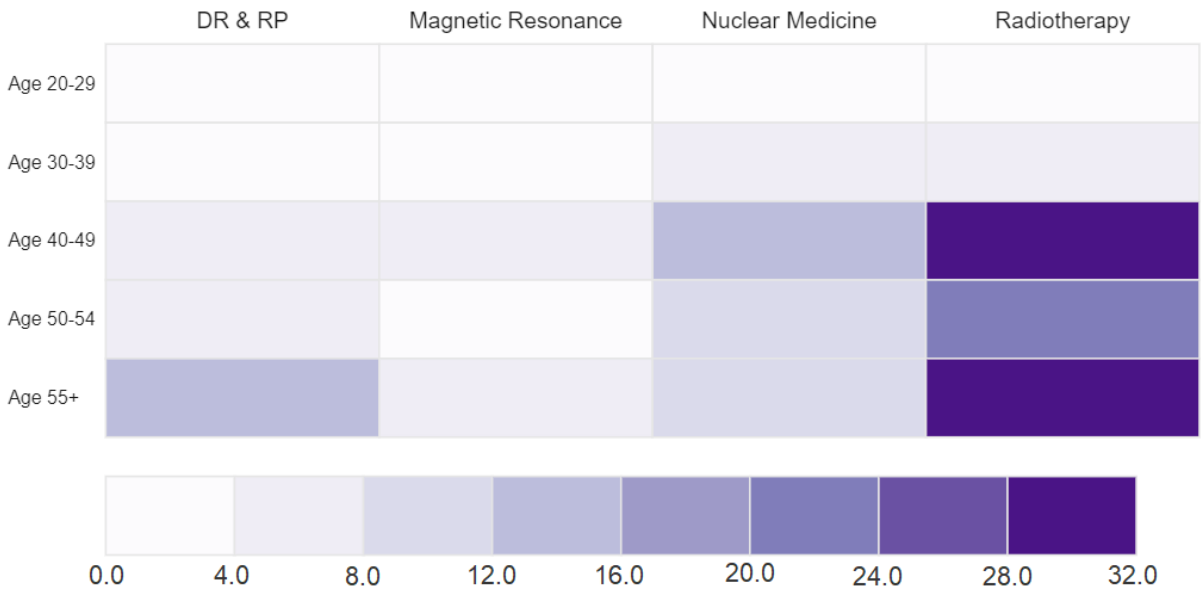

Figure 5: A heat map displaying numbers of CCS post holders, across specialisms and age brackets.

By examining the number of staff working towards the HSSR, it is possible to examine how this is addressing current and future workforce need for staff in CCS roles. Survey respondents were asked about numbers of staff who were currently enrolled in HSST, or on track to achieve HSSE. Radiotherapy reported 74 individuals, Nuclear Medicine reported 20, and DR & RP reported 14. In comparison with current levels of CCS vacancies, Radiotherapy and Nuclear Medicine are currently training more individuals for HSSR registration than there are consultant-level vacancies, while DR & RP are training fewer. Survey respondents additionally stated that 30% of recently filled CCS posts were filled by an HSST graduate: this is likely to rise as the number of HSST graduates in the workforce increases.

The fact that DR & RP have fewer staff working towards HSSR registration may be related to reduced capacity for training. According to IPEM's most recent workforce survey data[5-8], detailed in Table 2, DR & RP has a comparatively small establishment size and high vacancy rate. This is likely to create difficulties in releasing staff time to work towards training programmes like HSST. Moreover, senior staff in DR & RP may need to pursue certification as a Radiation Protection Advisor (RPA), as the services of an RPA are legally required for departments using ionising radiation[9]. This represents an additional training burden within this specialism, making pursuit of HSSR registration even more difficult.[1]

Specialism	Establishment	Vacancies	Vacancy Rate
Radiotherapy	2001.9	152.0	8%
Nuclear Medicine	1091.1	133.5	12%
Magnetic Resonance	116.3	13.2	11%
DR & RP	566	95.2	16%

Table 2: Recent data on establishment and vacancies in the Medical Physics specialisms.

These data suggest that HSST is being used appropriately to succession plan for CCS roles in Radiotherapy and Nuclear Medicine, but this is not as prevalent in Diagnostic Radiology and Radiation Protection. **Until the significant workforce shortages in DR & RP are addressed, the existing discrepancy in HSST training numbers is likely to remain.**

Notes

1. This paragraph represents an addition to the originally released document, based on feedback from members.

References

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