Experience with Assistant Physicist and in-service STP trainee posts

Claire Skinner
Head of Radiological Physics and Radiation Safety, Royal Free London NHS Foundation Trust

Background. Background to your organisation and the issues being faced

Insufficient numbers of STP trainees in RP/DR are coming through the “direct entry” route via the North London training consortium.

Difficulties recruiting HCPC-registered scientists due to high competition for those trainees that do choose RP/DR via the “direct entry” route. Situation exacerbated by high number of new posts being created across London and beyond, due to CQC mandating the creation of additional posts at IRMER inspections.

Inadequate resource leading to risks of legislative non-compliance and losing external contracts. Increasing demands due to CDC and expansion particularly in CT and mammography.

In Dec 2021 a unique opportunity arose to apply for HEE funding for “in-service” STP trainees. Funding to be at Band 6 for 3 years from Sep 2022.

Solutions: Solutions proposed including intending outcome.

Hastily wrote and banded an Assistant Physicist job description and person spec (Band 5). Wrote business case for creating a new Band 6 STP training post at risk, arguing this would be fully funded for 3 years if our application to HEE was successful… business case successful!

Recruited an Assistant Physicist at Band 5, to be promoted to a Band 6 STP trainee when the HEE funding came through. Lots of good applicants with good physics degree and enthusiasm!

Applied for HEE funding before we had recruited…application successful, phew!

Post holder started Jun 22 at Band 5, promoted to Band 6 in Sep 22 when she started STP and funding came through. 3 months over the summer doing useful project work for us.

This has been such a success that when our Band 7 physics radiographer went part time, we converted the remaining 0.6 WTE into another 1.0 WTE Band 5 Assistant Physicist. We wrote a new JD which better met current service needs and includes more computer science skills. Will lead on setting up and maintaining a programme for remote testing of workstations; support our DMSs; develop software and databases; and act as our liaison with PACS and IT. We have successfully recruited a good physics graduate and the new post holder has just started

Lessons Learned: Identify elements that you changed or would do differently

Applying for HEE funding before recruiting was risky – but it worked out, and recruiting at Band 5 meant we didn’t 100% guarantee the STP post (which would have meant funding MSc)

Too early to tell if the second post works out – watch this space! But if it doesn’t we can rewrite the JD and try again…

Best Practice: Highlight areas of success/best practice and why.

Need persuasive business cases - ”home-grown” approach with clear career path was appealing

Lots of good applicants with good physics degrees and enthusiasm

In-service route secures training of a DR/RP physicist, ready for a Band 7 when qualified

Conclusion. Overall thoughts - benefits/negatives of this solution

Assistant Physicist role is a good stepping stone for the “in-service” STP programme. If all goes well with our second recruit he could apply for HEE funding for STP at a future date, vacating the Band 5 post and the process starts again. This approach ensures a career path for the post holder (making the job more attractive than a technologist post with no further prospects) whilst ensuring service resilience.

However there is additional pressure on senior staff to provide the training

Regional Medical Physics Practice Educator Roles

Sarah Peel (Southeast England), Clare Anderson (East of England), Rosemary Eaton (London), Neil Davis (London North Consortium), Abigail Smith, Caitlin Whybrow, Mike Mayo, Chloe Trevail and Joshua Naylor (Southwest England)

Background: From 2021, regional medical physics practice educators were funded by HEE (now NHSE Workforce Training and Education) to support increased training capacity.

Solutions: Each region has taken a different approach, which will be presented. Regional initiatives include:

STP training:

- Regional network meetings to identify areas of the STP curriculum that could be delivered through workshops, online learning or other collaborative methods
- Regional agreement on training plans and the level of evidence expected for the new curriculum, with a particular focus on pared-down rotations where appropriate
- Collaborative working including bespoke support for non-ionising radiation rotation
- Practice educators providing pastoral support to trainees and giving assistance in assessing rotational and professional competences.
- Gathering feedback from trainees and sharing key points with supervisors in training centres
- Preparing final year trainees for the IACC final assessments
- Support for new supervisors such as bespoke ‘train the trainer’ sessions

Wider workforce initiatives:

- Webinar on Routes to Clinical Scientist Registration to increase awareness of all options
- Webinar on level 6 Medical Physics apprenticeships and the IPEM clinical technologist training scheme to increase regional uptake
- Webinar on writing reflective evidence for STP, route 2 and MPE portfolios
- HSST webinar to increase regional uptake
- Encouraging departments to employ admin staff to reduce scientist workload
- Encouraging every centre to host STP and apprentices and supporting accreditation
- Expanding overseas recruitment - enabled through sharing best practice and accelerating HCPC registration
- Development of regional NHS Futures platforms to share information and educational resources between training supervisors
- Working to develop level 2 and 4 medical physics apprenticeship curricula with a training provider

Lessons Learned: Collaborative and/or consortium working can reduce the training burden on an individual department and allow for increased training capacity. The new STP curriculum allows for a more imaginative and flexible approach to the rotations, which can be better tailored to the needs of the service. However, quality and consistency between training centres must be maintained. It can be challenging to find an effective way to communicate information and share resources across a regional footprint so it’s important to explore new technologies to better enable this.

Best Practice: Sharing resources and outputs across regions avoids duplication. We would like to develop a community of practice for medical physics educators and trainers or plug into existing networks.

Conclusion: To meet the workforce challenges in medical physics, we must support all training routes and levels. The NHS England regional practice educators are working together to practically provide support across their regional footprint and increase training capacity.

Stronger Together – Regional Services and Imaging Networks

Oliver Morrish, Cambridge University Hospitals NHS Foundation Trust

Background: The East Anglian Regional Radiation Protection Service (EARRPS) is a radiation protection and diagnostic radiology physics service based in Cambridge. We deliver to several hospital and community NHS Trusts as well as a number of private providers in the healthcare, research, education and veterinary sectors.

We are affected by many of the same workforce issues as those experienced elsewhere. Most significantly:

- Inadequate numbers of qualified applicants to fill vacant positions
- Capacity of experienced staff to deliver training to an increasing number of trainees
- Limited numbers of qualified experts to deliver and supervise services

Solutions: The recent IPEM workforce survey demonstrated that there is a tendency for larger services to be shorter-staffed compared to recommendations than smaller services. As a regional service EARRPS delivers relatively high levels of activity. This brings with it advantages and disadvantages with regard to the workforce which will be presented alongside a discussion about whether emerging Imaging Networks present an opportunity to realise similar advantages across services.

There are a number of features of EARRPS that supports resilience in the face of workforce challenges.

- Flexible approaches to recruitment, training and job role. This means: utilising all available training routes and tailoring training to the individual; identifying talent and being open to appointments of unqualified individuals into role that supports them to achieve the necessary qualifications; not working in silos and creating multi-skilled individuals who can work flexibly.
- Structures to support standardised service delivery by the whole team. For example our ISO-9001 Quality Management System provides a framework to support process-driven aspects of the service as well as providing opportunities to standardise outputs in line with client's requirements. Also our HSE-recognised Radiation Protection Adviser (RPA) body supports the governance of non-certified individuals giving RPA advice.
- Highly skilled and supported technologist workforce. EARRPS has employed clinical technologists as a critical part of the workforce since its inception. They deliver a wide range of services including commissioning and routine testing of complex imaging equipment, management of local research approvals and audits of regulatory compliance. Two of our technologists have recently achieved certification as qualified experts.

Lessons Learned: A flexible approach to workforce development can support resilience in a resource-challenged environment. This is evident in larger services but may also be achieved within networked services.

Best Practice: A supportive learning environment tailored to the individual can support staff retention while also delivering a team focused, flexible and multi-skilled workforce in the future.

Conclusion: Increased provision of training is the key to increasing workforce numbers in the future. In the meantime, a flexible approach to workforce development is needed to create resilience and ensure service continuity. Larger services have scale which can support such flexibility. Imaging networks may present opportunities for smaller services to do the same.

Workforce - "You cannot receive what you don't give" - Laozi

Elizabeth Davies

Proffered papers - please follow the style below:

Background. University Hospitals of Leicester NHS Trust is a large teaching hospital employing approximately 17 000 staff and covering a cancer population of 1 million. It is a specialist cardiac centre with 6 cardiac catheter labs and one hybrid theatre and has an extensive equipment base due to the radiology managed equipment service. Radiation Safety covers Diagnostic Radiology and radiation safety aspects of Nuclear Medicine and Radiotherapy. The historical establishment for ionising radiation has been low with a number of years where the service was run by 2 scientists and one technician. In recent years private work has been reduced to focus on the work required internally.

In any field there is constant churn of the workforce, whether this is at a short-term scale or a longer-term scale. The main issues faced at Leicester is that, despite a good record of training through the STP programme (2-3 Medical Physics STPs per year), due to the national recruitment process, we already know that a number of STP trainees do not intend to stay in Leicester after training. We have therefore decided to pursue other routes to train individuals, in addition to STP training, which we are clear is part of our duty to the community.

Solutions: A number of different solutions have been attempted to increase numbers some specific examples are:

1. Took on a trainee technician, who completed training, did route 2 scientist training and is now on HSST (he will be submitting an abstract about his perspective).
2. Recruited a Nuclear Medicine technician who then converted their registration to Radiation Safety.
3. Recruited a band 5 Junior Physicist from the locality to undertake project work on a temporary contract, when this individual proved to be very capable, they were supported to carry out in service STP training. This released band 5 funding until they have completed the training which allowed recruitment of a band 5 annex U trainee technician on a temporary contract who would finish training at the same time. As soon as the individual started training the case was made for a band 7 post for them when they finished. When funding for this was obtained the band 5 post could be made permanent.
4. Appointed more than just an administrator. We have recruited a number of fantastic individuals at band 3, ostensibly to administer the personal dosimetry service, who we have managed to train in other roles alongside this work:
    - A retired engineer who worked part time for us and we trained up to do PACs QC.
    - An individual who went on to become an STP trainee.
    - An individual who we trained up internally to do dental QC and ultrasound QC.
    - An individual who did an Apprenticeship in Data Analysis and now helps to compile reports for assurance. They have been trained up to place environmental monitoring and produce the reports for the RPA to sign off.

Lessons Learned: It is difficult when you put a lot of effort into training an individual and they move on to bigger and better things. Instead of looking at it as wasted time look at all the work they were able to do during their time with you due to that training. The key is to use lots of different approaches rather than to just use the standard routes to training.

Don't say that you don't have enough staff to train people, we never will if everyone says this.

Best Practice: Ensure that there are opportunities for progression for individuals with promise regardless of their background. With the right training there are lots of activities that can be carried out by lower banded staff.

Conclusion. I don't have all the answers, we are still at 42% of recommended staffing levels, but we are going in the right direction. Focus on what you need and explore every method to get there, the quickest way to get there may not be the best.

The 'Scientist': An unexpected Journey

Richard Farley – Clinical Scientist (DR/RP), University Hospitals of Leicester NHS Trust

Background. This is not a case study of workforce issues in my current organisation but more my own personal reflection of the unexpected journey I have travelled so far as an example of the potential of alternative routes into the career.

I have travelled a long a winding road, starting my career in medical physics as a trainee technologist, qualifying as a technologist, embarking on route 2 scientist training, qualifying, and now progressing to HSST training. I took the less travelled route, but believe that I came out of it a more rounded scientist than I would otherwise have been.

Upon leaving university with a BSc in Physics with Space Science and technology 20 years ago, I wished to continue my education and undertook a Masters in Radiation and Environmental Protection. Ironically, had I chosen the Masters in Medical Physics offered I may have had a much more straightforward route into the profession. Hindsight is 20:20, however this did provide me with a broad practical experience using and detecting radiation covering wide applications.

My first sliding doors moment was in 2009, as I applied for a trainee technologist position (IPEM 'Education Only' route), intrigued by the opportunity to work with radiation and complicated machines, I successfully became a clinical technologist in 2014. Whilst I enjoyed the role of a technologist, I felt that I had more to offer and was supported to compile another portfolio of evidence for the ACS Route 2 equivalence. In 2018 I became a registered clinical scientist and could have completed my journey there. However, as a now seasoned traveller, I find myself in the 2nd year of HSST. I have followed the 'long way round' trail over the last 14 years to get to this position, with the support and belief of my team and I will continue to develop for the rest of my career.

Solutions: Extrapolating my own personal experiences as a case study will hopefully highlight:

1. The possibility to grow your own workforce, with individuals starting at different entry points.
2. How individuals can be supported to grow and develop their talent into the different healthcare science career paths.
3. The need to raise the profile of Medical Physics further in secondary and tertiary education.

Lessons Learned: For me, I believe my experiences and journey has helped enrich my own knowledge and development, and though it has taken longer than if following other more structured programs, I don't believe this would have been of interest to me back in 2009. Another key cornerstone is the importance of the influence of other people being supportive and challenging me to push further, without these important people I wouldn't be where I am now. My experience helps endorses the concept of the Academy for Healthcare Science (2017) career pathway, that there is the possibility to enter at the starting assistant level and be able to advance all the way to consultant level.

Best Practice: Healthcare science is reliant on the expertise of its workforce and ensuring that we make the most of all individuals based on their potential, irrespective of their background, is essential to ensuring that we are able to develop the workforce today for the requirements of tomorrow. The only way to retain talent in a highly competitive workforce is to offer the opportunities for individuals to develop to the full extent of their potential.

Conclusion. This is just one example of the road less travelled through a healthcare science career. There are likely to be many different examples like this across the country and in a time of portfolio careers, rather than jobs for life, investing in career long development is the only way to ensure talent retention. The Healthcare Science career framework offers more opportunities than ever for development of the existing workforce, and I would encourage you to fully explore these opportunities.

Academy for Healthcare Science (2017). *Career Framework for Healthcare Scientists.* Available at: https://www.ahcs.ac.uk/about/the-healthcare-science-industry/career-framework-for-healthcare-scientists/ (Accessed: 9 May 2023).

Medical Physics Technology Degree Apprenticeships at UWE

The issues with recruitment in Medical Physics are well documented. To meet the training demand, the University of the West of England (UWE) has offered degree apprenticeships in Medical Physics Technology since 2017 with specialisms including; Radiation Physics, Nuclear Medicine and Radiotherapy Physics. Degree apprenticeships are funded using the apprenticeship levy, meaning that the fees are already covered.

A degree apprenticeship is a partnership between the University and the workplace where the apprentice spends 20 % of their time working on academic content and 80 % of their time training and working within the department. The University provides the taught academic content, and the workplace is responsible for delivering workplace training following a clear training programme with competencies set out by the University. For the degree programmes at UWE, the students attend a week of face-to-face practical tuition at the start of each semester followed by a number of online webinars each week, covering taught content.

The degree apprenticeship appeals to students who enjoy the fact that they can 'earn while they learn', which also allows access to the professions for a wider range of people such as mature students. This larger pool of applicants is beneficial to the employer as is the fact that the apprentices are available to support the department while they train. Employers who have partnered with UWE have provided positive feedback about their apprentices with one employer stating that 'with UWE and our support, they will be a credit to our profession'. In this talk we will outline key aspects of the BSc Healthcare Science (Medical Physics Technology) Degree Apprenticeship at UWE and how we work with departments to deliver this.

Advanced Practice for Clinical Technologists – Abstract for DR Workforce Challenges meeting

Background:
Clinical technologists are key members of the Healthcare Science workforce and contribute to many different services within Medical Physics and Engineering. Within the Diagnostic Radiology specialism technologists make up approximately one third of the total workforce but vacancy rates are high and most departments report that retention of technologists is a problem, with many either retraining as clinical scientists or leaving the profession entirely, often due to lack of opportunity for progression. In many cases significant training time has already been invested in these staff (in part due to few opportunities for external training as there are few PTP degrees in this specialism). A task group was set up to consider possible progression routes for technologists that would help improve retention rates, and also add resilience to the workforce by upskilling existing experienced staff.

Solution:
Comparable Allied Health Professional roles have established routes to register as Advanced Practitioners which allow more experienced staff members to gain additional certifications and work to an extended scope of practice. This also exists within some areas of Medical Physics but is not widespread and no recognised route has been established; instead, there are isolated areas where technologists are employed as "Advanced Practitioners" and work at a higher level, but there is no consistency in job descriptions or additional training or educational requirements.

The proposal from this group is to establish a recognised route to advanced practice certification with consistent education and training requirements and a register of qualified staff similar to the MPE and RPA registers. This would then align with Agenda for Change job descriptions and enable departments to advertise posts suitable for advanced practitioners. It is expected that this would have dual benefits:

- recruitment and retention of existing technologists would be improved as there would be greater scope for career progression,
- DR departments would have greater resilience in staffing as advanced practitioners would have more crossover in role with clinical scientists.

A paper has been circulated around relevant professional bodies and IPEM SIGs and is currently with IPEM for final approval. It includes proposals for expected scopes of work at different levels of advanced practice.

Challenges:
This would represent a change in established staffing culture, with technologists who have undergone advanced practitioner training being involved in work which has traditionally been done only by clinical scientists.

An appropriate register will need to be set up and maintained, and new training routes established. There will inevitably be some training costs involved and departments who wish to employ advanced practitioners will need to be supportive of this (comparable to the support required to train MPEs and RPAs).

Conclusion:

Supporting the proposed Advanced Practitioner Technologist plan could have benefits across Medical Physics, but particularly within DR where experienced technologists could share more workload with clinical scientists and so ease some of the pressures on more senior scientists working in MPE and RPA roles. Better retention of this section of the workforce would have advantages both in terms of reducing recruitment, and having more staff available to provide training for new starters and STPs.