



POSITION STATEMENT ON THE RADIOTHERAPY PHYSICS WORKFORCE

June 2016

Executive Summary

This Position Statement sets out the Institute's concerns regarding the Radiotherapy Physics Workforce. The recent workforce survey and the training background is discussed, and the identified shortages and recent training numbers used to forecast potential shortages over the coming 5-year period. The forecast shows that if an additional 12-13 Clinical Scientists are trained each year, then the shortfall in Clinical Scientists will be redressed by 2021. An even greater number of practitioners must be trained annually to redress the current shortfall. It will require 30 trained Practitioners exiting annually from 2019 to redress the shortfall by 2022. In order to achieve these outcomes, IPEM recommends that:

- **The number of Scientist Training Programme (STP) place commissions be restored to 2015 levels, or to training centre capacity, whichever is the higher figure, and remains at that level.**
- **The profession encourages the use of Route 2 as a route to Clinical Scientist registration for those coming through non-traditional career paths such as from industry or academia. IPEM continues to support and develop Route 2 for the foreseeable future.**
- **IPEM should develop and support an alternative route to registration.**
- **Practitioner Training Programme (PTP) places be commissioned and funded to encourage uptake**
- **The number of PTP-compliant courses be expanded**
- **Apprenticeship programmes should be rapidly implemented to provide support staff below clinical technologist/Practitioner level who could undertake more routine work, and providing a PTP-compliant route for in-service progress of these staff to technologist/Practitioner roles.**

1. Introduction

IPEM is increasingly concerned about supply of physicists, engineers and technologists (Practitioners) in radiotherapy physics, and believes that a workforce crisis is developing which will affect essential support for services to patients.

Our concern has deepened since the Comprehensive Spending Review 2015 in which the Health Education England budget was reduced. This in turn meant that the training commissions for the Practitioner Training Programme (PTP) places in Medical Physics and the associated financial support that had been planned for 2016 were dropped. Additional concern has arisen as the numbers for the 2016 Scientist Training Programme (STP) intake for Clinical Science (Medical Physics) has been announced, as these have been reduced to 67, compared to the 73 in the 2015 intake. This is despite an overall increase in the number of Healthcare Science STP commissions. This statement sets out the background to our concerns and proposes some solutions. We believe that urgent action is needed to address significant threats to the future of the service. Our recommendations are set out in section 3 and include reversing the decline in Scientist and Practitioner training programme commissions.

2. Background

2.1 2015 Workforce census

In November 2015, IPEM carried out a repeat census of the radiotherapy physics and engineering workforce. This census was sent to 91 radiotherapy centres in the UK, both independent and NHS-run (counting satellite centres separately), of which 82 replied. One independent centre was not identified prior to inviting responses, so was not given the opportunity to respond, and subsequently one satellite centre, Queen Mary's at Sidcup, has opened. The total number of radiotherapy centres in the UK is 92 as of May 2016.

This census identified:

- 68 WTE Clinical Scientist vacancies (9.0% vacancy rate)
- 41 WTE Physics Practitioner vacancies (9.2% vacancy rate)
- 24 WTE Engineering Practitioner vacancies (8.2% vacancy rate)

The large majority of UK radiotherapy centres are in England (81, of which 73 responded), with 5 (of which 4 responded) in Scotland, 3 (of which all 3 responded) in Wales and 2 (which both responded) in Northern Ireland.

Despite a larger than usual out-turn of newly-trained staff in 2014, a large shortfall in the form of unfilled vacancies in the current establishment has developed over the period 2007-2015. Owing to the change-over from a four year training scheme to a 3-year training scheme, meaning that the intakes from both 2010 and 2011 exited in 2014, IPEM's original workforce forecast, based on the 2014 census, suggested that the shortfall would be redressed over the next 5 years, provided that:

- commissions of places on the national Scientist Training Programme (STP - used by England, Wales and Northern Ireland) remained high, at around 70 per annum, as for the 2015 intake
- the number opting for a non-traditional route to registration e.g. IPEM's Route 2 remained constant
- The Scottish, STP equivalent scheme continues to train around 5 per annum.

The current survey shows that the model used to forecast the workforce requires updating because:

- The 2015 census is more comprehensive, with 28 centres which did not respond (or were not identified so not given the opportunity to respond) are now included and so has identified additional establishment and more vacancies
- The number of Route 2 registrations in 2015 was considerably fewer (zero) than in previous years
- Owing to the timing of the 2014 census there was uncertainty over whether the finishing STP trainees had been counted in the established workforce or whether they would be available to fill vacancies. The 2015 census clarifies the situation.

The forecast workforce supply has now been updated to take account additional information acquired from the latest survey, and the correction of anomalies that arose from the timing of the previous survey. With Clinical Scientist vacancies at 64 WTE in November 2015, despite a larger than usual out turn in 2014, the picture is considerably more concerning than was forecast in 2014. The forecast now shows that unless increased training provision is made available, the shortfall will ***not be redressed by 2018, but will instead remain around 60 WTE, and then in 2019, when the 2016 intake of reduced STP commissions exits, the shortfall will be increased still further.***

2.2 Additional pressures

The introduction of new radiotherapy techniques, particularly proton beam therapy, and the move towards extended hours working, means that a 5% increase in demand is a conservative assumption, and deepens the level of concern still further.

The shortfall in the **Physics and Engineering Practitioner (Technologist)** workforce has also been accruing for some time.

- 30 Physics Practitioners are anticipated to qualify from the Cumbria Graduate Diploma by 2016, with 10 exiting in 2015 and 20 due to exit in 2016. However, the majority are already employed in substantive posts and unavailable to fill the identified vacancies.
- This scheme has been extended with a confirmed 2016 intake of 33, although based on previous cohorts, it is likely that only 17 will opt for radiotherapy, with the remainder opting for Nuclear Medicine. This will be the final Graduate Diploma cohort.
- The IPEM Technologist Training Scheme is providing a small number of qualified staff, and this scheme is set to continue and expand
- Practitioner Training Programme degree courses are not attracting students (with the exception of the radiotherapy physics programme at the University of Swansea where 3 places are commissioned annually and funded by the Welsh Assembly).

The forecast in early 2015 anticipated that the shortage would be redressed by 2018 if the high numbers exiting from the graduate diploma at Cumbria were not already in employment. The 2015 census provided data that showed that the overwhelming majority (90%) of those on the graduate diploma were already employed in a substantive post, and were therefore not available to fill the vacancies identified in 2014. This information combined with the additional responses compared to the 2014 survey now means that the shortage will not be redressed in the short term, despite an additional 17 places commissioned for a 2016 intake onto the Graduate Diploma. Those qualifying through the IPEM training scheme will be unavailable to fill the vacancies identified in the 2015 census, as the scheme involves training while employed in an established position. Not all of the vacancies identified are at entry-level, but the availability of early-career staff may allow more experienced staff to move into higher-level positions. ***The forecast shows that, unless adequate additional training provision is put in place this shortfall will remain above 50 WTE and reach 80 WTE by 2020.***

The very small number (<5, more probably 2) of qualified Radiation Engineering Practitioners anticipated to exit annually until 2018 from the sole PTP provider at the University of Bradford is insufficient to redress the 29.5 WTE shortfall. The shortage of training for Radiation Engineers remains an extreme cause for concern, especially since the University of Bradford are no longer recruiting and this course will cease after the final cohort exits in 2018.

An additional concern in the technologist/Practitioner workforce is the age profile which has resulted from a stagnation of training. Over 24% of radiation engineering technologists are aged over 55, and 8% of radiotherapy physics Practitioners. These individuals are due to retire over the next 5 years and with no training pipeline, the workforce crisis will deepen further.

2.3 Training capacity

Early in 2015, a telephone survey conducted by IPEM found that Clinical Scientist training centres in radiotherapy were already working at close to capacity, and that some centres would be unable to maintain the high training load that 70+ STP commissions generates. This may be the reason for that some centres reduced the number of their requests for STP trainees below those actually required to fill vacancies. However, this was not the case at all centres, and at least two large centres have not had their requests for trainees to start in 2016 fulfilled. It is possible that the number of trainees requested were reduced at Local Education and Training Board level before being passed to Health Education England in an attempt to meet budget cut targets.

3. Our Position

We are concerned that the supply of trained staff to provide physics support to radiotherapy services is barely adequate for the current service, and inadequate for the planned service expansions.

In 2014 we welcomed the increase in the number of commissioned STP training places for medical physics and clinical engineering, and the introduction of radiotherapy-specific places. Those increases have been reversed in 2016 and instead there has been a reduction in the number of commissioned STP training places for Medical Physics, with only 67 places commissioned in 2016 instead of the anticipated 73 places (for all physics specialisms, not just radiotherapy physics). While we recognise that Healthcare Science STP places in total have increased, the number of places for Medical Physics has fallen; as explained in section 2, this may be related to a lack of training capacity in some centres, or attempts by LETBs to meet respond to budget cuts. We are concerned that there is no adequately robust scheme in place to address the vacancies arising for these Clinical Scientists which may affect essential support to patient services. While capacity may prevent an immediate return to 2015 levels, as vacancy rates reduce, training capacity will be increased, and certainly all centres should be training at their capacity. In addition, consideration should be given to measures that could reduce the training load on clinical departments.

The large numbers of Practitioners training via the graduate diploma programme at the University of Cumbria, were welcomed but as this route has now closed, unless the undergraduate PTP expands significantly and rapidly we are concerned about the future pipeline for physics technologists.

We are extremely concerned that there is effectively no supply of trained staff to provide engineering support to radiotherapy.

We note that the Practitioner Training Programme is not attracting students; in 2015 HEE agreed to fund and commission PTP places at Swansea to increase the attractiveness of training, but this was withdrawn following the budget cuts which followed the CSR. Some Local Education Training Boards (LETB) have provided some financial assistance to trainees, and a distance learning PTP course (including both Radiotherapy Physics and Radiation Engineering) at the University of the West of England will be accepting employed trainees on a part-time basis from September 2016.

4. Summary

It is clear that additional Clinical Scientist training places are required, both in England and in Northern Ireland in the areas of medical physics and clinical engineering. This could be in the form of additional commissioned STP training places, requiring additional funding from Health Education England (HEE) via the Local Education and Training Boards, and from the Department of Health, Social Services and Public Safety in Northern Ireland, for salary, support and fees. It could be from the expansion of the IPEM Route 2.

In Scotland and Wales, Scientist training has fulfilled local needs in recent years, but there are concerns that it will no longer continue to do so, especially with on-going vacancy problems in England and Northern Ireland which may seek to recruit qualified scientists from Scotland and Wales.

The PTP training model is not meeting needs in any of the four countries, although Wales is training sufficient Radiotherapy Physics Practitioners for needs in Wales. National funding for English students was promised in 2015, but this has since been withdrawn, although some local LETBs are providing limited support for a small number of places from local budgets. This is unable to supply the entire UK. In addition, no UK country is training enough Radiation Engineering Practitioners. In Wales, the funded PTP places are always filled and the university has further capacity to accept students from, the other UK countries if relevant funding is available. However, expansion of the number of PTP compliant courses would

provide better geographical spread of work placements, and together with funding to encourage uptake would create a pipeline of future workforce.

IPEM is eager to work with Health Education England and other agencies to help address these serious problems. IPEM will continue to maintain and develop its own clinical technologist training scheme as an alternative training route at Practitioner level. Numbers accepted onto this training scheme are predominantly limited by moderator availability

5. Recommendations

IPEM's forecast shows that if an additional 12-13 Clinical Scientists are trained each year, then the shortfall will be redressed by 2021. Forecasts show that an even greater number of practitioners must be trained annually to redress the current shortfall. Since it takes a minimum of two years to train a practitioner, it would require 30 exiting annually from 2019 to redress the shortfall by 2022. In order to achieve these outcomes, IPEM recommends that:

- **The number of STP training place commissions be restored to 2015 levels, or to training centre capacity, whichever is the higher figure, and remains at that level.**
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This document has been prepared and published on behalf of the Institute of Physics and Engineering in Medicine (IPEM) to set out its position in this topic.

For further or updated information, please see the IPEM website at www.ipem.ac.uk.

If you have any questions about this statement, please email office@ipem.ac.uk