



# IPEM Institute of Physics and Engineering in Medicine

**The Institute of Physics and Engineering in Medicine's (IPEM) response to the All Party Parliamentary Group on Radiotherapy's call for written evidence for the inquiry into the current and future state of radiotherapy provision across the UK.**

## **About IPEM**

- IPEM is a professional association and Learned Society with 4,500 members working in hospitals, academia and industry, who are physicists, engineers and technologists working with applications of physics and engineering applied to medicine and biology.
- Our mission is to constantly improve human health by the application of physics and engineering to prevention, diagnosis and treatment of disease through research, innovation, education and clinical practice. Our strategic objectives are to set and influence standards and best practice; influence and deliver education, training and continuing professional development; support and influence research and innovation; strengthen our public engagement and influence decision-makers; and influence and engage with national and international bodies.
- As a charity, IPEM's aim is to advance the application of physics and engineering to medicine for the public benefit and to advance public education in this field. We do so by supporting and publishing research, and supporting the dissemination of knowledge and innovation through project funding and scientific meetings; and by setting standards for education, training and continuing professional development for healthcare scientists and clinical engineers.

## **1. What is your view on the adequacy of current and future radiotherapy provision across the UK?**

IPEM has previously highlighted concerns regarding the Radiotherapy Physics workforce<sup>1</sup>, in particular, the inadequacy of supply of trained staff to provide physics support for current radiotherapy services and future demand. Complex radiotherapy techniques using advanced equipment of increasing technical sophistication requires appropriate levels of support by Clinical Scientists, physics and engineering technologists, guided by Medical Physics Experts (MPE) and Radiation Protection Advisers (RPA)<sup>2</sup>. This is to ensure advanced technology is safely and effectively used for the benefit of patients undergoing radiotherapy treatments. The IPEM Workforce Intelligence Unit continues to collect and update data on

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<sup>1</sup> [IPEM Position Statement on the Radiotherapy Physics Workforce](#)

<sup>2</sup> [IPEM Recommendations for the Provision of a Physics Service to Radiotherapy](#)

the UK medical physics and engineering sectors, for the benefit of both the profession and patients.

**2. NHSE published its Radiotherapy Specification in January 2019. What is your view of the provisions and plans set out in that specification? Is the specification being implemented properly and effectively?**

IPEM has welcomed the new service specifications for the delivery of radiotherapy services published by NHS England<sup>3</sup>. The aims of the new specifications are to improve access to modern, advanced and innovative radiotherapy techniques. The specifications present opportunities for joint, multi-disciplinary team working, standardisation of best practice and clinical protocols with the intent to increase equipment utilisation, as well as participation in research and clinical trials.

As the service specifications were only published in January this year, and the implementation across networks is only in its infancy, it would be too soon to determine whether the specifications are being implemented properly and effectively. As noted by IPEM previously, although the aims of the Operational Delivery Networks for radiotherapy services are to provide greater workforce resilience and sustainability, workforce planning for medical physics and bioengineering staff must remain a focus.

Also, the new Radiotherapy Networks will need further investment to develop, particularly regarding IT infrastructure, to enable efficient partnership working. Specific details regarding how investment is going to be made in each network has yet to be clarified.

**3. Do you have a perspective on the level, funding effectiveness of Radiotherapy services in the UK compared to other countries/ jurisdictions? If so, please expand on this perspective. Do all those patients who should receive radiotherapy do so?**

IPEM has no comment to make on this question.

**4. Are the current NHS tariff system and tariff levels for radiotherapy fit for purpose?**

IPEM is aware that there is a variability across the country in the application and use of the tariff system. In some regions commissioning is carried out as a 'block' contract rather than with individual Payment by Results (PbR) tariffs. Therefore the use of the tariff system appears to be inconsistent.

**5. What is your view and/or experience of the level of accessibility to advanced radiotherapy services such as SABR?**

There does not appear to be a recent review of access levels to SABR in the UK. This data will be collected as a network service indicator as part of the Radiotherapy Network Service specification. In addition, NHSE has also proposed to collect this data via the PHE Radiotherapy Data Set (RTDS) as part of the re-introduced 'Radiotherapy dashboard'. Accessibility may then be easier to assess when this data is in the public domain.

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<sup>3</sup> [IPEM statement on new specifications for radiotherapy services in England](#)

**6. Do you have any view of, or data on, or experience relating to the link between travel times and the uptake of radiotherapy treatment, and on which, if any, geographic areas suffer from unacceptably high travel times?**

There does not appear to be a recent review of travel times and radiotherapy uptake in the UK. In the published literature, there is a well-established inverse link between travel times and the take-up of cancer treatment services<sup>4</sup>. IPEM would welcome further research in this domain.

**7. How do you assess the current state of the Radiotherapy workforce in terms of adequacy, morale, wellbeing, training, skill mix and recruitment and retention?**

IPEM has a Workforce Intelligence Unit providing accurate data on the UK medical physics and engineering sectors, for the benefit of both the profession and patients. Data is regularly collected regarding the status and ongoing developments within the Radiotherapy Physics workforce.

Clinical Scientists:

The most recent workforce census demonstrated an 8% vacancy rate for Radiotherapy Clinical Scientists from an establishment of approximately 800WTE. With training at the current levels of commissioning of STP places, the Scottish Training Scheme, and steady contributions from Route 2, it is predicted that the shortage will not be redressed in the next 5 years. An increase in training places to redress this shortage should take place incrementally, as a 2015 survey showed training capacity limitations, with 85% of centres being unable to increase the number of trainees at that time. In the last two years data shows that training capacity has increased slightly but there are still some limitations. These include: pressure on service provision as a result of supporting extra trainees; inability to provide placements for Year 1 rotations in other subjects and a lack of physical space, desks and equipment.

Retention rate is high; of those trained since 2008, 80% remain in the profession.

Radiotherapy Physics (Scientist) is on the National Shortage Occupation List (NSOL), which should facilitate recruitment from outside the EEA, by removing the requirement for the Resident Market Labour Test and also imposing individual minimum salary requirements rather than the general Tier 2 minimum.

The impact of any changes to EU migration, or registration of equivalent EU qualifications with HCPC is yet to be quantified but many departments report employing significant numbers of EU staff; any loss will deepen the shortage further, which this already-depleted workforce does not have the resilience to absorb.

Clinical Technologists (Practitioners) in Physics: 2017 census, the vacancy rate for Radiotherapy Clinical Technologists (Practitioners) in physics was 6.2%.

Although this is a decrease in rate from 2015, and vacancies have dropped, this is believed to be because radiographers have been employed in technologist roles. The future supply of radiographers is a cause for concern following the discontinuation of degree bursaries. The IPEM Technologist Training Scheme continues to provide a number of qualified staff.

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<sup>4</sup> [Distance as a barrier to cancer Diagnosis and Treatment](#)

Clinical Technologists (Practitioners) in Engineering: 2017 census, the vacancy rate for Radiotherapy Clinical Technologists (Practitioners) in Engineering was 6.5% The age profile of this workforce was raised as a concern.

**8. Have you, or your members if you are an organisation, experienced Radiotherapy from a patient perspective? If so, what is your view on the quality and level of service? How do you think it could and should be improved?**

IPEM has no comment to make on this question.

**9. Are there any other matters which you would like to raise?**

Medical physics and bioengineering professionals make a significant contribution to the safe and effective delivery of radiotherapy. They support the whole life-cycle of radiotherapy equipment, from evaluation, procurement, installation and commissioning, through to clinical implementation and routine maintenance and Quality Assurance. They lead and support primary research, developing new equipment and techniques to improve the effectiveness of radiotherapy. They also have key roles in personalising radiotherapy for individual patients by planning and optimising treatments to minimise the risk of side effects and maximise cure rates.

Radiotherapy is a prime example as to why IPEM campaigns for 'Science for Patient Benefit'. Our members strive to improve patients' overall experience of a course of treatment. They ensure equipment is ready and available when it is needed, they adapt treatments to the physical changes a patient can go through whilst having radiotherapy and they develop new techniques to reduce the time it takes to deliver treatments.

IPEM is very happy to support the aims of the All Party Parliamentary Group (APPG) for Radiotherapy. We agree that modern radiotherapy is highly effective and that more needs to be done to ensure that it is accessible and available to all patients that can benefit from it. We are pleased that the APPG have highlighted the need to have enough highly trained professionals available to deliver services as well as the right equipment, software and IT to empower them to improve services.

The IPEM Workforce Intelligence Unit has identified significant workforce challenges for the provision of radiotherapy services, with large vacancy rates for Clinical Scientists, clinical technologists and engineers. Workforce planning for medical physics and bioengineering staff must be prioritised. Capacity for national training programmes for healthcare scientists should be increased. Expanding the roles of medical physics professionals within the multi-disciplinary team should also be further developed and supported.

It is the highly trained, highly skilled workforce that will achieve the goals set out by the APPG - that every patient has access to the best, high-quality radiotherapy, individualised to their cancer; that the UK develops a world-class patient-first radiotherapy service; and that the UK achieves the best survival rates, so that patients live longer beyond their cancer diagnosis.

**Ends**