

IPEM response to the Health and Social Care Committee Cancer services inquiry

About IPEM

- The Institute of Physics and Engineering in Medicine (IPEM) is a professional association and Learned Society with 4,500 members working in hospitals, academia and industry, who are medical physicists, clinical and biomedical engineers and technologists working with applications of physics and engineering applied to medicine and biology.
- Our mission is to improve health through Physics and Engineering in Medicine and our vision is one in which professionalism drives improvements in diagnosis, treatment and care, transforming the lives of patients.
- As a charity, IPEM's aim is to promote for the public benefit the advancement of physics and engineering applied to medicine and biology and to advance public education in the 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.
- In compiling this response, IPEM consulted with members of IPEM's Radiotherapy Professional Standards Panel.

Why do cancer outcomes in England – in particular survival – still lag behind comparable countries internationally?

There is no doubt that early diagnosis plays a major part in cancer outcomes, and the difference in early diagnoses between England and other comparable countries is well known and clearly documented. Less well known is the reduction in the proportion of patients that receive Radiotherapy as part of their cancer journey in England, compared to the rest of Europe. This must also be recognised as a significant contributor to the difference in patient outcome.

In England, we are still reliant on a large number of aging Linacs, despite a replacement program being on the 'six point plan' for Radiotherapy published by the RT APPG in 2020. These older machines are not only more likely to break down than newer models, but also lack the latest technological advancements, with consequences for treatment accuracy, financial efficiency and uptake of advanced techniques within the NHS.

While some funding has recently been made available, such small and inconsistent injections of capital do not represent a sustainable solution and frustrate long-term planning. Purchases of Linacs via this route, have to be rushed to comply with unfeasibly short timescales, often with minimal notice. This severely compromises the effective evaluation of purchased equipment and can directly disrupt patient care as departments are forced to facilitate complex installations at unsuitable times. As things stand, funding arrangements disproportionately favour large radiotherapy centres. With more Linacs, larger centres have a greater chance of requiring a replacement at any given time, and are therefore better placed to capitalise on the brief opportunities presented by sporadic

funding rounds. Linac replacement funding needs to be regular, consistent, fairly distributed and planned and publicised well in advance.

In England, we lack sufficient specialist equipment to increase the capacity for the more advanced techniques in Radiotherapy. For example, there are not enough MRI scanners with capacity to allow for Radiotherapy planning using MR information. MR Linacs are currently being introduced routinely in private centres, but not in the NHS. Some specialist treatments achievable with MR Linacs will potentially improve the outcomes and survival of patients with certain tumour types. We suggest the introduction of a national plan to evaluate such advanced treatment equipment for the NHS environment so that an optimal roll out can be planned.

There have historically been restrictions on the implementation of new radiotherapy treatment techniques, such as SABR, which is detrimental to improving patient outcomes across England. This should not be allowed to continue.

How will covid-19 affect efforts to catch up to the best cancer outcomes internationally?

Continued use of PPE, although absolutely essential for safeguarding patients and staff, significantly increases the time taken to deliver each radiotherapy treatment. In spite of this, NHSE still expects departments to work towards 9,000 treatments per Linac per year, and there is evidence that NHSE will not consider funding Linac replacements until that level of activity is reached. No radiotherapy department was achieving that level of activity pre-Covid-19 and, certainly aren't now.

Increasingly complex imaging techniques, and complex planning and monitoring of radiotherapy treatments themselves, means that this NHSE number of 9000 fractions per Linac per annum is unrealistic in non-Covid times. This level of activity is not only unreachable, it would allow for no spare capacity for any future waves of Covid infections, and allows no time for the essential quality assurance of radiotherapy equipment.

There is evidence to suggest that a larger proportion of patients are being treated with radiotherapy palliatively, than prior to Covid. It will take some time for the data to be finalised, however this will clearly put back the efforts to catch up to the best cancer outcomes.

We support the recommendations from the Cancer Summit paper for a Minister with responsibility to lead and oversee a national cancer recovery plan, who would be a central point of reference for professional bodies.

Will implementing the Long Term Plan for cancer improve cancer outcomes to the level of the best countries internationally?

Although there is not enough in the paper about Radiotherapy and its place in the treatment of cancer, some of the specific detail, if implemented, will clearly help improve cancer outcomes. How far they will improve outcomes is, of course, difficult to calculate.

The workforce implementation plan is not working from a radiotherapy physics perspective. There is an apparent lack of overall responsibility for funding extra training places in specialist roles; and these roles are consistently shown by workforce studies to be far below recommended levels.

Regarding the enabling of digital support for cancer diagnosis and treatment - individual Trusts are still struggling to find ways of financing IT solutions that are revenue based. It has previously been recognised that there is a problem reconciling revenue and capital, and there has been little apparent progress toward a solution. As a pertinent example, the emerging use of AI tools to contour structures on patient CT scans, greatly reducing the time from referral to treatment, typically use revenue models. This has led to a much slower rollout of these tools in Radiotherapy than might otherwise be expected; when these could be a really positive benefit in clearing up backlogs in radiotherapy.

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