

Policy priorities for clinical oncology 2021–2026

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PRIORITIES...

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This report identifies and contextualises priorities for clinical oncology and how to make them a reality. All of the priorities are interdependent and equally critical if we are to achieve a clinical oncology service that can provide the best possible treatment and outcomes for people with cancer.

Clinical oncologists lead the delivery of all types of non-surgical cancer treatment and are the only medical specialty qualified to prescribe radiotherapy. Radiotherapy is a common, safe and highly effective treatment for cancer and nearly half of cancer patients receive it at some point.¹ Around 40% of patients who are cured of their cancer will have received radiotherapy as part, or the whole, of their treatment.² Over half the people in the UK born after 1960 will be diagnosed with cancer at some point in their lives and people are living longer with the disease.^{3,4} Early diagnosis gives people the best chance of curative treatment and long-term survival.⁵ In the UK, we currently only diagnose just over half of patients at an early stage.⁶

A fully staffed, adequately funded and well-supported cancer workforce with all available tools at their disposal will:

- Vastly improve patient outcomes and experience
- Decrease waiting times for treatment
- Improve staff wellbeing
- Reduce early retirement as a result of burn out.

However, the **oncology workforce is currently chronically understaffed and needs considerable investment over the coming five years.**

Adding to this challenge, **access to modern equipment is variable;** many linear accelerators (LINACs)* are over the recommended age limit of ten years and **NHS information technology (IT) infrastructure needs modernising.**

Innovations in **digital technologies** – including the fields of artificial intelligence (AI) and machine learning (ML) – **have potential to enhance patient care and service efficiency,** but will fail to achieve positive impact unless NHS IT systems are modernised to support emerging digital innovations. Advances in genomics could significantly improve outcomes for patients by making treatment decisions more personalised and treatments better targeted. However,

*A medical linear accelerator (LINAC) is the device most commonly used for external-beam radiation treatments for patients with cancer. It delivers high-energy X-rays or electrons to the region of the patient's tumour.

this will necessitate appropriate training so the workforce can use new knowledge effectively for patient benefit. **Better data on the effectiveness of all new radiotherapy modalities and more robust and accessible data on cancer prevalence in real time is needed** to justify commissioning decisions and to standardise treatment protocols that will help to maximise Radiotherapy Operational Delivery Network (ODN) models and to streamline patient pathways.

This combination of factors means that patient outcomes are subject to stark inequality and this is unlikely to change without significant intervention now. In short, **to improve cancer survival rates and provide greater support to those living with and beyond cancer, oncologists should be enabled to offer the best available treatment for any patient, regardless of where they live in the UK.** Expanding on the RCR's *Five priorities for radiotherapy 2019–2020* this can be achieved by:⁷

1. **Maximising the cancer workforce**
 - Increase training places and capacity to train
 - Facilitate the implementation of skillmix solutions
 - Enable overseas recruitment
 - Enhance the working environment
2. **Providing the necessary tools for optimum patient care**
 - Enact a funded, rolling equipment-replacement programme
 - Fund and support robust IT infrastructure across the NHS
3. **Supporting and nurture new innovative ways of working**
 - Fully supported integrated networking solutions
 - Enable clinical use of treatment innovations (to include AI and ML)
 - Make the best use of data to improve care
 - Review patient pathways and systems.

Priority one: Maximising the cancer workforce

The importance of cancer care is recognised by the UK Government through the NHS *Long term plan* commitment to detect 75% of cancers at an early stage by 2028.^{8,9} However, **demand for radiotherapy is increasing** as recent innovations have resulted in safer, more efficacious and cost-efficient therapies.¹⁰ There is an 8% annual increase in systemic anti-cancer therapy (SACT) delivery, with trends set for this to grow further.¹¹

As demand levels grow, there remains a chronic lack of supply. There is a current shortfall of 207 consultant clinical oncologists (19% of minimum numbers of consultants required to meet demand).¹² This is projected to increase to 444 (32%) by 2024. Unless sustained investment in additional training places and overseas recruitment is released, national cancer ambitions are unachievable and shortages pose a real threat to the effective delivery of radiotherapy and systemic anti-cancer treatments.¹²

Clinical oncologists work in multidisciplinary teams, and **skillmix is inherent to departmental success.** To realise benefits for patients, funding to grow the numbers of allied health professionals (including therapeutic radiographers, specialist nurses, prescribing pharmacists and support staff) and medical oncologists (who can also prescribe SACT) is also essential. Funding should also cover other associated costs, including training infrastructure, trainer time, leadership roles and administrative support. We advocate that the recommendations and principles asserted in the Cancer Research UK *Full team ahead* document continue to be implemented.¹³

Employers must also take urgent measures to improve the working environment and the wellbeing of the staff to improve staff retention and productivity. Improvements include providing more comfortable working conditions, smarter job planning, protected supporting professional activities (SPA) time and offering dedicated resting space to staff.¹⁴

To ameliorate the workforce shortfall and release necessary capacity requires:

- Investment of approximately **£232.8 million**, comprised of **£210.1 million** to boost training places and **£22.8 million** to support and enable overseas recruitment¹⁵
- Enabling better use of the workforce's skills and experience through facilitation of skillmix and a comfortable, inclusive working environment
- Releasing capacity in job plans for service improvement and research for the benefit of patients and more efficient service delivery
- Ensuring optimal admin and IT support for doctors to improve efficiency and productivity.

Priority two: Investing in the best equipment for patients

Information derived from available sources (such as the radiotherapy dataset [RTDS]) only gives a general picture of the equipment available to oncologists. We have estimated that across the 62 cancer centres in the UK, there are approximately 340 LINACs and 40 brachytherapy machines in use.^{6,16,17} However, given the rapid innovation over the past decade, we know that **radiotherapy equipment across the UK is showing serious signs of age and, in some cases, no longer allows optimum patient care.** A fully funded radiotherapy equipment replacement programme, including all LINACs older than ten years, brachytherapy machines,* computed tomography (CT) and dedicated magnetic resonance imaging (MRI) planning machines would provide a core level of sustainability for all cancer centres, meaning that patients receive optimum care.

The NHS' aging IT base is well-documented and a consistent source of lost time and productivity for clinicians. In 2020 the Department of Health and Social Care (DHSC) committed to reducing staff log-in times. However, hundreds of thousands of NHS computers continue to run on obsolete

*Brachytherapy is a type of contact radiotherapy where small pieces of radioactive material are placed directly onto tumours to shrink them.

hardware and software, are unable to receive information from other trusts and health boards and do not have integrated electronic patients records systems.^{18–20} These limitations and inefficiencies are a waste of time and money and fundamentally inhibit doctors' ability to care for their patients.

That said, **there have been notable positive changes within cancer services as a result of the 2020 COVID-19 pandemic;** these should be built upon as circumstances normalise. Where there has been good investment in IT systems, remote access has facilitated decentralised working, networked peer review of radiotherapy planning and virtual multidisciplinary team meetings (MDTMs). The efficiency of some out-patient services has been transformed by the use of telephone or video clinic appointments. However, the variable quality of these potentially beneficial provisions has only highlighted the critical need for up-to-date, agile and interoperable IT systems to be implemented at all centres nationwide.

To ensure that all patients benefit from the most advanced technologies with the highest chances of cure and lowest levels of side-effects, no matter where they live requires:

- Capital investment in a UK-wide rolling radiotherapy equipment replacement programme, including linear accelerators (LINACs), brachytherapy machines and CT and MRI planning machines, which would cost approximately **£87.3 million per annum** with co-ordinated deployment to meet population need.¹⁵ This would offer improved access to state-of-the-art treatment, such as stereotactic ablative radiotherapy (SABR)
- An initial investment of **£300 million** to replace all LINACs over ten years old¹⁵
- All equipment upgrades to be supplemented with funds to cover installation and maintenance costs (which can be as much as the equipment itself)
- Modern, robust and interoperable IT hardware and software throughout the NHS to allow flexible, efficient and remote working and virtual MDTMs.

Priority three: Enabling better ways of working

The RCR fully supports the ongoing development of the radiotherapy ODNs.²¹ These networks are mobilising well and have been able to access small packages of initial funding via NHS channels. However, **if they are to deliver real benefits to patients, they will require ongoing managerial and clinical input as well as investment in interoperability.** Similar investment will be required to support the current networking arrangements in many cancer centres across the devolved nations. Sustained investment in the underpinning systems and governance of ODNs would enable strong clinical leadership and the implementation of quality improvement and research networks while facilitating audit and data collection. This would make clinician peer review significantly easier, providing sustainable quality assurance of radiotherapy on a national basis and improving service resilience in times of sickness.

AI, if properly funded and regulated, will yield significant benefits for cancer care. Alongside broad use across NHS operations, such as supporting and streamlining patient pathways and appointment bookings, AI solutions have the potential to revolutionise clinicians' workflow, automate low-skilled, time-consuming tasks and provide new data on patient care and population health. The DHSC and partners have repeatedly committed to ongoing funding for AI, including a recent announcement of a £250 million AI lab to support and accelerate public–private products and trials.²² Funded projects that could benefit patients with cancer already include programmes to detect breast cancer, lung nodules, predict patient responses to treatments and help with radiotherapy planning. These technologies will need to be rigorously evaluated and tested before being actively deployed across NHS systems outside of trial settings.

Advances in genomics are growing apace and could mark a new era of targeted cancer treatment.²³

Oncologists are likely to need more consultation time to explain genomic results to patients.

Personalised medicine may mean it takes longer to

plan and individualise all cancer treatments, but it may also result in some patients no longer needing certain therapies such as immune boosting treatments, which in turn could reduce workload. The effect of the increasing availability of genomic analysis on workforce demand is hard to predict, but it could be instrumental in helping to interpret results for patients.

In a climate of limited resources, **we need robust evidence to model the demand more accurately and to enable and encourage research and implementation of new radiotherapy schedules and techniques to ensure the best treatments are available to all patients based solely on need.**

Underpinned by efficient IT systems, improving the quality, cohesion and accessibility of cancer data and data sources would facilitate more robust metrics on supply and provide a more accurate picture of demand. Cancer prevalence is likely to be a more useful measure than incidence when predicting demand as oncologists provide treatment throughout a whole cancer pathway, not just at diagnosis, and demand for subsequent therapies is growing.

Better data will facilitate standardisation and dissemination of best practice and nationally co-ordinated pathway planning. Access to good data will allow optimal and efficient ways of working to be defined and implemented, helping to ensure that consultant oncologists are working at the top of their licence. To this end, a centralised system of data collection for trusts and health boards is strongly recommended, with the National Cancer Registration and Analysis Service (NCRAS) providing oversight and linkage of SACT, RDTS and patient outcome data. RCR audit and quality-improvement systems will continue to tell us **why** things happen, but the national data sets need to accurately tell us **what** happens.

Payment by results tariffs can be prohibitive to optimum patient care.²⁴ For example, a clinically streamlined pathway for many cancers would be to perform a contrast-enhanced positron emission tomography-CT (PET-CT) rather than a 'standard' PET-CT followed by a contrast-enhanced CT. Under the current tariff system, the latter model

is more financially rewarding as the trust will receive payment for the contrast-enhanced CT in addition to the PET-CT, which is paid for by a separate specialised commissioning budget.

We recommend the DHSC and relevant NHS national bodies work to enable and enact:

- A dedicated support fund of £21 million per annum over the next five years for radiotherapy ODNs. This money will support and resource radiotherapy ODNs to ensure cancer expertise will continue to progress to make sure patients are offered the best possible cancer care, regardless of where they are in the UK¹⁵
- Support for cohesive development, testing and deployment of ML and AI tools to encourage and enable their adoption into working practice which will, in turn, support innovations in cancer treatment
- Dedicated NHS funding earmarked to support the expansion of staff time and clinical job plans to cover AI testing and innovation, in addition to rolling national grants to support commercial project development
- Roll-out of learning healthcare systems across all 62 cancer centres, designed for real-time collection of data. This will better identify the clinical utility of new treatments with uniform peer-review software centrally funded²⁵
- Facilitation of the use of RDTS and SACT data sets to enable service planning and quality improvement and, wherever possible, to standardise patient-reported outcome and experience data-collection methodology (PROMS and PREMS)
- A review of specialised commissioning and tariff arrangements to ensure that cancer teams are empowered to offer the best treatments available to their patients
- Education and training in genomic analysis and how to apply this to treatment decisions.

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