Time To Act: Tackling inequality in radiotherapy access

A report on re-establishing radiotherapy leadership to deliver the Government's 2029 cancer waiting-time targets

September 2026

THIS REPORT WAS RESEARCHED AND FUNDED BY RADIOTHERAPY UK

Radiotherapy UK

The APPG on Radiotherapy (APPG RT)

This is not an official publication of the House of Commons or the House of Lords. It has not been approved by either House or its committees. All-Party Parliamentary Groups are informal groups of Members of both Houses with a common interest in particular issues. The views expressed in this report are those of the group.

appg

Forewords

Foreword from Tim Farron MP
Chair, All-Party Parliamentary Group on Radiotherapy

I have seen, very clearly, the difference we can make for cancer patients. Radiotherapy is one of the most powerful tools we have to treat and cure cancer, yet thousands of people who could be benefiting from it are not.

It's been a privilege to sit alongside so many constituents living with cancer, but one case in particular sticks in mind. A Mum in her thirties, with two primary school children, working as a teaching assistant and living in the Lake District. She had breast cancer and she needed to travel to Preston - a two-and-a-half-hour round trip for 25 days. It was my honour to drive her for one of her treatments. Along with the rigours of the disease itself, she was utterly shattered by the travelling. If it wasn't for her children, she said she'd have thrown in the towel before the treatment was over.

Stories like this are why, as Chair of the All-Party Parliamentary Group on Radiotherapy (APPGRT), I, and fellow MPs, have continued to call for a clear plan for radiotherapy.



In 2024, the APPGRT launched 'World-class Radiotherapy in the UK; Right Patient, Right Treatment, Right Time' – a ten-year vision setting out the key areas of delivery needed to achieve world-class radiotherapy for all.

Leadership sat at the heart of that vision then, and it remains at the heart of what we are calling for now.

Good intentions and ambitious targets are not enough on their own; they need an expert body with the authority and frontline clinical expertise to turn them into reality.

The Government's decision to abolish NHS England is an opportunity. ICBs can't be expected to be specialists in the highly technical field of radiotherapy, so having a national committee to help them navigate this complex and ever-evolving cancer treatment should be welcomed. It is a chance to build something better than the fragmented system that has so hampered radiotherapy services. The expert radiotherapy community has the skills and experience to lead this work – they have done it before, through the original National Radiotherapy Advisory Group, and they can do it again.

Radiotherapy is not a marginal treatment. It is needed by more than half of all cancer patients, it is among the most cost-effective interventions in modern medicine, and it continues to advance technologically at a pace many parts of our system are simply not equipped to keep up with. Other countries are investing accordingly. The UK should not be left behind, and our patients should not pay the price of that gap.

This report sets out why re-establishing a National Radiotherapy Advisory Group (NRAG2) is the mechanism this moment demands. I commend it to the Secretary of State, to my parliamentary colleagues, and to everyone who shares the conviction that no cancer patient's chance of survival should depend on their postcode.

Tim Farron MP



Foreword from Brenda Scotland Lived Experience Ambassador



My interest in radiotherapy and this report comes from my own lived experience and the experience of so many. Too many of us have seen a system which can't deliver what it needs to. The post code lottery makes me angry. It simply isn't fair that where you live can dictate the treatment you get, not what is the best combination of treatment for your needs.

We've also seen a workforce doing its absolute best within the system and the circumstances. When I joined the workshop that led to this report, I heard dedicated professionals coming together to put their knowledge and experience into finding solutions. It gives me hope that there is such a willingness to take these complicated issues on. Most importantly, I could see that the experience of patients was at the heart of these ideas. That was a huge issue for me coming into the workshop – I wanted to make sure that the patient's voice was loud and central. I wasn't disappointed.

Many patients will be less interested in the mechanics of the system that gives them their treatment; they simply want it to work. However, statistics like the long-term failure to hit the 62-day target should concern all of us. Behind the numbers, this is people not getting the treatment they need on time and, in some cases, not at all.

This report is a step towards a better system and better outcomes.

Brenda Scotland.

Executive Summary

The Government's ambition to meet the cancer waiting-time targets in England by March 2029 cannot be achieved without addressing the growing crisis in radiotherapy. Radiotherapy is needed by more than half of cancer patients and is the most cost-effective treatment available of the 3 major cancer treatments, yet only around 35% of patients receive it [1]. Its performance against the 62-day standard is the worst of all the cancer treatments available.

Ageing equipment, uneven access to treatment, chronic workforce shortages and fragmented decision-making are creating an unacceptable postcode lottery in access for patients and threaten to widen the gap between current performance and the Government's ambitions. In short, there is no coordinated plan.

This report calls for the establishment of a new National Radiotherapy Advisory Group (NRAG2). An independent group, consisting of expert multidisciplinary representation across the radiotherapy professions to provide national leadership, coordinate workforce and technology planning, and ensure equitable access to world class radiotherapy. This would include establishing a National Radiotherapy Implementation Group (NRIG) to work specifically on embedding new technologies and ways of working. This report builds on the findings of the APPGRT's report, 'World Class Radiotherapy in the UK' [2].

The original NRAG model provides a valuable starting point. Updated to reflect today's NHS, this would mean nation-level radiotherapy advisory groups for England, Scotland, Wales and Northern Ireland, each feeding into an overarching national NRAG. Each nation-level group would be empowered to tailor recommendations to its own health care system, reflecting how differently radiotherapy is delivered across the UK. This structure would allow the benefits of stronger national leadership to be realised consistently, while giving each nation the flexibility to shape implementation appropriately.

The scope of this report is weighted towards how these recommendations could be delivered in England, reflecting the availability of richer data sources, but the underlying principles - and the importance of equitable access to world-class radiotherapy for all patients across the UK - apply universally.

The original NRAG helped to modernise services and contributed to over 2,500 lives being saved annually in England [3]; an equivalent improvement today could save over 3,000 lives each year.

Modern techniques such as adaptive radiotherapy have huge benefits but must be brought forward in a strategic and fair way, ensuring access for all patients who would benefit from it. Re-establishing this model would provide the mechanism needed to turn the Government's cancer ambitions into reality and transform outcomes for patients across England and the UK. In summary, the NRAG model is a proven and effective model for improving cancer survival through radiotherapy access.

Contents

1. Introduction: The commitment to cancer patients p7
2. The Gap we Need to Close p9
3. Why Now? p13
4. What the National Radiotherapy Advisory Group (NRAG2) is and what it would do p14
5. The Evidence that NRAG works p17
6. Recommendations p18
7. Acknowledgements p19

Introduction: The commitment to cancer patients

In the National Cancer Plan for England, published in February 2026, the Government has committed to restoring performance on all three NHS England cancer waiting-time standards by March 2029; 80% of patients receiving a diagnosis or all-clear within 28 days of an urgent referral; 96% starting treatment within 31 days of a decision to treat; and 85% starting treatment within 62 days of cancer referral [4]. Alongside this, the Plan is explicit that it is committed to closing the deep inequalities and the "postcode lottery" in access to cancer treatment and the latest innovations in care.

The 62-day target is critical because it measures from referral to first treatment and it is the clearest indicator of whether the system can diagnose and treat patients fast enough to save lives. Hitting the 28 and 31-day targets will not solve the current issue of patients being treated on time. Data shows that the risk of death for some cancers increases by approximately 10% for every four weeks a patient is delayed from starting treatment [3]. Delays to starting treatment lead to tumours progressing, becoming harder and more expensive to treat, or incurable.

It has previously been shown that reducing the waiting time for radiotherapy from 12 weeks to 31 days from the decision to treat, which was achieved in the first decade of this century, saved approximately 2,500 lives per year in England [3].

Meeting the 62-day target depends not only on referral, diagnostics, and outpatient appointments, but on the availability of definitive treatment capacity.

Currently, only 70% of cancer patients receive treatment within 62 days, falling well short of the 85% target [5]. Treatment is made up of surgery, systemic anti cancer therapy, and radiotherapy.

However, within these cancer waits, performance for patients whose first treatment is radiotherapy is shockingly low, with just 40% starting treatment within 62 days of referral, and some areas achieving this for as few as 10% of patients [5]. This is a measure of the whole cancer pathway performance, from referral to first treatment, highlighting that patients needing radiotherapy first are being let down by delays along that pathway. The situation is made worse by research showing up to 60,000 patients per year could be missing out on being offered radiotherapy entirely [6].

Cancer rates are expected to increase, and the Government's Cancer Plan aims to improve early diagnosis. As a result, more patients are likely to be diagnosed with early-stage prostate and lung cancer [7]. These patients are among those who are most likely to need radiotherapy.

Building capacity in radiotherapy to improve the 62 day target from an average of 40% to 85% in less than three years will be a major challenge, particularly without a clear plan, leadership, or sufficient funding.

World class radiotherapy is a lifesaving, technologically advanced and highly targeted cancer treatment. It is needed by 53% of cancer patients[8] [9], yet in 2021 on average only 35% of patients in England received it [1].

Access ranges from 29.8% to 50.1% depending on where a patient lives - not on their diagnosis, but on their postcode [1]. At £3,000–£7,000 per course, it is also one of the most cost-effective cancer treatments available [10], whilst also reducing recurrence, preserving organs and relieving symptoms.

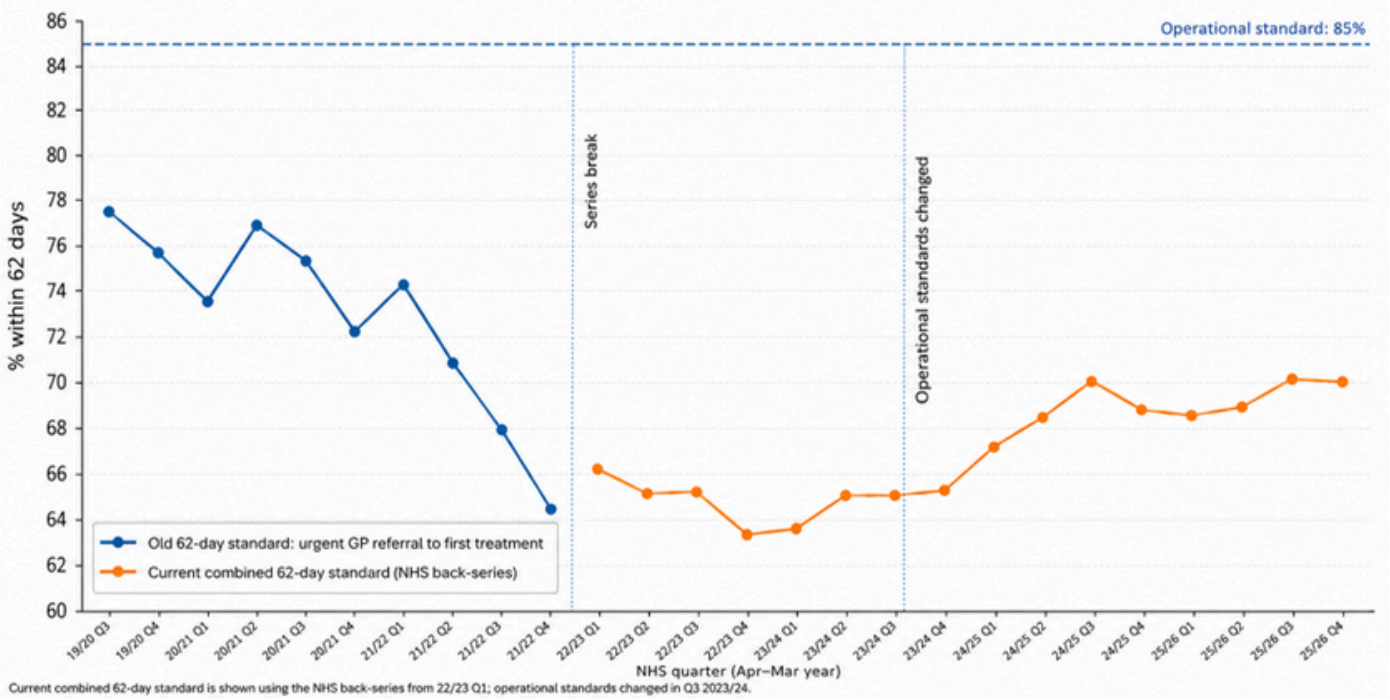
The National Cancer Plan for England set ambitious and welcome commitments to patients but lacked clear mechanisms to deliver them or resources to meet them. The Government's decision to abolish NHS England creates a rare opportunity to correct that.

A lack of corresponding data on cancer waiting times, radiotherapy utilisation data, and differences in waiting time targets across the devolved nations makes comparable analysis for Wales, Scotland and Northern Ireland more challenging. As a result, detailed analysis of these nations was outside the scope of this report.

However, the recommendations set out for England are transferable across the UK, with the overarching aim of ensuring that everyone has equitable access to world-class radiotherapy treatment when they need it.

The Gap We Need to Close

FIG 1: Radiotherapy UK – analysis of NHS England Cancer Waiting Times Data from 2019/2020 Q3 to 2025/2026 Q4 of the 62-day treatment standard from referral for suspected cancer to first treatment showing percentage of patients meeting the target each quarter.



How long patients wait for treatment.

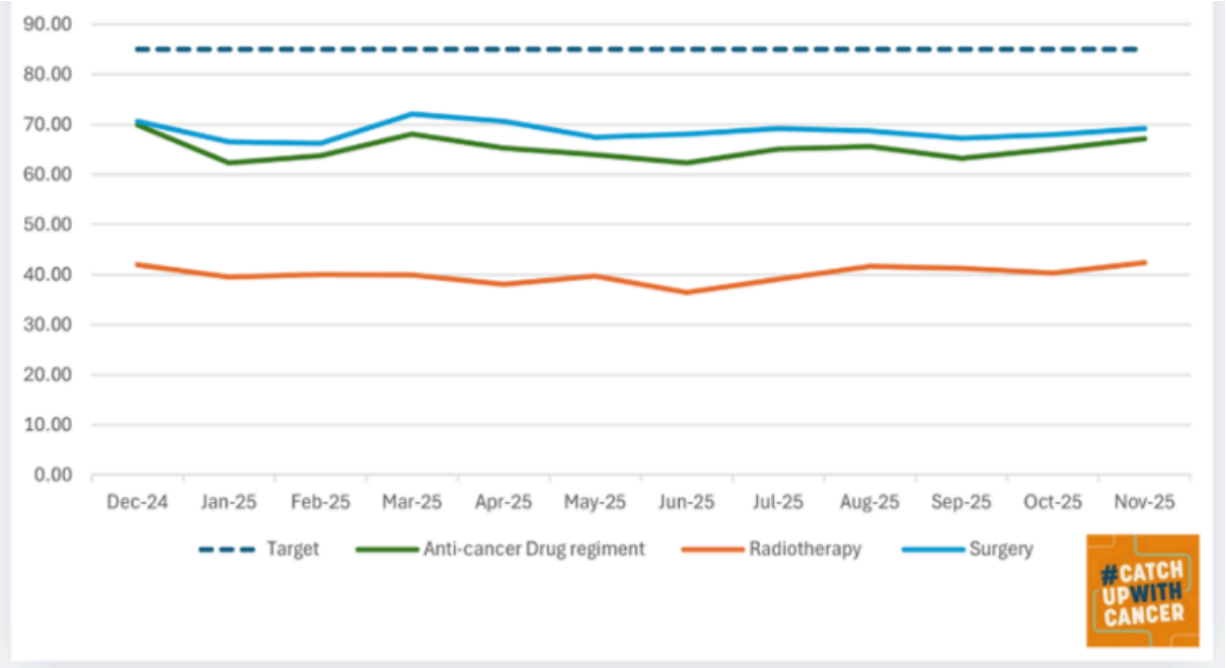
As things stand, the 2029 commitment to start treatment within 62 days for at least 85% of cancer patients following referral, cannot be met. Since 2015 cancer waiting times have shown little to no sustained improvement in England.

In England radiotherapy has the worst 62-day performance of the main cancer treatment modalities, performing worse than surgery and systemic anti-cancer therapy, with only 4 in 10 patients receiving their treatment on time (FIG 2).

This highlights the route and entire pathway to radiotherapy as a first treatment is one of the most problematic in the cancer pathway and needs urgent assessment.

Without leadership and a clear strategic plan for world class radiotherapy, the gap between the 2029 commitment and current delivery will not be fixed.

FIG 2: Percentage of persons in England treated within 62-day treatment standard from referral for suspected cancer to first treatment (Dec 2024 – Nov 2025) broken down by treatment modalities; surgery, systemic anti-cancer drugs, radiotherapy.



Access is rationed by geography, not need

Health Economics in Radiation Oncology (HERO) figures show that radiotherapy is required in 53% of cancer treatments in UK, yet in England only around 35% of patients receive it [1]. Between 2019 and 2021, the regional variation in access to radiotherapy in England ranged from 29.8% to 50.1% [1]. This means that in some parts of the country, 1 in 2 cancer patients received radiotherapy, while in other areas, fewer than 1 in 3 patients did.

There is also a postcode lottery in patient travel times. Previous national guidance referred to a recommended travel time of no more than 45 minutes to or from a radiotherapy centre.

Data suggests that longer travel times impacts patients' decision to proceeded with their cancer treatment given the multiple visits involved [11][12].

In 2024, Radiotherapy UK analysis found that millions of people across the UK live further than 45 minutes from their nearest radiotherapy centre by car, and far more are outside that threshold when public transport is considered [13]. This disproportionately affects patients on lower incomes, disabled patients, older people, and those without access to a car.

Investment does not always reach where it is needed most.

The Government's 2025 investment of £70 million to replace 28 LINAC machines in England that were past their recommended lifespan is welcome, but engagement with the sector suggests that the allocation could have been more strategically focused on equality of access to world class radiotherapy.

Even with this uplift, Radiotherapy UK estimates that there are still 23 radiotherapy machines currently operating past their recommended lifespan in England, with a further 26 more exceeding recommended lifespan by 2027.

Equipment capacity throughout the UK is also an ongoing concern. The UK is estimated to have around 5.1 linear accelerators per million people, below comparable European countries, where estimates are around 7–10 per million [14]. The link between capacity and failing to hit the 62-day treatment target is clear and it is fixable.

The workforce cannot deliver the targets as currently planned.

In the UK Radiotherapy has a relatively small workforce of around 6,400 professionals, yet it delivers treatment to approximately 175,000 patients across the UK each year. Despite the scale of this contribution, workforce shortages persist across all key professional groups. The Royal College of Radiologists' (RCR) 2025 workforce census reported a 17% shortfall in clinical oncologists [15].

Similarly, the Institute of Physics and Engineering in Medicine's (IPEM) 2023 workforce census found an overall vacancy rate of 10% among clinical scientists, technologists and engineers [16], while the Society of Radiographers (SoR) reported an 8% vacancy rate for therapeutic radiographers [17], supported by a more recent snapshot analysis carried out by Head Therapeutic Radiographers Baker and Gilham (2026) [18].

These workforce reports consistently highlight the urgent need to expand the radiotherapy workforce to meet current demand and prepare for the anticipated rise in cancer incidence. At the same time, radiotherapy departments are managing increasing patient demand alongside ageing equipment, limited training capacity, and persistent shortages of specialist staff. Despite these pressures, recruitment freezes continue to affect services in parts of the country.

There is no long-term, nationwide plan for either the current workforce or its future pipeline. Workforce shortages directly affect treatment capacity, waiting times and the ability to adopt modern technology. The Royal College of Radiologists, Society of Radiographers and Institute of Physics and Engineering in Medicine have all independently raised the alarm on workforce shortages and pipeline issues across radiotherapy [15][16][17].

Delivering safe, high quality radiotherapy depends on training sufficient numbers of radiotherapy specialists throughout all professions.

Decision-making is fractured by design.

Radiotherapy decision-making lacks clear accountability at the highest level. Funding and treatment decisions sit with Integrated Care Boards (ICBs) in England and their equivalents in the devolved nations. These organisations have such a broad remit that they cannot fairly be expected to have the necessary expertise and experience at a senior level in every one of them to design the world class system that patients deserve.

Freedom of Information requests by Radiotherapy UK in 2023 found that around 70% of ICBs in England do not have a named person responsible for radiotherapy. Operational Delivery Networks in England allow some cross-working but still operate regionally. The result is that patients presenting with the same symptoms in different parts of the country can be offered different treatment paths - not because of clinical judgement, but because of what their local system has access to [19].

This underscores why radiotherapy needs a strategic, national body, led by professionals and clinicians who understand its complexities.

Why Now?

Two things make this the right moment to act.

The National Cancer Plan for England set the ambition but not the mechanism.

The National Cancer Plan for England, released in February 2026, should have been the start of ten years of advancement in cancer care, yet it has not delivered the clear strategic plan needed to meet its own targets. There remains a lack of clarity over who is responsible for what, a lack of ownership of both problems and successes, and targets set without the resources attached to achieve them. This concern has also been echoed elsewhere - that the Plan's ambition is not yet matched by a credible, costed implementation route [20].

The abolishing of NHS England is a live opportunity to fix the structures that impede radiotherapy delivery.

The Government's plans to abolish NHS England present a genuine opportunity to review and improve how services like radiotherapy are delivered, rather than simply transplanting an already fractured model onto a new landscape.

For example, the favourable data on five fraction Stereotactic Ablative Radiotherapy (SABR) for prostate cancer was presented in 2023, but NHS England only formally allowed the commissioning in 2026 [21]. This gatekeeper function slows innovation and delays access to new radiotherapy techniques and technologies, something which a new model should look to minimise.

NRAG2 is the mechanism that turns this moment of structural flux into a structural fix for cancer patients who need radiotherapy.

What the National Radiotherapy Advisory Group (NRAG2) is and what it would do

Overarching principles

• Clinically-led, with representation from the whole multi-disciplinary radiotherapy workforce and professional bodies.
• Empowered to make system changes, not just recommendations.
• Independent, with Ministerial overview and engagement from DHSC.

Independence to make and enact decisions, and clinical multidisciplinary leadership matter because they ensure that recommendations are rooted in what is clinically sound and evidence-based to deliver better outcomes for patients. World class radiotherapy is highly technical and depends on specialist equipment, software, imaging, digital infrastructure, planning systems, treatment machines and a multidisciplinary workforce including clinical oncologists, therapeutic radiographers, medical physicists, clinical scientists, dosimetrists, and engineers. It is crucial that those driving decision-making and delivery of services are experts in delivering radiotherapy on the front line and are given the resources required to do so.

A National framework

We do not set out a definitive operating model here, but the original NRAG offers a useful starting principle, updated for today's NHS: nation-level advisory groups feeding into a national NRAG, each empowered to tailor recommendations to their own system.

Translated into the current ICB structure in England, which the National Cancer Plan has already given greater powers over radiotherapy funding, this would mean each ICB developing a Radiotherapy Action Plan within a national framework set by NRAG2. This preserves clinical autonomy with professionals retaining the ability to advise patients and manage services as they judge best.

This structure would not remove the powers currently given to ICBs. NRAG2 would not be responsible for ICB level decisions on spending or resourcing. NRAG2 would also not be responsible for monitoring individual ICB's performance against targets.

What changes is that NRAG2 designs the national radiotherapy framework and oversees and supports ICB-level plans to ensure that there is accountability for delivering equal access to world class radiotherapy. By sitting above the ICBs, NRAG2 can spot both strengths and weaknesses across the system, allowing best practice to be shared rapidly.

NRAG2 would make use of the existing Get It Right First Time (GIRFT) programme, utilising it as a way to ensure that each ICB's Radiotherapy Action Plan was implementing the national framework in a way that was effective, efficient and, most importantly, delivered the best outcomes for patients. NRAG2 would not see a centralisation of powers away from the ICBs but would instead empower them and give them the tools to deliver world class radiotherapy.

Workforce planning

Short-term, unstable funding currently limits departments' ability to plan their future workforce or invest in training and apprenticeships, despite the long-term benefits. Demographic data and AI modelling tools can now predict population and cancer-incidence changes more accurately than ever, but this capability has not filtered into workforce planning - again a symptom of short-termism baked into the funding model. NRAG2 should use these tools to map UK-wide workforce needs and training to spot patterns and solutions and access funding to resolve issues.

Technology rollout

Two recent examples show what happens when new technology is introduced without a planned, equitable rollout:

- *AI auto-contouring*: £15.5 million in funding was promised under the previous government but not taken forward by the current one. Centres that could afford the financial risk invested anyway; those that couldn't, didn't. An initiative meant to benefit all patients instead deepened existing inequality - disadvantaging the centres, and patients, who were already worst off.
- *SABR for certain prostate cancers*: A persistent disconnect between clinical practice and national commissioning has emerged in the delivery of stereotactic ablative radiotherapy (SABR) for prostate cancer.

Clinical reality, driven by international evidence demonstrating its safety and efficacy, means that many radiotherapy departments have been delivering prostate SABR despite it only being commissioned this year and not being recognised in the current payment system [22][23].

In both cases, the common thread is a fractured system and the absence of a clear, long-term national plan for introducing a step-change in delivery. NRAG2 would take a nationwide, long-term view of both existing and emerging technologies, planning their introduction efficiently and fairly.

The original NRAG also played a hands-on role here, overseeing a £23 million innovation fund which organised a nation-wide implementation of Intensity-Modulated Radiation Therapy (IMRT) [24] including running in-person demonstrations and training so that new technology was properly embedded rather than unevenly adopted - a model NRAG2 should repeat.

A safeguard for future developments and technology

As new techniques continue to emerge, not all will be suitable for NHS adoption, or will justify the investment and disruption required. NRAG2's long-term approach to resource planning allows for controlled testing and phased implementation, moving the system away from the current "have" and "have not" pattern while still protecting each department's clinical autonomy to choose the right treatment for each patient, as a clinical decision rather than a resource-driven one.

This is particularly relevant in the case of adaptive radiotherapy which is set to be the next significant step forward in radiotherapy treatment. Departments need to be helped to implement this in a way that unlocks its full potential and ensures that access to it is there for every patient that could benefit from it.

It also creates a clear pathway for scaling treatments such as Molecular Radiotherapy (MRT), which requires coordinated strategic planning to develop the necessary infrastructure, equipment, workforce, and research base. In parallel, it encourages the exploration of new service delivery models - from remote planning to innovative partnerships, ensuring that patients can access treatment in the right place, at the right time, with their needs at the centre of decision-making.

The Evidence that NRAG Works

It has worked before.

The original NRAG, a strategic body providing leadership and accountability, enabled coordinated action that saved an estimated 2,500 lives annually in England [25]. Scaled to today's population, an equivalent improvement would save approximately 3,000 lives per year.

It was NRAG that was able to identify the scale of the issues in radiotherapy and from this, address them in an evidence-led way. Through NRIG it was able to implement real change, such as the training to make sure IMRT was successfully, and fairly, introduced and used. NRAG also played a role in developing a Proton Beam Therapy service in the UK [26]. This all came from being able to oversee the system and take a longer-term approach.

The economic case is strong.

Radiotherapy is a key part of cancer treatment, helping almost 50% of patients who survive for five years or more [27]. Getting treatment right the first time is not only better for patients, but also more cost-effective. Successfully treating cancer early can avoid the need for more complex care later, such as second-line treatments or palliative care, which often rely on expensive medications [27].

There are also wider benefits to timely and effective treatment. Around one in four men needing treatment for prostate cancer, and more than half of women with breast cancer, are diagnosed before they reach retirement age. This means that delays or less effective treatment can affect people who are still working or supporting others. When this happens, the impact goes beyond the individual and their family - it can also affect the wider economy through lost productivity and increased need for support.

Radiotherapy is already a proven, cost-effective lever. NRAG2 is the mechanism for pulling it consistently, everywhere, rather than only where local capacity and funding happen to allow.

Recommendations

1. **Calling on the Secretary of State for Health and Social Care** to formally commit to establishing NRAG2 and its implementation arm (NRIG) - independent, clinician-led, with representation from each of the professional bodies, and empowered, with appropriate funding, to set a binding national framework for world-class radiotherapy as a named delivery mechanism for the March 2029 cancer waiting-time targets in England and relevant targets in the devolved nations.

2. **The NHS Modernisation Bill** ensures that there is clear accountability for delivery, standards, and national coordination in radiotherapy in England.

Acknowledgements

This paper follows a workshop held on 3 June 2026, attended by academics, workforce representatives, professional bodies, and people with lived experience of radiotherapy, convened to discuss re-establishing NRAG2. We thank all of them.

References

[1] NHS digital, Radiotherapy Data Set. https://digital.nhs.uk/ndrs/data/data-sets/rtds, Indicators for radiotherapy utilisation amongst adult patients with cancer in England v.2 (Accessed 30/06/2026)

[2] APPG-RT report, World Class Radiotherapy in the UK. https://radiotherapy.org.uk/wp-content/uploads/2024/11/Radiotherapy-WorldClass-Report.pdf (Accessed 08/07/2026)

[3] Ahmad S, Burnet NG, Rapid Response: Prompt radiotherapy saves lives. Response to Lartigau E. Stereotactic body radiotherapy. BMJ 2011;343:d4286

[4] HM Government, National Cancer Plan for England (4 February 2026) https://www.gov.uk/government/publications/national-cancer-plan-for-england: (accessed 13/08/2026)

[5] NHSE 2026-27 Monthly Cancer Waiting Times Statistics. https://digital.nhs.uk/ndrs/data/data-outputs/cancer-data-hub?area=treatment-data (Accessed 13/08/2026)

[6] https://www.theguardian.com/society/2025/oct/03/more-than-60000-cancer-patients-in-england-not-getting-any-radiotherapy-research-shows (Accessed 13/08/2026)

[7] Cancer Research UK. Cancer in the UK: what's needed as cases exceed 400,000 a year. https://news.cancerresearchuk.org/2026/04/23/cancer-in-the-uk-2026-cases-exceed-400000-for-the-first-time/ (Accessed 08/07/2026)

[8] Borras A, Lievens Y, et al. The optimal utilization proportion of external beam radiotherapy in European countries: An ESTRO-HERO analysis. Radiotherapy and Oncology 116 2015 38–44

[9] Delaney G, Jacob S, Featherstone C, et al. The role of radiotherapy in cancer treatment: estimating optimal utilization from a review of evidence-based clinical guidelines. Cancer. 2005 Sep 15;104(6):1129-37

[10] Spencer, K, Defourney N, Tunstall D et al. Variable and fixed costs in NHS radiotherapy; consequences for increasing hypo fractionation. Radiother Oncol. 2022 Jan; 166:180-188 25 26

[11] Huguet M. Centralization of care in high volume hospitals and inequalities in access to care. Soc Sci Med 2020; 260: 113177.

[12] Tataru D, Spencer K, Bates A, et al. Variation in geographical treatment intensity affects survival of non-small cell lung cancer patients in England. Cancer epidemiology 2018; 57: 13-23.

[13] Radiotherapy UK. Equity of access to cancer treatment. https://radiotherapy.org.uk/wp-content/uploads/2024/03/Equity-of-access-to-cancer-treatment_Final.pdf (Accessed 07/07/2026)

[14] APPGRT Report May 2025, Elevating radiotherapy in the National Cancer Plan https://radiotherapy.org.uk/wp-content/uploads/2024/03/Equity-of-access-to-cancer-treatment_Final.pdf (Accessed 08/07/2026)

[15] Royal College of Radiologists Clinical Oncology Census 2025. https://www.rcr.ac.uk/media/prbd5ofl/rcr-2025-clinical-oncology-workforce-census-report.pdf (Accessed 13/08/2026)

[16] Institute of Physics and Engineering in Medicine, Radiotherapy Census Report 2023. https://www.ipem.ac.uk/media/2zajb5ju/ipem-radiotherapy-census-report-2023.pdf (Accessed 13/08/2026)

[17] The Society of Radiographers. Radiotherapy Radiographic Workforce UK Census 2023, https://www.sor.org/getmedia/4fe04eb7-46c6-4856-913d-441e09f6c3e4/RR-Census-2023_D1-7 (Accessed 16/07/2026)

[18] Baker, A. and Gilham, M. (2026) Therapeutic radiographer workforce gap analysis and workforce snapshot: January 2026. Unpublished workforce analysis shared August 2026.

[19] Aggarwal A, et al. Cancer treatment delays need systematic attention. BMJ 2026;392:s14

[20] Rachet B., et al. England's national cancer plan is more of a commercial strategy than a health policy, BMJ 2026;392:s278

[21] NHS England. NHS to offer 'multi-beam' precision radiotherapy to thousands with prostate cancer. https://www.england.nhs.uk/2026/06/nhs-to-offer-multi-beam-precision-radiotherapy-to-thousands-with-prostate-cancer/ (Accessed 08/07/2026)

[22] Powell Brown I, Hutton D, etal. Sustainable capital funding for modern and innovative radiotherapy services. 2025.BJR, 00, 1–3 https://doi.org/10.1093/bjr/tqaf255 (Accessed 08/07/2026)

[23] Powell Brown I, Hutton D, etal. Radiotherapy commissioning and tariff—how can we deliver advanced, innovative, and personalised radiotherapy? 202 5BJR, 00, 1–4. https://doi.org/10.1093/bjr/tqaf253 (Accessed 08/07/2026)

[24] Williams MV, Cooper T, Mackay R, Staffurth J, Routsis D, Burnet N. The implementation of intensity-modulated radiotherapy in the UK. Clin Oncol (R Coll Radiol). 2010 Oct;22(8):623-8

[25] Department of Health. Radiotherapy Services in England 2012. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213151/Radiotherapy-Services-in-England-2012.pdf (Accessed 08/07/2026)

[26] Department of Health. National Proton Beam Therapy Service Development Programme: Strategic outline case. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213044/national-proton-beam-therapy-service-development-programme-strategic-outline-case-16102012.pdf (Accessed 08/07/2026)

[27] Burnett N, et al. The Use of Radiotherapy in the Cure of Different Cancers - Further Results From the FORTY (Favourable Outcomes From Radiotherapy) Clinical Oncology, Volume 45, 2025, 103902, ISSN 0936-6555, https://doi.org/10.1016/j.clon.2025.103902 (Accessed 08/07/2026)