

## **Written evidence APPG Inquiry on Radiotherapy Faculty of Clinical Oncology, Royal College of Radiologists**

### **Introduction and background**

- Radiotherapy is an extremely effective treatment for curing cancer when the disease is detected early enough and for palliating symptoms when a cancer has spread.
- Over the last two decades technological advances have made radiotherapy treatments safer and more effective, improving cure rates with fewer short- and long-term side effects. New ways to deliver radiotherapy, for example delivering treatment in a few very high dose treatments rather than as a long course (daily Monday to Friday) over many weeks, mean more patients with cancer may benefit from treatment.
- Radiotherapy will have an increasing role in the treatment of cancer over the next 30 years because
  - Cancer is more common with advanced age and our population is aging.
  - The focus on early detection of cancer will mean more cancers are diagnosed that can be cured with radiotherapy.
  - New drug treatments for cancer prolong survival, often making cancer a chronic illness but rarely provide cure. Drugs will not replace radiotherapy, but in many cancers delivering chemotherapy and radiotherapy at the same time, results in more cures than radiotherapy alone.
  - People who live longer with cancer, but are not cured, will need more radiotherapy.
- Radiotherapy is delivered by a multi-professional team comprising radiographers, physicists and clinical oncologists. Clinical oncologists are the only medical professionals able to prescribe radiotherapy. When chemotherapy and radiotherapy are delivered at the same time (concurrently), nurses and pharmacists also form an integral part of the team.
- High energy protons have recently been delivered for the first time in the UK in 2018, improving patient access to highly specialised radiotherapy.
- The UK has a long history of being active in radiotherapy research with publication of many of the trials that have changed worldwide practice.

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

We think there are four key areas to focus on – *workforce, equipment, access and funding.*

**a) Workforce**

- The current oncology workforce is not large enough and there are inadequate plans to increase that workforce to meet anticipated future population demand. The [RCR CO census](#) gives full details about the clinical oncologist (doctor) numbers and the CRUK “[Full Team Ahead](#)” document provides evidence for the wider cancer team and the evidence based future demand. Without an adequate workforce we will be unable to realise the potential radiotherapy has to improve cancer outcomes for patients.
- Recruitment – there needs to be an urgent increase in funded training numbers. This is a medium-term solution as consultant oncologists take an average of 6.5 years to train (8 years for those working less than full time (LTFT)). Reduced barriers to overseas recruitment will assist as part of a short-term solution.
- Retention – enabling flexibility during their career will encourage younger doctors and those approaching retirement age to be able to continue to contribute to the NHS workforce.
- Staff well-being – there is [increasing evidence](#) of stress and burnout in the workforce and improving the working environment is essential to improve this.
- Skill mix – this is well recognised and accepted in oncology but gaps in the multiprofessional workforce and reduced medical workforce to enable service development are a barrier to full implementation, to the detriment of patient experience.

**b) Equipment**

- Excellent radiotherapy needs modern hardware and software. There is no funded rolling programme of machine replacement or for software upgrades in most of the home nations (there is in Scotland). We would like to see a national plan for funding of radiotherapy equipment to enable every patient to have access to the appropriate treatment.
- At the moment business cases for hardware and software are being duplicated across the country. This is wasteful of limited clinical expert time across all professions.
- A funded networked IT infrastructure would enable connectivity between centres, supporting seamless transfer of diagnostic and therapeutic information between competing organisations. This would facilitate patients being treated closer to home in some rarer cancers. It would also improve service resilience in times of maternity and sickness absence, especially in smaller centres, and would therefore improve patient experience. Peer to peer quality review would also be enabled, decreasing variation and improving outcomes – please see [RCR Guidance on Radiotherapy target volume definition and peer review](#).

### c) Access

- Estimating the ideal amount of radiotherapy that a population needs is not straightforward but there is evidence that access to different radiotherapy techniques is not equitable. For example, SABR for lung cancer is not commissioned in all the UK centres who are willing and able to deliver this treatment. Access is not just about travel times / distances and emphasis should be placed on ensuring the infrastructure for radiotherapy supports the delivery of excellent treatment and support during therapy for the whole UK population. At the moment, barriers to this include:
  - IT connectivity. A network solution can support the design and planning of complex radiotherapy in one centre with delivery in other, more remote centres, but only if there is appropriate IT infrastructure.
  - Appropriate commissioning (e.g. SABR, brachytherapy).
  - Socio-economic factors – supported transport, car-parking, hotels/hostels, choice of appointment times.

### d) Funding

- The current tariff funding of radiotherapy per fraction is not fit for purpose. It can disincentivise novel ways of working such as delivering a smaller number of fractions with a more complex technique.
- Funding should incentivise novel ways of working in other areas of the pathway such as follow-up.
- Reimbursement for treatments with equally effective outcomes e.g. prostate surgery, brachytherapy and external beam radiotherapy are differentially funded.
- The UK is a world-leader in radiotherapy trials but the way trial work is funded is a disincentive to trial recruitment.
- Funding models should support innovation and research. With workforce shortages there is not enough time for professionals to lead innovation and service development.
- Different hospitals have different processes for encouraging and facilitating innovation so approaches to implementing new techniques often involve duplication of effort and resources.

**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?***

- The vision for a fully networked service with shared protocols, team working across organisations and support for the local delivery of therapy where possible, is laudable and wholly supported by the RCR.
- Whilst the NHSE specification is limited to England we would support the aims outlined above across all devolved nations.

- The operational delivery networks (ODNs) are currently being established over a maximum three-year period. It is too early to tell if they are working properly or effectively. However, amongst radiotherapy heads of service the detail of the network arrangements is still subject to debate and uncertainty.
- Whilst some networks will undoubtedly “hit the ground running”, the fact that there may be a three-year period in some areas with lack of integrated clinical leadership of radiotherapy services gives concern for effective service delivery and development in those areas, to the potential detriment of patient care.
- Effective implementation and therefore realisation of long-term goals is not achievable without further support. We would suggest that the following are prioritised as part of the radiotherapy CRG workstreams:
  - The development of national protocols for cancer site specific therapy, including radiotherapy.
  - The development of national radiotherapy site-specific consent forms.
  - A national IT connectivity and information governance plan to allow remote support for peer to peer review, diagnostic and therapeutic information sharing and to minimise patients travelling. However, some patients will always have to travel to access specialised techniques and support. Those who do need to travel require financial support and back fill for the caring roles that they may have.
  - A plan to support the roll out of advanced radiotherapy techniques to more centres so that all patients have access to latest techniques e.g. SABR.
  - Explicit support for the roll out of radiotherapy trials taking account of need for quality assurance (QA) of clinicians and planning teams.
  - A national platform for electronic patient related outcome measures (PROMs) collection.
- We strongly recommend the involvement of the devolved nations in the radiotherapy CRG workstreams to ensure equitable patient access to peer reviewed practice across the four nations.

**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.***

- Cancer services are organised very differently across the world and direct comparisons are often tricky to obtain. There are positive and negative points about the UK system.
- Positive points about the UK system:
  - MDT working is fully embedded and allows clinical oncology input into the management of all patients. This enables appropriate access to radiotherapy.
  - The relative number of radiotherapy machines (LinAcs) per centre is higher than in Europe. This leads to economies of scale, easier routine quality assurance (QA) of machines and backup in case of breakdown.

- Centralised standardised training schemes which deliver professionals capable of delivering the current service but also able to implement service improvement and innovate the future service.
- Cost effective delivery of combined modality therapy.
- A trend toward shorter fractionation due to resources, but also a tradition of less explicit funding per fraction prescribed.
- A fully national service with no academic / general split. Site specialisation is promoted. This improves patient access to high quality care.
- Embedded multi-professional working which facilitates a smooth patient pathway and improves patient experience.
- A significant reduction in the number of simple tasks undertaken by medical profession. This means they are working more toward the top of their licence which delivers value for money.
- Negative points about the UK system:
  - Exact spend per capita is hard to quantify compared to other countries but is definitely less whichever metric is chosen.
  - Less and older hardware. There is no incentive to implement new techniques or invest in new hardware if not reimbursed.
  - Less and older software. Again, no incentive to invest in new ways of working if not reimbursed.
  - Many services are battling locally with the impact of acute unplanned care as part of the DGH / acute hospital environment.
  - Stress on diagnostics. The per capita spend on diagnosis is low, leading to stress on the treatment pathway as lost time needs to be made up.

***Do all those patients who should receive radiotherapy do so?***

- The “correct” uptake of radiotherapy is complex to model accurately. Modelled uptake varies with patient choice and changes in the accepted international evidence base e.g. active surveillance for prostate cancer.
- There is good evidence that radiotherapy uptake is not at the predicted modelling level UK wide.
- Estimating the number of people who have adverse outcomes because they are not being treated with radiotherapy is much more contentious.
- For many patients, radiotherapy is part of a choice between treatment modalities and it is likely some patients choose other, equally effective treatments, perhaps due to better tolerance of side effects or personal belief.
- There is evidence from [RCR audit of radical radiotherapy in non-small cell lung cancer \(NSCLC\)](#) that patients from certain demographics will choose a less good treatment rather than travel to access a better treatment option.

- This question is better framed as “Do all patients have equal supported access to the best radiotherapy treatment?” The answer to that is definitely no.

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

- The current tariff system is not fit for purpose. Innovation and new techniques are not properly incentivised – please see [“You get what you’re paid for? The Royal College of Radiologists \(RCR\) members’ experiences of the NHS tariff system in England.”](#)
- Reimbursement for treatments of similar effectiveness are differently funded e.g. surgery, brachytherapy and external beam radiotherapy for prostate cancer. We need to move to pathway funding not task funding.
- Integration of new imaging modalities in treatment planning is not supported e.g. MRI guided brachytherapy for cervix cancer.
- The current funding model is a disincentive to novel ways of working – e.g. virtual or AHP led follow-up, reviewing skill mix support for protocolised tasks, the use of image guided radiotherapy (IGRT) to ensure the radiotherapy is delivered accurately.
- The costs for radiotherapy trials above current standard of care not funded which is positive disincentive to trial recruitment.
- There is no agreed national tariff for brachytherapy. This is a disincentive to the implementation of service improvements, and a potential detriment to patient outcomes.
- Funding in the devolved nations is a mixture of block contract and direct payments. Uplifts for innovation are therefore less transparent and more difficult to access. The funding system outside England is therefore also unfit for purpose and in need of urgent overhaul.

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

- The advanced radiotherapy techniques of today are standard techniques tomorrow. Limiting techniques to a small number of centres reduces patient access. In Scotland, Wales and Northern Ireland, all centres deliver body SABR, whereas in England access is restricted.
- The ODNs should improve access to advanced techniques but this will only occur if they function effectively to promote a peer support network across all the professions to enable implementation.
- Fast, reliable IT connectivity, which is not funded, is critical to realising this vision.
- It will take at least three years to set up the ODNs so access for many is likely to be limited for at least that time.
- Many centres take on treatment of patients with novel techniques “at risk” to improve local access without clear funding. It would be better were this recognised and supported.



- Above the neck (intracranial) SABR is limited to 12 centres in England, commissioned through the trauma (not cancer) CRG which means access issues are unnecessarily complex to address.
- Patients needing intracranial SABR should be able to access to an expert neurosurgical discussion and opinion using virtual conferencing (VC) facilities without the need for them to travel to one of the 12 commissioned centres. (They are often in a late phase of their illness and are not allowed by law to drive).
- Implementation of advanced techniques also requires time from the multi-professional team. In a capacity constrained workforce, ringfencing time for this to happen at pace is challenging, but essential.

**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?***

- Uptake of radiotherapy is complex and subject to many factors including patient choice.
- Access is not simply about travel times.
- The [data usually quoted about travel times](#) and access to radiotherapy for the UK is more than ten years old. There is [new evidence](#) that travel time may not be a significant determinant for some groups in the era of modern radiotherapy.
- Some radiotherapy techniques can only be delivered with specialist expertise. Supporting patients through the side-effects of complex radiotherapy, particularly for rarer cancers, can require specialist support teams. Some patient groups will always have to travel to access appropriate radiotherapy techniques and support.
- Practical and financial support is necessary for patients who have to travel to access specialised radiotherapy e.g. hostels and hotels.
- The major determinant of demand for radiotherapy is age, as cancer is a disease of the elderly. Elderly people are more likely to live in relative poverty and have unpaid caring roles which cannot be backfilled with current social care provision. They are less likely to be able to access services unsupported.

**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?***

- **Adequacy** – current radiotherapy workforce provision is inadequate with significant geographical variation, both in terms of current funded demand and ideal service led demand – see [Full Team Ahead](#). This is mirrored across all professional groups. The gap between headcount and WTE in clinical oncology widens every year. It is difficult to benchmark the precise gap with other countries given the different scope of practice seen in countries of similar GDP. However, whichever workforce you compare with, the UK headcount lags significantly behind. The RCR are contributing to the European HERO project which will provide objective data.

- **Morale** – there are concerning signs of [increased workforce stress](#). Because there are not enough clinical oncologists, they are spending proportionately more time spent caring for patients directly at the expense of service development. The RCR supports a networked Heads of Service group to share best practice and innovation. They reflect an increasing struggle to balance clinical demand with available workforce.
- **Wellbeing** – there is a large and well validated literature highlighting increased levels of stress and burnout amongst oncology clinicians (the figure varies but is generally twice that of the general population). An aging population increases demand. Assimilating new techniques and technologies and trying to support access to trial opportunities are all factors which add to the stress of complex conversations, especially at relapse and toward the end of life. Time and funding for tailored support, e.g. clinical supervision, can improve staff functioning.
- **Training**
  - Trainees – the curriculum is being rewritten to support clinicians practising medicine in the 21<sup>st</sup> century. The profession remains committed to providing high quality clinically based patient-centred training.
  - Consultants – workforce shortages mean clinicians need to access high quality, interactive CPD at a time convenient to them. Employing organisations are often reluctant to release clinicians in terms of time and financial support to attend external CPD events.
  - General – there is increasing evidence that trainees become consultants in areas geographically close to their training placement. Those organisations without trainees or where trainee posts are lower struggle to recruit staff. The clinical oncology workforce has a high proportion of less than full time trainees. Even with the 100% recruitment we have currently, the gap between headcount and WTE is widening.
- **Skill mix** – this is well embedded in the radiotherapy workforce and well supported by all professions. Development and implementation of novel roles is continuing at all levels to facilitate the patient pathway and improve patient experience. In many areas medical training pathways being altered to ensure trainees are assigned where the training opportunities are. Consultant mentoring and clinical leadership of skill mix is established but is coming under increasing pressure due to workforce shortages.
- **Recruitment**
  - Trainees - four nation national recruitment rounds happen at least once and usually twice a year. Significant emphasis is placed on promoting the speciality to medical students and early career (uncommitted) doctors. This has resulted in a fill rate of virtually 100% at round one for the last three years. We urgently need more funded posts to fill the shortfall in current demand and to increase future posts, even with maximal skill mix - see [Full Team Ahead](#).
  - Consultants – the vacancy rate is increasing with one in six centres having fewer oncology consultants than six years ago. Thirty per cent of posts have been vacant for more than one year. Replacement vacancies currently outstrip UK trainee output even before new demands are factored in. Ways to make recruitment from abroad easier will help in some ways but the pool of combined modality therapy trained



oncologists is small internationally given differences in career structure in most first world countries. There are a few locums in circulation, but most are from the UK training pool waiting for a specific job to be advertised. Locums are expensive and not self-sustaining in the longer term and generally provide little service development or recruitment into clinical trials.

- Non-consultant, non-training grade (SAS) doctors – this is a small workforce in the UK. The number who support radiotherapy services directly by prescribing radiotherapy is very small and, anecdotally, does not seem to be increasing. The group are usually locally grown and are often those who may have left national standard training schemes. The RCR is developing tailored support for this group.
- **Retention** – this needs to be improved. There are serious generic issues currently affecting all clinical specialties, including pension concerns and spiralling demand on the background of poor investment and rigid working conditions. The age at which people leave the workforce is dropping. Increased demand, complexity of therapy and having many emotionally charged consultations on a daily basis means incentivising the workforce to keep supporting patients is challenging.

**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?***

- Much of this information can be gained from review of the [national patient experience survey](#) or the information gathered as a requirement by organisations themselves.
- In addition, many organisations run patient experience groups where these issues are raised and addressed.
- Most if the feedback received is positive and praises staff dedication, professionalism and competency. Common issues raised include:
  - Travel issues – cost of petrol, choice of appointment time to fit in with other commitments, availability and cost of car parking, lack of hospital transport, failure of hospital transport.
  - Lack of choice – out-patient clinic appointment times, radiotherapy planning and treatment appointment times.
  - Lack of access - food and beverage availability during hospital visits, clinical nurse specialist support, pharmacy access, access to senior medical input if appointments are outside core working hours.
- Access should be improved by supported travel costs or hotel / hostel accommodation for patients who need to travel daily. For those receiving treatment outside core hours, access to specialist help needs to be available during treatment.

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

- Severe shortages in the capacity of the diagnostic workforce mean that there are significant delays in the pre-treatment pathway. The time available for optimisation of frail patients' health prior to complex curative radiotherapy is reduced, resulting in increased side effects and poor patient experience as well as increased costs to the health economy.
- Severe shortages in the capacity of the diagnostic workforce mean that implementation of screening programmes is at risk, reducing the number of patients diagnosed at early stage who could benefit from curative radiotherapy.
- Many patients need investigations which involve radioactive isotopes. The majority of these need to be imported from Europe (or South Africa) with a new supply needed every three days. Other tests can be substituted but this provides an increased stress on other workforces (nuclear medicine) whose capacity is also strained.
- As radiotherapy technology advances, novel imaging techniques are used to improve treatment and reduce unnecessary radiation, benefiting patients in the longer term. To realise these benefits the diagnostic hardware and software also needs a rolling funded ongoing modernisation programme.
- Patients with prostate and cervical cancer may receive curative therapy with radioactive sources implanted during a short general anaesthetic. The usefulness of the source decays, requiring replacement every three to four months. All the radioactive sources are imported from abroad, usually from Europe. There is concern that after Brexit, rapid and easy access to source changes will be problematic. For prostate cancer patients, we can easily substitute other therapies of equal value. In cervical cancer there is no alternative therapy that can deliver a cure. These patients may die from their cancer if radioactive sources are not available.
- More patients are cured after radiotherapy and are often discharged from formal follow-up services. Primary care is then the first port of call for patients concerned about recurrent cancer or late effects of treatment. GP education to identify and triage patients is required. Signposting of patients to appropriate services by a radiotherapy expert would be invaluable but needs further investment in new ways of working e.g. telephone advice clinics for primary care clinicians.
- Due to the cures delivered by radiotherapy, there are patients living with sometimes debilitating late radiation side effects which are more common with older treatment techniques. Equity of access to specialist services to support these patients is variable and should be addressed.
- New technology to deliver radiotherapy means that late radiation side effects can follow new, unexpected patterns. Identifying these patterns and using this information to improve the service for patients and clinicians is vital. Investing in Patient Reported Outcome Measures (PROMs) with routine, electronic data collection is essential. This will help patients with problems to be rapidly identified and access support when it is needed.
- General and specialist palliative care provision is limited and variable throughout the four nations due to variable funding models and a constrained multi-professional workforce. This results in poor patient experience and patchy end of life care. Clinical oncologists are trained to deliver general palliative care as well as radiotherapy and systemic anti-cancer therapy treatment (SACT). The lack of fully funded palliative care services means patients



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do not have the specialist support they need. It also adds to oncologists' workload and reduces the time they have for quality improvement of the radiotherapy service.

**Royal College of Radiologists, Clinical Oncology Officers – 07 June 2019**