All Party Parliamentary Group for Radiotherapy

Manifesto for Radiotherapy

Improving cancer survival with a modern world-class radiotherapy service

- 1 in 2 people in the UK now develop cancer at some point in their lives.

- By 2025, the percentage of cancer patients needing radiotherapy as part of their treatment will have risen from the current 50% to 60%.

- Only 5% of the NHS cancer budget is spent on radiotherapy (£383 million a year). More investment in access to advanced modern radiotherapy will increase cancer survival.

- Only £424 million in the last 6 years has been spent on new advanced radiotherapy, compared with £1.95 billion spent on new cancer drugs.

- An increase from 5% to 6.5% of the annual cancer budget would secure a world-class radiotherapy service for the UK.

- An additional one-off investment of £250 million would secure equal access for all radiotherapy patients over the next 10 years.
What is radiotherapy?

Radiotherapy is a treatment used to kill cancer cells through aiming high-energy radiation at the tumour. Unlike chemotherapy, which impacts the entire body with chemicals, modern radiotherapy is accurate to within millimetres, limiting damage to healthy cells around the cancer. This makes radiotherapy useful for treating cancers in areas vulnerable to damage, allowing effective treatment of cancers, which would be practicably untreatable through surgery or chemotherapy.

There have been major breakthroughs in radiotherapy in the last 10 years with modern advanced radiotherapy being more precise, curing more patients and producing fewer side effects to the point where patients can often continue working normally during the course of their treatment.

However, this advanced radiotherapy is not currently available across all the UK.
The need for radiotherapy

- **1 in 2** of us in the UK will develop cancer and **1 in 4** of us will undergo radiotherapy at some time in our lives.
- Radiotherapy is highly effective, improving survival rates in **16%** of cancer patients compared with only **2%** with chemotherapy\(^1\).
- With rising cancer rates due to obesity and ageing, radiotherapy need in the UK is expected to rise by up to **25%** by 2025\(^2\).
- UK cancer survival rates lag behind the European average in **9 out of 10** cancers. The UK has the **second worst survival rates** for lung cancer in Europe\(^3\). Modern advanced radiotherapy (e.g. stereotactic body radiotherapy, SBRT) improves survival rates in lung cancer. SBRT is needed to make effective use of new diagnostic tests and turn early detection into cures.
- If England achieved the best European cancer survival rates, **10,000** lives would be saved each year\(^3\).

Improving access to radiotherapy

- Radiotherapy centres are unevenly distributed with varied access for patients across the UK\(^4\). Future planning must account for an ageing population.

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\(^1\) Recommendations for achieving a world class radiotherapy service in the UK: Final report for Cancer Research UK. Cullen et al 2014
\(^3\) National Cancer Action Team, ‘Developing Key Messages on Cancer for Commissioners’, www.ncin.org.uk/view?rid=942
The vision for radiotherapy in the next 10 years

• Every patient will have access to the best high-quality radiotherapy for their individual cancer.
• The UK will develop a world-class patient-first radiotherapy service.
• The UK will have the best survival rates in Europe, not some of the worst.
• The UK will have and make full use of the best and most modern radiotherapy equipment, facilitated by a system of funding that incentivises effective modern treatment.
• An investment in IT connectivity will allow a transformational change in model of radiotherapy service so that every cancer patient will have access to a radiotherapy centre as close to home as possible to provide radiotherapy for the most common kinds of cancer within the recommended 45-minute travel time\(^6\).
• The NHS will have enough highly trained clinicians, radiographers, medical physicists and healthcare professionals with the right skills to deliver the best possible outcomes for patients.
• Modern advanced radiotherapy only costs £3–4K per patient. This relatively modest investment in radiotherapy will lead to significantly increased survival rates and a higher quality of life for people with cancer.

The All Party Parliamentary Group for Radiotherapy in England seeks to act as the voice of radiotherapy to work with the government and NHS to realise our vision.

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Current UK radiotherapy funding

- Radiotherapy receives only 5% of the cancer treatment budget; so £383 million per year\(^7\) (0.025% of the NHS budget).

- This compares with the cost of just one cancer drug. The NHS Herceptin budget (a drug used to treat 15-20% of breast cancer patients) is £160 million a year.
  - A recent UK trial\(^8\) showed only 6 months, and not 12 months, of adjuvant Herceptin may be needed in adjacent therapy. Therefore, up to £80 million a year could potentially now be saved by the NHS, offsetting much of the additional radiotherapy cost.

- Radiotherapy accounts for 9% the cancer budget in Australia and 11% on average across Europe (includes outpatient funding)\(^9\). The UK already spends 20% less per cancer patient than the European average\(^2\).

- NHS investment in advanced radiotherapy compares poorly with cancer drugs. Only £424 million in the last 6 years has gone towards radiotherapy\(^10\), with £1.95 billion spend on new cancer drugs\(^11\). Yet radiotherapy is clinically proven as the more effective form of curative cancer treatment\(^1\).

- Modern treatment needs fewer patient visits to hospital due to its increased effectiveness. The current funding system (tariff) for radiotherapy creates perverse incentives as to the best possible delivery of treatment for patients. NHS trusts receive less income if patients attend less often, thus removing incentives to introduce such modern advanced radiotherapy. Changing this perverse payment system would allow NHS Trusts to introduce newer, more effective radiotherapy, requiring fewer patient visits.

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\(7.\) Social and General Statistics, House of Commons Library 2018
\(8.\) http://abstracts.asco.org/214/AbstView_214_217191.html
\(10.\) Written answer to WPQ 148715
\(11.\) https://www.bmj.com/content/357/bmj.j2097 & https://www.bmj.com/content/360/bmj.k461
How much money is needed?

- An estimated sustained additional **£100 million a year** is needed to catch up with and provide the advanced modern radiotherapy currently needed in the UK.
- With a **£250 million one-off investment**, the transformational change in the model of radiotherapy services in the UK that is need over the next 10 years can be provided.
- This is only an increase in the annual radiotherapy budget from **5% to 6.5%** of the cancer budget.

*Investment in radiotherapy not only enables treatment of large numbers of cancer cases to save lives, but also brings positive economic benefits.*

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**Equipment:** A rolling programme is needed to ensure no radiotherapy machine is more than 10 years old. This will free up front-line staff from bureaucracy. Estimated costs excluding VAT below:

Machines cost £1.4–£1.8 million and on average £300,000 for IT licences and service contracts (stipulating 98% reliability). One machine can treat 5,000 patients in its 10-year life span. UK NHS has 285 radiotherapy machines: 5.2 per million population; the European average is 6–7 machines per million population. New machines allow precise personalised radiotherapy using adaptive therapy and future AI.

Enabling works can cost up to £500,000. IT and software upgrades for equipment can cost £200,000.

Treatment planning machines can cost £500,000 plus VAT and CT simulators approximately £1 million plus VAT.

**Next-generation equipment needed:** e.g. MR Linacs (currently only 2 in the UK) cost approximately £7 million.

**Work force:** Sustained investment in highly trained multidisciplinary work force needed.

Investment needed in quality assurance teams, planning posts (medical physics), therapeutic radiographers, consultant workforce (100% increase in new training posts recommended). Funding need to reinstate bursaries for radiographer training (1 of the 10 universities in 2018/2019 now not running its course due to reduced applicants) and incentives for maintained work force in less popular geographical areas.

**Transformative new model for networked centres to improve access to radiotherapy**

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13. Full Team ahead: understanding the UK non-surgical cancer treatments workforce CRUK 2017
Summary of use of radiotherapy annual investment

**Capital costs:** to centrally fund rolling capital replacement budget (funding machines/enabling work/software) to ensure sustainable access to efficient modern radiotherapy machines for the years to come.

**Revenue costs:** to change the radiotherapy tariff to one based on the cancer treatment, not the number of visits to hospital: rewarding innovations and outcomes.

**Advanced radiotherapy:** to allow rapid, comprehensive implementation of modern advanced radiotherapy.

**Networking:** to transform IT connectivity investment to support an efficient multidisciplinary networked UK service.

**Work force:** to sustain and expand the current technically advanced and highly skilled work force

Acknowledgements

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References

7. Social and General Statistics, House of Commons Library 2018
10. Written answer to WPQ 148715
11. [https://www.bmj.com/content/357/bmj.j2097](https://www.bmj.com/content/357/bmj.j2097) & [https://www.bmj.com/content/360/bmj.k461](https://www.bmj.com/content/360/bmj.k461)