Achieving a world-class radiotherapy service across the UK

A report for Cancer Research UK

Cancer Research UK's mission is to reduce the number of people dying from cancer in the UK and across the world. One of the central pillars of this is to drive the development and national implementation of the very best treatment options for patients, which maximise cure rates and quality of life, whilst minimising side effects.

Radiotherapy continues to be one of the most important treatments for cancer patients. Its use is likely to increase in the future, as cancer incidence rises, as new and improved radiotherapy technologies are introduced and as research demonstrates how patient outcomes could be improved by combining radiotherapy with other treatments.

However, the number of patients receiving radiotherapy, and the length of time patients are waiting for radiotherapy, continue to be below optimum. Patients outside the UK have better access to newer technologies. For this reason, Cancer Research UK has commissioned this 'state of the nations' report, for the first time bringing together data from across the nations of the UK, setting out the challenges in each of the four nations and making recommendations for change.

Cancer Research UK's interest in ensuring that the UK achieves a world-class radiotherapy service is evident not only in this report's recommendations for current services and policymakers. It is also reflected in the Charity's increasing commitment to radiotherapy as an area of cancer research.

Drug discovery and development have been traditional strengths in cancer research in the UK, but over recent decades radiobiology and radiotherapy research suffered from historically lower levels of funding. Cancer Research UK's five-year strategy, published in November 2008, identifies radiotherapy as an area of unmet research need and a key target area for future research funding.

Cancer Research UK has a long history in radiotherapy research and is looking not only to increase investment in research, but also to influence public policy to improve the radiotherapy services available to patients.

The aim of this report is to provide a comparative overview of the current plans for radiotherapy services across the UK, with an outline assessment of progress and performance against these.

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CANCER RESEARCH UK

Executive Summary

In recent decades it was widely believed that radiotherapy would not play a key role in cancer treatment in the future, being eclipsed by advances in chemotherapy and immunotherapy. This resulted in an under-investment throughout the UK (and in other countries across the world) in radiotherapy services.

Radiotherapy has, however, continued to be integral in treating and curing cancer, and clinical demand currently outstrips capacity. Given the considerable increases in cancer incidence that are projected in all of the UK nations over the next decade and beyond, ensuring capacity meets demand is likely to be increasingly important.

Since the turn of the 21st century, all the UK governments have recognised that significant increases in radiotherapy capacity are needed if future demand is to be met. Between 2005 and 2007, reports were published in England, Scotland and Wales, with the aim of improving radiotherapy services. The reports all concluded that increasing workforce and equipment capacity would be crucial in meeting current and future demand. The Northern Ireland Executive has also begun to consider how to expand services further.

Now that the national radiotherapy planning reports are several years old this 'state of the nations' report examines progress on these recommendations, and those measures being taken in Northern Ireland. The report focuses on the key issues of patient access to radiotherapy,[i] and levels of staffing and equipment in the radiotherapy services, as well as considering the public profile of radiotherapy in the UK.

It is estimated that around half of all patients should receive radiotherapy as part of their treatment – within a defined time period. Good measures of radiotherapy output are therefore waiting times and patient 'access rates'.

Access rates throughout the UK are currently still well below the estimated 50% optimum level.

Waiting times standards are now in place in all of the UK home nations. The Joint Council for Clinical Oncology (JCCO) standards, set in 1993, provide a benchmark for radiotherapy treatment waiting times, but significant variations in compliance exist across the UK. In addition, these are limited to first treatments only, meaning that the vast majority of radiotherapy treatments are not covered. Progress is being made in England, where, by the end of 2010, standards will be extended to include the need to commence radiotherapy treatments within 31 days of decision to treat. This will be a substantial undertaking for the radiotherapy services.

There has generally been good progress towards implementing recommendations to increase the number of linear accelerators ('linacs'), the machines most commonly used to deliver radiotherapy treatment for patients with cancer. However, there are real challenges to be faced in the retirement and necessary replacement of older machines and how this is being planned.

There has also been good progress in increasing workforce capacity in recent years. Interviews conducted for this report highlighted that workforce issues are beginning to be resolved, but this momentum must be maintained. Workforce capacity is of particular importance for the expansion of overall radiotherapy capacity – sufficient staff are required to operate new pieces of radiotherapy equipment.

Success requires co-ordinated effort within the home nations, for example in introducing the four-tier career framework for radiographers. While government intentions may be good, progress will not be made without the NHS rising to the challenge at local level.

[i] not including brachytherapy

National co-ordination should enable local initiatives to address the variations in access to and need for services. There is also a need for greater focus on up to date published information about the planning, co-ordination and (in England) commissioning of radiotherapy services.

National reports that chart progress would be useful. To complement this, radiotherapy outcome information should be collected and made available, and incorporated into a nationally agreed radiotherapy dataset. Ultimately, good data on radiotherapy activity will help governments and radiotherapy providers to determine if they are achieving real improvements. Unfortunately, obtaining reliable data is currently problematic.

The integration of new radiotherapy technologies will be another important aspect of any future-focussed radiotherapy service. While progress has been made on introducing some new technologies, notably intensity modulated radiotherapy (IMRT), there needs to be a greater focus on making this available to all patients for whom it provides benefits and on introducing systems to support the uptake of other new and emerging technologies, such as proton therapy, where appropriate.

The UK needs to continue to undertake high quality research to understand further cancer indications in which the newer technologies may provide a real benefit that justifies their implementation.

Any vision for future radiotherapy services will need to encompass all of these elements. It will also need to recognise that radiotherapy will remain a major treatment modality for cancer for many decades to come and that its efficacy and cost-effectiveness are likely to increase, as it is combined intelligently with new drugs and as more accurately targeted technologies for delivery are developed.

Finally, it cannot be hoped that the high quality of the UK's radiotherapy services will be widely recognised unless the public hears about it and until it becomes "front of mind" as a key contributor to increasing cancer survival. Raising the profile of radiotherapy in the wider world will also serve to propel the other recommendations in this report.

It is crucial that momentum, commitment and investment be maintained. Continued – and in some cases, urgent – action is required to ensure that all cancer patients in the UK who might benefit from radiotherapy are treated in a timely fashion, and have access to world-class radiotherapy services.

Conclusions and recommendations

The progress that we have seen across the UK since the national radiotherapy planning reports were published clearly demonstrates the importance of careful planning in the delivery of a service as complex as radiotherapy. To maintain this progress continued action is needed to address shortages in capacity, both in terms of workforce and equipment.

Whilst it is important that we do not introduce unnecessary bureaucracy into our radiotherapy services, we do want a service that is made more efficient by being better planned, and those delivering services made more accountable. Only in doing this can we ensure that all patients who may benefit from radiotherapy are being offered this treatment option – within acceptable waiting times.

In addition to maintaining momentum on the current issues, all UK governments should be looking ahead to longer-term requirements to maintain world-class radiotherapy services. National governments in England, Scotland and Wales should ensure implementation of all recommendations in the national radiotherapy planning reports, within agreed timeframes. Despite an overall good service, Northern Ireland is some way behind the other nations of the UK in publishing plans for service improvements and future radiotherapy needs.

It is essential that cancer patients have equitable access to radiotherapy and that provision is tailored to local needs. There is a high level of variation between the level of radiotherapy being delivered across the nations that cannot be explained by factors such as higher incidence of cancer in certain areas. Good data capture and communication are crucial for progress to be charted and services to be benchmarked against each other. It is clear that current datasets are lacking in a number of areas. Effort is needed to address this.

Public awareness of the role that radiotherapy plays in the treatment of cancer is low. A campaign is required with the aim of increasing public awareness of available and potential radiotherapy treatments, as well as the efficacy, safety and cost-effectiveness of radiotherapy and the importance of adequate funding for radiotherapy services.

Recommendation 1: Planning for the future
All UK governments should produce a rolling ten-year plan, setting out a vision and strategy for future radiotherapy services, which should be revised every few years.

The strategy should set out plans for linac replacement and progress towards fractionation and service delivery targets.

Recommendation 2: Measuring success
All UK governments should introduce datasets for the reporting of fractionation, waiting times, access, and patient outcomes. The routine collection of benchmarked radiotherapy data, like that being developed in England, should be obligatory for radiotherapy services across the UK.

Radiotherapy datasets should also incorporate a measure of outcome, to be co-ordinated through the work of the National Cancer Intelligence Network, the results of which should be made available to local providers and the public.

Recommendation 3: Ensuring equity in access
Local radiotherapy providers should be carrying out demand modelling based on differences in cancer incidence on a region-by-region basis. Commissioners, PCTs, SHAs and networks should work with local providers to publish plans for their services, to be updated with progress every few years.

Cancer networks, with guidance from the Department of Health, should work with SHAs and Trusts to ensure that they have plans in place to meet the 2010 radiotherapy waiting times standard and work with those that are under-delivering, to increase their radiotherapy provision.

These plans should include means of sharing best practice in service improvements such as the '3SI approach' and success against service delivery targets, waiting times and patient access rates at the local level.

Recommendation 4: Training the radiotherapy workforce
A national career promotion strategy should be introduced across the four nations of the UK – led by the Society and College of Radiographers and the Department for Business, Innovation and Skills – with a focus on therapeutic radiography. This should include measures of success in implementation of the four-tier skills model, at both national and local levels, and the establishment of Virtual Environments for Radiotherapy Training (VERTs).

In addition a review of clinical oncologist specialisation in the UK should be led by the Royal College of Radiologists and the Royal College of Physicians and involve all key stakeholders.

Recommendation 5: Integrating new technologies
NICE should provide national guidance on novel radiotherapy techniques, such as intensity modulated radiotherapy (IMRT) and proton therapy, where there is a clear consensus that the evidence supports their implementation in certain indications. This should be supported by sufficient funding from government to ensure that all patients who may benefit can get access to these new technologies.

The Departments of Health in the four nations should communicate and support planning on a regional basis for new and emerging radiotherapy technologies, so that sufficient capacity can be planned for. Local providers should detail plans for the delivery of IMRT.

Recommendation 6: Communicating with the public
A UK-wide working group should be formed, incorporating all relevant stakeholders, to formulate a strategy and proposal for awareness raising about radiotherapy. This should be led by the national departments of health, with support from Cancer Research UK and the Royal College of Radiologists.