

Dramatic changes to radiotherapy treatments due to COVID-19

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Dramatic changes were seen in the delivery of radiotherapy treatments for cancer during the first wave of the coronavirus pandemic in England.

Much shorter [radiotherapy](#) courses were delivered, treatments were delayed where it was safe to do so and some increases were seen in order to compensate for reduced surgical capacity.

Experts believe the changes reflect an impressive adaption of services by the NHS, and that the overall impact on [cancer](#) outcomes is likely to be modest.

The new research, led by the University of Leeds, with Public Health England and the Royal College of Radiologists, reveals that there was a decrease in radiotherapy treatment courses of 19.9% in April, 6.2% in May, and 11.6% in June 2020, compared with the same months the previous year.

These decreases equated to more than 3,000 fewer courses of radiotherapy between 23 March and 28 June 2020, than would have been expected. However, the missed courses were likely to be due to postponement, where the risk of doing so was deemed low. In June though, it appears that the reduced number of courses may reflect a worrying fall in the number of patients being diagnosed with cancer.

The new study is the first to assess the impact of the [pandemic](#) on radiotherapy services in England and is published today in *The Lancet Oncology*.

A rapid change in practice occurred for [breast cancer treatments](#), enabled in part by the results of a UK trial published just as the pandemic struck, which showed a one-week course to be just as effective as a three-week course for many patients.

Strikingly, the use of the shorter course of treatment went from just 0.2% of all breast cancer radiotherapy courses in April 2019, up to 60.0% of all courses in April 2020.

The switch to shorter courses of treatment was also seen in other types of cancer, and will have helped to keep patients safe and services running during the pandemic.

For some cancer types there was a significant increase in the use of radiotherapy courses compared to the previous year. There was an increase of 143.3% in curative radiotherapy for bladder cancer and 71.3% for oesophageal cancer in May, and 36.3% for bowel cancer in April.

These types of cancer are often treated with surgery. Radiotherapy offers an alternative curative treatment or means to safely delay, and it is likely these timely increases were delivered to keep patients safe when surgery was not possible due to the pandemic.

Radiotherapy guidance during pandemic

Around one in three people with cancer in the UK will receive radiotherapy as part of their treatment. Radiotherapy can be used to try and cure a patient of their cancer, or to treat pain and other symptoms when curative treatment is not possible.

Treatments are often given using daily targeted doses of radiotherapy over a number of weeks. Every cancer is different, and radiotherapy courses vary depending on the type of cancer and the aim of treatment.

In March and April 2020, national and international recommendations were quickly published to ensure the safe and effective use of radiotherapy, as the first wave of COVID-19 hit the UK. The Royal College of Radiologists helped coordinate the writing and publication of many of these guidelines, with researchers from the University of Leeds contributing to many of these.

Lead author of the new study Dr. Katie Spencer, University Academic Clinical Fellow at the University of Leeds and Consultant Clinical Oncologist at Leeds Teaching Hospitals NHS Trust, said: "Radiotherapy is a very important treatment option for cancer, and our study shows that

across the English NHS there was a rapid shift in how radiotherapy was used.

"It is impressive to see that the data closely follows the guidelines published at the start of the pandemic. For cancers such as breast and bowel, shorter, more intensive treatments were delivered to provide similar outcomes for patients.

"Where treatment delay is safe, like in prostate cancer, delays were used to reduce the risk of coronavirus exposure. This was particularly important for older patients, who are more vulnerable to the virus.

"In other cases, such as head and neck, and anal cancers, we saw that the number of radiotherapy treatments hardly changed during the first wave. This was really reassuring, as we know that it is vital that these treatments are not delayed."

Treatments during the first wave

The researchers looked at the number of radiotherapy treatments taking place between February and June 2020 within the English NHS, taken from Public Health England's National Radiotherapy Dataset. They compared the number of radiotherapy courses, and their length, with the same time period in 2019, to look at the effects of the coronavirus pandemic and lockdown.

The largest reduction in treatments was seen for patients aged 70 and above (34.4% reduction in April 2020). This likely reflects concern where patient vulnerability to the risks of coronavirus outweighed the low risk expected from delaying treatment in some settings. For example, treatment for prostate cancer fell 77.0% in April 2020 compared to the previous year, and treatments for non-melanoma skin cancer fell 72.4% the same month.

Co-author Dr. Tom Roques, Medical Director, Professional Practice for Clinical Oncology at the Royal College of Radiologists, said: "This research shows the incredible speed with which radiotherapy services within the NHS were able to adapt their treatment patterns to help protect patients with cancer, whilst coping with reduced surgical capacity due to the global pandemic.

"Despite the intense pressures on the NHS, it was able to effectively adapt radiotherapy treatments, finding alternative treatment options where possible, and continuing its world-leading standards of patient care.

"In the midst of the current COVID-19 surge, NHS capacity is under even greater stress. However, cancer teams are using all of the clinical experience and innovations from last year to ensure radiotherapy services continue to operate and provide the best care possible for patients."

The research team hope their findings will help healthcare providers to understand the indirect consequences of the pandemic and the role of radiotherapy services in minimising those effects.

This research involved contributions from University of Oxford, Velindre University NHS Trust, Norfolk & Norwich University Hospitals NHS Foundation Trust, and NHS England.

Fewer patients presenting

Dr. Spencer, from the University of Leeds' Institute for Health Sciences and the Leeds CRUK Radiotherapy Centre of Excellence, said: "As the country emerged from the first lockdown in June, we saw that the number of patients receiving radiotherapy was still reduced compared to last year.

"The pandemic continues to cause severe disruption for cancer diagnosis and some national screening programmes. This has meant that fewer patients were diagnosed with cancer during the first wave of the pandemic and this is likely to have led to the persistent fall in treatments we see. We know that patients who have their cancer diagnosed early have a better chance of being cured so this is really worrying.

"If people have concerns about their health it is really important that they go and seek help. Radiotherapy services remain up and running and are ready to look after people, as always."

More information: Katie Spencer et al, The impact of the COVID-19 pandemic on radiotherapy services in England, UK: a population-based study, *The Lancet Oncology* (2021). [DOI: 10.1016/S1470-2045\(20\)30743-9](https://doi.org/10.1016/S1470-2045(20)30743-9)

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