

Top ten tips for turning the radiotherapy department green



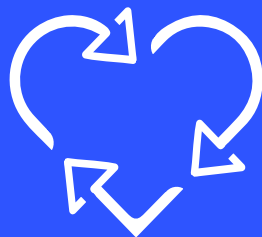
1. Get everyone interested

As with any new project – the more people involved the better. Many colleagues within the department will already have great motivation to improve sustainability so start a conversation and recruit members for a radiotherapy sustainability group. A good way to start this is with a lunch talk or departmental seminar. Involve as many different staff groups as possible (radiographers, physicists, nurses, managers, estates, doctors etc).

This will make any subsequent changes much easier to implement and feedback. Trusts will also have a green group so let them know what you're doing and how you can link into any changes they are making¹.



2. Quick wins to generate momentum

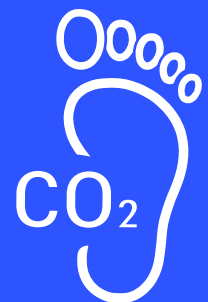


Encourage colleagues to turn lights off (stickers on light switches), reduce paper use and switch off computers overnight. Patients requiring pre-hydration could be asked to bring in reusable drinks bottles. As a further step, patients could be offered digital information via a QR code or link rather than a paper copy.

3. Focus on your carbon hotspots

Patient travel is the biggest contributor to the carbon footprint in the radiotherapy department^{2,3}. Consider the ways in which patients travel to the department, and consider public transport routes when planning new centres.

A review of the use of hypofractionated regimes may also prove useful – as well as being more cost effective, they have the added benefit of reducing patient travel, thereby increasing convenience and reducing the environmental impact of travel.



4. Sustainability supports health and well-being as well as the planet

Encourage staff members and colleagues to cycle, walk and share lifts. Engage with your hospital estates and sustainability teams to make sure there are facilities to support active travel, such as adequate bike racks and showers.

Working from home, bring meals in reuseable cartons, and reducing reliance on single-use plastics (eg plastic cups) can have environmental benefits. Start a culture of green travel for conferences or shared on-line attendance.

5. Think about the 'co-benefits'



With any change, calculate the annual cost saving. This will demonstrate the additional benefits to the Trust, and can be a big motivator for management support for a project. Then measure the environmental impact of your changes ([courses such as this](#) can teach you how to calculate a carbon footprint).

Finally, let the trust communications team know about the financial and carbon savings you've made – they can promote all the amazing green work you and your team are doing. Make sure you include this in the promotion!

6. Acknowledge that producing sustainable change is a challenge

Healthcare workers are overstretched and pressured, and sustainability can sometimes feel like a low priority. Sustainability measures can reduce workload in the long-term and in the short-term can be made easier for people, eg accessible recycling bins, global switch to recycled paper. Converting carbon savings into an easy-to-understand format is a great motivator. Celebrate and promote any achievements made to maintain morale.



7. Get to know your LINACs

Linacs are energy intensive machines^{2,3}. The idle time of the linac should be minimised by efficient use when it is turned on and switching it off when not in use. This will also reduce sulphur hexafluoride (SF₆) leakage, which is a gas used in linacs with a high global warming potential⁴.

Even a small leak of this gas could have a significant carbon footprint. SF₆ leaks can be minimised, and it can be captured and sent back to the manufacturer for recycling.

8. Don't forget the drugs

Many supportive and chemotherapy drugs are prescribed and supplied within the radiotherapy department. There is a carbon footprint behind the manufacturing and supply of these – if they aren't made up on site, consider whether delivery could be made more sustainable, for example by using a cycle courier⁵.



These pharmaceutical agents may also enter the natural environment: several studies have identified traces of cytotoxic cancer treatments in samples taken from rivers and sea water in the UK^{6,7}. Review medications to ensure that all those prescribed are being used and encourage patient to bring in any unused medications to dispose of safely⁸.

9. Delete your data



A recent study has found that servers' emissions represent 4.7% of the total emissions³, mainly due to the large amount of data stored for long periods of time. The average amount of data stored per radiotherapy treatment in this study was 3GB.

In England, Wales and Northern Ireland, it is law that hospital records for adults should be retained for at least eight years after the conclusion of treatment or death^{9,10}. In reality departments often hold data for long beyond this. Consider deleting data based upon the date of the last visit, the date of death and the type of data.

10. Celebrate your progress



Turning a radiotherapy department green can be a big learning curve for everyone involved. It is immensely rewarding to see change coming into effect, momentum building and colleagues starting to support your work. Let the Radiotherapy Board environmental sustainability group¹¹ know how you are getting on!

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The Royal College of Radiologists
63 Lincoln's Inn Fields
London, WC2A 3JW, UK



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+44 020 7405 1282
enquiries@rcr.ac.uk
rcr.ac.uk

Instagram X @RCRadiologists



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