

Environmentally Sustainable Radiation Oncology: Can We Turn the Tides?

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It is irrefutable that our planet and human health are increasingly impacted by a changing climate. Around the world, numerous sectors are actively participating in adaptation and mitigation efforts to reduce the environmental impact of daily practices and lessen the burden on human health.¹ In the US, the health care sector accounts for approximately 8.5% of greenhouse gas (GHG) emissions, with hospitals consuming, on average, more than any other type of nonresidential building.² Governments, hospitals and health systems, domestically and around the globe, have committed to reduce health care emissions and address issues of environmental injustice.³ Accordant actions include: analyzing waste streams and segregation practices, monitoring operating room temperatures, creating “green” travel policies, developing device-reprocessing programs, recycling electronic waste, implementing climate-smart supply chains, using locally sourced food services, and establishing climate resiliency community-based programs.^{1,4}

As radiation oncologists in training, we feel obligated to not only advocate but actively participate in transitioning to sustainable practices within our field and the broader oncology community. The Global Health Subcommittee

within the Association of Residents in Radiation Oncology has established the Climate Health, Equity, and Sustainability Taskforce (CHEST) to foster united awareness, action, and collaboration. Broad-reaching opportunities and areas for future focus include, but are not limited to the following:

1. Develop and disseminate climate health and oncology educational tools.
2. Quantify GHG emissions associated with current radiation therapy.
3. Reduce clinical and procedural waste.
4. Practice sustainable resource consumption.
5. Advocate for decarbonization of energy sources within the health system.
6. Identify opportunities for improved equipment/departmental energy efficiency (eg, machine idle time and sequence of treatment delivery).
7. Collaborate with industry partners to align machine design, production, and operations with sustainability goals.

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8. Partner with suppliers to increase the availability of reusable products when possible (eg, immobilization devices and procedural equipment).
9. Address issues of environmental injustice and health inequities exacerbated by climate change.
10. Design and implement programs to promote climate health equity and build climate resiliency among vulnerable populations.⁵

In accordance with national and international societies and other medical specialties (including the American Board of Radiology) who have declared commitments toward environmental stewardship, we as residents make this call to action within radiation oncology and our professional society.³ We aim to bring climate health, equity and sustainability to the forefront of current discussions. Radiation oncologists have an urgent but

timely opportunity to actively engage and become leaders in creating a more equitable, sustainable, and healthy future for our communities, patients, colleagues, and generations to come.

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