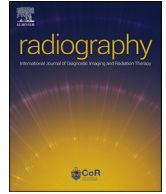




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Guest editorial

Impact of the COVID-19 pandemic on Radiation Therapy Practice: A Catalyst for Research



The respiratory illness officially named Coronavirus or COVID-19 was first detected in Ireland in February 2020¹ and continues to affect the daily operation of the Irish healthcare system. Ireland's initial response to the pandemic included granting additional funding to the public health service (HSE), launching a national recruitment drive for the public healthcare sector and, very significantly, improving the partnership with private hospitals to improve capacity.² For almost all healthcare systems, measures such as restrictions on hospital visits, postponement of elective procedures and the incorporation of telemedicine into care have been widely adopted. Ireland's temporary suspension of cancer screening services in March 2020, in accordance with government advice, is consistent with the approach of many countries within the International Cancer Screening Network.^{3,4} This action, combined with reduced presentation to General Practitioners (GP), limitations on capacity at points of referral, and staff redeployment across the healthcare system has contributed to fewer referrals to rapid cancer access clinics, attendances, and subsequent treatments.^{5,6} Interruption of these vital services has delayed diagnosis and may result in an increased incidence of more advanced cancers in the future.^{7,8} Alkatout and colleagues⁹ reported "the COVID-19 pandemic could challenge the resilience of health programs in oncology" as patients with a more advanced diagnosis will require more complex care with potentially graver outcomes. How will this potentially impact on the day-to-day life of radiation therapists (RTTs) in the future?

Hypofractionation

Current estimates suggest that radiation therapy (RT) is recommended as a component of care for 50% of oncology patients.^{10,11} Traditionally, a dose per fraction of 1.8–2Gy was a feature of dose fractionation regimens for many treatment sites.¹² In response to COVID-19, moderate to ultra hypofractionated RT was discussed within the radiotherapy community.¹³ Practice recommendations subsequently emerged from various countries and consensus groups for a range of sites.^{13–16} Many centres worldwide have adopted the FAST-FORWARD ultra-hypofractionated regimen for early-stage breast cancer.^{17–20} Increases in hypofractionation were also seen for palliative treatments, which is in keeping with evidence for most palliative indications.¹⁵ Potential benefits to patients include convenience, reduced treatment-related financial burden and biological advantages; as a community we await further research on the impact of this change in fractionation to

service delivery, patient experience, treatment efficacy and toxicity data.

Alterations in working patterns

Working patterns for the Radiation Oncology team, including RTTs, changed in response to the COVID-19 pandemic. The European Society for Radiotherapy and Oncology (ESTRO) Radiation Therapist Committee (RTTC) published recommendations for practitioners in 2020 which included remote working where possible, a pivot to online team meetings and staggered onsite work schedules.²¹ Recent evidence indicates that working remotely was introduced for medical physicists, dosimetrists and the wider medical team.^{22,23} Evidence also suggests that access to remote working is not universally available and is limited in low- and middle-income countries (LMICs) and developing countries.^{24,25} In many industries, hybrid working or a full time "return to the office" policies have been introduced. Research in this area is largely retrospective and focuses on changes already implemented. Little is known about the lasting changes to radiation oncology work patterns, if any, and changes specific to RTT work patterns. Future research may focus on the effect of alternative practice options for service delivery and on the job satisfaction, retention and recruitment of RTTs.

Tele-medicine

Patients attending RT departments are more likely to be immunocompromised and may demonstrate worse outcomes following infection by the COVID-19 virus.²⁵ Telehealth was adopted in many radiation oncology departments with the aim of limiting the time patients spend in RT departments.^{26,27} Although the technology required to facilitate telemedicine has been available for years, the COVID-19 pandemic provided the impetus to adopt these technologies and integrate them into the radiation oncology patient pathway. Several processes can be supported by telemedicine including patient assessments, decision to treat and prescription^{28–32} and immobilisation and image acquisition,³³ volume delineation,³⁴ treatment planning,^{35–37} setup, verification, treatment delivery³³ and follow-up. Virtual consultations with members of the radiation oncology team can be delivered prior to commencement of treatment, during treatment or and/or following treatment cessation. Therefore, the inclusion of

telemedicine into radiation oncology practice is varied. Despite the potential for telehealth interactions as a substitute for “in person” appointments, there remain difficulties with assessment of toxicities, for example skin toxicity.²⁷

The widespread adoption of telemedicine practices has spurred research into its implications for patients and providers. Ongoing studies, including the “CORONA-SHIELD” study (NCT04357574), the “TIPOPS” NCT04936243 study and an observational study at MD Anderson (NCT05496972) will help to identify the role that telemedicine will play in radiation oncology care in the future. The CORONA-SHIELD trial will primarily assess radiation oncology healthcare providers implementation of, and perception of telemedicine. The prospective, randomised TIPOPS study will incorporate the experiences of patients with early-stage breast cancer and prostate cancer following either a face to face or remote follow up consultation. Despite the potential of these studies to add to the evidence base, many unknowns will persist, including if radiation oncology providers have reverted to previous practices or are continuing with telemedicine adaptations to pre-pandemic practice and, if so, what format these adaptations take. It is essential the future research in this area should focus on patient reported outcome measures and the inclusion of caregivers. Research needs to address the implementation of telemedicine for patients with complex care needs attending for radiation therapy, where multiple professionals are involved in reviewing patients routinely during the delivery of radiation therapy course, for example patients attending for treatment for head and neck cancer.

Education

The experiences of student healthcare professionals during the COVID-19 pandemic varied between countries and educational institutions.^{38–40} In Ireland and the United Kingdom, the national regulators of multiple healthcare professions issued guidance to education providers, detailing considerations for students undertaking clinical placements.^{41,42} Cancellation of placements was common, particularly at the beginning of the COVID-19 pandemic.³⁹ A current unknown is the specific adaptations to educational programmes and to what extent those changes will persist into the future. Changes to academic teaching and entering placement sites at a time of upheaval have the potential to unsettle students. Research conducted among student diagnostic radiographers in Ghana⁴³ and the UK,⁴⁴ suggests that studying at this time has had negative effects, but also may have instilled a feeling of pride. It is possible that this may be similar for student RTTs; questions remain regarding the effect of undergoing RTT training at this time and what this will mean for the graduates' careers, including retention in clinical practice.

The COVID-19 pandemic has a continuing effect on patient care and day-to-day practice of radiation oncology in Ireland and the world. Ongoing research will assist our understanding of the effects of the COVID-19 pandemic and the changes it prompted on radiation oncology staff and patients to further inform our future practice.

Conflict of interest statement

The authors have no conflicts of interest to declare

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