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Editorial

Embracing Skill Mix in the Clinical Oncology Workforce – Capturing Impacts of Consultant Therapeutic Radiographers in the UK

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About 3.7 million new cancers are diagnosed annually in Europe, with more than 1.9 million associated deaths [1]. Radiotherapy is an essential treatment modality in cancer management and is recommended in more than 50% of cases [2,3]. In the UK, there is a growing demand for radiotherapy services due to the reported 3% increase in cancer prevalence per year [4]. This increase in demand is set against a background of declining growth in the non-surgical oncology medical workforce. Vacant consultant clinical oncologist posts have more than doubled over the past 5 years to a 10% vacancy rate in 2019, with this shortfall predicted to rise over the next 5 years [5]. An emphasis on skill mix and collaboration with the multidisciplinary team has been highlighted as one way to help meet demand and patient expectation.

Aligning with the focus on productivity, workforce efficiency and increasing patient expectations, the optimisation of skill mix within a multiprofessional team, including the development of non-medical consultant posts, has continued to be developed in radiotherapy services [6–8]. The first UK consultant therapeutic radiographer (CTR) was appointed in 2003, with the aim to improve cancer services for the benefit of patients [9]. CTRs are individuals who provide clinical leadership within a clinical speciality; and bring strategic direction, innovation and influence through the four domains of practice: expert clinical practice; professional leadership and consultancy; education, training and development; and practice and service development research and evaluation [9,10].

There are currently just under 200 consultant radiographers across both disciplines of diagnostic and therapeutic radiography registered with the Society and College of Radiographers (SCoR). The number of CTRs continues to increase due to the clinical expertise and leadership provided by the CTR to drive forward integration and change across professional boundaries in radiotherapy services. They can innovate new ways to provide services while delivering continuity of care within the increasing cancer workload [9,10].

Limited evidence exists to showcase the wider impact of consultant radiographers on service transformation and patient outcomes [11]. The impact on patients, staff and the organisation can be direct or indirect, immediate or delayed, and

Q1 intentional or unintentional [12]. A consultant radiographer-specific impact framework has been developed to evaluate the individual and collaborative role impact at both the local and national level [13]. In its development, it has been shown that a nursing impact framework is transferable, broadly speaking, to other healthcare disciplines where impact can be measured on patients, staff and the organisation. It is crucial that the impact of the role is not quantified as a way of replacing medical colleagues, but demonstrating the role's positive influence on patient outcomes, education, research and innovative leadership to complement the existing clinical service [13].

Against this background, the SCoR Consultant Radiographer Advisory Group (CRAG) aims to offer evidence to help validate this impact framework, and in so doing, showcase the benefits of the CTR within the radiation oncology

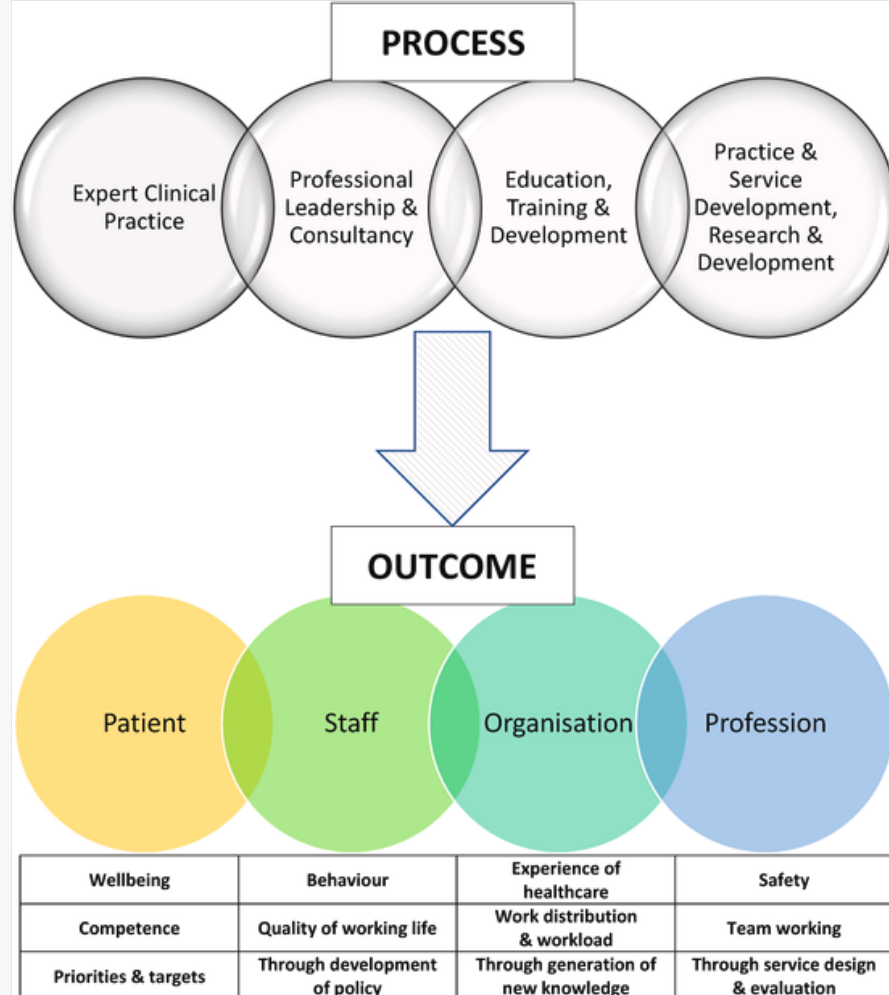
service. The CRAG works with and advises the national professional body (SCoR) on current and future challenges in the profession by providing leadership and ongoing development of advanced and consultant practices in diagnostic imaging and radiotherapy [9].

Consultant Radiographer-specific Impact Framework

Within the impact framework, there are two major components – process and outcome. The process relates to the activities and services that the consultant radiographer provides. These are explored in relation to the four core domains of practice, as previously outlined. The outcome relates to the end result of the provision of care, capturing the impact as a result of the process. As illustrated in [Figure 1](#), the outcome is quantified as the impact on patients, staff, organisation and profession under 12 categories [13].

alt-text: Fig 1

Fig 1



The four consultant radiographer core domains and the 12 impact categories under the consultant radiographer impact framework.

Radiotherapy is a complex process and therapeutic radiographers are the only healthcare professionals qualified to plan and deliver radiotherapy. There are numerous individual but connected stages in a typical radiotherapy patient pathway, in which CTRs can provide clinical leadership to implement change and integration across different professional boundaries. Very often, each 'process' by CTRs covers more than one core domain impacting multiple 'outcome' categories on: patient, staff, organisation and profession. As well as a useful tool for the personal development review

process, standardising the method of impact capture will facilitate national data collection and analysis of the impact of the CTR workforce.

Examples of Capturing Impact of the Consultant Therapeutic Radiographer

The authors of this Editorial are current members of CRAAG who are established within CTR roles in their localities, specialising in either specific tumour sites (N. Roberts and S. Wickers for breast) or radiotherapy treatment modalities (H. Nisbet for treatment toxicity review and Y. Tsang for specialised radiotherapy delivery). For the illustrative purpose of this Editorial, typical example processes by the four authors were evaluated to highlight impact capture through the consultant radiographer impact framework.

For CTRs being established in radiation oncology clinics as radiotherapy clinical and technical experts, it is essential to have their scope of practice defined comprehensively; CTRs can provide their professional consultancy and take in responsibility for radiotherapy patients being directly referred from oncology multidisciplinary **team** meetings. Audits of patient throughput, patient and peer satisfaction have been completed by all of the authors using annual activity reports and 360-degree feedback tools. These metrics help to capture the impact of their roles on: patient, staff, organisation and profession. This continuous audit process also allows for a comparison of clinical activity against peers and medical colleagues to gauge the impact provided, if the employer so chooses.

Under the domains of education and service development, examples of process can be illustrated by either developing a new radiographer-led sexual health clinic service (H. Nisbet) or implementing volumetric modulated arc therapy breast boost radiotherapy in breath hold (S. Wickers). Through these two individual development projects, both CTRs have managed to identify the need of the new radiotherapy service and technique through appraisal of current local service provision, systematic review of the literature and alignment with local and national cancer objectives. The implementation plans have included development of project objectives and timelines, service protocols, scope of practice, work instructions, staff training and competency framework. The impact of these processes on patient and staff can be measured by service evaluation through audit and analysis of service/treatment statistics and patient/staff feedback. Presentation of results at local (clinical governance), national and international level (poster and short abstracts for oral presentations at conferences) can further enhance the impact on organisation and profession.

In terms of the research profiles, all of the authors are involved in numerous national radiotherapy trial management groups. The remit of the trial management group is for monitoring all aspects of the conduct and progress of the trials, in order to ensure that the trial protocol is adhered to and take appropriate action to safeguard participants and the quality of the trial itself. N. Roberts is the first CTR to act as a local principal investigator for the PRIMETIME trial investigating the safe omission of radiotherapy as directed by immunohistochemical profile in early breast cancer; and S. Wickers is a co-investigator on the PARABLE proton therapy trial. Currently, Y. Tsang is a member of the executive group and the co-chair of workstream phase III trial and methodology of the National Cancer Research Institute Clinical and Translational Radiotherapy Research Working Group (NCRI CTRad). All of these process examples showcase the CTRs' national expert profiles in technical radiotherapy and research. Through the research trial and CTRad activities, CTRs play a major role in developing national audits and consensus statements on the use of advanced radiotherapy and developing a portfolio of practice-changing trials.

Continuous Evolution of Consultant Therapeutic Radiographer Practice

With the growing demand for cancer services and shortage of the non-surgical oncology medical workforce, there is an increasing number of CTR posts being established. Although this might infer the successful introduction of CTR roles for meeting the local service demand and patient expectation, it is essential to capture the impact of the role, not only with a clinical focus, but also across academic and research practice boundaries. It is hoped that in formalising an approach to capturing impact, a degree of standardisation in role function can be fostered nationally.

More recently, the acknowledgement of the increasing influence of the non-medical consultant workforce on the health service has culminated in a nationally agreed capability and impact framework [14]. Although aimed at all nursing and allied health professional groups, the core elements of the framework are borne out in the adapted consultant radiographer impact toolkit and within the CTR examples provided here.

Both toolkits highlight the need to capture impact against the four core domains of consultant practice and through a combination of: key performance indicators, 360-degree feedback, clinical audit and development of new knowledge. The 'snap shot' examples offered here show the range of metrics and outputs currently being used to record impact of the CTR role. In turn these impact assessments can evidence the value of these roles in and across organisations while helping to promote the broad scope of practice to the wider oncology healthcare team and service leads.

In the last decade, there have been rapid changes and progressive developments in the technology and equipment used for planning and delivery of radiotherapy. It is crucial to continue developing and adapting the CTR roles in order to facilitate the delivery of advanced radiotherapy that meets with the service demand. Careful considerations should be given to the long-term developments of the CTR to ensure that they stay relevant and continue to have an impact demonstrating innovations with improved patient care.


Conflicts of Interest

The authors declare no conflicts of interest.

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 The corrections made in this section will be reviewed and approved by a journal production editor. The newly added/removed references and its citations will be reordered and rearranged by the production team.

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