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Research Article

Competency in Quality: Defining the Scope and Nature of Quality Competencies for Radiation Oncology Residency Programs

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ABSTRACT

Introduction: Quality and safety in radiation treatment have garnered increasing attention in recent years. With the introduction of the CanMEDS 2015 Physician Competency Framework, incorporation of patient safety and quality improvement will be required across all seven established physician roles for radiation oncology residents. An appreciation for the competency areas relevant to radiation oncologists (ROs) in the quality and safety domain is thus needed to inform training in this area.

Methods: Semistructured interprofessional focus groups were held with ROs, medical physicists, and radiation therapists to ascertain the scope of quality principles required of newly certified ROs, to identify current teaching best practices, and to define required competencies in this area. Audio recordings were transcribed verbatim and data analyzed iteratively and coded using a constant comparison method.

Results: Three focus groups were held with 20 participants overall, and an average duration of 68 minutes (range 47–81 minutes). Participants found it difficult to define quality but noted that for residents it might encompass competencies in peer review, incident and change management, and quality culture. Although addressed in various ways in current residency programs, it was thought that explicit acknowledgment of relevant "nonmedical expert" quality competencies would ensure adequate attention in residency.

Conclusions: Quality and safety are important concepts in radiation oncology, warranting attention in residency training to develop the knowledge, skills, and behaviour necessary in practice.

RÉSUMÉ

Introduction : La qualité et la sécurité des traitements de radiation ont suscité une attention croissante au cours des dernières années. Avec le dévoilement du *Cadre de compétences CanMEDS 2015 pour les médecins*, l'incorporation de la sécurité du patient et de l'amélioration de la qualité devient une exigence dans les sept rôles du médecin pour les résidents en oncologie. Il est donc nécessaire de comprendre les champs de compétence dans le domaine de la sécurité et de la qualité qui son pertinents pour les radio-oncologues afin d'éclairer la formation dans ce domaine.

Méthodologie : Des groupes de discussion interprofessionnels semi-structurés ont été tenus avec des radio-oncologues, des physiciens médicaux et des radiothérapeutes afin de recenser les pratiques exemplaires actuelles en enseignement et définir les compétences requises dans ce domaine. Les enregistrements ont été transcrits mot à mot et les données ont été analysées de façon itérative et codées au moyen d'une méthode de comparaison constante.

Résultats : Trois groupes de discussion ont été tenus avec 20 participants au total, pour une durée moyenne de 68 minutes (plage de 47 à 81 minutes). Les participants ont trouvé difficile de définir la qualité, amis note que pour les résidents cela pouvait comprendre des compétences en révision par les pairs, en gestion des incidents et du changement et en culture de qualité. Bien que ce soit abordé de différentes façons dans les programmes actuels de résidence en médecine, les participants croient qu'une reconnaissance explicite des compétences en qualité « autres que celles d'un expert médical » permettrait d'accorder à cette question une attention adéquate dans le programme de résidence.

Conclusions : La qualité et la sécurité sont des notions importantes en radio-oncologie et méritent qu'on y accorde suffisamment d'attention dans les programmes de résidence pour permettre le développement des connaissances, des compétences et des comportements nécessaires dans la pratique.

Keywords: Quality and safety; competency; training; radiation oncology residency

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Introduction

Quality and safety in radiation treatment have garnered increasing attention in recent years. Highly publicized incidents [1, 2], the overall complexity of cancer care [3], and a focus on personalized, but evidence-based practice [4] have prompted a number of valuable initiatives to optimize the quality and safety of radiation treatment for all Canadians. There is growing recognition that poor quality radiotherapy can lead to poor quality outcomes [5] and that integration of quality programs, metrics, and standards into everyday practice may be as important as other advancements in the treatment of cancer. Although many initiatives relate directly to the delivery of care, such as the activities of the Canadian Partnership for Quality Radiotherapy and efforts of individual and regional cancer programs to standardize care and formalize peer review, there has been little attention to these considerations in precertification education. Lessons learned in other industries with a more established mechanism for training in quality and safety, such as the airline industry [6], are increasingly suggesting that this topic warrants consideration in radiation oncology.

With the introduction of the CanMEDS 2015 Physician Competency Framework, the Royal College of Physicians and Surgeons of Canada articulates the need to incorporate patient safety and quality improvement across all seven established physician roles [7]. This charges each individual specialty with the responsibility to revise its own competency profiles and program curricula to ensure this new focus is addressed. Using an approach that proved successful in developing an imaging competency profile for newly certified radiation oncologists (ROs) [8, 9], a collaboration was undertaken between educators in radiation medicine disciplines and the Canadian Partnership for Quality Radiotherapy to define the elements of competency inherent to quality in radiation oncology. The first step in this process was to seek an appreciation for the competency areas relevant to ROs in the quality and safety domain, through consultation of experts in this area. This article reports on phase I of a larger study and serves as a needs assessment. Resultant themes will be included in a broader environmental scan for potential competencies, and then reviewed in a consensus-building exercise to develop a final comprehensive competency profile.

Methods

Qualitative Method

Interprofessional focus groups were employed to generate a broad preliminary picture of the competencies required of ROs. As a need assessment, intended to identify an inclusive set of topics to be considered in subsequent phases of this study, no qualitative framework for theory generation or testing was used. Focus groups were selected over interviews as the qualitative tool of choice because they afforded the opportunity to engage a diverse set of viewpoints, highlight areas of agreement and dispute regarding professional responsibilities in quality, and allow emergent themes to be explored and elaborated with minimal involvement from the moderator, relying instead on participants' ideas inspiring contributions from others. Focus groups are deemed an appropriate choice when the subject matter is not particularly sensitive in nature, and participants are not likely to feel intimidated or unduly influenced within the broader group structure [10, 11].

Study Population

A purposive sample of radiation medicine professionals involved in the technical delivery of radiation therapy care was considered for inclusion. These included ROs, radiation therapists (RTTs), and medical physicists (MPs). As per professional designations in Canada, RTTs included treatment planning (dosimetry) responsibilities and roles. Inclusion was limited to these professional groups as the three main professions involved in the technical delivery of radiotherapy care. Although nursing, social work, and a spectrum of other professional groups are integral to the broader cancer patient journey, quality and safety in the planning and delivery of radiotherapy presents a unique set of considerations, which were the desired focus of this investigation. The inclusion criterion was that participants either have unique insight or roles in quality management or leadership, or in trainee education. Select residents and fellows were chosen based on an interest in quality issues or perceived insight into their academic programs. Potential participants were chosen from among those within a single radiation treatment program at an academically affiliated institution (group A) or those scheduled to attend the Canadian Organization of Medical Physicists' Canadian Winter School (www.comp-ocpm.ca/winter-school), focused on quality issues in radiation medicine (groups B and C). The context of the latter two groups maximized the opportunity to ensure broad geographical representation and participants from both major urban academic health centres and smaller regional cancer centres.

Data Collection

Institutional Research Ethics Board approval was granted before recruitment. An e-mail invitation to participate in the study was sent to potential participants. Efforts were made to accommodate all who responded. Representation of profession was considered in the composition of scheduled focus groups and, as per optimal focus group guidelines, a maximum of eight participants were scheduled in each group. Focus groups were held at a mutually agreed on time in the case of group A, or at predetermined times during scheduled breaks in the conference (groups B and C). Each focus group was led by the same trained investigator, an RTT.

Focus groups were semistructured and consisted of guiding questions designed to: ascertain the scope of quality principles required of newly certified ROs, identify current teaching best practices, and define required competencies in this area. Although an interview script was used that articulated those