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# Technical Innovations & Patient Support in Radiation Oncology

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## Editorial

### Introduction to the ESTRO European Qualifications Framework (EQF) 7 and 8: Benchmarking Radiation Therapist (RTT) advanced education



M. Coffey\*, M. Leech, on behalf of ESTRO, the RTT committee

Applied Radiation Therapy Trinity, Discipline of Radiation Therapy, Trinity College, Dublin 2, Ireland

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#### ABSTRACT

Innovations in radiotherapy practice continue to develop and expand. With this comes a requirement for suitably educated Radiation Therapists (RTTs) to expand their scope of practice and work at advanced levels within radiotherapy departments. This paper introduces the ESTRO European Qualifications Framework (EQF) 7 and 8 benchmarking document, where the distinction between levels 7 and 8 is discussed. It details the evolution of the profession of RTT from graduate to extended and advanced roles. As professionals within the radiation oncology team, this advancement brings with it the necessity for appropriate education at EQF levels 7 and 8 in order to ensure the knowledge base, critical analysis skills and safe practice of RTTs in such roles and to drive the profession forward for the future.

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## Introduction

This paper accompanies the European Qualifications Framework (EQF) Level 7 and 8 benchmarking document in this edition of Technical Innovations and Patient Support in Radiation Oncology and follows on from the EQF 6, published in 2016, which outlined RTT graduate competences [1]. The EQF 7 and 8 benchmarking document defines the competences that RTTs should have to work at an advanced or specialist level in accordance with the second and third cycles of the Framework of the European Higher Education Area [2]. For most of the roles defined in the document there are two distinct options: role extension and advanced practice often with varying educational requirements. Level 7 indicates extended practice and is supported by postgraduate diploma education. Level 8 reflects advanced practice and is underpinned by Masters or Doctorate level education. This benchmarking document reflects the advanced knowledge skills and competences necessary for specialisation and career progression.

## Background

Radiotherapy has, and still is, increasing in complexity as a result of ongoing technical developments, new approaches to treatment delivery and the potential for integration with biological and molecular agents that will be commonplace in clinical care

within a decade. Some of the new technologies include, MRI linear accelerators and treatment approaches that are rapidly becoming routine practice in radiotherapy departments include stereotactic brain and body irradiation and adaptive radiotherapy. The rapid development of proton centres adds a further dimension to be considered. Several of these new approaches involve the delivery of a very high focused dose to a very small volume often delivered at a faster rate and are associated with a much higher potential for error. This changing face of radiation oncology with increasingly complex treatment approaches is now, more than ever, dependent on an appropriately educated, competent workforce to ensure accurate preparation and delivery of treatment within a safety aware environment for all patients.

The developments referred to have the potential to improve patient outcome and provide more efficient and effective service delivery. However, to fulfil this potential, several factors need to be considered. Staff shortages, particularly with respect to RTTs, are recognised worldwide and prevent optimum use of the available resources. Appropriate education and the potential for career progression have been identified as important factors in recruitment and retention by many healthcare professionals impacting directly on the quality service delivery. “Job model research has shown that a job needs to do more than supply a salary – it needs to supply the opportunity for personal growth and self-esteem. Skill variety, significance of tasks and autonomy are core dimensions identified in job enrichment” [3].

The ultimate goal of radiotherapy is improved patient outcome. The graduate competences defined in the level 6 benchmarking document are key to achieving this goal. However from the service

\* Corresponding author at: Discipline of Radiation Therapy, Trinity Centre for Health Sciences, St. James's Hospital Campus, Dublin 8, Ireland.

E-mail address: [mcoffey@tcd.ie](mailto:mcoffey@tcd.ie) (M. Coffey).

provision perspective, efficiency and effectiveness are also key considerations. Unfortunately, all too often, the key consideration in this context is financial which does not always bring about the desired results. Efficient and effective service delivery is also influenced by factors such as sustainability, adaptability and staff retention. Studies in the USA and Canada [4] have shown the benefits of advanced practice on service delivery encompassing some of the factors referred to above. They demonstrated a positive impact on recruitment and retention, enhanced continuity and coordination of care, better utilisation of staff skills and expertise and, as a consequence, more targeted use of the skills of other professions, a cost-effective method of delivering high-quality services, improved team work and interdisciplinary collaboration and more appropriate skill-mix within clinical teams. This, in turn, facilitates increased emphasis on prevention, education and health promotion and increases patient and family satisfaction with services.

### The RTT as a professional

Professional recognition for RTTs includes recognition of both title and role, which, in turn, also defines responsibilities. This has many implications for service delivery and the development of education programmes to support best practice. Failure to recognise the profession of RTT inhibits the development of appropriate education and training programmes and associated certification, limits the potential for research to improve patient outcome and impedes the EU aspiration of free movement of personal across Europe.

The current situation in Europe for RTTs is extremely diverse and the role is not well recognised or defined in many countries. This disparity inhibits professional development, the introduction of academic programmes and impacts on the quality of radiotherapy delivered to patients. It also leads to difficulties in recruitment and retention which, in turn, impact directly on professional status, development of appropriate education programmes and workforce stability.

Gillan, Di Prospero, Harnett and Holden [5] discuss the origin of RTT as a profession comparing it to similar developments in other allied health professional areas responding to practice evolution and new practices. "Achievements in other health related areas have been significant with clear career progression defined at an international rather than national or local level. The advanced practice nurse model is one example of the benefits of this approach [4]."

As discussed previously the introduction of specialist roles has been shown to have a beneficial effect on many aspects of patient treatment and outcome. Cancer Care Ontario has pilot tested 5 different AP roles for Radiation Therapists (AP4RT Project 2004-onwards) and has shown that the 'experience with advanced practice roles demonstrates clearly that these roles can improve the quality and efficiency of patient services, address critical health human resource issues, address key gaps in service delivery in Ontario's cancer system, and increase patient and provider satisfaction' [6]. To continue to provide optimum care and to meet the future challenges of service delivery the development of appropriate postgraduate education is necessary.

### Postgraduate education of RTTs in Europe

In countries with established level 6 education programmes RTTs are progressing to MSc and PhD level. Where these programmes have a dedicated radiotherapy faculty or where clinical departments have a strong research profile these qualifications are in radiotherapy specific areas that directly relate to improved practice. In countries where there is a mixed education programme in place with limited or no radiotherapy staff, the lack of specialist

expertise often results in these qualifications having a non-radiotherapy related focus. Such a qualification may be very beneficial to the RTT professionally, but does not necessarily improve the practice of radiotherapy.

This benchmarking document defining higher level practice can be used in conjunction with the level 6 benchmarking document to develop innovative approaches to appropriately defining the content of postgraduate education programmes and to working towards the establishment of a radiotherapy specific faculty responsible for the programme delivery.

### Extended and advanced practice

Currently RTTs are taking on a wide range of specialist, extended or advanced roles and responsibilities in many countries. The extended and advanced competences defined in this benchmarking document reflect the responsibilities taken by RTTs across Europe and internationally and can be supplemented at any time to form the educational basis for new activities in the future. The areas defined within the document are: advanced delineation and volume determination, advanced treatment planning, advanced imaging, quality and risk management, management, patient care and support, brachytherapy, research and education.

### Structure of the defined competences in the benchmarking document

Level 7 & 8 reflect the specialist roles taken by appropriately educated RTTs. It is envisaged that the specialist roles are independent of each other and the RTT will not be required to be proficient in all areas defined in the accompanying tables but should have the requisite transferable skills to adapt to future developments.

Level 7 is described in the Framework as "highly specialised knowledge, some of which is at the forefront in a field of work or study, as the basis for original thinking and/or research, including a critical awareness of knowledge issues in a field and at the interface between different fields" [7]. This description is very relevant for RTTs working at an extended level or in a specialised area underpinning best practice in technical treatment preparation and delivery, the provision of psychosocial care to patients and supporting the development of research for practice. Knowledge at this level underpins the specialised problem-solving skills and competences, stimulates research and innovation and transforms practice through integration of knowledge [7]. These skills and competences enable RTTs to take responsibility for the introduction of change in their working environment, to work at an extended level and participate as an autonomous team member.

Level 8 is described in the Framework as "knowledge at the most advanced frontier of a field of work or study and at the interface between fields" providing the skills and competences of "the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice" [7]. This academic level supports innovation and commitment to actively carry out research and practice improvement. Having knowledge, skills and competences at level 8 enables RTTs to become clinical specialists/advanced practitioners in their area at a national and international level and to drive professional change ultimately benefitting the patient as well as the profession.

### Conclusion

Using this benchmarking document to develop and evaluate current postgraduate education programmes with respect to both

level and content will help to underpin accurate and safe radiotherapy for all patients across Europe.

It is essential that postgraduate education programmes are specific for RTTs and are designed to incorporate the core topics underpinning each defined specialty ensuring dynamic but safe and accurate practice going forward.

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