



Original Article

Promoting a Research Culture among Junior Radiation Oncologists: Outcomes from the Introduction of the Australian and New Zealand Research Requirement in Training



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Abstract

Aim: Since 2005, radiation oncology trainees in Australia and New Zealand have had to undertake a piece of original research during training, and submit a manuscript, as first author, for senior peer-review. Satisfactory completion of this requirement is one component of eligibility to sit the Royal Australian and New Zealand College of Radiologists Fellowship examinations. The purpose of this study was to examine the value of this curriculum requirement, including the publication rates and potential barriers to trainee research.

Materials and methods: An online survey was sent to 116 radiation oncologists/trainees who trained since the mandatory research requirement was introduced (2005–2011). Questions concerned research topics, publications, subsequent research activity, perceptions on barriers to research and aids to conducting research during training. A web-based search of PubMed by author name was carried out to complete and verify publication statistics.

Results: In total, 108 (93.1%) of the 116 trainees across 20 centres who submitted their research papers to the Radiation Oncology Faculty Research Committee were successful in meeting the required standard first time. Half of these trainees ultimately published their paper in a peer-reviewed journal. Of trainees responding to the survey, 62% presented their research at a scientific meeting. Most of the studies were either retrospective (62.3%) or dosimetry/physics projects (10.1%). The main problems encountered in conducting projects were competing clinical commitments and lack of dedicated research time. Notably, long ethics approval processes, lack of supervision and statistical support for projects were not considered barriers.

Conclusion: This mandatory research requirement ensures trainees initiate and complete at least one project during their training. Since the introduction of this curriculum component, half of the research projects have resulted in publication in a peer-reviewed journal. Increased 'protected time' and training in scientific writing and methods may improve publication rates and quality. This first review of the Australian and New Zealand radiation oncology trainee research requirement highlights areas that need to be addressed to further support and foster a research culture among junior radiation oncologists.

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Key words: Curriculum; publication; quality assurance; radiation oncology training; research

Introduction

Participation in, and initiation of, clinical research activities has been central to the ethos of radiation oncology as a speciality in Australia and New Zealand, as in other countries, over several decades. This has created, in many training centres, an expectation that registrars in specialty training take an active part in research activities within their departments, and that they initiate and complete at

least one project during their 5 years of training. This intention was both implicit in taking up an accredited training position in radiation oncology and explicit in that the Royal Australian and New Zealand College of Radiologists (RANZCR) Radiation Oncology Handbook [1] stated the importance of research conducted as part of training. Furthermore, the college established a prize to be awarded annually to the best presentation of original research by a radiation oncology trainee at the annual scientific meeting.

However, there was no formal stipulation at the college level that projects had to be carried out or completed and no means by which this was ensured. The involvement of registrars was often highly dependent on the culture of the institution at which they occupied a training position and

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the degree of mentorship that existed from senior colleagues in this area.

In 2004, members of the Education Board identified this as an issue worthy of further examination, given that there was widespread agreement of the importance of this facet of training, and a growing world-wide emphasis placed on the practice of evidence-based medicine. It was agreed that personal participation and leadership in clinical research should ideally be started early in the process of becoming a specialist, and was such a central element of the professional role of radiation oncologists (perhaps all specialists), that a mandatory requirement should be introduced.

Thus, from 2005, trainees had to submit a manuscript of a 'publishable quality' reporting their original research work, to an experienced research review panel, who were charged with vetting the manuscripts against pre-determined criteria to judge them satisfactory or otherwise. Expected research and critical appraisal skills have since been made even more explicit within the competencies stated within the 'new' RANZCR Radiation Oncology Training Program Curriculum, launched in 2009 [2].

The aim of this study was to evaluate the outcome and success of the formal research requirement in training by quantifying research project publications, as well as reporting the trainee-identified barriers faced in conducting research during training.

Materials and Methods

The Faculty of Radiation Oncology (FRO) has maintained a registry of trainee research submissions since 2005, when the mandatory research project was introduced. This was obtained with permission from the FRO and a database was compiled. The registry consisted of 116 trainees across 20 training centres who had submitted their mandatory research project to the FRO.

Survey

We conducted a cross-sectional online survey using Survey Monkey™ for trainees who had submitted their research paper to the FRO from 1 January 2005 to 31 July 2011. An information e-mail outlining the aim of the survey and the option to not participate was sent to trainees listed on the database. The survey was e-mailed to trainees through the FRO with subsequent reminder e-mails. Non-responders to the online survey were mailed a hard copy. The survey tool was custom designed with a total of 21 questions and consisted of four components (Appendix 1):

1. Baseline training and project data;
2. Research project publications and total publications in a peer-reviewed journal for research carried out during training;
3. Presentation of research projects at national and international scientific meetings;
4. Barriers to, and suggestions for, enhancing trainees' research experience.

The online survey was configured with automatic filters such that if a trainee identified that they had not published their research paper then they were automatically redirected to the next section. The survey was reviewed and tested by members of the FRO as well as five trainees [3]. Most of the questions were designed as closed questions, although there was provision for open comment on some topics.

In addition to the survey, a computer-based search of the PubMed database was carried out to identify publications of the mandatory research paper as well as all other scientific publications by trainees during their training period, with a cut-off date for the end of training set as the date for achieving RANZCR Fellowship. This was correlated with the survey answers. In rare instances where there was a discrepancy between the two methods of data collection regarding publications, the PubMed published data were considered the 'correct' result.

This was a quality assurance study evaluating an aspect of the radiation oncology curriculum and permission to conduct the study was obtained from the RANZCR FRO and the Education Board.

Results

In total, there were 116 trainees across 33 training centres who submitted the mandatory research paper to the FRO between January 2005 and July 2011. Of the 116 respondents who were trainees during the period in question, 79 (68.1%) had obtained their RANZCR Fellowship and 37 (31.9%) were still in the training programme. In total, 82 (70.7%) of the trainees responded to the survey, of whom 52 (63.4%) were currently fully qualified and 30 (36.6%) were still in training.

Trainee Research Publication

A satisfactory pass was awarded to 108 (93.1%) trainees on first submission of their research requirement by the FRO Research Committee. The total number of resubmissions during this period was eight (6.9%). In total, 62 (53.4%) first author mandatory research papers were published in a peer-reviewed journal. Publication by fellowship year was as follows: seven (64%) in 2007, nine (69%) in 2008, 14 (74%) in 2009, 12 (67%) in 2010, eight (44%) in 2011 and 12 (32%) of current trainees (Figure 1). The total number of

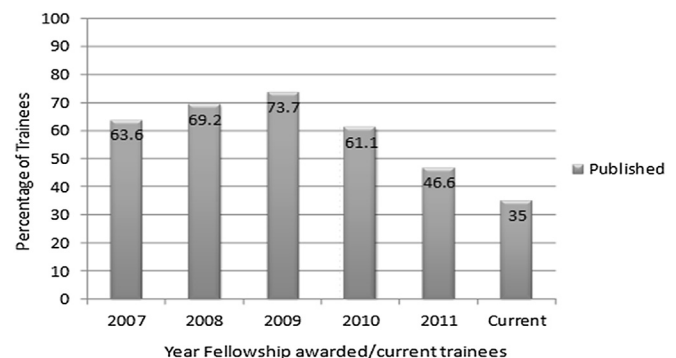


Fig 1. Trainee research project publications by fellowship year.

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