

Original Article

The scholarly radiation therapist. Part one: charting the territory

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Abstract

As radiation therapy practice evolves with advancing treatment and planning technologies, merging of imaging modalities, changing working models and the advancement to higher education, radiation therapists are frequently finding themselves on the frontline of translating new knowledge into practice. To a large degree, this growing involvement in self-directed original research, with associated dissemination of completed results, has led to an increasing number of therapists being encouraged to pursue an academic path in addition to a clinical career. In Canada, radiation therapists are being appointed as faculty to university departments for the first time. It is heartening that such opportunities are increasing; therapists are able to play a profound role in developing an evidence-based professional body of knowledge while at the same time being recognised for scholarly endeavours. However, despite these many positive steps, barriers and challenges to the development of a scholarly culture for radiation therapists still exist. Part one of this two-part series explores the history of the profession and the subsequent development of a scholarly culture.

Keywords

Academic practice; professionalisation; professional structure; scholarship

INTRODUCTION

As radiation therapy practice evolves with advancing treatment and planning technologies, merging of imaging modalities, changing working models and the advancement to higher education, radiation therapists are frequently finding themselves on the frontline of translating new knowledge into practice. To a large degree, this growing involvement in self-directed original research, with associated dissemination of completed results, has led to an increasing number of therapists being encouraged to pursue an aca-

demical path in addition to a clinical career. In Canada, radiation therapists are being appointed as faculty to university departments for the first time. It is heartening that such opportunities are increasing; therapists are able to play a profound role in developing an evidence-based professional body of knowledge whilst at the same time being recognised for scholarly endeavours. However, despite these many positive steps, barriers and challenges to the development of a scholarly culture for radiation therapists still exist. Part one of this paper explores the history of the profession and the subsequent development of a scholarly culture. Part two discusses a particular departmental initiative designed to boost radiation therapists' involvement in scholarly activity, and examines some of the barriers and facilitators identified in that work.

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BACKGROUND

Traditionally, in academic circles, the term ‘scholar’ was reserved for those individuals who were strongly and/or solely focussed on research and publication.¹ In the field of radiation medicine, physicians (as well as physicists and nurses) have conventionally been the members of the team that are engaged in scholarly work; usually accompanied by a university appointment (with associated expectations for research, grant capture and publication). Nevertheless as radiation therapists claim higher professional standing they become increasingly responsible for developing the radiation medicine knowledge base through research and publication.² Yet, radiation therapists are relative newcomers to this arena and may not be familiar with the scholarship intrinsic to the mores of the other professions.

A review of the health professions literature inevitably leads to the body of work related to nursing. Nurses have struggled with defining what scholarship means to them and how to ensure it is grounded in patient outcomes.^{3–6} Nurse scholars are often employed as research-only staff, with the opportunities and supports afforded by the position.⁷ Much of the nursing literature discussing scholarship concentrates on tenure-track doctorally prepared faculty as there is an underlying assumption that “doctoral study is considered necessary to conduct independent, original research”.⁸ There is also a body of work that attempts to bring scholarship ‘down to earth’ and debates the meaning of clinical scholarship. This would seem, at first glance, to fit the bill for radiation therapists, as we are a primarily hands-on profession. Indeed Diers⁶ suggests that scholarship involves ‘certain habits of mind’ and emphasizes the practice (or observational) elements of scholarly activities. However, Diers⁶ also points out that competence, expert practice and intuition do not make a scholar. There has to be informed, intelligent and cognitively grounded analysis of the situation.

It has been acknowledged that for neophyte academic professions such as radiation therapy, special consideration needs to be made to allow

for full engagement in scholarly activities. These considerations can go some way to compensate for the lack of ‘historical and corporate knowledge borne of years of experience, and in the absence of insightful mentors and contacts’.⁷

To move forward it is sometimes necessary to pause and examine our past experience. As an increasing amount of radiation therapists embrace an academic career we take a look at the three elements that the authors feel come to bear on the development and maintenance of a scholarly culture for health professionals, including radiation therapists. These elements are clinical practice, educational preparation and research. The evolution of each is discussed including how one impacts the other.

THE EVOLUTION OF RADIATION THERAPY CLINICAL PRACTICE

The origin of radiation therapy as a profession and its relationship to the role of the radiation oncologist is very similar to the evolution of the nurse and the nurse – physician relationship. Traditionally, those individuals who accessed the profession of medicine were ‘gentlemen of independent means’, resulting in a male-dominated hierarchical model of medicine.⁹ Health professions, primarily female populated, developed as a subservient ‘hand maiden’ role, which was dependent on close supervision and functioned only under strict medical instruction.⁹ Over the last five decades, although still strongly influenced by the medical model, the health professions (including nursing) have established their own professional identities, undergoing a process of “professionalisation”, through education, establishment of standards of practice, obligatory registration and self-regulation. The profession of radiation therapy, in Canada, has been no different in this respect.

In radiation medicine, as in many medical specialties, collaborative or inter-professional practice has emerged in the last decade as the best model for contemporary patient care with individuals working in a co-operative, team-based and less hierarchical structure.¹⁰ Professional boundaries overlap and synergize to

ensure a harmonized, seamless team approach delivered by three very distinct yet interdependent professional disciplines; radiation oncology, medical physics and radiation therapy. Collaborative practice is more patient-focused as all members of the team contribute their professional services to the continuum of care and scopes-of-practice begin to blur.

During this time radiation therapists have been moving into novel areas of clinical work as new technology forces innovative ways of working, often areas that were traditionally associated with medical or physics colleagues.¹¹ This so-called advanced practice is usually linked to increased educational preparation (e.g. the United Kingdom's model contains consultant radiographers at a doctoral level) as well as increased autonomy and responsibility. Thus the scope of clinical practice for radiation therapists has changed beyond expectation. There is an unprecedented scope for specialised practice and the development of new techniques. With a more autonomous practice and development of new knowledge comes the potential for scholarly work in the form of research and its dissemination in a similar manner to the other members of the treatment team.

THE EVOLUTION OF RADIATION THERAPY EDUCATIONAL PREPARATION

As previously discussed, the profession of radiation therapy arose out of the need for 'assistants' for physicians. As with other such professional groups, the creation of the radiation therapy

assistant began in accordance with local needs, for example a local radiology practice, usually utilizing some sort of apprenticeship model. The preparation was very narrowly focussed on 'what' needed to be done, not 'why' it needed to be done. Over time, however, as specific technologies and practices became commonplace and more widespread, recognition of common needs spurred the development of centralized education and organized practice standards.

In the case of radiation therapy in Ontario, and, in fact, in most of Canada, educational preparation remained primarily as hospital-based, diploma-level vocational training until the 1990s (see Figure 1). However, in the early 1990s, as with many other professions, and in line with the observations of the International Commission on Radiological Protection,¹² radiation therapy leaders and educators began to look at alternative ways to prepare radiation therapy practitioners for the demands of a rapidly changing and complex health-care environment. Many health-care professions aspiring to an increased professional status recognised that higher education led to increased academic credibility, for their practitioners and their educational faculty.¹³ The mid-1990s brought many pressures to bear on radiation therapy education in Canada. International instances of degree-based programming were more and more prevalent. Health professional literature advocated for an enhancement of '...comparable training in the relevant social sciences—the type of education that will inform the graduates about the social, economic and political forces that continually impact on the health-care environment'.¹⁴ After commissioning a study of the radiation

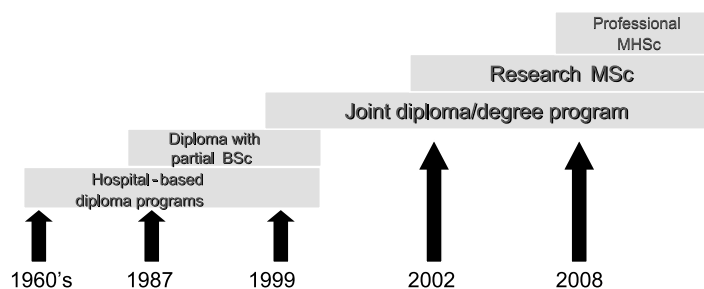


Figure 1. Illustration of the evolution of educational preparation for Radiation Therapists in Ontario, Canada.

sciences education, the Canadian Association of Medical Radiation Technologists concluded that, in addition to several other health professions, they too would require baccalaureate-based education as the basic requirement for entry to practice.¹⁵ The province of Ontario was the first to respond to the new requirement by opening the first degree-based entry-level Canadian radiation therapy program in Toronto—a joint degree/diploma program offered by the University of Toronto, Faculty of Medicine, Department of Radiation Oncology and The Michener Institute for Applied Health Sciences.

One of the most notable differences with this program was that for the first time in Canada educational preparation for radiation therapy fell under the auspices of a scholarship rich university department. As such, the objectives of the educational program were substantially different than those that had previously existed in the vocationally oriented diploma programs. Emphasis in the new format shifted from task oriented, discipline and technology-specific competencies to higher order outcomes such as critical thinking, analysis and synthesis, enquiry and original thought. Not only were these objectives and approaches new for the students and the faculty in the program, but also the impact on the practicing professional who provides clinical education for this new breed of students was profound. Questions of ‘why’ instead of ‘how’ were to be answered. Students required mentors and advocates and found themselves in a learning environment that was, for the most part, not prepared for this new approach. It became quickly apparent that educational and practice culture for radiation therapy did not have an existing infrastructure for mentorship or scholarly endeavours. This is where the educational preparation of radiation therapists significantly differed from that of the other two major professions involved in the collaborative team.

Another unexpected side effect of the program shift to an academic centre is that program faculty were expected to pursue a university faculty appointment with all the associated pre-requisite scholarly expectations (such as publication of research etc.). Those who entered into the educational arena, or the scholarship of teaching,

often did so because of an enthusiasm and commitment to teaching the next generation. To some educationalists, faculty appointments and the subsequent expectation to conduct educational research was a whole new world and in some cases, a foreign and somewhat daunting one.

As a result of the long-standing existence of hospital-based education in radiation therapy, and the relative small size of the profession, there is a lack of Canadian postgraduate programs tailored to radiation therapists. Canadian radiation therapists interested in academic advancement must seek out programs focusing on associated fields of study, for example public health administration and education; programs not necessarily designed to further the practice or study of radiation therapy.

THE EVOLUTION OF RADIATION THERAPY RESEARCH ACTIVITIES

Radiation therapists have always conducted research, from simple audit to participation in multi-centre clinical trials. In the past many were working collaboratively with medical physicists or radiation oncologists (often on large-scale multi-centre trials) rather than conducting their own practice-based research.¹⁴ The definition of a profession relies to a large degree on ownership and development of a professional knowledge base through applied research.^{16,17} Indeed it has even been argued that the knowledge base for radiation therapy was developed primarily through the research activities of other disciplines and, as such, radiation therapists have had a limited contribution to their own practice development and may not be fully regarded as a profession.¹⁸ However in the last decade, in line with the advancement of clinical practice and increasing educational preparation, research involvement has increased dramatically as more therapists become involved in basic and knowledge-translation research. Many therapists are employed as researchers and many more are integrating research more fully into their daily practice as ‘an integral part of routine work’.¹⁹

As we have seen, educational preparation for engagement in research activities has increased along with the general shift to a baccalaureate program. Literature reviews have demonstrated a positive correlation between upgrading entry-level requirements and subsequent participation in research activities.¹⁵ An essential part of research is the dissemination of results in the form of presentations or publication, as well as integration and application as research results are translated into practice. For many radiation therapists, becoming involved in scholarly work is thus inherently linked to their involvement in research; one begets the other. However, as will be discussed in more detail later, mentorship plays a key role in the development of one's scholarly portfolio. At this early stage in the development of the academic radiation therapist, intra-professional mentors are difficult to find, leaving developing research therapists to seek out guidance outside the profession.

DISCUSSION

So we have seen that scholarly practice for the radiation therapy profession has developed in line with advancement and increased involvement in three areas, namely clinical practice, educational preparation and research activity. In the authors' experience, individual therapists who engage in scholarly activity usually demonstrate elements of all of these areas, namely specialised clinical practice (to provide data for research), research activity and often (but not always) increased educational preparation. The relationship between these three elements of scholarship however need not be equal (e.g., educational research may not involve clinical practice).

Involvement in scholarly activity also depends on many other factors. Time constraints, lack of flexibility in the workday, human resource and financial supports as well as dedicated workspace are common challenges and are articulated barriers to the evolution of the integration of scholarly activity into radiation therapy practice.¹⁸ Moving into an unknown environment can be disconcerting; team support is an integral (but often unarticulated) aspect of working life for radiation therapists. Feelings of isolation are

common as practice changes from the norm (e.g., moving into a previously unexplored area such as research).²⁰ In the authors' opinion, a distinct lack of guidance and/or mentorship for radiation therapists is unfortunately fairly common and may hinder the acquisition of scholarly attributes. Finally, since radiation therapists are usually highly time managed (e.g., with a daily patient list) some therapists moving into more autonomous roles may have initial difficulty in both time management and the need to prioritise a list of tasks that extend beyond the structured workweek. Individual desire and commitment are also key; in the authors' experience radiation therapists with a strong desire to establish an academic career (and the flexibility to dedicate extra time outside the traditional work day) are often (but certainly not always) more likely to become involved in scholarly activity.

As we have seen, scholarship traditionally has been associated with research and publication (and, more marginally, teaching). More recently Ernest Boyer framed, more broadly, the elements of modern day scholarly activity—the scholarship of discovery; the scholarship of integration; the scholarship of application; and the scholarship of teaching.²¹ In general, Boyer felt that there are many valuable activities taking place outside the pure academic arena that warranted note and recognition for their contribution to the advancement of existing bodies of knowledge.²¹ This broader context has changed the way we think about scholarly contribution and may be a valuable way of looking at scholarship for an essentially service-driven profession such as radiation therapy. We certainly need to look beyond the traditional (and often quite rigid) 'publish or perish' mentality of traditional scholarship and forge a more flexible model that works for our unique profession.

FINAL THOUGHTS

As a profession, radiation therapy has come a long way in a relatively short time. It is not surprising then that we are still defining and discussing what scholarship might mean to us. However, as radiation medicine continues to play a major role in the management of the disease, the profile of the radiation therapist

will continue to rise within the interdisciplinary team. Commensurate with this enhanced profile will be heightened expectations for radiation therapists to engage in self-directed scholarly activity through enquiry, analysis, and creation of new knowledge in their specific domain. In addition, the recognition of radiation medicine as a discrete discipline will continue to result in the creation of independent clinical departments in associated local universities. This will continue to add pressure to the radiation therapy community to function in academic and scholarly circles, circles that until recently may have been foreign to the radiation therapy practitioner. In order to take our place at the table, we must embrace our opportunities and address our challenges although this will take time, cultural change and support from individual practitioners, our organisations, professional bodies and educational institutions.

In the authors' place of employment, particular emphasis has been placed on the elimination of the 'silo' effect of the three disciplines, in order to create a cohesive inter-professional team approach and thereby, enhanced continuity of care for the patient. New technologies in the environment have begged changes in the local practice model, and the vision of the leadership has recognized the potential for service improvement with a more equitable and inter-professional approach to radiation treatment. In line with this increased collaborative approach, an articulated goal was to increase the contribution of radiation therapists to the scholarly activity of the department, and a strong association with an academic institute has introduced the radiation therapists to a broader community of practice. Part two of this paper discusses the so-called 'Advanced Integrated Practice' initiative in light of the issues raised in Part one and examines some of the barriers and facilitators to scholarly practice identified.

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