Introduction

The Royal Australian and New Zealand College of Radiologists (RANZCR) is the professional body for radiation oncologists for the 2 countries on either side of the Tasman Sea. RANZCR has a standard approach to the delivery of services to patients in both countries, but each has specific and particular challenges related to geography, demographics, and health care resourcing. This article focuses on radiation oncology in Australia.

The Australian population is currently more than 23 million individuals, and is growing by a staggering 400,000 per year, driven mainly by immigration. The population is also aging. The proportion of persons more than 65 years of age is predicted to increase from 14% in 2012 to nearly 20% in 2031, with the number of persons more than 85 years of age doubling in that time frame (1).

The cancer incidence is increasing, and not only as a result of population aging. The number of cases diagnosed rose by 20% (ie, from 40,000-50,000) between 2000 and 2010 (2). Of particular note is the higher cancer incidence in the indigenous population, being 461 compared to 434 per 100,000 (2004-2008) for nonindigenous individuals, with a higher age standardized mortality rate of 252 versus 172 per 100,000 (2007-2011) (3).

A robust benchmark for planning radiation therapy services on a population basis was set in Australia, with the optimal use rate calculated (4). It was recently updated (5), showing that 1 of 2 patients with cancer would benefit from radiation therapy. With the increasing cancer incidence, the predicted number of patients requiring treatment is expected to more than double between the years 2000 and 2020, as illustrated in Figure 1 (6).

Geography also creates a key challenge in Australia. Greater than 90% of the population lives along the seaboard, and those living in rural and remote areas need to travel large distances to access radiation oncology centers, thereby creating an additional barrier. The survival rates in more remote areas are lower than in metropolitan areas (7). Recent government policy has seen the establishment of a number of regional cancer centers to improve access for rural communities. Individuals living in remote areas still need to travel, as it is obviously impractical to support radiation therapy service delivery where the population is too sparse to provide a sufficient case load for a linear accelerator (linac), and the regional centers provide accommodation for those who are too distant to travel daily.

A number of telehealth programs have been developed to allow specialists in the larger centers to undertake consultation and other aspects of cancer patient management in their own communities, including delivery of chemotherapy in some instances, conducted by trained local staff.

RANZCR: Its role and relationships

RANZCR is the specialist medical college responsible for training and setting the professional standards for medical specialists in Australia and New Zealand who practice in the fields of clinical radiology and radiation oncology. RANZCR recently underwent a restructure with establishment of parallel faculties for each discipline, reporting to a
Despite significant investment, we know that many patients are still having difficulty accessing radiation therapy services, because the growth in cancer incidence has outstripped the ability of new centers to cope with need and demand. The second tripartite strategic plan, Planning for the Best (8), concentrates on 5 key domains: (1) providing a quality radiation oncology service; (2) resourcing the radiation oncology sector; (3) supporting regional and rural access to radiation oncology services; (4) supporting Aboriginal and Torres Strait Islander access to radiation oncology services; and (5) focusing on research and academia as the foundations of future practice.

Critical to the success of the plan are 3 key themes: the need for effective workforce planning; the requirement to demonstrate that all practices conform to accepted standards of care delivery; and the need for the universal collection and dissemination of data on patient access and other measures, to inform resource allocation. The Faculty and the Radiation Oncology Tripartite Committee will continue to work with our consumers, governments, and other cancer-related bodies to achieve the best care for our patients.

The Faculty also works closely with the Trans Tasman Radiation Oncology Group (TROG) (9), which promotes the value of clinical trials and the importance of research to the discipline and delivery of radiation oncology services. As a small discipline, many RANZCR Fellows are active in this clinical trials group. TROG now has more than 12,000 patients registered on its clinical trials, and is one of the most successful cancer trials groups in Australia and New Zealand. The vast majority of treatment centers in the 2 countries are part of the TROG network, and TROG has been instrumental in the safe and high-quality introduction of technologies such as intensity modulated radiation therapy (IMRT), through a pretreatment audit program of the technical requirements for delivering radiation therapy in the clinical trial environment. TROG work has also shown the importance of peer review and quality assurance in ensuring the best outcomes for patients. The HeadStart trial (10) demonstrated that failure to conform to protocol and deliver quality radiation therapy is associated with a survival decrement of 20% in head and neck cancer patients—a salutary lesson for us all.

The current environment

As in most Western economies, the growing and aging population is causing ever more demands on the health dollar. Fortunately, the past decade has seen radiation oncologists working closely with federal and state health departments to focus attention on the pivotal role of the discipline in the cancer control arena. The first Tripartite strategic plan for radiation oncology followed on the publication of the Baume report (11), which resulted in an increase in and upgrade of the linac fleet across Australia, and significant activity designed to alleviate the
the balance of patient, government, and insurance payments
odds with the provision of “free at the point of service”
investment in the health care market, and this may be at
“leaner and meaner” but still needs to make a return on its
as the treatment of cases not readily treated locally.
The Australian model of care in radiation oncology
differs somewhat from that in many other countries, in that
radiation therapists in Australia perform a large proportion
of the dosimetric activities and are also responsible for
treatment delivery. Radiation oncology medical physicists
are also involved in dosimetry, particularly in brachytherapy,
as well undertaking technological developments, quality
assurance activities, machine commissioning, and
 calibration. The sector is looking closely at role evolution
models, recognizing the need to provide an efficient and
cost-efficient service and a flexible, adaptable workforce to
deliver high-quality care.
Radiation therapy services in Australia are delivered in
both the public (free at the point of care) and private sectors.
All citizens or permanent residents of Australia are entitled to
public health care, and, until recently, the great majority of
radiation therapy was delivered through the public system.
Recent years have seen significant pressure on public re-
ources in many areas, with growing waiting times to start
treatment, resulting in RANZCR providing guidance as to
how prioritization of access should be based on clinical need.
This has led to growth in the private sector, where patients
may have faster access, at times paying some out-of-pocket
costs. It is estimated that nearly 40% of care is now deliv-
ered in private centers. Both sectors receive a mix of funding
through federal and state streams, although this is in flux, as
recent reforms are in the process of changing the way in
which federal funds may be used to supplement state service
 provision. Some private practice groups are now also being
contracted to provide public services. Both federal and state
governments support capital infrastructure as well as direct
service provision. The government reimbursement system is
too complex to detail here, but radiation therapy delivered in
the outpatient setting does not attract private health insurance
cover—a situation the profession has wanted to change for
some time.
We are opening dialogue to address the challenges that
this mixed model of care provides. Private practice can run
“leaner and meaner” but still needs to make a return on its
investment in the health care market, and this may be at
odds with the provision of “free at the point of service”
care. Private care is partially funded by government but
minimally by insurance, and we need to be confident that
the balance of patient, government, and insurance payments
is robust enough to sustain. Consideration is also being
given to the contribution of both public and private sectors
to training, research, emergency care, the role of the
multidisciplinary model of care, and patient advocacy to
ensure that no patient is disadvantaged. This is still very
much an embryonic piece of work in the evolving
Australian oncology environment.
One key area of practice in which Australia lags behind
other countries has been the ability to gain timely reim-
bursement for new technological developments that would
benefit patients. Both RANZCR and TROG, over the past
4 years, have put a great deal of effort into developing
means to ensure timely assessment of new approaches to
facilitate reimbursement. The federal government sup-
ported a TROG project on the Assessment of New Radi-
ation Oncology Technologies and Treatments (ANROTAT)
(12), which produced a framework model to support rapid
health-related technological and economic evaluation. The
manuscripts describing this work are currently being sub-
mitted for publication.

The quality arena

A key focus of the Faculty and Tripartite Committee’s work
for a number of years has been the development of Radi-
ation Oncology Practice Standards (13) for the delivery of
radiation therapy, as a template to ensure a consistent high
level of quality in service delivery across Australia.
Although every Australian state has endorsed the adoption
of these standards in principle, implementation across ju-
risdications has yet to be completed. The Faculty’s Horizon
Scan Position Paper on Radiation Oncology Techniques
and Technologies (14), which is regularly reviewed and
updated, presents our position on the uptake of techniques
used for safe delivery of high-quality radiation therapy. The
Faculty also has a number of other position statements and
publications to guide our members in their day-to-day
practice. These are available on the RANZCR website (15).
One of the recommendations that arose from the work
on the Practice Standards was to establish a national
dosimetry center, which would act as an independent body
to monitor and audit linac dosimetry across all centers in
Australia. The Australian Clinical Dosimetry Service
(ACDS) was established in 2011 as a critical means of
ensuring safety and accuracy of service delivery. The
ACDS was funded only for an initial period of 3 years, and
a report on the evaluation of its activities (which will
determine ongoing funding) is currently awaited.

Raising the profile of radiation oncology

One of the key priorities for the RANZCR Faculty of Ra-
diation Oncology is to actively engage the medical, cancer,
and general community so as to raise awareness of the role
and value of radiation therapy as a modern, effective
treatment for cancer. The Radiation Oncology: Targeting
Cancer campaign was initiated in 2013, with the main campaign messages being that radiation therapy is a safe, highly cost-effective and targeted cancer treatment that achieves excellent clinical outcomes in the curative and palliative settings. The campaign is centered on a website (16) aimed at patients, carers/caregivers, and general practitioners that contains useful, up-to-date and visually appealing information about all aspects of radiation therapy, several personal stories and videos from patients and radiation oncology professionals, related news updates and supporter statements, frequently asked questions, as well as contact details and locations of all radiation oncology centers in Australia and New Zealand.

Since its launch in October 2013, the campaign website has had almost 2000 unique visits. The campaign also has a social media presence through Twitter (17), Facebook (18), and LinkedIn (19). Through television, print, and social media, (Fig. 2) we are driving traffic to the website—aiming to build a support base to assist in lobbying governments and other decision makers. Ultimately, the goal is to see radiation oncology services appropriately funded in Australia and New Zealand and to increase use rates to levels closer to optimal. All readers are encouraged to visit the Targeting Cancer website and to register their support on the site and through social media.

**Education and training of radiation oncologists**

The standards and requirements for training in radiation oncology in Australia and New Zealand are managed by RANZCR. This allows a highly standardized and closely regulated program for all 150 trainees, delivered across 40 accredited training sites, despite the large geographic area. The training program is a minimum 5 years and commences after at least 2 general postmedical qualification (RMO) years. Entry is very competitive due to the popularity of radiation oncology as a career choice, despite job prospects being uncertain in the immediate future for many training radiation oncologists. The RANZCR training program prepares radiation oncologists to be central decision makers and care coordinators within the multidisciplinary cancer team. Our radiation oncologists are required to have strong clinical knowledge across the breadth of oncology practice (including surgery and systemic therapies), as well as being high-level technical experts. Unlike, for example, the RCR program in the United Kingdom, we do not train “clinical oncologists,” as there is a strong medical oncologist contingent in Australia, and our philosophy has been that the enormous knowledge and expertise required across both disciplines may not be optimally attained through the 5-year program. That being said, radiation oncologists may provide chemotherapy in some settings, for example, synchronous with radiation, and certainly they commonly prescribe hormonal therapies and the newer biological agents.

A significantly revamped training program curriculum was implemented in 2009, with the first cohort completing their training late 2013. The “new” curriculum is based on the CanMEDs model (20), articulating competencies within each of the 7 domains. Simultaneously, the training program was restructured to match in-training assessment and learning opportunities to curriculum competencies. Two formal examination series were retained, analogous to the UK oncology sciences—based Part 1 and RCR Fellowship “exit” examinations. The program was designed to facilitate feedback and frequent interactions between supervisors and trainees. At the same time, training sites were grouped into networks for the purposes of sharing training resources and ensuring that all areas of the curriculum were met, as well as allowing movement of trainees between sites to enhance the training experience.

The first 2 or 3 years of managing these major changes proved to be challenging for trainees, all staff at training sites, and RANZCR officers and managers. Significant cultural changes in the learning environment to adhere to adult-learning principles and best-practice evidence in education were required. Integrating the demands of the new program with clinical service delivery remains a challenge for some sites. Overall, however, the “new” curriculum has become the norm, and a recent comprehensive, independent review of the program content and network delivery of training has reported that both trainees and Directors of Training feel more guided in their learning and better supported within the new system.

For qualified RANZCR fellows, RANZCR has a centrally managed continuing professional development (CPD) program that is compulsorily linked to medical registration. This has been overhauled in recent years to make the activities more meaningful and spread across a breadth of domains including academic pursuits, College engagement, quality, and clinical expertise. Fellows can enter and manage their CPD activities online through the Learning Portal housed on the RANZCR website (21).

**Building our future**

The RANZCR Faculty of Radiation Oncology has a history of being largely proactive in championing reform and driving the agenda for improving cancer patient care. The future of our specialty in Australia and New Zealand will doubtless follow this principle. Some examples include examining our own schedules for recredentialing of fellows and developing role-evolution strategies for radiation oncology professionals. These strategies include radiation therapists taking on aspects of practice (eg, contouring) to ensure that our teams are working “smarter,” that is, at their most efficient while protecting quality.

“A Career in Radiation Oncology” (22) is another RANZCR initiative actively promoting careers in radiation oncology for all craft groups through targeting school and university students. Addressing the shortfall in medical physicists, in particular, will ensure a stronger future for the sector.
Successful Treatment Celebrated on World Cancer Day

To mark World Cancer Day 2014, Radiation Oncology Targeting Cancer reunited patients with members of their radiation oncology team 10 or more years after radiation therapy. When added together, these patients have survived a total of 251 years since treatment. Radiation therapy is safe, cost-effective and has good clinical outcomes.

Show your support and sign up at targetingcancer.com.au

The Faculty remains committed to the importance of contributing to build the evidence base for radiation therapy practice, from basic laboratory research to clinical trial activity, mentioned above in relation to TROG. Original research has formed a compulsory component of our training program for some time, and trainees attend interactive workshops in statistical methods and research methodology run in conjunction with TROG. We are acutely aware of the need to
References

5. Barton M, Jacob S, Shafig J, et al. 2013, ‘National and International Benchmarks set following study of delivery of Radiotherapy Ser-
17. Available at: @TargetingCancer