Action Plan: Identification of contemporary and emerging issues affecting the Radiation Oncology Sector

This document outlines the *issues* facing the radiation therapy sector in Australia and New Zealand and provides a series of objectives and measures to guide action. This document is 'intent' focused and aims to function as a reference tool used in also identifying the *needs* of the radiation oncology sector, particularly when considering directions for advocacy. It has been prepared jointly by the constituent bodies of the Radiation Oncology Alliance (ACPSEM, ASMIRT, CSNA and RANZCR) and will be reviewed on a 12 monthly basis.

Timely radiation therapy reduces deaths from cancer

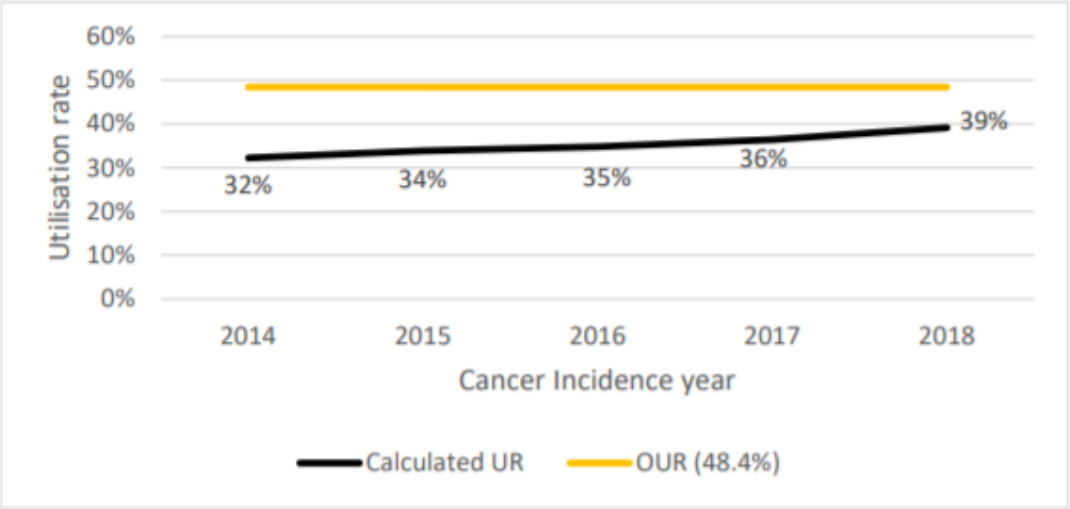
Radiation oncology involves the use of high energy radiation to treat cancer and other diseases. Radiation therapy may benefit over half of patients diagnosed with cancer and contribute to approximately 40% of all cures while relieving symptoms and improving quality of life for many others. For incurable patients, radiation therapy is highly effective in relieving symptoms such as pain.

Whilst 1 in 2 patients with cancer may benefit from radiation therapy at some point during their illness, in Australia and New Zealand, only around 35-40% cancer patients actually receive it. This means many cancer patients miss out on having radiation therapy, leading to unnecessary deaths and needless suffering.

Cancer is one of the leading causes of morbidity and mortality worldwide and is the second leading cause of death globally. Observed radiation therapy utilisation rates (i.e. the proportion of all cancer patients who receive radiation therapy), while showing some improvement in the last decade, remains consistently below optimum benchmark rates. Data from AIHW estimate that utilization rate within Australia has increased from 32% in 2014 to 39% in 2018. This is still below the benchmark figure of 48.4%.[1] Benchmark rates estimate the proportion of patients in a population who have an indication for radiation therapy treatment.

[1] Australian Institute of Health and Welfare, "Radiotherapy in Australia 2017–18," *Commonwealth Government*, Canberra, 2019.; *AIHW*, "Cancer Data in Australia," 3 11 2020. [Online]. Available: https://www.aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-datavisualisation. [Accessed 2020].

Figure 2.1 Number of RT courses provided as a proportion of incident cases, 2014–2018



Sources: AIHW (2019) 'Radiotherapy in Australia 2017–18' and AIHW Cancer Data in Australia website https://www.aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation

Note: In Figure 2.1 UR stands for 'utlisation rate' and OUR stands for 'optimum utilisation rate'

Issues facing Radiation Oncology service provision

Issues impacting quality service provision

- Fragmented planning of specialist oncological services, radiation oncology infrastructure and workforce;
- Variability in access to timely radiation therapy treatments across both geographic locations and cancer types;
- Lack of implemented and permanent initiatives focused on quality and safety, including:
    - Radiation Oncology Practice Standards for facilities have not been adopted by jurisdictions;
    - There is no nationally implemented minimum radiation oncology dataset to guide planning across Australia compared to New Zealand;
    - A national incident monitoring system appropriate for radiation therapy as well as a national Radiation Incident Register is essential for both Australia and New Zealand;
    - The Australian Clinical Dosimetry Service is funded only as a user pays service. A second provider entered the market in 2023. New Zealand has no National Dosimetry service and is reliant on third party services.
- Problems persisting with timely and safe introduction, evaluation and uptake of modern techniques and technologies in radiation oncology;

- Inequity of access imposes costs onto the patient and carers with respect to travel, accommodation and support as well as risks of financial toxicity;
- The challenge of ensuring the voice of the consumer is heard;
- The challenge of maintaining regular and on-going collaborative dialogue with governments and health departments in all jurisdictions.

Resources to support the delivery of services: workforce, equipment and facilities

Current numbers and trends in the availability of workforce and linear accelerators are not sufficient to meet the target optimal utilisation rate of 48.4% of new cancer patients in 2022 and beyond especially when considering the growing number of cancer patients.[2]

The Australian Institute of Health and Welfare cancer data indicates 150,782 new cancer cases are projected to occur in Australia in 2021, an 8% increase from the corresponding 139,413 cases in 2017. The New Zealand Cancer Registry recorded a 12% increase in cancer registration from 23,266 cases in 2014 to 26,158 cases in 2018. It should be noted that there will be fewer Radiation Oncologists in New Zealand by 2030. The declining radiation oncologist workforce is a significant workforce issue. According to Health Workforce NZ there will be 58 Radiation Oncologists in New Zealand by 2029, a decrease of 6.[3]

Radiation therapy requires quality service provision that is dependent on a multi-disciplinary workforce consisting of radiation oncologists, radiation therapists, medical radiation physicists, cancer nurses and allied health personnel trained in oncological care. Ongoing investment in facilities, equipment and a multidisciplinary workforce must remain a national health priority in Australia and New Zealand.

Radiation therapy is inexpensive if delivered optimally according to evidence-based guidelines. Despite it being a capital intensive cancer treatment, when recurrent and ongoing costs are taken together, radiation therapy is inexpensive when delivered optimally and in accordance with the evidence-based guidelines.

The issues are:

- Lack of effective coordination between bodies responsible for workforce, resources and infrastructure planning; [4]
- Appropriate support of nursing, palliative care and allied health services is integral to not only radiation oncology, but throughout all aspects of the patient's cancer care journey. This is particularly the case in relation to radiation therapy in New Zealand.
- A critical barrier for patients is their accessibility to radiation oncology facilities;
- Appropriate imaging and specialised radiation therapy services and associated techniques (such as for Head & Neck cancers, Gynaecological cancers and Paediatric

[2] K. Wong, G. P. Delaney & M. B. Barton, "Evidence-based optimal number of radiotherapy fractions for cancer: A useful tool to estimate radiotherapy demand," *Radiotherapy and Oncology*, vol. 119, pp. 145-149, 2016.
[3] James MM, P; Leung, J; Baxi, S. Faculty of Radiation Oncology 2018 workforce census: the status of the radiation oncology workforce in New Zealand. NZMJ. 2020;132.
[4] See Radiation Oncology Health Program Grants (ROHPG) Scheme 2020 review report | Australian Government Department of Health.

cancers) are not cohesively incorporated into service plans and infrastructure planning;

- Ongoing resourcing for a program of equipment replacement within agreed lifespans is essential to ensure that radiation therapy equipment is kept current.[5]
- Forum to regularly update and discuss with Government and regulatory authorities on the progressive strategies, measures and technological advances on the horizon.
- Challenges of ensuring payment structures reflect the rapid changes in delivery (increasing technology and shorter course length) so that there are no perverse disincentives for either payer or provider to deviate from an optimal care approach;
- Funding for brachytherapy and lack of coordinated planning associated with staffing and facilities that offer brachytherapy services.

Access to services for rural and regional patients

While the last decade has shown an increase in the number of radiation therapy treatment centres in regional and rural areas, there remain multiple barriers for cancer patients to access services in these areas. The barriers include:

- Ease of access and availability of quality and timely cancer care;
    - Financial burden of cancer and its treatment has a disproportionate impact on patients based on their geographical location;
    - Travel to receive treatments and the associated social burden including accommodation and impact on carers;
    - Opportunities in communications technology to improve care and patient convenience;
- Rural and regional radiation therapy centres face challenges with recruitment and retention of workforce;
- Lack of effective coordination in service planning and workforce development for rural service provision.

Access to services for Aboriginal and Torres Strait Islander and Māori patients

Aboriginal and Torres Strait Islander Peoples and Māori have unique needs[6] with respect to radiation oncology for the following reasons:

- Different patterns of cancer incidence compared to non-Indigenous Australians and New Zealanders;

[5] See Radiation Oncology Health Program Grants (ROHPG) Scheme 2020 review report | Australian Government Department of Health.

[6] Measuring (and narrowing) the gap: The experience with attendance of Indigenous cancer patients for Radiation Therapy in the Northern Territory. Carruthers S, Pennefather M, Ward L, Giam K, Penniment M. J Med Imaging Radiat Oncol. 2019 Aug;63(4):510-516. doi: 10.1111/1754-9485.12887. Epub 2019 May 13.

- Development of cancers at an earlier age compared to non-Indigenous populations leading to later diagnosis and limiting access to screening. Later diagnosis is associated with more advanced stages of disease. This leads to lower survival rates;
- Continued disadvantage in accessing treatments;
- Cultural safety considerations;
- Limited data and research on Indigenous cancer care.

Research and academia as foundations of future practice

Research in radiation oncology provides direct clinical benefit to patients (measurable outcomes, used in diagnosis and treatment).

- Radiation oncology research in Australia and New Zealand is under-funded:
    - This limits capability for developing and implementing advances in patient care, and for workforce training and development;
    - There is disparity of research funding for radiation oncology compared to its clinical benefit to patients;
    - There are very few publicly funded fellowship positions in New Zealand;
    - The impact of this disadvantages the services in regional and rural facilities in Australia and New Zealand.
- Research in radiation oncology is different to pharmacological based research in that:
    - Randomised trials are more difficult;
    - Novel methodologies are required to evaluate new technologies; often taking years (>10years) to produce results.
- There is further potential for collaboration between the various research groups, institutions, professions and individuals involved in cancer research.
- There is limited industry support and funding.

Directions and Objectives

Given the issues facing the radiation therapy sector in Australia and New Zealand we have developed a number of objectives and measures to guide action.

Strategic Direction	Objective	Defining Success
Ensuring the place of radiation therapy as an integral plank of cancer care.	Radiation therapy is seen as an equal partner in cancer care.	A planned approach at the national level in Australia and New Zealand that recognises and promotes radiation therapy as an equal pillar in cancer care.

Providing a quality radiation oncology service.	The current and future standard is a world class radiation oncology service with robust quality systems and standards in place.	An integrated approach at the national level in Australia and New Zealand to the radiation oncology sector, which incorporates established and published treatment guidelines such as standards of practice, national monitoring systems and information repositories.
Resourcing the radiation oncology sector.	The radiation oncology workforce and infrastructure are appropriate to meet current and future cancer incidence.	A prospectively planned and nation-wide and statewide coordination of radiation oncology services across Australia and New Zealand. Develop a plan with stakeholders to maintain (and develop, where appropriate) sustainable access to brachytherapy services.
Supporting rural and regional access to radiation oncology services.	Rural and regional patients have timely and affordable access to radiation oncology services.	Coordinated and focused approaches at the national level in Australia and New Zealand to improve rural and regional patient access to radiation oncology services which takes into account the needs of all cancer patients, their families and carers.
Supporting Aboriginal and Torres Strait Islander Peoples and Māori access to radiation oncology services.	Aboriginal and Torres Strait Islander and Māori patients have access to radiation therapy services offered in a culturally appropriate and safe environment.	An Indigenous worldview and Indigenous leadership driving improved patient outcomes for Aboriginal and Torres Strait Islander Peoples and Māori in cancer control and radiation therapy in Australia and New Zealand.

Research and academia as foundations of future practice.	World class research is part of the core business of radiation therapy services.	The number of active clinical trials open and accruing patients at facilities and the number/% of patients being screened for those trials and then treated on trial protocols.