



# Shining a light: Radiotherapy cancer treatment in Australia

2022

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# About Evohealth

The delivery of healthcare is complex.  
Our focus is not.

Better health for all Australians.



# Foreword



**Mark Brooke,**  
CEO Lung Foundation Australia

"This report is a timely reminder that not all Australians receive the same access to quality care - and this is the reality for many people diagnosed with lung cancer. Lung cancer is often diagnosed late, particularly in rural and remote areas, and inconsistencies in access and the quality of care often results in missed opportunities for life-changing treatment. It is critical that after diagnosis, radiation therapy is considered alongside other treatments, and we ensure appropriate support and care is available. Together, we can improve the health outcomes for all Australians."



**Richard Vines,**  
CEO Rare Cancers Australia

"Radiation Oncology is an incredibly important weapon in our treatment of cancer in Australia. That it is currently underutilised means that many of those who are living with cancer are being denied a very important component of their care. The three recommendations of this report will be important steps in ensuring all Australian cancer patients have timely and equitable access to this important resource"



# Executive summary

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In Australia, there is one new cancer diagnosis every four minutes. Cancer is the leading cause of death, responsible for three in every ten deaths. Navigating the pathway from diagnosis is complex, confusing, and stressful to many Australians.

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We know that best practice cancer care may include a range of treatments. The four pillars of cancer treatment are surgery, chemotherapy, radiation therapy (RT) and immunotherapy. Of these four pillars, RT is a cost-effective treatment intervention leading to minimal downtime and adverse effects. Despite advances in contemporary RT, many patients are not treated with RT, either by choice, or because they were not offered it in the first place.

In Australia it is estimated that **one out of every five** cancer patients who should receive RT in line with best practice care **do not** receive it. The difference is stark in some of our most common cancers, such as lung and prostate. It is estimated that 62 per cent of eligible prostate cancer patients and 48 per cent of eligible lung cancer patients, respectively, do not receive RT.

After diagnosis, patients often embark on a sequential journey of cancer care, moving from one specialist referral to another. This is not best practice. More effective and efficient care includes a multidisciplinary team with shared decision making and care coordination.

This white paper highlights and addresses the obstacles to accessing RT cancer care

in Australia, including barriers such as access, awareness, and financial burden.

Our country is vast, and we know that our fellow citizens in regional and remote areas experience greater burden, and poorer outcomes with respect to health. Access to RT is no different. Location is not the only barrier to patient access. Our research reveals that there is limited understanding amongst some patients and members of the clinical community on the role of RT, and advances in contemporary RT practice.

Finally, there is the financial burden that is borne by many patients undergoing cancer treatment, compounded for those in regional areas, where travel is required. Fortunately, a range of funding programs exist for patients, however many are simply unaware due to a lack of a centralised repository of information.

Through extensive research and interviews, this white paper provides three recommendations that address these obstacles, so that all Australians who are eligible to receive RT can do so. These solutions have been designed to be simple and easily implemented within the existing policy frameworks of the Australian healthcare system. A summary is provided over page.



# Recommendations

# 1

## RECOMMENDATION

### One

**Establish geographic nodes to ensure equitable access to best practice RT treatment for all Australians**

The regional nodes will coordinate patient care, ensure access to an established MDT for their region and bring together existing programs and services in a targeted way that enables optimal care pathways inclusive of RT.

# 2

## RECOMMENDATION

### Two

**Ensure all patients and clinicians are aware of the benefits and impact of modern RT treatment through targeted campaigns**

Develop a targeted campaign and messages aimed at empowering consumers by helping them understand the clinical and quality of life benefits of contemporary RT treatment.

Develop a primary care education package focused on developing awareness and understanding of contemporary RT practice.

# 3

## RECOMMENDATION

### Three

**Support a national directory of travel and accommodation for those needing to travel for cancer treatment**

The service will include available services provided in each state and territory and provide guidance on eligibility.

Diagnosis  
every

**4** minutes (1).

In 2015-16,

**\$10.1  
billion**

WAS SPENT ON  
DIAGNOSING  
AND TREATING  
CANCER (2).

RT HAS A ROLE  
IN CURING

**40%**  
OF ALL  
CANCERS (3).

RT is  
**cost-effective**

compared with other  
treatments (4).

FOR EVERY DOLLAR  
THE AUSTRALIAN  
GOVERNMENT  
INVESTS IN  
**TREATING CANCER,  
RT COSTS 6 CENTS.**  
(3).

**20%**

of cancer patients  
who should receive  
RT in line with best  
practice care do not  
receive it (5).

**48%**

of all cancer  
diagnosis include  
RT as best  
practice care (5).

**62% & 48%**

of prostate | of lung cancer

patients who should  
receive RT do not (6).

Cancer patients  
in Australia are

**10% LESS LIKELY**

to receive RT for every  
100 kilometres they live  
from a treatment centre (7).

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## 2022

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# Introduction

Cancer is a significant and growing global health burden.

In 2020, there were 19.3 million new cancer cases and 10 million deaths. This is expected to grow by an estimated 47 per cent by 2040 (8). In high-income countries, the cost of cancer ranges from 8.4 to 18 per cent of a country's gross domestic product (9).

In Australia, there is one new cancer diagnosis every four minutes and cancer is the leading cause of death, responsible for three in every ten deaths (1, 10).

The most frequently diagnosed cancers in Australia are breast, prostate, melanoma of the skin, colorectal and lung (Figure 1) (11).

### Australian aged-standardised incidence per 100,000 (2020)

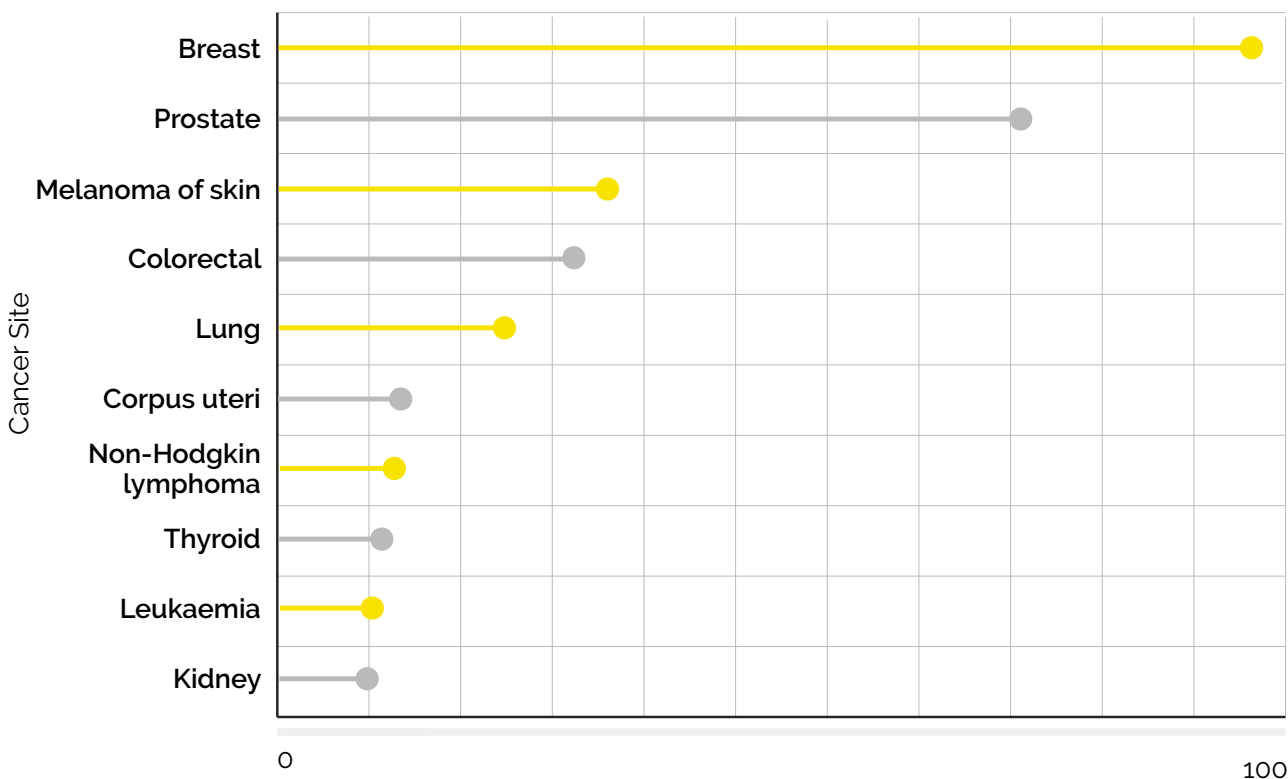


Figure 1 - 2020 incident cancer diagnoses in Australia. (Source: International Agency for Research on Cancer).

The incidence of cancer in Australia is comparable to countries of similar populations and health care systems, including the United Kingdom, United States, Canada, and Germany (11). The deaths associated with cancer are also similar, and for some cancers, lower. For example, the annual mortality rate for lung cancer in Australia is the lowest of

comparable countries at 15.8 per 100,000 compared to Germany, who has the highest incidence at 23.1 per 100,000 (11). For deaths resulting from prostate cancer, Australia (at 10.0 per 100,000) is between the United States (lowest at 8.2 per 100,000) and the United Kingdom (highest at 12.4 per 100,000) (11).



# Burden of cancer in Australia

The cost to the health system of cancer in Australia is substantial. It is estimated that in 2015-16, \$10.1 billion was spent on diagnosing and treating cancer (1).

Lung cancer is the leading cause of death followed by colorectal and prostate cancer (12). Lung cancer has the highest mortality rate of any cancer in Australia, at 17.7 per cent of all cancer related deaths. It is also estimated to cost the Australian economy over \$300 million in direct (health care) and indirect (productivity) costs per year (12-14). Prostate cancer has the third highest mortality rate of any cancer, with 12 per cent of diagnosed patients dying, and costs the Australian economy approximately \$1.4 billion per year (12, 15).

Whilst the annual incidence of prostate cancer is higher than lung cancer (72.5 compared with 25.3 per 100,000 population), the five-year mortality rate is lower meaning more Australians live for longer with prostate cancer (11, 12). As a result, the burden of disease for the patient, family and the Australian healthcare system is significant for these two cancers with very different disease trajectories. This is highlighted in Figure 2 below.

## Burden of lung and prostate cancer in Australia

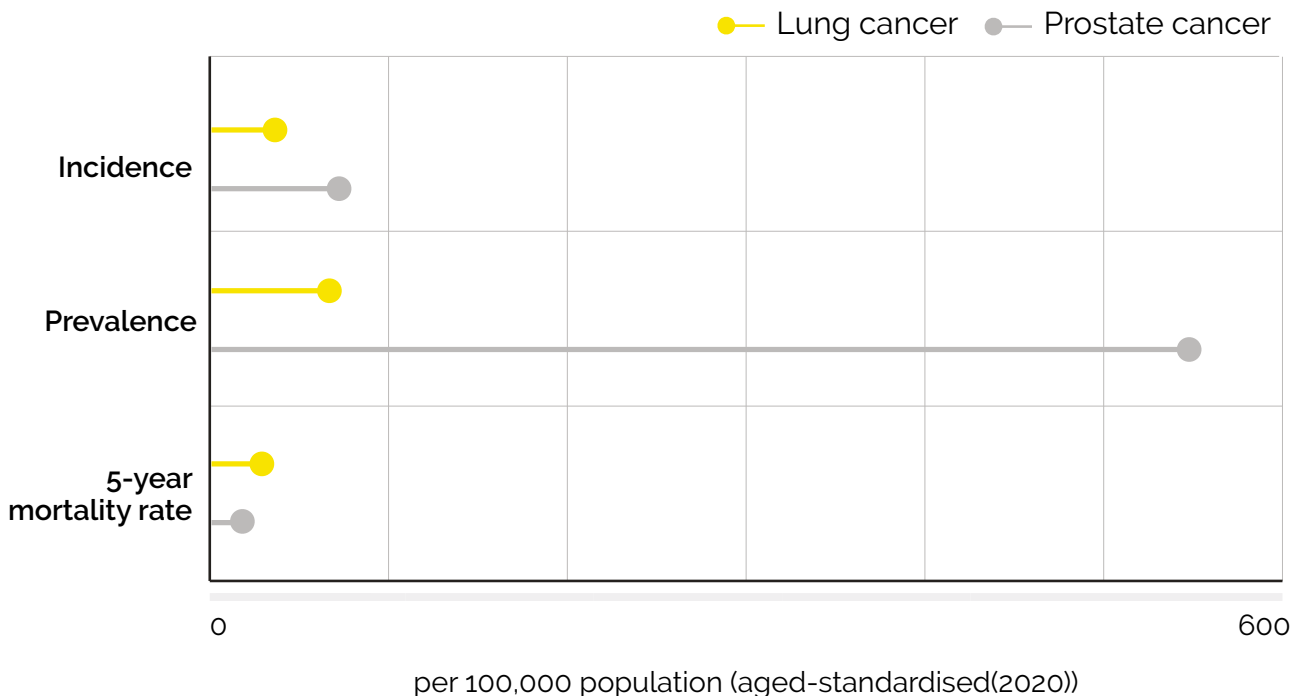


Figure 2 - Burden of lung and prostate cancer in Australia. (Source: International Agency for Research on Cancer).

## Best practice cancer care

Due to advances in the treatments that have been made available in recent decades, the 5-year survival rate in Australia amongst all patients with diagnosed cancer (except skin cancer) increased from 48 per cent in 1988 to 68 per cent in 2013 (6). Despite this improvement in patient outcomes, optimal treatment pathways are not always being followed, or treatment options are not always being offered to patients accessing care.

Whilst 48 per cent of all cancer treatment plans include RT as best practice care, only 39 per cent will receive it (5). The gap in best practice care is stark for lung and prostate cancer where only 52 per cent and 38 per cent of eligible patients receive RT (6). This has resulted in preventable morbidity and mortality (4, 16).

Care may include some, all, or none of the four pillars of cancer therapy (4):

- surgery;
- chemotherapy;
- radiation therapy; and
- immunotherapy .

Radiation therapy, or radiotherapy (RT), is an important pillar in cancer care. For example,

best practice guidelines for both prostate and lung cancer recommend RT, resulting in both clinical and quality of life benefits to patients.

This white paper examines the reasons for the divergence of best practice, optimal and actual use of RT in practice.

We identified several opportunities to bridge this gap within the current system, and developed three recommendations:

1. Establish geographic nodes to ensure equitable access to best practice RT treatment for all Australians.
2. Ensure all patients and clinicians are aware of the benefits and impact of modern RT treatment through a targeted campaign.
3. Support a national directory of travel and accommodation for those needing to travel for cancer treatment.

Whilst the recommendations in this white paper are intended for all cancer types, our analysis is focused on two cancers where achieving optimal RT utilisation would have the largest impact for the Australian health care system and society. **These are lung and prostate cancer.**

# Best practice cancer care

Over the last decade there have been significant advances in the treatment of cancer. Advances include the development of targeted, immunomodulating medicines, such as monoclonal antibodies (mAbs), and radiation oncologic techniques which can deliver site-specific, high-dose RT in short courses (4). These advances have led to improved patient outcomes, including quality of life, life expectancy and mortality rates.

RT plays an important role in achieving these outcomes for patients and is integral to contemporary oncology practice (3). It is one of the four central pillars of cancer treatment

(Figure 3) and is used in combination with other treatments to optimise patient care and outcomes (4).

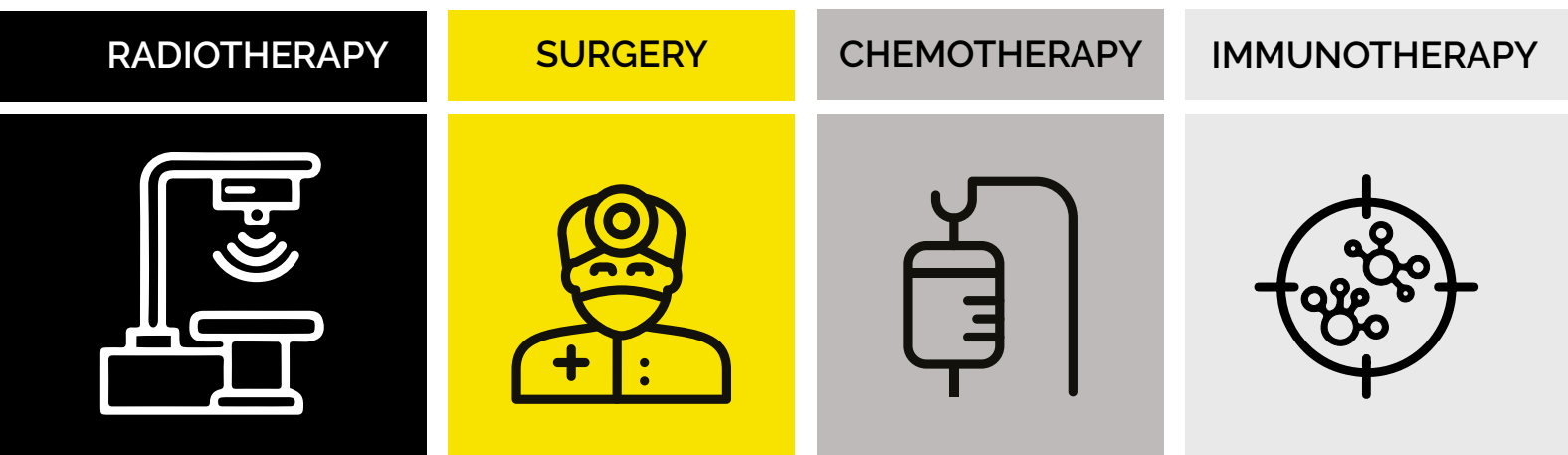


Figure 3 - Four pillars of cancer therapy (4).

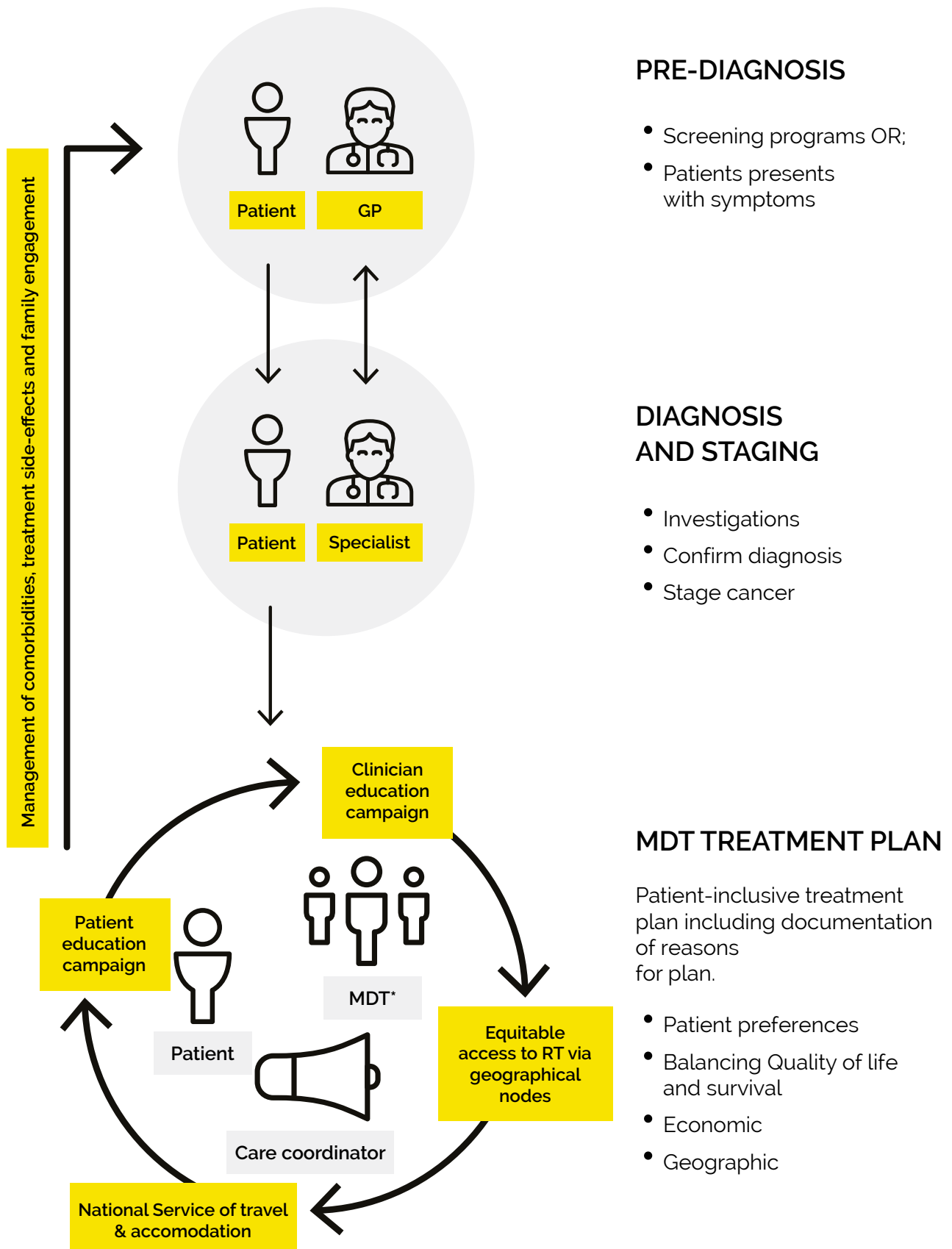
Best practice cancer care involves three phases: pre-diagnosis, diagnosis, and treatment (Figure 4). Pre-diagnosis includes screening activities, such as Australia's pioneering Cervical Screening program (17), and early presentation of symptoms, most often to primary health providers, such as General Practitioners (GPs). The second phase is diagnosis of the cancer, done through investigations for the purposes of confirming diagnosis and staging. Most often this is a specialist clinician. In the case of lung cancer,

it is usually a Respiratory Physician, and a urologist for prostate cancer.

**What follows the diagnosis is a complex treatment algorithm that is highly dependent on the site of the cancer and the patient's entry point into the system. Some, all, or none of the four pillars of cancer therapy, presented above, may be offered to patients as options for treatment or care. Navigating this can be daunting for many patients.**



# Optimal patient pathway for treatment of cancer in Australia



\* Refer to page 17 for list of MDT members

Figure 4 - Optimal patient pathway for treatment of cancer in Australia (Source: Evohealth)

# Radiotherapy, targeting cancer

RT is a commonly prescribed treatment pathway for patients diagnosed with cancer. In Australia in 2018-19, almost 74,200 courses of RT were delivered, an eight per cent increase over the previous year (18).

Radiation oncology (RO) includes the treatment of patients with radiation therapy. There have been advances in RO care, such as stereotactic body radiotherapy (SBRT) and intensity-modulated radiation therapy (IMRT). These have transformed traditional RT from a one-size-fits-all approach to a

personalised-treatment (4). These advances allow for targeted RT over shorter courses with improved outcomes for both patients and payers. New RT techniques are associated with several advantages summarised in Table 2 below (4,6,19,20).

*Table 1 Advantages of Contemporary RT over traditional RT*

Advantages of contemporary RT over traditional RT	
Improved patient outcomes	Reduced side-effects from treatment. Improved quality of life, morbidity, and survival.
Improved patient compliance	Shorter courses of RT.
Cost saving to patients	Reduced personal costs through less appointments and interruptions to work and personal commitments.
Cost saving to payers	Reduced burden on hospital resources. Reduced morbidity and mortality burden.

These improvements have led to more targeted treatment, leading to a reduction in side-effects and consequently a reduction in the impacts experienced by patients (4). There is less impact on the patient, making it a more effective and appealing cancer treatment. These advancements have also led to a reduction in time associated with treatment. The reduction in side-effects means time

between treatments is reduced, thus creating a much more efficient treatment regime (4).

In addition to the significant clinical advances in care, modern RT techniques have also been shown to be cost-effective with comparable efficacy to surgery and chemotherapy, when considering the entire cancer journey (3).

**For every dollar the Australian Government invests in treating cancer, RT costs 6 cents.**

Contemporary approaches to RT are contributing to this cost-effectiveness. For example, hypo fractionated radiotherapy is a shorter, higher dose treatment schedule,

which has been shown to be cost-effective in several cancers including prostate, breast, and lung (19).

## The role of RT

Critically, RT has a role in curing 40 per cent of all cancers (3). RT is used at various stages of the cancer pathway. RT may be the primary treatment, used prior to surgery or for reducing symptoms in palliative care. RT can also be used in combination with chemotherapy and other therapies, such as the monoclonal antibodies. Recent research has shown the synergistic clinical benefits of using RT and monoclonal antibodies together (21). Prostate, breast, lung, and colorectal cancers are some of the most prevalent cancers in Australia and can be managed using RT (18).

As well as a curative role in the treatment of cancer, RT can be recommended as pre-operative to reduce the size of a tumour. This may lead to better outcomes for the patient (22). RT also plays a role in preventing recurrence of some cancers post resection. This is known as postoperative radiotherapy (PORT) (23). Data shows that PORT can reduce

the yearly risk of local recurrence by 37 per cent compared to surgery alone (23). PORT is commonly used in breast cancer treatment. RT is also used in palliative care and has a critical role in enhancing quality of life for patients in end stage disease (18). RT is well-established as a tool to manage some terminal cancer sequelae such as bone metastases; cognitive decline in patients with brain or spinal cord metastases; and also from obstruction by a tumour (24).

RT in its various forms, spans the cancer treatment journey and plays an integral role in curing cancer, managing symptoms, and enhancing quality of life for patients.

**It is therefore essential** that those patients who are eligible for RT, access it.

## The impact of low RT utilisation

Best practice RT utilisation is determined using evidenced-based clinical algorithms and is reported as 'optimal radiotherapy utilisation rates' (ORUR) (16). The 'actual radiotherapy utilisation rates' (ARUR) are then compared against the ORUR to determine whether utilisation of services is appropriate in a particular country or region (25).

Despite the cost-effectiveness and advances in technology, RT is underutilised in Australia and eligible cancer patients are not always offered or receive access to this important

intervention. Underutilisation of RT is particularly prevalent amongst lung and prostate cancer, resulting in preventable morbidity and mortality (6, 16).

In Australia it is estimated that **20 per cent** of cancer patients who should receive RT in line with best practice care **do not** receive it (5) (Figure 5). Utilisation rates are lower for both lung and prostate cancer with 62 per cent of eligible prostate cancer patients and 48 per cent of eligible lung cancer patients not receiving RT (6).

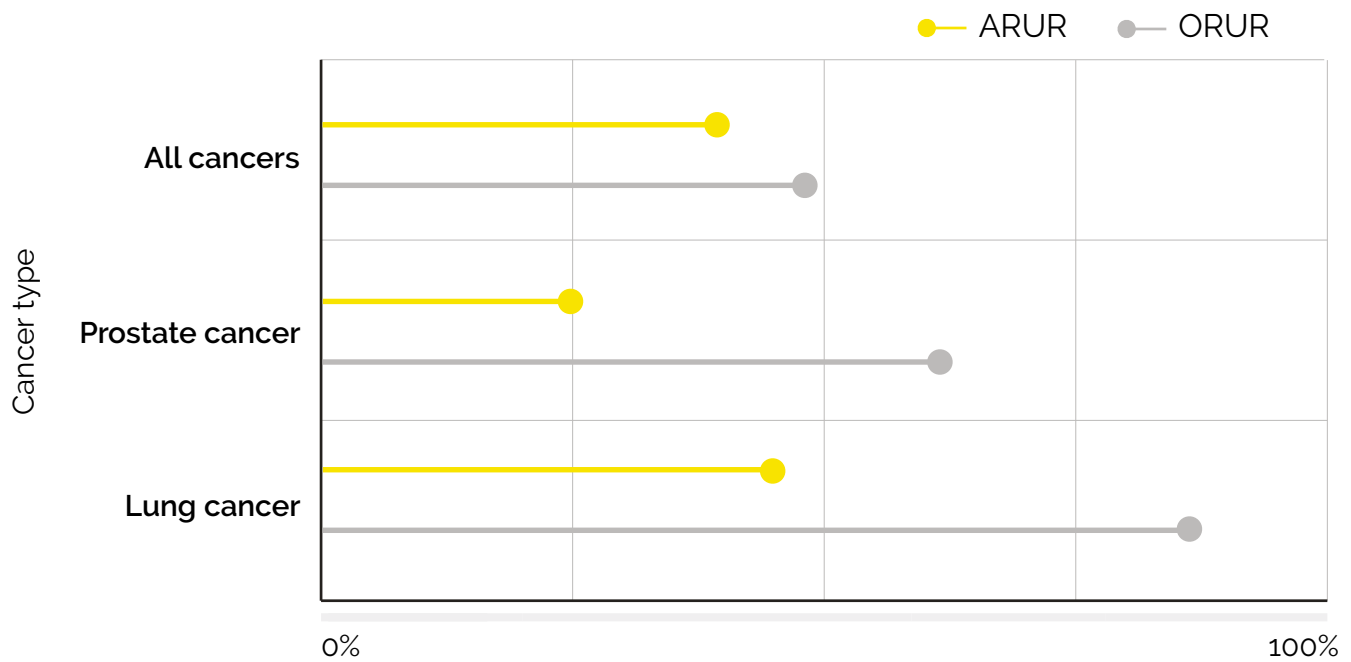


Figure 5 RT utilisation for lung and prostate cancer in Australia (5).

There are many reasons for lower accessibility to RT including language barriers, cultural barriers, rural and remote patients, clinician-patient communication barriers, and distance from cancer and RT centres, plus financial barriers if a public sector service centre for RT is not nearby."

**Lung cancer specialist,  
medical oncologist**

Conservative estimates show that the underutilisation of RT in NSW alone has resulted in the premature death of 1,162 people and the suboptimal management of local cancer containment for 5,062 people over a five year period (6). In the absence of other data on premature death, it is expected that these results can be extrapolated across Australia and may be worse in more remote locations where accessing RT has additional barriers.

**Underutilisation of RT is having detrimental effects on patients' health outcomes when it comes to cancer care.**

This report has identified opportunities within the Australian health system to improve uptake of RT. These opportunities are:

- support multidisciplinary approaches to cancer care;
- improve awareness and understanding of RT; and
- improve equitable access to RT services.

Each of these are discussed in detail in the following sections.

# Support multidisciplinary approaches to care

The objective of best practice cancer care is to ensure that ALL patients are offered ALL available treatments, in accordance with contemporary, evidence-based guidelines. In the context of cancer treatment, this is best facilitated by multidisciplinary teams (MDTs). MDTs support effective clinical decision making and coordination of patient care.

Multiple international and national guidelines for best practice cancer care advocate for MDTs (26-28). These teams include a range of professionals from complementary disciplines who coordinate patient care. An MDT may include:

- ✓ SURGEONS;
- ✓ RADIATION ONCOLOGISTS
- ✓ MEDICAL ONCOLOGISTS
- ✓ GENERAL PRACTITIONERS
- ✓ OTHER SPECIALIST CLINICIANS
- ✓ RADIATION THERAPISTS
- ✓ PATHOLOGISTS
- ✓ PHARMACISTS
- ✓ NURSES
- ✓ CARE COORDINATORS
- ✓ DATA MANAGERS
- ✓ CLINICAL TRIAL COORDINATORS



Shared decision making is central to MDTs and is supported by clinical guidelines for cancer treatment (29, 30). MDTs assist clinicians and patients to navigate complex treatment options in order to develop an

individualised treatment approach (31). There are a range of benefits that accrue from taking an MDT approach to cancer care, including benefits to the patient and the health system. These are detailed in Table 2 below (32).

Table 2 Benefits of MDT for patients and the health system

 <p><b>Patient Benefits</b></p> <ul style="list-style-type: none"> <li>• deliver multidisciplinary care</li> <li>• Reduced time to treatment</li> <li>• Increased involvement in decision-making</li> <li>• Improved compliance with clinical guidelines</li> <li>• Improved survival</li> <li>• Increased satisfaction with care</li> </ul>	 <p><b>Health System Benefits</b></p> <ul style="list-style-type: none"> <li>• Reduced duplication of services</li> <li>• Improved communication and care coordination</li> <li>• Consistent delivery of best practice care</li> <li>• Educational opportunities for health professionals</li> <li>• Improved mental health for health professionals</li> </ul>
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Source: Cancer Australia

The Royal Australian and New Zealand College of Radiologists (RANZCR) supports MDT approaches to cancer care. Further, RANZCR also recommends that activities are recorded and audited as part of an overall quality and safety framework (26).

The second role of MDT is to facilitate care coordination between the MDT and the patient. Care coordinators facilitate the development of a patient-centric care plan

including patient preferences for treatment and convenience of appointments (33). Care coordinators play an important role in assisting patients to navigate the health system and accessing support services (33).

Most importantly, shared decision making in cancer treatment, such as that in MDT, improves patient satisfaction and translates into improved compliance with treatment (31).

Most physicians agree with the premise, that MDT supports best practice care, however evidence shows that it is often underutilised due to lack of training (34).

Despite the evidence and benefits, the MDT approach to cancer care is not always accessible and/or utilised. Clinicians report that not all patients are presented to a cross-discipline group and that this may lead to poorer outcomes. Radiation oncologists interviewed noted the correlation between

presentation at MDT meetings and access to RT. Further, it was suggested that omission of RT as a treatment option occurred more frequently than for chemotherapy or immunotherapy.

Importantly, whilst care coordinators are perceived as important members of the MDT, access is often limited by inadequate time, staff and clinician awareness and support, as well as restrictive patient eligibility (33).

60 per cent of respondents believe that the demand for care coordinators was greater than the capacity of the system."  
**Cancer Council Victoria**

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## Supporting MDT care

With strong support for MDT approaches to cancer care across the literature and best practice guidelines, it is unsurprising that a range of tools supporting MDT implementation have already been developed. We have identified funding mechanisms, guidance documents, tools, and pilot programs.

Funding for MDTs can be hospital based or through the Medical Benefits Schedule (MBS). The MBS includes two item numbers specifically for MDT for patients with cancer, 871 (\$84.80) and 872 (\$39.50). Claiming varies according to health professional and is limited to two per year per patient (35).



### MBS item 871: Cancer care case conference

Attendance by a general practitioner, specialist, or consultant physician as a member of a case conference team, to lead and coordinate a multidisciplinary case conference on a patient with cancer to develop a multidisciplinary treatment plan, if the case conference is of at least 10 minutes, with a multidisciplinary team of at least 3 other medical practitioners from different areas of medical practice (which may include general practice), and, in addition, allied health providers (35).

**Reimbursement Fee: \$84.80.**

In a country as vast as Australia, leveraging digital technology to deliver multidisciplinary care is critical. Telehealth is a valuable tool for ensuring equitable access to care, particularly those in regional and remote areas (36). Telehealth has been utilised extensively during the COVID-19 pandemic. However, 1 January 2022 changes to the MBS item numbers for specialist telehealth services enforce initial consultation via videoconferencing only, which may limit

access for patients without suitable video conferencing hardware/software or sufficient bandwidth (remote areas) (37).

Specialists are advised to be aware of these changes to the MBS criteria for telehealth services when claiming.

To further support implementation of MDT care, Cancer Australia has developed web-based tools and proformas for assisting health professionals (32). These are provided in editable format and include patient information, meeting agenda, attendance register, treatment plan proforma and communication template for informing the patient's GP of the outcome.

A template for MDT care already exists. In 2007 the Federal Government invested \$7 million in the Cancer Services National Demonstration Program (CanNET) which linked regional and metropolitan cancer services across Australia (38). The objectives of this project included identification of MDTs, improved consistency of care, and reduced duplication of services. Tools developed during this project included agreed referral pathways and a directory of services for MDTs by postcode and cancer site, as well as an information hub for sharing information and educational resources. CanNET also provided a guide to GPs and specialists as to how to claim MBS item codes relevant to MDT arrangements (38).

“Multidisciplinary care is even more important than ever. Guidelines suggest most or all of the multidisciplinary team should meet virtually. Good communication to GPs is vital with potentially more of the care of the cancer patient being undertaken by the GP, such as follow-up care and organising imaging and tests.”  
**Cancer Australia**

# Best practice care in the COVID-19 pandemic

## Radiation therapy and the COVID-19 pandemic

In general, it is recommended that RT be delivered in the shortest course possible, utilising telehealth for care coordination. The current COVID-19 pandemic may shift treatment preferences towards increased use of RT in certain cancers as it can be delivered in an outpatient setting, and unlike surgery, RT does not compete with resources which may be needed to manage COVID-19 positive patients such as hospital and Intensive Care Unit (ICU) beds. In addition, RT has less effect on the immune system compared with chemotherapy and monoclonal antibodies, which may reduce risk of COVID-19 infection in cancer patients (39, 40).

## Improving MDT uptake

Despite funding, tools and templates, uptake of MDT patient centred care is poor. In 2020-21 there were over 60,000 claims for MBS item code 871 (clinician lead in an MDT cancer care case conference meeting). With around 145,000 new cancer diagnoses per year according to The Australian Institute of Health and Welfare (AIHW) – this is an average of 0.4 services per diagnosis, despite eligibility of two (10). Taking into account that some patients are treated within the State/Territory

hospital system, the real impact is likely to be significantly worse.

One of the biggest barriers leading to poor MDT uptake is the lack of availability of a standardised referral pathway. Further, there is a lack of systematic coordination and standardisation of services which has resulted in variable access to MDT, and therefore quality of care for Australians living with cancer (38).

“There is a lack of comprehensive and standardised models of care, no coordination between doctors, hospitals and specialists. I personally observed a lack of uniform approach to care amongst three public hospitals in the same city.”

**Lung cancer survivor and patient advocate.**

The reasons for this are multifactorial. Clinicians identified referral pathways, service capacity and funding as key challenges to ensuring equitable access to best practice care for patients.

The MBS item numbers for MDT do not support attendance at MDT.

The funding is not considered adequate, and it is administratively burdensome.”

**Specialist clinician**

Access to a MDT is highly dependent on the treating specialist. For example, once a GP suspects a diagnosis of prostate cancer, they will refer the patient to a urological surgeon. For lung cancer, the first treating specialist is often a respiratory physician. These clinicians may or may not be part of an MDT. If they are not part of the MDT, what then may follow is a sequential pathway of specialist referrals, versus an efficient and concurrent process such as that occurs with an MDT.

The CanNet program highlighted earlier, worked to solve this issue. Although focused on regional areas at the time, this framework of 'treatment nodes' based around a geographic region would serve as a template to addressing the lack of developed referral pathways to MDT.

**This white paper reveals that access to MDT for cancer care across Australia is inconsistent, leading to variable access to RT. This directly contributes to the underutilisation of RT in Australia.**

### Recommendation



Establish geographic nodes to ensure equitable access to best practice RT treatment for all Australians.





## Living with lung cancer: The medical merry-go-round

### Lung cancer patient advocate:

Angela\* (name changed to protect confidentiality) was relatively young when diagnosed with lung cancer (in her thirties). Angela found her diagnosis confronting and was confused with the information she was given by her GP. Angela also felt stigma because of her past smoking history.

Since diagnosis, it has been a tough journey for Angela with multiple changes in medical teams and treatment plans. Initially, Angela had "blind" trust in the health care system. As her treatment progressed, she felt excluded from the decision-making process. There was no communication between herself and her GP and medical oncologist. There was a different medical oncologist every time she turned up at the public hospital for appointments. Angela reached out to a patient advocacy group which helped her to understand the health system, available treatments and to advocate for herself.

Angela changed MDTs several times as she was not satisfied with the care. **"There is a lack of standardised and coordinated care....and a lack of uniformity of care amongst public hospitals....(even) in the same city....I felt like I was on a medical merry-go-round."**

Angela has now found an MDT that she trusts and continues to work with her during her treatment journey. They have also helped her get access to clinical trials.

Angela shares her story in the hope that it empowers other Australians living with lung cancer to get access to best practice cancer care.

# Improving awareness and understanding

Contemporary RT is a cost-effective treatment intervention for cancer care. RT, as a technology, however, does not have the 'profile' or is not as prominent as chemotherapy. In fact, anecdotal evidence suggests that, at times, patients confuse the two.

In order for patients to make an informed choice regarding RT, they first must be aware of it, and understand how treatment is structured.

It is understandable that some patients will be cautious when consenting to certain interventions during their cancer journey. However, RT appears to elicit undue caution, and at times, resistance from both patients and some members of the clinical community. Of particular note, is the patient's concern regarding the potential adverse impact of

RT, namely a fear of getting subsequent secondary cancer or damaging healthy tissue (41, 42). Despite the significant advances in RT technology and treatment in recent years, these views continue (43).

One study in NSW found that 60 per cent of patients opted out of RT due to concern around the long-term side-effects of treatment (44). In the same study, 43 per cent of patients also cited a lack of patient centred resources on RT as a reason for declining RT care.

“My patients are fearful of the side effects of radiotherapy.” **Regional GP**

Physicians, particularly primary care doctors, hold a crucial role in supporting patients to access appropriate treatment, and patients rely on them to fulfill this role in a way that ensures best practice care (43). However, GPs report that in some instances they do not feel equipped with information on RT to adequately discuss cancer treatment options

with their patients. Specifically, they felt ill equipped to discuss the benefits of RT over surgery for some cancers or discuss the various treatment modalities such as short courses through outpatient clinics.

“The single best way to improve RT utilisation, is for physicians to adequately explain RT safety and subsequently combat the bad reputation.” **Medical Oncologist**

This lack of awareness and understanding around the benefits that RT can provide is leading to poorer patient outcomes. Associate Professor Ian Haines, Medical Oncologist makes an important point on this issue, specific to prostate cancer (45).

Consideration also needs to be given to ensure that we present the information and options to our First Nations in a respectful and culturally appropriate manner. Further, adaption for culturally and linguistically diverse communities (CALD) is also critical.

“...men are not told about a new Australian radiation oncology study the results of which show that prostate cancer patients are more likely to regret choosing surgery than having radiation therapy [16.9 per cent compared with 4.2 per cent]. The study’s results are particularly important given the fact that both radiation therapy and surgery deliver equal results, yet radiation therapy (often a more cost-effective option) is underused in prostate cancer treatment.”

**Professor Ian Haines**

## Keeping informed

Best practice care anticipates that the treating team, including the MDT and GP need to be informed of, and understand all treatment options available for the patient in their care. There does, however, appear to be a knowledge gap when it comes to RT.

Research suggests that the challenge with physician knowledge of RT is linked to a lack of exposure and education in medical school. One Australian study found that final year medical students were much more confident identifying surgical management options for cancer patients than when RT may be indicated (46). More than one third of final

year students believed that external beam radiation therapy turned patients radioactive (46). It was noted in the study that no formal course content on RT was included in the curriculum.

GPs identified that they do not feel equipped to have informed conversations with patients regarding RT. Given the pivotal role that they play in coordinating care and supporting patients to make informed decisions, a lack of knowledge and awareness creates barriers to patients understanding and subsequently accessing appropriate RT treatment.

“There needs to be more education for GPs and patients around the current RT options and the benefits over surgery for some cancers. Patients need to know that RT can be delivered in the outpatient setting and in short courses.” **Medical Oncologist, NSW**

Advances in RT, and subsequent benefits, need to be better communicated to the patient and physician communities. This will ensure that patients are fully informed, and able to access best practice care, including RT. We recommend that this is achieved through a targeted education campaign.

### Recommendation



Ensure all patients and clinicians are aware of the benefits and impact of modern RT treatment through a targeted campaign.

# Improving equitable access to RT

Australia is a large continent, with the majority of the population concentrated on the eastern seaboard, in particular in the south-east. According to the Australian Bureau of Statistics, the density is 3.3 people per square kilometre (47). By comparison, population density in the US is 36 people per square kilometre (48).

With a comparable total number of RT machines to the US, Norway and France (Figure 6), and more than New Zealand and the UK, the number of RT access points does not appear to be the critical issue (48). This was supported during research, with stakeholders noting that on per capita basis, the number of RT machines available are more than adequate to service the current Australian population (5).

## RT equipment per 1,000,000 population

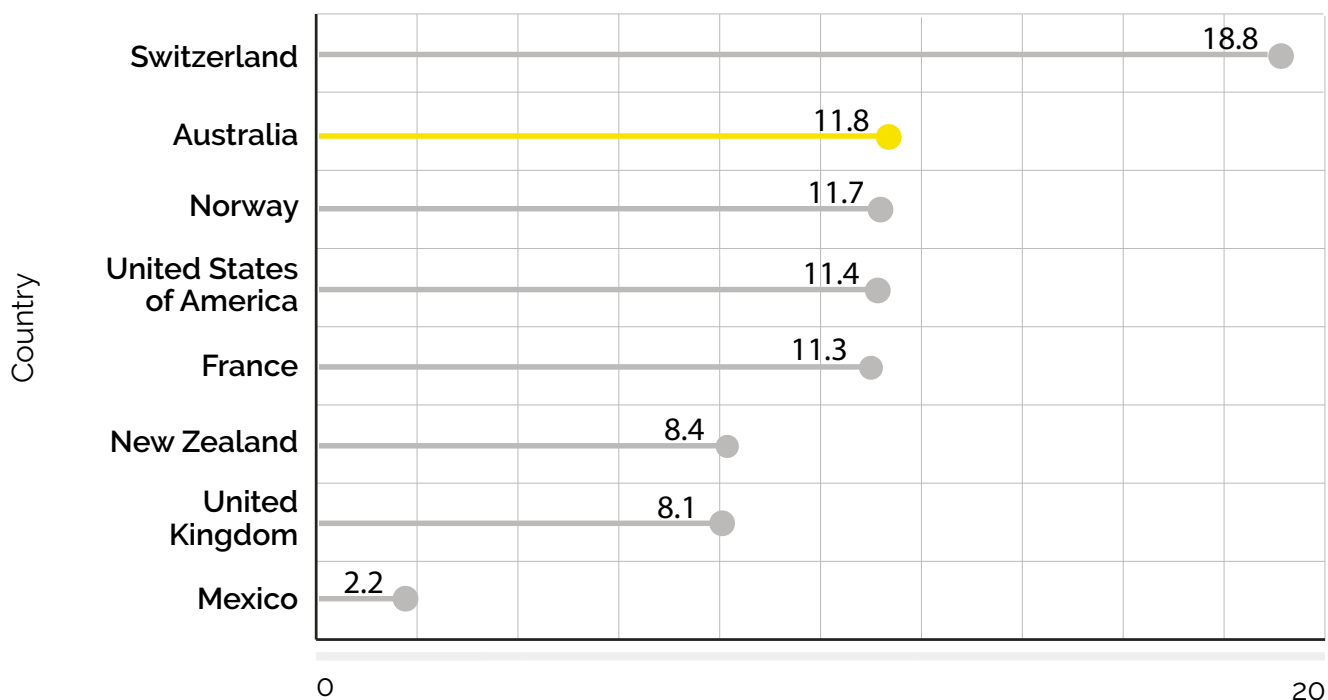


Figure 6 - Number of RT machines per 1,000,000 based on 2021 or latest available data (48)



**Despite this, up to 20 per cent of all cancer patients, 62 per cent of prostate cancer patients and 48 per cent of lung cancer patients continue to go without RT treatment (5).**

Undoubtedly, the size and disparate spread of population in Australia is challenging. Many patients living in rural and remote Australia have to travel considerable distance to access RT. This, however, isn't unique to RT. Medical oncology treatment centres are also located in metropolitan or close regional areas.

Analysis undertaken for this report, reveals the distribution of RT services across Australia (Figure 7) against the Modified Monash Model (MMM), a measure of remoteness (50, 51). This reveals a familiar story of maldistribution of services, skewed heavily towards the metropolitan centres. There is a cluster of services in Perth, yet no services available to the rural or remote regions of Western Australia. It is a similar story in the Northern Territory, with only one service, located in Darwin, to service the entire Territory. A patient requiring RT who lives in Alice Springs, would have to travel approximately 1,500km to attend an RT appointment.

There is a clear gap when it comes to RT services in rural and remote Australia, with less facilities available. The evidence is compelling; the further a patient lives from an RT service, the less likely they are to access RT or attend appointments (3, 7, 45, 52, 53). In fact, for every 100km a patient lives from a RT service, they are 10 per cent less likely to access care (7). This is leading to poorer cancer outcomes for rural and remote populations compared with those living in metropolitan centres (54).

Poor access to RT has been shown to be a key factor that influences an eligible patient's ability and willingness to participate in RT treatment. A survey conducted in 2017 on barriers to accessing RT revealed that 44 per cent identified that a lack of a local radiation oncologist impacted on their decision to decline RT. Additionally, 20 per cent did not want to travel to meet with a radiation oncologist and 37 per cent did not want to travel for follow up investigations (44). In recognition of these access challenges, the Australian Government has made significant investment in both public and private RT services nationally, via the Radiation Oncology Health Program Grant (ROHPG) (see box). ROHPG has been working to support establishment of RO services in areas of need across Australia since 1988 (5).

## Radiation Oncology Health Program Grant (ROHPG)

The Federally funded ROHPG commenced in 1988 and currently provides capital funding for both public and private RT services across Australia. The program has been working to support the establishment of RO services in areas of need. In 2019, the government invested \$76.7 million through the ROHPG in RT equipment supporting 93 per cent of Australian RT centres. The program uses both cancer incidence and prevalence rates and ORURs to inform Australian RT needs.

A recent review of the ROHPG program found that despite investment and consequential growth in the number of linear accelerator (LINAC) in recent years, the growth was city centric and insufficient to improve equitable access and Australia's overall RT optimal utilisation rate.

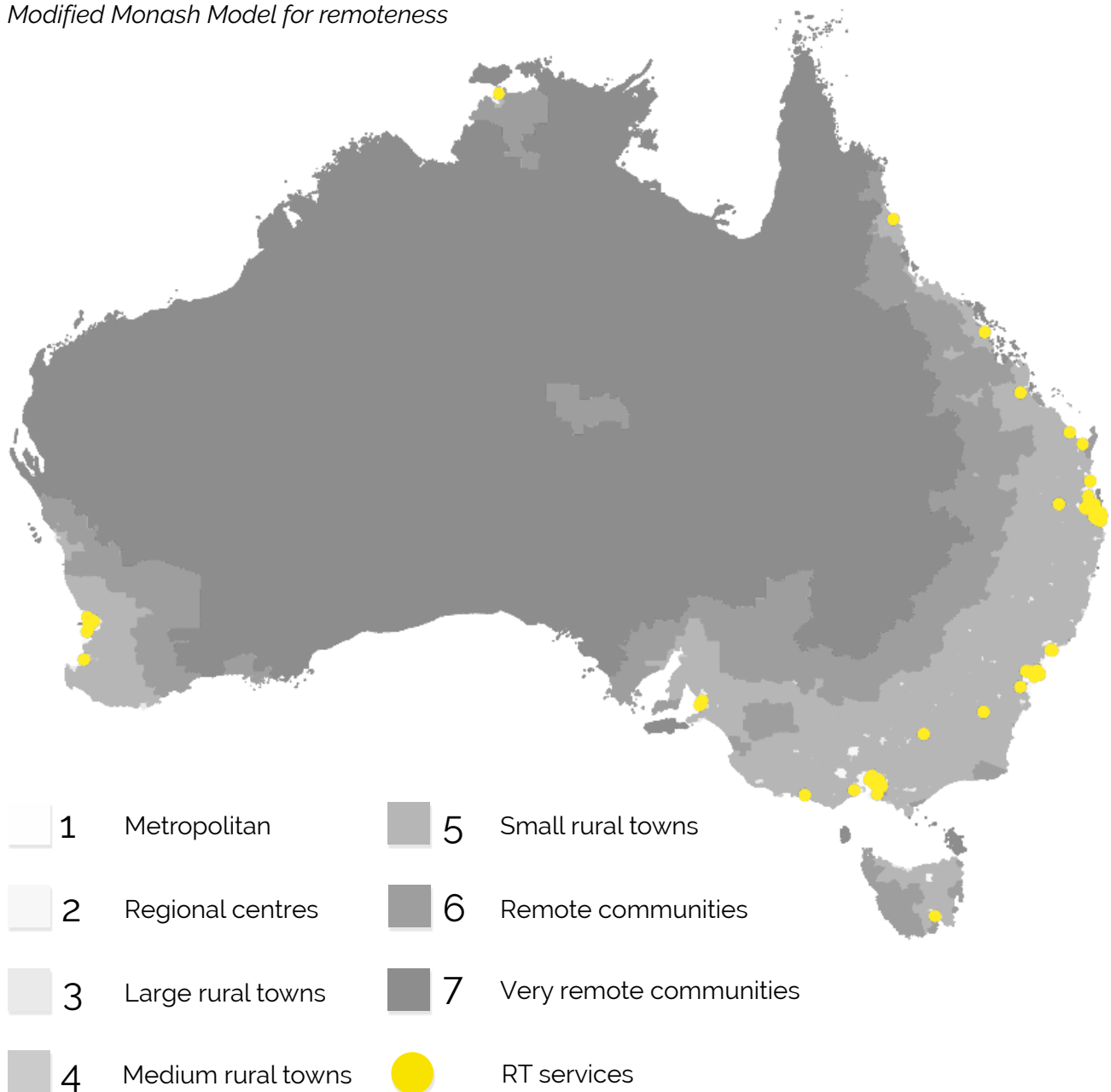
*Modified Monash Model for remoteness*

Figure 7 Distribution of RT services by MMM for remoteness (Source: Evohealth)

## Financial burden

There are sometimes significant financial and lost productivity burdens associated with travel to treatment centres. This is a major driver behind the underutilisation of RT among rural and remote patients. The time and costs associated with travel can be significant. Not only are patients required to take time away from their lives and livelihoods, they also often must cover the costs of travel and accommodation. For some, this can be an insurmountable barrier to accessing appropriate care. It's estimated 31 per cent of eligible patients decline RT treatment due to inadequate assistance with transport and accommodation (44).

“Cancer exacerbates the health disparities among patients, especially in rural and remote areas.” – **regional GP**

While there are travel and accommodation funding supports offered to cancer patients across Australia, these supports are varied and provided by a range of organisations, including State Government and not-for-profit organisations (NPOs). Financial support may be provided through Patient-Assisted Travel (PAT) programs, funding for accommodation as well as legal and financial advice.

Additionally, loss of income due to illness can be mitigated through a Centrelink program which provides a means tested living cost supplement and health care subsidies for Australians with low incomes.

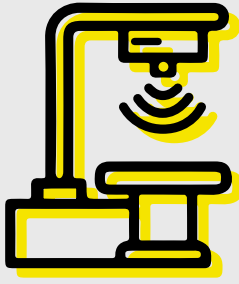
Navigation through the multitude of options from over a dozen cancer support organisations is challenging for patients (54). Options for financial support vary and many non-for-profit organisations refer patients to the state-based cancer support services. Overall, it is unclear who is funding what. The Lung foundation has undertaken extensive research into patient perspectives on treatment and highlighted similar concerns (55).



Navigating the health system as a lung cancer patient can be stressful, confusing and particularly overwhelming when you are emotionally vulnerable. At times, I felt like I was lost in a foreign country in the dark with no map to help me navigate. It was such a relief and comfort when I met my CNS [lung cancer nurse coordinator] who answered my questions, guided me through the complex processes, explained confusing paperwork, and helped me resolve logistical challenges. Access to CNS should be the norm, not a rare luxury.” **Patient**

Financial support to assist families during cancer treatment exist. However, stakeholder input and RT utilisation data tells us that there is still work needed to support patients to access services, particularly in the remote setting (18, 35, 5, 56, 57).

A cancer diagnosis is often a stressful and confusing time. Anecdotal evidence suggests that there is also confusion about what a private RT facility can offer to patients with limited financial capacity (see box – What does private RT mean?)



## What does private RT mean?

In Australia, radiotherapy is split between the public and private sectors, with 64 per cent of services provided in the public system.

However, 60 per cent of RO facilities are privately owned (5). Stakeholders reported that there is confusion about how to access privately operated services.

In some instances, patients mistakenly think that they must have private health insurance to access privately operated services. This is not the case. Privately funded services access MBS funding the same way that public services do. In some instances, MBS funding will cover up to 90 per cent of the costs of accessing RT through a private service.

In addition, many private RT facilities will bulk-bill public patients. Out of pocket expenses are a significant issue across the health system broadly and are exacerbated for patients living in rural and remote areas. In addition, out of pocket expenses often influence whether a patient will choose RT over alternate oncology treatments. Notwithstanding the significant contribution that the MBS program makes and private billing arrangements, the out-of-pocket expenses can still be prohibitive for lower income earners.

In addition to the financial burden experienced by patients, ease of access has also been shown to directly influence health care practitioners' decisions with respect to referring patients for RT. Specifically, health practitioners are concerned about the ability to manage RT side-effects remotely. This is further exacerbating the underutilisation among rural and remote Australians.

**Further work is urgently needed to ensure equitable access to RT services across Australia.**

### Recommendation



Support a national directory of travel and accommodation for those needing to travel for cancer treatment

# Who are MediStays™?

**MediStays™ was co-founded in 2016 by Associate Professor Sarah Everitt and Craig Everitt, who both have a background in RT, after their personal experience of a family member's difficulties in accessing accommodation and financial assistance to travel over 650 km for emergency cancer surgery.**

The overwhelming research at the time showed that Australians in rural and regional areas faced significant barriers to care if they needed access to specialist medical treatment. That meant any factor that reduced those barriers – such as an easy way to find the most suitable and cost-effective accommodation – could potentially save lives and improve treatment outcomes.

In five short years, MediStays™ has become a vital part of the community of care that puts its arms around Australians when they are confronting a health crisis. This circle of assistance and comfort includes health referrers, hospitals, medical centres, disability coordinators, peak bodies and policymakers. It also takes in those rural and regional communities that are famous for rallying behind their own in times of great need. To date, MediStays™ has supported over 30,000

nights' accommodation for patients and carers.

MediStays™ vision is to create a world where finding a trusted, comfortable place to stay is no longer a barrier to optimal care. A world where anyone with a medical condition, disability or other vulnerability feels safe in the knowledge that the right accommodation can be found quickly and easily. A world where everyone gets the same high-quality healthcare, regardless of their point of origin. This vision is shared by the entire MediStays™ team, who are committed to removing barriers to care through the provision of quality, trusted accommodation. Central to this effort are MediStays™ Care Navigators, who guide Australians through the complex and often stressful process of finding accommodation to support their hospital visit or disability support plan.

## Benefits of MediStays™:

- ✓ Partnerships with multiple national and state-based accommodation and financial support organisations.
- ✓ Assessment of patient eligibility for financial support schemes.
- ✓ Care Navigators; one-to-one relationship with patient and family.
- ✓ Verification of accommodation to meet individual needs (E.g., access for medical equipment and clinical staff, wheelchair access, dietary requirements, cohabitation with primary carer and COVID-19 isolation requirements).
- ✓ Real-time navigation software to ensure current and most appropriate accommodation for each patient and family.

- ✓ Heavily discounted and long-stay rates. Coordination of payment from various support schemes.
- ✓ No additional cost to patients.

Endorsed by the Victorian Minister for Health and Director for Rural and Regional Health, MediStays™ is now featured on websites including the Better Health Channel, hospitals and community groups. In 2022, MediStays™ will be announcing further partnerships with hospital and healthcare networks Australia-wide.

## John's story

**Diagnosed with lung cancer in 2020, John required six weeks of concurrent radiation and chemotherapy in Melbourne. Living on the Victorian Gippsland coast, John's initial diagnosis had already been delayed due to the bushfires.** *"Like everyone here, I was just thinking about getting things back on track after the fires. I thought my cough got a bit worse due to the smoke...didn't think it'd be cancer."*

Fortunately for John, he was reviewed by a multi-disciplinary team in Melbourne with the recommendation he undergo six weeks curative intent treatment. John shared *"the problem was that I didn't know where to stay and basically couldn't afford it. It was all a bit much and, to be honest, I was pretty tempted not to go. Luckily for me, my friend had recently been at The Alfred for a heart bypass and told me about MediStays™."* John's wife called MediStays™ who arranged everything for his upcoming journey and ensured he could access world-class treatment without delay. In John's case, MediStays™ rates in a fully self-contained apartment were \$105/night (best available public rate \$159) and they linked him to the Victorian Patient Transport Assistance Scheme (VPTAS) subsidy.

*"I saw a lot of people at the hospital and they were very good. I received the best care. But I think it's hard for them to understand the barriers for country patients. Finding somewhere to stay and no-one mentioned the financial assistance. Without MediStays™ I would have paid more for my accommodation and missed out on the VPTAS. Either that or I wouldn't have travelled at all."*

John's journey distance **Melbourne to Orbost 746km round trip.**

Diagnosis **Lung cancer**

Treatment **Six weeks concurrent radiation therapy and chemotherapy**

Accommodation **Fully self-contained one bedroom apartment**

Without MediStays™ support: Accommodation  
**\$159 @ 42 nights No VPTAS TOTAL -\$6678**

With MediStays™ support: Accommodation  
**\$6 @ 42 nights = \$252 plus \$100 for first year claim. Total expenses = \$352**

Financial saving to John **\$6,326 (plus VPTAS support for petrol costs)**



# Summary of Recommendations

To increase RT utilisation in Australia, we have developed a set of three recommendations aimed at addressing the most significant obstacles identified in this report. The solutions are provided at a macro level below and detailed in the next chapter.

These solutions have been designed to be simple and easily implemented within the existing policy frameworks of the Australian healthcare system.

# 1

## RECOMMENDATION | One

**Establish geographic nodes to ensure equitable access to best practice RT treatment for all Australians**

The regional nodes will coordinate patient care, ensure access to an established MDT for their region and bring together existing programs and services in a targeted way that enables optimal care pathways inclusive of RT.

# 2

## RECOMMENDATION | Two

**Ensure all patients and clinicians are aware of the benefits and impact of modern RT treatment through targeted campaigns**

Develop a targeted campaign and messages aimed at empowering consumers by helping them understand the clinical and quality of life benefits of contemporary RT treatment.

Develop a primary care education package focused on developing awareness and understanding of contemporary RT practice.

# 3

## RECOMMENDATION | Three

**Support a national directory of travel and accommodation for those needing to travel for cancer treatment**

The service will include available services provided in each state and territory and provide guidance on eligibility.

*Source: Evohealth*

## Detailed recommendations

# 1

### Establish geographic nodes to ensure equitable access to best practice RT treatment for all Australians

The evidence is clear, best practice RT treatment should be delivered to all patients by way of an appropriately skilled MDT, however, as discussed earlier in this white paper there is inconsistency in the application of best practice care. Equity of access should be a priority of Government. As a critical step to address this, it is recommended that the State and Federal Governments work together to **establish regional cancer treatment nodes**. For ease of implementation and to ensure seamless integration into the existing health frameworks and infrastructure, these nodes should geographically mirror regional health districts. Given the mutual benefit and responsibility, it is recommended that a 50/50 split funding model (State and Federal Governments) is used to enable the nodes. The regional nodes will coordinate patient care, ensure access to an established MDT for their region and bring together existing programs and services in a targeted way that enables optimal care pathways. The role of the regional nodes will be multifaceted:

#### i. Promote and embed optimal care guidelines (RT by way of MDT) into clinical practice

We know that ensuring that patient care is consistent with clinical guidelines leads to better outcomes (63). Cancer Australia has developed guidance materials (34) which provides a clear evidence-based definition of the role and mechanism of the MDT in cancer care. The guidance materials theoretically provide support to clinicians across Australia in delivering cancer care through an MDT. However, the evidence shows inconsistency in terms of application of the guidance nationally. A critical factor to the success of any clinical guideline is adherence by clinicians (63). Once established the regional nodes should undertake work to ensure that the guidelines are firmly embedded in clinical practice in their respective region. A range of mechanisms can be utilised to ensure that guidance is embedded into clinical practice, these include:

- individual audit and peer feedback on guideline uptake;
- sending out reminders to clinicians;
- educational seminars with opinion leaders;
- leveraging existing policy frameworks and government commitments such as the Cancer Navigator system and recent budget measures;
- having dedicated nurses/allied health professionals to assist physicians operationalise the guidelines; and
- reimbursement incentives, including promoting the existing MBS items codes specific for MDT cancer care.

## ii. Coordinate and support the regional MDT

There are many established programs, services and funding instruments that all serve a common objective in ensuring optimal and equitable care pathways for patients with cancer. However, coordination and utilisation of these services is varied, resulting in disparate referral pathways for patients. A key function of the regional node will be to establish and coordinate an MDT for the region. Where appropriate it will leverage existing services such as CanNET to bridge any workforce gaps between metropolitan and rural regions. The regional node will provide administrative services to the MDT and coordinate regular case conferences to ensure that all patients requiring treatment through a MDT have timely access.

## iii. Leverage existing programs and services to streamline patient experience

Another role of the regional node will be to ensure that patients are aware of and have access to appropriate and relevant services available to them in their state or territory, for example:

- practical or financial assistance;
- travel or accommodation services;
- patient support groups;
- cancer nurses; or
- system navigators.

# 2

## Ensure all patients and clinicians are aware of the benefits and impact of modern RT treatment through a targeted campaign

As with any treatment, raising patient awareness of the benefits and impact of RT treatment for cancers will empower patients and further support best practice treatment of cancers with RT. As noted earlier in this white paper, we know that misunderstanding and misinformation can be a key barrier to patients accessing RT, particularly when it comes to information about treatment times, impact on daily activities and side-effects (46). Modern RT does not need to be time consuming or invasive. Advances in RT technology have led to more targeted treatment, leading to a reduction in injury to healthy tissue and consequently a reduction in side-effects and impacts experienced by patients (3). These advancements have also led to a reduction in time associated with treatment. The reduction in injury to healthy tissue means time between treatments is reduced thus creating a much more efficient treatment regime (3).

It is recommended that the Australian Government consider developing a targeted campaign and messages aimed at empowering consumers by helping them to understand the clinical and quality of life benefits of modern RT. Specifically, the campaign should include accurate, digestible information about time commitments and short- and long-term side-effects of modern RT treatment. This campaign should be aimed at creating an informed patient who is able to seek best practice treatment for their cancer and partake in the shared decision making

with their treating physician and MDT. The evidence is clear that an empowered consumer is more likely to take part in treatment (44). The campaign should also include appropriate and targeted messaging for vulnerable population groups and those less likely to receive appropriate RT, such as the elderly, women, Aboriginal and Torres Strait Islander peoples, and the culturally and linguistically diverse to ensure that the message is disseminated equally across the Australian community.

A key enabler to successfully empowering consumers is ensuring that their primary care providers, in most instances their GP, are also aware of the benefits and impact of modern RT. This could be achieved through a primary care education package delivered through an academic detailing program either in-person or on-line.

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# 3

## Support a national directory of travel and accommodation for those needing to travel for cancer treatment

Travel, accommodation, and lost productivity costs have been shown to be a significant barrier to people accessing RT treatment. There are services and funding available to support patients with these costs, however they are spread across the public, private and not-for-profit sectors, making it difficult for patients to navigate. The directory should include available services provided in each state and territory and provide simple guidance on eligibility. This directory should be maintained to provide up-to-date information. Further, the directory should directly link in with the regional nodes to ensure streamlined and consistent information for patients and utilisation of supports.

Further, it is recommended that the Federal Government run a campaign to promote the directory amongst GPs and the clinical community to further support patients in accessing relevant services early in their treatment journey.

# Conclusion

While there have been significant advances in RT technology in recent years resulting in reduced negative impact on patients, it is clear that there is a significant population of eligible Australians who are not accessing RT treatment in line with best practice cancer care.

This provides a real opportunity for the Federal Government to implement several simple, actionable solutions, designed to fit within the current health system infrastructure, that will significantly impact on outcomes for these Australians. The call to action is clear, to save lives we must:

**Establish geographic nodes** to ensure equitable access to best practice RT treatment for all Australians.

**Ensure all patients** and clinicians are aware of the benefits and impact of modern RT treatment through a targeted campaign.

**Support a national directory** of travel and accommodation for those needing to travel for cancer treatment.

# Abbreviations

Abbreviations	Meaning
ARUR	Actual Radiotherapy Utilisation Rate
AUD	Australian Dollars
CCORE	Collaboration for Cancer Outcomes Research and Evaluation
EBRT	External-Beam Radiation Therapy
ESTRO	European Society of Radiation and Oncology
GP	General Practitioner
ICU	Intensive Care Unit
IMRT	Intensity-Modulated Radiation Therapy
LINAC	Linear accelerator
mAbs	Monoclonal Antibodies
MBS	Medical Benefits Schedule
MDT	Multidisciplinary Team
MMM	Modified Monash Model
NSCLC	Non-Small Cell Lung Cancer
ORUR	Optimum Radiotherapy Utilisation Rate
RANZCR	Royal Australian and New Zealand College of Radiologists
RO	Radiation Oncology
ROHPG	Radiation Oncology Health Program Grants
RORIC	Radiation Oncology Reform Implementation Committee
RT	Radiation Therapy
SBRT	Stereotactic Body Radiotherapy
SCLC	Small Cell Lung Cancer
SDM	Shared Decision-Making
VPTAS	Victorian Patient Transport Assistance Scheme



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