



**Radiation Oncology**  
**YOUR CHOICE SAVE LIVES**

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# TARGET YOUR FUTURE

## RADIATION ONCOLOGY

# A Career in Radiation Oncology

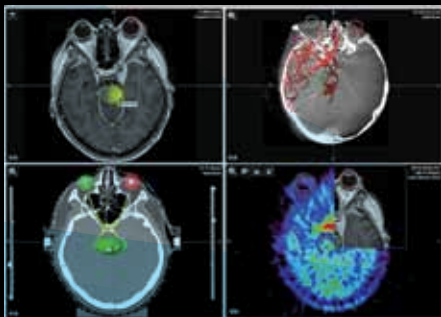
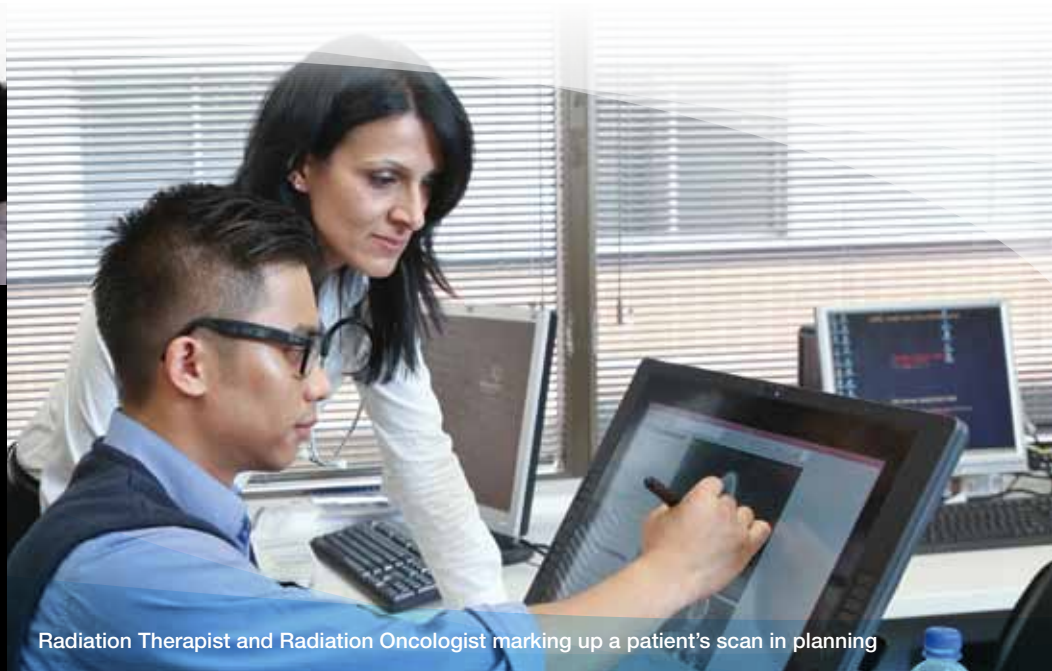
## YOUR CHOICE SAVE LIVES

Take the first step towards a career in Radiation Oncology  
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### What is Radiation Oncology?

Radiation Oncology is made up of three unique medical specialties that focus on the treatment of cancer patients with radiation therapy (also known as radiotherapy); namely radiation oncologists, radiation therapists and radiation oncology medical physicists.

Radiation therapy can be used to treat almost all cancers anywhere in the body and over half of new cancer patients require radiation therapy. Most people in Australia who have radiation therapy are treated with high energy X-rays produced by a large machine called a linear accelerator (linac).



Computer images of a patient tumour

Radiation Therapist and Radiation Oncologist marking up a patient's scan in planning



## Radiation therapy as a cancer treatment

Radiation therapy is a proven, effective way to treat cancer and can be used alone or together with other treatments like surgery or chemotherapy (anti-cancer drugs). Using highly precise doses of radiation to damage or destroy cancer cells, radiation therapy is usually delivered to patients in controlled measures called fractions, over a number of weeks – this gives normal cells time to recover between treatments and allows high doses of radiation to be delivered to the cancer site over a period of time.

Radiation therapy is by its very nature a personalised treatment: every patient's treatment is unique and tailored to suit where the cancer is situated in the body as well as individual circumstances.

The process of delivering radiation therapy treatments is complex and involves an understanding of medical physics, radiobiology, radiation safety, and the interaction of radiation with other treatments. Each step in the process of radiation therapy requires strict quality control measures to ensure that patients receive the set treatment correctly.



## Working in Radiation Oncology

Working in Radiation Oncology also requires excellent communication and teamwork skills. Daily interactions with patients who may be feeling ill or weak requires the ability to form respectful and trusting relationships with both adult and child patients, and their families, to ensure a joint approach to the patient's treatment.

## Cancer affects an increasing number of Australian families

Cancer has a major impact on the Australian community, with one in every three people developing cancer in their lifetime. Cancer treatment is an important health priority area in Australia. Radiation Oncology's impact in the fight against cancer is important.







## What are my career choices in Radiation Oncology?

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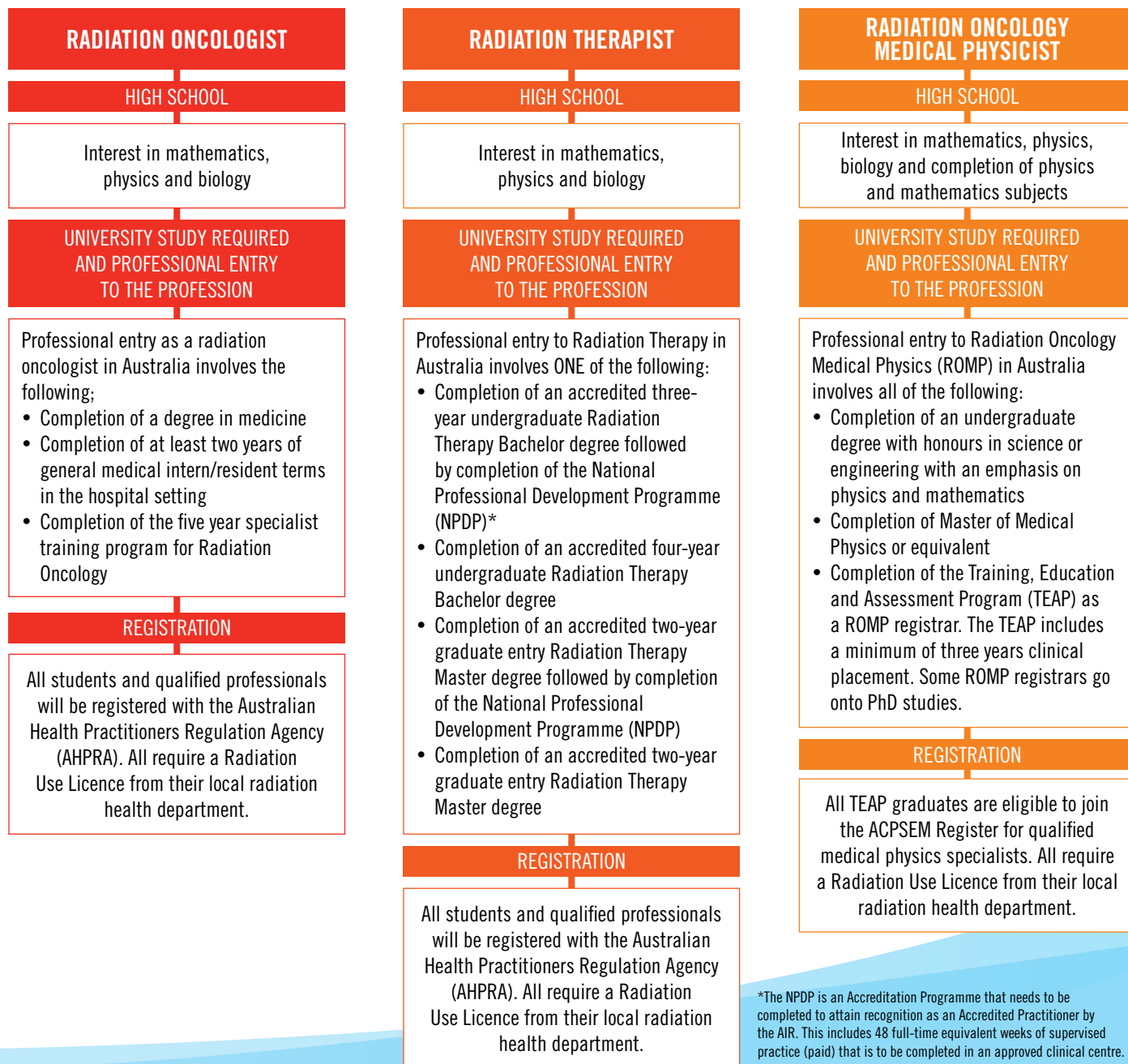
A number of careers in the Radiation Oncology field will lead to professionals working together to treat cancer patients. Qualified experts work together in teams to deliver cancer care through radiation therapy. These professions include:

- **Radiation oncologist** - a medical doctor who completes training to specialise in the management of cancer patients, specifically using radiation therapy. Radiation oncologists use cutting-edge technology and work in teams with other doctors to create and deliver radiation therapy to patients.
- **Radiation therapist** - a health professional who designs, calculates (plans) and provides the radiation dose to patients and is responsible for ongoing patient care and wellbeing of the patient and their family over the length of treatment.
- **Radiation oncology medical physicist** - a scientist who creates, implements and monitors the delivery of radiation therapy, taking into account the protection and safety of patients and others involved in the treatment process.

This team of Radiation Oncology professionals is supported by a larger team which includes: engineers, information technology (IT) support, data managers, oncology nurses, social workers, dieticians and other health professionals.

Other career paths in Radiation Oncology may include industry, project management, teaching at University and consulting work, just to name a few.

# What is required to become a Radiation Oncology professional?



## Opportunities to make a difference

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Success is being achieved in the fight against cancer. The survival rates for cancer have improved dramatically in the past 20 years. This is thanks to research, finding cancer early and access to a better range of treatments.

## A field of change

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Radiation Oncology uses rapidly changing technology to improve the accuracy and effectiveness of radiation therapy, including better control and cure of tumours, as well as reducing side effects. It is an exciting and changing field of medicine.

## Is Radiation Oncology safe to practise as a profession?

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There is a great deal of misunderstanding about radiation. Radiation therapy is delivered in a safe environment with controlled and monitored safety measures. Radiation Oncology professionals are carefully monitored and are trained to minimise the radiation dose to the patient and the public. Radiation Oncology professionals are not present in the treatment area during the patient's treatment, but are positioned outside the room closely monitoring the patient on CCTV cameras.

## Why Choose Radiation Oncology as a career?

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YOUR CHOICE TO HELP SAVE LIVES. Radiation Oncology is an inspiring, rewarding and exciting medical career with a range of opportunities in the public and private areas. It combines the best areas of care for patients of all ages, with challenging and continually changing treatment. The daily work can be interesting and motivating.

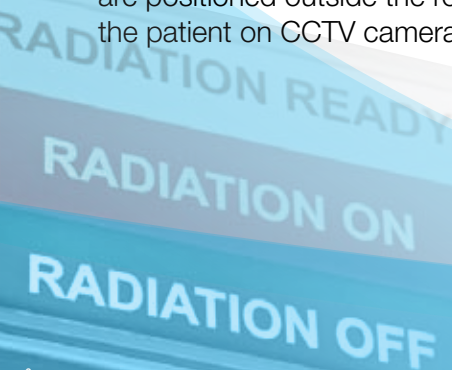
There is an ongoing need for professionals in Radiation Oncology as the need for more cancer treatment in the population increases. Radiation Oncology is a career with good job prospects. Work hours are regular and there is the added flexibility to travel and work overseas.

## Is a career in Radiation Oncology for me?

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A Radiation Oncology professional will generally have:

- An interest and ability for sciences - biology and/or physics
- An interest in healthcare
- Logical thinking
- Problem solving skills
- Good communication skills
- A focus on patient care in both children and adults
- Enjoy working in a teamwork environment
- An interest in using state of the art technology



# The Radiation Oncology professions in focus

## Radiation Oncologists

A radiation oncologist is a medical doctor who has special training in the management of patients with cancer, in particular involving the use of radiation therapy, as one area of their cancer treatment.

They also have expertise in the treatment of non-cancerous conditions using radiation therapy. Radiation oncologists are responsible for monitoring the patient and organising imaging and other tests, in order to create and action a management plan for a patient.

Radiation oncologists work closely with other medical specialists, especially surgeons, medical oncologists

and palliative care physicians, as part of a team caring for patients with cancer. Radiation oncologists also work closely with radiation oncology medical physicists and radiation therapists to plan and deliver radiation therapy.

Radiation oncologists have an important role in communicating with patients, their family members and other carers in the management of the patient's cancer and overall care.

Radiation oncologists have overall responsibility for determining and setting the most suitable amount of radiation (from high energy X-rays, electron beams or gamma rays) to deliver to a patient and the way that this will be carried out.



### **Maria Najim** Radiation Oncologist

#### **My career story**

I always wanted to study medicine from a very early age. At school I chose science based subjects including maths, physics, chemistry,

but also took up French and Italian as languages. I have worked at a number of different hospitals including St George, Wollongong, Westmead and Nepean, but I really enjoyed my rural rotations which included Taree, Wagga Wagga and Bowral.

#### **My inspiration to take on a career in Radiation Oncology**

I have always had an interest in oncology and found Radiation Oncology different to "usual" medical terms. I discovered Radiation Oncology as part of my general rotation as a resident medical officer in oncology. I was fascinated by what the radiation oncologist had to offer patients. Radiation Oncology includes clinical work, mainly in the outpatient setting,

which is good for patients and their families as patients can be managed and treated close to home. It also makes great use of modern technology which allows delivery of treatment in a very accurate and precise manner.

#### **Skills that have helped me in my career**

Good communication skills are essential which is not only important when dealing with patients and family but also with other health professionals. You also need to be caring, compassionate and empathetic.

#### **What I enjoy most about my career**

I enjoy the clinical work in assessing and managing oncology patients as well as planning their treatment. I also enjoy the multidisciplinary approach to management and working closely with other health professionals as well as the perks of international and local travel to meetings and conferences.

#### **Why I recommend a career in Radiation Oncology**

I recommend Radiation Oncology as a career as it is very rewarding to look after oncology patients both in the curative setting, and it has an important role in the palliative setting.

## Radiation Therapists

Radiation therapists use 3D and 4D imaging equipment and computer planning systems to create and calculate the best treatment for the patient as set out by the radiation oncologist. They deliver the radiation therapy after moving the patient into the treatment position that will provide the best radiation coverage for their cancer whilst limiting the radiation delivered to normal, healthy tissue.

As well as having scientific and technological interests, radiation therapists need to have compassion and strong social skills. Radiation therapists are responsible for working with patients throughout their treatment. Their role extends to the management of patients in dealing with their fears and worries often related to their illness and treatment. Radiation therapists work as members of a highly skilled team.

As an Australian graduate, there are good travel opportunities to work overseas. Australian graduates are wanted in many countries due to their multi-level skills.

## Reuben Patrick Estoesta Radiation Therapist

### **My inspiration to take on a career in Radiation Oncology**

*I was inspired to take on a career in Radiation Oncology at an early age with both of my parents working in cancer services; my father working as a medical physicist and my mother working with BreastScreen Australia.*

*At high school, the subjects I studied included chemistry, biology, advanced english, mathematics and modern history. Since leaving school, I have completed a bachelor degree in Applied Science (Medical Radiation Sciences) and am in the process of completing a postgraduate degree in Health Science (Medical Radiation Sciences).*

### **What I enjoy most about my career**

*What I enjoy most about being a Radiation Oncology professional is the use of highly technical machinery (linear accelerators for cancer treatment and 3D-based computer planning systems used in cancer treatment planning). I enjoy the quick pace at which these systems are constantly evolving as it challenges me to learn new techniques and provides a chance to work with state-of-the-art equipment. Furthermore, I enjoy the patient contact that comes with working in Radiation Oncology. I also have the opportunity to attend national and international conferences and continue my professional education.*

### **Skills that have helped me in my career**

*The skills required for a career as a radiation therapist include good communication skills, critical thinking and a good eye for detail.*

### **Why I recommend a career in Radiation Oncology**

*I recommend a career in Radiation Oncology as it offers an opportunity to not only work with state-of-the-art equipment but also the satisfaction that the job you are performing plays a vital role in a patient's cancer journey.*





## Radiation Oncology Medical Physicists

Radiation oncology medical physicists are medical physicists who create, implement and monitor the procedures which allow the best treatment using radiation, taking into account the protection and safety of patients and others involved in the treatment process.

Radiation oncology medical physicists are most typically involved with the safe operation and quality of systems used for imaging and treatment of patients. This can include machines such as linear accelerators, CT scanners, superficial X-ray machines, treatment computer systems and radioactive materials. Radiation oncology medical physicists are also responsible for implementing and ensuring the safety of new treatment techniques such as 4D CT imaging and image guided radiation therapy.

Radiation oncology medical physicists work closely with IT and engineering staff to ensure all the radiation therapy equipment and computers are working correctly and linked together correctly.

In their role, a radiation oncology medical physicist is consulted by radiation oncologists and radiation therapists to provide advice as to the best use of medical radiation for treatment and protection. Radiation oncology medical physicists make sure that all equipment meets international and national conditions so that the radiation dose recommended by the radiation oncologist and planned by the radiation therapist can be delivered to the patient correctly.

## Lisa Howard Radiation Oncology Medical Physics Registrar

### My career story

*In high school and university, I really enjoyed chemistry and physics, particularly the radiation based concepts, so a career in Radiation Oncology was ideal for me. My study so far has included completion of bachelor and masters degrees at university. As part of my training to become a certified medical physicist, I am enrolled in the Training, Education and Accreditation Program run by the Australasian College of Physical Scientists and Engineers in Medicine. This training program is a full-time paid position for up to five years.*

*I have worked both in Qld and NSW and I also get the opportunity to travel with attendance at national and international conferences and courses.*

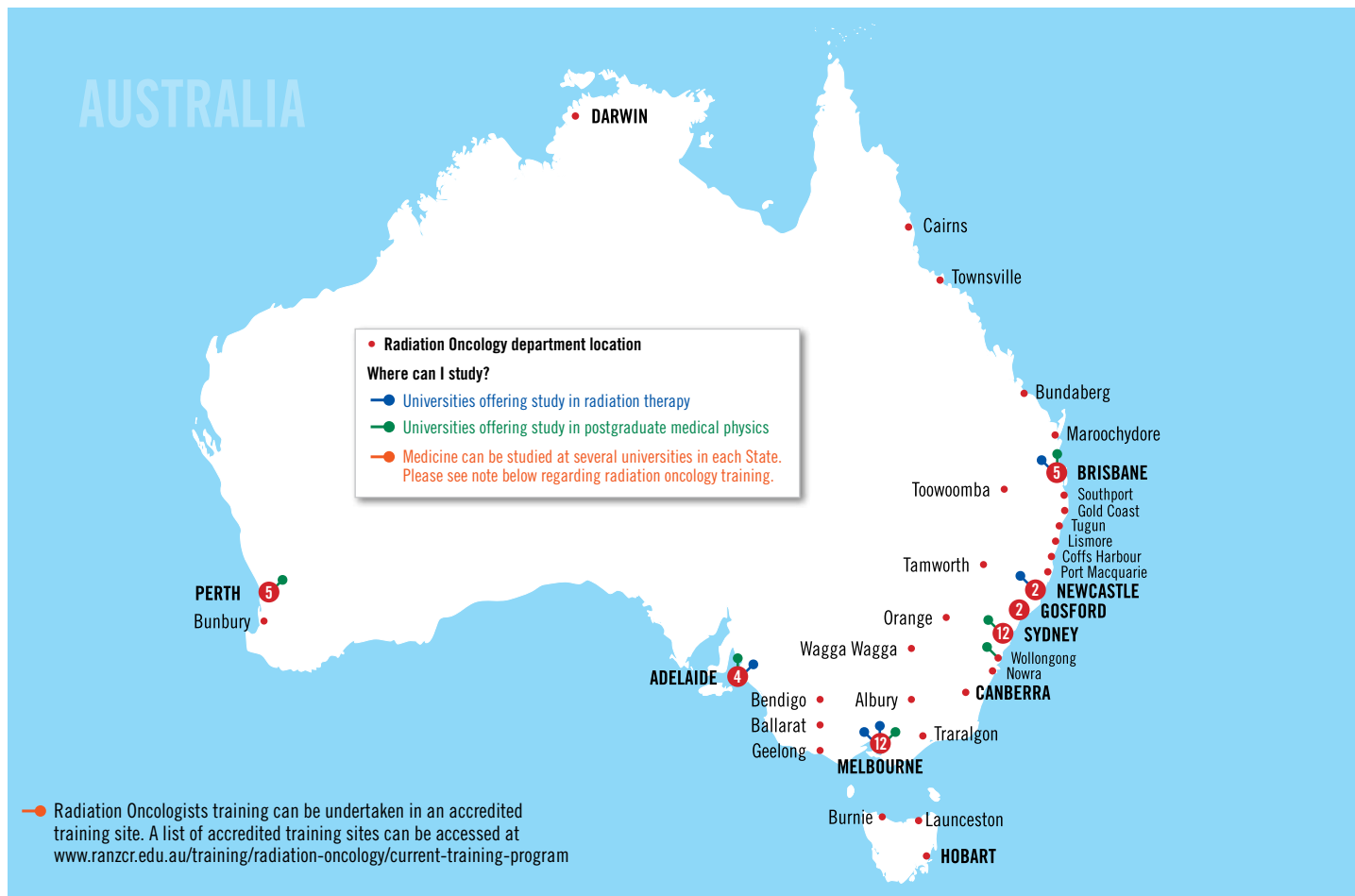
### Skills that have helped me in my career

*As a radiation oncology medical physicist, the skills important to me as part of my job include attention to detail, analytical, problem solving, understanding of computer systems, communication, and commitment to quality patient care. Our thorough attention to detail ensures that all patients undergoing radiation therapy are treated accurately and safely. It is very rewarding working in a multidisciplinary team to ensure that patients receive the best possible care.*

### My inspiration to take on a career in Radiation Oncology

*I was inspired to take a career in the cancer related field after a friend's mother passed away from breast cancer when I was younger. I recommend Radiation Oncology as a career as it is very rewarding helping patients through their cancer treatment journey.*





## Where can I work?

In Australia, Radiation Oncology departments are found in major public hospitals, some private hospitals or private oncology clinics. Most departments are found in capital cities or larger regional and rural locations. Radiation therapy is usually given as an outpatient treatment which means that patients will visit just for the radiation therapy treatment.

Compared to other specialties, radiation therapy is delivered in a relatively small number of centres – 69 centres across Australia in 2013.

## Research in Radiation Oncology

Research in Radiation Oncology provides direct clinical benefit to patients. All members of the Radiation Oncology team can become involved in research that will result in better outcomes for patients. Participation in research may include taking part in clinical testing or laboratory research.

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## Where can I find more information on Radiation Oncology?

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 Radiation Oncology Medical Physicist: [www.acpsem.org.au](http://www.acpsem.org.au)

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