



AUCKLAND
RADIATION
ONCOLOGY

Guide for Healthcare Professionals

Auckland Radiation Oncology

Auckland Radiation Oncology has established an international reputation for being at the forefront of radiation therapy cancer treatment, offering patients a choice of leading edge radiation therapy aimed directly at improving cancer treatment outcomes and quality of life. Established in 2008 as the first private radiation therapy treatment centre in New Zealand, we now care for more than 750 patients a year requiring radiation therapy, at our treatment centre in Epsom, Auckland.

Our cancer services are based around multidisciplinary teams and partnerships, with each team member offering special skills to support patient care. Our approach to treatment means that each patient's treatment journey is streamlined and simple; making things as easy as possible in what can be a very difficult time.

An inspired joint venture partnership – Auckland Radiation Oncology is a joint venture, owned and operated by MercyAscot and Southern Cross Hospitals. The centre is located on the MercyAscot Epsom site, with the land and buildings owned by MercyAscot Properties Ltd. The purchase of equipment, leasing of the site, and ongoing business operation are funded through the joint venture.

Our purpose built facility offers attractive, modern and comfortable surroundings with the convenience of radiation therapy, pre and post treatment care, close proximity to laboratory and radiology providers, a pharmacy and support from Mercy Hospital, all in one central location. ARO also offers free on-site parking, free Wi-Fi for patients, good access to motorways, public transport, accommodation and other services.

Dedicated and compassionate staff at every level ensures that patients are welcomed as individuals and receive highly personalised attention in a comfortable, discreet and compassionate environment.

ARO offers treatments that are funded by health insurers and is a Southern Cross affiliated provider.

World leading treatment and technology

The greatest challenge with radiation therapy is to minimize damage to healthy tissue, whilst delivering a sufficient and precise dose to the tumour so that it can be destroyed. Auckland Radiation Oncology utilises the latest advancements in treatment planning, linear accelerator based technology, medical imaging and dosimetry to deliver radiation therapy with the utmost of accuracy to reduce the risk of side-effects to the patient.

Our team is focussed on innovation to ensure the safest and most effective treatment delivery and on providing leading-edge treatments that put the patient at the centre of the treatment process. ARO has a commitment to investment in the latest technology, to ensure that the treatment patients receive is the most appropriate for their condition.

ARO uses imaging and planning methods that enable customisable and easily reproducible plans to deliver the most effective dose possible to different parts of the tumour and surrounding tissue. Intensity modulated radiotherapy (IMRT) and image guided radiotherapy (IGRT) are used concurrently to deliver the planned dose whilst continuously monitoring the position of the actual tumour within the delivered beams.

“Superb organisation! This is the pinnacle of quality medical care and I’m humbled by its excellence. Truly – I have been treated like a king... Today, tomorrow, Christmas, summer – here I come!”

– Prostate patient, Auckland



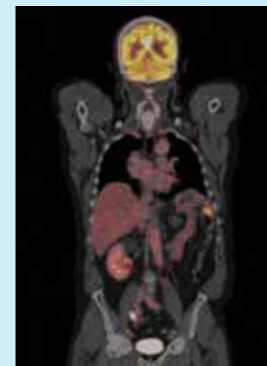


Imaging

At ARO, using the latest in imaging techniques is essential to delivering safe and effective treatment. Treatment plans are designed and calculated from a dedicated computed tomography (CT) planning scan. This usually involves contouring the organs and tissues within the patient so that the dose received can be accurately calculated and the treatment dose can be delivered precisely to the target volumes. By using 4D-CT scanning the extent of tumour motion can also be determined from the images acquired, enabling the treatment plan to be designed more precisely using adequate margins that will cover the tumour.

In addition to the CT planning scan it may be useful to have additional scans (ideally these scans will be carried out with the patient in the same position as in the CT planning scan):

- Diagnostic CT scans may provide extra information
- Magnetic Resonance Imaging (MRI) scans provide a lot more information and contrast for soft tissues and enable clinicians better accuracy in outlining soft tissue structures such as in the prostate and head and neck regions.



Positron Emission Tomography (PET) imaging

The use of PET in combination with CT provides accurate information on tumour extent and distribution for many common cancers. PET imaging enables the functional state of tumours and other tissues to be taken into account. Multimodality imaging combining both functional and anatomical or morphological information is now the gold standard for advanced radiation therapy treatment planning. The use of PET results in high accuracy in the detection of many tumour types by detecting only metabolic active tissue which should increase the accuracy of target volume delineation.

- The use of high fractional doses, particularly for Stereotactic Radiation Therapy (SRT), requires precise definition of the target volumes as well as the critical organs.
- Definition of the gross tumour volume is one of the most important steps in treatment planning and all other subsequent steps depend upon.
- PET can be used for staging, prediction of tumour response to therapy, detection of early recurrence and evaluation of changes in organ function following treatment.

Volumetric Modulated Arc Therapy (VMAT)

Elekta VMAT is the next generation arc therapy technique that establishes new standards for radiation therapy treatment speed and dose reduction to the patient. Single or multiple radiation beams sweep in uninterrupted arc(s) around the patient, dramatically speeding treatment delivery. VMAT with complete or partial arc(s) may reduce treatment times from the eight to twelve minutes required for "conventional" radiation therapy to as few as two minutes.

VMAT provides the radiation oncologist with the greatest freedom of choice regarding how the optimal dose will be delivered. 3-D volume imaging technology integrated into treatment systems at ARO enables our radiation therapists to see the tumour target at the time of treatment and to guide therapy that both maximizes the radiation dose to the target and minimizes exposure to surrounding healthy tissues.





Intensity Modulated Radiation Therapy (IMRT)

IMRT is an advanced mode of high-precision radiation therapy that allows the precise delivery of radiation doses to a malignant tumour or specific areas within the tumour. IMRT allows for the radiation dose to conform more precisely to the three-dimensional shape of the tumour by modulating the intensity of the radiation beam in multiple small volumes. IMRT also allows higher radiation doses to be focused to regions within the tumour while minimizing the dose to surrounding normal critical structures.

Treatment is carefully planned by using 3-D CT or MRI images of the patient in conjunction with computerized dose calculations to determine the dose intensity pattern that will best conform to the tumour shape. Typically, combinations of multiple intensity-modulated fields coming from different beam directions produce a custom tailored radiation dose that maximizes tumour dose while also minimizing the dose to adjacent normal tissues.

Because the ratio of normal tissue dose to tumour dose is reduced to a minimum with the IMRT approach, higher and more effective radiation doses can safely be delivered to tumours with fewer side effects compared with conventional radiotherapy techniques. IMRT also has the potential to reduce treatment toxicity, even when doses are not increased. Due to its complexity, IMRT does require slightly longer daily treatment times and additional planning and safety checks before the patient can start the treatment.

Currently, IMRT is being used most extensively to treat cancers of the prostate, head and neck, and central nervous system. IMRT has also been used in limited situations to treat breast, thyroid, lung, as well as in gastrointestinal, gynaecologic malignancies and certain types of sarcomas.

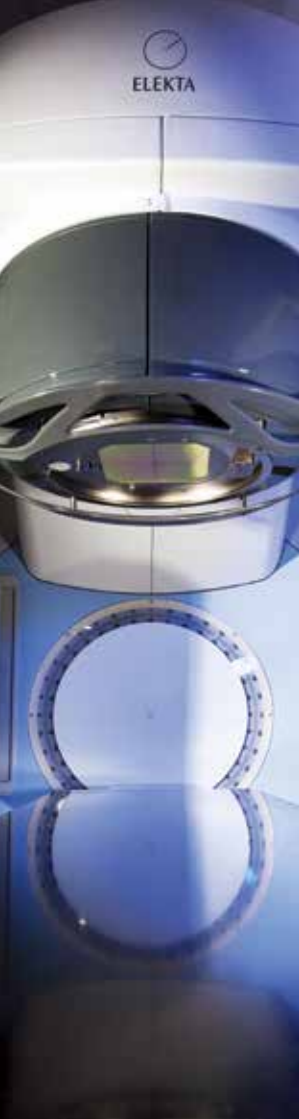


Image Guided Radiation Therapy (IGRT)

IGRT uses a variety of 2-D, 3-D and 4-D imaging techniques throughout the course of radiation therapy to accurately identify, pinpoint and monitor the patient's tumour for changes. IGRT increases the probability of tumour control and sparing of normal tissues due to the improved targeting of the tumour.

ARO uses both Elekta XVI and Symmetry™ imaging immediately before or during the time radiation is delivered, while the patient is positioned on the treatment table. These images are then compared to the images taken during simulation. Any necessary adjustments are then made to the patient's position in order to more precisely target radiation at the tumour and avoid healthy surrounding tissue.

- XVI – 2D and 3D kV imaging enables planar and volume imaging to allow soft tissue detail to be seen in any area of the body immediately prior to treatment.
- Symmetry™ – Unique 4D kV imaging provides 4D volume imaging of moving tumour immediately prior to treatment. This volume image is matched to the original 4D-CT image used in the treatment planning phase, and the patient position is then corrected to locate the tumour in the planned position. This allows moving targets to be treated aggressively without compromising the safety of adjacent critical structures.

IGRT is used to treat tumours in areas of the body that are prone to movement, such as in the lungs, liver, and prostate gland, as well tumours located close to critical organs and tissues.



Stereotactic Radiation Therapy (SRT) and Stereotactic Ablative Radiation Therapy (SBRT/SABR)

Radiation therapy is rapidly evolving, resulting in innovative treatment options, with stereotactic and hypo-fractionated therapies increasingly becoming the standard of care for a variety of cancers such as; acoustic neuromas, pituitary adenomas, haemangioblastomas, secondary brain tumours and tumours in the lung, liver and pancreas. This stereotactic technique is less invasive than surgery and may be more broadly applicable to greater numbers of tumours and patients can conveniently finish their treatment in days instead of several weeks.

These ground-breaking techniques combine advanced tumour targeting under 4D-image guidance and higher doses of radiation than conventional radiation therapy to accurately treat a well-defined tumour.

Any misalignments in patient position are corrected using the robotic patient positioning HexaPOD™ evo couch system which provides six degrees of freedom including translational and rotational corrections. These systems allow sub-millimetre patient positioning accuracy and targeting of the tumour during treatment.

Leading-edge treatment planning systems

ARO was the first treatment centre in Australasia to implement RayStation® the most advanced treatment planning system on the market today. The RayStation® optimisation algorithms for VMAT, IMRT and 3D-CRT alongside a comprehensive set of tools for traditional 3D planning form the core of functionality. Fusion capabilities (CT, PET and MRI), contouring, collapsed cone convolution dose computation and 4D data compatibility, as well as unique features such as multi-criteria optimisation, dose tracking, treatment adaptation and deformable registration, are all utilised at ARO to improve patient treatment outcomes.



Why choose Auckland Radiation Oncology?

ARO puts the patient first

- ARO offers patients the best in personalised care. With no waiting times and treatment schedules that are flexible to the needs of each patient, patients receiving treatment ARO do not feel they have to vastly compromise their daily routines or quality of care whilst undergoing radiation therapy. Staff at every level put the patient at the centre of everything that they do.

Advanced and leading edge technologies

- ARO is committed to the investment and introduction of the latest cancer treatments and technology. World-leading diagnostic techniques, technologies and individualised treatment plans based on internationally established clinical guidelines ensure safe and effective delivery of treatment, from specialists who are leaders in their respective fields.

ARO offers the best choice for the best outcomes

- Unique treatment plans for every patient are developed by a team of specialists, who will consider all possible treatment options and recommend those that they believe will achieve the best possible outcome for each patient.

"I was most impressed that when physical problems arose, with radiation treatment, staffs' response was immediate and appropriate. I cannot speak highly enough of all staff."

– Anon, Auckland



The team managing cancer care at Auckland Radiation Oncology

The team at Auckland Radiation Oncology is led by Professor Chelleraj Benjamin, Clinical Director.

The highly qualified team of physicists at ARO is led by Dr Bongile Mzenda (CSi, MIPEM).

Bon has vast experience as a medical physicist working in the UK radiation therapy services incorporating lead physicist roles for both public and private institutions. He has a strong research background with several publications covering advanced radiation therapy applications. He also peer reviews a number of radiation therapy and applied computing journals.

Denise Redwood (BSc RT (T)) is the Manager of Radiation Therapy Services at ARO. With many years of experience as a radiation therapist in New Zealand, the UK and the USA; Denise has managed a fantastic team of administrators, nurses and radiation therapist since the launch of ARO in 2008.

Every member of staff has been hand-picked because of their commitment to patient-focussed care and skill in their particular specialisation.

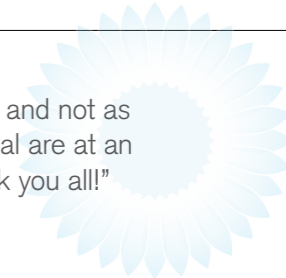


Radiation Oncologists consulting at Auckland Radiation Oncology

Consultant	Qualifications	Areas of speciality
Dr Chelleraj Benjamin (Benji)	ONZM; MB BS; DMRT; MD; FRANZCR	Breast, Head & Neck, Skin and Urological Malignancies; Palliative radiation oncology
Dr Susan Brooks	MB ChB; FRANZCR	Breast, Gastrointestinal, Gynaecological and Skin Malignancies; Palliative radiation oncology
Dr John Childs Whangarei satellite clinic	ONZM; MB ChB; FRANZCR; FRACP	Breast, Urological, Gastrointestinal and Haematologic Malignancies; Palliative radiation oncology
Dr Christine Elder	MB ChB; FRANZCR	Breast, Gastrointestinal and Lung Malignancies; Palliative radiation oncology
Dr Anthony Falkov	MB BCh; FRANZCR	Central Nervous System (brain and spine), Gastrointestinal and Head & Neck Malignancies; Sarcoma; Palliative radiation oncology. Stereotactic Radiation Therapy
Dr Louis Lao	MB ChB; FRANZCR	Gastrointestinal and Lung Malignancies; Lymphoma and Oligometastases; Palliative radiation oncology. Stereotactic Radiation Therapy
Dr John Matthews	MB ChB; Dip Obst; FRANZCR; FACHPM	Urological and Skin Malignancies including melanoma; Palliative radiation oncology
Dr Maria Pearse	MB ChB; FRANZCR	Breast, Gastrointestinal, Lung, Melanoma and Urological Malignancies; Palliative radiation oncology
Dr Giuseppe "Peppe" Sasso	MB ChB; Spec (Onc Rad)	Breast and Genitourinary Malignancies; Palliative radiation oncology. Stereotactic Radiation Therapy

"My deep appreciation for treating me as an individual with feelings, and not as a number. Your professionalism and skills both technical and personal are at an exceptionally high standard all the time. Thank you, thank you, thank you all!"

– Head and Neck patient, Orewa



Referrals to Auckland Radiation Oncology

When you refer a patient to Auckland Radiation Oncology, you can do so with the greatest confidence that we are committed to providing the best care possible for your patient.

Our consultants regularly participate in Multidisciplinary Meetings (MDMs), which means that our radiation oncology consultants work closely with specialists ranging from surgeons to medical oncologists reviewing specific cases and discussing treatment options, to ensure that every patient's care is aligned.

Patients can usually be seen by an ARO consultant within a week of referral, depending on consultant availability and there are no waiting times for a simulation CT scan or to start treatment once a treatment plan has been decided.

Cost for radiation therapy and treatment duration are specific to each patient. Once their case has been assessed

by a specialist, the treatment plan will be discussed with the patient and will be communicated with their referrer.

You can refer your patient to a specific consultant or send a request for a speciality-specific review. The ARO consultant profiles with their full detail and specialisations are listed on our website but for more information please contact our Specialist Centre bookings team who will advise you accordingly (see contact details below).








We will work with your patient to complete the registration process, liaise with their insurance provider where applicable, and to schedule an appointment at their convenience. You will be notified once the appointment is scheduled.

We appreciate and thank you for considering Auckland Radiation Oncology as part of your care team.

THERE ARE A NUMBER OF OPTIONS YOU CAN CHOOSE FROM TO REFER A PATIENT:

- Call +64 9 623 6587 to speak with our Specialist Centre bookings team
- Fax through a patient referral letter to +64 9 623 6586
- Email through a patient referral letter to specialistcentre@aro.co.nz or to the specialist directly (email addresses can be found on our website)

Where we are

-  AUCKLAND RADIATION ONCOLOGY
-  MERCY RADIOLOGY
-  MERCYASCOT PHARMACY
-  MERCYASCOT HOSPITAL RECEPTION
-  MERCY SPECIALIST CENTRE
-  CAFE
-  CAR PARK
(Use link bridge off upper level to access ARO)



Street Address: 98 Mountain Road, Epsom, Auckland
Website: www.aro.co.nz

Ph: 09 623 6046
Fax: 09 623 6586
Email: info@aro.co.nz



AUCKLAND
RADIATION
ONCOLOGY

A partnership
between MercyAscot
and Southern Cross
Hospitals



MercyAscot



Southern Cross
Hospitals