NUHS RADIATION ONCOLOGY RESIDENCY PROGRAMME

Adj A/Prof Koh Wee Yao
Programme Director

Introduction

Radiation Oncology is a field of clinical medicine that involves the use of ionizing radiation to treat cancers, as well as other conditions responsive to radiation.

Our Radiation Oncology Residency Programme at National University Cancer Institute, Singapore (NCIS) is committed to training well-rounded radiation oncologists with specialised clinical expertise and professional competencies, empowering them to lead in patient care, education, and research.

Overview

The 5-year Radiation Oncology Residency Programme is designed to fulfil the requirements of Specialist Accreditation Board (SAB) for specialist certification in Radiation Oncology in Singapore.

Admission criteria require applicants to have one year of clinical postings outside of Radiation Oncology prior to entry into the programme.

The main training sites are National University Hospital and Tan Tock Seng Hospital, with opportunities for oversea attachments (minimum 3 months, up to 1 year).

Programme Highlights

- **Learn Personalised Cancer Care**
  Radiation Oncology uniquely blends science and art to deliver tailored treatments by carefully balancing treatment decisions and radiotherapy techniques. Residents learn to achieve cancer control or symptom relief while minimising treatment adverse effects.

- **Structured, Supportive Training**
  Our programme features a structured curriculum with systematic tracking of progress, supported by a nurturing learning environment, dedicated mentors, and a collegial departmental culture.

- **Comprehensive Curriculum**
  Residents receive in-depth training in medical physics, radiation biology, and clinical oncology, with a strong emphasis on advanced radiation technologies that enhance precision in both curative and palliative care.

- **Diverse Clinical Exposure**
  Residents gain experience across a broad spectrum of cases at multiple training sites, including opportunities for overseas rotations, fostering both clinical expertise and cross-institutional collaboration.

- **Growth beyond Residency**
  The programme is designed to develop not only clinical excellence but also the full spectrum of CanMEDS competencies—including communicator, collaborator, leader, health advocate, scholar, and professional. Graduates will be well-prepared to take on leadership roles in patient care, education, and research, and to thrive in an evolving healthcare landscape.

Programme Structure

Clinical Practice

Basic training in Years 1 and 2 focuses on foundational sciences, including medical physics, radiobiology, cancer biology, pharmacology of systemic anti-cancer treatments, and medical statistics.

Residents are required to spend dedicated time at treatment unit (linear accelerator), simulation suite, treatment planning, and physics quality assurance. This curriculum prepares residents for first FRANZCR/ FRCR Radiation Oncology examination.

Advanced training in Years 3 to 5 emphasizes the comprehensive management of common malignancies and provides exposure to less common ones. This phase also includes training in advanced radiotherapy techniques (stereotactic radiotherapy, brachytherapy, total body irradiation, total skin electron), clinical oncology (systemic therapies, cancer screening and prevention, palliative care), and pathology. By the end of this phase, residents are expected to be ready for the final FRANZCR/ FRCR Radiation Oncology Examination.

Throughout the programme, residents rotate through various tumour streams, with each clinical rotation lasting between 3 to 6 months. During these rotations, residents will attend outpatient clinics, inpatient referrals, radiotherapy treatment reviews, radiotherapy simulation, radiotherapy planning, radiotherapy quality assurance meetings, brachytherapy, and multidisciplinary tumour board discussions.

Radiation Oncology Educational Programme Outline

Training	**Basic Training**		**Advanced Training**		
Year	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Training sites	NUH and TTSH		NUH and TTSH - Opportunities for overseas postings - Optional elective postings: Palliative medicine, diagnostic radiology, medical oncology, pathology		
Subjects	Medical Physics Radiobiology Cancer biology Pharmacology Medical statistics		Advanced radiotherapy techniques Radiation Oncology Clinical Oncology Pathology		
Research	Research training				

Interprofessional Learning

Beyond core Radiation Oncology rotations, residents will rotate through key related specialties such as Pathology, Palliative Care, Medical Oncology, Malignant Haematology, General Surgery, Urology and Otorhinolaryngology. This interprofessional exposure ensures well-rounded clinical training.

Educational activities include a comprehensive didactic lecture series, case-based discussions, tutorials, journal clubs, and examination preparatory sessions to support residents' professional growth and exam readiness. Additionally, residents are provided with protected time—half a day per week—for self-directed learning.

Research

Residents have access to a wide range of research opportunities, supported by experienced mentors and structured research workshops. Areas of focus include basic science, translational research, and clinical studies.

Our residents have consistently contributed to the academic field through publications in peer-reviewed journals and presentations at both local and international conferences. Many have also received prestigious awards in recognition of their work.