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Radiation Medicine is one of the 15 departments in the Faculty of Medicine and Health Sciences at Walter Sisulu University (WSU). It was ratified and consolidated by the University Senate in August 2023, and is home to the divisions of Diagnostic Radiology, Radiation Oncology, Nuclear Medicine and Medical Physics.

The divisions of Radiation Oncology and Diagnostic Radiology are fully accredited to train postgraduate students. These divisions have a rich history and play a crucial role in service delivery and training in disciplines where human resources are very scarce, especially in rural settings. Radiologists and oncologists are very few worldwide, and are difficult to attract to rural areas. These divisions have evolved from a solo specialist to the current state where they are accredited for specialist training.

The Diagnostic Radiology Division

Two sites are accredited for radiology specialist training, Nelson Mandela Academic Hospital (NMAH) in Mthatha and Livingstone Hospital in Gqeberha.

The department started at Umtata General Hospital (UGH) in 1986. For most of its existence, it has had specialists. Radiographers played and still play a vital role in both service and training. Dr A Ganesan pioneered the radiologists, followed by Dr Cynthia Hlatswayo, who sadly passed away shortly after. In 1989 Prof. I B Targonska joined, followed by Dr S Rajiah, who passed on in 1992. Dr M I Anwary was recruited in 1992 and served the Eastern Cape for 30 years until retirement in 2023.

In 1986, the department was equipped with only a fluoroscopy unit and an ultrasound machine. A single-slice computed tomography (CT) scanner and a mammography machine were purchased in 1998. In 2004, it moved from UGH to its current home at NMAH. A brand-new digital department was established through the efforts of Prof. Targonska, Dr Anwary and radiographers, consisting of a picture archiving system, digital radiography, fluoroscopy, ultrasound units and mammography. Later, a four-slice spiral CT scanner was added. In 2011, a 64-slice spiral CT scanner, digital mammography and digital fluoroscopy units were purchased and commissioned.

Tutorials for medical students at what was then the University of Transkei commenced as early as 1998. The registrar training programme commenced in 2005 in collaboration with the University of Cape Town. This programme was cut short by the unfortunate resignation of Prof. Targonska in 2011, which left only one radiologist in the department. In 2012, Dr Anne Namugenyi joined the department, and the registrar programme was re-introduced. Under the leadership of Mrs N Makwedini, then Chief Executive Officer of NMAH, and the Dean of the Faculty of Medicine and Health Sciences, Prof. W Chitha, a private-public partnership with Drs Mdunge and

Mnguni Radiologists was established and the programme received full accreditation to train radiologists. To date, over 30 young doctors have passed the Part I Colleges of Medicine of South Africa radiology examinations, and 10 have qualified as specialist radiologists. We are proud to mention Dr C Naidoo and Dr M Lobi, who were the first WSU-trained radiologists. The corridors of radiology at NMAH and Livingstone Hospital are currently trodden by several trainees in radiology, eager to learn and give back to the community.

The Radiation Oncology Division

Radiation oncology training has two accredited sites, Frere and Livingstone hospitals. Cancer care became a significant focus, with periodic investigations into cancer incidence in the Eastern Cape in the 1950s.

Oncology departments in the Eastern Cape have undergone several renovations and modern equipment upgrades by the Eastern Cape Department of Health to enhance patient care. State-of-the-art machines, including linear accelerators, dedicated planning CT scanners, Monaco planning systems, high dose rate brachytherapy units and radioactive isotope treatment facilities, are available for cancer care. These efforts have enhanced the training of radiation oncologists by the university.

Mthatha oncology

Oncology services in Mthatha were set up and run thanks to the strong leadership and guidance of oncology-trained nurses in 1985. They pioneered the development of oncology services in the eastern part of the Eastern Cape. With support from oncologists at Frere Hospital, they received therapeutic scripts and administered the chemotherapy, avoiding the need for patients to travel and saving them time and money. These dedicated and courageous nurses included sisters Maqhoga, Mdunge and Majova, and have been recognised and honoured. NMAH and WSU are grateful to the Bristol Myers Squibb Foundation, which funded a cancer project that established the infrastructure: building renovation, equipment for chemotherapy mixing, and staff training. Five medical officers received training on screening, treatment and monitoring side-effects of patients. Further afield, a decentralised cancer treatment model led by Dr Z Jafta was established in 2018. As a result, district hospitals in the province can provide some limited cancer treatment services.

At NMAH, a R416 million oncology unit is under construction after having been commissioned in 2023. This brings much-needed services closer to patients in the eastern part of the Eastern Cape, who at present must travel over 500 km to urban East London to access life-saving cancer treatment. This fulfils the government's commitment to bringing services to the people, and provides a fertile teaching platform for the WSU students.

Frere Hospital Oncology Department

Frere oncology was started as a satellite site of Groote Schuur Hospital in the 1980s with Dr V B Reddy heading the unit, which was situated in the hospital's basement. Dr Reddy, together with Dr N Bental and Dr B Pokharel, spearheaded the building of a new department with a new linear accelerator machine. The oncology building had space for wards and an upmarket outpatient facility with consulting rooms, offices, a radiotherapy unit and a chemotherapy unit.

Like radiology, Frere oncology training received partial accreditation, and registrars had to complete their training at Groote Schuur Hospital. In 2016, under the leadership of Prof. Pokharel, WSU received oncology full accreditation.

Treatment modalities range from chemotherapy and radiotherapy to radioactive iodine for thyroid cancers. The centre treats all solid tumours. Dr Neil Littleton, a haematologist based in Gqeberha, is recognised for his invaluable outreach clinics to Frere Hospital since the year 2000.

Research forms a cornerstone of the training, with Prof. Pokharel leading work on brachytherapy for oesophageal carcinoma and several clinical trials covering work on radiotherapy treatment techniques. Areas of research range from analysis of choriocarcinoma in HIV-positive and negative patients, comparison of hypofractionation of prostate cancer with normal fractionation, and ototoxicity of cisplatin for patients receiving chemotherapy for a range of cancers.

Livingstone Hospital Oncology Department

Dr Erika Jansen pioneered the oncology services at Livingstone Hospital and selflessly provided services until retirement. She was succeeded by Dr Adelaide de Freitas, who maintained specialist services despite poor resource availability in the hospital and the province. She is the only oncologist working with several registrars and medical officers. Passion and empathy for the community drive the teaching and service delivery.

Comprehensive cancer care is offered, including radiotherapy for adult and childhood tumours, chemotherapy for adult malignant tumours, radioisotope treatment for malignant and benign conditions, and combined clinics for breast cancer and head and neck, urological, gastrointestinal and paediatric tumours.

Since inception of the Division of Radiation Oncology, nine oncologists have been produced by WSU. Retaining them in the public sector is challenging; however, many remain within the province in the private sector.

A river that forgets its origins runs dry, and we believe in Ubuntu not just as a philosophy but as a clinical tool.

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