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OPINION

Taking newly developed skills in oncology practice home – personal opinion of a returning Zambian supernumerary trainee

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Background

Zambia is a landlocked country in Sub-Saharan Africa. It has a population of approximately 16.59 million people according to the last national census in 2016. The cancer incidence is 10 600 and mortality 7500 per 100 000.[1] With regards to cancer treatment it has one comprehensive centre, Cancer Diseases Hospital, offering radiotherapy, chemotherapy and recently oncology surgery.[2] All seven of the country's clinical oncologists work at this centre, which is based in Lusaka, the capital city. Patients must therefore travel from all other parts of Zambia to access specialised care. However, plans are underway to decentralise the care.

The Cancer Diseases Hospital operationalised in 2006 with one expatriate Radiation Oncologist. Later four Zambian Clinical and Radiation oncologists graduated from training in South Africa. As part of the second phase of expansion and capacity building, I was sent for training in Radiation Oncology at Stellenbosch University/Tygerberg Hospital where I successfully graduated with a Masters in Medicine and a Fellowship of the College of Radiation Oncologists Colleges of Medicine of South Africa.

The training program in South Africa

The duration of this clinically-based Masters Degree was four years. The mode of teaching was English. However, the working language of most of the patients and staff was Afrikaans. This was an additional challenge I needed to overcome. Some key areas that allowed the training program to be relevant to my home country were as follows. The skills gained in radiotherapy were 2D (2-dimensional) and 3D (3-dimensional) based. The exposure to both modalities was helpful as the transition from 2D to 3D is still ongoing in Zambia. The acquisition and commissioning of CT simulator and a new treatment machine in the department during my training allowed me to be part of the implementation process, which will be commonplace for me at home in the future. Training in solid tumour systemic treatment was also undertaken. The department was publicly funded and all drugs had to go through a critical evaluation for provision of equity of service. This allowed me to gain insight into weighing the overall benefit of a given therapeutic modality against the responsibility of providing service to a large number of people. The re-evaluation and remodelling of the quality assurance program in the department during my time in training also added to building experience and knowledge in the processes involved in this important activity.

Implementing skills in Zambia

Following the successful completion of the training program, I returned home to contribute to the delivery of cancer care in the country. The department currently has 2 cobalt machines, 1 linear accelerator, 2 high dose-rate brachytherapy units, 1 conventional simulator, 1 CT scanner, 1 MRI, 1 mammography unit, 2 X-ray units and 2 ultrasound machines. We also have an 8-bed isotope isolation ward and an operating theatre. The in-patient department has 250-bed capacity. [3]

The volume of patients seen is large with approximately 2500 new cases seen in 2017 alone.[4] One thousand three hundred and fifty-six (1356) were treated on the machines and 721 new cases of chemotherapy were administered.[5] The most common cancer managed is uterine cervix cancer and a total number of 1602 brachytherapy procedures were done. Each patient undergoes 3 or 4 insertions.[4]

Positives factors and successes

In the department elements of good quality assurance practice are weekly peer review meetings for external beam radiotherapy and brachytherapy in house. Multidisciplinary team meetings with gynaecology oncologists, gastroenterologists, pathologists, breast surgeons, general surgeons and pulmonologists are functioning and have been strengthened.

The brachytherapy program for cervical cancer is particularly successful. Plans are individualised to the patient using mostly ring or cylinder and intrauterine tandem. Insertion of applicators is under ultrasound guidance. 2D and 3D brachytherapy are done in parallel. The patients undergoing 3D planning also have access to an MRI for advanced planning. We are moving towards

use of interstitial needles for the large residual disease areas. We aim to implement brachytherapy for other disease sites.

A local training program has been established and this will accelerate capacity building efforts.

Challenges

A high patient load compared to low specialist number is the greatest challenge. Weak multidisciplinary relationships hinder comprehensive care in the centre. Despite the existing meetings, not all physicians in the respective disciplines participate. Radiology support is poor and is a key area that is in need of improved input. With regards to radiotherapy, a lack of multi-leaf collimators on any of the machines impedes the conformity of treatment as only limited number of fields can be realistically used, especially considering the patient load.

Conclusion

Zambia is in a unique situation of having most of the infrastructure needed for oncology services. Returning with well-developed oncology skills has had a very positive impact on the home centre. Clear goals and objectives when one is in training enable adaptation upon return from training abroad. A future analysis is needed to evaluate outcomes of training in resource-rich environments for medical practitioners from low resource settings.

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