

Accelerating the Future: Designing a Robust and Affordable **Radiation Therapy TREATMENT SYSTEM** for Challenging Environments

The 4th Conference to coordinate efforts to design and develop an affordable and robust yet technically sophisticated linear accelerator-based radiation therapy treatment (RTT) system was held in Gaborone, Botswana on March 20-22, 2019. The conference was sponsored by STFC with funding from the UK Global Challenges Research Fund (GCRF) and supported by CERN and ICEC.

All too often, conferences related to creating a new program or technology to improve the care of patients with cancer or other conditions in LMICs and underserved regions of UIC countries are held in major world cities; New York, Geneva, London. Convening this conference in Gaborone enabled a significant number (over one half of the attendees) of physicians, physicists and staff from Sub-Sahara Africa and other LMICs to attend, present their reports and interact with the scientists working with them in their own region of the world thereby generating a sense of a global community working to-

ward a common goal. It also allowed participants to visit hospitals, both private and public, in Gaborone to see the conditions under which the robust and modular RTT system will be used. The visiting participants left Gaborone with a much better understanding of the challenges faced by those treating patients with cancer in LMICs and a much stronger commitment to work with their colleagues to develop the new RTT systems that they need.

This workshop, built upon two prior workshops held at CERN in November 2016 and October 2017, and one in Manchester UK in March 2018. LMIC countries with participating representatives included: Botswana, Ghana, Jordan, Kenya, Nepal, Nigeria, Tanzania, Zambia, and Zimbabwe. Expertise included accelerator and medical physicists, engineers, oncologists, and healthcare management representatives.



Fourth CERN-ICEC-STFC workshop held in Gaborone, Botswana March 2019.



Linnet Nhari, the radiographer at Life Gaborone Private Hospital



State-of-the art linac facility at Life Gaborone Private Hospital



Medical staff from Botswana



Mokolodi Nature Reserve in Botswana

The meeting was organized with presentations and discussions encompassing five areas:

1. Local LMIC perspective on healthcare, cancer care, and technology challenges
2. Current radiation therapy systems and challenges
3. Project reports on the STFC funded work packages
4. Education, training and technical support needs
5. Discussion on priorities and next steps