Advancing the Design of a **ROBUST AND AFFORDABLE RADIATION THERAPY TREATMENT SYSTEM** ***for*** *Challenging Environments*

Group photo of the meeting in Washington D.C.

Washington D.C. was the location of the 5th workshop to advance the design of an affordable and robust, yet technically sophisticated linear accelerator-based radiation therapy treatment (RTT) system. The meeting was hosted by the International Cancer Expert Corps (ICEC) and included participants from the STFC Daresbury Laboratory, CERN, Lancaster University (UK), Kings College London Institute of Cancer Policy, Oxford University (UK) and Melbourne University (AU), and ICEC and its Scientific Advisors.

Building on the input from prior workshops and design sessions at the recent meeting in Botswana (March 2019), a core team of physicists, radiation oncologists, and health systems experts convened to further refine design decisions and planning for a new LINAC.

The agenda had presentations and discussion on topics that included:

- ***An overview of the developing science and future implications for Radiation Therapy***
- ***A discussion on the clinical functional requirements for a radiation treatment system designed for challenging environments***
- ***Refinement of the design elements for the LINAC***
- ***A review of trends in cancer treatment and payment, and healthcare system priorities and challenges in both UICs and LMICs***
- ***Opportunities to support a sustainable skilled workforce, for both treatment applications, and service and maintenance requirements in LMICs, through the development of ongoing education and training programs***

> **“With only 10 % of patients in low-income countries who need radiotherapy having access to this treatment, this project is critically important for improving cancer care.**
>
> *-Donna O’Brien*

Key decisions on many elements of the proposed system were made amongst the group. The initiative is rooted in developing a systems solution for improving cancer treatment in LMICs, an organizing theme for all of the workshops. To ensure that the needs and barriers are understood, a survey was designed for distribution to cancer programs in LMICs to gather more specific information on servicing challenges and downtime. This survey builds on a failure mode analysis that is being conducted in parallel. Ongoing education, training and mentoring programs will be an integral component of the planning for the new LINAC, so each workshop includes a discussion on how these needs are best met and funded.

The workshop concluded with a summary of progress, priorities to be addressed, a proposed timeline, and next steps.

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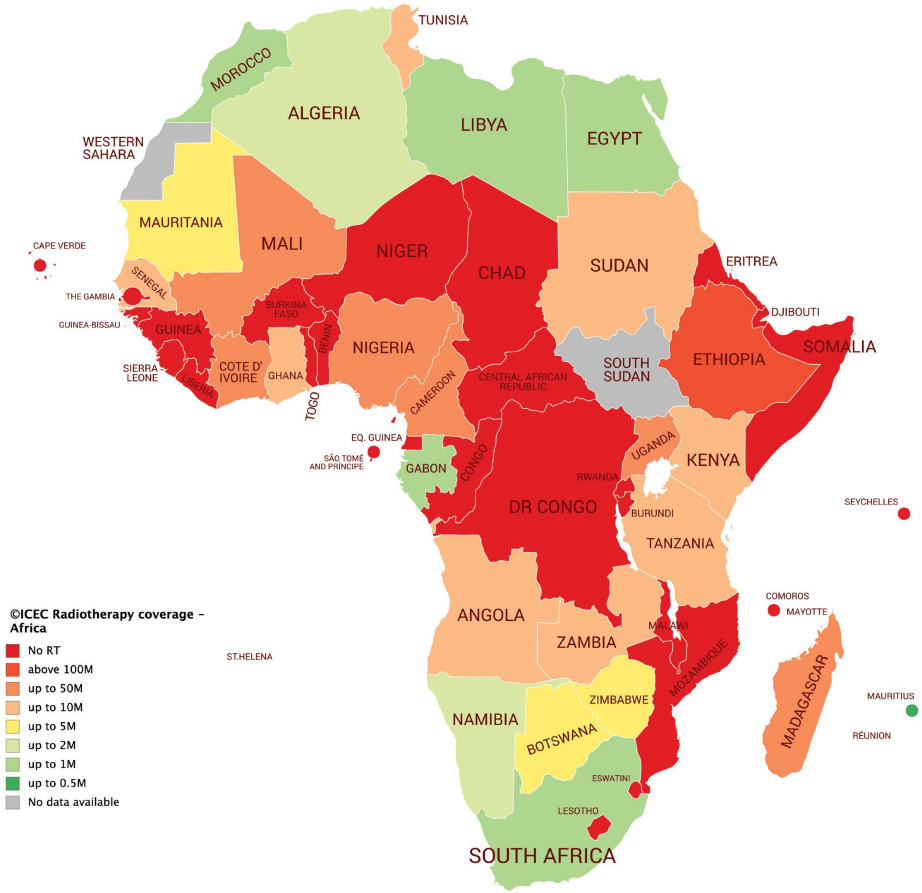
This project continues to inspire leading physicists, physicians, and healthcare management and health policy professionals to use their expertise to expand access to radiation therapy for those most in need.

-Larry Roth

McIntosh, Spears, Dosanjh and Chin - animated discussions during the meeting.

As the project moves forward, the creativity, positivity and generation of new ideas to address many of the current challenges to deliver radiotherapy in LMICs and challenging environments globally never falters among this group of incredibly talented individuals

-Nina Wendling



Map showing the number of people per functioning machine in Africa.