

**Implementation & Evaluation of a
Clinical Research Mentorship Program (CRMP) for Oncology Trainees
Through Distant-Learning, Mentorship and International Partnership**

**Grant Report
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Background for READS Grant Application

Overview and summary

The Clinical Research Mentorship Program (CRMP) is a collaborative initiative created by Princess Margaret Cancer Center, and University of Toronto Department of Radiation Oncology (2016), jointed forces by MD Anderson Cancer Center (2021), delivered in collaboration with LMIC radiation oncology residency programs with the goal of enriching the clinical research experience of LMIC oncology physician trainees.

The program was inspired by a need, enabled by a collaborative spirit, and initial seed fund investment by Princess Margaret's Global Capacity Building Fund in its first year behind the idea. The program consists of formalizing a structure to create LMIC-HIC mentorship triads (supervisor – trainee – mentor) around each participating LMIC trainee. Within this distant - learning enabled environment, a research methods seminar (13 weeks) and a year-long mentorship for the trainees on their research projects is delivered, supported by a robust evaluation program. Two new components to be evaluated through the current grant, is a mentoring the mentors (and supervisors) program (6 weeks), and a transition to mentoring strategy designed based on our partners' needs.

CRMP began as a collaboration with the Korle Bu Cancer Center, Ghana in 2016-2017, followed by Parirenyatwa Radiotherapy Center, Zimbabwe in 2018-2019, and the Association of Clinical and Radiation Oncologists of Nigeria with engagement of all seven residency programs in the country (2020-2021). The focus of the current grant application is for the 2022-2023 cohort, which is a further expansion of our reach in collaboration with the African Organization of Research and Training in Cancer (AORTIC). This offering represents a scale up of our program. Our goal is to support 10 African radiation oncology physician trainees from across Africa.

The CRMP is designed to engage different collaboration partners each year. Supporting a small number of oncology trainees while very meaningful, can be criticized as modest in its impact. We hypothesize that it is possible to scale collaborative projects by sharing a core purpose (research mentorship for trainees in our case), and a common “developmental framework” across different settings, translating lessons learned from one to another, with increased efficiency with each iteration. By teaching the teacher, mentoring the mentors, and applying an evaluation program that seeks to iteratively understand the enablers and barriers of each new environment, we expect the effect and lessons learned with each cohort is accumulative. It will build relationships and expand the network, translating into accelerated growth in capacity that is meaningful on a global scale. In part following feedback from my first READS grant application (2020), and the feedback from our mentees and collaborators, we added to our project two components: **“Transition into Mentoring”** and **“Expanded Evaluation”** components.

Aim

Our grant budget of \$5,000, was intended to be used as match funding to support the new **“Transition into Mentoring”** and **“Expanded Evaluation”** components of our program for the **2022-2023 cohort**.

Grant Objectives

The primary objective of this project is

To evaluate the feasibility and efficacy of the 2022 CRMP (AORTIC – MD Anderson - Toronto collaboration) supporting a medium size (10 Trainees) multicenter cohort of trainees – supervisor and mentor collaboration.

Secondary objective of the project is

1. To evaluate the **feasibility** and efficacy of a concurrent “mentoring the mentor” program designed to enhance mentorship skills for participating mentors and supervisors.

Timeline for this grant

The current grant application will apply to the 2022-2023 cohort (Jul 2022 – Dec 2023).

At the time of grant submission, the CRMP cohort for 2021 (Jul 2020 -Dec 2021) including evaluation is already ongoing.

The metrics and tools used to evaluate each of the objectives are outlined in section “Project Evaluation” (Appendix 4b described below)

Since the Jul 2022- Dec 2023 Cohort (AORTIC) is currently ongoing, and the 2021-2022 Cohort (NIGERIA) was ongoing at the time of the project grant submission, and the deliverables for the NIGERIA cohort, mirrors the outcome we plan to report for the AORTIC cohort, we have provided results from both cohorts in the grant report.

Summary of grant results and deliverables

The 2021-2022 (NIGERIA) cohort included seven residents from all the training programs in Nigeria, and the 2022-2023 (AORTIC) cohort included 7 residents from 4 countries (Ethiopia, Zimbabwe, Kenya and Tanzania. It is worth stating that the first cohort (Ghana) included 2 residents, and second cohort (Zimbabwe) included 2 residents who had mentors assigned.

Feasibility

Research seminar series

All residents participated and completed the research seminar course (7/7 Nigeria, 7/7 AORTIC).

Project completion

The progress of the **Nigeria cohort** was significantly affected by the COVID pandemic. Of the 7 residents enrolled, only two residents completed their projects and a third resident pivoted and completed an alternative project, resulting in a **project completion rate of 3/7 (43%)**.

The **AORTIC cohort's** project is ongoing. To date, 3 residents' projects (Ethiopia) are completed, while the remaining 4 are ongoing.

All residents who completed their project were successful in having their abstract accepted at an international conference and their results disseminated with a **successful abstract presentation at international conference rate of 43% (3/7)**.

Manuscript publication rate was too early to evaluate for both the Nigeria and AORTIC cohorts. Looking at previous cohorts (cohort I- II, 2016-2019), this was **2 /4 (50%)**.

It is noteworthy that two merit awards were provided to one trainee (Nigeria), and two trainees were successful (Zimbabwe, Ghana) were successful in securing subsequent peer reviewed research grants although these metrics were beyond the scope of our project.

Supervisors & mentors participation in “mentoring the mentor” seminars

For the Nigeria cohort, 5/7 supervisors and 5/5 mentors; and 4/6 supervisors (Zimbabwe, Ethiopia, Tanzania) and 4/6 mentors participated in at least one **“mentoring the mentor”** seminar series. i.e. **18/24 (75%)**. In general, supervisors and mentors are interested in participating. However, the sessions are not mandatory and scheduling sessions across countries and time zones were challenging, The sessions were recorded and made available to supervisors and mentors to maximize asynchronous participation.

Mentor self-evaluation of quality of mentoring was captured by 7/12 (58% response rate) supervisor and mentors (Nigeria cohort). 100% of the participants felt the mentoring the mentor sessions were helpful and will recommend to future supervisors/mentors. Respondents felt they were performed better at the end of the mentoring year in the six areas that were discussed including supporting academic writing, assessing understanding, addressing equity and inclusion, fostering independence, aligning expectations and maintaining communications.

Areas of strengths of the mentoring mentor seminar series included better communications/leadership skills and the use of sharing of experiences are a learning strategy. Areas of improvement included more time for participants to contribute, provide certification for participation, follow up exercises, include advice of time management, and mentee experiences.

From the residents’ (mentees’) perspective, changes in the quality of mentoring (baseline and at 4 months) were not as readily noticed. Only 2/14 (14%) Nigerian respondents, and 0/3 (0%) AORTIC mentees noted a change in behavior between baseline and month 4. Although the mentees scored the overall quality of mentoring was high 6.3 (SD 0.6) (1 = very low 7 = very high); meet expectations 6 (SD 1) and would recommend to my colleagues 6 (SD 1) . (1 = strongly disagree, 7 = strongly agree).

Transition to mentoring & AORTIC seed grant

These two components is ongoing and its feasibility and impact will be evaluated towards the end of 2023.

Conclusions

The CRMP is a feasible model of collaboration between HIC and LMIC to enhance research capacity involving multiple centers. The mentoring the mentor strategy is well received by the mentors and supervisors although more strategies is needed to encourage participation and sustainability. While the mentors and supervisors themselves felt it was useful, changes in behavior were not as readily observed by the mentees. Reasons for the lack of impact require further exploration. Additional strategies to develop sustainability of research capacity including transition to mentoring, and AORTIC seed grant will be evaluated at the end of 2023.

Acknowledgement

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