

Global Health Rotation in Low- and Middle- Income Countries during Medical Physics Residency Training Program

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Acknowledgements & Disclosures

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- No conflicts of interest

Learning Objectives

- ▶ Cultivate a future workforce with a global perspective that aims to reduce healthcare disparities worldwide through fostering international collaborations
- ▶ Articulate some of the challenges for radiotherapy in LMICs compared to HICs
- ▶ Understand the benefits of a GHR during the medical physics training program
- ▶ **Apply this pilot program's roadmap for a GHR elsewhere, and take-away ideas for fostering collaborations between LMICs & HICs**

Collaborators



- ▶ Samuel Hendley, PhD
- ▶ Kyuhak Oh, PhD
- ▶ Ashok Bhandari, MS
- ▶ Ellie Bacon, MS
- ▶ Megan Hyun, PhD
- ▶ Su-min Zhou, PhD
- ▶ Kyle J. Gallagher, PhD



Phillip J. Taddei, PhD



- ▶ Sara Abou Neaj, MS
- ▶ Bilal Shahine, PhD
- ▶ Wassim Jalbout, PhD

Motivation

Global health disparities are overwhelming in radiotherapy and necessitates a collaborative effort (Zubizarreta et al 2015, Kassick and Abdel-Wahab 2021).

To cultivate a future workforce that seeks to reduce global health disparities in radiotherapy, we initiated a collaborative bi-directional residency exchange between academic hospitals in a HIC and LMIC.

Partnership

- ▶ Collaboration was done between UNMC and AUBMC



Background: About UNMC

- ▶ University of Nebraska Medical Center is active in both the academic/research and the clinical missions of UNMC/Nebraska Medicine, allowing health care professionals and students the environment to provide high-quality patient care.

Patient Care Team

- ▶ 9 Radiation Oncologists
- ▶ 10 Physicists
- ▶ 4 Radiation Oncology Residents
- ▶ 4 Medical Physics Residents
- ▶ 6 Dosimetrists
- ▶ 17 Therapists
- ▶ 8 Nurses
- ▶ Well trained, & many are board-certified

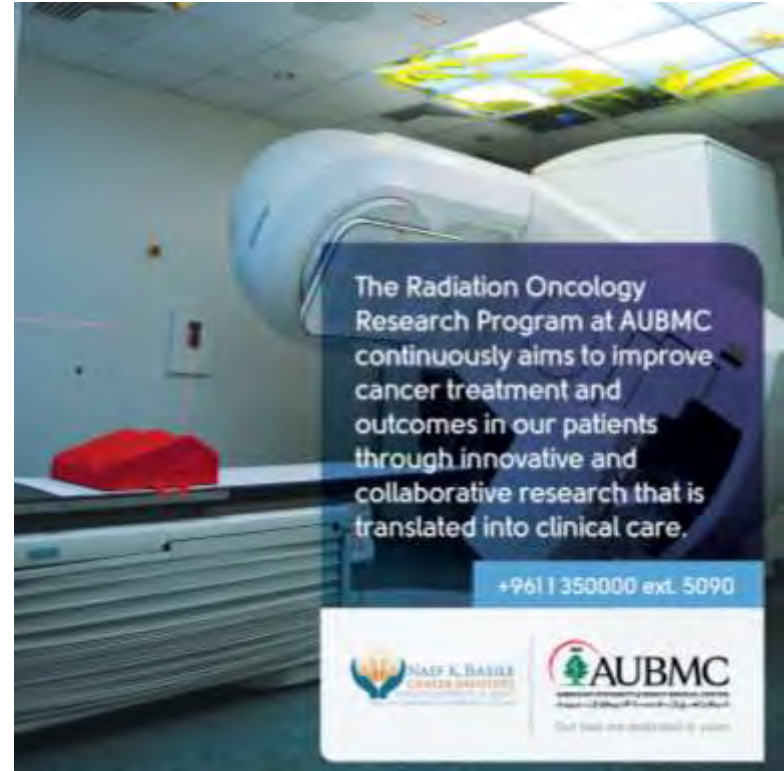


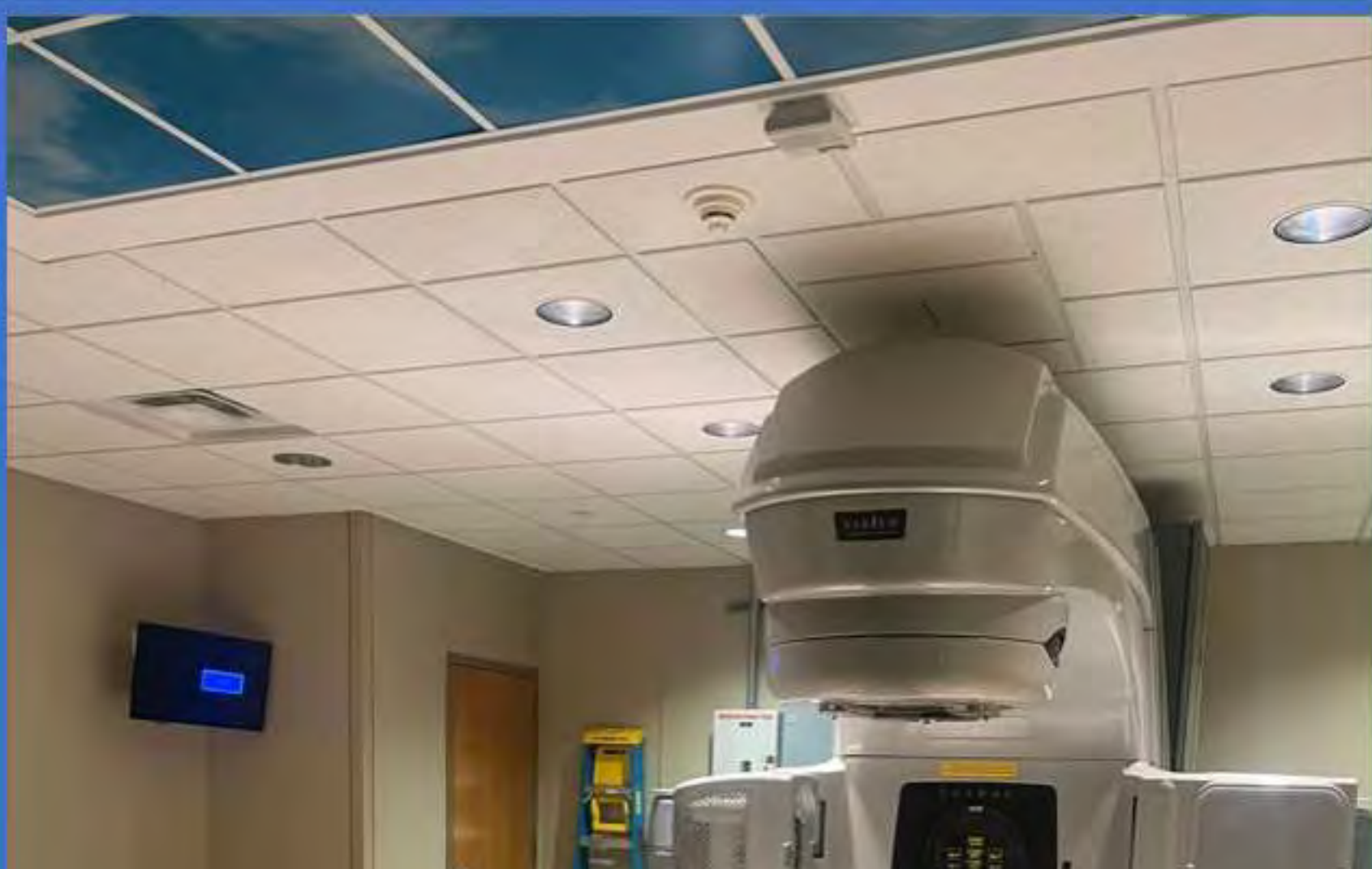
Background: About AUBMC

- ▶ American University of Beirut in Lebanon is an academic hospital in the middle east with focus on patient care, research, and education
- ▶ Provide excellent care in an under-resourced setting

Patient Care Team

- ▶ 4 Radiation Oncologists
- ▶ 3 Physicists
- ▶ 2 Radiation Oncology Residents
- ▶ 2 Medical Physics Residents
- ▶ 8 Therapists
- ▶ 3 Nurses
- ▶ Well trained, & many are board-certified





Techniques (UNMC)

- 3D-CRT and VMAT
- SBRT, SRS, and IGRT
- TBI
- TSET
- Gammatile
- HDR GYN Brachytherapy
- HDR Prostate
- Eye Plaque LDR
- Provide excellent patient care with advanced techniques

Global Health Rotation



INTEGRATED INTO
THE CLINIC AT UNMC



PILOTED A CLINICAL
RESEARCH

Global Health Rotation

Week 1



- On-boarding at HIC clinic
- Initiate clinical research project
- Join clinical operations (chart rounds, CT sim, dosimetry, QA)
- Shadow different special procedures

Week 2

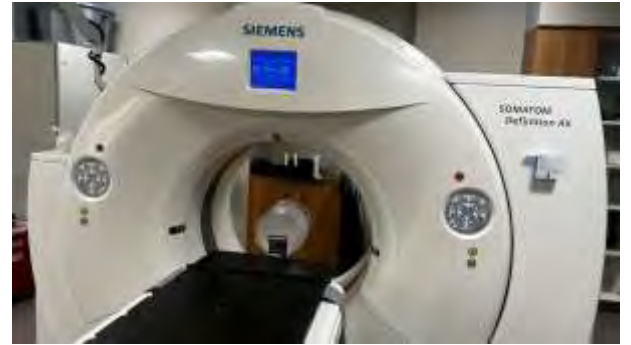


- Continue clinical research project
- Participate in the in-person "Patient Communication Simulation Training"
- Continue to observe clinical procedures

Week 3



- Conclude research project
- Observe any remaining clinical and QA procedures



Outcomes

- The LMIC resident was exposed to new technologies & practices that were unavailable in their home country.
- The LMIC resident gained hands-on experience and was exposed to special procedures (IORT, TSE, TBI, LDR eye plaque, SRS, HDR for prostate and GYN cancers), and was introduced to the daily clinical workflows for EBRT
- The LMIC resident initiated a research project in collaboration between the two institutions that will be continued remotely.

Challenges

- ▶ Visa from LMIC to HIC
- ▶ Weather at HIC (Suggest exchange to be done between spring and summer)

But it's worth it!



Lessons Learned

- Clinical research initiative
- Cultural interaction and exchange
- Importance of good collaborators
- Aim to expand partnership

Future Directions



Bi-directional residency exchange



Continue working on FLASH research



Continue to strengthen partnership between AUBMC and UNMC (clinical, research, & education)

Rotation goals

- Our pilot GHR successfully established a framework for residency training programs in HICs and LMICs to collaborate in a bi-directional exchange and can serve as a model for other globally-orientated residency programs.
- The GHR bolsters the cultural, clinical, scientific, and professional development of residents.
- GHR fosters collaboration and connections between residents from academic hospitals in HICs and LMICs.
- GHR holds promise to strengthen the long-term goals of the residents to improve the healthcare of patients worldwide through sustained international collaborations.





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