

Overcoming Barriers in Patient Care for Radiologists in Uganda

Chinonso Ani, BS¹, Rita Nassanga, MD², Zeridah Muyinda, MD²
1. Vanderbilt University School of Medicine, Nashville, TN, USA

2. Department of Radiology, Mulago National Referral and Teaching Hospital, College of Health Sciences, Makerere University, Kampala, Uganda

Abstract

As a third-year medical student at Vanderbilt University School of Medicine, I participated in a diagnostic and interventional radiology global health rotation at Mulago National Referral Hospital in Kampala, Uganda. For practicing radiologists and trainees, there are barriers that effect their practice of radiology. The goal of this project is to address some of these barriers and highlight solutions that are used to help these radiologists continue providing care to patients.

Lower Wages

In Uganda, the path to becoming a medical doctor is different. Health education in Uganda is free, but it is understood that you must pay for private school to be afforded a chance at attending a medical school. Personal connections, money and merit factor in your medical school admission that occurs after high school. After pursuing a 5-year MD equivalent (MBCHB) + 1 year of additional training, you will become a medical officer. The average general practitioner is paid \$2000/month (lower than surrounding countries). Radiology residency is 4 years with a tuition price of \$800/month.

Solutions:

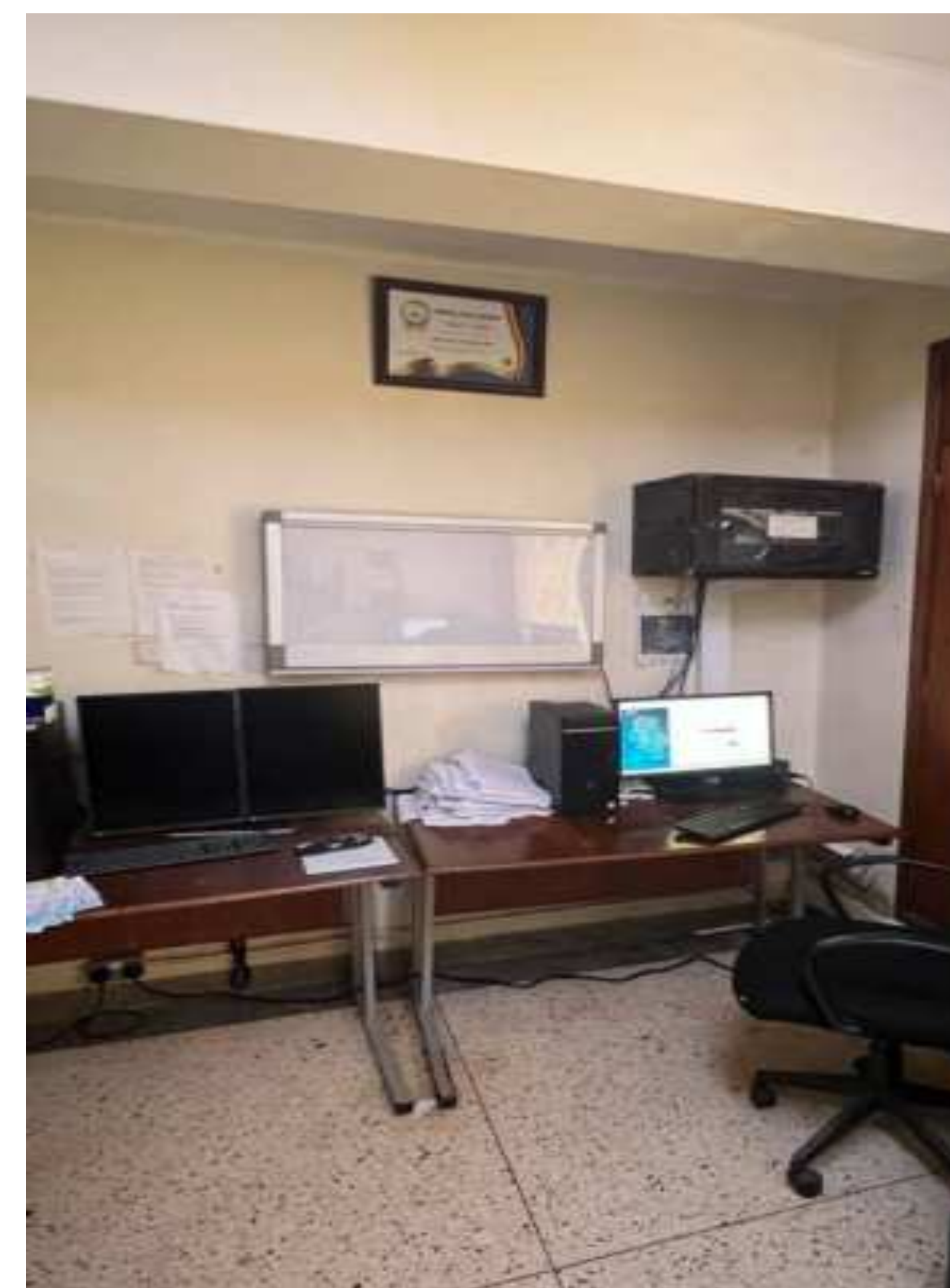
- Those interested in DR work as GPs for 3-5 years before pursuing residency
- Makerere University/Mulago National Referral Hospital provides \$270/month in scholarship to its students
- Academic radiologists work their academic jobs in the morning and work their higher paying private practice jobs in the afternoon and weekends
- DR residents pursue careers in neighboring and foreign countries after finishing residency

Lack of Electronic Health Record System

Uganda's health system faces challenges due to the lack of a comprehensive electronic health system. Despite adopting the District Health Information Software (DHIS) 2 for better data management, many lower-level facilities still rely on outdated paper-based methods. The government acknowledges e-health's potential in improving health but struggles with unsustainable pilot projects and a lack of organized technology adoption. This hinders efficient healthcare delivery and underscores the need for coordinated e-health strategies.

Solutions

- Patients must bring physical imaging to Mulago
- Repeat scans are needed when access to prior imaging is limited
- Heavy reliance on the primary team and consultation with referring providers
- The Ministry of Health and Mulago National Referral hospital are working on an EHR system (beta testing)
- Creative initiatives (Breast Health Card)



Low Income Patient Population

As of 2021, Uganda's GDP per capita was \$858 compared to \$69,288 in the US. Although there are efforts by the Ministry of Health to provide universal health care with National Health Insurance Scheme Bill of 2021, most Ugandans are without insurance. 38% of health expenses in the country are handled through individual out-of-pocket payments.

Solutions:

- Mulago National Referral Hospital provides low-cost care
- Prioritization of low-cost imaging
- Less monitoring/surveillance imaging
- Adaptations and creativity for interventional procedures
- Patients are responsible for bringing equipment/supplies for interventional procedures (gloves, sterile cover, catheters, etc.)

High Workload and Staffing Shortages

As of 2021, there are only 48 radiologists to serve 40 million Ugandans. Uganda has a centralized health system. Radiologists work at the General Hospitals and more central levels of care, leaving Level I – IV health centers understaffed. These centers (Level II and up) are still equipped with x-rays, ultrasound and other scanners. Most scans are sent to Mulago National Referral Hospital to be read and interpreted.

Other private schools have been founded to address the gap in radiology coverage. However, these schools are known for producing "fake" radiologists that endanger patients with inaccurate reads and contribute to more disorder within the system.

Solutions

- Makerere University has expanded their radiology residency class size to 10 residents (1 from rural background) per year completing a 4-year residency (as of 2023)
- Mulago Hospital is in current development of a teleradiology program
- The Ministry of Health is working on creating an accreditation process for radiology programs
- Road2IR has helped to increase training of interventional radiologists with their first fellowship class graduating in May 2025.

Conclusions

While there are many barriers for radiologists in Uganda, there are many creative and adaptive solutions that are employed so radiologists can provide vital care, interventions and physician consultation to those in need.