



KCMC Cardiovascular Center in Tanzania

Developing A Model Cardiovascular Center and Training Site
For East and Southern Africa

May 2022

Who We Are

Kilimanjaro Christian Medical Center (KCMC) Planning Team Leaders



Dr. Gileard Masenga
Executive Director, KCMC



Dr. Sarah Urasa
Director of Hospital Services



Dr. Kajiru Gad Kilonzo
Planning Coordinator

U.S. Advisory Team

Institutional Affiliations

East Africa Medical Assistance Foundation (EAMAF)

Support planning for design, financing and equipment
purchase for the cardiovascular center

The Minneapolis Heart institute Foundation (MHIF)

Train Northern Tanzania's first full cardiac care team,
including in cardiac surgery

The Minnesota Chapter of the American College of Cardiology (ACC-MN)

Train KCMC hospital and primary care
clinicians in cardiac care

U.S. Core Advisory Team

Dr. John Knoedler

Radiologist, Midwest Radiology (retired)

30+ year advisor to KCMC School of Radiology and Cancer Center

John Reiling, MHA, MBA, PhD

Health Administrator 30+ years; including President/CEO, Health East Care System (retired)

10-year advisor to KCMC School of Radiology and Cancer Center

Dr. Mike Nelson

Emeritus Professor, Dept. of Radiology, University of Minnesota

30+ year advisor to KCMC School of Radiology and Cancer Center

Dr. Vib Kshetry

Cardiac Surgeon; Director, Global Outreach Program, Minneapolis Heart Institute Foundation

20+ years training cardiac teams in developing countries

Wendy Bennett

Consultant to foundations, focused on grantmaking strategy (retired)

10 yr advisor to medical NGOs working in developing countries (partnerships, fundraising, coms)

Teresa Knoedler

Healthcare attorney, The Friedemann Firm

2-year advisor to KCMC Cardiovascular Center

The Need: There's an appalling lack of cardiac care in Africa

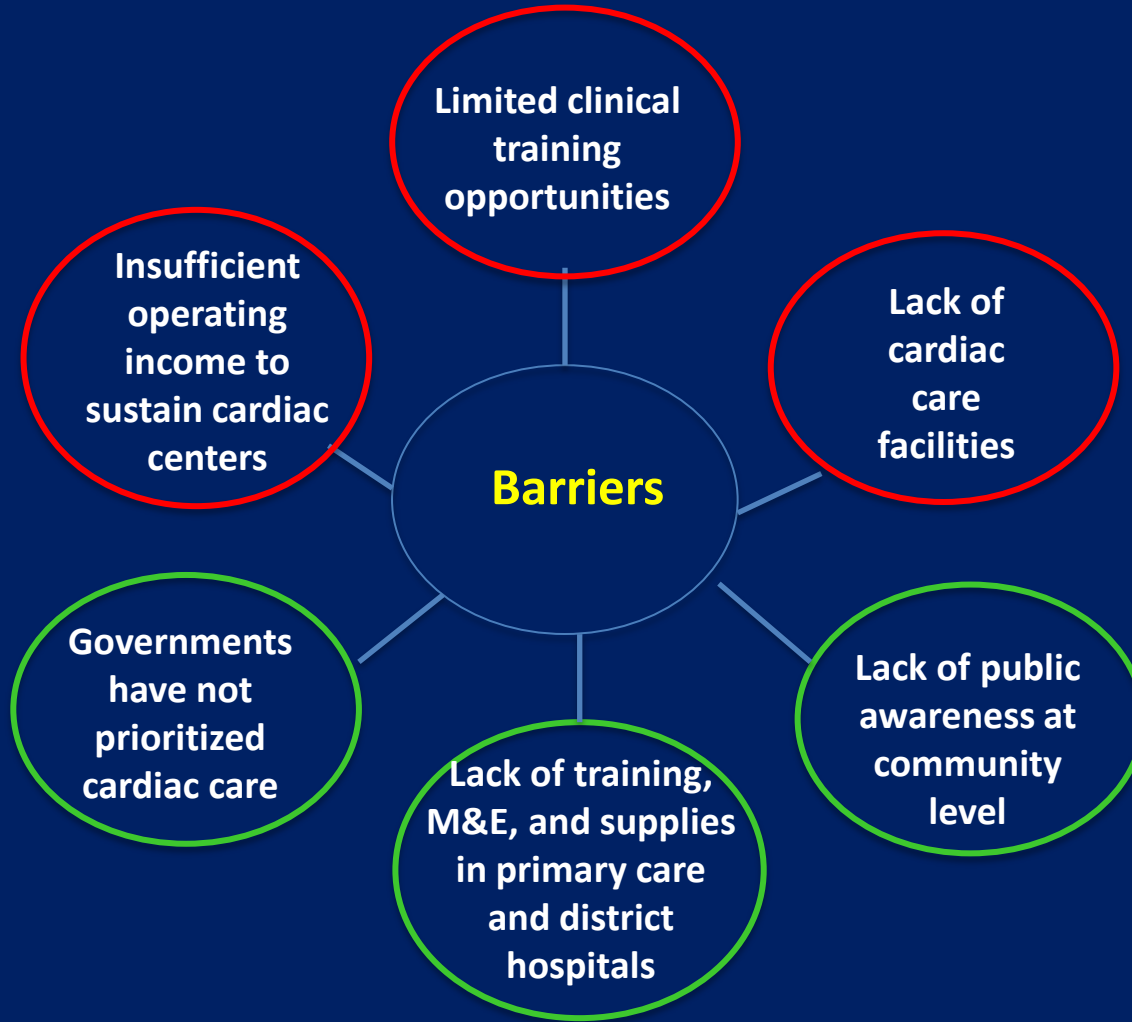
- Most people in Africa have no access to cardiac care
- Cardiac treatment is largely restricted to a few national or regional referral centers in major cities.
- Children and young adults are hardest hit, as they are the ones most affected by heart disease in low-income populations. Many die young. Millions of these early deaths could be prevented.
- In recent years, experts have tested models to bring high quality cardiac care to people living outside of major cities, in ways affordable to low-income countries. KCMC's initiative will bring this model to Northern Tanzania and create a training center for East and Southern Africa.

Barriers to Access Cardiac Care in Africa



How We Will Address Barriers to Access Cardiac Care in Africa

Red highlight:
our model
addresses
directly



Green highlight:
our model
addresses
through
partners

Our Goal



Develop and validate for scale-up a model to expand access to cardiac care in Africa.

Strategies

1. Design and construct a sustainable, “affordable” cardiovascular center at KCMC hospital in Northern Tanzania that can be replicated in the region
2. Train a full cardiac care team for KCMC and develop a Cardiovascular Training Center in Tanzania to serve the broader region.
3. Develop a sustainable financing model for cardiovascular center operations

Key Attributes of the Model

1. We encourage government prioritization of cardiac care.
Currently there are no cardiologists or cardiac surgeons in Tanzania's Northern Zone (pop 15 mil), and just one cardiac surgery center in all of Tanzania (pop 56 mil).
2. We will work with the government to prevent rheumatic heart disease (RHD) in children, eliminating suffering and early death for thousands of children.
3. We will develop a Cardiovascular Training Center -- to serve Tanzanian patients, and train cardiac specialists coming from East and Southern Africa so we can scale up cardiac care in Africa.

KCMC's U.S. Planning Partner

East Africa Medical Assistance Foundation (EAMAF)

- EAMAF (a MN based 501c3) is supporting KCMC to plan the cardiovascular center -- design, equipment, supplies & materials, and financing.
- For 30 years, EAMAF has supported radiology training at KCMC
 - Trained & equipped 100+ Assistant Medical Officers and 40 Radiologists
 - KCMC is equipped now to diagnose heart disease
- EAMAF also manages a program of US volunteers who teach at KCMC
 - 100+ doctors from 5 US medical schools have volunteered at KCMC

Introduction to Kilimanjaro Christian Medical Center (KCMC)

- In the foothills of Mt Kilimanjaro
- A region with significant tourism revenue and growing middle class.
- Serves the cities of Arusha and Moshi, Tanzania.



Overview of KCMC

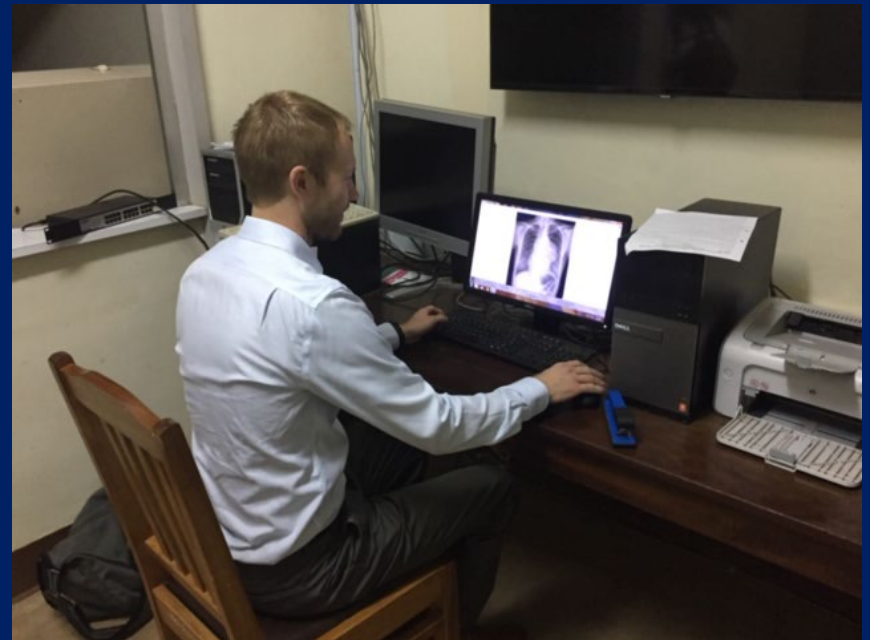
- 500 bed teaching hospital in Moshi, Tanzania
- KCMC is a partnership between the national government and Good Samaritan Foundation (Lutheran)
- Serves as the government hospital for Northern Zone of Tanzania, with catchment area of 15 mil people
- Has a medical and nursing school. In future, they can train cardiac fellows.
- KCMC's strong leadership has enhanced the hospital and teaching specialties, e.g., in radiology, emergency medicine, and they recently built a cancer center.
- KCMC has had 30 yr partnerships with U.S. (MEPI, Duke Global Health, Univ of Minnesota, EAMAF) and with Netherlands academic & clinical experts

KCMC – A Well Connected Hub

- KCMC has fiber-optic internet connection with live trainings and remote learning center.
- KCMC is located near Kilimanjaro International Airport with flights to Europe, Middle East and East Africa



KCMC Medical School



KCMC Radiology PACS

KCMC Partner Research Center: Tracking Prevalence & Outcomes



KCMC partners with Kilimanjaro Clinical Research Institute

- To develop evidence for interventions
- To provide research training



Group photo for HighRif-C Study Training held on 29th and 30th June 2020

KCMC can work with KCRI on cardiac research.

Examples:

- To validate KCMC's model for cardiac care
- To provide evidence to the government on prevalence of cardiac conditions

KCMC Trains Health Workers in Primary Care & Community Health

- KCMC's Community Health Dept. supports KCMC services, teaching, and research
- The Tanzanian Government will require KCMC to train primary care providers and community health workers in cardiac care once the cardiac center is built.
- KCMC plans to partner with NGOs and academic research centers to create a full continuum of cardiac care across the health system, from community to tertiary care, serving as a model for Tanzania and others

KCMC Training Partner

Minneapolis Heart Institute Foundation (MHIF)

- Led by Dr. Vib Kshetry, Cardiac Surgeon and Dir. of MHIF Global Outreach
- Earlier success: MHIF supported training of Ethiopia's first full cardiac care team, including cardiac surgery (<https://mplsheart.org/global-outreach/>)
- MHIF will support KCMC to train a full cardiac care team (over 3 yrs)
 - Surgeons, interventional cardiologists, anesthesiologists, perfusionists, nurses
 - Train together as a team
 - Train in a high volume, renowned hospital in Bangalore – Narayana Institute of Cardiac Sciences
(<https://www.narayanahealth.org/hospitals/bangalore/narayana-institute-cardiac-sciences-bommasandra>)
 - Funding for this training already received

KCMC Training Builds on MHIF Success in Ethiopia



The Plan for KCMC's Cardiovascular Center

Opening: 2025 (as cardiac team returns from training in India)

- 1 OR
- 1 hybrid OR/cath lab
- 2 cath labs
- 16 ICU beds (split pediatric & adult)
- 100 inpatient beds; 8 step-down beds
- 8 clinic rooms, 8 echo rooms, 3 rooms for EKG, stress tests, cardiac rehab, lab, pharmacy

The plan is to increase volume of patients over start-up of 4 years. At full capacity, will do:

- 400 surgeries/year
- 1,200 cath lab procedures/year

Financing of KCMC Cardiovascular Center

Cost **

\$10.7 mil for construction and equipment

Income

\$4.0 mil A loan for equipment

\$2.9 mil KCMC has been encouraged to apply for Gov't of Tanzania grant for equipment

\$3.8 mil We are seeking gifts and recoverable grants to support construction

Operations financing

- National Health Insurance Fund (NHIF)
- Private pay by patients
- Charitable provision for impoverished families

**These estimates may change as architectural plans, equipment pricing, and financing plans are finalized.

KCMC Graduation

