DEVELOPMENT OF A SUBSPECIALTY CARDIOLOGY CURRICULUM FOR PEDIATRIC REGISTRARS IN MALAWI: IMPLEMENTATION OF A LONG DISTANCE HYBRID MODEL

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OVERVIEW

- Introduction to Malawi and medical education there
- How the Cardiac Curriculum was developed and implemented
- Initial results
- Future Directions
WHERE IS MALAWI?
Malawi Overview

Officially the poorest country in the World in 2015 according to the World Bank

Source: World Bank national accounts data, and OECD National Accounts data files
MALAWI FACTS

- Former British Protectorate
- English is one of the official languages but Chichewa predominates
- Always voted one of the friendliest places on the planet

Source: Lonely Planet
16 million people
- One of the most densely populated countries in Africa
- Still very rural with two main cities- Lilongwe and Blantyre
- Slightly under 50% of population is under the age 18
- High fertility rate of 5-6 per children per women
- Highest preterm birth rate in the world

Source: UN data by country profile- Malawi
HEALTH CHALLENGES IN MALAWI

- 10-12% of the population is HIV infected
- 60% of the population face the problem of food insecurity
- Malaria is endemic year-round

Source: UN data by country profile-Malawi
Healthcare is free
The majority of healthcare is provided by clinical officers
High nurse to patient ratio
Few doctors and even fewer specialists
16 pediatricians currently working in the public sector
QUEEN ELIZABETH CENTRAL HOSPITAL (QECH), BLANTYRE MALAWI

- The largest central hospital in the country
- Referral hospital for the entire Southern region
- Approximately +1100 in-patients
- Affiliated with the College of Medicine
QECH AFFILIATIONS

- College of Medicine
  - One of the largest medical schools in central Africa
- Malawi Liverpool Wellcome Trust
  - UK based research institute
- Other partnerships with John Hopkins, CDC
THE PEDIATRIC DEPARTMENT AT QECH

- Run by 8 Pediatric Attendings
  - Half expat/half Malawian
- Residency program of 4-8 pediatric residents
- 300+ in-patients
- 9 wards
- Over 10+ specialty outpatient clinics
PAEDIATRIC CARDIAC DISEASE IN AFRICA

- Specialty run by Neil Kennedy
- Inpatient and outpatient care
- EKG and ECHOs
- Basic drugs (no prostaglandins)
- Diseases include congenital heart defects, rheumatic heart diseases, cardiomyopathies and tamponade
PEDIATRIC POSTGRADUATE EDUCATION

- Run by Laura Newberry
- Four year program (3 years in Malawi and one in South Africa)
- Residents become Board certified in Paediatrics in South Africa
- Growing number of trainees
AMERICAN PEDIATRIC EXPERTISE

- Anne Greene
- Pediatric cardiologist at Children’s National
- Involved in fellowship teaching
- Pediatric Boards
Dr. Greene visited in 2013 and provided initial teaching and training.

Training consisted of didactic teaching, ECHO training 1:1 and bedside rounds.

Pilot program was then devised among the three leads.

Dr. Greene, the cardiology faculty and fellows at Children’s National Medical Center started working on the modules.

Dr. Greene returned to Malawi an additional two times for further training and teaching.
Each module was equivalent to a one hour lecture

A short quiz at the end

The registrars evaluated whether they had an increase in medical knowledge and confidence after each module.

Drs Kennedy and Newberry were available for questions in person and Dr Greene available via email.
Review Question 1

The First Heart Sound or S1 correlates with which part of the cardiac cycle?

1- AV Valve opens

2- AV Valve closes

3. Isovolumic Relaxation

Please feel free to write in details of your thinking.
RESULTS

- The average post-module quiz score was 94%.

- Repeat testing with the same questions four months after the modules were used and tested demonstrated an average score of 78% with a range from 60 to 100%.

- Pre and post module registrar self-assessment regarding confidence in content area showed a substantial gain in knowledge and confidence mean scores.

- In qualitative feedback, modules were helpful in studying for certifying examinations.

- All four of the registrars sitting their Malawian and South African Part One Paediatric Certifying Exams passed.
DISCUSSION

- Encouraging initial results

- Long distance hybrid model is sustainable

- Model works well when with permanent local doctors committed to training

- Need international expertise is available via email, skype and several in person visits per year
A Malawian Pediatric cardiologist will return from his training in South Africa in 2017.

Additional Modules and complex cases are being added regularly to an online database.

ECHO training.

Malawian registrars are now developing modules for US residents to learn about common problems in a tropical setting such as rheumatic heart disease, HIV cardiomyopathy and African type endocardial fibroelastosis.