

Addressing the shortage of research capacity in cardiovascular disease in Africa via leadership training

Anastase Dzudie,^{1,2,3,4,5} Karen Sliwa^{1,2,4,5,6}

¹Department of Internal Medicine, Douala General Hospital and Buea Faculty of Medicine, Douala, Cameroon

²Department of Physiology and Biochemistry, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Yaoundé, Cameroon

³Clinical Research Education, Networking and Consultancy, Douala, Cameroon

⁴Soweto Research Group, Department of Medicine and NIH Millennium Fogarty Chronic Disease Leadership Programme, University of the Witwatersrand, Johannesburg, South Africa

⁵Department of Medicine, Hatter Institute for Cardiovascular Research in Africa, Groote Schuur Hospital, University of Cape Town, Cape Town, South Africa

⁶Mary McKillip Institute, ACU, Australia

Correspondence to

Professor Karen Sliwa, Department of Medicine, Hatter Institute for Cardiovascular Research in Africa, Groote Schuur Hospital, University of Cape Town, Cape Town 7925, South Africa; karen.sliwa-hahnle@uct.ac.za

Cardiovascular diseases (CVDs) have rapidly emerged as a major cause of disease and deaths in Africa. Contrasting with the global picture of disease, CVDs affect and kill the generation of breadwinners in Africa,^{1–3} this in a region suffering from the most severe health workforce shortage globally. This situation may hamper the achievement of the Sustainable Development Goals.

In the global road map to achieve a 25% reduction in CVD morbidity and mortality by the year 2025 ('25×25' goal) as suggested by WHO, training champions who will lead the agenda in Africa is crucial. These champions would act as catalyst to both optimise the implementation of existing policies and produce local research evidence to guide policy, practice and improve the performance of the health system.^{4–5} The World Heart Federation Emerging Leader (WHFEL) and the National Institute of Health (NIH) Fogarty Wits Non-communicable Disease Research Leadership Training Programmes, among others, are two key initiatives at the forefront of this challenge. These programmes support organisations like the Pan African Society of Cardiology (PASCAR) in their efforts to detect, select and train talents on the continent. These are proactive and systematic investments designed to build a pipeline of CVD leaders within the African continent. Understanding what it takes to have an effective CVD policy leadership would provide an appropriate response to cardiovascular epidemics in Africa, hence the need to visit early strategies and associated results.

Under the leadership of three investigators with expertise in different fields, the NIH Fogarty Wits Non-communicable Disease Research Leadership Training Programme was established in 2010. This training programme aims to develop a group of well trained researchers at the masters, PhD, and postdoctoral levels that will facilitate the cross-cutting need to examine in-depth social, genetic, epigenetic, clinical, and physiological factors of CVD and metabolic disease in Africa (figure 1). The programme is open to researchers from various parts of Africa and from different backgrounds, allowing them to meet and share experiences, networking and shaping the future of Africa. Thus far, 20 researchers selected from eight countries will contribute to advancing the understanding of CVD in Africa. They will provide evidence to monitor and understand the underlying causes of CVD and develop effective intervention programmes.

WHFEL consists of a cohort of CVD experts and talented PhD students selected from existing CVD researchers. The current WHF president, Salim Yusuf, initiated this programme in 2014 to bring together an extraordinary group of global talents in the name of CVD (figure 2). These experts collaborate, research and contribute to achieving the '25×25' goal. Since 2014, of the 75 selected candidates ranging from academia, civil service, private industry and cardiovascular medicine, 15 were African. These experts share a common interest in advancing CVD prevention and treatment in their home countries, and maximising research and knowledge and collaborating regionally and globally.

Other policy leadership training initiatives in Africa include the Human Heredity and Health in Africa Consortium training programme supported by the NIH and Wellcome Trust. This was in response to global efforts to apply genomic science and associated technologies to further the understanding of health and disease in different populations. Training future leaders in various aspects of biomedical research provides an important component of this project.

The outcome of these initiatives is already very visible. Between 2000 and 2014, the African contribution to worldwide research publications per year has increased from 0.7% in 2000 to 1.3% in 2014, with South Africa, Nigeria and Kenya contributing to 52% of the publications.⁶ As the leading African country in clinical research, South Africa has opened training opportunities for future leaders on the continent. In their respective countries, these leaders work with local authorities to create conditions that will foster innovation, commitment and excellence in clinical research. Dr Dike Ojji (Nigeria) and other WHFELs have collectively attracted grants including the GlaxoSmithKline Open lab to sponsor the first ever conducted randomised controlled trial that will discover the best combination of front-line antihypertensive medications for black patients residing in sub-Saharan Africa. The trial is entitled the Combination Therapies in Lowering Blood Pressure in Black Africans, and is registered under the number NCT02742467.⁷ In Cameroon, we encourage clinical researchers to link and network through the association of Clinical Research Education, Networking and Consultancy (CRENC). The CRENC comprises a group of clinical researchers and independent investigators who work in unison to facilitate regular training in human research methods. Among regular local/



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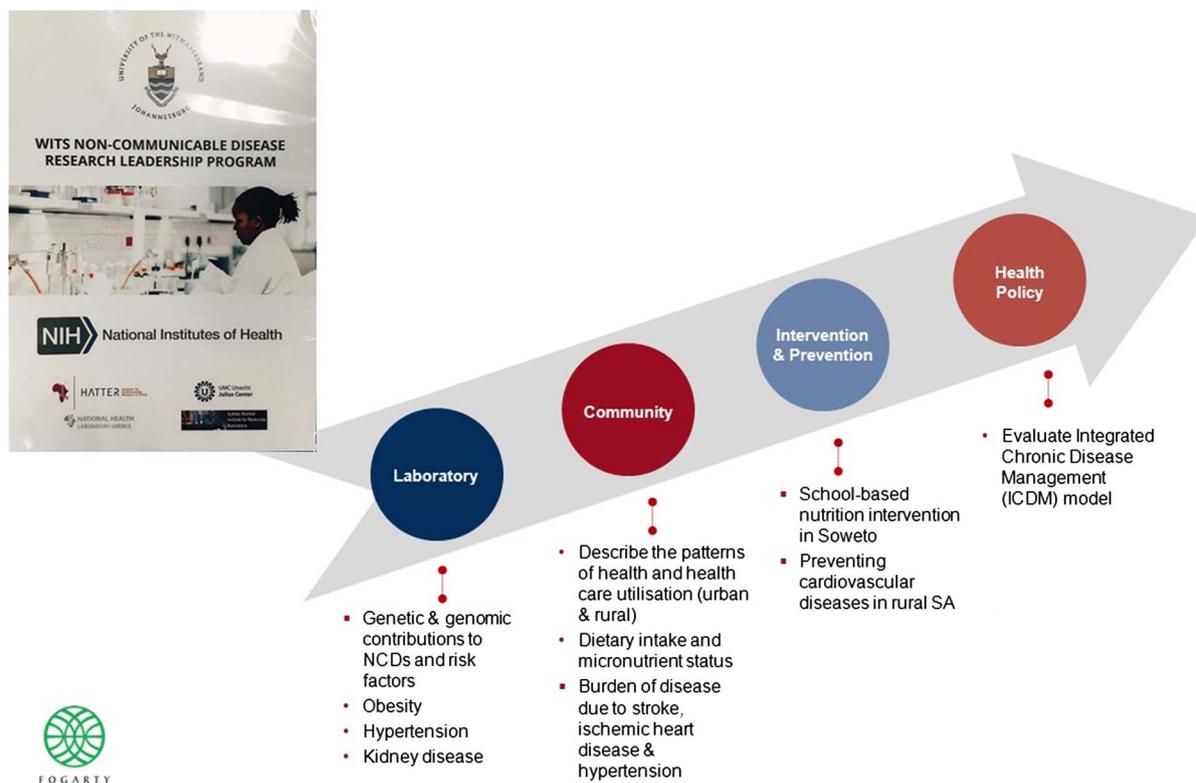


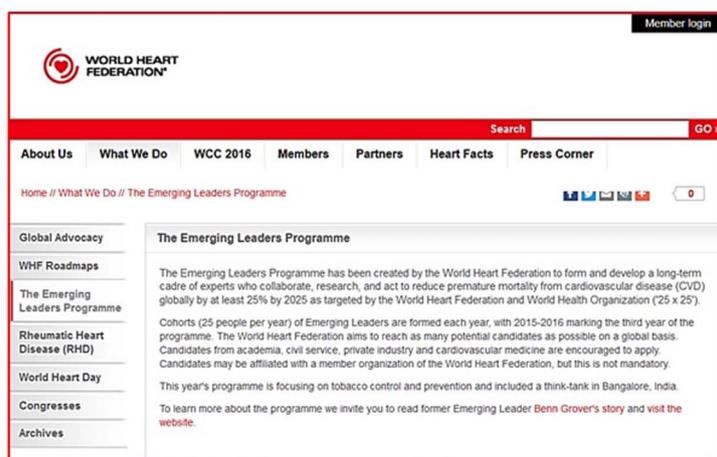
Figure 1 The National Institute of Health (NIH) Fogarty Wits Non-communicable Disease Research Leadership Training Programme.

national courses year round, the CRENC organises an international training course every 2 years. The international course programme comprises rigorous didactics, an intensive share of research experience, education on leadership and mentorship, and on how to translate research findings into an improvement of cardiovascular health. In 2014, this course welcomed over 200 participants, from undergraduates to senior clinical researchers, and was supported by the Douala General Hospital (DGH), Cameroon and the Hatter Institute of Cardiovascular Research in Africa, University of Cape Town, South Africa.⁸ In October 2016, the CRENC engaged PASCAR, the Cameroon

Cardiac Society and the Douala Reference General Hospital (DGH) in a joint venture for a research methods and hypertension-training course held at the DGH (figure 3). During this event, 100 abstracts in all areas of clinical medicine were presented, some receiving awards. The event was supported by the NIH Fogarty International Center (Advancing Science for Global Health), PASCAR and the DGH.

In order to achieve the '25×25' goal, Africa's investment in CVD policy leadership training still has a long way to go. The need for improving the performance of health researchers on the African continent is extensive. In addition, health authorities

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Salim Yusuf, MD (Bangalore), DPhil (Oxford), MRCP
World Heart Federation president
2014-2016

Figure 2 The World Heart Federation (WHF) Emerging Leader programme (founded by the current WHF president, Salim Yusuf).



Figure 3 Group photograph during the 2016 Health Research Methodology training course at the Douala General Hospital, Cameroon.

face greatly daunting challenges dealing with CVD in all parts of sub-Saharan Africa. The overall needs are near overwhelming and, to some extent, poor management due to inadequate leadership skills, poor infrastructure and burgeoning layers of bureaucracy have had a catastrophic effect on the delivery of healthcare in many regions. It is our hope that African cardiologists and other clinicians dealing with CVD will seek engagement with all health actors and authorities, and vice versa, for the common goal to improve care in a difficult set-up.

Acquisition of better epidemiological data for CVD needs to be an integral and sustainable activity of the health system to strengthen strategies. In the current North-South collaboration, recognition that each side can learn from the other needs highlighting. Partnerships must be built on mutual respect and not dictated by the partner with better access to funding. True partnerships within Africa, via South-South collaborations and globally, supported by national governments and research funding bodies, need to be encouraged and strengthened in the next decade. This will help training national champions for CVD.

Among other challenges, addressing the shortage of health-care providers through mass training, task shifting and sharing is an absolute necessity. Finally, African health decision makers should use available research evidence to guide policy, strengthen practice and maximise use of resources to improve care.

In conclusion, the design of current CVD policy leadership training programmes was to impact the '25×25' goal significantly. However, there is always room for improvement in every leadership training strategy. These programmes are consequently subject to the continuous need for updating vision, support, objectives and multilevel team leading strategy. It is at this cost that Africa will attempt to achieve the '25×25' goal.

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