

GLOBAL ROUNDS

Battling Cardiovascular Diseases in a Perfect Storm

South Africa 25 Years After Apartheid

Almost 25 years after a peaceful transition from apartheid to democracy, South Africa (SA) has a complex and dysfunctional 2-tiered healthcare system. The chronically underfunded, understaffed public system serves 84% of the population. The wealthiest 16% have access to private health care, consuming 58% of the gross domestic product expenditure on health.¹ More than 70% of doctors in SA are employed in the private sector. Furthermore, the healthcare system has to contend with several colliding epidemics: HIV and tuberculosis; cardiovascular disease (CVD), mental health, and other noncommunicable diseases (NCDs); substance abuse and violence; and an unacceptably high mortality caused by maternal and childhood disease. Of the country's population of 57 million, >12% are HIV infected. SA has the world's largest antiretroviral therapy program, subsidized by the government and provided free of charge. The high HIV prevalence drives the tuberculosis burden, which remains enormous despite improving treatment outcomes. As a result of the HIV epidemic, life expectancy has not changed much over the past 25 years, with the 2018 life expectancy being 67.3 years for women and 61.1 years for men.² Between 2002 and 2006, there was a drop in life expectancy. CVD is the leading cause of death after HIV/AIDS.²

CVD presentations range from infectious origins, for example, rheumatic heart disease, tuberculous pericarditis, HIV, and other virus-induced cardiomyopathies, to noncommunicable causes such as hypertension, myocardial infarction, stroke, and peripheral artery disease. The epidemiological transition, characterized by an increase in obesity, hypertension, and diabetes mellitus, has seen an increase in noncommunicable forms of CVD in all urban and semiurban areas. However, the burden of NCDs is likely to increase further because antiretroviral therapy reduces mortality and affects the cardiovascular system.³ Communicable diseases and NCDs are fueled by common precursors such as poverty and poor education (Figure).

SA is ethnically diverse and is one of the countries with the highest Gini coefficients, a sign of great disparities. Within SA, certain population groups are affluent, with access to excellent education and health care, while the majority remain poorly educated, residing in absolute or relative poverty (\$2/d).¹ Poverty has profound effects on CVD patterns, worsened by late diagnosis and limited access to various forms of disease management.

SA has a universal public healthcare system, providing primary, secondary, and tertiary levels of care. The national public health sector, staffed by a quarter of the doctors in the country, remains the main provider for >40 million South Africans.¹ Nurses and community health workers have historically been central to national health care, especially in rural areas, and over the past decade, their role has strengthened. SA graduates currently ≈2000 physicians per annum from 8 medical schools, with <15 new cardiologists emerging from the national training program annually.⁴ There is an enormous shortage of trained cardiologists and cardiotho-

Karen Sliwa, MD, PhD
Ntobeko Ntusi, MD, DPhil

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Key Words: cardiovascular disease
■ South Africa

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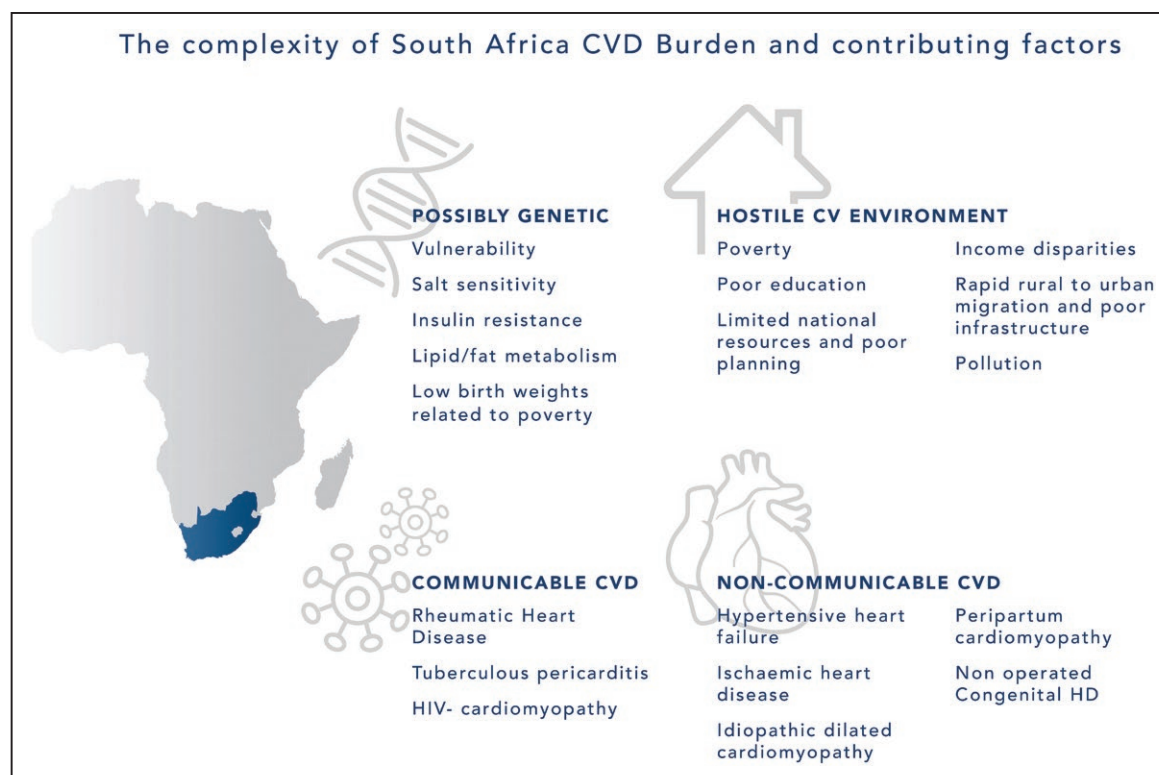


Figure. The complexity of South African cardiovascular (CV) disease (CVD) burden and contributing factors.

HD indicates heart disease.

racic surgeons, as well as inadequate specialized cardiac facilities and equipment, leading to a situation in which many patients have no access to basic diagnostic facilities such as electrocardiography and echocardiography or any form of device treatment (eg, pacemakers).⁵ Many public hospitals or entire provinces, eg, the Eastern Cape, are in a state of crisis caused by underfunding of the complex and competing health needs, the legacy of an overall poor level of education, high poverty levels, an unemployment rate of >25%, and a dire shortage of healthcare workers.

However, policy makers in SA have recognized that investment in education, research, and health will increase trade and provide stability and national prosperity. In addition to the moral imperative, it would be of self-interest for the more educated and affluent to facilitate this process. Education of cardiovascular healthcare professionals is highly regulated by national institutions, and research infrastructure is supported largely by universities, the National Research Foundation of South Africa, and the Medical Research Council, as well as by private companies and foundations. Professional education is augmented by participation at international and national conferences organized by the South African Heart Association, which has a number of specialized interest groups, including the Heart Failure Society of South Africa, South African Society of Cardiovascular Intervention, and Cardiac Arrhythmia Society of South Africa. Continuing medical education can be accessed

online via the South American Medical Association and other bodies. We believe that podcasts, social media, and print journals have a limited role in SA.

Historically, SA partners closely with the global north (eg, the United States and United Kingdom) on education and research but, increasingly, within Africa.⁴ This is facilitated by the Pan African Society of Cardiology, which has a strong focus on cardiovascular research with particular relevance for the African continent.

What are SA's biggest challenges in cardiovascular medicine, and how are they currently addressed? Because of stretched and competing resources and limited health infrastructure, the following strategies are currently partially underway: (1) improvement in the diagnosis and management of NCDs and CVDs at the primary care level, including via an integrative service with infectious diseases such as HIV/tuberculosis; (2) development of human resources, including task sharing and task shifting (eg, use of nonphysician technicians); (3) improving salaries to retain health professionals in the public workforce domain; (4) increased and easier access to essential medicines for CVD by promoting simplified regimens, generic drugs, and combination tablets; (5) development of appropriate context-specific guidelines and algorithms for risk stratification and medical management; (6) population-wide interventions promoting healthy diet, physical activity, healthy environment, and cessation of smoking and alcohol abuse; and (7) strengthening surveillance and quality assurance systems.

SA has a number of best practices to share: (1) it has one of the most comprehensive, largely adhered to, tobacco regulations in the world; (2) taxation on sugar-sweetened beverages passed in 2017; (3) partnerships between industry and government have been mapped out to promote healthy food options and healthier work environments; and (4) a Directorate for Chronic Diseases, Disability, and Geriatrics has been established that has produced and distributed several national guidelines for the prevention and control of NCDs.

However, much more could be achieved through stronger collaboration among the public, communities, and industry and through engagement between medical and nonmedical sectors of government to facilitate better overall use of resources, thus leading to national health and economic growth.

ARTICLE INFORMATION

Received November 15, 2018; accepted November 24, 2018.

Correspondence

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

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Affiliations

Hatter Institute for Cardiovascular Research in Africa, Department of Medicine, Faculty of Health Sciences, University of Cape Town, South Africa (K.S., N.N.). Division of Cardiology, Department of Medicine, Groote Schuur Hospital and University of Cape Town, South Africa (K.S., N.N.).

Acknowledgments

The authors thank Sylvia Dennis for the preparation of the manuscript.

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Disclosures

None.

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