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*Editorial*

# Cardiovascular Health in Africa: The Long Road Toward Sustainable Solutions

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**Abstract:** Cardiovascular health in Africa has been a subject of medical observation for nearly a century, yet it remains a neglected priority within health agendas. Since Donnison and Lond's 1929 report on blood pressure in African populations, the continent has undergone an epidemiological transition marked by rising non-communicable diseases. Today, cardiovascular disease (CVD) is a leading cause of mortality in sub-Saharan Africa, with a prevalence that has increased more than 130% between 1990 and 2019. Unlike high-income countries, where early detection, pharmacological advances, and robust prevention programs have driven a steady decline in CVD mortality, Africa continues to face disproportionately high rates of premature deaths. Contributing factors include uncontrolled hypertension, limited access to diagnostics, scarce and centralized cardiology services, and unaffordable essential medicines. These challenges perpetuate economic instability and deepen inequalities, constituting a "silent cardiovascular epidemic." Future solutions require strategies adapted to African realities rather than direct importation of high-income models. Hypertension control should be the cornerstone, supported by systematic blood pressure monitoring, community-based education, and intersectoral policies promoting healthier lifestyles. Strengthening health systems through training, access to affordable medicines, and basic diagnostic tools is critical. Regional cooperation and international solidarity, modeled on successful infectious disease programs, are equally essential. Moreover, digital health innovations, including mobile health platforms, telemedicine, portable devices, and artificial intelligence, offer cost-effective opportunities to expand access and enhance data-driven decision-making. The African cardiovascular crisis is not a distant threat but a present reality. Closing the gap demands political will, investment, and global partnerships. Just as HIV/AIDS and malaria mobilized unprecedented action, cardiovascular health in Africa must now be recognized as a priority for equity, economic stability, and the right to health.

**Keywords:** Africa; Cardiovascular Disease; Hypertension; Health Systems; Digital Health.

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Cardiovascular health in Africa has attracted medical attention for nearly a century. In January 1929, Donnison and Lond published in The Lancet the article "Blood Pressure in the African Native: Its Bearing Upon the Aetiology of Hyperpiesia and Arterio-sclerosis," describing blood pressure patterns in African populations and their relationship with hypertension and arteriosclerosis [1]. This early observation highlighted a paradox: in a continent burdened by infectious diseases and malnutrition, cardiovascular pathology was already present, though largely neglected in health agendas.

For much of the twentieth century, Africa's public health priorities focused on malaria, HIV/AIDS, tuberculosis, and other communicable diseases. However, the epide-

miological transition, driven by rapid urbanization, dietary shifts, and aging populations, has led to a sustained rise in non-communicable diseases, particularly cardiovascular disease (CVD) [2]. Hypertension became widespread, poorly controlled, and premature cardiovascular mortality increasingly displaced infectious disease deaths. Recent epidemiological studies reveal a historical lag: while high-income countries achieved significant progress in prevention, diagnosis, and treatment of CVD, Africa silently accumulated a growing burden with insufficient resources or strategies to respond [3].

**1. Current Situation**

CVD is now a leading cause of death in sub-Saharan Africa, affecting both men and women and increasingly impacting young adults [2]. The Global Burden of Disease Study (1990–2019) reported a more than 130% increase in absolute prevalence [3]. This rise translates into millions of deaths and profound economic consequences in societies already facing multiple health challenges. Comparative analyses indicate that while cardiovascular mortality has fallen drastically in high-income countries due to effective risk factor control and therapies, premature CVD death in Africa remains disproportionately high [2]. Cerebrovascular disease, ischemic heart disease, and hypertensive heart failure predominate, often diagnosed late.

Globally, cardiovascular mortality has declined steadily over the past five decades, driven by pharmacologic innovations (statins, antihypertensives, anticoagulants), interventional cardiology, population-based prevention programs, and stronger health systems [4]. The World Heart Report 2023 confirms that these benefits are unevenly distributed: Europe and North America record historic declines, while Africa has not replicated this trajectory [5]. Several factors explain this gap. First, modifiable risk factors are prevalent. The PURE study of over 155,000 participants in 21 countries documented that uncontrolled hypertension, unhealthy diets, abdominal obesity, smoking, and low physical activity are major determinants of cardiovascular mortality, with even greater impact in low-income settings [4]. Second, opportunities for early detection and control are limited: fewer than 20% of hypertensive Africans are aware of their condition, and fewer than 10% achieve adequate control [4].

Health system limitations are also critical. Specialized cardiology services are scarce and urban-centered, while essential medications are inconsistently available and often unaffordable [6]. National programs for CVD prevention remain limited, and universal coverage policies rarely ensure continuity of chronic care [5]. The consequences are dual: cardiovascular mortality rises in absolute terms, and the burden increasingly affects economically active populations, perpetuating poverty and inequality. Africa faces a "silent cardiovascular epidemic" largely overlooked in political agendas and international funding [2, 5].

**2. Future Directions**

Sustainable solutions for cardiovascular health in Africa require a paradigm shift. Strategies must be tailored to the social, economic, and cultural realities of each country rather than imported wholesale from high-income settings [6]. Prevention and early detection must be central. Hypertension should be the primary target, as its effective control reduces risk of stroke, myocardial infarction, and heart failure [4]. Systematic blood pressure measurement in primary care, coupled with community-based health education, can generate immediate, cost-effective benefits [2]. Lifestyle interventions, including balanced diets, reduced salt intake, physical activity, and tobacco cessation, require intersectoral policies involving education, agriculture, transport, and urban planning [2,5].

Health system strengthening is essential. Training should include cardiologists, general practitioners, and nurses in risk factor management [6]. Essential medicines must be made accessible through centralized procurement, local production, and subsidies to prevent financial exclusion [5]. Basic diagnostic tools, electrocardiography, portable

echocardiography, should be progressively implemented in district and regional hospitals [6]. International and regional cooperation is a key pillar. Experiences in Portuguese-speaking African countries demonstrate that collaboration can facilitate protocol sharing, training, and digital monitoring of chronic patients [7]. The global community, including multilateral organizations and development agencies, must recognize that investing in Africa's cardiovascular health is critical for economic and social stability [5].

Local research must be prioritized. While studies such as PURE or the Global Burder Disease provide valuable insights, Africa-specific evidence is limited [3,4]. National registries, population cohorts, and clinical trials will allow policies to be data-driven rather than extrapolated from other contexts [6]. As Mocumbi has highlighted, low- and middle-income countries have historically demonstrated resilience and innovation in tackling infectious diseases. The political, financial, and social commitment that reduced HIV/AIDS and malaria mortality must now be directed to cardiovascular disease [6].

Leveraging digital innovation for cardiovascular care. Digital innovation offers promising opportunities to improve cardiovascular care in Africa if adapted to local realities. Mobile health (mHealth) platforms, supported by high cell phone penetration, can provide patient education, reminders, self-monitoring, and remote consultations, helping overcome barriers of distance and cost [6,7]. Telemedicine extends cardiology expertise beyond urban centers, while low-cost portable devices, such as handheld echocardiography or smartphone-based blood pressure monitors, enable point-of-care screening in rural areas. Artificial intelligence can further support early diagnosis by interpreting ECGs, echocardiograms, or retinal images where specialists are scarce. Wearables, particularly in atrial fibrillation detection, exemplify how technology can improve early diagnosis and continuous monitoring, though they also raise ethical and regulatory challenges [8].

Digital health also strengthens data collection for registries and surveillance, allowing governments to monitor trends and evaluate interventions [6, 7]. Yet, integration requires addressing infrastructure gaps, electricity shortages, and the digital divide. Ensuring equity, affordability, and interoperability is essential. Ultimately, technology should complement, not replace, traditional health system strengthening, serving as a catalyst to expand access, efficiency, and quality of cardiovascular care in Africa.

## 3. Conclusion

From Donnison's 1929 observations to contemporary burden of disease data, Africa's cardiovascular health trajectory reflects delay, inequity, and persistent challenges [1–3]. While global achievements in reducing cardiovascular mortality are celebrated, Africa continues a difficult path toward sustainable solutions. The evidence is clear: the African cardiovascular epidemic is not a future problem, it is a present reality. What is missing is not knowledge, but decisive action. The leadership, resources, and international solidarity that transformed the fight against HIV/AIDS and malaria must now be unleashed to confront Africa's cardiovascular crisis [5,6].

By 2030, the global health community faces a choice: continue documenting disparities, or mobilize innovation, policy, and equitable partnerships to close the cardiovascular divide. The time for observation has passed. The next decade must be about delivering solutions, saving lives, and ensuring that cardiovascular health becomes a universal right, not a privilege.

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