



# Facing the future: tackling non-communicable diseases in Africa

A Fabric of Africa report

**PHILIPS**

## Simple, Community-Supported Solutions

In 2014, it is unacceptable for women to suffer from untreated breast cancer. It is unacceptable for indoor air pollution to compromise the futures of children by breathing toxic smoke from unventilated cooking. It is unacceptable for obesity and its related illnesses – diabetes and cardiovascular disease – to reduce human productivity and compromise the economic development of an entire continent.

Philips' Fabric of Africa report on non-communicable diseases (NCDs) challenges all of us to solve widespread health care problems that have been allowed to fester for far too long. While there is clearly great work being done by health care professionals, policy makers, and non-governmental organizations, we need to make progress faster.

I agree with WHO Regional Director for Africa Dr. Luis Sambo that we have "unfinished business" in Africa that is critical and urgent. Critical, urgent, and within our grasp! Addressing NCDs doesn't require multi-million dollar medical centers or the most sophisticated medical devices. Speed and simplicity - proven programs delivered locally and cost-effectively using relatively low-tech devices and techniques - are the keys to leapfrogging Africa to a better place fast.

I'm proud that Philips is helping to lead the way by developing and supporting all kinds of programs that quickly make real differences in peoples' lives. These include prenatal ultrasound screenings, obstetric fistula repair, and mobile mammograms. We can do more, such as addressing indoor air pollution through a collaborative program modelled on our successful Philips Philanthropy by Design Chulha/Chapina Stoves Project launched in India and Guatemala. Sometimes, we find the answers are so simple - and the rewards far greater than we imagine at the start.

In 2008, nearly three million African deaths were attributable to preventable or treatable NCDs. That figure will rise by more than 25 percent in the next decade. Suffering that most of us would find monstrous if it affected our families, our communities, or us! Unacceptable, correct?

Let's adopt this report as our manifesto to speed simple, community-supported solutions in the areas of greatest need. Let's tackle NCDs with the same urgency as we would any other kind of epidemic. Let's conclude our unfinished business and bring 21st century health and well-being to Africa right now.



Eric Silfen, M.D.  
Chief Medical Officer



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# TACKLING OBESITY AND THE NUTRITION TRANSITION

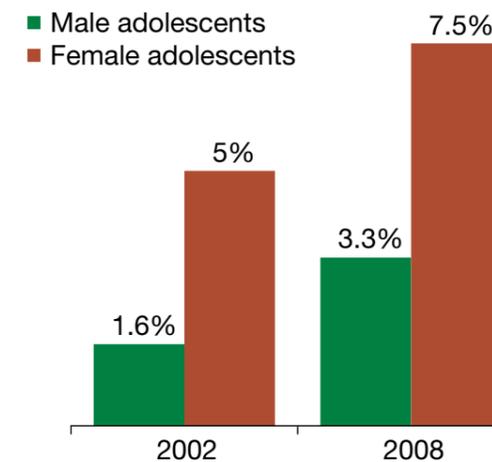


Effectively tackling the rising prevalence of obesity and excess weight gain that is occurring in many African countries requires an understanding of the changes that are driving this increase, including the concept of “nutrition transition”.

As the WHO recently stated, many low- and middle-income countries in Africa are now facing a double burden of disease. As countries continue to deal with problems of infectious disease and under-nutrition, they are also experiencing “a rapid upsurge in non-communicable disease risk factors such as obesity and excess weight, particularly in urban settings.” As a result, “it is not uncommon to find under-nutrition and obesity existing side-by-side within the same country, the same community, and the same household”.<sup>1</sup>

These countries, communities, and households are undergoing the nutrition transition – defined as changes in dietary patterns and nutrient intake during economic and social development. The effect of this is often exacerbated by associated rises, particularly in urban populations, in the adoption of more sedentary lifestyles, and higher rates of alcohol use and smoking. In a recent study, researchers at South Africa’s Human Sciences Research Council (HSRC) set out to quantify the degree to which individual countries in sub-Saharan Africa were undergoing this transition. They reported that the countries with the highest nutrition transition scores were South Africa, Ghana, Gabon, Cape Verde, and Senegal: these countries had high levels of obesity/excess weight, high intakes of energy and fat, and yet relatively low infant mortality rates.<sup>2</sup>

In August 2013, the HSRC published the latest findings of the South African National Health and Nutrition Examination Survey (SANHANES-1), highlighting the current very high – and rising – prevalence of obesity and overweight in South Africa. It found that 24.8% of women and girls were overweight, while a further 39.2% were obese – these figures were significantly higher than those



Source: Rates of obesity in South African adolescents between 2002 and 2008<sup>3</sup>

seen in men and boys. The current 39.2% prevalence of obesity in women and girls is much higher than the prevalence of 27% observed in a similar survey conducted in 2003.

The SANHANES-1 study team made a series of recommendations for the country’s Department of Health, intended to reduce the future prevalence of risk factors for NCDs. These included the introduction of policies “that discourage, and/or ban, the explicit or covert promotion of foods known to be associated with increasing the risk of disease, with priority being afforded to weight management.”<sup>4</sup>

To be successful, nutritional interventions need to follow some important criteria. In a recent paper discussing how to address the nutrition transition in South Africa, researchers listed ten principles gained from existing literature. These included the need to use a “bottom-up” rather than a “top-down” approach, gaining “buy-in” from the community in order to optimize compliance with nutritional advice and recommendations. Consumer-friendly dietary guidelines are also vital to promote healthy eating.

Researchers concluded that “the nutrition transition may be steered into a more positive direction if the suggested basic principles are used in the planning of holistic, integrated policies and interventions aimed at optimal nutrition for all”.<sup>5</sup>

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## EGYPT: LEADING THE WAY IN DIABETES CARE DESPITE POLITICAL CHANGE

Although the major focus of attention on health care issues in Africa has traditionally been on infectious diseases, increasing urbanization and changing population demographics are increasingly shifting the spotlight towards NCDs usually associated with the West and so-called 'Western' lifestyles. Diabetes is a primary example.

Age-specific estimates reveal that the prevalence of diabetes in urban centers in Africa often exceeds that of high-income Western nations.<sup>1</sup> According to the International Diabetes Federation, around 80% of diabetes patients in Africa remain undiagnosed and therefore untreated, leading to a high rate of avoidable mortality.<sup>1</sup> Furthermore, the prevalence of diabetes in Africa is predicted to double in the coming 20 years. As figures for 2011 reveal, deaths in Africa that year from diabetes in age-range 20–79 years were 20% higher among women (206.5 million) than men (138 million).<sup>1</sup> Sub-Saharan Africa currently has the highest mortality rate due to diabetes in the world.<sup>2</sup>

Egypt currently has the highest prevalence of diabetes of any African country (7.5 million) and the eighth highest

prevalence of any country in the world.<sup>2</sup> According to the WHO, during the period 1990–1999 there was a substantial decline in the contribution of infectious diseases to overall mortality in Egypt and an increase in the contribution of NCDs, including diabetes and its related conditions.<sup>3</sup>

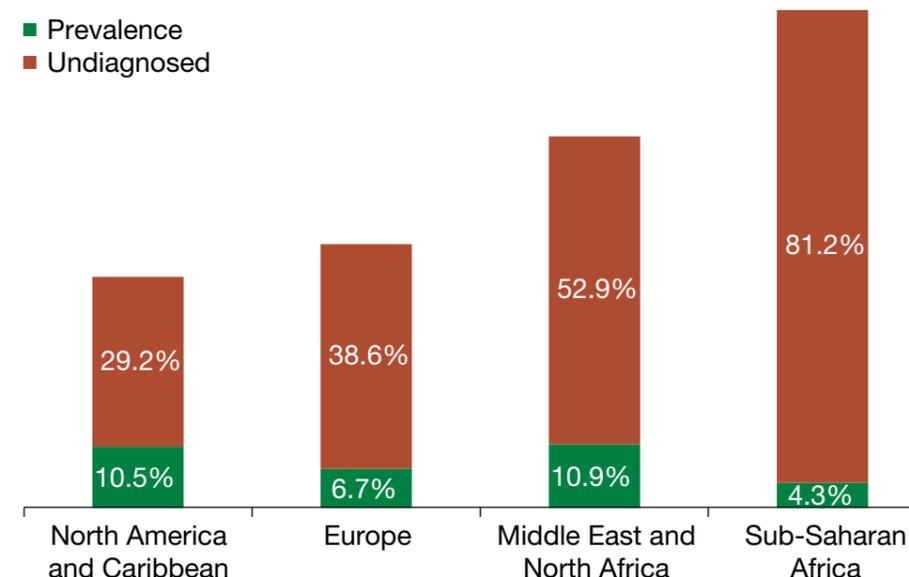
Yet despite the political turmoil that Egypt has faced during recent years, the need for a sustained effort to combat the growing threat of diabetes has not been overlooked, and the country continues to lead and play a key role in the fight against diabetes in Africa.

This year alone, Egypt has hosted both the fourth Arab Diabetes Forum, and the fifth National Egyptian Diabetes Congress.<sup>4,5</sup> Also, in 2012, Egypt's Health Ministry joined forces with the WHO to produce a comprehensive national survey of the prevalence of NCDs in the population, and of risk factors at the root of many of those diseases such as smoking, obesity, and hypertension.<sup>6</sup> Understanding the nature and magnitude of the problem is a major step in the direction of finding effective solutions.



Although the current Egyptian government is understandably engaged with higher priority issues, Professor Morsi Arab, President of the Egyptian Diabetes Association (EDA), believes that diabetes care in his country has not suffered significantly as a result of the recent political changes. He was recently quoted as saying, "Fortunately, in spite of significant economic suffering, the availability of medicines and care for people with diabetes did not suffer"<sup>7</sup>. In Egypt's fight against diabetes, the importance of this level of commitment and positivity cannot be underestimated.

Relatively free from political constraints, the EDA is leading the way in Egypt, promoting awareness through advocacy, providing workshops for health care professionals, pushing ahead with prevention and education agendas, and assuming a crucial role to guide and inform other diabetes associations on the continent.



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# A RISE IN BREAST CANCER MORTALITY IS NOT INEVITABLE

Data from the International Agency for Research on Cancer (IARC) predict that the incidence of all cancers (excluding non-melanoma skin cancer) in Africa will rise to about 1.33 million in 2030 – almost double the recorded 2008 figure of 715,571 .<sup>1</sup>

More sobering still is the fact that these predictions are based only upon demographic factors such as aging and population growth, and may actually be a big underestimation. The true figures will most likely be influenced by increasing trends towards the adoption of the so-called 'Westernized' lifestyles that are associated with economic development, and unfortunately also with increased cancer incidence, such as smoking, physical inactivity, and unhealthy diets.<sup>2</sup>

It is expected that considerably over 50% of new malignancies in Africa will continue to be diagnosed in women. As the 2008 IARC figures for Africa reveal, breast

cancer was not only the most frequently diagnosed malignancy among women, but was also, by far, the most frequently diagnosed cancer when considering statistics across both sexes.<sup>1</sup>

*Fabric of Africa's* ongoing campaign aims to not only discuss and raise awareness of the important issues surrounding breast cancer in Africa, but also highlight some of the innovative and successful initiatives that are demonstrating how a proportional increase in breast cancer mortality in Africa is far from inevitable and can be effectively mitigated.

A recent article looked at the reasons why breast cancer has now overtaken cervical cancer as the most commonly diagnosed cancer in women.<sup>3</sup> Again, risk factors associated with economic development were identified as the most likely drivers of this trend. These include early menarche, later child-bearing, having fewer children, and obesity.

The same article noted that the high mortality rate from breast cancer in Africa compared with Western countries (see Figure) was related not only to lack of appropriate screening services, but also to a lack of awareness of the symptoms of breast cancer, and to the stigma that is often associated with cancer which lead to women presenting at a late stage when their survival chances are relatively low.

Uganda is a particular case-in-point. It has been shown that the incidence of breast cancer there has almost doubled over the past 20 years.<sup>4</sup> The benefits and challenges of providing mobile screening services in rural Uganda, an initiative from Imaging the World – a technology-focused non-governmental organization – was the subject of another article. Although the initial aim of the scheme was to provide portable low-power ultrasound machines for obstetric imaging, the potential use of ultrasound as an alternative to traditional mammography was also observed.<sup>5</sup> In fact, a recent clinical study has suggested that ultrasound may provide an accurate and inexpensive imaging technique for the evaluation of clinically palpable breast masses.<sup>6</sup>

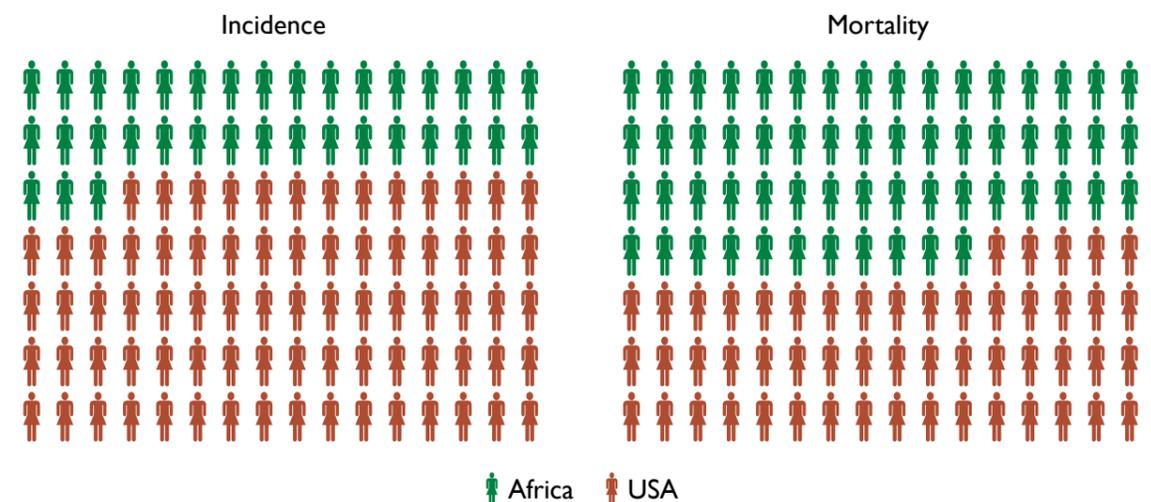
Following on from field trials of obstetric ultrasound, a very recent 2013 initiative by Imaging the World in rural Uganda has tested a diagnostic protocol using ultrasound in women with palpable breast masses.<sup>7</sup> Scans were not only interpreted in real time, but were also evaluated remotely by expert interpreters in the USA. A 100% agreement was reported between image interpretations made at the point-of-care and under the more controlled conditions in the USA.

Furthermore, the tremendous impact that community health workers can have in rural settings should not be underestimated – not only to guide women with breast cancer though the complexities of low-resource health care systems, but also to provide culturally sensitive support to demystify cancer and break down the barriers of stigma that prevent many women from seeking help while their disease is still treatable.<sup>8</sup>

These and many other such initiatives across the whole of Africa are providing clear indications that, with an innovative and sustained approach, statistical predictions for cancer in Africa need not be prophecies of an explosive rise in cancer deaths. Although the incidence of breast cancer in Africa is likely to increase, an associated proportional increase in breast cancer mortality does not have to be inevitable.

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Africa incidence: 92,600. Africa mortality: 50,000.  
USA incidence: 205,500. USA mortality: 45,600.

Figure: breast cancer incidence and mortality in Africa and USA, 2008. Source: GLOBOCAN 2008 I.

# HEART MATTERS IN AFRICA



Efforts to improve heart health have been boosted by recent advances in our understanding of how cardiovascular disease (CVD) manifests in Africa – and how this differs from other regions.

These advances, summarized in a 2013 paper reviewing the key research findings uncovered in recent years, include recognition that 90% of cases of heart failure in Africa are caused by hypertension, rheumatic heart disease, and cardiomyopathy. Most cases in the West, in contrast, are caused by coronary heart disease.

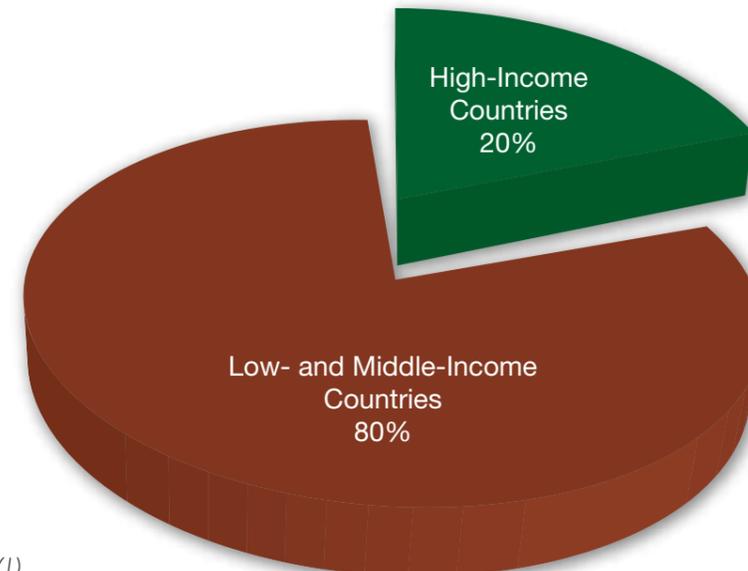
Stroke, now a major cause of early disability and death in Africa, is understood to be more closely associated with hypertension, rather than with atherosclerosis (blood vessel blockage). Meanwhile, CVD among children in

Africa is dominated by congenital and rheumatic heart diseases, which occur at much higher rates than in other parts of the world.

The authors of the summary also noted reports that although ischemic heart disease is currently a relatively modest contributor to CVD in Africa (in contrast with most Western countries), “the burden of risk factors for atherosclerosis is rapidly increasing across the diversity of rural and urban settings”.<sup>1</sup>

This improved understanding of the epidemiology of CVD in Africa, and within individual countries in the region, provides a solid, evidence-based foundation from which to launch effective care initiatives. In a recent interview, a leading specialist emphasized the importance of widening

Percentage of 16.7 million deaths attributed to CVD worldwide in 2010



Source: (1)

access to echocardiography across sub-Saharan Africa. This part of the continent in particular is having to address CVD related to poverty and infections and cardiovascular problems caused by the HIV/AIDS epidemic and its management, as well as the increasing emergence of risk factors and diseases of affluence.<sup>2</sup>



Dr Ferande Peters

In a recent interview, Dr Ferande Peters (cardiologist and director of Echocardiography at the Chris Hani Baragwanath Hospital in Soweto, Johannesburg, South Africa) pointed out that the aforementioned difficulties lend themselves “very well to being unraveled by the use of echocardiography”. He maintains that, currently, echocardiography is restricted to tertiary institutions as there is a shortage of adequately trained sonographers and cardiologists. This situation is likely to change relatively quickly, as more extensive training programs are planned.<sup>3</sup>

In Egypt, a range of educational initiatives is being implemented, aimed at improving the knowledge both of family doctors and of specialists. Professor Sherif El-Tobgi (Professor of Cardiology at Cairo University, and current president of the Egyptian Society of Cardiology) described, in an interview with *Fabric of Africa*, plans for cardiologists to visit family doctors – some of whom are in very remote areas – to discuss issues such as the correct interpretation of echocardiographs. A CVD database is also being established, along with a national network of cardiology centers of excellence, to promote the exchange of information, provide opportunities for higher quality local and national research, and ultimately improve patient care.<sup>4</sup>

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Professor Sherif El-Tobgi

# REDUCING RESPIRATORY DISEASE: SIMPLICITY MAY BE THE ANSWER

The influence of environmental factors in respiratory diseases and lower-respiratory-tract infections has been well established. Compared with the more obvious factors such as tobacco smoke and environmental pollution, the profound effects of indoor air pollution from burning solid fuels are comparatively less well known.

According to the WHO, 4.6% of deaths in Europe from lower-respiratory-tract diseases among children aged 0–4 years can be directly attributed to indoor air pollution from solid fuel use.<sup>1</sup> While this may be a surprising statistic, the same WHO report goes on to say, “Adding the effects of indoor and outdoor air pollution and other indoor

conditions, at least 42% (95% confidence interval 32–47) of all lower-respiratory infections were estimated to be attributable to the environment in developing countries.” In more economically developed regions, this figure is halved.<sup>1</sup>

There are, of course, worldwide efforts at the highest level to reduce environmental pollution. The dangers of tobacco use, a particular problem in Africa, are also being addressed by initiatives such as the Framework Convention on Tobacco Control, with the support of major international bodies.<sup>2,3</sup>

However, as Dr Lee Jong-Wook, former Director-General of the WHO, put it, the effect on health of the provision of energy for simple household matters such as cooking and boiling water have been “largely ignored by the world community.”<sup>4</sup>

The indoor burning of solid fuels and biomass results in the release of a multitude of pollutants, including not only carbon monoxide and small particles, but also toxic chemicals such as nitrogen oxides, benzene, butadiene, and polyaromatic hydrocarbons.<sup>4</sup>

In the WHO’s report, Dr Jong-Wook went on to say, “More than three billion people still burn wood, dung, coal, and other traditional fuels inside their homes. The resulting indoor pollution is responsible for more than 1.5 million deaths a year – mostly of young children and their mothers.” The burning of solid fuels in the home is especially prevalent in African countries where, as in other countries where indoor smoke levels are high, it is considered to be responsible for up to 40% of chronic obstructive pulmonary disease (COPD).<sup>1</sup> Since in the developing world women are largely responsible for household duties, inevitably the burden of related respiratory disease has been reported to be higher in women than men.<sup>1</sup>

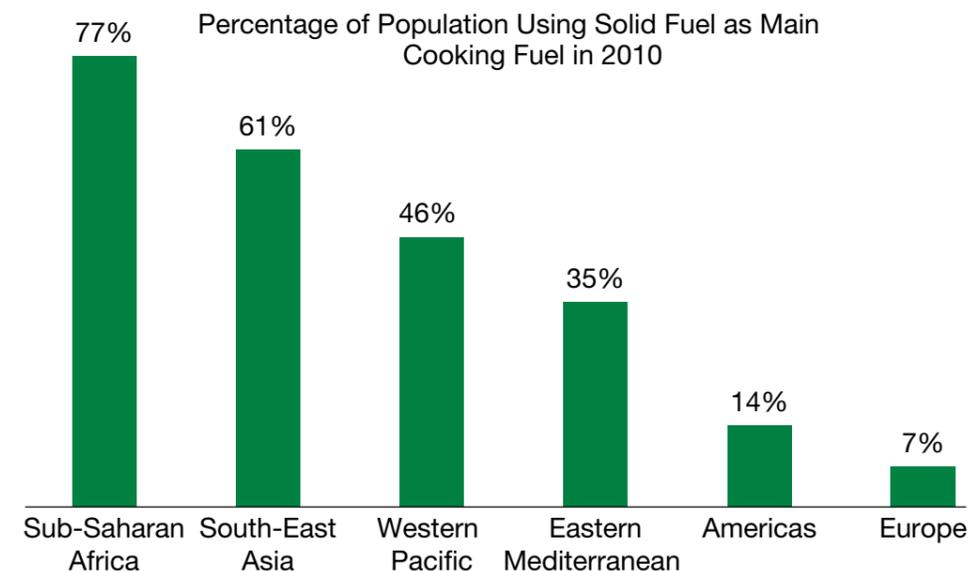


Example of an indoor cooking stove

The United Nations Millennium Development Goals highlight the role of energy services and, in particular, modern cooking fuels and methods as a prerequisite for development.<sup>4</sup> Although relatively clean household fuels such as kerosene, LPG, and biogas do exist, they are often beyond the financial reach of people living in poor rural communities.<sup>4</sup>

However, the use of cheap wood-burning stoves in Africa to replace open fires has been reported to reduce indoor air pollution by 50%.<sup>4</sup> The non-profit-making organization Potential Energy had begun distributing these so-called Berkeley-Darfur stoves in Darfur.<sup>5</sup> Also, environmentally friendly fan-driven stoves, capable of burning wood, biomass pellets, or dung, that can reduce smoke and carbon monoxide levels by up to 90%, have recently been brought onto the market in Africa, aiming to be of benefit to poor and middle-income households alike.<sup>6</sup>

As the WHO acknowledges in their Fuel for Life report, the most effective solutions to tackling domestic air pollution in the short term will most likely be found in such simple practical measures as providing stoves that more cleanly and efficiently burn the cheap solid fuels that are routinely used in rural communities.<sup>4</sup>



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Source: (7)



## AFTERWORD

This first Fabric of Africa report has shown how NCDs are being addressed by health care professionals, policy makers, and non-governmental organizations.

The issue is a major one: well over 2 million people in Africa die from NCDs every year, and this number is predicted to increase by more than a quarter (27%) over the next 10 years. The important driver of this rise in NCDs is the increasing adoption of modern lifestyles and behaviors, including unhealthy diet, urbanization, tobacco and alcohol use, and physical inactivity. Of course, the impact of NCDs goes beyond the personal: a significant proportion of the debilitation and death associated with NCDs is occurring among people of working age, bringing with it with a serious impact on economic development. As the WHO has previously warned, not addressing NCDs will lead to a shrinking workforce, curtailing vital growth and economic development.

The need to refocus efforts on NCDs is a priority of the WHO. Early in 2013 it convened a 3-day multi-stakeholder meeting on how to address risk factors for NCDs in the African region. In the meeting's opening

address, Dr Luis Sambo (WHO Regional Director for Africa) noted that NCDs are on the rise, and "at the same time we face the unfinished business of major communicable diseases, and maternal and child health problems." While recognizing that these are all competing for limited resources, Dr Sambo emphasized that we "must take action to address the rising burden of NCDs in Africa."

The good news, said Dr Sambo, is that sound health policy and preventive actions at government, community, and individual levels "have the potential to halt or reverse the rising trend of NCDs". After all, he said, "today's risk factors are tomorrow's diseases".

This report has highlighted some key examples of ongoing practical efforts to address NCDs. These examples clearly demonstrate that with appropriate organization, funding, and access to medical equipment and treatments, it is possible to provide effective care, even in remote areas, and make a real difference to people's lives. Fabric of Africa pledges to continue showcasing practical examples, and lessons learned, through articles on the website and in future reports.

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*"We must take action to address the rising burden of NCDs in Africa. After all, today's risk factors are tomorrow's diseases."*

*Dr. Luis Sambo (WHO Regional Director for Africa)*



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