

A hidden menace: Cardiovascular disease in South Africa and the costs of an inadequate policy response

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INTRODUCTION

Cardiovascular diseases (CVD) including, hypertension and stroke constitute an estimated 60% of all chronic non-communicable disease deaths worldwide.⁽¹⁾ In South Africa (SA), approximately 195 people die per day due to CVD, representing about 20% of the daily deaths due to HIV/AIDS.⁽²⁾ Several factors contribute to this trend. The first is an epidemiological transition, which has seen a rise in non-communicable diseases. The transition in SA is different from other countries in that it is complicated by a persisting high burden of HIV/AIDS and TB, maternal and perinatal conditions and growing burden of road traffic injuries. Other major factors include a demographic transition, urbanisation and globalisation, the latter through risk factors such as tobacco smoking

ABSTRACT

The cardiovascular disease (CVD) burden in South Africa (SA) is increasing amongst all age groups and is predicted to become the prime contributor to overall morbidity and mortality in the over 50-year age group. Several factors contribute to this – an epidemiological transition, which has seen a rise in chronic non-communicable disease, and a demographic transition with much reduced fertility and a growing proportion of the population above 60 years. In parallel with unfolding urbanisation, the population burden of vascular risk factors namely hypertension, hypercholesterolemia, diabetes and obesity has increased. The scale of CVD burden poses a threat to the health system and calls for timely intervention. This paper discusses the burden of CVD in SA and current initiatives to address it. Evidence is presented from studies that focus on prevention including salt reduction and trans-fatty acids legislation. The economic and clinical impact of an inadequate private and public sector response is summarised. The paper documents lessons from other countries and proposes health systems strengthening measures that could improve care of patients with CVD. SAHeart 2011; 8:48-57

and unhealthy diets. Even in rural SA, associated diffusion of urban behaviours is fostering the CVD epidemic.⁽³⁾

The United Nations projects that the percentage of population above 60 years will more than double between 1999 and 2050 in SA, with the burden due to CVD predicted to become the prime contributor to total morbidity and mortality in the over 50-year age group.⁽⁴⁾ However, CVD is taking its toll even amongst the younger age groups, with deaths projected to increase by over 40% in the 35-to 64-year age group by 2030. This is further complicated by the growing number of HIV survivors, now estimated at 5.8% of the population older than 50 years.^(5,6)

This poses several challenges regarding the management of this emerging epidemic in the face of persisting undernutrition and

communicable diseases. It is particularly difficult because existing healthcare delivery structures are currently oriented towards acute care. In addition, funding for chronic healthcare has until now been oriented towards vertical management of HIV/AIDS. This situation calls for a review of current policies in order to ensure an appropriate and cost-effective management of cardiovascular disease.

The paper reviews strategies to address the CVD burden in SA. Some of these have been incorporated into policy and others bear scrutiny. The paper also addresses potential health system alternatives to improve the care of patients with CVD. We highlight the economic and clinical impact of an inadequate response and document cost-effective measures that could offer more efficient and effective use of scarce public sector resources.

COSTS OF CARDIOVASCULAR DISEASE

In 2003, cardiovascular disease cost the European Union €169 billion⁽⁷⁾ and \$475.3 billion in direct and indirect annual costs in the USA in 2009.⁽⁸⁾ Similar information is minimal in SA. Recent data shows that total costs of heart disease and stroke accounted for 2 to 3% of the GDP of the country in 1991 (i.e. between R4 135 billion and R5 035 billion).^(9,10) Direct costs comprised 42% of the total, of which 75% was carried by the private sector.⁽¹⁰⁾ Assuming a 4% rate of inflation, and a higher prevalence of CVD, the overall costs for CVD in 2010 would be more than double that 20 years ago.

RISK FACTORS IN SOUTH AFRICA

The major risk factors namely high blood pressure, tobacco use, high cholesterol, obesity, physical inactivity and unhealthy diets are increasingly prevalent in Africa, both in urban and rural settings.⁽¹¹⁾ The national prevalence of hypertension in sub-Saharan African countries (SSA) ranges from about 4% to 10%, with SA at the upper-end of this spectrum. The prevalence of hypertension amongst males and females in one rural Mpumalanga district was 44% and 42% respectively,⁽¹²⁾ a figure much higher than that reported for other rural areas in SSA.⁽¹³⁾ Data from the same sub-district

show an emerging trend of obesity and overweight amongst adolescent girls, suggesting the emergence of a nutritional transition characterised by a shift towards a higher caloric content diet and/or decline in physical activity.⁽³⁾ Dietary changes coupled with lifestyle and occupational changes among adults, reinforced by widespread labour migration to urban centres is fostering the epidemic not only of high blood pressure and obesity but also stroke.⁽¹⁴⁾ This trend is not confined to rural areas. A Soweto hospital-based study showed that 50% of all CVD patients present with hypertension, half of whom are obese.⁽¹⁵⁾

GOVERNMENT INITIATIVES AND GUIDELINES TO ADDRESS CVD

Despite the growing burden of CVD and its potential catastrophic costs, there has been a limited health system response. This can be partially attributed to attention being focused on HIV/AIDS but government recognition and initiatives are gradually beginning to be targeted at chronic disease more broadly. In 1996, the Directorate of Chronic Diseases, Disabilities and Geriatrics was established within the National Department of Health. In 2006, this directorate developed national guidelines for the management and control of NCDs. The intent was to facilitate a cross-sectoral response to the NCD burden in line with the World Health Organisation's Action Plan for 2008 to 2013.⁽¹⁶⁾

Several disease specific guidelines for hypertension, chronic diseases of lifestyle (CDL) and for type 2 diabetes mellitus have been developed.^(17,18) These guidelines provide information on the management and control and include interventions that have been shown to be cost-effective in middle and lower-income countries. However, available evidence suggests that primary prevention and management of common cardiac conditions is limited even with these guidelines "in place".⁽¹⁹⁾

Prioritisation of interventions for the primary prevention of chronic diseases is minimal. For example, the guideline on primary prevention of CDL lists a variety of interventions for management. These interventions range from self-screening for weight control,

to the role of workplace support groups.⁽¹⁸⁾ It is unclear what package of interventions should be adopted given the current resource envelope to ensure attainment of the highest health gains whether in urban or rural settings.

The Department of Health has implemented standard treatment guidelines (STGs) and an Essential Drugs List (EDL) for treatment and management of CVD. Although drug supply remains problematic, these guidelines have been instrumental in getting essential medicines to poorer and less accessible communities. Standard treatment guidelines enable more rational prescribing.⁽²⁰⁾ However, the guidelines themselves warrant more careful scrutiny. For example, hypertension treatment guidelines are based solely on the blood pressure level approach in diagnosis and management of hypertension except where diabetes is a co-morbid condition.⁽²¹⁾ Recent evidence suggests that focussing on one risk factor at a time may result in under-treatment of high-risk patients and possible over-treatment of lower-risk patients.⁽²¹⁾ Instead the WHO is advocating for an absolute risk assessment approach which aims to balance several CVD risk factors present in an individual whilst promoting a healthy lifestyle.⁽²²⁾ There is evidence to suggest that this approach could have an enormous impact on the treatment of heart disease⁽²³⁾ and would be a more cost-effective way of managing CVD.⁽²¹⁾

Whilst focus on CVD has been minimal, the revised South African guideline for managing ischaemic stroke and transient ischaemic attack is a notable step.⁽²⁴⁾ This guideline puts forward a protocol for management that considers both the current epidemiological context and the strength of evidence of interventions for stroke care. The comprehensive plan that spans across all aspects of care including primary prevention, acute management, secondary prevention and rehabilitation, offers hope for mitigating the burden of disease due to stroke.

APPROACHES TO PREVENTION

Two approaches are conventionally advocated for CVD prevention. Population-wide approaches targeting the entire popula-

tion and addressing the causes rather than the consequences; and those that target individuals who are at high risk or aimed at persons with established disease. Population-based interventions that address socio-economic factors and change the context to make individuals' default decisions healthy (Figure 1) are the most effective as they tend to reach broader segments of society and require less individual effort.⁽²⁵⁾ Approaches directed at the individual using evidence-based clinical care though crucial are often limited by lack of access, erratic and unpredictable adherence levels and imperfect effectiveness in many health settings. Although a combination of both approaches is a more effective way of preventing CVD, the following discussion is focused on specific population-based approaches using Frieden's health impact pyramid (Figure 1) as the framework. It further highlights selected health systems strengthening initiatives that could improve the management of patients with CVD.

POPULATION WIDE INTERVENTIONS

Current policies – Tobacco legislation

Worldwide it is recognised that one of the most effective programmes for prevention of CVD is a comprehensive tobacco

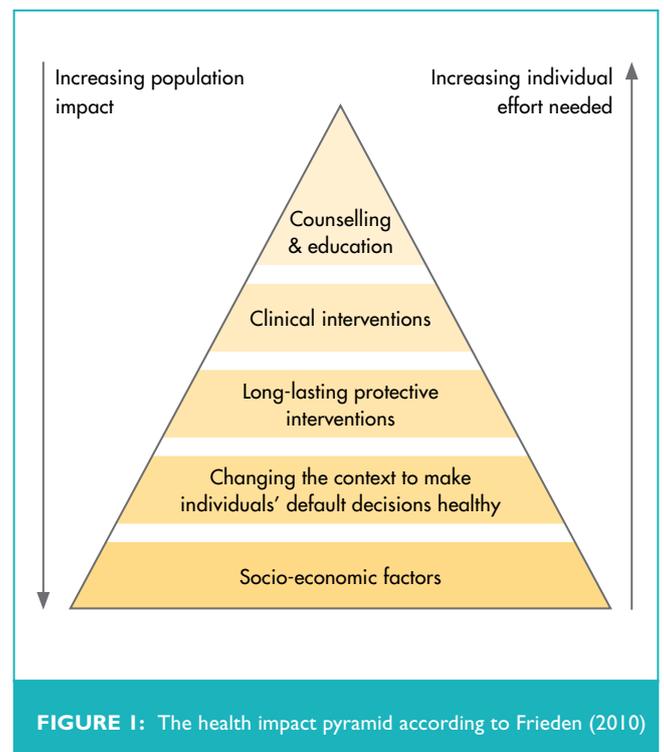


FIGURE 1: The health impact pyramid according to Frieden (2010)

control programme, one which desirably contains most of the elements of the health impact pyramid.⁽²⁵⁾ SA has been a leader in this regard, with the passing of the Tobacco Products Control Act of 1993.

This legislation prohibited and/or restricted smoking in public places, regulated the sale and advertising of tobacco products and warning labels on tobacco packages. Most importantly, from both an effectiveness and cost-effectiveness perspective, the Government increased tobacco taxes to 50% of the retail price of a pack of cigarettes in 1997.⁽²⁶⁾ Taxes were gradually increased to 52% in 2002, where they now remain. Following this legislation, annual cigarette consumption fell by 33% from 1993 to 2003.⁽²⁷⁾ Consistent with this trend has been a decline and stabilisation in the number of smoking-related CVD deaths.⁽²⁸⁾ Although the decline in CVD cannot be definitely attributed to the legislation, it is encouraging that the trend is in the expected direction. The impact of such legislation on resources saved has not been formally evaluated. However estimates from other countries suggest that as much as a few billion dollars could be saved annually.^(29,30) In 2010 the National Council Against Smoking (NCAS) urged the Minister of Finance to review tobacco tax rates in SA.⁽³¹⁾ This advocacy group highlighted that SA's tax rates on tobacco were among the lowest in the world, thus emphasising that there is additional opportunity to benefit from tobacco legislation policy in SA.

Potential for new policies – Salt Reduction

Modern diets contain many times the minimum daily requirements of sodium, most of this coming from packaged foods and restaurant meals, making it difficult for individuals to control their intake.⁽²⁵⁾ In SA, salt ingestion amongst all population groups exceeds international guidelines of <6g salt/day.⁽³²⁾ Close to 50% of this intake comes from non-discretionary sources, with bread as the single greatest contributor.⁽³²⁾ Evidence from around the world, including SA, equates salt reduction with a drop in blood pressure and a lower risk of CVD events.^(33,34) Recent data from the USA indicates that as little as a three grams per day decrease in salt intake could reduce annual healthcare costs attributable to cardiovascular disease by \$10-24 billion annually.⁽³⁵⁾

While interventions that target salt reduction are key, dietary advice to reduce discretionary intake has little population impact.^(34,36) One example of an effective cost-saving initiative is the "Tick" programme in Australia in which the salt content of selected processed foods is decreased.⁽³⁶⁾ In SA, Woolworths has reformulated several of its recipes to gradually reduce the salt content in making many of its brand products.⁽³⁷⁾ Both these examples rely on voluntary action by the food industry. However, evidence from Australia now shows that the population health benefits could be 20 times greater with government legislation to make the "Tick" programme mandatory.⁽³⁶⁾ All this evidence suggests that policies to decrease the salt content of bread is an opportunity worth exploring in SA.⁽³⁸⁾

Future policies – trans fatty acids

The Department of Health is consulting with stakeholders on a proposed trans fatty acid Bill.⁽³⁹⁾ This Bill aims to reduce trans-fats present in certain processed and prepared foods currently for sale in SA. Because trans fatty acids significantly increase the risk of cardiovascular disease, the WHO recommends that trans fatty acids should be less than 1% of daily energy consumption. Currently, the oils in SA fast food outlets contain up to 25% of industrially produced trans fatty acids; most store-bought foods unless labelled otherwise contain trans fats.⁽⁴⁰⁾ Currently, the guidelines on Advertising and Labelling of Foodstuffs (under revision), which were promulgated under the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) do not address the labelling of trans fats, in particular industrially produced trans fatty acids.

Evidence from Denmark which implemented legislation banning the use of oils and fats containing more than 2% of industrially produced trans fatty acids in foods, shows that this method is effective in reducing trans fat intake.⁽³⁹⁾ In 2005, two years after Denmark implemented the legislation, a public surveillance programme showed that it is impossible to ingest more than 1g of industrially produced trans fatty acids on a daily basis.⁽³⁹⁾ Even more encouraging is that this intervention is cost saving since it requires no consumer education. Generalising from such experiences the cost amounts to no more than US\$0.50 per

person per year whilst the cost-effectiveness ratio for this intervention ranges from US\$25 to US\$73 per DALY* averted depending on the region.⁽⁴¹⁾

It is encouraging to note that the issue of trans fat acid intake is already on the policy agenda for SA. Even though the economic benefits from this intervention have not been formally evaluated, one can speculate that the decline in morbidity and mortality will have a positive impact on the costs to government of treating CVD.

Community based Interventions

A vital component of a successful prevention programme is community empowerment initiatives aimed at influencing social norms, health beliefs, and behaviours of the community.⁽⁴²⁾ Because personal lifestyle is socially conditioned, such interventions when effective will likely have a widespread positive impact on healthy behaviour change in society. Several community based interventions (CBIs) that could have an impact on chronic disease management have been initiated in SA (Table 1). However, most of these initiatives have been in localised settings, and were not taken to scale. Weak inter-sectoral action limits the effectiveness of these interventions. In addition studies to evaluate the benefit of CBIs in SA are rare, making it difficult to move towards a concerted programme of action.⁽⁴³⁾ Nonetheless, one study in the Western Cape showed that active community based intervention was effective in managing blood pressure control.⁽⁴⁴⁾ These findings are important since CVD is the leading cause of death among both men and women in the Western Cape Province, accounting for one in four deaths (25%).⁽⁴⁵⁾

INITIATIVES WITHIN THE PRIVATE SECTOR

It is encouraging to note that the private industry, particularly private medical aid companies in SA are making strides towards CVD prevention. Discovery's "Vitality" and Momentum's "Multiply" are rewards based wellness programmes that use diverse

incentives to encourage healthy behaviour.^(47,48) These programmes provide access to facilities for prevention including screening for CVD risk factors and for fitness. Members earn points for engaging in their health and are "rewarded" according to their level of engagement. Evidence from the Vitality Insured Persons (VIP) study showed that a high level of engagement is associated with both a reduction in admission rates and lower claims costs for cardiovascular conditions.⁽⁴⁸⁾ Nonetheless, membership to these programmes comes at an additional cost, and about 40% of Discovery Health beneficiaries are not on Vitality.

Whilst Vitality is limited to beneficiaries, it is noteworthy that Discovery has increased its physical activity programmes beyond the private sector by funding and assisting the launch of the Discovery Healthy Lifestyle Programme (DHLP) in a rural setting of Limpopo.⁽⁴⁹⁾ DHLP comprises two components – "Health Nutz" and "Live it Up". The former is focussed on school based physical activities incorporated into the school's curriculum. The latter is a physical activity based programme that has been incorporated into chronic disease support group meetings held once a week at primary healthcare clinics. A qualitative evaluation of the programmes indicated a positive change in perception of physical activity in this community and growth in the "Live It Up" programme.⁽⁴⁹⁾ Several similar initiatives have been launched in 1 000 public and private schools throughout SA. Such efforts are commendable in the fight against CVD.

POLICY LESSONS FROM OTHER COUNTRIES

As noted above, experience from other countries suggests that the most effective way to manage and control chronic diseases combines population-wide approaches and targeted, individual-based approaches. Importantly, a suite of interventions, once fully implemented, will take at least five years to show any measurable effect. This timeframe accommodates both government and sub-national programmatic measures. Benefits to the popula-

*DALYs for a disease or health condition are calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lost due to Disability (YLD) for incident cases of the health condition. One DALY can be thought of as one lost year of "healthy" life.

tions following rapid wide-ranging improvements in diet and decreased calorie intake have been recorded in Finland,⁽⁵⁰⁾ USA,⁽⁵¹⁾ and Poland.⁽⁵²⁾

In Poland, mortality due to coronary heart disease fell drastically by about 26% between 1990 and 1994. This decline has continued through 2002, with most of the decline attributed to a major increase in consumption of non-hydrogenated rapeseed

and soya bean oil, rather than from reductions in smoking or an increase in fruit intake. Dietary legislation led to the replacement of dietary saturated fat with polyunsaturated fat. Vegetable fat and oil consumption also increased (primarily in the form of rapeseed and soybean oil products), while animal fat consumption, mainly butter declined. Price subsidies on butter were removed and cheaper vegetable oils made available. The result of this intervention is one of the most dramatic rates of decline ever seen in Europe.

TABLE I: Community based interventions for chronic disease prevention⁽⁴⁶⁾

Programme	Programme description	Programme outcome
Community Health Intervention Programme (CHIPs) ⁽⁷⁾	<p>This health intervention programme was developed by the Sports Science Institute of SA (SSISA) in 1997 in response to the growing prevalence and burden of non-communicable diseases.</p> <p>The aim of the programme is to promote health through the medium of regular physical activity.</p> <p>Five programmes were designed to respond to needs of individuals through all phases of the life cycle.</p> <p>The programmes are "Healthnutz" for children, "Optifit Outreach" for adults, "Fit for Work", a workplace-based exercise intervention, "Live it Up" for older adults and "Wakey Wakey", which is a group-based health awareness programme.</p> <p>Each of these programmes embraces a two-fold strategy: education to increase awareness regarding the risk for developing chronic diseases of lifestyle; and regular physical activity to encourage adherence and self-efficacy in making healthier lifestyle choices.</p>	<p>The programme has achieved the following:</p> <p>Opened over 40 branches, trained more than 300 leaders and impacted on 8 685 individuals' lives.</p> <p>The next phase of growth is to expand the programme nationally and to develop a "train the trainer" model.</p> <p>They are seeking accreditation from the South African Qualifications Authority (SAQA) for resource manuals and the training offered to leaders.</p>
Woolworths Health Promotion Programme	<p>Working closely with schools and the Department of Education, Woolworths in conjunction with SSISA, has developed the "Making the Difference through Nutrition Programme".</p> <p>This initiative combines outcomes-based education, interactive classroom activities and informative parent workshops, which positively influence the lifestyles and well-being of young learners and their communities.</p> <p>One of the primary focuses of this initiative is to teach learners not only the importance of regular physical activity, but also how to become more physically active in a fun, creative and sustainable manner.</p>	<p>Woolworths and SSISA have produced a DVD to educate children, caregivers, parents and teachers about how to make physical activity an integral part of the lives of children.</p> <p>In the DVD the presenters give valuable insights into the extensive benefits of physical activity, as well as practical advice on how to improve children's physical activity levels at home and at school.</p> <p>The 1km Health Track and the dynamic group dance (Dance for Fun), provide two inspiring examples of how exercise can be accessible and fun.</p>
Soul City Health Promotion Programme	<p>Soul City has run a television soap opera series with a health promotion programme, which targeted low-income groups. They also ran a sister radio programme for those without access to television.</p> <p>These included health messages addressing under-nutrition and overweight.</p>	<p>An extensive evaluation of the Soul City programme showed that it resulted in increased knowledge and awareness of high blood pressure, and adopting a healthy lifestyle to prevent and treat hypertension.</p> <p>The programme was also associated with positive change in intention and actual behaviour.</p>

Another country that has reaped success from implementing a community-based intervention is Finland.⁽⁵³⁾ In 1972, this country had the world's highest death rate from cardiovascular disease, which was attributed to heavy tobacco use, high fat diet and low vegetable intake. However, following the implementation of the broad community-based intervention, cancer and heart disease mortality decreased by close to 60% over 30 years and led to an increase in life expectancy in both men and women.^(50,53) This broad community based intervention involved consumers and schools, as well as social and health services, and led to policies banning tobacco advertising, introduction of low fat and vegetable oil products, changes to farmers' payment schemes and incentives for communities achieving the greatest reduction in cholesterol. The continual success of this programme could be attributed to several factors including nation-wide adoption of the programme.⁽⁵⁴⁾ In addition to this community intervention, a transparent commitment by the Finnish government towards healthy dietary changes is another contributory factor. For example, until the early 1970s, the government subsidised butter and whole cream and taxed margarine. In contrast a new law was passed in 1985 to allow low-fat spread and mixed butter and oils to compete through government subsidies. Furthermore screenings for cholesterol for all people over 20 years of age were recommended every five years, a move that increased people's interest in their diets.⁽⁵⁵⁾

There is also evidence that workplace based interventions are a feasible and often successful means of improving health of employed adults. For example, the Johnson & Johnson Health and Wellness Programme in the United States provides preventive services and services during and after a major medical event to employees.⁽⁵³⁾ This approach has seen an improvement in eight out of 13 categories including tobacco use, cholesterol level, blood pressure and drinking habits.

HEALTH SYSTEM CHANGES

A pre-requisite for effective implementation of prevention strategies and identification of high-risk individuals is a functioning pri-

mary healthcare system.⁽⁴²⁾ Strengthening human resources to cope with the shifting burden of disease is a key component to strengthening primary healthcare. Due to severe shortages of health workers in SA, strategies that allow less specialised health workers to reliably and effectively assess and manage CVD in primary care settings are worth exploring.⁽⁴²⁾ Equally important is the possibility of integrating the core components of prevention, screening and management of CVD risk factors within HIV clinics where routine assessment and management of patients has to date been comprehensive.

Applying task shifting to managing CVD

There is evidence suggesting that strategies such as task shifting are effective in managing CVD.⁽⁵⁵⁾ A Canadian study found that a community pharmacist and nurse team can have a major effect on hypertension in patients with diabetes mellitus and sub-optimal BP control in the community.⁽⁵⁶⁾ SA has developed considerable experience of task shifting with respect to HIV/AIDS treatment and care. Available evidence indicates that mainstreaming uncomplicated HIV/AIDS care to lower-level cadres (specifically, nurses and adherence counsellors) in clinics improves quality of care,⁽⁵⁷⁾ access to care and adherence to medication.⁽⁵⁷⁾ Drawing from this experience, a task shifted model for cardiovascular disease management warrants exploring in SA.

Integrating care – leveraging HIV services

Placement of integrated chronic care at the centre of primary healthcare systems will ensure a comprehensive response to one of the most important health problems confronting local communities.⁽⁵⁸⁾ Given the high burden of HIV /AIDS in SA, integration of care for patients with multiple chronic diseases is likely to decrease stigma associated with HIV whilst enhancing access and use to other chronic care services. Experience from Cambodia indicates that such an approach is feasible and could have the desired benefits.⁽⁵⁹⁾ However, before such an undertaking, it is crucial to understand whether the added complexity of integrated care could foster fragmentation of primary healthcare systems instead of invigorating it.⁽⁵⁸⁾

SA is beginning to develop experience with integrated chronic care through the PALS PLUS initiative (Practical Approach to Lung Health and HIV/AIDS in South Africa) that combines evidence-based, locally adapted symptom and sign-based guidelines, with educational outreach.⁽⁶⁰⁾ This strategy is used to change the behaviour of health practitioners. The Western Cape and Free State are implementing it throughout their primary care facilities and this could provide a stepping-stone for integrating CVD management within TB and HIV clinics. Nonetheless, there is no evidence yet regarding the cost or cost-effectiveness of such an initiative.

RECOMMENDATIONS

In the face of scarce healthcare resources and an underperforming healthcare system, SA can do much more to address CVD. This includes implementing and reviewing legislation that takes a population-wide approach. The draft bill on trans fat is a step in the right direction for SA.

A front-of-pack food labelling traffic light system where red = bad/unhealthy, and green is good/healthy (with amber between the two), with respect to levels of salt, fat, saturated fat, sugar and other nutrients, is worth considering.⁽⁶¹⁾ This approach is not only easy for the consumer to understand but avoids the problems likely to be encountered when developing an effective educational campaign for a diversity of consumers. Nonetheless, because of the potential to harm lucrative sales from junk food and ready meals (which are often laden with cheaper sugar, salt and fat laden ingredients), such a strategy is likely to encounter opposition from food manufactures and their shareholders with vested interests.

There are compelling grounds to integrate the management of HIV/AIDS with care for other chronic conditions such as diabetes and hypertension in SA. Since adherence levels and patient management are generally stronger within HIV clinics, one might predict that patient outcomes for CVD would also improve with a similar approach. However, in planning for such an undertaking,

it will be crucial to perform operational research into the specifics of managing particular diseases and risk factors.⁽²⁷⁾

CONCLUSIONS

The burden of cardiovascular disease is growing in SA. Responding to the burden of CVD is in line with a recent United Nations resolution that seeks to halt the increasing trends in premature deaths from non communicable diseases.⁽⁶²⁾ Reversing the emerging epidemic will take more than just targeting individuals, their behaviours and lifestyle choices. Emphasis should be placed on population-wide policy development that supports a change in the health context to encourage healthy personal decisions. Healthier food environments through salt reduction in packaged foods and legislation on trans fats, could have a considerable impact. Whilst SA has been a leader with respect to tobacco legislation, tobacco consumption and smoking has now stabilised at an unacceptably high level. Without careful review of current policy and best practices for managing CVD on several fronts, opportunities to curb a potential catastrophe will be missed.

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