NATIONAL STRATEGIC PLAN FOR THE PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES 2020-2025.

28 October 2019

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Health is both a contributor to, and a beneficiary of, all of the Sustainable Development Goals (SDGs)[i]. Tedros Adhanom Ghebreyesus. Director-General, World Health Organization

Non-communicable diseases are widespread. They have many dimensions, numerous causes, and countless undesirable consequences. But, there are proven ways to prevent and manage them. António Guterres. UN Secretary-General 2018.

Chapter 1 INTRODUCTION

Non-Communicable Diseases (NCDs), including mental disorders, currently pose one of the biggest threats to health and development globally, particularly in low and middle income countries[ii]. It is predicted that unless proven interventions are rapidly implemented in countries, in the short to medium term health care costs will increase exponentially and severe negative consequences will ensue not only to individuals and families but to whole societies and economies. NCDs are already a major burden in South Africa, but without added rigorous and timely action the health and development consequences may well become catastrophic. Immediate and additional, high quality, evidence based and focussed interventions are needed to promote health, prevent disease and provide more effective and equitable care and treatment for people living with NCDs at all levels of the health system.

In South Africa, over the past two decades a number of critical interventions have been introduced to combat morbidity and mortality from NCDs, however these need to be strengthened and additional catalytic interventions introduced. This National Strategic Plan directs the actions that will be undertaken between 2020 and 2025 across sectors to redress and reverse the growing threat posed by NCDs. The overarching objective of this Plan is that South Africa reaches the Sustainable Development Goal to *reduce, by one-third, premature mortality from noncommunicable diseases (NCDs) through prevention and treatment and promote mental health and well-being by 2030* (Goal3.4) [iii].

Gaining value for investments is central to this Plan. The cost effectiveness of different interventions has been analysed by the World Health Organization and "Best Buys" for the reduction in NCD mortality and morbidity have been identified[1][iv] and are incorporated here. Many of these interventions focus on primordial prevention/promotion due to the comparatively low financial and other resource inputs required to achieve critical health outcomes. Multi-sectoral involvement is crucial to this and is thus central to this Plan.

However, as outlined in a recent Lancet review, while in the long term NCD prevention offers a higher return on investment than NCD control, both are essential to an effective response strategy[v]. **Either one without the other will result in failure to meet the SA NCD targets.** Early identification and effective management and control of NCDS is thus also emphasized, with specific emphasis on interventions in primary health care. This is vital to both attaining good NCD outcomes and for reducing economic and service pressures at higher levels of care. **A 90/60/50 model for hypertension and raised glucose is adopted for this plan**, in which 90% of all people over 15 will know whether they have hypertension and/or raised blood glucose or not; 60% of people with raised blood pressure or blood glucose will receive intervention and 50% that are receiving interventions will be controlled.

Over the past decade South Africa has placed considerable emphasis on developing a service platform for the management of people living with HIV and Tuberculosis in primary care and achieved significant successes in achieving this, however with the introduction of the Integrated Clinical Services Model (ICSM) this platform has been extended to include an integrated basis for all chronic disease management within Primary Health Care[vi]. This requires further extension so that all chronic diseases are treated equally and all people are treated holistically[2].

[1] While there is concern that the studies that have influenced these "best buys" have mainly come from developed countries, these are currently the best available pr+-oposals.

[2] This is modelled on the HIV 90/90/90 targets. Given current baselines having a similar target for NCDs is not realistic and therefore a 90/60/50 target has been set for 2025.

Notwithstanding the centrality and prioritization of prevention/promotion as well as primary level interventions, this Plan recognizes also that providing quality and effective NCD services at secondary, tertiary and quaternary levels of the health system and effective movement and transfer across levels, are essential elements to attaining the targeted outcomes. This Strategic plan thus takes a comprehensive approach, within the context of Universal Health Coverage.

In addition to cost-effectiveness, the principles of equity, person centeredness, a life-course approach and a gendered focus are highlighted.

Impact of NCDs on development and the need for multisectoral action

It has been estimated that by 2030 the cumulative lost output to the global economy through NCDs will be $47trillion (baseline 2010)[vii]. In 2015, the economic burden of diabetes alone in sub-Saharan Africa was US$19.45 billion, or 1.2% of cumulative GDP of the whole sub-Saharan African region. Unchecked, the economic burden from NCDs is projected to increase to between $35.33 billion and $59.32 billion by 2030[viii].

The accumulated losses to South Africa (SA)'s gross domestic product between 2006 and 2015 from diabetes, stroke and coronary heart disease alone are estimated to have cost the country around R26 billion[ix]. It has been estimated that the economic cost due to productivity losses arising from absenteeism, presenteeism and early retirement due to ill health in South Africa, largely from NCDs, equated to a total of 6.7% of GDP in 2015 and is expected to increase to 7.0% of GDP by 2030[x]. It is estimated that for diabetes alone, in 2018, public sector costs of diagnosed patients in South Africa was approximately R2·7 bn and would be R21·8 bn if both diagnosed and undiagnosed patients are considered[xi]. In real terms, it is estimated that the 2030 cost of all T2DM cases will increase to R35·1 bn.

On the other hand the World Health Organization's global business case for NCDs shows that if low and low-middle income countries put in place the most cost-effective interventions for NCDs (including for both prevention and management), by 2030 they will

see a return of $7 per person for every dollar invested[xii]. In addition, evidence shows that treatment for depression would yield USD $5 for every one dollar spent[xiii]. Similar high returns on outlay would certainly be expected in South Africa. Investing in prevention and control of NCDs is thus both essential for growth and development and, when carefully planned and prioritised, is highly cost effective.

The exact extent to which modifiable risk factors could prevent NCDs in South Africa has not been calculated, however the WHO in the region of the Americas (PAHO) estimated that 80% of all heart disease, stroke, and type 2 diabetes and over 40% of cancer is preventable through multi-sectoral action[xiv]. Given that many of the countries in the PAHO region share socio-economic similarities with South Africa, analogous figures are probable in South Africa too.

The very substantial NCD modifiable risk factors require robust, evidence informed and comprehensive health promotion strategies[xv]. To achieve this a multi-sectoral approach is critical. Poverty, rapid urbanization and industrialization, population ageing, the effects of globalization of marketing and trade, and other social and commercial determinants of health are among the main contributing factors to the rising incidence and prevalence of non-communicable diseases. Increasing NCD levels are being influenced by factors including tobacco use and availability, unhealthy diets that are fuelled by cheap (and unhealthy) foods and marketing of foods high in salt, fat and sugar, lack of physical activity, high alcohol consumption and air pollution. A considerable proportion of global marketing of unhealthy products targets children and adolescents as well as women. Rapid, unplanned urbanization changes peoples' way of living through more exposure to the shared risk factors, however NCDs are also highly prevalent, and growing, in rural areas[xvixviixviii].

As early as 1978 the Alma Ata Declaration stated "Economic and social development… is of basic importance to the fullest attainment of health for all and to the reduction of the gap between the health status of the developing and developed countries. The promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life and to world peace"[xix].

There is now overwhelming and broad consensus, including from the United Nations

General Assembly that in order to comprehensively address NCD mortality and morbidity that a “Health-in-all-policies”, “Whole-of-government” and “Whole-of- society” approach must be adopted[xx]. It is almost certain that without comprehensively addressing the social and economic determinants of health that Sustainable Development Goal 3.4. as well as the majority of the nine voluntary NCD targets set by the World Health Organization in the Global Action Plan for the Prevention and Control of NCDs[xxi] (see pages 59-60), will not be reached. Given this, the WHO High level Commission on NCDs and the 2018 UNGA Declaration both state that Heads of State and Government, not Ministers of Health only, should oversee the process of creating ownership at national level of NCDs and mental health[xxii],[vi].

The Sustainable Development Goals adopted by Member States of the United Nations (including South Africa) in 2015, are interlinked and indivisible, with improved health outcomes, including NCD outcomes, being central to achieving a number of the SDG goals. According to a recent Lancet report, progress on SDG target 3·4 will have a central role in determining the success of at least nine SDGs[v]**.** Conversely though, to reach the health goals, including the specific NCD Goal (3.4), will require intensive and wide ranging interventions that fall not only within various targets within the Health parent Goal (Goal 3),but also in a number of the other SDGs.

Figure 1 Relation between SDG target 3.4 and other SDGs[xxiii]

Moreover, within Goal 3, to Ensure Healthy Lives and Promote Well-being for All at All Ages, there are a number of interdependent targets which need to be met simultaneously in order to facilitate reaching the specific NCD Target (3.4). These include Goal 3.8, to ensure universal access to universal health coverage including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all; Goal 3.3 which focusses on ending communicable disease epidemics – given the high levels of comorbidities between communicable and non-communicable diseases; Goal 3.5 to strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol; Goal 3.7 to ensure universal access to sexual and reproductive health-care services; Goal 3.9 to substantially

reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination; Goal 3.a Strengthen the implementation of the WHO Framework Convention on Tobacco Control; Goal 3.b Support the research and development of vaccines and medicines for the communicable and non-communicable; and Goal 3.c substantially increase health financing and the recruitment, development, training and retention of the health workforce.

The South African National Development Plan 2030 (NDP) also asserts that health is not just a medical issue and that greater intersectoral and inter-ministerial collaboration is central to good health. The Plan states that the social determinants of health need to be addressed as a matter of urgency, including promoting healthy behaviours and lifestyles[xxiv].

A number of government sectors are fundamental to achieving effective promotion of health and the prevention of disease. These include Agriculture, Land Reform and Rural Development; Basic Education; Communications; Co-operative governance and Traditional Affairs; Employment and Labour; Environment, Forestry and Fisheries; Finance; Health; Higher Education, Science and Technology; Human Settlements, Water and Sanitation; Mineral Resources and Energy; Police; Public works and infrastructure; National Treasury; Small Business Development; Social Development; Sports, Arts and Culture; Trade and Industry; Transport; Women, Youth and Persons with Disabilities.

Health sector interventions to combat NCDs

The Health sector itself has a vital and dynamic role to play in a continuum starting with promotion/prevention and encompassing early identification, management, control, rehabilitation and palliative care at all levels of the health system. Health systems and services must be improved and strengthened in a manner that effectively promotes healthy lives and provides comprehensive care for Non-communicable Diseases within the framework of Universal Health Coverage and a primary health care approach.

Given the breadth of the required health sector involvement in reducing NCDs, together with the number of different NCDs that require specific emphasis and that have unique objectives, this Strategic Plan for the most part provides the broad strategic framework for specific interventions rather the details of them.

Prevention/promotion from within Health includes legislative and regulatory initiatives, awareness, education and information to the public, social and behaviour change programmes, community-based programmes, increased screening and health promotion and secondary prevention by health practitioners. Non-governmental organizations (NGOs) in the health sector also have an essential role with regards to promotion and prevention of NCDs as they work in and with communities. This allows for trusting engagement and opportunities to provide for example accurate and culturally accessible information and education and promotion/implementation of individual and community level behaviour change. The private sector that impacts on health (including through manufacturing and retailing of food, alcohol and tobacco) too is critical in adopting strategies to promote health and that put health before profit.

The Department of Health and its partners, including those in the private sector, are the primary providers of health care and have the main responsibility and accountability to the public to provide excellent quality and equitable health services. Especially in low and medium income countries, lack of or inadequate quality services is a critical cause of high rates of premature mortality from NCDs. Undoubtedly the quality of health care services for people living with NCDs in South Africa needs extensive improvements and enhancement. It is essential that people are screened and identified as early as possible, are put onto effective management programmes and that the long term control of diseases, including adherence to care, is maintained. The Health care system requires more directed and intensive focus on NCDs with specific emphasis on investment and effective delivery of care. Optimal NCD care requires well planned and highly functional services in which the specific needs of persons living with NCDs are considered, understood, integrated and linked to budgets. Critically, NCD services must be provided at all levels of care, with appropriate up

and down referral and rehabilitation and palliative care being provided where and when necessary. Moreover health promotion must occur at all levels of the health system.

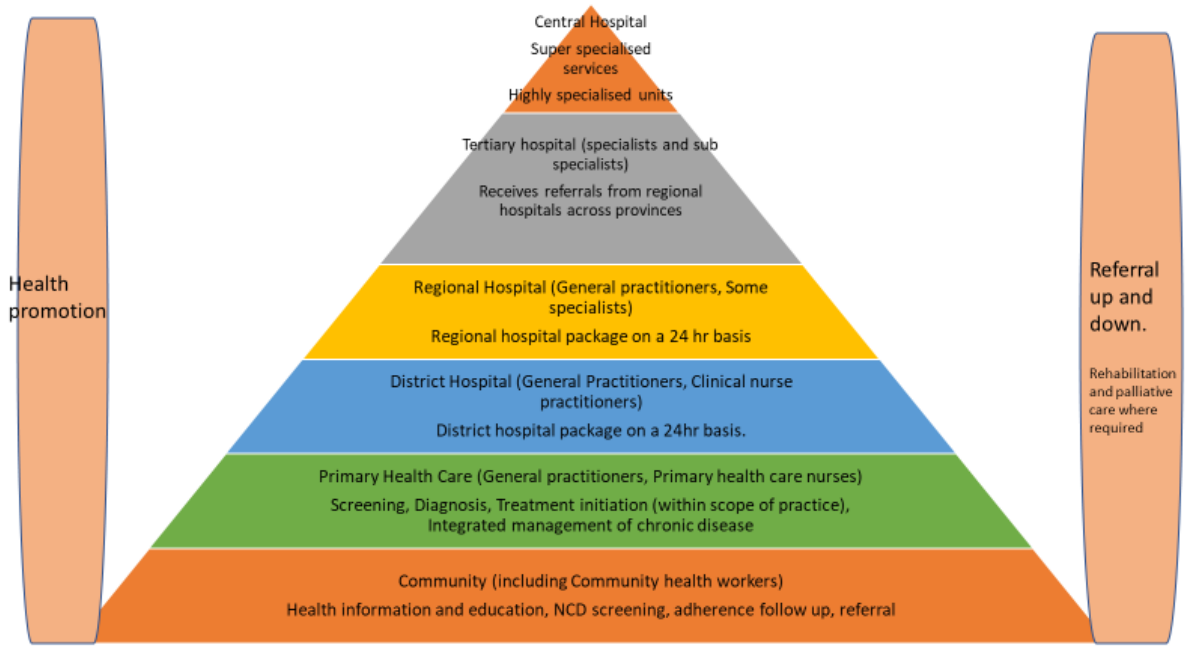


Figure 2 Levels of NCD intervention with the health system

NCDs within health sector reform

Significantly, the Department of Health and its partners have already recognised that the health system is in urgent need of reform towards more integrated, unified and effective care[xxv] and areas for specific interventions required to achieve Universal Health Coverage and quality health care at all levels of the health system have been prioritised. This creates the perfect opportunity to improve NCD outcomes. A central objective of this Strategic Plan is to facilitate the explicit inclusion of NCDs and their risk factors wherever and whenever health systems plans and services are being made and implemented.[3] Hence for example when planning for improved infrastructure, medicines and equipment supply, human resources, health financing, laboratory services, information systems and monitoring and evaluation or for the Ideal Clinic or Ideal Hospital, the requirements for improving NCD status must be fully understood, prioritised and integrated.

[3] South Africa suffers from a Quadruple burden of Disease. The other main burden areas are communicable diseases (including HIV and TB), maternal and child health and injuries and violence.

90/60/50 target by 2025

Given very high levels of cardiovascular disease and diabetes in South Africa, the 90/60/50 model (similar to the 90/90/90 model that is applied to HIV) will be applied to blood pressure and blood glucose. That is 90% of all people over 15 will know whether they have hypertension and/or raised blood glucose or not; 60% of people with raised blood pressure or blood glucose will receive intervention and 50% that are receiving interventions will be controlled.

Integrated Care

This Plan takes a comprehensive and integrated approach to dealing with NCDs rather than creating a separate parallel service for NCDs. In particular the integration of NCD care at primary care level with other health service areas is critical, predominantly with chronic communicable diseases and with maternal and child health services. Many people live with multiple morbid chronic conditions – whether communicable or non-communicable or both - and many women have pregnancy and maternal related NCDs that have both short and longer term health consequences. Hence an approach that treats the person holistically rather than a particular disease within a single integrated system is central. As seen in Figure 2 as part of the Integrated Clinical Services Model (ICSM), all chronic diseases, whether they are communicable or non-communicable, are treated equally and within the same health stream. The same applies to all users whether they have one or a number of chronic conditions. This is particularly important as people with HIV are now living longer and also developing NCDs. Within this model people are treated for all their conditions in a single session by a single health practitioner.

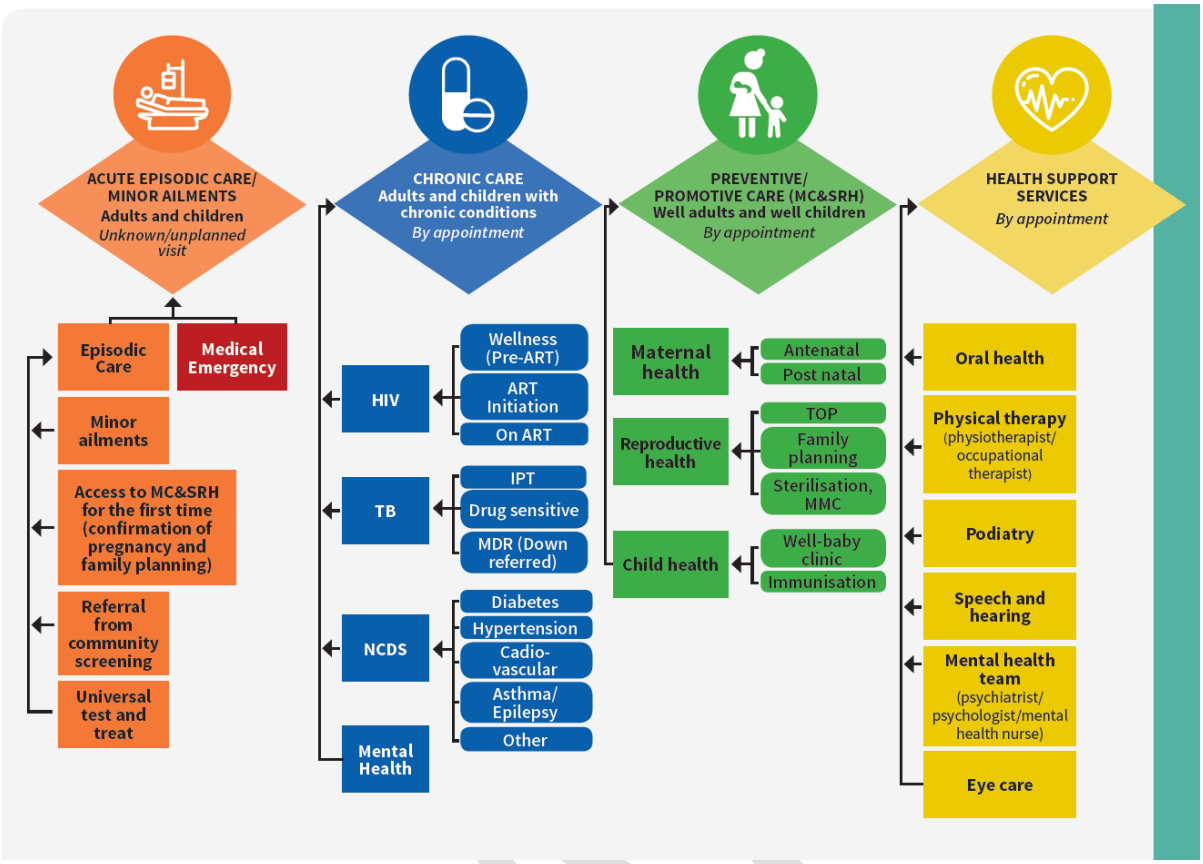


Figure 3 ICSM Model. Breakdown of services offered within the four streams of care.

More specialised NCD services and planning

Notwithstanding the importance of both primary level services for NCDs and for integration of services at this level, at higher levels of health care, very focussed and specialized services are essential for specific disease types and more specific disease focussed planning is also required. This is already occurring within the Department of Health where for example the Integrated Clinical Disease Management model complements specific and strategic documents that deal for instance with diabetes[xxvi], mental health[xxvii] and cancer[xxviii]. Plans are also in place to deal with cross cutting areas such as Palliative care[xxix] and Rehabilitation[xxx]. There are however, still policy and planning gaps for specific diseases and therefore timeframes for their development are included as part of this Strategic Plan. All care interventions though will be delivered through the existing health system which must be then be geared to effectively implement them.

Costing of high prevalence NCDs in primary care (with the view to increasing chronic care to all in need)

While current services and backlogs for all NCDs at all levels of the health system will be attended to, and services improved as part of overall access and quality improvement in health care (see pages 10-11), as part of this Plan a costing and modelling of primary health care services for hypertension, high blood glucose and cholesterol has been undertaken, with a the view to securing additional resources. The specific **additional** investment for hypertension, high blood glucose and cholesterol in primary care is necessary inter alia because:-

- There is a very high prevalence of cardiovascular disease and diabetes in South Africans, and diabetes rates are increasing rapidly (see Pgs 22-25);
- Only half or less of people with hypertension, high blood glucose and high cholesterol are usually identified as having these conditions and consequently often present at late disease stages (See cascade for hypertension and diabetes on pgs). This impacts on individuals and families, but also becomes expensive to treat and increases the rate of complications;
- Despite the relatively low numbers of people in need of care receiving it, NCDs are by far the main reason for people attending primary health care, with hypertension being the leading cause as well as the most common diagnosis[xxxi].
- Early and effective interventions are available and are cost-effective[xxxii],[xxxiii].;
- The extent of care needed at higher levels of health care for cardio-vascular disease and diabetes is dependent on the initial accomplishments of primary care interventions[4].

[4] It is possible that effective identification, treatment and control of these key conditions within primary health may reduce treatment needs at higher levels of the health system, or at least result in less need for increased care. It is therefore rational in a context of limited resources to initially invest in increasing numbers and quality of care within primary care. Improvements in higher level services will however also be addressed through general health systems reform.

Towards Equitable care

As with other areas of health care, NCD care is currently inequitably provided between the private and public sectors, with high human and financial resources available in the private sector and a significant under-resourcing in the public sector[xxxiv]. The Department of Health is currently undertaking wide ranging health reform towards universal health coverage and the needs of persons at risk for or with NCDs will be comprehensively addressed in this process. This means that health promotion, prevention of disease and effective care and treatment should all be included as part of all National Health Insurance (NHI) plans. No-one should be excluded from essential NCD care due to financial reasons.

Moreover, care for people with NCDs as well as preventive programmes are not equitable between rural and urban areas in South Africa[xxxv]. In accordance with the approach of integrating NCDs into health systems reform processes, this Plan aims to ensure that NCDs are fully accounted for in all health systems, services and financing reform, including for rural areas (including preventive and promotive interventions). For example, and very importantly, when human resources are being planned for in rural areas, this must include health practitioners at all levels that are effectively trained and able to deal with various needs presented by people with NCDs in rural areas.

This Plan also considers the need for good quality facilities[5] and appropriate and available equipment and medicines at all levels of health care and at referral patterns to ensure that effective management and control and transfer is provided through the course of any illness or disease.

As much as this Strategic Plan aims to achieve the SDG objective of leaving no-one behind, it cannot equally cover every NCD, nor can it include the details for the prevention and control

[5] As reflected in the Ideal Clinic and ideal Hospital Norms and Standards.

of any particular NCD that does not fall within what can be termed generic risk factors. In accordance with UN recommendations this Plan prioritises cardiovascular disease, diabetes, COPD, Cancer and Mental Health. However, it does not include specific clinical or health promotion/prevention guidelines and these will be covered by more focussed and dedicated policies/documents/guidelines[6] that are identified in this plan as requiring development.

Surveillance, monitoring and evaluation

Finally, it is concerning that currently NCD surveillance, monitoring, evaluation and research is largely unable to adequately inform NCD policy and planning. An effective response to NCDs requires information, research and development and an innovation agenda to strengthen health systems, develop affordable technologies and medicines, and find innovative financing and service-delivery solutions. While the South African Demographic and Health Survey 2016 provides important baseline data for measuring a number of the targets of this Plan, and Stats SA Mortality data provides important information for measuring NCD mortality, there are critical information improvements that need to be made to these data sources in the future, and other additional surveillance and monitoring systems must be established. In particular the DHIS indicators must be reviewed to collect usable NCD information. Additional evaluation, cost effectiveness and other research is also urgently required.

[6] Some such policies/documents/guidelines already exist, while others would still need to be developed.

Chapter 2 NCD MORTALITY, MORBIDITY AND BEHAVIOURAL RISK FACTORS

Globally noncommunicable diseases (NCDs) kill 41 million people annually, equivalent to 71% of all global deaths. Each year, 15 million people die from an NCD between the ages of 30 and 69 years with over 85% of these premature deaths occurring in low- and middle-income countries[xxxvi]. WHO estimates that deaths from noncommunicable diseases (NCDs) are likely to increase globally by 17% over the next 10 years, and the Afro Region will experience a 27% increase, that is 28 million additional deaths from these conditions which are projected to exceed deaths due to communicable, maternal, perinatal and nutritional diseases combined by 2030[xxxvii]. NCDs and their risk factors worsen poverty, while poverty, isolation, marginalization, and discrimination contribute to rising rates of NCDs.

Hypertension, diabetes and other NCDs, were once rare in traditional African societies[xxxviiixxxix] but have become a major public health problem with high prevalence rates contrasting with low awareness, treatment and control rates[xlxli]. Figure 2 below illustrates for example that though heart disease and strokes are sometimes viewed as diseases of developed or richer countries, and though this was previously to a large extent true, incidence and prevalence patterns are changing drastically and projections are that by far the greatest growth in these diseases will be in low and middle income countries over the next decades. Table 1 illustrates that LMIC bear the brunt of Cardiovascular and Cerebrovascular diseases in terms of actual and projected mortalities from both diseases.

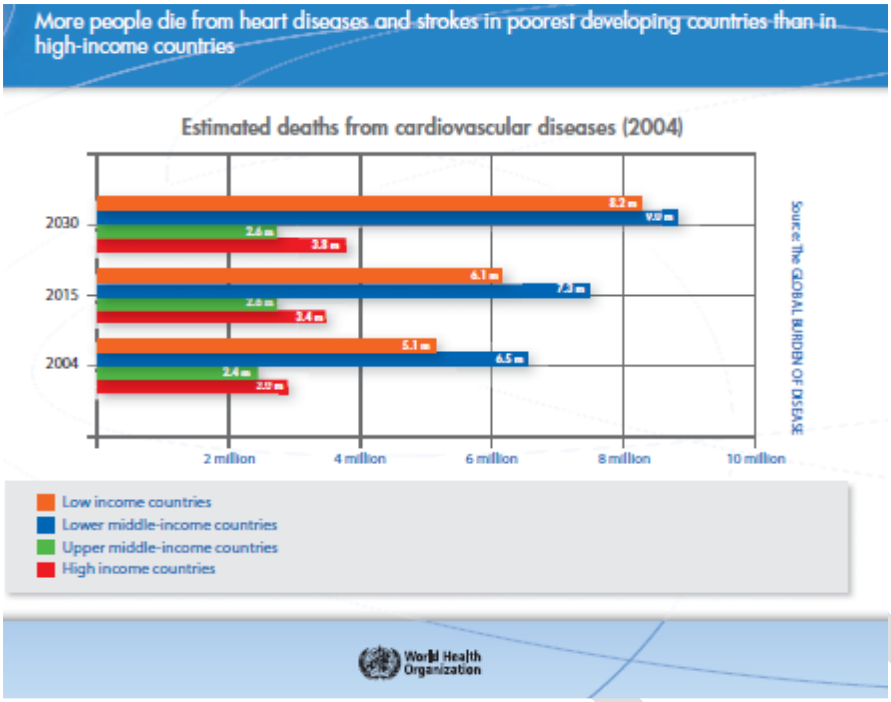


Figure 4 Cardio-vascular diseases by country income.

Nearly 30% of NCD-related deaths in low-income countries occur under the age of 60, whereas in high-income countries the proportion is only 13%. Mortality from NCDs in Africa in people under 60 relative to higher income regions is shown in Figure 3.

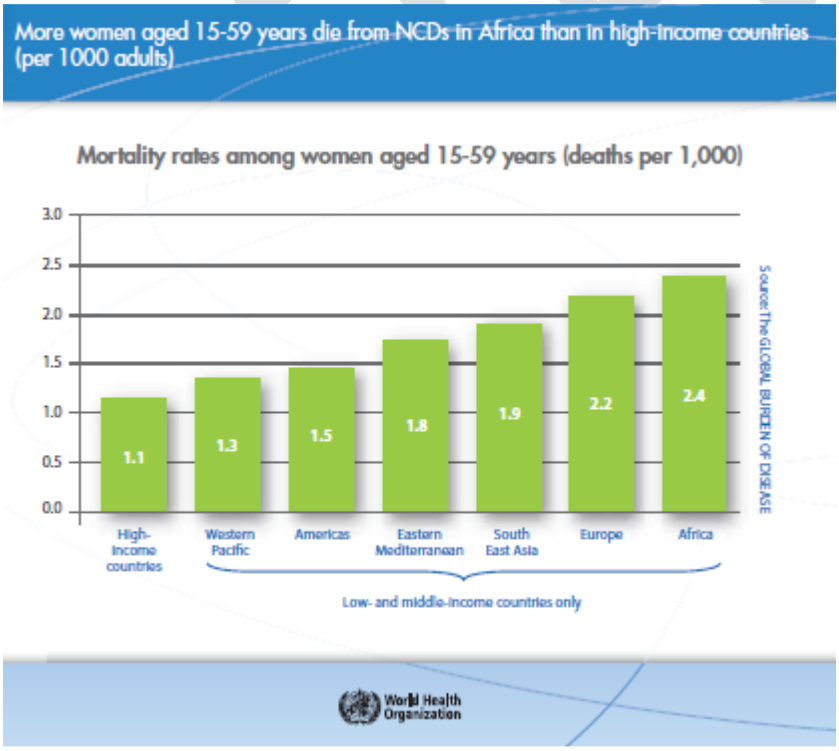
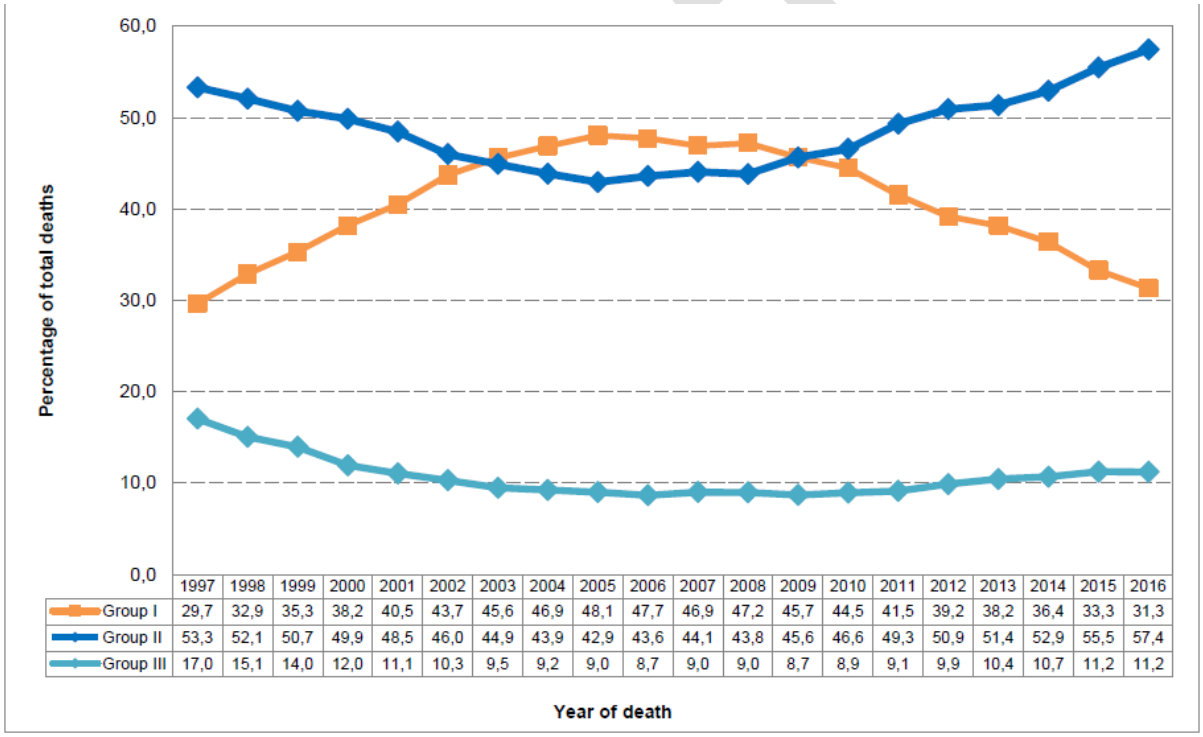


Figure 5 Mortality of women from NCDs across WHO regions

The NCD Situation In South Africa

Mortality

Statistics South Africa suggest that NCDs contribute 57.8% of all deaths, of which 60% are premature (under 70 years of age) [7]. Many of these deaths are preventable through evidence based promotive/preventive and control measures.



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Group I	29,7	32,9	35,3	38,2	40,5	43,7	45,6	46,9	48,1	47,7	46,9	47,2	45,7	44,5	41,5	39,2	38,2	36,4	33,3	31,3
Group II	53,3	52,1	50,7	49,9	48,5	46,0	44,9	43,9	42,9	43,6	44,1	43,8	45,6	46,6	49,3	50,9	51,4	52,9	55,5	57,4
Group III	17,0	15,1	14,0	12,0	11,1	10,3	9,5	9,2	9,0	8,7	9,0	9,0	8,7	8,9	9,1	9,9	10,4	10,7	11,2	11,2

Figure 6 Percentage of deaths due to communicable diseases, non-communicable diseases and injuries 1997-2016.

It is important to note that this graph does not in itself reflect a rise in NCD mortality. While proportions of cause of death are important, rises (or falls) in any condition or set of conditions (like NCDs) are directly related to rises and falls in mortality from other conditions. For example, the major reason for the rise in the proportion of NCD deaths in

[7] This is assuming that deaths from unknown causes are equally distributed between communicable diseases, non-communicable diseases and non-natural deaths.

South Africa in the above graph is the fall in the number of HIV related deaths rather than due to major increases in NCD deaths per se.

The South African Medical Research Council publishes an annual report on mortality utilizing the Rapid Mortality Surveillance database based on deaths registered onto the National Population register[xlii]. This report estimates mortality indicators after correcting for incompleteness of registration births and deaths. This permits reporting on the probability of dying between the ages of 30 and 70 years from NCDs - which is the indicator required for reporting on the SDGs. This is adjusted to include the ill-defined natural causes to the estimated total number of deaths.

The probability of dying prematurely, between the ages of 30 and 70, due to selected NCDs including cardiovascular disease, cancer, diabetes and chronic respiratory diseases is 34% for males and 24% for females – 29% for both sexes. There has been no significant change between 2011 and 2016. The highest single cause of death from NCDs is cardiovascular disease, followed by cancer, diabetes and chronic respiratory disease.

PREMATURE MORTALITY ATTRIBUTED TO CARDIOVASCULAR DISEASE, CANCER, DIABETES OR CHRONIC RESPIRATORY DISEASE (PEOPLE AGED 30-69 YEARS)						
	2012	2013	2014	2015	2016	2017
Cardiovascular disease ${}_{40}q_{30}$ Total	15%	15%	14%	15%	14%	14%
Cardiovascular disease ${}_{40}q_{30}$ Male	18%	18%	17%	18%	18%	17%
Cardiovascular disease ${}_{40}q_{30}$ Female	12%	12%	11%	11%	11%	11%
Cancer ${}_{40}q_{30}$ Total	9%	9%	9%	9%	9%	9%
Cancer ${}_{40}q_{30}$ Male	10%	10%	11%	11%	11%	10%
Cancer ${}_{40}q_{30}$ Female	7%	7%	7%	8%	8%	8%
Diabetes ${}_{40}q_{30}$ Total	5%	5%	5%	5%	6%	5%
Diabetes ${}_{40}q_{30}$ Male	5%	5%	5%	6%	6%	5%
Diabetes ${}_{40}q_{30}$ Female	5%	5%	5%	5%	5%	5%
Chronic respiratory disease ${}_{40}q_{30}$ Total	4%	4%	4%	4%	4%	4%
Chronic respiratory disease ${}_{40}q_{30}$ Male	6%	6%	6%	6%	6%	6%
Chronic respiratory disease ${}_{40}q_{30}$ Female	3%	3%	2%	2%	2%	2%

INDICATOR	TARGET 2019	2011*	2012	2013	2014	2015	2016
Total	None	29%	29%	29%	30%	30%	29%
Male	None	34%	34%	34%	35%	35%	34%
Female	None	25%	24%	24%	24%	24%	24%
Total							
Cardiov. disease	None	15%	15%	14%	15%	14%	14%
Cancer	None	9%	9%	9%	9%	9%	9%
Diabetes	None	5%	5%	5%	5%	6%	5%
Chronic resp. disease	None	4%	4%	4%	4%	4%	4%
Males							
Cardiov. disease	None	18%	18%	17%	18%	18%	17%
Cancer	None	10%	10%	11%	11%	11%	10%
Diabetes	None	5%	5%	5%	6%	6%	5%
Chronic resp. disease	None	6%	6%	6%	6%	6%	6%
INDICATOR	TARGET 2019	2011*	2012	2013	2014	2015	2016
Females							
Cardiov. disease	None	12%	12%	11%	11%	11%	11%
Cancer	None	7%	7%	7%	8%	8%	8%
Diabetes	None	5%	5%	5%	5%	5%	5%
Chronic resp. disease	None	3%	3%	2%	2%	2%	2%

* Baseline set at 2011 due to lag in availability of data

Table 1 Premature Mortality Attributed to Cardiovascular Disease, Cancer, Diabetes Or Chronic Respiratory Disease (People Aged 30-69 Years)

Figure 5 presents the probability of a 30 year old dying before age 70 from an NCD while Figures 6 breaks this into specific disease areas for males and females. Reductions in most diseases from 2000 are evident.

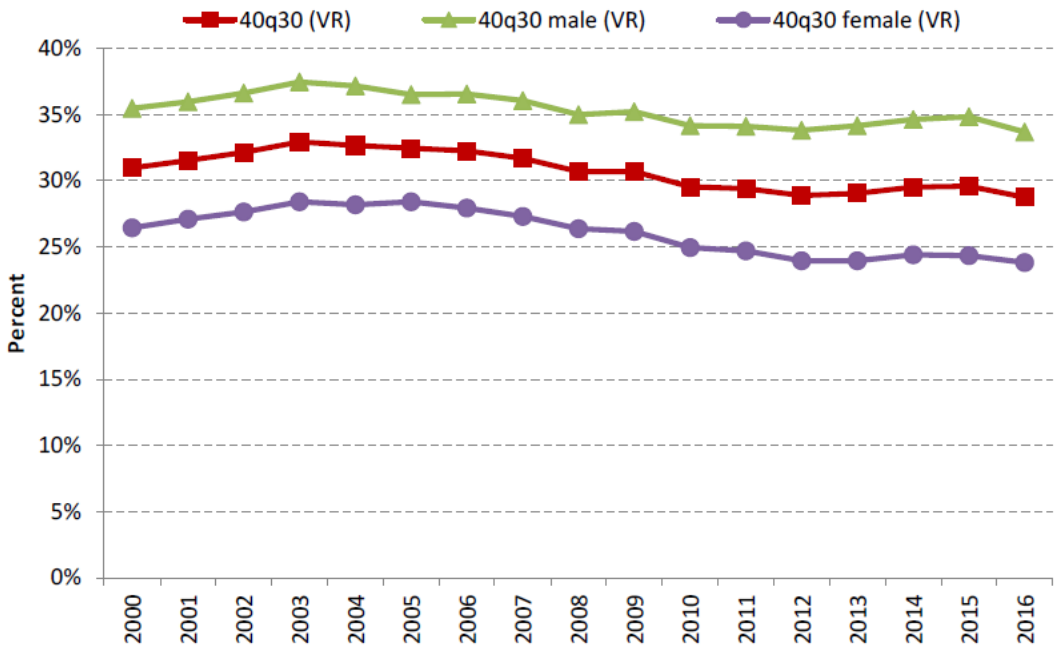
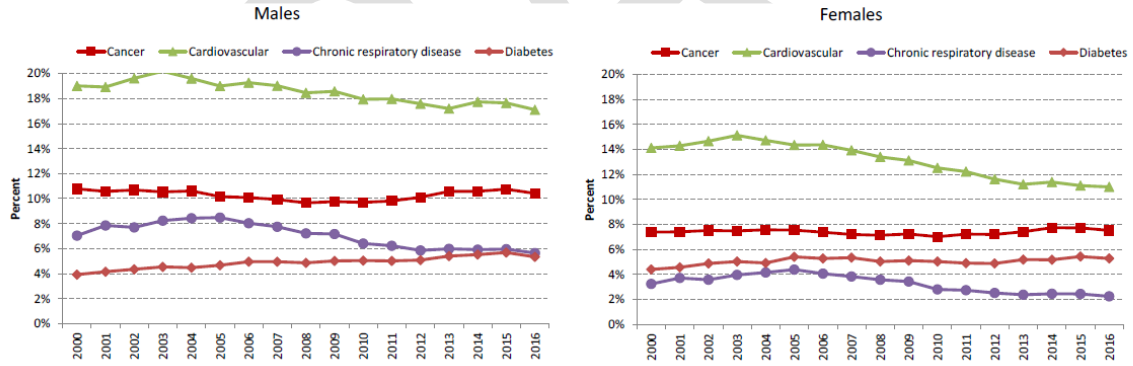


Figure 7 Probability of a 30 year old dying before age 70



Figures 8 Probability of a 30 year old dying before age 70 from an NCD – Male and Female

Cardiovascular diseases have declined from its peak in 2003 but still remains the highest cause of NCD deaths. Chronic respiratory diseases have also decreased. Diabetes has however increased in both men and women.

While these figures appear to indicate a good downward trend, most morbidity and risk factors appear to be showing increases and are likely to begin to impact on mortality in forthcoming years unless concerted actions are taken.

Morbidity, Disability and Burden from NCDs

Cardio-vascular disease

The South African Heart and Stroke Foundation estimate that every hour in South Africa 5 people have heart attacks and 10 people have strokes[xliii]. Raised blood pressure is an important risk factor for cardiovascular diseases and chronic kidney disease and has high comorbidity with diabetes. Globally, two-thirds of strokes and half the cases of ischemic heart disease and over 70% of hypertensive heart disease are attributable to raised blood pressure. It is also a major risk factor in pregnancy[xliv]. Global age-standardised prevalence of raised blood pressure in 2015 was 24·1% in men and 20·1% in women[xlv]. In South Africa however, according to the South African Demographic and Health Survey, 46% of women and 44% of men aged 15 years and older have hypertension[xlvi]. This is almost double the world average. Alarmingly since 1998 the prevalence of hypertension has nearly doubled, from 25% to 46% among women and from 23% to 44% among men[8].

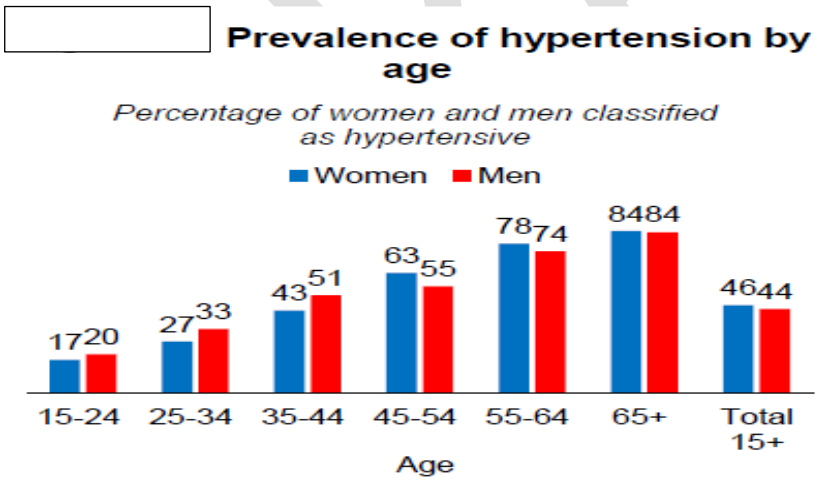


Figure 9 Prevalence of hypertension by age.

Twenty-two percent of women and 15% of men report that they are taking medication to lower their blood pressure. Overall, 9% of women are taking medication to control their blood pressure and have a normal blood pressure level, while 13% of women are taking

[8] It should be noted, however, that different instruments were used to measure blood pressure in the two surveys

medication to control their blood pressure but are still hypertensive. Among men, 6% are taking medication to control their blood pressure and have normal blood pressure, and 9% are taking medication to control their blood pressure but are still hypertensive. In total, among those with hypertension, 80% of women and 87% of men have uncontrolled hypertension.

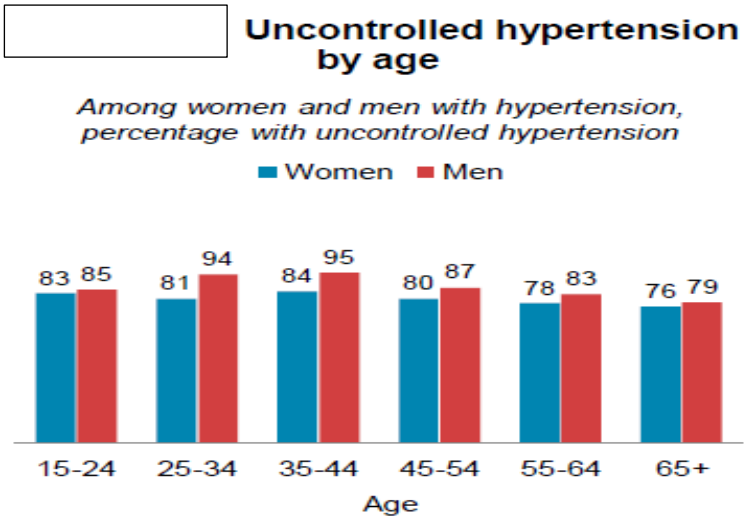
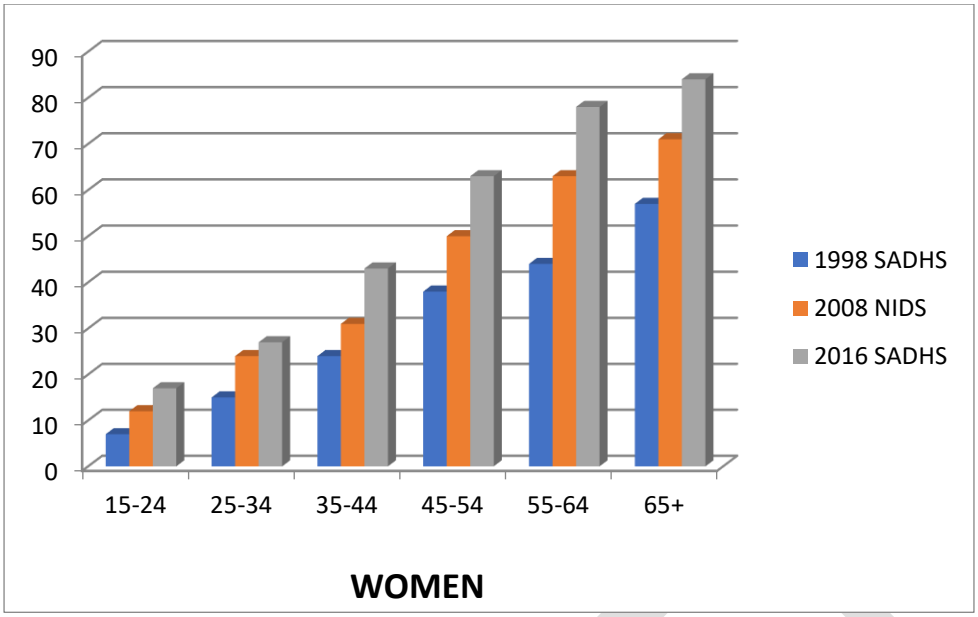


Figure 10 Uncontrolled hypertension by age.

The myth that hypertension is a disease of the rich and well educated is debunked by findings that the prevalence of hypertension falls from a high of 76% among women and 66% among men with no education to a low of 35% among women with a secondary complete education and to 37% among men with a secondary incomplete education. There is no clear trend according to wealth, and the prevalence does not vary to the extent it does by education, especially among women.

Figure 10 shows the prevalence of hypertension comparisons between 1998 SADHS, 2008 NIDS and 2016 SADHS[9]. The rapid rise of hypertension in the younger age group (15 - 24) is of concern as it signifies an upsurge of cardiovascular disease, cerebrovascular disease and chronic kidney disease in the coming years, together with excessive healthcare costs associated with this epidemic.

[9] As noted previously there is concern that these measurements were taken using different instruments and therefore not fully scientifically comparable.



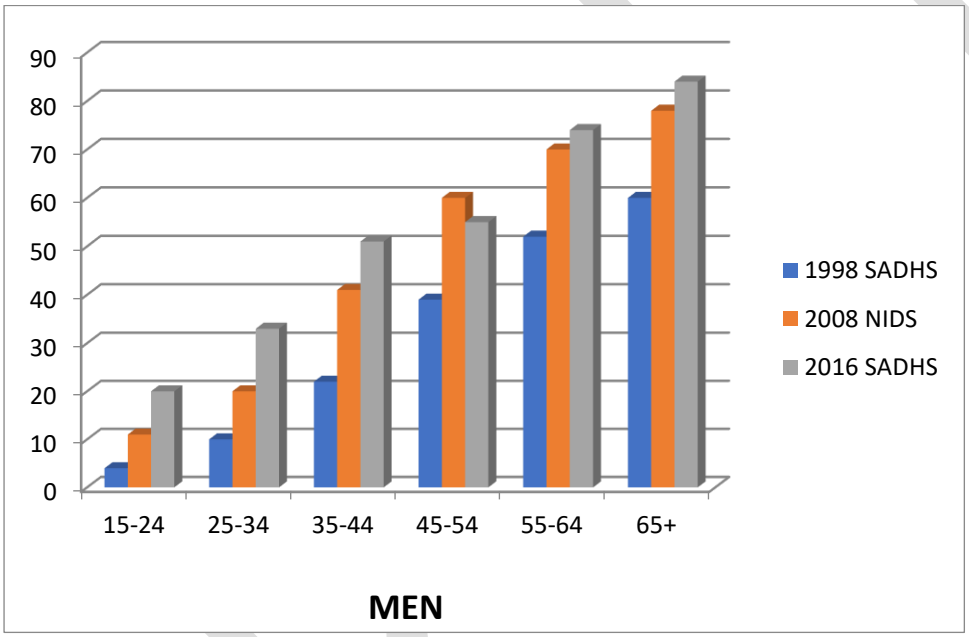


Figure 11 Prevalence of hypertension comparisons between 1998 SADHS, 2008 NIDS and 2016 SADHS.

The care cascade for hypertension, Figure 10, taken from the SANHANES , illustrates the need for primary prevention, secondary prevention (screening), effective referral and high quality treatment. According to the BMJ Global Health 2017 as depicted below[xlvii], of those with hypertension, 51% have been screened for hypertension, a 49% loss. Of those who have ever had their blood pressure measured, 51% was diagnosed with hypertension, a 49% loss. Of those who received a diagnosis, 77% were put on high blood pressure medication, a 23% loss.

Of those who had taken blood pressure mediation in the last 30 days, 52% had controlled blood pressure, a 48% loss.

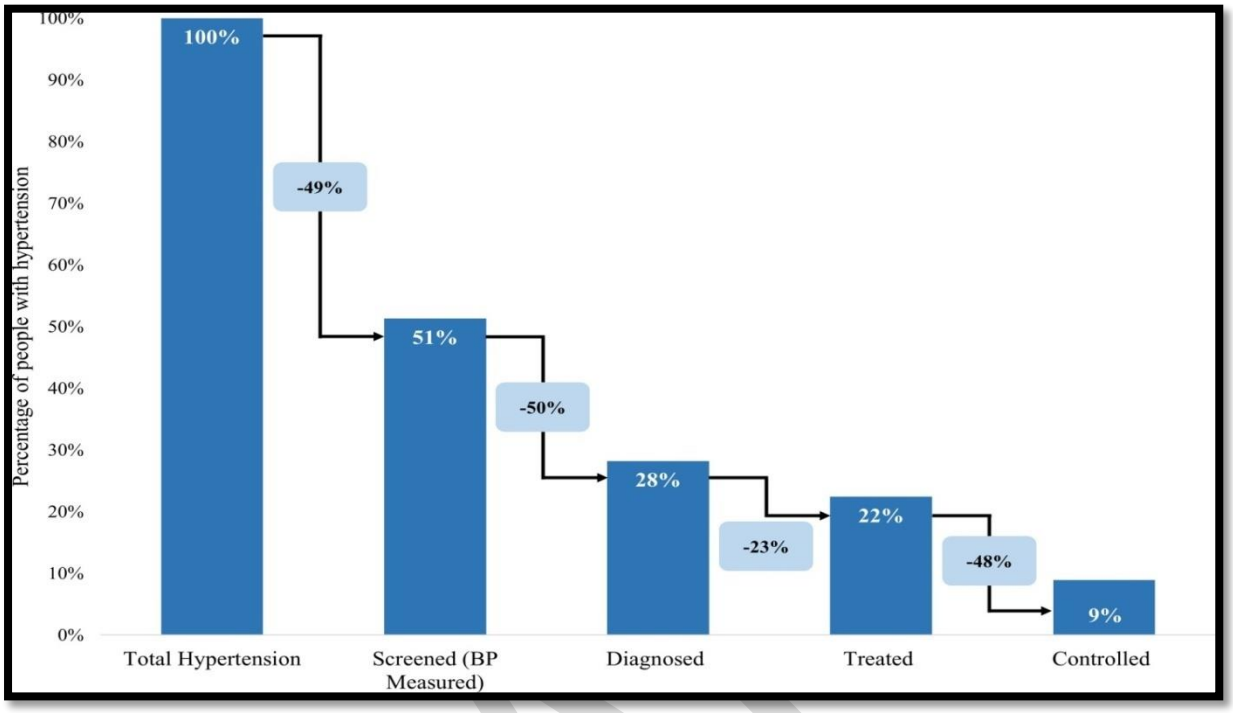


Figure 12 Care cascade for hypertension

Diabetes

According to the SEMDSA guideline for the management of diabetes, the estimated national prevalence of diabetes (based on HbA1c) in persons older than 15 years was 9.5% (2012), and about 45% of these individuals were undiagnosed. An additional 9% of the South African population had abnormal glucose regulation defined by an HbA1c between 6.0 and 6.4%[xlviii].

The SADHS found that thirteen percent of women and 8% of menr 15 have an adjusted HbA1c level of 6.5% or above, indicating that they have diabetes. Most women (64%) and men (66%) have an adjusted HbA1c measurement between 5.7 and 6.4 and are therefore classified as pre-diabetic. Diabetes prevalence increases with age with people over 45 at special risk.

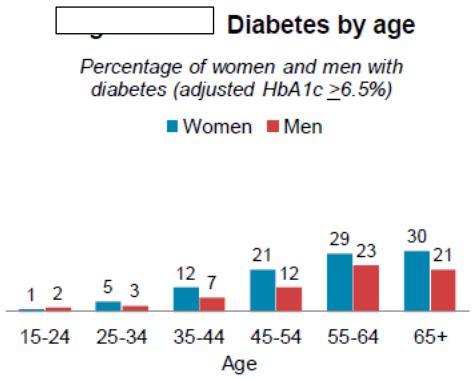


Figure 13 Prevalence of diabetes by age

An important, finding of the SADHS was the anticipated finding that diabetes rates increased with higher weight. Twenty three percent of women and 24% of men who are obese are also diabetic.

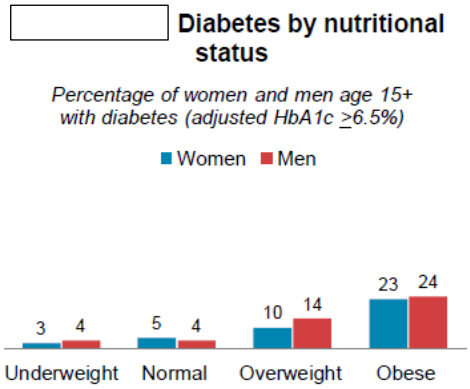


Figure 14 Diabetes by nutritional status

While by far the majority of cases of diabetes are Diabetes 2, the prevalence of Diabetes 1 is increasing[10]. In Soweto, between 1982 and 1992 mortality due to Type 1 diabetes was 16%, a follow-up study showed 43% mortality after 20 years of follow-up[xlix].

[10] No national data are available to describe the degree of this increase

The care cascade for diabetes, using data from the SANHANES, is similar to that for hypertension. In total though while the disease of only 9% of people with hypertension is controlled this is 19% for diabetes. Notwithstanding over 80% of people with diabetes are not controlled and around half on treatment are not controlled[l].

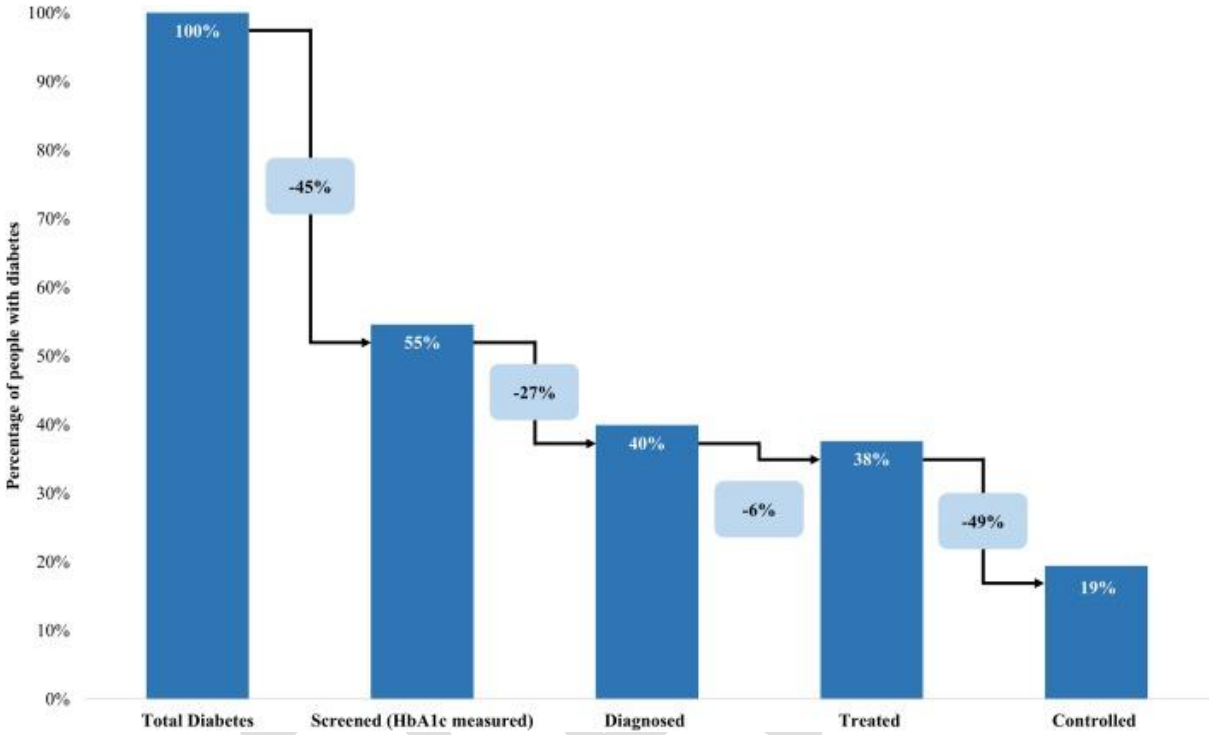


Figure 15 Care cascade for diabetes

Rates of diabetes in provinces also varies substantially, as do the numbers with raised blood glucose that are on medication and those controlled on medication (See Figure 15).

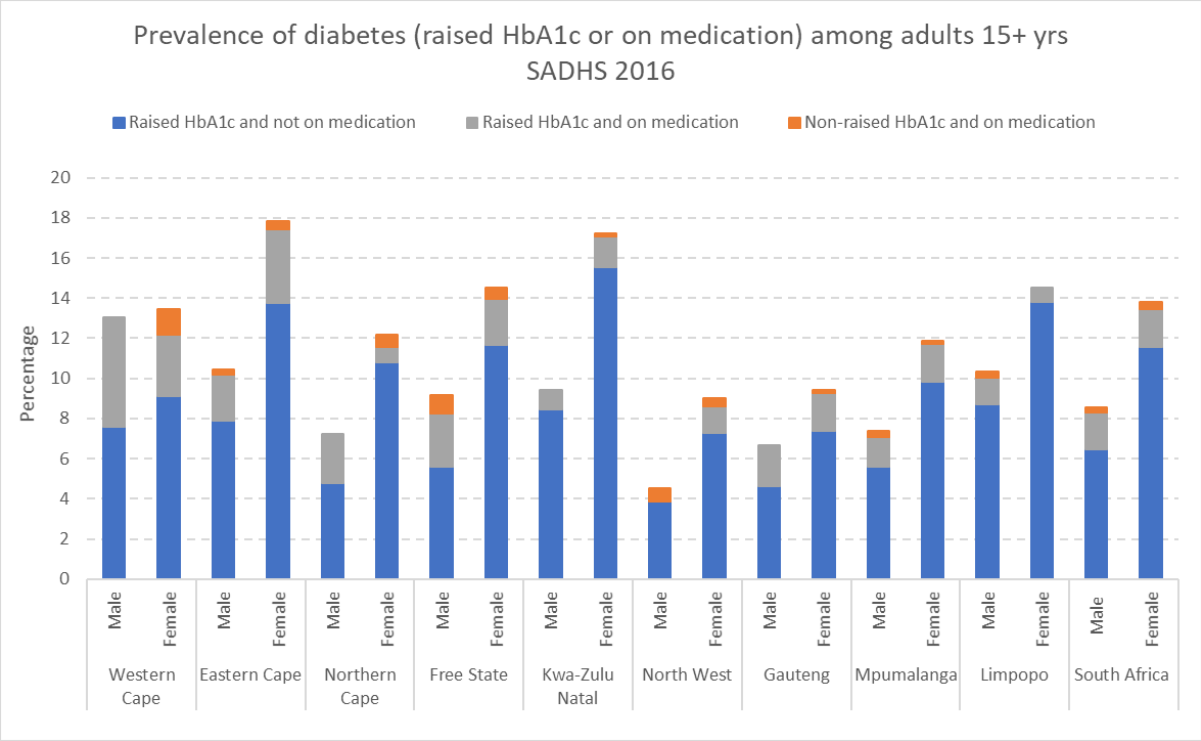


Figure 16 Rates of Diabetes by province, by whether on medication and by levels of control.

Respiratory diseases

According to the SADHS 17% percent of women and 14% of men report experiencing less breath compared with others their age. The proportions of women and men who woke up with breathing difficulties and/or a coughing attack in the 12 months before the survey are 22% and 27%, respectively. The proportions of respondents with asthma symptoms are lower (3% among women and 4% among men). Less than 2% of women and men have symptoms of COPD.

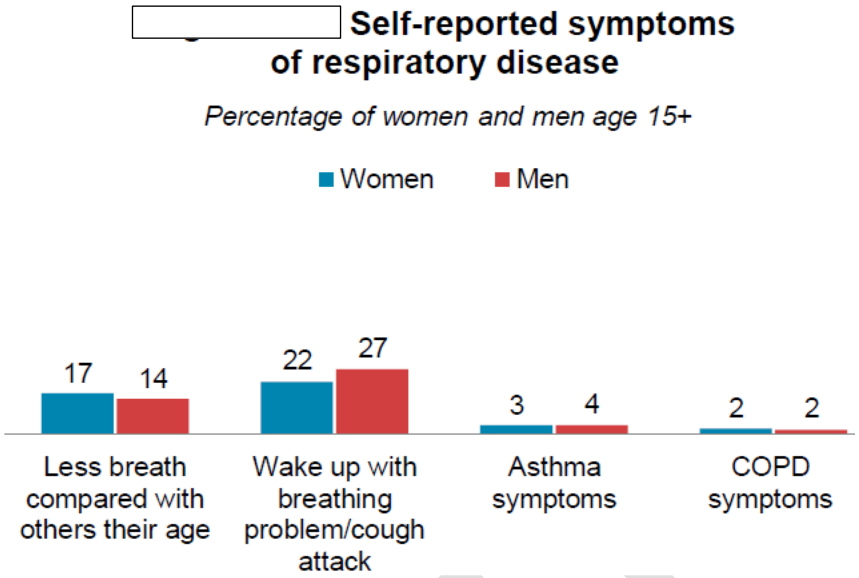


Figure 17 Self-reported symptoms of respiratory disease

While comparisons with figures from the 1998 survey must be made with caution due to differences in instruments used it appears that asthma has declined from 9% to 3% among women and from 7% to 4% among men. COPD symptoms are low for both women (3% in 1998 and 2% in 2026) and men (2% in both years).

Cancer

In 2014, the most recent year for which cancer data is available, 74 577 new cases of cancer were registered with the National Cancer Registry. The most common female cancers were breast, cervix, colorectal, uterine and lung. Breast cancer is the leading cancer among women for all the race groups, except in black women where cervical cancer is the leading cancer (Figure 15). Top male cancers were prostate, colorectal, lung, bladder, and oesophageal. Prostate cancer remains the cancer with the highest incidence in South African men of all races (Figure 16). Kaposi sarcoma, a known AIDS-defining cancer, is the fourth most common cancer among black men. Overall, leading cancers in South African men and women remain largely unchanged across a 13-year period from 2002 to 2014 (Figure 17). Breast and cervical cancers have consistently accounted for over a third of all cancers in women in South Africa, contributing 37.7% and 37% of all the female cancers in years 2002 and 2014 respectively. Prostate cancer contributed 15.4% and 19.2% of all male cancers in years 2002 and 2014 respectively.

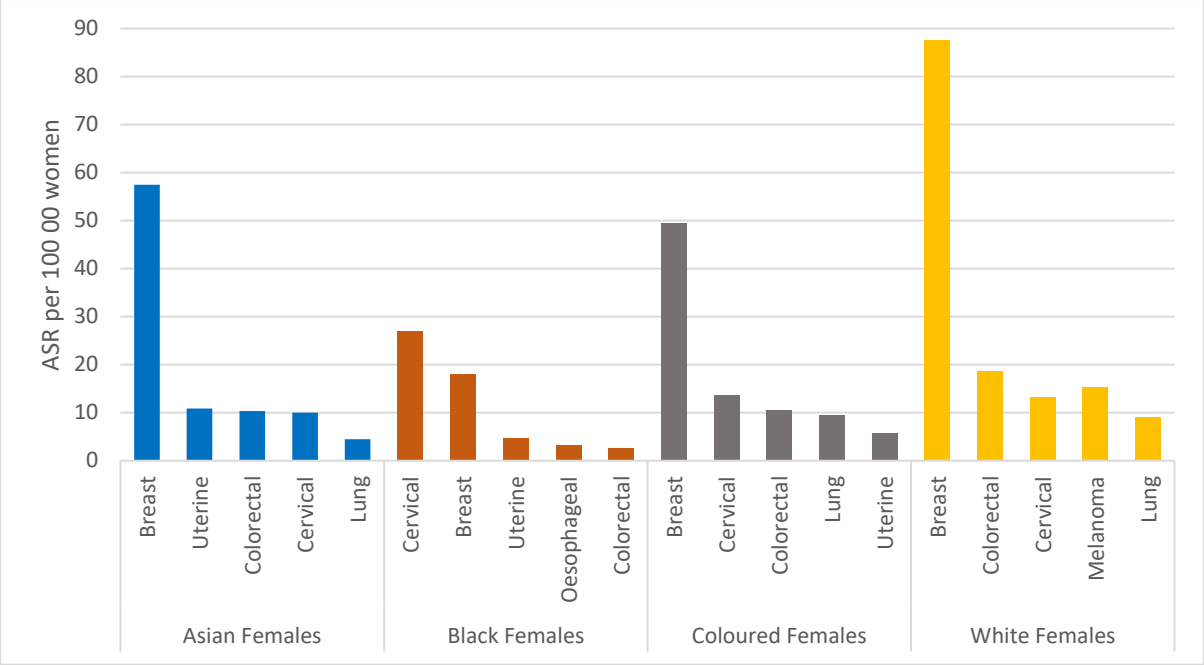


Figure 18 Top five cancers (based on age-standardized rates) among the Asian, black, coloured and white female population groups in South African for the year 2014.

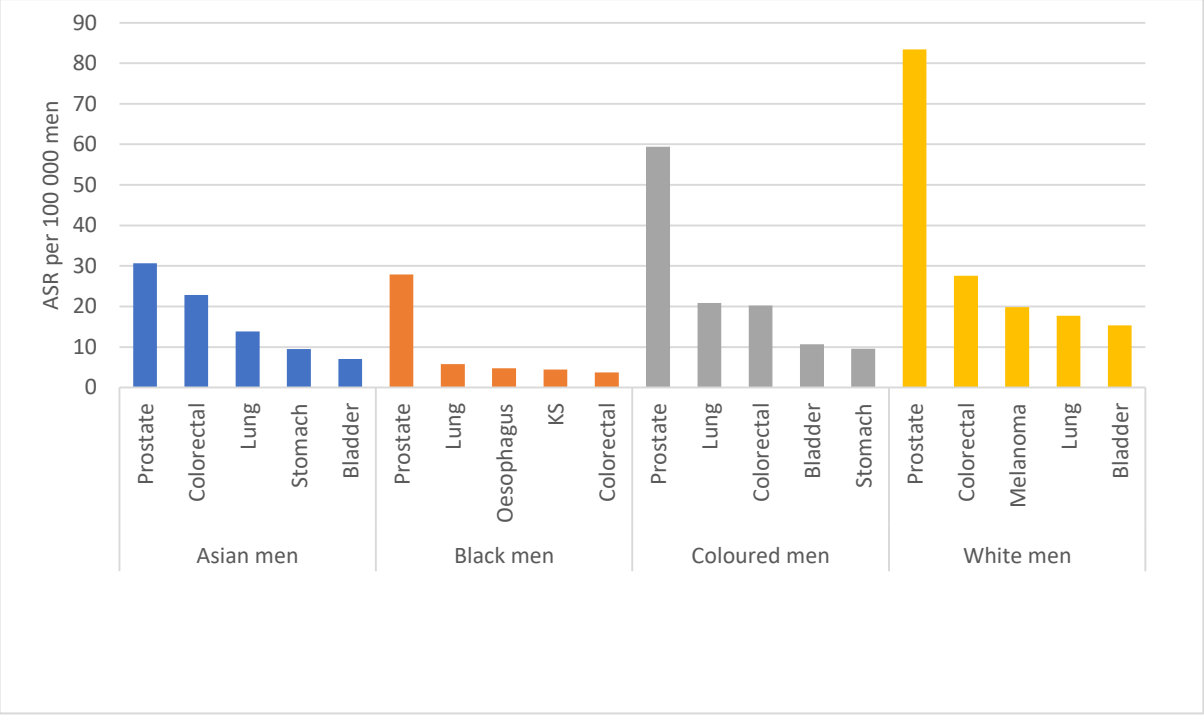


Figure 19 Top five cancers (based on ASR) among the Asian, black, coloured and white male population groups in South African for the year 2014.

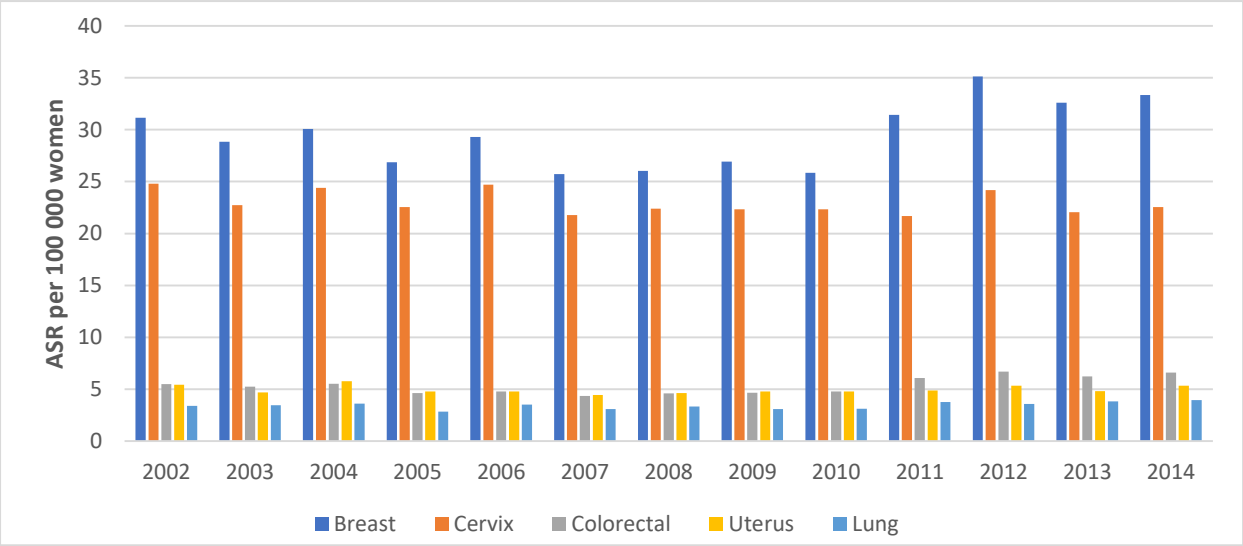


Figure 20: Incidence of the top five cancers among women were breast, cervical, colorectal, uterine and lung cancer for the years 2002-2014.

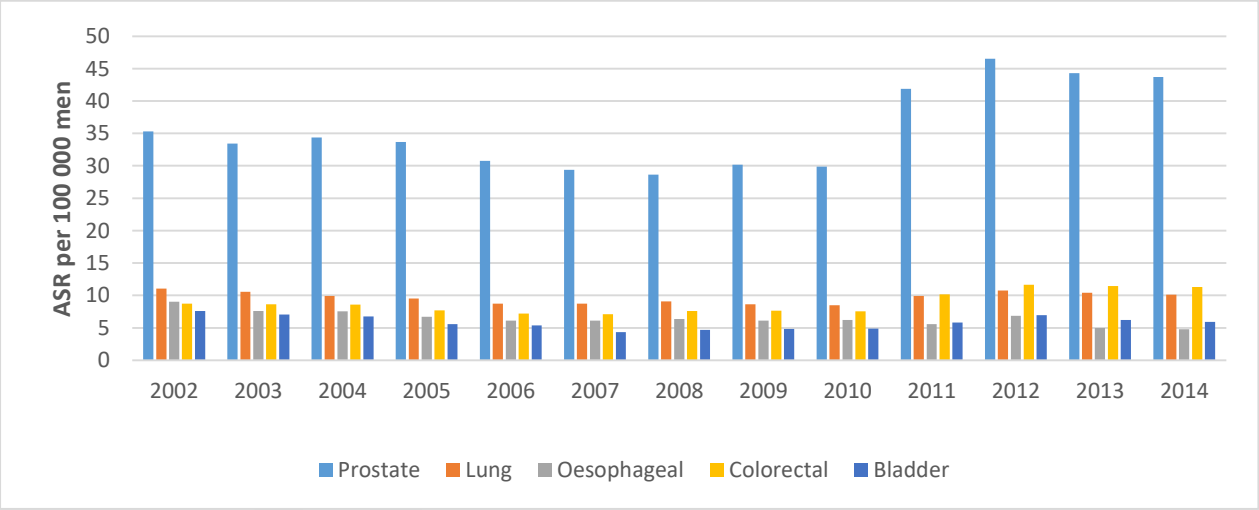


Figure 21: Incidence of the top five cancers among men were prostate, lung, oesophageal, colorectal and bladder cancer for the years 2002-2014.

The Global Cancer Observatory (Globacan) reports that the 10 most common cancers across men and women in 2018 were Breast, Cervix, Prostate, Colorectum, Liver, Non-Hodgkin lymphoma, Lung, Kaposi sarcoma, Stomach and Leukaemia

According to the Cancer Association of South Africa (CANSA), currently between 800 to a 1 000 SA children are diagnosed with cancer annually[li]. However, it's estimated that half of the children with cancer in South Africa, are never diagnosed. According to the recent South African Children's Cancer Study Group (SACCSG) registry statistics, for 2009 to 2013, the five foremost childhood cancers in South Africa are:

- leukaemia
- lymphoma (tumours that begin in the lymph glands)
- brain tumours
- nephroblastomas or Wilms tumours – cancer of the kidneys
- soft tissue sarcomas (tumours that begin in the connective tissue)

Mental Health

The last comprehensive epidemiological study in South Africa was done in 2002/3. The South African Stress and Health (SASH) survey found that 16.5% of adults have experienced a mood, anxiety or substance use disorder) in the previous 12 months[lii]. There are important gender differences with women at increased risk of developing depression and anxiety disorders, whereas men are at increased risk of developing substance use disorders.

Disorder	%
Anxiety	8.1
Mood	4.9
Impulse	1.8
Substance Use	5.8
Schizophrenia	1.0
Bipolar	1.0
Any anxiety, mood, impulse or substance use disorder	16.5

Table 2 : 12-month prevalence of adult mental disorders in South Africa

Though no national studies have been conducted on the prevalence of mental disorders in children and adolescents, the 12-month prevalence of child and adolescent mental disorders in the Western Cape was reported to be 17%[liii].

Based on a review of local and international epidemiological literature neuropsychiatric disorders are ranked 3rd in their contribution to the overall burden of disease in South Africa, after HIV and AIDS and other infectious diseases.

The average annual prevalence of suicide in SA has been found to be 13.25 per million and that suicide accounted for approximately 9.6% of all unnatural deaths[liv] . These figures are probably an underestimate because of underreporting. The last available data suggests that the lifetime prevalence for suicide ideation, plan and attempts were 9.1 %, 3.8%, and 2.9%, respectively[lv].

Multi-morbidities

Multi-morbidities are high amongst people with chronic conditions, and occur both between different NCDs and between communicable and Non-Communicable Diseases. For example, diabetes and cardiovascular diseases have a very high occurrence with the WHO estimating that diabetes triples the risk of TB. According to a Lancet publication people living with chronic communicable diseases such as tuberculosis and HIV/ AIDS are most likely to develop comorbidity with noncommunicable diseases[lvi]. In addition, coexisting communicable and non-communicable diseases augment the risk or effect of the other. A study on South African educators with HIV found a high level of NCDs. They reported that increased age and increased immune suppression, overweight and obesity, social deprivation, and longer duration of exposure to antiretroviral treatments are some of the most common NCD risk factors in HIV infected individuals[lviilviii]. Moreover, as people living with HIV grow older their risk of developing and NCD increases as it does for those without HIV. Risk of metabolic disease is also increased in HIV-infected patients on lifelong combined antiretroviral therapy.

Three interactions have been noted between tuberculosis and cancer. First, tuberculosis increases lung cancer risk. Second, cancers can promote reactivation of latent M tuberculosis infection. Third, immunosuppression attributable to cancer treatment can reactivate latent tuberculosis infection.

The SANHANES found that of the 5% of South Africans aged 15 and above that self-reported diabetes, 73% had at least one additional cardiovascular chronic illness[lix]. In a study in two districts in the Western Cape of participants with hypertension, diabetes, respiratory disease and depression, 80%, 92%, 88% and 80%, respectively, had at least one of the other three conditions[lx]. In a study in Khayelitsha, based on the analysis of treatment prescriptions for both chronic communicable and non-communicable diseases, a high comorbid diseases pattern was found for TB patients, with 80% having HIV, 37% hypertension and 12% diabetes mellitus[lxi]. Hypertension was the most common co-morbidity in both HIV/ART and DM patients. A high prevalence of multimorbidity was found in younger patients on ART (26% and 30% in 18–35 year and 36–45 year age groups respectively). It was also shown that among younger HIV/ART patients with multimorbidity, hypertension and diabetes prevalence were significantly higher than patients in the same age groups who were not on ART. Another study found a TB-NCD comorbidity (26.9%) and TB-NCD multimorbidity (25.3%)[lxii].

Mental health and wellbeing are central to reducing the global burden of non-communicable diseases. A 2019 review of multiple studies and meta-analyses found significant associations between mental disorders and most NCDs[lxiii]. For example, in the World Mental Health Surveys, odds ratios for the association of heart disease with mental disorders were 2.1 for mood disorders, 2.2 for anxiety disorders, and 1.4 for alcohol misuse or dependence across countries. There have also been strong links found between diabetes and mental disorders, including schizophrenia, bipolar disorder, depression, and post-traumatic stress disorder as well as between diabetes and cognitive impairment. Depression is particularly prevalent in people with cancer, however links have also been shown between particular cancers and both anxiety disorders and post-traumatic stress disorder. Moreover, in the World Mental Health Surveys, mood, anxiety, and substance use disorders were associated with subsequent onset of asthma.

It has been further found that risk factors for NCDs tend to cluster together, particularly in people with common mental disorders, where they may have multiplicative effects[xxx]. Physical inactivity is linked to a range of mental disorders, including serious mental disorders. Unhealthy diets have been associated with several mental disorders, including common mental disorders. Tobacco and alcohol use are also linked with both common and serious mental disorders.

In a study in rural South Africa of persons 40 and over it was found that 69.4% of the respondents had at least two conditions and 37.7% had at least three conditions (10 conditions were measured)[xvii]. Using a definition of multimorbidity whereby conditions were clustered according to different determinants and consequences, ie into four categories of cardiometabolic conditions, mental disorders, HIV and anaemia, 53.9% of the sample had at least two categories and 17.5% had at least three categories. Figure 20 shows very clearly a very high co-morbidity between NCDs such as hypertension and diabetes, but also between communicable diseases such as HIV and NCDs and also between mental conditions and other NCDs[lxiv].

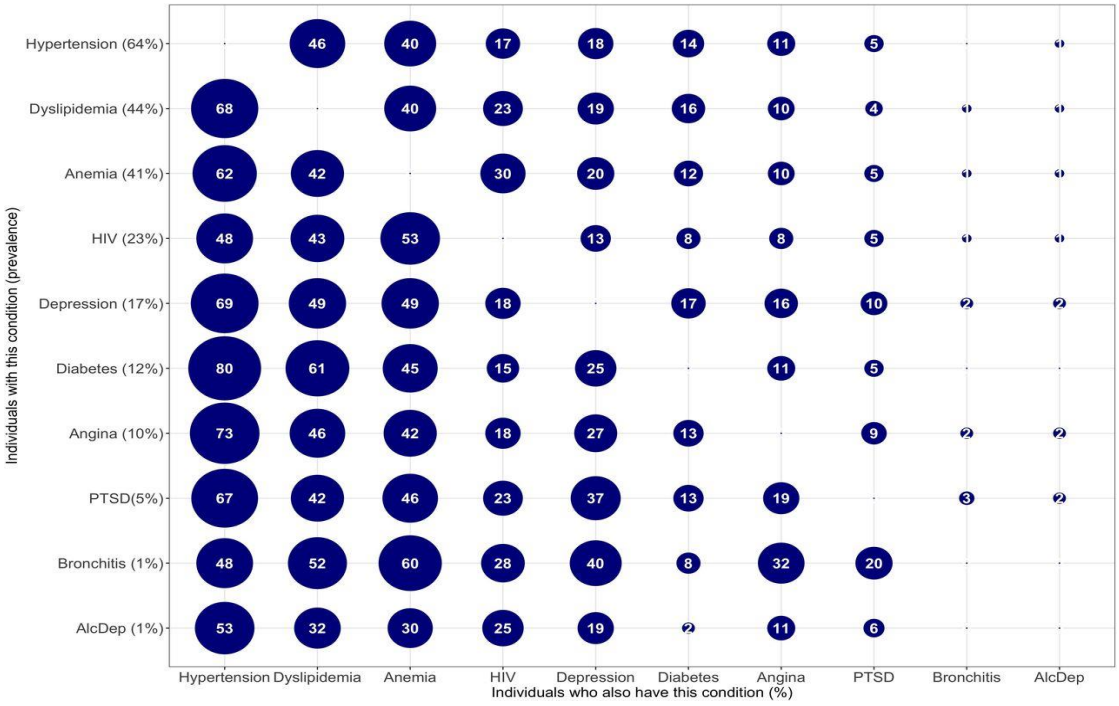


Figure 22 Multimorbidity of various diseases/disorders

Persons with severe mental disorders die 10 to 20 years earlier than the general population with cause of death primarily being NCDs[lxv]. They have a 2 to 3 times higher risk of dying from cardiovascular diseases than the general population and a 2 to 6 times the rate of respiratory conditions than the general population - even after controlling for tobacco smoking and substance abuse. These persons are also more likely to die of diabetes mellitus and cancers.

Disability from NCDs

According to the Institute for Health Metrics and Evaluation the following are the causes of the most disability in South Africa. The majority are non-communicable diseases.

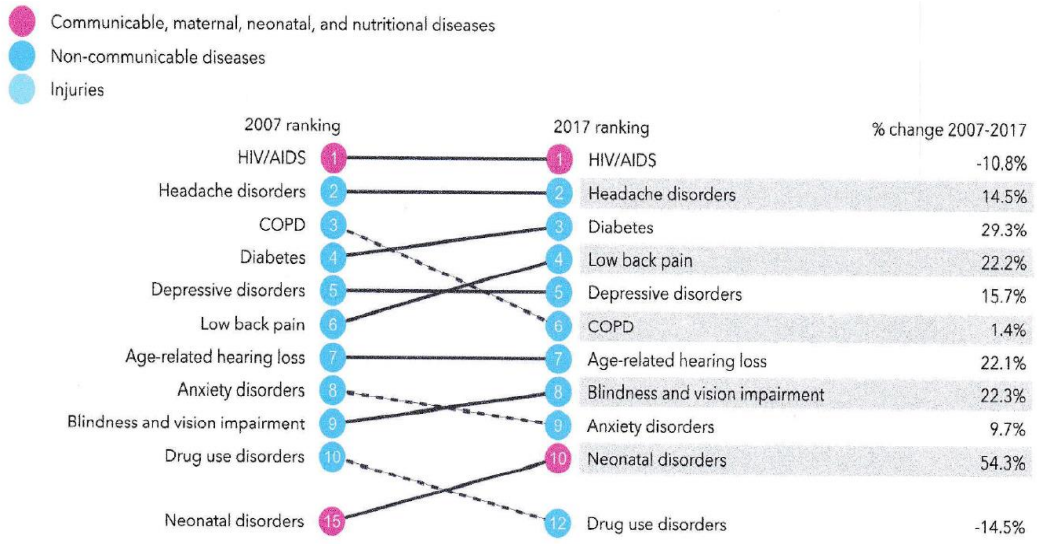


Figure 23 Top ten causes of years lived with disability (YLD) and percentage

Burden of Disease from NCDs

In terms of causes of death and disability combined (Disability Adjusted Life Years), three of the top 10 causes are NCDs, with diabetes showing a particularly high increase.

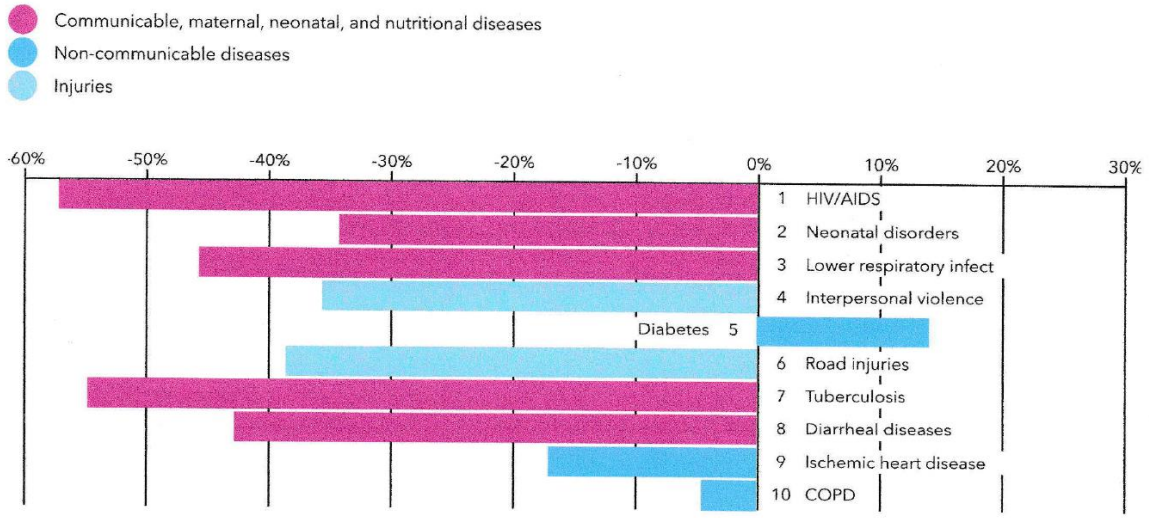


Figure 24 Top 10 causes of disability-adjusted life years (DALYs) in 2017 and percentage change 2007-2017, all ages

Main behavioural risk factors for NCDs

Genetic/biological factors are extremely important in the development of NCDs and some conditions will develop irrespective of personal behaviours or the environment that shapes these behaviours and/or even direct environmental influences themselves. However, the WHO have identified and highlighted 5 highly influential and reversable risk factors. This section outlines the current status of these risk factors in South Africa.

Tobacco

Tobacco is one of the main causes of premature deaths in the world. Smoking has negative impacts on all the major NCDs including lung and other cancers, chronic obstructive pulmonary diseases (COPD), heart diseases and stroke and diabetes. Tobacco is also known to worsen mental health and alcohol use.

According to the SADHS 37% of men and 8% of women currently smoke tobacco products daily or occasionally. Of everyday smokers the majority (75% women and 64% men) smoke between 1 and 9 cigarettes a day while 12% of women and 18% of men smoke 15 or more.

There appears to have been a consistent downward trend in tobacco use between 1993 (33%) and 2012 (18%) with a possible rise in 2016 (22%). However, the 2012 SANHANES data may be a statistical outlier (the measured prevalence was lower than the true prevalence), creating a false impression of the extent of success between 2007 and 2012. Both the AMPS (All Media and products Survey) and NIDS (National Income Dynamics Survey) find that prevalence was higher in 2012, so the reliability of this figure may be questionable. Using SADHS data there have been discernible reductions between the 1998 and 2016.

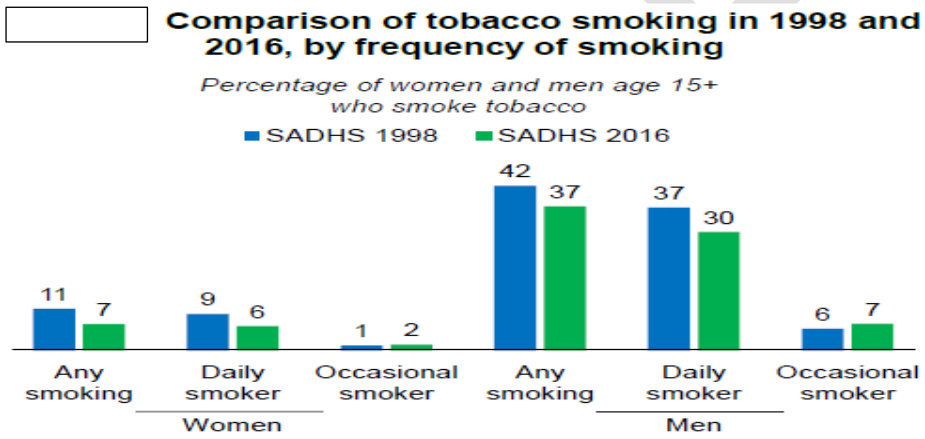


Figure 25 Comparison of tobacco smoking in 1998 and 2016, by frequency of smoking

Alcohol

Alcohol has been associated with all the main NCDS. A review of the relationship between alcohol and non-communicable diseases[lxvi] found that alcohol is causally linked (to varying degrees) to cardiovascular outcomes, including hypertension, haemorrhagic stroke and atrial fibrillation; eight different cancers ie oral, pharynx, larynx, oesophagus, liver, colon, rectum, breast (with risk linked to volume consumed); liver disease (fatty liver, hepatitis and cirrhosis); pancreatitis; diabetes.

In 2010 the WHO estimated an average annual per capita consumption of alcohol for South Africa (persons over 15 years of age) as 11 litres; and the numbers of heavy episodic drinkers as 25.6%. The numbers of people abstaining from alcohol consumption was estimated at 51% males and 79% female[lxvii]. Therefore, the numbers of drinkers that consumed to heavy episodic levels was very high.

From the data available it appears that the total adult consumption has stayed somewhat stable over the past 5 years. According to the Genesis report Evaluating the Economic, Health and Social Impacts of the proposed Liquor Amendment Bill, 2017, based on the averages of the Legal Drinking Age population from 2012 to 2016, it is estimated that the volume of liquor consumed (L/per capita/year) decreased from 11.52 to 10.98[lxviii] .

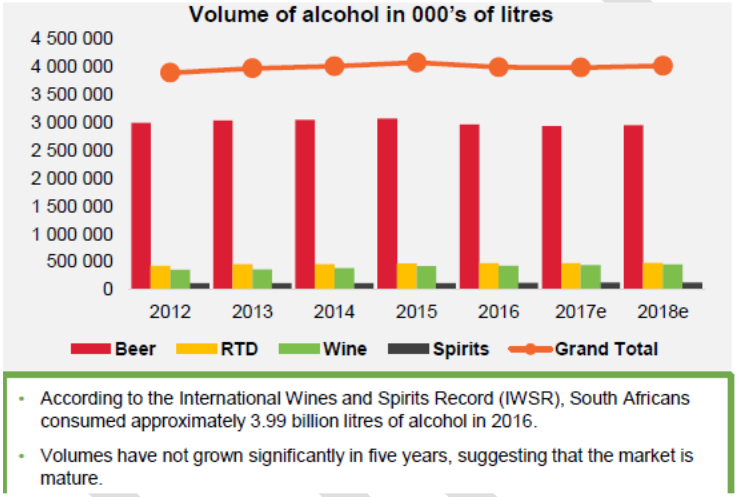


Figure 26 Volume of alcohol in 000's of litres

Moreover, according to the Centre for Addiction and Mental Health (CAMH) in Toronto that calculates global alcohol consumption patterns, there also seems to have been a small decline in consumption in South Africa.

2012	9,86
2013	9,70
2014	9,60
2015	9,43
2016	9,14

Table 3 Per capita alcohol consumption in South Africa

Whether the actual per capita consumption came down or not, it is clear from the SA Demographic and Health Survey (Table 5) that risky drinking is still high, especially amongst men[xxvii].

Alcohol consumption and risky drinking: Men

Percentage of men age 15 and older who ever drank alcohol, who drank alcohol in the past 12 months, who drank alcohol in the past 7 days, who drank five or more drinks on at least one occasion in the past 30 days, and who show signs of problem drinking as assessed by the CAGE test, according to background characteristics, South Africa DHS 2016

Background characteristic	Ever drank alcohol	Drank alcohol in past 12 months	Drank alcohol in past 7 days	Drank five or more drinks on at least one occasion in past 30 days[1]	Show signs of problem drinking by the CAGE test[2]	Number of men
Age						
15-24	56.4	49.3	26.3	20.7	13.0	1,241
15-19	45.6	38.8	16.6	11.8	5.8	651
20-24	68.4	60.8	37.0	30.5	20.8	591
25-34	65.5	60.5	43.4	36.1	21.5	962
35-44	68.3	60.1	40.2	31.8	18.4	744
45-54	53.9	47.5	36.7	27.8	15.5	492
55-64	64.9	54.3	45.1	25.7	14.4	406
65+	59.0	46.8	39.5	20.9	8.8	364
Population group						
Black/African	61.5	53.9	36.0	28.3	16.7	3,534
White	77.2	71.0	57.7	25.7	8.2	257
Coloured	52.4	46.0	34.9	25.6	15.9	335
Indian/Asian	39.8	27.0	12.9	6.2	7.8	82
Other	*	*	*	*	*	2

Table 4 Alcohol consumption and risky drinking: Men

Diet

Overweight and obesity is very strongly associated with NCDs including cardiovascular disease. Diabetes[lxix], COPD and cancer[lxx].

South Africa, together with many low and middle income countries, suffers from the coexistence of undernutrition along with overweight and obesity, or diet-related noncommunicable diseases, within individuals, households and populations, and across the lifecourse. This is more than a coexistence. According to the WHO undernutrition early in life – and even in utero – may predispose to overweight and noncommunicable diseases such as diabetes and heart disease later in life. Overweight in mothers is also associated with overweight and obesity in their offspring. Rapid weight gain early in life may predispose to long-term weight excess[lxxi].

While countries vary considerably with respect to which dietary factors impact most on poor health, and the following data should thus be read with caution in relation to South Africa. A systematic evaluation of dietary consumption patterns across 195 countries showed that the leading dietary risk factors for NCD mortality are diets high in sodium, low in whole

grains, low in fruit, low in nuts and seeds, low in vegetables, and low in omega-3 fatty acids; each accounting for more than 2% of global deaths. Figure 23(A) illustrates the extent to which different dietary factors globally impact on mortality and Figure 23(B) on the rate of DALYs[lxxii].

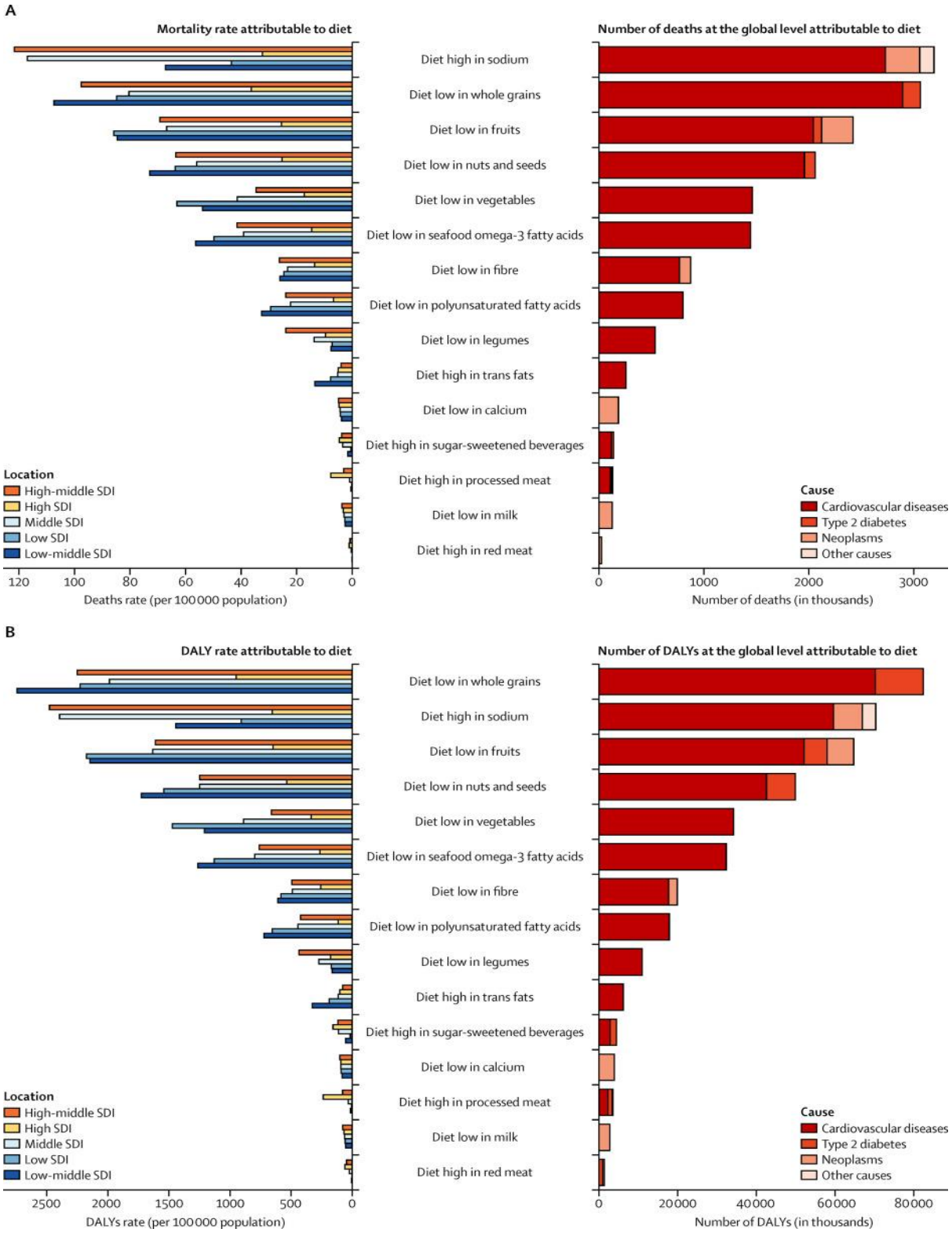
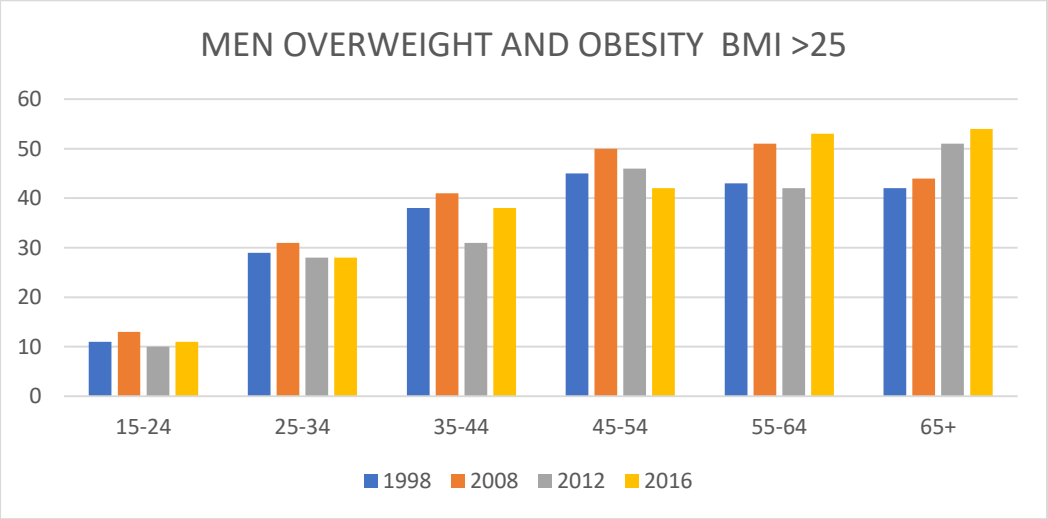


Figure 27 Impact of diet on morbidity and DALYS

While the South African Demographic and Health Survey (2017), of data collected in 2016, indicates some small reductions in younger men and men up to 54[xxvii], it appears that overweight and obesity in older men and in women of all age groups is increasing.

Approximately one-third (30%) of women have a BMI in the normal range, 3% are underweight, 27% are overweight (BMI of 25.0-29.9), and 41% are obese (BMI of 30 or above). Twenty percent of women are severely obese (BMI of 35 or above), a subgroup of the obese category. The majority of men (59%) have a BMI in the normal range; 10% are underweight, 20% are overweight (BMI of 25.0-29.9), and 11% are obese (BMI of 30 or above). Three percent of men are severely obese (BMI of 35 or above).



Men Overweight and obese

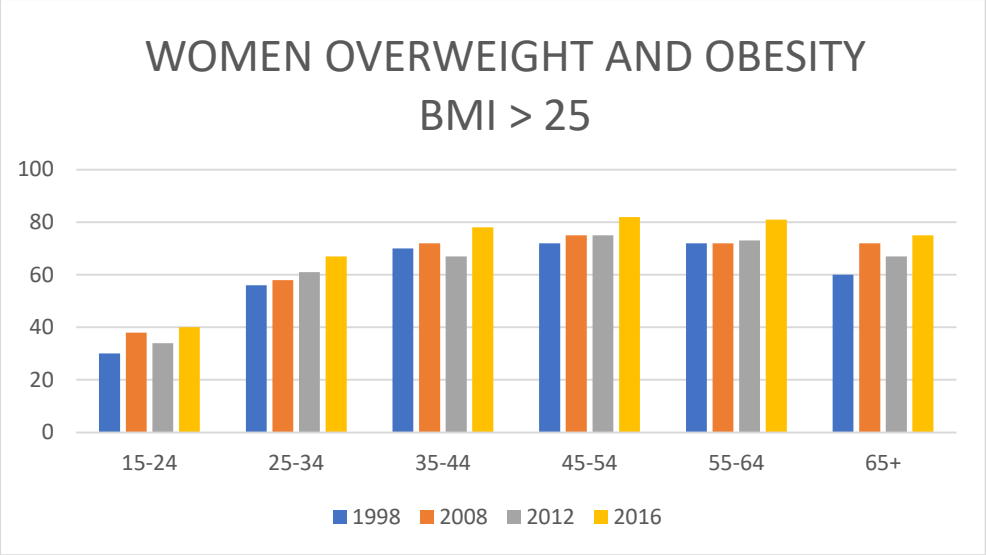


Figure 28 Men and Women Overweight and Obesity

There are also high numbers of people, especially women, with severe obesity BMI >35

Severe obesity among women and men

Percentage of women and men age 15 and older with a body mass index (BMI) ≥35, according to background characteristics, South Africa DHS 2016

Background characteristic	Women		Men	
	Body mass index[1] (BMI) ≥35.0	Number	Body mass index (BMI) ≥35.0	Number
Age				
15-24	5.8	1,040	0.7	927
15-19	4.5	520	1.0	499
20-24	7.1	520	0.3	428
25-34	17.3	1,016	2.3	700
35-44	26.4	784	5.0	540
45-54	29.0	676	4.8	340
55-64	29.9	553	6.2	313
65+	23.8	592	4.0	286
Population group				
Black/African	20.2	4,066	2.1	2,663
White	14.5	188	14.1	175
Coloured	25.7	317	6.6	207
Indian/Asian	18.0	87	(5.4)	60
Other	*	3	*	0
Residence				
Urban	22.3	2,880	3.6	2,025
Non-urban	17.0	1,782	2.2	1,080
Province				
Western Cape	26.3	415	4.7	261
Eastern Cape	20.0	627	2.3	413
Northern Cape	15.3	106	4.5	68
Free State	21.3	265	2.0	177
KwaZulu-Natal	22.5	923	5.0	520
North West	14.4	354	1.9	271
Gauteng	22.1	1,072	3.4	848
Mpumalanga	15.3	394	0.8	273
Limpopo	16.2	506	2.2	276
Education				
No education	22.8	417	3.8	169
Primary incomplete	21.3	571	1.1	398
Primary complete	17.9	231	3.2	163
Secondary incomplete	20.5	2,053	1.7	1,437
Secondary complete	17.9	946	4.8	624
More than secondary	21.5	443	8.3	313
Wealth quintile				
Lowest	12.1	951	0.4	630
Second	16.0	911	1.2	649
Middle	21.4	999	2.6	677
Fourth	24.0	937	2.6	595
Highest	28.5	863	9.5	554
Total 15+	**20.3**	**4,662**	**3.1**	**3,105**
Total 15-49	**16.7**	**3,179**	**2.4**	**2,353**

Notes: The body mass index (BMI) is expressed as the ratio of weight in kilograms to the square of height in metres (kg/m^2). Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on 25 unweighted cases and has been suppressed.

[1] Excludes pregnant women and women with a birth in the preceding 2 months

Table 5 Severe obesity in men and women

Young children are exposed to unhealthy diets at an early age, resulting in the persistent increase in obesity. Adult obesity is linked to both overweight and underweight in childhood.

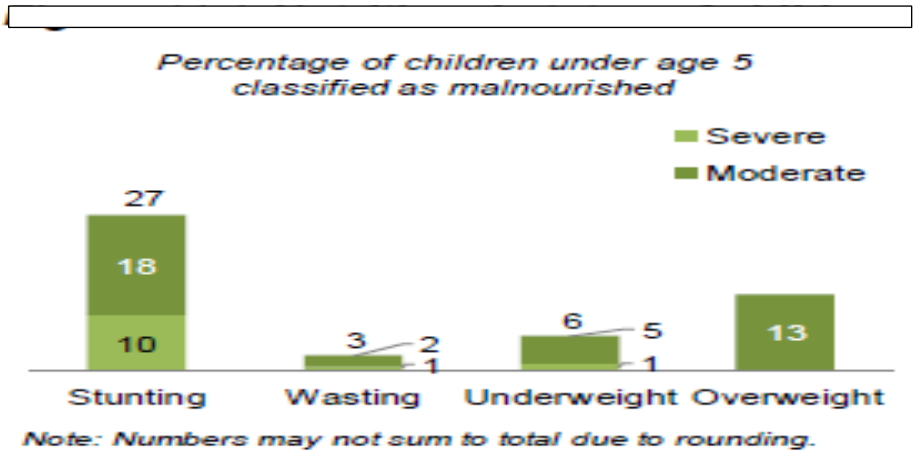


Figure 29 Nutrition status of children

Low rates of exclusive breastfeeding of babies is very important in later development of Non-Communicable diseases. The Demographic and Health Survey of 2016 found that only 32% of babies are exclusively breastfed at 6 months. According to the Cancer Association of South Africa (CANSA) breastfeeding may help to reduce the risk of childhood cancer like leukaemia and decrease the chance of becoming of obese later in life which is a risk factor for cancer[lxxiii]. They say also that mothers also benefit as there is strong evidence that shows those who breastfeed exclusively for 6 months and beyond have a lower chance of developing breast cancer. The risk for endometrial and ovarian cancers is also reduced through breastfeeding.

Poor diet amongst young children is characterised by significant intake of sugary drinks and snacks and salty snacks. In SA 9 and 10 year olds are number 2 for Sugary drink consumption across the globe). “Junk food” is highest where the child is not being breastfed.

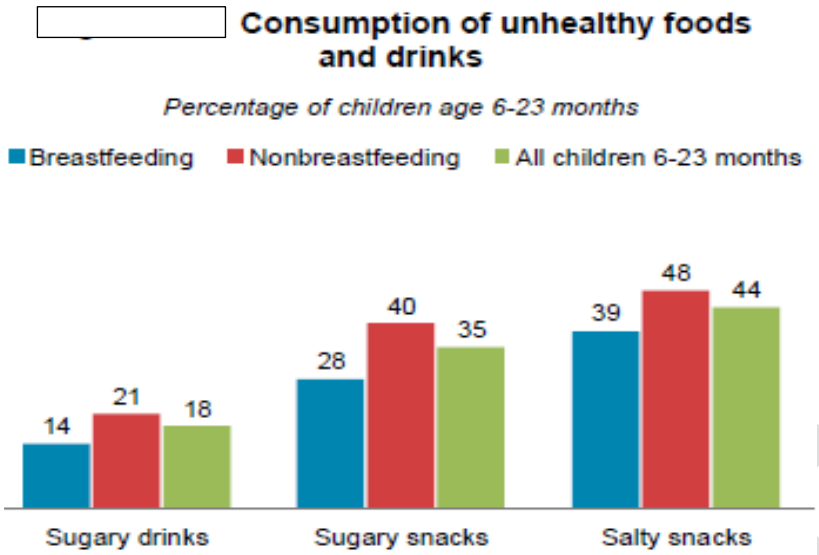


Figure 30 Consumption of unhealthy foods and drinks

Local food environments play a key role in individual, family, and population-level health. Unhealthy food environments, including access to and affordability of healthy foods, foster unhealthy diets[lxxiv]. This is especially true for communities with predominantly low-income, low socio-economic status. Healthier food options typically cost between 10% and 60% more when compared with unhealthier options at retail outlets. In South Africa, from 1994 to 2012, there has been an overall increase in energy intake, sugar-sweetened beverages, processed and packaged foods, animal source foods, and added caloric sweeteners, while the consumption of vegetables actually decreased. In particular, the consumption of processed and packaged food, such as soft (sugary) drinks, sauces, dressings and condiments, and sweet and savoury snacks had the most drastic increase (>50%). These findings show significant changes in food consumption patterns that may be due to a changing food environment[lxxv].

It is noteworthy that moderate obesity is associated with an 11% increase in healthcare costs and severe obesity with a 23% increase in health costs. Productivity is also compromised.

In randomized clinical trials in high income countries, dietary interventions have proven to both prevent and manage important diseases, such as diabetes and cardiovascular disease. In individuals with elevated fasting blood glucose, a combination of dietary changes and physical activity reduced the risk of developing diabetes by 58% compared with a 31% reduction in individuals receiving metformin[lxxvi].

According to SADHS 2016, 10% of respondents eat fried foods, 2% eat fast food, 13% eat salty snacks, and 14% consume processed meats on a daily basis.

Salt

The association between sodium and hypertension has been well established. Moreover, high salt intake promotes gastric cancer, is associated with osteoporosis, increased asthma severity, renal stones, progression of renal disease and obesity.

A study published in 2017 by Ware et al embedded in the SAGE Wave 2 study found a medium salt intake of 6.8 g/day[lxxvii]. Similarly a study published in 2018 by Charlton et al found medium salt intake values measured through 24 hr urine sampling to be under the 7g/day mark[lxxviii]. However as many as 28% of the sample had values over 9g/day. Another study of South Africans of black, white and Indian origin found a mean population intake of 7.2 g/day[lxxix].

Studies have not yet been conducted on salt intake since the introduction of the first regulation targets in 2016 and thus it is too early to assess the impact of the salt regulation.

Sugar

High intake of free sugars – particularly in the form of sugary drinks, also known as sugar-sweetened beverages (SSBs) – increases overall energy intake and may threaten the nutrient quality of diets, leading to an unhealthy diet, weight gain and increased risk of NCDs[lxxx] that include heart disease, stroke, diabetes and Cancer. A 2018 study by Okop et al. revealed that a higher intake of SSB predicts weight gain in a sample of South Africans drawn from low-income settings[lxxxi]. In 2013, SA ranked seventh in the world in sugar consumption with a per-capita annual consumption of sugar of 36 kg. Between 2002 and 2016 annual sales of SSBs doubled from 3.0 to 6.0 billion litres[lxxxii]. Another concern is the association between frequency of intake of free sugars and dental disease, specifically the association between a regular intake of free sugars with an increase in the development of dental caries[lxxxiii]. 60% of 6 year olds have dental caries in SA[lxxxiv]. Liquid sugar calories are

especially harmful – drinking just one SSB per day increases an adult's likelihood of being overweight by 27% and a child's by 55%[lxxxv].

Saturated fats

Saturated and trans- fats increase Cholesterol levels and trans fats lower HDL level, thus increasing the risk of coronary artery disease.

Physical inactivity

Worldwide, it has been estimated that physical inactivity causes 6% of the burden of disease from coronary heart disease, 7% of type 2 diabetes, 10% of breast cancer, and 10% of colon cancer. Inactivity causes 9% of premature mortality[lxxxvi]. Higher levels of physical activity are associated with lower mortality rates for both younger and older adults. Low levels of physical activity results in fewer Kj burned thus contributing to high prevalence of obesity.

From the WHO Observatory data physical inactivity is South Africa is as follows[lxxxvii]:-

Adults 18 yrs +	Age-standardised Prevalence of Insufficient Physical Activity (%) (< 150 of moderate/wk or < 75 min of vigorous/wk)	Crude Prevalence of Insufficient Physical Activity (%) (< 150 of moderate/wk or < 75 min of vigorous/wk)
All	38.2 (30.1-46.8)	37.2 (29.3-45.7)
Men	28.5 (22.0-35.9)	25.9 (19.8-33.0)
Women	47.3 (37.7-57.0)	47.8 (38.8-57.6)

Table 6 Physical activity 18 years +

A recent study of SA learners aged 8 - 14 years found that 57% engaged in moderate levels of physical activity (PA)[lxxxviii]. Thirty-one percent did not meet internationally recommended

amounts of moderate to vigorous physical activity. Overall, males reported higher PA levels than females. PA levels declined with age from 11 to 14 years by 14% and 20% in males and females, respectively.

A cross-sectional survey from the Cape Town (urban) and Mount Frere (rural) areas found that 74% of participants engaged in moderate-to-vigorous physical activity[lxxxix]. Women were 34% less likely to engage in vigorous physical activity.

Air pollution

According to the WHO one-quarter to one-third of deaths from heart disease, stroke, lung-disease and cancers are due to air pollution[xc]. A recent study by the Forum of International Respiratory Societies' Environmental Committee, estimates that about 500,000 lung cancer deaths and 1.6 million COPD deaths can be attributed to air pollution. They say further that air pollution may also account for 19% of all cardiovascular deaths and 21% of all stroke deaths and is associated with many other NCDs including diabetes[xci].

A 2016 report by the World Bank estimates that around 20 000 South Africans die from air pollution related causes annually[xcii], while a study by the International Growth Centre puts the number of deaths at 27 000[xciii].

Chapter 3 CURRENT RESPONSES TO NCDs IN SOUTH AFRICA

Important developments have taken place in South Africa for the promotion of health and prevention of NCD diseases, to attain better management and control of NCD and for effective rehabilitation and Palliative to be strengthened. Though it is acknowledged that much more is still required, a number of important interventions have taken place that are already impacting on NCDs and or their risk factors or that form the foundation for further interventions.

Prevention and Promotion

South Africa has taken a number of legislative/regulatory/policy steps to prevent NCDs. A National Health Promotion Policy and Strategy was adopted and has been operative since 2015. Specific preventive interventions include (by main risk factors):

1)Tobacco

The Tobacco Products Control Act, Act 83 of 1993. **as amended by Act 12 of 1999,** Regulations, 2 December 1994; Regulations, 29 September 2000; Tobacco Products Control Amendment Act 23 of 2007; Tobacco Product Control Amendment Act of 2008; Regulations: Reduced Ignition Propensity (RIP), 16 May 2011. (See Appendix for content of the legislation and regulations)

In addition, a new Draft Control of Tobacco Products and Electronic Delivery Systems Bill has been tabled. The key areas that the Bill will regulate are: restrictions on public smoking; the sale and advertising of tobacco products and electronic delivery systems; the prohibition on financial or other support; the prohibition of vending machines; the standardisation of the packaging and appearance of tobacco products and electronic delivery systems; and restriction on the sale of products.

2)Alcohol

Legislation around access to alcohol is housed within the Department of Trade and Industry. A Liquor Bill was published for comment in 2016. This Bill covers inter alia increasing the

legal age of alcohol consumption, controlling access to alcohol products and the advertising of alcohol. No further progress has yet been made in passing this Bill into an Act.

Regulations regarding warning labels on alcohol products were introduced by the Department of Health in 2007 and amended in 2017.

3)Diet and food environment.

- A regulation on Trans-fats in Foodstuffs was passed in 2011 (R127). According to this regulation the trans-fat content of any oils and fats cannot exceed two grams per 100 grams. Products with higher trans fats levels are prohibited from entering or being sold in the country.
- A regulation on reduction of sodium in 13 categories of foodstuffs that are the most common source of sodium for the majority of South Africans was passed in 2013 (R214) and amended in October 2017. Initial salt targets were set for 2016 with final targets in June 2019. It is anticipated that this will result in 7 400 fewer CVD deaths and 4 300 less non-fatal strokes per year compared with 2008. Cost savings of up to R300 million is also expected[xciv].

- A levy on sugar sweetened beverages (Health promotion levy) was passed in 2018. The levy is fixed at 2.1 cents per gram of the sugar content that exceeds 4g per 100ml. This amounts to an approximately 10% tax. Fruit juice is currently exempt It is anticipated that this will avert an estimated 8000 premature deaths related to type 2 diabetes mellitus (T2DM) over 20 years. Government would save R2 billion in subsidised health care, and raise ZAR6 billion in tax revenues per annum. An estimated 32 000 T2DM-related cases of catastrophic expenditures and 12 000 cases of poverty will be averted[lxxvi]. The deaths averted would be concentrated in the third and fourth income quintiles, while the bottom two income quintiles would bear the lowest burden of taxes.
- South Africa adopted a Strategy for the Prevention and Control of Obesity in South Africa (2015-2020). This Strategy has the following six goals:- Create an institutional framework to support inter-sectoral engagement; Create an enabling environment

that supports availability of and accessibility to healthy food choices in various settings; Increase the percentage of the population engaging in physical activity (PA); Support obesity prevention in early childhood (in-utero – 12 years); Communicate with, educate and mobilize communities; Establish a surveillance system and strengthen monitoring, evaluation and research. Targets and activities are included.

- The Department of Health supported the Heart and Stroke Foundation to run a Salt Watch campaign.
- National Nutrition Week and National Obesity Week took place annually from 9 to 15 and 15 to 19 October respectively. For the past three years (2016, 2017 and 2018) the DoH campaigns focused on the importance of eating regular, healthy meals to prevent obesity and consequently non-communicable diseases and to promote health.
- The Department of Health is currently working on developing the Front-of-Pack (FoP) labelling as a tool to simplify nutritional information for consumers, in addition to make nutritional information mandatory on most food labels, irrespective of whether a claim is made or not. The nutrients are the same as those identified by the WHO in their Global strategies which aim to reduce obesity and non-communicable diseases, namely added salt, sugars and saturated fat.

4)Physical activity

The Country commemorates the Move for Health campaign on an annual basis on the 10th of May. The campaign is led by the Sports and Recreation South Africa in collaboration with the Department of Health. The Department of Sports and Recreation hosts an annual Big Walk on the first Sunday of October each year. The Big Walk is the South African version of the World Walking Day. Since 2012 it has taken place in all provincial capital cities with more than thirty thousand (30 000) participants in 2017.

The Cabinet of South Africa also declared the first Friday of October as the National Recreation Day since 2014. The campaign is targeting all Citizens to be physically active.

The Department of Health has an MOU with the Department of Sports and Recreation South Africa, to increase participation of South Africans in non competitive sports.

5)Air Pollution

Parliament passed the National Environmental Management: Air Quality Act, 2004 (Act No. 39) in 2004[xcv]. The aims of the Act are to regulate and manage air pollution in the country; Monitor the pollutants to ensure that air quality is improved; Enhance the quality of ambient air in order to secure an environment that is not harmful to the health and wellbeing of people. The government has published a list of sources/activities which have significant effects on the environment. These sources require an atmospheric emission license before they can operate. From these sources, the government sets limits on the amount of emission a source is allowed to release into the atmosphere. There are emission standards for different industries. Environmental management inspectors conduct compliance and monitoring to ensure that emission standards are met[xcvi].

The Department of Environmental Affairs holds an annual Lekgotla that provides a forum for coordination and co-operation in air quality management. It provides a platform for air quality officials from all spheres of government to interact by sharing their experiences and challenges and to refine the regulatory tools going forward.

5)HPV

The Human Papilloma Virus (HPV) vaccination programme was launched in 2014 by the National Department of Health (NDoH), in partnership with the Department of Basic Education (DBE), as part of primary prevention against cervical cancer. The aim was to target an estimated 550 000 girls in grade 4, aged 9 years and 17 000 public and special schools, before they were exposed to HPV infection. A bivalent vaccine (Cervarix) is given at five to six month intervals using a campaign approach implemented through the Integrated School Health Programme (ISHP). The first round is conducted during February to March and the second round in August to September of each year. Between 2014 when this programme started and February 2019 1 934 635 Grade 4 girls had received Dose 1 and 1 207 477 Dose 2.

Management and Control

A number of policies, action plans and guidelines have been developed since 2013[11]. These include:-

1. National Cancer Strategic Framework 2017-2022 (2017)
    - Cervical cancer policy (2017)
    - Breast cancer policy (2017)
2. Updated Management of type 2 diabetes in Adults at Primary Care Level. (2017)
3. Mental Health Policy Framework and Strategic Plan 2013-2020. (2013)
4. National Policy Framework and Strategy on Palliative Care 2017-2022 (2017).
5. Framework and Strategy for Disability and Rehabilitation Services in South Africa 2015-2020 (2015)
6. Guideline for the Management of Acute Asthma in Adults_2013 update.
7. Strategy for the Prevention and Control of Obesity in South Africa 2015-2020

In addition, a number of important health systems changes have been introduced that have included and benefitted persons with NCDs.

1. An Integrated Clinical Services Model that incorporates all chronic diseases, whether communicable or non-communicable, was introduced through the Ideal Clinic initiative. This means that patients are seen for whatever chronic disease they have, including for multiple conditions, at the same visit. As of 2018, 97.2% percent of clinics had reorganized with designated consulting areas for management of chronic

[11] The previous Strategic Plan for the Prevention and Control of NCDs was introduced in 2013.

conditions and had patient appointment systems for people with chronic conditions (up from 87% and 73% respectively in 2017).

2. NCDS were fully included in the Primary Health Care Service Package drafted in 2015. The most common NCDs have also been included into the Adult Primary Care package[xcvii] including Asthma/COPD; Cardiovascular Disease, Diabetes, Mental Health conditions; Epilepsy, Musculoskeletal Disorders.
3. Medicines for many patients that are stable on NCD medication are provided through the Centralised Chronic Medicines Dispensing and Distribution (CCMDD) model.
4. Concerted efforts have been made to improve drug availability at hospital and primary care levels. Five commonly used medicines for NCDs are taken here as representative of NCD drug availability.

Information and Research

There are a number of surveys that are (or have been) conducted periodically in South Africa that collect data on non-communicable diseases and their risk factors. These include the South African Demographic and Health Survey (SADHS), the South African National Health and Nutrition Examination Survey (SANHANES), the National Income Dynamic Survey (NIDS), the Study on Ageing and Adult Health (SAGE), the Youth Risk Behaviour Survey and others[12]. Unfortunately, these studies are not regular and are not standardised and therefore data is usually not comparable. There are also a number of studies that get done on specific risk factors such as smoking, drinking, nutritional intake, physical activity, salt intake and so on but these also tend to be one off and also do not use standardised and comparable methodology.

It would be expected of survey data to be regular and comparable and hence one would be able to make health planning decisions on this data, but despite the SP objective and target this has not been achieved. Probably the biggest obstacle to having a comprehensive surveillance mechanism is cost.

A significant step towards having standardised data on NCDs and their risk factors was the tabling to Parliament of the Bill on NAPHISA (National Public Health Institute of South

[12] The WHO STEPS is not conducted in South Africa. While STEPS questions are included in some of the surveys mentioned, this is not a formalised STEPS survey.

Africa). One of the objectives of this Bill is to strengthen epidemiology and surveillance of communicable diseases, noncommunicable diseases, cancer, injury and violence prevention and occupational health and safety.

Numerous research studies, including epidemiological studies, clinical trials, health systems and outcomes evaluation research have been conducted and have informed Department of Health responses. This includes research by government supported institutions including the Medical Research Council, the Human Sciences Research Council and the Council for Scientific and Industrial Research, Universities, Research Consortia, Non-profit Organizations and the private sector.

Chapter 4 SCOPE AND STRUCTURE OF THIS STRATEGIC PLAN

This Plan is focussed primarily on NCDs that cause the highest morbidity and mortality and their main causes. According to the World Health Organization, globally cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9million), and diabetes (1.6 million). These 4 groups of diseases account for over 80% of all premature NCD deaths.

In South Africa premature mortality from NCDs is also led by cardiovascular diseases where 17% of men and 11% of women (total 14%) are expected to die between the ages of 30 and 70. This is followed by cancer, 10% male, 8% female (Total 9%); Diabetes, 5% for both men and women and chronic respiratory diseases, 6% male and 2% female (total 4%). While current accurate burden of disease data is not available, it is highly likely that in the same way as the proportion of NCD mortality has increased, this would also be true of Disability Adjusted Life Years (DALYs) lost through NCDs. Moreover, the high and rising levels of morbidity such as hypertension and diabetes/pre-diabetes reported above and for example increasing rates of obesity, would also strongly point towards increasing DALYs from NCDs.

Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all significantly increase the risk of dying from an NCD. The annual incidence of amputations from diabetes is 2000 and from diabetes related blindness is 800[xcviii]. Detection, screening and treatment of NCDs, including rehabilitation and palliative care, are key components of the response to NCDs. Notwithstanding, the Third UN General Assembly Declaration on NCDs, together with the WHO High level Commission on NCDs introduced an important shift from prior prioritization within NCDs when they moved from the 4x4 model in prioritizing NCD intervention to the 5x5 model[13iv]. Whereas previously COPD, Cardiovascular Diseases, Diabetes and Cancer together with the risk factors of Tobacco, lack of exercise, poor diet and alcohol were prioritised, now mental health has been added as a priority condition and

[13] There are a number of other risk factors that are also important such as sexual behaviours- promoting Human papilloma virus infections, sun protection and eating red meat that are all risks for cancer, however these 5 have been prioritised by the WHO and adopted as priorities in this strategy.

air pollution as a critical risk factor. The Declaration states that “mental disorders and other mental health conditions, as well as neurological disorders, contribute to the global burden of non-communicable diseases and that people living with mental disorders and other mental health conditions may face stigma and discrimination, being more susceptible to having their human rights violated and abused, and also have an increased risk of other non-communicable diseases and therefore higher rates of morbidity and mortality, and that depression alone affects 300 million people globally and is the leading cause of disability worldwide”. In South Africa, according to the Institute for Health Metrics and Evaluation, depression is the 5th and anxiety the 9th highest cause of years lived with disability.

With regards to air pollution the Declaration states that “There is increasing evidence about the role of indoor and outdoor air pollution, with its links to urbanization, in the development of NCDs. Poor air quality is widespread, and in many cities, vehicles are responsible for a high proportion of pollution. Poorly designed streets and heavy traffic also discourage walking and cycling, contributing to decreased physical activity and increased levels of obesity”[iv].

Despite the above prioritization there are many other NCD conditions of critical public health importance, most of which have high health burden, though relatively lower mortality. They include renal, endocrine, neurological, haematological, gastroenterological, hepatic, musculoskeletal, skin and oral diseases and genetic disorders; disabilities, including blindness and deafness; epilepsy and violence and injuries. NCDs also have close relationship with various communicable diseases such as HIV and TB and with maternal and child health concerns, including hypertension and diabetes in pregnancy.

In addition to the Department of Health, eleven different government sectors/departments have been identified for specific actions during the duration of this Plan. These are:- Agriculture, Land Reform and Rural Development; Basic Education; Communications; Co-operative Governance and Traditional Affairs; Environment, Forestry and Fisheries; Finance/National Treasury; Higher Education, Science and Technology; Social Development; Sport, Arts and Culture; Trade and Industry and Economic Development; Transport.

Within the Department of Health the responsibility for different health functions that are required to meet NCD goals reside in a range of different Directorates, within provincial Health Departments and in Health Districts. Hence different Directorates within the Department of Health and not just the directorate responsible for NCDs as well as Provinces and districts, will assume the responsibility and accountability for reaching identified targets[14].

[14] While the DoH has a section dealing with NCDs, it is often other sections within the Department that are required to implement policy and plans to meet the NCD prevention and control needs. For example, if particular drugs need to be made available at primary care level for prevention of cardiovascular diseases (See indicators 18 and 19 of the WHO targets on pg 8), then Affordable Medicines, rather than the NCD section, need to ensure that this occurs. The human resource needs for providing good NCD interventions need to planned through the involvement of different sections and implemented primarily through Human Resource development.

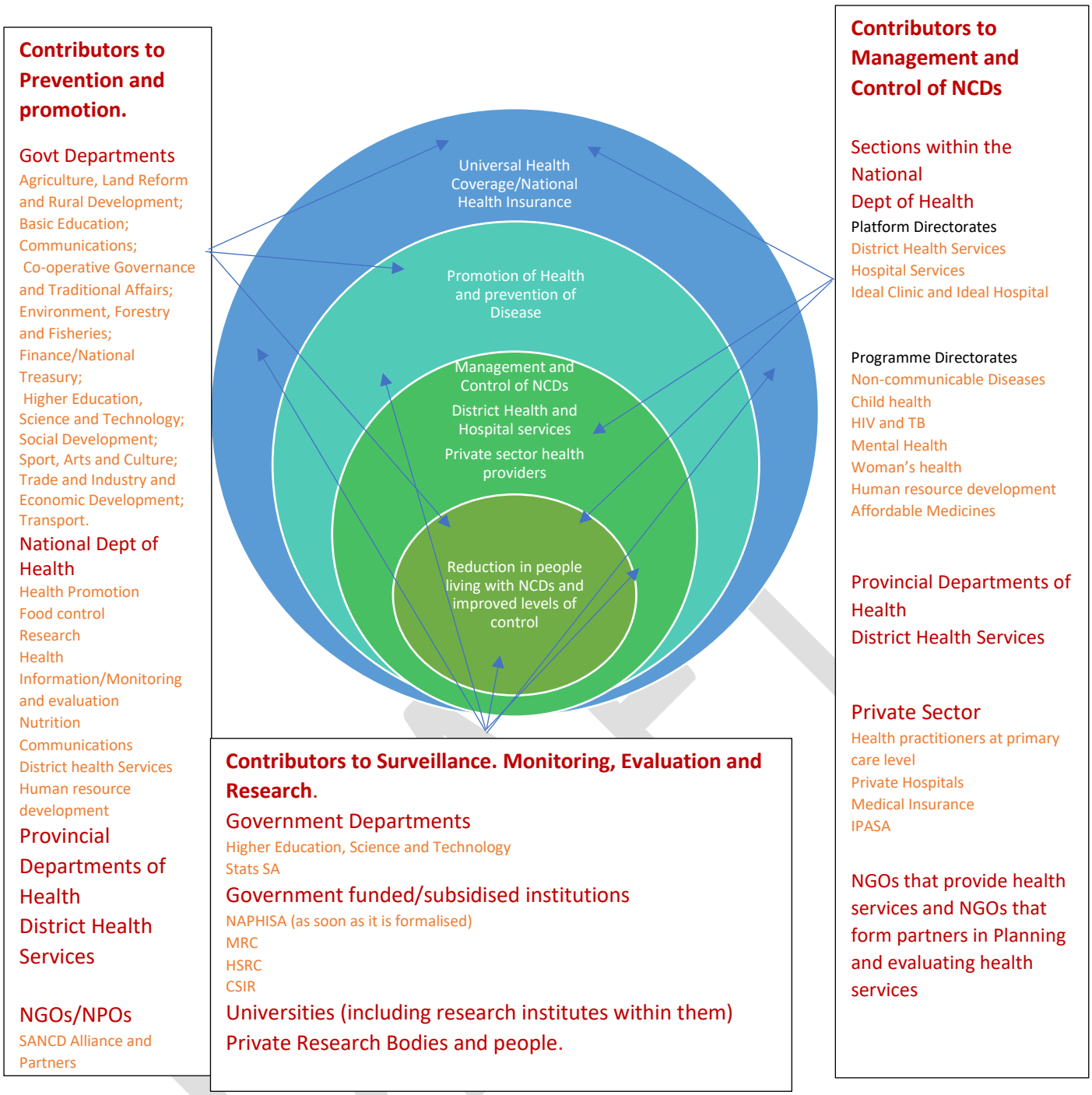


Figure 31 Contributors to meeting NCD goals

Health services and systems themselves need to be reoriented to fully include health promotion and the prevention and control of NCDs and mental health services. These are crucial in Universal Health Coverage policies and plans as well as strengthening of the key "building blocks" for improved health care. For example, NCDs and mental health services, including health promotion and prevention and priority health care interventions, as well as access to essential medicines and technologies must be included in minimum benefit packages for NHI. Similarly, human resource development and training must fully embrace the needs for NCD prevention and care.

90/60/50 model.

Screening for NCDs and treatment within primary care, particularly for hypertension, blood glucose and cholesterol is critical as not identifying persons with NCDs and neglecting treatment, results in interventions that are far more stressful to the individual and their families and are more costly, such as cardiac bypass surgery, carotid artery surgery and renal dialysis, draining both individual and government budgets. Ninety percent of all people over 15 will know whether they have hypertension and/or raised blood glucose or not.

Screening for cancers, particularly cervical cancer and breast cancer, but also through primary health care practitioners identifying the early signs of other cancers by having sufficient knowledge and awareness to do this, including childhood cancers, is crucial.

Once identified, users must receive appropriate level care. For hypertension, diabetes, high cholesterol, COPD and mental health the majority of people can be effectively treated within primary care. The numbers and costs of this, in compliance with the guidelines provided within Adult Primary Care, the guideline utilised for care and treatment as part of the Ideal Clinic programme, are calculated in Chapter 5. For cancer appropriate referral as soon as possible to facilities that provide care is fundamental.

The fact that many people suffer from co or multi-morbidities and also that the key risk factors are often common is vital to this Plan. Promotion and prevention approaches may thus not need to be diseases specific and may in fact cover areas not specifically part of the 5x 5 model. For example, the main risk factors for cardiovascular disease and diabetes are also those for dementia, so while dementia is not specifically included as a priority area here, by implementing prevention of risk for the main NCDs, this will also reduce the incidence of dementia. Similarly, key aspects of diet risk such as sugar intake are similar for oral health as for other priority NCDs.

From a treatment perspective to treat different chronic diseases separately is not only clinically inappropriate as for example the practitioner may not know what other medicines the person is taking, but it can prejudice the patient in other ways too, such as needing to spend more time at the clinic seeing disease specific practitioners, additional transport costs and having to take more time off work if they are employed. Chronic diseases may be within non-communicable diseases but are also common between communicable and non-communicable diseases. On the one hand susceptibility to diseases increase when one has one disease (for example to TB in diabetes patients) but also now as people with HIV get older they become more prone to non-communicable diseases (See).

Moreover, an important part of this Plan is its focus on children and youth. The UN Declaration recognizes "the significant impact of non-communicable diseases on children, which is of major concern, in particular the rising levels of obesity among them, recognizing that children who are given the opportunity to grow and develop in a healthy environment that is responsive to their needs, including breastfeeding, and that, at a young age, fosters and encourages healthy behaviour and lifestyles, including healthy dietary choices and regular physical activity, and promotes the maintenance of healthy weight, can greatly reduce the risk of non-communicable diseases in adulthood"[iv]. Overweight and obesity in childhood are known to have significant impact on both physical and psychological health[xv]. Globally over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. Overweight and obese children are likely to stay obese into adulthood and more likely to develop non-communicable diseases like diabetes and cardiovascular diseases at a younger age. The genesis of Type 2 Diabetes and Coronary Heart Disease often begins in childhood, with childhood obesity serving as an important factor[xv]. Research published in The Lancet has found that 70% of premature deaths in adults are associated with behaviours that began in childhood[xcix]. Young people worldwide are susceptible to the marketing of unhealthy foods, tobacco and alcohol, and many grow up in environments that are especially unfavourable to the adoption of healthy eating and exercise[c]. The Lancet Commission on Adolescent Health and Wellbeing has highlighted the "triple dividend" to be gained from a sustained focus on the 10-24 age group, benefitting young people during their adolescent years, during adult life, and with benefits passing to future generations. Young

people worldwide are susceptible to the marketing of unhealthy foods, tobacco and alcohol, and many grow up in environments that are especially unfavourable to the adoption of healthy eating and exercise. While not part of the Political Declaration itself there is also growing concern about rising levels of actual NCDs in children and at younger ages.

An Integrated Clinical Service Management model remains key to improved, integrated and holistic health delivery. Health care can be improved through improved appointment systems, seeing the same practitioner at each visit; better understanding by clinicians of the needs of people through the life course; greater emphasis on cost effective interventions and a focus on gender and gender needs.

The management of many NCDs and its risk factors within primary care is reasonably simple and inexpensive. Treating complications, however, is costly, requiring providers with a high level of skill and specialised equipment. Prevention of complications is therefore crucial. To allow effective prevention of complications, de-centralisation of care—from experts who work in hospitals to community health workers and other clinical and non-clinical providers who work in the primary care system and deliver home-based screening and care—needs to be accelerated[ci]. Moreover, simple equipment for diagnosis and monitoring, sufficient and knowledgeable health-care providers, availability of treatments and disease registries are essential and must always be in good working order. For management and control of chronic diseases, it is critical to have an active and informed patient in their own therapy.

Sixty percent of people with raised blood pressure or blood glucose will receive intervention and 50% that are receiving interventions will be controlled will be introduced.

Chapter 5 VISION, GOALS AND TARGETS

Vision

A long and healthy life for all through prevention and control of non-communicable Diseases

Goals

Accelerate implementation of ;

1. Evidence-based prevention/promotion of NCDs[15]:
2. Evidence based management and control and management of NCDs for all.
3. Surveillance, monitoring, evaluation and research

These will be attained within the Framework of Universal health Coverage.

Four central themes are embedded and mainstreamed across these 3 goals[16]:-

- A people centred and integrated approach
- A life course approach
- A cost-effectiveness approach
- A gendered approach.

[15] There is however overlap between these areas as for example screening for NCDs is prevention, but it is also central to management and control. Similarly, eligible people receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes is simultaneously prevention and management of NCDs. Having good data systems that enable effective management of patients covers both management and surveillance. Decisions on where to place these areas of overlap have been taken where they are considered to fit most appropriately

[16] These four areas were identified as critical following a review of the Strategic plan for the prevention and Control of NCDs 2013-2017. These are also identified as important principles in the WHO Global Action Plan 2013-2020. Other guiding principles outlined in this Plan such as Evidence-based strategies; Universal health coverage; Human rights approach and Equity-based approach are also seen as important and are captured throughout this document.

Targets

The comprehensive target for South Africa, in accordance with the SDG Goal 3.4, is to:-

Reduce, by one-third, premature mortality from noncommunicable diseases (NCDs) through prevention and treatment and promote mental health and well-being by 2030.

The specific targets of this Strategic Plan are the nine voluntary targets agreed to by Member States of the World Health Organization to be reached by 2025 and additional targets with respect to reduction of sugar intake; management and control of hypertension, high blood glucose and cholesterol in primary care (90/60/50 model); implementation of the National Cancer Strategic Framework and screening for mental health in people with chronic conditions and vice versa. The WHO targets consist of mortality and morbidity goals, behavioural risk factors and national Health sector response. The objectives to be reached and indicators[17] for measuring outcomes are outlined in Table 6.

[17] These will also be the indicators used to measure the extent to which South Africa has reached the targets. In addition, however, specific objectives have been set that relate to these Targets and these have their own indicators to measure how well implementation has taken place.

Framework Element	Target	Indicator
MORTALITY & MORBIDITY		
Premature mortality from noncommunicable disease	1. A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	1. Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
Additional indicator		2. Cancer incidence, by type of cancer, per 100 000 population
BEHAVIOURAL RISK FACTORS		
Harmful use of alcohol[1]	 2. At least 10% relative reduction in the harmful use of alcohol[2], as appropriate, within the national context	3. Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context 4. Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context 5. Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context
Physical inactivity	 3. A 10% relative reduction in prevalence of insufficient physical activity	6. Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily 7. Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent)
Salt/sodium intake	 4. A 30% relative reduction in mean population intake of salt/sodium[3]	8. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
Tobacco use	 5. A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years	9. Prevalence of current tobacco use among adolescents 10. Age-standardized prevalence of current tobacco use among persons aged 18+ years
BIOLOGICAL RISK FACTORS		
Raised blood pressure	 6. A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances	11. Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg) and mean systolic blood pressure
Diabetes and obesity[4]	 7. Halt the rise in diabetes & obesity	12. Age-standardized prevalence of raised blood glucose/ diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose) 13. Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex) 14. Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥ 25 kg/ m² for overweight and body mass index ≥ 30 kg/m² for obesity)
Additional indicators		15. Age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years[5] 16. Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day 17. Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol ≥5.0 mmol/l or 190 mg/dl); and mean total cholesterol concentration

Framework Element	Target	Indicator
NATIONAL SYSTEMS RESPONSE		
Drug therapy to prevent heart attacks and strokes	 8. At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes	18. Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk ≥30%, including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes
Essential noncommunicable disease medicines and basic technologies to treat major noncommunicable diseases	 9. An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities	19. Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities
Additional indicators		20. Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer 21. Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the national context and national programmes 22. Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programmes and policies 23. Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt 24. Vaccination coverage against hepatitis B virus monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants 25. Proportion of women between the ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programmes or policies

Table 6. WHO Targets and Indicators for NCDs by 2025

In addition to these WHO targets, South Africa aims to increase to 90% the percentage of all people over 15 that will know whether they have hypertension and/or raised blood glucose or not; 60% of people with raised blood pressure or blood glucose will receiving intervention and 50% that are receiving interventions will be controlled. Sugar intake will be reduced from 36 to 30 kg per annum. There will also be full implementation of the National Cancer Strategic Framework, including early identification. Screening for mental health in people with chronic conditions and vice versa will be fast-tracked.

South African Baseline and Targets.

Table 7 provides the current South African starting points for the 9 WHO targets plus the four additional targets added specifically for South Africa. It also gives the targets which this Plan aims to achieve by 2025. In Chapter 7, an implementation Plan with activities, time frames and those responsible for meeting these targets is presented within the 3 goals pertaining to promotion/prevention, management and control and surveillance/monitoring, evaluation/research. In order to reach a number of the targets, actions are required in more than one, and even all three, of the categories. For example, reductions in the prevalence of people with raised blood pressure or halting the rise in diabetes requires all of preventive actions, management and control interventions and improved surveillance, evaluation and innovative research.

2025 Targets for South Africa

	FRAMEWORK ELEMENT	CURRENT SITUATION/BASELINE	TARGET FOR 2025
1.	Premature mortality from NCDs	29%	22%
		34% for males	26%
		24% for females	18%
2.	Harmful use of alcohol	Per capita consumption 9.14 litres	8 litres per capita
		Alcohol consumption.	
		61% of men	55%
		26% of women.	23%
		Risky drinking	
		total 23%	21%
		20% of men	18%
		5% of women	4%
3.	Physical inactivity	Total 40%	36%
		28.5% men	26%
		47.3% Women	43%
		(< 150 of moderate/wk or < 75 min of vigorous/wk)	
4.	Salt intake	Mean population intake 7g per day	5g per day
5.	Sugar intake	Per capita intake 36 Kg per person annually	30 kg per person annually.
6.	Tobacco use	Age 15 plus	
		Total 22.5%	16%

	37% men	26%
	8% women	6%
7. Raised Blood pressure	Age 15 plus	
	Total 45%	34%
	46% women	35%
	44% men	33%
8. Diabetes and obesity	13% of women and 8% of men age 15 and older have an adjusted HbA1c level of 6.5% or above.	13% of women and 8% of men age 15 and older have an adjusted HbA1c level of 6.5% or above.
		27% of women overweight and 41% obese.
	27% of women overweight and 41% obese.	20% of men overweight and 11% obese
	20% of men overweight and 11% obese	
9. Drug therapy to prevent heart attacks and strokes	Not available. Research to be carried out	At least 50% of eligible people.
10. Essential NCD medicines and basic technologies to treat major NCDs	80% availability of essential NCD medicines	At least 80% of essential NCD medicines
11. Knowledge of hypertension and blood glucose status	51% of people with hypertension and 55% of people with raised blood glucose	90% of people know their status
12. Intervention provided for raised blood pressure and blood glucose	22% of people with hypertension and 38% of people with raised blood glucose	60% of people with hypertension and raised blood pressure provided with interventions.
13. User's blood pressure and blood glucose levels controlled	9% of people with hypertension and 19% of people with raised blood glucose	50% of people with hypertension and raised blood pressure controlled.
14. Mental health screening.	To be determined through research	
15. National Cancer Strategic Framework	National Cancer Strategic Framework 2017-2022	Full implementation of the Framework

Table 7 South African Baselines and Targets to be achieved by 2025

Chapter 6 COSTING AND MODELLING OF PRIMARY CARE MANAGEMENT AND CONTROL OF HYPERTENSION, RAISED BLOOD GLUCOSE AND HIGH CHOLESTEROL.

Main objectives to be undertaken to meet the set targets, by the 3 main goals of this strategic Plan.

I)**ACCELERATE IMPLEMENTATION OF EVIDENCE-BASED PREVENTION/PROMOTION OF NCDS**:

This Strategic Plan focusses on the five major risk factors for NCDs through a multisectoral approach. These risk factors are diet and the food environment, tobacco, alcohol abuse and physical inactivity. In addition, prevention of NCDs requires screening of NCDs to detect problems as early as possible, vaccinations (HPV) and comprehensive approaches such as healthy cities. The strategies that will be employed to do this are:-

i. Adopt and implement a multi-sectoral approach to the promotion of health and prevention of NCDs;
ii. Integrate promotion of health and prevention of NCDs into relevant DoH and NHI policy and implementation Plans;
iii. Screen and detect NCDs as early as possible;
iv. Implement HPV vaccinations annually;
v. Promote exclusive breastfeeding for the first six months of life and introduction of appropriate complementary feeding after six months with continued breastfeeding up to two years and beyond;
vi. Promote health amongst children and youth including interventions to prevent and decrease overweight and obesity;
vii. Develop and adopt a healthy cities approach;
viii. Reduce harmful use of alcohol through legislative and fiscal interventions;
ix. Increase physical activity, especially amongst children and youth;
x. Decrease intake of salt;
xi. Decrease population sugar intake through legislative and social behaviour change measures
xii. Decrease tobacco use through legislative and social behaviour change measures;
xiii. Decrease population blood pressure through prevention and promotion;
xiv. Decrease diabetes and obesity through prevention and promotion mechanisms
xv. Increase screening for mental health conditions, in persons with existing NCDs and vice versa;
xvi. Introduce innovative technologies, including use of social media, to promote health and prevent NCDS

II) **ACCELERATE IMPLEMENTATION OF EVIDENCE BASED MANAGEMENT AND CONTROL AND MANAGEMENT OF NCDS FOR ALL.**

xvii. Ensure that NCDs are adequately included in DoH plans for NHI and for:-
- xvii.1.1. infrastructure development,
- xvii.1.2. medicines and equipment supply,
- xvii.1.3. human resources,
- xvii.1.4. laboratory support
- xvii.1.5. financing.
- xvii.1.6. social mobilization

xviii. Strengthen the implementation of the Integrated Clinical Services Model so that all chronic conditions, both communicable and non-communicable, are treated in an integrated and equal manner in all primary health care facilities.

xix. Develop age appropriate guidelines for priority NCDs where these do not exist and update policy/guidelines when current ones expire;

xx. Strengthen health service delivery at all levels for persons with raised blood pressure and cardiovascular disease and specifically increase the extent and quality of the management and control of hypertension in primary care;

xxi. Strengthen service delivery for persons with diabetes at all levels of the health system and specifically increase the extent and quality of the management and control of diabetes in primary care, together with referral where required;

xxii. Prevent heart attacks and stroke through guidelines with respect to medication and counselling;

xxiii. Ensure availability of medicines on the EDL and equipment required to manage NCDs;

xxiv. Support the implementation of the National Cancer Strategic Framework 2017-2020[18];

xxv. Introduce evidence based innovations and technologies to improve management and control of NCDs.

[18] Many of the objectives of this Plan have not yet been realized and therefore the time frames will be adjusted and aligned with this Plan.

III)**ACCELERATE IMPLEMENTATION OF SURVEILLANCE, MONITORING, EVALUATION AND RESEARCH**

xxvi. Ensure accurate NCD mortality information.

xxvii. Ensure that routine NCD data is collected within primary health services that reflects (at least) the numbers of people receiving NCD interventions, for which conditions, levels of control and numbers of people not returning for treatment

xxviii. Ensure that routine NCD data is collected within hospital services.

xxix. Standardise collection of alcohol consumption data and conduct research on prevention of alcohol harm.

xxx. Monitor physical activity and conduct research to decrease physical inactivity.

xxxi. Monitor salt intake and conduct research to lower intake.

xxxii. Monitor sugar intake and conduct research to lower intake.

xxxiii. Monitor tobacco use and conduct research to lower use.

xxxiv. Monitor hypertension, diagnosis and control and research more effective interventions.

xxxv. Monitor diabetes levels, diagnosis and control as well as obesity and research more effective interventions

xxxvi. Prevent heart attacks and strokes through research

xxxvii. Ensure availability of basic technology and medicines through monitoring and research

xxxviii. Undertake technological innovations in e-health and m-health, including the use of social media to prevent NCDs and improve management and control.

ACCELERATE IMPLEMENTATION OF EVIDENCE-BASED PREVENTION/PROMOTION OF NCDS

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
i)Adopt and implement a multi-sectoral approach to the promotion of health and prevention of NCDs.	1)A 25% relative reduction in the overall mortality from the major NCDs Behavioural risk factors 2, 3 and 5 of WHO targets.	Selected government departments have specific plans aimed at reducing NCDs and/or evidence that health outcomes have been considered and included in their policies and Plans. Plans implemented by Departments	Government departments to consider the health implications of their policies and plans and adapt them accordingly to promote better health. DoH to engage relevant sectors on evidence based and effective mechanisms to reduce NCDs and promote national development. Relevant government departments to have plans for their sector to reduce NCDs. Relevant departments implement these plans as per activities below.	No multi-sectoral plans in place.	5 government departments have plans for the reduction of NCDs	10 government departments have plans for the reduction of NCDs. 5 government departments fully implementing their plan	Agriculture, Land Reform and Rural Development; Basic Education; Communications; Co-operative governance and Traditional Affairs; Environment, Forestry and Fisheries; Finance/National Treasury; Higher Education, Science and Technology; Social Development; Sport and Sport, Arts and Culture Recreation; Trade and Industry. NCD section Health Promotion.	Departmental plans. Evidence within policies and Plans that health implications have been considered and included. Reports on implementation from sectors.
ii)Integrate promotion of	1)A 25% relative reduction in the	A coherent strategy on mechanisms for	Consult relevant stakeholders.	NIL	Prevention and promotion included as		NCDs NHI Health promotion	NHI implementation documentation

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
health and prevention of NCDs into relevant DoH and NHI policy and implementation Plans	overall mortality from the major NCDs 1)A 25% relative reduction in the	inclusion of prevention and promotion into DoH and NHI plans. Promotion and prevention of NCDs included in DOH and NHI implementation plans, including dedicated funding for this.	Develop a strategy on mechanisms for inclusion of prevention and promotion into DoH and NHI plans. Include *age appropriate, evidence based and cost effective* NCD promotion and prevention as part of NHI implementation. Ensure NHI funding includes prevention/promotion.		part of the purchasing responsibilities A strategic plan on mechanisms for inclusion of prevention and promotion into DoH and NHI plans.		Provincial Departments of Health	
		Social and behaviour change focussed information and education campaigns on NCDs	Identify the cost-effective and evidence based promotion/prevention interventions required in each development stage. Implement campaigns .	Information disseminated around NCDs but not usually evidence based.	3 thematic campaigns run	6 campaigns run	GCIS SANCDA NCDs Health promotion Communications Nutrition	Campaigns materials.

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
	overall mortality from the major NCDs						Provincial Departments of Health District Health Services	
		Prevention and promotion of NCDs included in reproductive and maternal and child health services	Train relevant health workers to inform pregnant women about the harms of smoking and drinking in pregnancy as well as the importance of a healthy diet and exercise. Train relevant health workers to identify depression and other mental health problems and provide basic counselling or refer. Encourage breast feeding to District Health services Provincial health services prevent later NCDs.	Usually not done or done superficially	Health practitioners in 20 districts trained	Health practitioners in all districts trained	NCDs Women's health Child health HRD Nutrition Health promotion. District Health services Provincial health services	Training curriculum Numbers trained

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			Assist mothers to introduce children to foods that will prevent rather than cause NCDs.					
		Promotion of healthy lifestyles included in the curricula and manuals for training of Community Health workers. Community health workers and other health practitioners at primary care level trained in healthy lifestyle promotion	Include relevant materials in the curricula and manuals for training of Community Health workers. Healthy life style education and brief behavioural change counselling to be given as part of routine visits to households.		Healthy lifestyle education included in the curricula and manuals for training of Community Health workers. CHW in 20 district trained	CHW in all districts trained	Health Promotion NCDs HRD Provincial Departments of Health District Health Services	Training curriculum. Survey
iii)Screen and detect NCDs as early as possible		Percentage of people screened for:- - high blood pressure,	Put SOP in place for screening of these 4 conditions	Draft SOP for hypertension, cholesterol and blood glucose	SOP adopted and implemented in all provinces	90% of people 15 and above screened for	NCDs Women's Health	DHIS

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
		- blood glucose - high cholesterol - cervical cancer			with baselines and targets.	hypertension and diabetes.	Provincial Departments of Health District Health Services	
iv)Implement HPV vaccinations annually		Numbers vaccinated for dose one and dose two HPV vaccine	Annual vaccination campaign continued				Child health	
v)Promote exclusive breastfeeding for the first six months of life and introduction of appropriate complementary feeding after six months with continued breastfeeding up to two years and beyond							Nutrition MWCH Provincial Departments of Health District Health Services	

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
vi)Promote health amongst children and youth, including interventions to prevent weight gain among school learners		Programmes to prevent NCDs and promote mental health included in school curricula. SGBs and DOE engaged in policy change around healthy food and drink. Healthy lunches, sugary drink sales banned	Design age appropriate programmes and materials for behaviour change with regard to all the major risk factors for implementation in schools and ECD centres. Department of Education to ensure that only healthy foods are sold in schools. Implement programmes	Some information and education, but haphazard	Evidence based programmes implemented in 20% of schools.	Evidence based programmes implemented in 50% of schools.	Basic Education Social Development NCDs Health Promotion	Reports from schools on implementation.
		Programmes to prevent NCDs and promote mental health included in HEAIDS programmes in institutions of higher learning.	Design age appropriate programmes and materials for behaviour change with regard to all the major risk factors in institutions of higher learning. Implement programmes	Nil	Programmes implemented in 5 institutions of higher learning	Programmes implemented in 10 institutions of higher learning	Higher Education, Science and Technology, Sport, NCDs Health Promotion Provincial Departments of Health	Report of each implementation

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
							District Health Services	
vii)Develop and adopt a healthy cities approach		At least 3 cities undertaking a "healthy cities" agenda	Departments of Co-operative governance and Traditional Affairs, Environment, Social Development together with the Department of Health assisting at least 3 municipalities/metros to implement the WHO healthy cities concept.	Nil	Programme implemented in 1 city	Programme implemented in 3 cities	COGTA Sport, Arts and Culture. Environment, Forestry and Fisheries Social Development NCDs Health promotion Provincial Departments of Health District Health Services	Implementation report from each city.
viii)Reduce harmful use of alcohol	2)At least 10% reduction in harmful use of alcohol.	Per capita intake of alcohol. Harmful use of alcohol	Department of Trade and Industry to ban all alcohol advertising and marketing to children and youth and restrict advertising marketing to adults.	Draft Bill	Bill considered by Parliament		DTI Mental health and Substance Abuse.	Legislation passed by parliament. Alcohol sales.

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			Department of Trade and Industry to increase legal drinking age. Department of Trade and Industry to decrease access to alcohol in terms of place and time. Review by Treasury to increase taxes on alcohol/consider minimum pricing for alcohol..					
ix)Increase in physical activity	3)30% relative reduction in physical inactivity		Department of Sport, Arts and Culture to increase access to safe exercise spaces/instruments that provide facilities for different development stages.				DEPT of Sport, Arts and Culture Social development DBE DHE	Policies of other government departments. Surveys

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			Department of Sport, Arts and Culture to increase sporting options for girls and women. Department of Basic Education to provide sporting activities in all schools and include this as part of the curriculum. Departments of Basic and Higher Education to provide age appropriate information to learners/students of the need for physical activity. Department of Transport to facilitate easy access for the use of healthy transportation such as bicycles.				SALGA Health promotion Provincial Departments of Health District Health Services	

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			Provide community based education, motivational and environmental programmes aimed at supporting behaviour change and physical activity. Encourage healthy aging					
x)Decrease intake of salt.	4) 30% relative mean reduction in population intake of salt.	Per capita intake of salt.	Run a campaign on the health harms from a high intake of salt. Warning labels on salt content in food. Reduce intake of salt in hospital foods Dept of Education to reduce salt content in food at schools. Work with retail outlets that serve food to reduce salt intake.	7g per day		5g per day	Food Control Health promotion Nutrition NCDs Food industry Provincial Departments of Health District Health Services	SAGE survey and other research

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
xi) Decrease population sugar intake through legislative and social behaviour change measures	15% relative mean reduction in population intake of salt.	Per capita intake of sugar	Treasury to review increase on the levy on Sugar Sweetened beverages and to increase the range of beverages that are included (eg fruit juice) DOE/SGBs to stop the sale of high sugar products in school tuck shops and around schools	36 Kg per person annually	34 Kg per person annually	30 Kg per person annually	Health promotion NCDs Treasury DBE	Sugar sales figures in SA

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
xii)Decrease tobacco use through legislative and social change measures.	5)30% relative reduction in prevalence of current tobacco use in persons of 15+ years.	Numbers of people 15 and over using tobacco.	Support parliament to pass the draft Tobacco Act. Provinces to increase tobacco cessation programmes. Treasury to review taxes on Tobacco products with view to introducing increases.	37% of men and 8% of women		26% of men and 6% of women using tobacco	Health promotion Communications NCDs Provincial Departments of Health District Health Services	SADHS or other research/surveys
xiii)Decrease population blood pressure through prevention and promotion.	6)A 25% relative reduction in raised blood pressure or contain the prevalence of raised blood pressure.	Raised blood pressure in population	As per above primary and secondary prevention and promotive intervention.	46% women 44% men	41% women 40% men* [1]	35% women 33% men*	NCDs Health promotion Communications Provincial Departments of Health District Health Services	SADHS or other research/surveys
		Numbers screened for hypertension	Facilitate adoption of SOP for screening of blood pressure.	Draft SOP	15% increase in numbers screened	30% increase in numbers screened	NCDs Health promotion District health services	SOP DHIS

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			SOP utilised in all provinces.				Ideal clinic Provincial Departments of Health District Health Services	
xiv)Decrease diabetes and obesity through prevention and promotion mechanisms	7)Halt the raise of diabetes and obesity.	Numbers in population with diabetes. Numbers of people who are obese.	As per above primary and secondary prevention and promotive intervention. Implement Obesity policy. Department of Agriculture, Land reform and Rural development to encourage/incentivise the production of healthy fruit and vegetables. Department of Agriculture, Land reform and Rural development, to assist	Obesity 41% women, 11% men Diabetes 13% percent of women and 8% of men	Obesity 41% women, 11% men Diabetes 13% percent of women and 8% of men*	Obesity 41% women, 11% men Diabetes 13% percent of women and 8% of men*	NCDs Health promotion Communications Nutrition Provincial Departments of Health District Health Services Department of Basic Education Department of Agriculture, Land reform and Rural development Department of Trade and Industry	SADHS or other research/surveys

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			with food gardens in urban and rural areas for the production of healthy fruit and vegetables. Department of Trade and Industry to develop guidelines for making healthy foods more affordable and accessible to poorer people in both urban and rural areas.					
		Numbers screened for diabetes	Facilitate adoption of SOP for screening of diabetes. SOP utilised in all provinces.				NCDs Health promotion District health services Ideal clinic Provincial Departments of Health District Health Services	SOP DHIS
xv)Increase screening for mental health	Mental health screening.	Numbers of people with chronic health	Introduce a mental health screening protocol into	NIL	20 Districts implementing mutual	All Districts implementing mutual	NCDs Mental Health	

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
conditions in persons with existing NCDs and vice versa;		conditions screened for mental health conditions including depression and anxiety disorders. Numbers of people with mental health conditions screened for NCDs	management of chronic health conditions. Ensure those screened positive are referred for diagnosis and management if needed. Apply NCD Screening SOP to all known mental health care users. Ensure those screened positive are referred for diagnosis and management if needed.		screening for mental health and other NCDs	screening for mental health and other NCDs	District health services Ideal clinic Provincial Departments of Health District Health Services	
xvi)Introduce innovative technologies, including use of social media, to promote health and prevent NCDS	A 25% relative reduction in the overall mortality from the major NCDs and all of the above promotion/prevention targets	Innovative technologies introduced, including use of m-health and social media.	Draw on local research and innovation to determine evidence based innovative technologies to prevent NCDs. Review international studies to determine evidence based	NIL	At least one new innovative technology introduced to prevent NCDs	At least one new innovative technology introduced to prevent NCDs	At least 3 new innovative technologies introduced to prevent NCDs	Record of implementation of innovative technology.

Objective	Target to which this objective will contribute.[1]	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO/ section in DOH.	Means of verification
			innovative technologies to prevent NCDs. Introduce innovative technologies					

2)ACCELERATE IMPLEMENTATION OF EVIDENCE BASED MANAGEMENT AND CONTROL AND MANAGEMENT OF NCDS FOR ALL.

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
xvii)Ensure that NCDs are adequately included in NHI and NDOH as well as PDOH plans for:- • NHI package of care; • Infrastructure • Medicines and equipment supply • Human resources • Financing.	1)A 25% relative reduction in the overall mortality from the major NCDs	NCDs are adequately included in NHI package of care. NCDs included and prioritised in plans for infrastructure, medicines and equipment supply, human resources.	Work together with partners, including NHI committees where appropriate to prioritise NCDs. To include in NCDs in NHI packages of care in infrastructure, medicines and equipment supply, human resources, PMBs.. Work towards having persons with NCDS in clinic committees and hospital boards. Train health workers in a more person centred approach to care.		NCDs included in NHI packages of care and infrastructure plans.		NCDs NHI Provincial Departments of Health District Health Services Provincial Departments of Health District Health Services	NHI documents Minutes of meetings

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
			Work with relevant sections towards an appointments system for chronic diseases and users being able to see the same health practitioner. Electronic records with unique user identifiers					
xviii) Strengthen the implementation of the Integrated Clinical Services Model so that all chronic conditions, both communicable and non-communicable, are treated in an integrated and equal	1)A 25% relative reduction in the overall mortality from the major NCDs	Percentage of primary health facilities fully implementing the ICSM	Strengthen support to clinics and community health centres to implement the ICSM as part of reaching the goals of the Ideal Clinic.	As of 2018, 97.2% percent of clinics had reorganized with designated consulting areas for management of chronic conditions and had	All clinics and community health centres to be fully compliant with all elements of the ICSM.	All clinics and community health centres to be fully compliant with all elements of the ICSM.	Ideal Clinic District Health Services NCDs Provincial Departments of Health District Health Services	Ideal Clinic Compliance Report

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
manner in all primary health care facilities.				patient appointment systems for people with chronic conditions.				
xix)Develop age appropriate guidelines for priority NCDs where these do not exist and update policy/guidelines when current ones expire	1)A 25% relative reduction in the overall mortality from the major NCDs	Guidelines for child related NCDs including rheumatic heart disease, asthma and diabetes 1. Plan for the prevention and management of stroke. Revised Mental health Policy Framework after 2020.	Develop, together with partners, guidelines for child related NCDs including rheumatic heart disease, asthma and diabetes 1 Develop, together with partners, a plan for the prevention and management of stroke. Revise Mental health Policy Framework after it expires in 2020	NIL Mental health Policy Framework	National Plan and 9 provincial implementation Plans New Policy and Strategic Plan	Implementation of plan	NCD Child health Mental health NCDs Provincial Departments Districts Mental Health	Guidelines for child related NCDs including rheumatic heart disease, asthma and diabetes 1 National Plan and 9 provincial Plans. Mental Health plan

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
		Hypertension Guideline for primary health care	Develop Hypertension Guideline for primary health care	Old guideline		New guideline on Hypertension	NCDs	New guideline on hypertension in primary care
xx)Strengthen health service delivery for persons with raised blood pressure and specifically increase the extent and quality of the management and control of hypertension in primary care.	**6)A 25% relative reduction in raised blood pressure or contain the prevalence of raised blood pressure**	Increase in numbers of people in treatment. Increase in percentage of people with controlled hypertension.	Guideline for treatment of hypertension updated. Document on care pathways Introduce brief behavioural change management to enhance adherence. .	Among people with hypertension 80% of women and 87% of men have uncontrolled hypertension	Among people with hypertension 70% of women and men have uncontrolled hypertension	Among people with hypertension 50% of women and men have uncontrolled hypertension	NCDs DHS Ideal Clinic Affordable Medicines Provincial Departments of health District health services	DHIS Sentinel survey
xxi)Strengthen service delivery for persons with diabetes and specifically increase the extent and quality of the management	**7)Halt the raise of diabetes and obesity**	Increase in numbers of people with diabetes in treatment.	Guideline for treatment of diabetes updated.	Among those who have never been diagnosed with	Among those who have never been diagnosed with diabetes, 8% of women and 5%	Among those who have never been diagnosed with diabetes, 6% of women and 4%	NCDs DHS Health research Ideal Clinic	SADHS and other research/surveys

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
and control of diabetes in primary care, together with referral where required. .		Increase in percentage of people with controlled diabetes	SOP for up and down referrals for diabetes developed. Introduce brief behavioural change management to enhance adherence. Work with provinces to increase and improve diabetes management and control	diabetes, 10% of women and 6% of men are diabetic; 85% of people on diabetes medication are not controlled.	of men are diabetic; 70% of people on diabetes medication are not controlled	of men are diabetic; 50% of people on diabetes medication are not controlled	Provincial Departments of Health District Health Services	
xxii)Prevent heart attacks and stroke.	**8)At least 50% of eligible people receive drug therapy and counselling (including**	Numbers of eligible people needing drug therapy and counselling receiving it.	Draw up SOP on who should receive drug therapy and counselling based on cost-effectiveness and actual costs.		20% of those eligible to receive drug therapy and counselling are receiving this	50% of those eligible to receive drug therapy and counselling are receiving this	NCDs Affordable Medicines Provincial Departments of Health District Health Services	DHIS (once included)

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
	glycaemic control) to prevent heart attacks and stokes		Introduce phased use of drug therapy and counselling starting with those that will get most benefit.					
xxiii)Ensure availability of EDL and equipment required to manage NCDs.	**9)A 80% availability of the affordable basic technology and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.**	Availability of basic technology and essential medicines	Review EDL for all NCDs at all levels of health care. Review basic technologies required for NCDs at all levels of health care. Work with provinces to ensure budget allocations adequately cover drugs and equipment on these lists.	A 80% availability of the affordable basic technology and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.	At least 80% availability of the affordable basic technology and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.	At least 80% availability of the affordable basic technology and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.	NCDs Affordable medicines Ideal clinic Provincial Departments of Health District Health Services	

Objective	Target to which this objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible government Department/NGO / section in DOH.	Means of verification
			Expand the numbers of people with NCDs receiving medicines through the CCMDD					
xxiv)Support the implementation of the National Cancer Strategic Framework 2017-2020	A 25% relative reduction in the overall mortality from the major NCDs	Targets set in the National Cancer Strategic Framework 2017-2020	Support the implementation of the implementation of the National Cancer Strategic Framework 2017-2020	Targets set in the National Cancer Strategic Framework 2017-2020	As per targets set in the National Cancer Strategic Framework 2017-2020	As per targets set in the National Cancer Strategic Framework 2017-2020	As per responsible actors set out in the National Cancer Strategic Framework 2017-2020	As per targets set in the National Cancer Strategic Framework 2017-2020
xxv)Introduce evidence based innovations and technologies to improve management and control of NCDs.	All of above	New technology innovations introduced that improve the management and control of NCDs	Conduct review of best practice in NCD management and control innovations, including point of care testing. Introduce new innovations		At least one new technology innovation to improve management and control of NCDs introduced	At least two new technologies innovation to improve management and control of NCDs introduced	NCDs Affordable medicines Ideal clinic Provincial Departments of Health District Health Services	

3) ACCELERATE IMPLEMENTATION OF SURVEILLANCE, MONITORING, EVALUATION AND RESEARCH

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
xxvi)Ensure accurate NCD mortality information	**1)A 25% relative reduction in the overall mortality from the major NCDs**	Accurate mortality statistics for NCDs	DoH to work with Stats SA and MRC to improve mortality information. Determine a formula for measuring premature mortality taking population increases and unknown causes of death into account.	Mortality statistics available but not accurate enough	Agreed measure of NCD premature mortality	Accurate statistics of premature NCD mortality	Stats SA MRC Research Unit	Mortality figures agreed by all main role-players including MRC and Stats SA.
xxii)Ensure that routine NCD data is collected within primary health services that reflects (at least):-	**1)A 25% relative reduction in the overall mortality**	DHIS/NIDS includes data on the numbers of people receiving NCD interventions, for which conditions, levels of control,	Develop, with provinces, an agreed data set for collecting NCD information	NIL	Data collected as part of NIDS/DHIS	Data collected as part of NIDS/DHIS	NCDs Monitoring and evaluation. Provincial Health Departments	Data sets available.

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
• the numbers of people receiving NCD interventions • for which conditions • levels of control • numbers of people not returning for treatment	**from the major NCDs**	people not returning for treatment.	Ensure that the NIDS/DHIS includes the routine collection of data on the numbers of people receiving NCD interventions, for which conditions, levels of control, people not returning for treatment. Utilize data collected for planning of health services				Districts Health Services	
xxiii)Ensure that routine NCD data is collected within hospital services.	**1)A 25% relative reduction in the overall mortality from the major NCDs**	Relevant NCD data Number of amputations	Develop, with provinces, an agreed data set for collecting NCD information.	NIL	Relevant NCD hospital data collected. Data on amputations collected (as a proxy for lack of	Relevant NCD hospital data collected. Data on amputations collected (as a proxy for lack	NCDs Monitoring and evaluation. Provincial Health Departments Districts Health Services	Hospital level NIDS

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
			Relevant hospital data collected. Data on amputations collected (as a proxy for lack of diabetes control).		diabetes control).	of diabetes control).		
xxix)Standardise collection of consumption data and conduct research on prevention of alcohol harm.	**2)At least 10% reduction in harmful use of alcohol.**	Consumption of alcohol. Levels of risky drinking. Improved SA data on effective preventive interventions	Determine which data source(s) will be used to measure alcohol consumption and use this to measure annual per capita and harmful drinking consumption. Monitor and evaluate impacts of policy interventions as they are introduced to assess impact.	Lack of clarity regarding information on consumption and alcohol related harm. No reliable South African information on best buys for prevention of alcohol related harm.	Agreed measure for measuring consumption and levels of risky drinking.	Accurate statistics available on consumption and levels of risky drinking available.	SADHS MRC HSRC Higher Education, Science and Technology	Accurate consumption and harm levels established. Improved data on effective prevention of alcohol related harm.

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
			Encourage additional research to reduce alcohol related harm with a special emphasis on children.					
xxx)Monitor physical activity and conduct research to decrease physical inactivity.	**3)30% relative reduction in physical inactivity**	Research and monitoring projects focusing on physical activity	Encourage and facilitate research to determine levels of physical activity in different age groups and by gender. Encourage research on the most cost-effective and culturally appropriate mechanisms to increase physical activity.	Lack of accurate data on physical activity. Lack of data on the most cost-effective interventions for reducing physical inactivity or evaluation of interventions.		Accurate data on physical activity in SA. Data on effective interventions available.	Health promotion Research Unit MRC Universities Higher Education, Science and Technology	Accurate data available on extent of physical activity. Data available on best interventions to increase physical activity.
xxxi)Monitor salt intake and conduct	**4) 30% relative mean**	Research and monitoring projects	Encourage and facilitate	No information	Accurate data available	Accurate data available	NCDs Research Unit	Research reports

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
research to lower intake.	**reduction in population intake of salt.**	focusing on salt reduction	research to determine the intake of salt at different ages and gender. Conduct research to establish whether to increase the numbers of items on the R214 regulations and/or to reduce the salt levels in the current items. Conduct research on impacts of salt in different demographic and genetic groups. Conduct research on the salt content of foods	available – though some research in process. Nil Inadequate information		Research completed Research completed	Research agencies Universities	

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
xxxii)Monitor sugar intake and conduct research to lower intake.	Halt the raise of diabetes and obesity	Research and monitoring projects focusing on sugar reduction	Encourage and facilitate research to determine the intake of sugar at different ages and gender. Conduct research to establish the impacts of the Health Promotion Levy on SSBs. Conduct research on impacts of sugar in different demographic and genetic groups.	Per-capita annual consumption of sugar of 36 kg	Per-capita annual consumption of sugar of 34 kg	Per-capita annual consumption of sugar of 30 kg	NCDs Health promotion Research Unit MRC University research units	
xxxiii)Monitor tobacco use and conduct research to lower use.	**5)30% relative reduction in prevalence of current tobacco use**	Accurate tobacco consumption data. Research results on impacts of illegal sales of tobacco.	Encourage research to determine tobacco intake by age and gender.	Data from SADHS.		Accurate tobacco consumption data.	Health promotion Research MRC Universities	Surveillance and research reports

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
	in persons of 15+ years.	Research impacts of changed legislation (once it has been adopted and implemented)	Encourage research on the impacts of illegal tobacco sales. Encourage research on the impacts of changed legislation.	Minimal research available. Nil	Research results on impacts of illegal sales of tobacco.	Research impacts of changed legislation (once it has been adopted and implemented)		
xxxiv)Monitor hypertension, diagnosis and control and research more effective interventions.	**6)A 25% relative reduction in raised blood pressure or contain the prevalence of raised blood pressure**	Extent of hypertension in the country known and monitored. Cost effective interventions researched and publicised.	Monitor rates of hypertension Encourage research into the most cost effective mechanisms for prevention as well as for the management and control and rehabilitation at different levels of health care of persons with	SADHS results	Results of research into the most cost effective mechanisms for prevention as well as for management and control and rehabilitation at different	Accurate statistics available	Research Unit NCDs Health promotion DHIS	Research and surveillance reports

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
			raised blood pressure.		levels of health care of persons with raised blood			
xxxv)Monitor diabetes levels, diagnosis and control as well as obesity and research more effective interventions.	**7)Halt the raise of diabetes and obesity**	Extent of diabetes and obesity in the country known and monitored. Cost effective interventions researched and publicised.	Monitor rates of diabetes and obesity Establish the most cost effective mechanisms for screening of blood glucose. Encourage research into the most cost effective mechanisms for prevention as well as management, control and rehabilitation at different levels of health care.	SADHS results 13% women, 8% men Obesity 41% women, 11% men	Research results of sentinel sites on control of diabetes.	Research results on the most cost effective mechanisms for prevention as well as management and control and rehabilitation at different levels of health care.	Research unit NCDs DHIS Higher Education, Science and Technology	Research reports

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
xxxvi)Prevent heart attacks and strokes through research	**8)At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and stokes**	Measure for numbers receiving therapy and counselling established.	Measure for numbers receiving therapy and counselling included in information system and measured regularly				Research DHIS	
xxxvii)Ensure availability of basic technology and medicines through monitoring and research	**9)A 80% availability of the affordable basic technology and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.**	System for measuring technology and drug availability for NCDs in place.	Ensure that the availability and accuracy (of technologies) are regularly monitored. Encourage cost-effectiveness analysis before any technology or medicine is included and ongoing research must ensure that these are				Affordable Medicines NCDs PHC Hospital services	

Objective	Target to which this Objective will contribute	Indicator	Activities	Baseline	Target for 2022	Target for 2025	Responsible section in DOH/partner	Means of verification
			flexible based on evidence.					
xxxviii)Undertake technological innovations in e-health and m-health, including the use of social media to prevent NCDs and improve management and control.	**A 25% relative reduction in the overall mortality from the major NCDs**	Research results that include innovative technologies using e-health that improve prevention and management/control of NCDs	DOH to encourage research agencies to conduct research to develop innovative technologies. Research institutions to conduct relevant research and feed information to DOH.	Relevant innovative research either not being done or not being filtering to the DOH	Results of at least 2 research projects involving e-health completed.	Results of at least 4 research projects involving e-health completed.	Research NCDs Health promotion	Research results.

The Tobacco Products Control Act, Act 83 of 1993 as amended by Act 12 of 1999

- Bans advertising and sponsorship
- Bans smoking in public places and work places except under specific conditions
- Restrictions on vending machines
- Provides for maximum yields of constituents
- Bans free distribution and reward
- Provides for fines

Regulations, 2 December 1994.pdf

- Prescribes health warnings on packs
- Packaging and Labeling requirement

Regulations, 29 September 2000.pdf

- Tar and nicotine levels
- Point of Sale
- Sponsorship and advertising
- Smoking in public places

Tobacco Products Control Amendment Act 23 of 2007.pdf.

- New and amended definitions
- Smoking in public places
- Standards for manufacturing and export of tobacco products
- Minister of Health's powers to regulate
- Tobacco product exemptions
- Offences and penalties
- **Tobacco Product Control Amendment Act of 2008.pdf**
  Age of Sale increased from 16 to 18 years old
- Ban on toys and confectionery resembling tobacco products
- Ban on tobacco product sales at health and educational establishments
- Ban on free distribution and reward
- Further restrictions relating to vending machines
- Minister of Health to further regulate:
    - Point of Sale signage and display
    - Packaging and labelling of tobacco products
    - Health warnings

Regulations: Reduced Ignition Propensity (RIP), 16 May 2011.pdf

- Definitions
- Testing standards and requirements
- Certification – a period of 18 months has been given from the date of publication for tobacco industry manufacturers and importers to comply

Packaging and marking requirements

Appendix II

Person centeredness and integrated care

The WHO defines people-centred care as an approach to care that consciously adopts individuals', carers', families' and communities' perspectives as participants in, and beneficiaries of, trusted health systems that are organized around the comprehensive needs of people rather than individual diseases, and respects social preferences[cii]. People-centred care also requires that patients have the education and support they need to make decisions and participate in their own care and that carers are able to attain maximal function within a supportive working environment. People-centred care is broader than patient and person-centred care, encompassing not only clinical encounters, but also including attention to the health of people in their communities and their crucial role in shaping health policy and health services.

Making sure that people are involved in and central to their care is now recognised as a key component of developing high quality healthcare and moving away from a paternalistic model where professionals 'do things to' people. People using health and social services are regarded as equal partners in planning, developing and monitoring care to make sure it meets their needs. This means putting people and their families at the centre of decisions and seeing them as experts, working alongside professionals to get the best outcome. Being compassionate and thinking about things from the person's point of view and being respectful are important. People are currently expected to fit in with the routines and practices that health services feel were most appropriate, but in this approach, services need to change to be more flexible to meet people's needs in a manner that is best for them. This partnership working can occur on a one-to-one basis, where individual people take part in decisions about their health and care, or on a collective group basis whereby the public or patient groups are involved in decisions about the design and delivery of services. There are many different aspects of person-centred care, including • respecting people's values and putting people at the centre of care • taking into account people's preferences and expressed needs • coordinating and integrating care • working together to make sure

there is good communication, information and education • making sure people are physically comfortable and safe • emotional support • involving family and friends • making sure there is continuity between and within services • and making sure people have access to appropriate care when they need it.

Using this approach people experience better care and help and they feel more satisfied, people are encouraged to lead a healthier lifestyle, such as exercising or eating healthily; to be more involved in decisions about their care so they get services and support that are appropriate for their needs. The shift to PCC enhances concordance between health care providers and patients' adherence to treatment plans[ciiiciv], improved health outcomes and increased patients' satisfaction with healthcare services[cv]. The adoption of PCC practices in primary health care has resulted in significant benefits for patients, as patients can better manage their health when they are informed and supported. Research has shown that a PCC approach significantly reduced patients need to access speciality care, hospitalisations and required fewer pathology investigations. Similarly, the adoption of a PCC approach in the health management of patients with chronic hypertension led to an increase in medication adherence. Other benefits related to PCC, including improving patients' self-perceptions, reducing stress and increasing empowerment, have also been reported in diabetes management[cvi].

A person centred approach also means understanding cultural perspectives as well as social and economic factors that impact the effectiveness of programmes (for example it is of little value to tell people to eat five fruit and vegetables every day if they do not have physical of financial access to attain them).

Figure 32 Person centred approach to health

A life course approach

The life-course approach focuses on how multiple determinants interact to affect health throughout life and across generations. Health is considered as a dynamic continuum rather than a series of isolated health states. The approach highlights the importance of transitions, linking each stage to the next, of defining protective risk factors, of prioritizing investment in health care and social determinants of health, and of gender equality and the promotion of human rights early in the life-course[cvii].

In their article on the Developmental Origins of Health and Disease: A Life-course Approach to the Prevention of Non-Communicable Diseases Baird et al state that “Given the very high worldwide prevalence of NCDs across a range of human pathology, it is clear that traditional approaches targeting those at most risk in older adulthood will not efficiently ameliorate this growing burden. It is thus essential to robustly identify determinants of NCDs across the entire life-course and, subsequently, appropriate interventions at every stage to reduce an individual's risk of developing these conditions. A life-course approach has the potential to

prevent NCDs, from before conception through fetal life, infancy, childhood, adolescence, adulthood and into older age"[cviii].

The life course concept recognizes the opportunity to prevent and control diseases at key stages of life from preconception through pregnancy, infancy, childhood and adolescence, through to adulthood. This does not follow the model of health where an individual is healthy until disease occurs. The trajectory is determined earlier in life, and evidence suggests that age related mortality and morbidity can be predicted in early life with factors such as maternal diet and body composition (before and during pregnancy), low childhood intelligence, adverse childhood experiences acting as antecedents of late-life disease. A life course perspective enables the identification of a high-risk phenotype and markers of risk early, supporting current efforts for primary prevention of NCDs by providing timely interventions in early life. Studies based on Developmental Origins of Health and Disease (DOHaD) have shown the transgenerational nature of NCD risk, and called for the need to attain optimum health in the preconception period. Multiple life-long health behaviours are established during adolescence making it an important stage for intervention.[cix]

According to the NCD Alliance, NCDs are increasingly apparent in young people and this has dramatic effects on their lives and on the societies in which they live. The omnibus resolution on NCDs adopted by UN Member States at the 66th World Healthy Assembly in 2013 recognises that children can die from treatable NCDs, including rheumatic heart disease, type 1 diabetes, asthma, and leukaemia. Addressing the prevention and treatment of NCDs early in the life-course accords with the right of the child to achieve the highest attainable standard of health, as enshrined in UN Convention on the Rights of the Child. Many unhealthy behaviours that underlie NCDs start during childhood and adolescence. They include the main modifiable NCD risk factors - physical inactivity, tobacco use and second-hand smoke exposure, unhealthy diets, and the harmful use of alcohol - strongly linked to morbidity, mortality, and disability in the short- and longer-term. For example the doubling, or in some cases tripling, of childhood obesity rates in many countries, threatens to reverse recent gains in child health as well as predisposing children and adolescents to unhealthy adult lives. In addition, children born to women with diabetes and cardiovascular diseases are predisposed to developing NCDs themselves, perpetuating the burden of disease across generations. For example, gestational diabetes mellitus, which affects more

than 20% of pregnancies in some populations, also predisposes the child to developing metabolic disorder later in life.

With the trajectory of NCD risk starting early in the life-course, early intervention will have the greatest impact, especially given that interventions targeted only at modifying behaviours in adulthood have had variable and disappointing results. In addition to actions on prevention, access to early diagnosis, treatment and care of children and adolescents with NCDs is also vital and has a direct impact on the reduction of preventable death and disability. Simple, cost-effective public health measures including provision of sustainable newborn screening and education programs can have a major positive impact on health outcomes. Other early interventions improve long-term outcomes, for example early support for communication/ health literacy and behavioural initiatives, along with parent education, can be critical for improving the health and developmental outcomes of children[cx].

The life-course approach will also identify the Management and Control needs of people at all ages. Older persons for example have special management needs related to their mobility that need to be addressed.

A cost-effectiveness approach

"Maximizing the impact of every dollar spent is crucial if we are to tackle one of the biggest health challenges of our time: NCDs" (WHO 2018)[cxi]. This is important in every country, but particularly where health resources are in short supply such as in South Africa where pressures on the public health system are impacting on access and quality of care. Return on Investment (ROI), encompasses the range of approaches that assess the value generated by an investment, compared to the resources put in. The WHO have calculated areas where countries can obtain the best return on investment and these are listed in Table 7. Not all of these actions are possible from within the Health Department/sector, however in areas that need to be implemented by other sectors, the Health Department/sector can assist with information and support to ensure that these best buys are implemented in the country. While the WHO have recommended 88 interventions based on cost, 16 are considered the most cost-effective and feasible for implementation. These are interventions where a WHO Choice

analysis found an average cost-effectiveness ratio of ≤ I$ 100 per DALY averted in low- and lower middle-income countries

Many of these interventions that fall outside the control of the Health sector, particularly those related to fiscal policies, have already been proven or projections of cost savings that can be made within the South African context[cxii].

WHO BEST BUYS FOR THE PREVENTION AND CONTROL OF NCDS[25,26]

REDUCE TOBACCO USE

1 Increase excise taxes and prices on tobacco products

2 Implement plain/standardized packaging and/or large graphic health warnings on all tobacco packages[27]

3 Enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship[28]

4 Eliminate exposure to second-hand tobacco smoke in all indoor workplaces, public places, public transport[29]

5 Implement effective mass media campaigns that educate the public about the harms of smoking/ tobacco use and second hand smoke[30]

REDUCE THE HARMFUL USE OF ALCOHOL

6 Increase excise taxes on alcoholic beverages[31]

7 Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media)[32]

8 Enact and enforce restrictions on the physical availability of retailed alcohol (via reduced hours of sale)[33]

REDUCE UNHEALTHY DIET

9 Reduce salt intake through the reformulation of food products to contain less salt and the setting of target levels for the amount of salt in foods and meals[34]

10 Reduce salt intake through the establishment of a supportive environment in public institutions such as hospitals, schools, workplaces and nursing homes, to enable lower sodium options to be provided

11 Reduce salt intake through a behaviour change communication and mass media campaign

12 Reduce salt intake through the implementation of front-of-pack labelling[35]

REDUCE PHYSICAL INACTIVITY

13 Implement community wide public education and awareness campaign for physical activity which includes a mass media campaign combined with other community based education, motivational and environmental programmes aimed at supporting behavioural change of physical activity levels

MANAGE CARDIOVASCULAR DISEASE AND DIABETES

14 Drug therapy (including glycaemic control for diabetes mellitus and control of hypertension using a total risk approach) and counselling to individuals who have had a heart attack or stroke and to persons with high risk (≥ 30%) or with moderate to high risk (≥ 20%) of a fatal and non-fatal cardiovascular event in the next 10 years

MANAGE CANCER

15 15) Vaccination against human papillomavirus (2 doses) of 9–13 year old girls

16 Prevention of cervical cancer by screening women aged 30–49, either through:

- Visual inspection with acetic acid linked with timely treatment of pre-cancerous lesions
- Pap smear (cervical cytology) every 3–5 years linked with timely treatment of pre-cancerous lesions
- Human papillomavirus test every 5 years linked with timely treatment of pre-cancerous lesions

Departments primarily responsible for implementing the best buys.

Health

Treasury

Communications

Police

Trade and Industry

Sport, Arts and Culture

Education

Figure 33. WHO best buys for NCDs with government departments required to implement them[19].

While the above "best-buys" have been well considered and based on as much research as possible, a study published in 2018 found that in fact many of these best buys are not supported by evidence from LMICs. The authors conclude that … "it is surprising that so many well-established interventions lack published evaluations in the areas where the burden of disease is highest. Although aspirin is likely to work in Djibouti just as well as it works in Denmark, the same is not necessarily true for media campaigns, marketing restrictions and taxation policies given heterogeneity in cultural norms and market factors. As premature mortality is highest in low-income settings, it is important that the major NCD interventions are evaluated in these settings. There is an urgent need for implementation research on the diet and alcohol-related 'best buys' in LLMICs as the evidence base is so scant". Notwithstanding there is also no evidence that the recommended WHO best buys would not be effective in a country such as South Africa, and certainly local research on

[19] While the above "best-buys" have been well considered and based on as much research as possible, a study published in 2018 found that in fact many of these best buys are not supported by evidence from LMICs. The authors conclude that … "it is surprising that so many well-established interventions lack published evaluations in the areas where the burden of disease is highest. Although aspirin is likely to work in Djibouti just as well as it works in Denmark, the same is not necessarily true for media campaigns, marketing restrictions and taxation policies given heterogeneity in cultural norms and market factors. As premature mortality is highest in low-income settings, it is important that the major NCD interventions are evaluated in these settings. There is an urgent need for implementation research on the diet and alcohol-related 'best buys' in LLMICs as the evidence base is so scant". Notwithstanding there is also no evidence that the recommended WHO best buys would not be effective in a country such as South Africa, and certainly local research on fiscal interventions such as taxation on tobacco, alcohol and sugar sweetened beverages strongly suggests that such interventions are indeed highly effective[xxxviii].

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Gender and NCDs

The impacts of Noncommunicable diseases (NCDs) on women in low- and middle-income countries (LMICs) has not been fully recognized[cxiii]. NCDs cause premature death and disability among women of all socioeconomic strata worldwide. NCDs have been the leading causes of death among women globally for at least the past three decades and are now responsible for two in every three deaths among women each year[cxiv]. This burden is expected to increase substantially in the coming decades, especially in LMICs, because of a combination of factors, primarily the ageing of the population, improvements in maternal health in LMICs and a projected increase in smoking, obesity and other risk factors for NCDs among women[cxv].

Azenha et al. point out the importance of ensuring that health systems have the capacity to equitably provide health services to women throughout their life-course and on maximizing collective efforts to meet women's health needs in all settings. NCDs, communicable diseases and maternal conditions are interrelated in complex ways. One can lead to the other. For example, hormonal changes during pregnancy can induce diabetes and hypertension. A pregnant woman who has diabetes, hypertension or infection with the human immunodeficiency virus (HIV) as an underlying condition is at greater risk of suffering complications during pregnancy and delivery than a woman who has none of these conditions[cxvi]. NCDs develop over years; it takes frequent contact with the health system to detect them at an early stage. In many settings, maternal and reproductive health services are the only potential points of contact for the secondary prevention of NCDs.

Women in all settings, regardless of resources, get NCDs; however, poor women, , are the least likely to have access to affordable diagnosis, management and treatment services[cxvii].

A gender-based perspective is necessary to integrate NCD prevention and control within existing health platforms. Sex and gender are implicated in patterns of exposure to behavioural risk factors for NCDs (e.g. HPV infection, smoking, obesity and physical inactivity). Important and unique interrelationships also exist between NCDs and the conditions that have traditionally been the focus of women's health care: maternal, reproductive and HIV-related problems. Such interrelationships make it particularly urgent to address the problem of NCDs in women and to develop differentiated approaches to disease prevention and control for women with and without NCDs. For instance, women who develop an NCD, such as diabetes, relatively early in life have different needs for safe pregnancy, childbirth and family planning services than other women. In light of these considerations, a gender-based approach to NCD prevention and control is a necessity. Such an approach will make it possible to: (i) understand the magnitude of the NCD burden and its risk factors in women; (ii) develop appropriate and effective strategies for prevention, screening and control; and (iii) ensure that these strategies support broader women's health and development goals[xvii].

Mortality target across key principles for interventions

	Sectors to be involved.	**Integrated within health system building blocks and priorities**	**People centred and integrated approach**	**A life course approach**	**A cost-effectiveness approach**	**A gender approach.**
1)A 25% relative reduction in the overall mortality from the major NCDs	Agriculture, Land reform and Rural development; Basic education; Communications; Co-operative governance and Traditional Affairs; Energy; Environment, forestry and fisheries; Health; Higher Education, Science and Technology; National Treasury; Sport, Arts and Culture; Trade and Industry;	NCDs to be included and prioritised in ALL current and future health systems reform initiatives including (but not limited to) infrastructure, medicines and equipment supply, human resources, information systems and monitoring and evaluation	Consultation around NCD prevention and control to be increased, including through clinic committees and hospital boards and to include persons living with NCDs. Programme for youth to include youth in their development. Users/patients to be given more control in health care decisions that affect their health and their treatment.	Specific development categories for interventions and for monitoring to be finalised (eg pregnancy, infancy, childhood, youth, early adulthood, middle age, older persons). The specific implications of prevention and control measures to be determined for each category. Provide the framework for management and control and support for appropriate development	Research to be conducted on SA best buys for NCDs and this must guide future policy and interventions. Cost effectiveness to be considered when any new NCD intervention is considered, including new guidelines, medicines and equipment. Promote increased access to cost-effective vaccinations to prevent infections associated with cancers, as part of national immunization schedules	NCD data to be collected by gender. Integrate NCD prevention and treatment into maternal and reproductive health services. Develop appropriate and effective strategies for prevention, screening and control Allow women to guide policies that affect them.

				categories including NCDs in children.		

Behavioural Risk factor **targets across key principles for interventions**

	Sectors to be involved.	**Integrated within health system building blocks and priorities**	**People centred and integrated approach**	**A life course approach**	**A cost-effectiveness approach**	**A gender approach.**
2)At least 10% reduction in harmful use of alcohol.	Basic education; Communications; Co-operative governance and Traditional Affairs; Health; Higher Education, Science and Technology; National Treasury; Sport, Arts and Culture; Trade and Industry; NGOs Private Sector	Health services at different levels to include services for alcohol misuse and dependency. Relevant medication to be available at different levels. Health personnel to be trained in how to deal with	Persons with substance abuse disorders to be respected as people rather than blamed. Peer support and rehabilitation services to be increased**.**	Implement Age/development appropriate preventive interventions including banning all advertising to children and youth. Work with relevant department to increase legal drinking age.	Advocate and work with relevant departments around 1)fiscal, interventions, 2)access to alcohol and 3)advertising	Alcohol consumption amongst women is relatively low. Ensure that this remains the case through control of marketing. Ensure care and support structures for women taking their particular needs into account.

		substance abuse.				
3) 30% relative reduction in physical inactivity	Basic education; Communications; Co-operative governance and Traditional Affairs; Health; Higher Education, Science and Technology; National Treasury; Sport, Arts and Culture; NGOs Private sector	Patient education and information sharing as part of NCD management and control.	Health authorities to work across departments to facilitate easy and safe access to facilities, hence allowing people to make and implement healthy choices. Education and information provided for people to make informed decisions on physical activity.	Advocate and work with relevant Departments for developmentally appropriate activities. For example with schools to get children and youth active, transport around things such as bicycle lanes, Trade and Industry around pricing of bicycles, social development to get pensioners more active.	Studies to be conducted on the most cost effective ways to encourage physical activity, for example building bicycle lanes, providing exercise structures in public parks, providing incentives to people etc.	Focus intervention to the needs of women and girls. For example ensure that sports that women participate in are promoted just as much as those for men; if gyms are established in public places ensure that the machines cater for the needs of women and ensure that the space is safe for women to exercise there.
4) 30% relative mean reduction in population intake of salt.	Health Comminications NGOs Private sector	Patient education and information sharing as part of NCD management and control.	Education and information provided for people to make informed dietary decisions.	Salt to be removed/reduced in products consumed by infants and children. Salt in public food establishments to be removed from tables until requested.	Encourage studies to determine impacts of regulations already promulgated and on possible impacts of further salt reduction mechanisms. Consider cost effectiveness of increasing the number of items in	Women, as the primary chefs in households to be targeted with correct information concerning salt and encouraged to reduce salt in foods

				Data on age specific intake of salt to be monitored for targeted interventions.	current salt regulations.	
5)30% relative reduction in prevalence of current tobacco use in persons of 15+ years.	Health SARS NGOs Private sector	Patient education and information sharing as part of NCD management and control. Smoking cessation programmes must be increased	Education and information provided for people to make informed decisions on tobacco use.	Advocate and work with relevant Departments for developmentally appropriate activities. For example with schools, workplaces and public places to reduce tobacco consumption.	Ongoing research is needed on fiscal interventions to reduce tobacco use. (While the current research is clear that higher taxes reduce consumption, the picture is ever changing with for example illegal sales of tobacco and hence ongoing research is needed.	Women are a target for the tobacco industry and hence every effort must be made to reduce the allure of smoking for women. Tobacco cessation programmes should focus on the needs of women.

Risk factor targets across key principles for interventions

Integrated within health system building blocks and priorities	Sectors to be involved.	Integrated within health system building blocks and priorities	People centred and integrated approach	A life course approach	A cost-effectiveness approach	A gender approach.
6)A 25% relative reduction in raised blood pressure or contain the prevalence of raised blood pressure.	Agriculture, Land reform and Rural development; Basic education; Communications; Co-operative governance and Traditional Affairs; Energy; Environment, forestry and fisheries; Health; Higher Education, Science and Technology; National Treasury; Sport, Arts and Culture; Trade and Industry;	Taking of routine blood pressure with standardised and serviced equipment in terms of SOPs (to be developed). Support to be provided by staff and peers for optimal control. Drug supply to be available.	Provide information for people to make informed decisions on prevention of raised blood pressure. Improve the understanding of the population for the need for early detection and encourage user led screening. Involve patient and family in programmes for optimal control of blood pressure.	Prevention of raised blood pressure starts in pregnancy and runs throughout the life course. Age specific interventions must target each development group. Information and education about prevention of NCDs can be made an integral part of reproductive health services.	Prevent raised blood pressure through legislation/regulation and fiscal measures. Establish the most cost effective mechanisms for screening of blood pressure and implement interventions accordingly. Establish the most cost effective mechanisms for management, control and rehabilitation at different levels of health care of persons with raised blood pressure and implement interventions accordingly.	Test for raised blood pressure and provide appropriate interventions as part of reproductive and maternal health services. Inform and educate women as the primary providers of nourishment to families, to provide healthy foods within their means, and to encourage physical activities, no tobacco and harmful alcohol use. Facilitate control of blood pressure through understanding the pressures on women to attend clinics (eg

						child rearing and household responsibilities, money for transport etc) through for example child care facilities at clinics, an appointment system etc.
7)Halt the raise of diabetes and obesity.	Agriculture, Land reform and Rural development; Basic education; Communications; Co-operative governance and Traditional Affairs; Energy; En Environment, forestry and fisheries vironmental Affairs; Health; Higher Education, Science and Technology; National Treasury; Sport, Arts and Culture; Trade and Industry;	Taking of blood glucose levels with standardised and serviced equipment in terms of SOPs (to be developed). Support to be provided by staff and peers for optimal control. Drug supply to be available.	Provide information for people to make informed decisions on prevention of raised blood pressure. Improve the understanding of the population for the need for early detection and encourage user led screening. Involve patient and family in programmes for optimal control of blood glucose.	Prevention of raised blood glucose starts in pregnancy and runs throughout the life course. Age specific interventions must target each development group.	Prevent raised blood glucose through legislation/regulation and fiscal measures. Establish the most cost effective mechanisms for screening of blood glucose and implement interventions accordingly. Establish the most cost effective mechanisms for management, control and rehabilitation at different levels of health care of persons with diabetes and implement interventions accordingly.	Inform and educate women as the primary providers of nourishment to families, to provide healthy and appropriate foods within their means, and to encourage physical activities, no tobacco and harmful alcohol use. Test for raised blood pressure and provide appropriate interventions as part of reproductive and maternal health services. Promote, protect and support breastfeeding, including exclusive breastfeeding for about six months from birth, as

						appropriate to reduce the risk of developing conditions such as obesity and non-communicable diseases later in life Facilitate control of blood pressure through understanding the pressures on women to attend clinics (eg child rearing and household responsibilities, money for transport etc) through for example child care facilities at clinics, an appointment system etc.

National Systems response targets across key principles for interventions

Integrated within health system building blocks and priorities	Integrated within health system building blocks and priorities	People centred and integrated approach	A life course approach	A cost-effectiveness approach	A gender approach.

8)At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and stokes	Health workers to be trained in why and when preventive medicines should be provided. Adequate staffing and drugs to be made available. Preventive foot care for people with diabetes (including educational programmes, access to appropriate footwear, multidisciplinary clinics) Diabetic retinopathy screening for all diabetes patients and laser photocoagulation for prevention of blindness	Provide information for people to make informed decisions on preventive therapy for heart attacks and strokes and to respect their decisions on whether to take this up or not.	SOP to be developed that determines the age group that will benefit, cost effectively, from preventive therapy. SOP to be developed together with users.	Costing exercise to be conducted on funds required to provide drug therapy to prevent heart attacks and strokes. Study to be conducted on the cost effectiveness of providing drug therapy to prevent heart attacks and strokes within the South African context.	Gender differences with regards to who and when must be built into the SOP dealing with preventive therapy for heart attacks and stroke.
9)A 80% availability of the affordable basic technology	A list of the affordable basic technologies and essential	The list must be drawn up with users and monitored together with users.	The equipment and essential drug lists must include the needs of all	The equipment and drug lists should be subject to cost-effectiveness analysis before being	

and essential medicines, including generics, required to treat the major NCDs in the public and private sectors.	medicines that must be provided in South Africa must be drawn up. Systems for monitoring their availability must be adopted and they must be measured on a regular basis		developmental/age groups.	included and ongoing research must ensure that these are flexible based on evidence.	

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