

Ethiopia Country Report

PASCAR and WHF Cardiovascular Diseases Scorecard project

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Abstract

Data collected for the World Heart Federation's Scorecard project regarding the current state of cardiovascular disease prevention, control and management, along with related non-communicable diseases in Ethiopia are presented. Furthermore, the strengths, threats, weaknesses and priorities identified from these data are highlighted in concurrence with related sections in the accompanying infographic. Information was collected using open-source data sets from the World Bank, the World Health Organization, the Institute for Health Metrics and Evaluation, the International Diabetes Federation and relevant government publications.

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On behalf of the World Heart Federation (WHF), the Pan-African Society of Cardiology (PASCAR) co-ordinated data collection and reporting for the country-level Cardiovascular Diseases Scorecard to be used in Africa.¹⁻³ Ethiopia, with assistance from the Society of Cardiac Professionals in Ethiopia (Ethiopian professional society) and non-communicable diseases (NCD) advisors/experts at the Ministry of Health of Ethiopia, was included as one of the countries to collate and verify the data. In this report, we summarise Ethiopia's strengths, threats,

weaknesses and priorities identified from the collected data, along with needs to be considered in conjunction with the associated sections in the accompanying infographic. Data sets that were used included open-source data from the World Bank, the World Health Organization (WHO), the Institute for Health Metrics and Evaluation, the International Diabetes Federation (IDF) and government publications.

Part A: Demographics

According to the World Bank (2018), Ethiopia is a low-income country (LIC) with 79% of its people living in rural areas.⁴ In 2015, almost 30.8% of the population was living below the US\$1.9-a-day ratio. Life expectancy at birth in 2018 was 64 and 68 years for men and women, respectively. The general government health expenditure was 1.4% of the gross domestic product (GDP), with the total health expenditure as a percentage of the GDP remaining stable and decreasing slightly to 4.2% in 2016/17.⁵ The total expenditure on health in 2016/17 was US\$3 102 527 667, while that on NCD was US\$344.67 million.⁵ The total expenditure on NCD as a percentage of health expenditure is 11.11%, of which 50.4% is government expenditure.⁵ The country's GDP per capita was US\$857.5 in 2019.⁶

Part B: National cardiovascular disease epidemic

The national burden of cardiovascular disease (CVD) and NCD risk factors

In 2017, the number of people affected by CVD in Ethiopia was 2 838 767.⁷ One-third (33.7%) of these cases was rheumatic heart disease (RHD), followed by ischaemic heart diseases (IHD) (22.5%) and stroke (11.4%).⁷ The estimated age-standardised mortality rate for Ethiopia in 2017 was 519/100 000 [95% uncertainty intervals (UI): 479–551] of the population, of which CVD was 182/100 000 (95% UI: 165–204).⁷ Currently, IHD (45%), stroke (34%) and hypertensive heart disease (HHD) (11%) are the three leading causes of CVD deaths in Ethiopia, with about 170 Ethiopians dying each day.⁸ Diet and systolic blood pressure (SBP) were the most predominant risk factors for CVD, accounting for over 50% of CVD-related disability-adjusted life years (DALYs), followed by air pollution.⁷

The trend in CVD-related death rate (age standardised) in Ethiopia is consistent with that of Kenya, Tanzania and Uganda, however, the prevalence is consistent with Tanzania

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but lower than Kenya and Uganda.⁹ In comparison to the neighbouring country, Sudan, and the other African countries under investigation, Ethiopia's premature deaths attributable to CVD (30–70 years old) is the lowest, at 6%.¹⁰ In 2017, the age-standardised total CVD death rate was 10.9%, which is lower than the global rate of 31.8%.⁹ The percentage of DALYs resulting from CVD for men was 4.2% and for women 4.0%. The total RHD mortality rate was 0.2% of all deaths, while the prevalence of RHD was 1.0%.⁹ In a study by Yadeta *et al.*,¹¹ a prevalence of 1.4% was found, while in rural Ethiopia, an even higher RHD prevalence was reported (37.5/1 000 of the population).¹² The prevalence of atrial fibrillation (AF) and atrial flutter was 0.1% (Table 1).⁹

Tobacco and alcohol

In 2016, the prevalence of tobacco use in adult men 15 years and older was 8.1%, while fewer adult women (1.8%) smoked, as reported in the Global Adult Tobacco Survey (GATS).⁶ Data from the WHO survey, STEPS (step-wise survey for NCD risk factors), revealed 7.3 and 0.4% of men and women, 15–69 years old, respectively, made use of this habit.¹³ In Ethiopia, the smoking prevalence for the youth (15 years median age) was 4.5% among boys and 1% in girls.¹⁴ No data were available for the estimated annual direct cost of tobacco use.⁶ The premature CVD mortality rate attributable to tobacco is 2% of the total

mortality rate, which is much lower than the global 10%.¹⁵ The three-year (2016–18) average recorded alcohol consumption per capita (≥ 15 years) was 0.9 litres (Table 1).⁶

Raised blood pressure and cholesterol

In 2015, the percentage of men and women, 18 years and older, with raised blood pressure (BP) (systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg) was 28.8 and 31.7%, respectively.⁶ STEPS data provided a much lower prevalence of 15.5% for men and 16.3% for women, which possibly differed because of the different age range and sample size.^{13,16} The percentage of DALYs lost because of hypertension was 2.2%, whereas the mortality rate caused by HHD was 1.1% in 2017 (Table 1).⁹ In 2015, the total cholesterol (TC) prevalence measured 5.2% in adults, 15–69 years old, with more women than men (6.8 vs 3.9%, respectively) having a raised TC (≥ 5.0 mmol/l).¹⁶

Physical activity

No data were available for adolescents, 11–17 years old, who were insufficiently active [< 60 minutes of moderate- to vigorous-intensity physical activity (PA) daily]. For adults, however, the age-standardised estimate was 14.9% of those who were insufficiently active (< 150 minutes of moderate-intensity PA per week, or < 75 minutes of vigorous-intensity PA per week) in

Table 1. Cardiovascular disease indicators for Ethiopia

Indicators	Male	Female	Total	Year
Status of the national CVD epidemic				
Premature CVD mortality (30–70 years old) (% deaths)	–	–	6	2012
Total CVD mortality (% of deaths)	10.5	11.6	10.9 (31.8)*	2017
Total RHD mortality (% of deaths)	0.2	0.2	0.2 (.5)*	2017
DALYs attributable to CVD (%)	4.2	4.0	4.1 (14.7)*	2017
AF and atrial flutter (%)	0.1	0.1	0.1 (.5)*	2017
Prevalence of RHD (%)**	0.6	0.8	1.4 (.5)*	2016
Tobacco and alcohol				
Prevalence of adult tobacco use (≥ 15 years old) (%) [#]	8.1 (36.1) ^{###}	1.8 (6.8) ^{###}	5.0	2016
Prevalence of youth (13–15-year-olds) tobacco use (%)	4.5 (18.2) ^{###}	1.0 (8.3) ^{###}	–	2007
Estimated direct (healthcare-related) cost of tobacco use in the population (current US\$)	–	–	–	2018
Proportion of premature CVD mortality attributable to tobacco (%)	–	–	2 (10)*	2004
Recorded alcohol consumption per capita (≥ 15 years) (in litres of pure alcohol) (three-year average)	–	–	0.9	2016–18
Raised blood pressure and cholesterol				
Population with raised BP (SBP ≥ 140 mmHg or DBP ≥ 90 mmHg) (%) [§]	15.5 (24.1)*	16.3 (20.1)*	15.8 (22.1)*	2015
Population with raised TC (≥ 5.0 mmol/l) (%) [§]	3.9	6.8	5.2 (38.9) ^{###}	2015
DALYs attributable to hypertension (%)	2.1	2.3	2.2 (8.7)*	2017
Mortality caused by HHD (% of deaths)	0.7	1.7	1.1 (1.7)*	2017
Physical activity				
Adolescents (11–17 years old) who are insufficiently active (< 60 minutes of moderate- to vigorous-intensity PA daily) (%)	–	–	(80.7) ^{###}	2010
Adults (age-standardised estimate) who are insufficiently active (< 150 minutes of moderate-intensity PA per week, or < 75 minutes of vigorous-intensity PA per week) (%)	11.3	18.3	14.9 (27.5) ^{###}	2016
Overweight and obesity				
Adults who are overweight (BMI ≥ 25 – < 30 kg/m ²) (%)	13.4	28.0	20.9 (38.9) ^{###}	2016
Prevalence of obesity (BMI ≥ 30 kg/m ²) (%)	1.9	6.9	4.5 (13.1) ^{###}	2016
Diabetes				
Defined population with fasting glucose ≥ 126 mg/dl (7.0 mmol/l) or on medication for raised blood glucose (age standardised) (%)	5.8 (9)*	5.0 (8)*	–	2014
Prevalence of diabetes (20–79 years old) (%)	–	–	4.3 (9.3) ^{§§}	2019

CVD, cardiovascular disease; RHD, rheumatic heart disease; DALYs, disability-adjusted life years; AF, atrial fibrillation; SBP, systolic blood pressure; DBP, diastolic blood pressure; TC, total cholesterol; HHD, hypertensive heart disease; PA, physical activity; BMI, body mass index.

*IHME Global data exchange; **Yadeta *et al.*;¹¹ #Global Adult Tobacco Survey; ###WHO GHO data; §Gebreyes *et al.*;¹⁶ §§IDF Diabetes Atlas.¹⁸

2016 (Table 1).⁶ In the 2015 STEP survey, 4% of men and 7.9% of women were reported to be physically inactive, with an overall prevalence of 5.8%.¹³

Overweight and obesity

In 2016, the prevalence of overweight [body mass index (BMI) ≥ 25 – < 30 kg/m²] and obesity (BMI ≥ 30 kg/m²) in adults 25 years and older was 20.9 and 4.5%, respectively (Table 1).⁶ Women had a higher prevalence (28%) of overweight than men (13.4%), with a similar pattern for obesity (6.9 vs 1.9% in women and men, respectively). According to STEPS data, far fewer men (4.4%) and women (8.8%) were found to be overweight, while only 1.2% of these adults had a BMI ≥ 30 kg/m².^{13,17}

Diabetes

The percentage of the population defined with a fasting glucose level of ≥ 7.0 mmol/l or on medication for raised blood glucose (age standardised) in 2014 was 5.8% for men and 5.0% for women.⁶ In 2019, the age-adjusted prevalence (adults 20–79 years) of diabetes was 4.3%, which is lower than the global prevalence of 9.3% (Table 1).¹⁸ Adults aged 15–69 years old who participated in the 2015 STEP survey had a higher diabetes rate of 5.8% using WHO criteria, and 3.2% according to criteria of the American Diabetes Association.^{16,17} In their article of the STEP survey on NCD risk factors, Gebreyes *et al.*¹⁶ reported 9.1% of the participants had impaired fasting glucose levels (IFG 100–125 mg/dl = 5.55–6.94 mmol/l) according to IDF criteria, whereas, per WHO criteria, only 3.8% had intermediate hyperglycaemia. Of these participants, 8.8% were men and 9.6% women, with 10.4% living in urban and 8.9% in rural areas. An increase in IFG from 9.1 to 12.1% was observed in the age groups 15–24 years and ≥ 65 years, respectively, while those 25–34 years old had the lowest prevalence (7.8%).

Part C: Clinical practice and guidelines

Health system capacity and guidelines for NCD risk factors

Ethiopia had an average of 0.8 physicians and 7.14 nurses per 10 000 of the population in 2018, and three hospital beds per 10 000 people in 2015.⁶ In 2017, a locally relevant clinical tool to assess CVD risk had been partially developed.¹⁹ Ethiopia was one of the lower-income countries to participate in the REMEDY study that reported a hospital-based registry for RHD and rheumatic fever.²⁰ Locally relevant clinical guidelines for the management of acute rheumatic fever (ARF) and RHD have been implemented.²¹ In 2016, guidelines were developed to address AF, pharyngitis, ARF and RHD.²² Guidelines for the treatment of tobacco dependence and a system to measure the quality of care provided to people who have suffered acute cardiac events had been noted in 2016.^{22,23} Similarly, guidelines for the detection and management of diabetes are available.²²

Essential medicines and interventions

Data on drug availability from a survey in September 2017 revealed Ethiopia had five of the eight essential medicines

available at primary-care facilities in the public health sector.²⁴ These were aspirin (23.08%), angiotensin converting enzyme (ACE) inhibitors (46.15%), β -blockers (19.23%), metformin (38.46%) and insulin (7.69% short acting; 11.54% intermediate acting). However, insulin is possibly only available at primary hospitals (Gebremichael, pers commun). Statins were only available at 4% of Ethiopian health facilities.²⁵ According to the revised National Essential Medicine List, warfarin and clopidogrel were available.²⁶ National guidelines are available for CVD risk stratification at the primary healthcare level, however, TC measurement is only done at the secondary and tertiary levels.²² Secondary prevention of ARF and RHD is available in public-sector health facilities.^{27,28}

Secondary prevention and management

In a single study in Bedele town in south-west Ethiopia, 11.0% of hypertensive persons received medical treatment in 2014.²⁹ Among identified cases with hypertension in the STEP survey, only 2.8% received treatment, which is lower than that reported for other LICs.¹⁶ In a study by Yadeta *et al.*,³⁰ 76.1% of high-risk patients with AF were being treated with oral anticoagulants (OAC) in 2016. In another hospital-based study on AF patients attending the cardiac clinic in 2019, 66% received OAC.³¹ Using the stroke risk-stratification CHA₂DS₂-VASc score, about 70% of participants with AF (4.3%) were identified to take OAC in a community-based cross-sectional study in south-west Ethiopia.³² However, these studies do not represent national data, as information regarding AF prevalence is scarce.³² The percentage of people with a history of CVD taking aspirin, statin and at least one antihypertensive agent is unknown.

Part D: Cardiovascular disease governance

In 2010, the Federal Ministry of Health (FMoH) developed a national strategic framework through the Health Sector Development Program IV (HSDP IV) addressing NCD, while previous HSDPs paid little or no attention to the prevention and control of NCD and their risk factors.³³ The development of a detailed national strategic action plan (NSAP) was recommended, which was drawn up and published in 2014.³⁴ The strategic plan, specifically, the Health Sector Transformation Plan (HSTP),³⁵ has recently been revised and endorsed in 2020.³⁶ For implementing the NSAP, there is a budget and a unit in the national MoH.^{34,37} There is a CVD focal point within the NCD unit of the MoH. Furthermore, a national surveillance system that includes CVD and their risk factors has been implemented.¹⁷ A national tobacco-control strategic plan has been launched, along with a multi-sectoral co-ordination mechanism.¹⁹ Collaborative projects between the MoH and non-governmental organisations and Addis Ababa University for CVD interventions have been reported.³⁸ Non-governmental expenditure on major NCD is to a certain extent allocated to CVD healthcare,³⁵ and the benefits of CVD prevention and control for population health and the economy have been modelled.^{39,40}

Assessment of policy response

No legislation exists that mandates health financing for CVD or any specific diseases, as the healthcare financing strategy

is comprehensive and integrated.^{28,37} Although legislation mandating essential CVD medicines at affordable prices have been introduced, these medicines are available at 30 to 40% of health centres in the primary healthcare level, with interruptions being common.^{25,38} Court orders protecting patients' rights and mandating improved CVD interventions, facilities, health-system procedures or resources were also not available.

In February 2019, the strongest tobacco-control legislation in Africa was passed in Ethiopia, covering at least four of the WHO framework convention on tobacco control (FCTC) articles.^{41,42} These are articles 8 (protection from exposure to tobacco smoke, including banning smoking in indoor work and public places), 11 (packaging and labelling of tobacco products), 13 (tobacco advertising, promotion and sponsorship) and 16 (sales to and by minors).⁴¹

Policies ensuring equitable nationwide access to healthcare professionals and facilities have been implemented,⁴³ whereas screening of high-risk CVD individuals has been suggested.⁴⁴ Currently, a CVD risk-prediction module is being developed, and a CVD risk-prediction chart will soon be adopted (Gebremichael, pers commun). No sustainable funding for CVD from so-called 'sin' taxes was noted. In 2008, the percentage of excise tax on sugar-sweetened beverages was 30%, while that of the final consumer price of tobacco and alcohol products was 75%.⁴⁵ Parliament recently endorsed a proclamation for increasing excise taxes on alcohol and tobacco products [30% *ad valorem* plus US\$0.25 (8 ETB) specific excise tax for cigarettes].^{46,47}

No legislation is available banning the marketing of unhealthy foods to minors or mandating clear and visible warnings on unhealthy foods.²² However, policy interventions by the Ethiopian Food and Drug Administration (EFDA) and MoH (sugar, salt, trans fats and saturated fats) are under development for promoting a diet to reduce CVD risk.⁴⁶

Stakeholder action

As part of the HSDP IV, initiatives were formulated to implement an integrated approach for the prevention and control of NCD through the advocacy of risk factors such as smoking, diet and PA.³³ Advocacy for CVD policies and programmes by non-governmental organisations was addressed by the NCD Alliance, and particularly, the Consortium of Ethiopian NCD Associations (CENDA).⁴⁸ More recently, Ethiopia established the NCD and Injuries (NCI) commission that was tasked with reviewing the NCI situation and produced a report in 2018.⁴⁹ This report forms the basis for the NCD initiatives and advocacy campaigns in the country, which extensively contributes to curbing these diseases.⁴⁹ Health professionals at six universities have been working with the FMOH on raising awareness and training health workers on RHD since 2016 through a project, Improving RHD Care in Ethiopia.⁵⁰ Patient engagement groups for RHD are also in progress, as indicated in a study by Yadeta *et al.*³⁰

In 2019, the WHO and the inter-agency task force on NCD conducted an investment case study for NCD and risk factors for NCD in Ethiopia, recommending that an effective multi-sectoral co-ordination mechanism be developed involving various partners.⁴⁹ Until now, the only involvement that has been invested is in the national tobacco-control plan.¹⁹ The MoH is working with different professional societies such as the Ethiopian Society of Cardiac Professionals on developing

guidelines, raising community awareness and training health workers.⁵¹ In a study on civil servants, hypertension screening by businesses at workplaces was suggested, and a repeated call was made in 2019 to curb the high prevalence.^{52,53}

The FMOH introduced an integrated management package for diabetes and hypertension at health centres and hospitals throughout the country.³⁴ Currently, about 691 health facilities are implementing PACK [maintained by Population Services International (PSI)-Ethiopia, with support from HHA (Healthy Heart Africa), CUAMM (*Collegio Universitario Aspiranti Medici Missionari*) with funding from the World Diabetes Federation (WDF); and the Tropical Health and Education Trust (UK-based, often DFID-funded NGO), with support from Novartis and Vital Strategies/Resolve to Save Lives].⁵⁴ The country has adopted the South African PACK global programme and developed the Ethiopian primary healthcare guidelines, which is currently implemented in more than 500 health centres, with NCD care adequately addressed. As part of the data gathered for Ethiopia, the following strengths, weaknesses, threats and priorities are summarised.

Strengths

Through the HSDP IV and HSTP, Ethiopia has outlined strategies to combat the growing incidence of NCD, of which CVD ranks the highest.³³ An NCD unit was established to co-ordinate national NCD prevention and control activities, including the development of protocols for each of the main NCD, such as CVD, diabetes, asthma and cancer, along with identifying essential services for each of these.³⁴

To improve data usage at all levels of the healthcare system, Ethiopia launched an information revolution strategy. The FMOH has one autonomous regulatory body to enforce regulations on harmful products such as tobacco, alcohol and an unhealthy diet.⁴³ This body, the EFDA, is funded by the FMOH, issues licenses and monitors all professionals and facilities in the public and private sector.⁴³

The government has an NCD interest within the FMOH that is included in the HSDP IV and HSTP I.^{33,35} Community-based health insurance coverage includes services for NCD prevention and treatment for the rural people and informal sector, which is relatively active although coverage and sustainability are still uncertain.³⁴ The other scheme, social health insurance for the formal sector, is pending because of refusal by this sector, while disease surveillance systems at national and sub-national levels strengthen NCD management.³⁴

Guidelines to reduce the incidence of CVD and other related NCD, such as hypertension and RHD, have already been developed and are being implemented.²² National guidelines to treat tobacco dependence are integrated within the national guidelines for clinical and programmatic management of NCD, and training manuals on healthy lifestyle counselling (including tobacco cessation) have been developed for primary healthcare workers.²² Ethiopia has developed and launched a national tobacco-control strategic plan, although the smoking prevalence is relatively low.¹⁹ Ethiopia, a LIC, also participated in the REMEDY study, a prospective, international, multi-centre, hospital-based registry for RHD.²⁰ Through the project, Improving RHD Care in Ethiopia, with support from the Minneapolis Heart Foundation and other donors, improved registration of cases, training of health workers

and awareness and advocacy of RHD are happening.⁵⁰ A national surveillance system (the STEP survey) that includes risk factors for CVD has also been undertaken and a report disseminated.¹⁷

According to the WHO FCTC, civil society is mainly responsible for advocacy for the development and enforcement of tobacco-control laws.¹⁹ The implementation or enforcement of a national tobacco-control plan is the responsibility of government entities such as the EFDA, and excise tax is charged.¹⁹ In February 2019, the Ethiopian parliament passed a new law on tobacco products, which claims to be ‘one of the strongest tobacco-control legislations in Africa.’⁴¹ Among other things, this new law will require work and public places to be tobacco free.⁴¹ Legislation mandating essential CVD medicines at affordable prices has also been implemented.³⁸

In summary, the strengths of the NCD programme in general and CVD in particular include:

- evolving interest and commitment of the FMOH and regional health bureaus on prevention and control of CVD
- an NCD agenda (including CVD) incorporated within the HSTP I and II
- strategic and annual plans regularly being developed on NCD (including CVD)
- guidelines, training materials and client and provider education materials developed on CVD
- awareness-raising campaigns being conducted, though not in a structured manner
- NCD issues (including CVD) integrated into the health-extension programme
- NCD programme (including CVD) integrated into the Ethiopian primary healthcare guideline
- national STEPS on NCD risk factors and GATS conducted and results launched
- national NCDI commission produced a report on NCDI situation and developed recommendations and cost-effective CVD interventions
- NCD investment case report produced by WHO and inter-agency task force on NCD (including CVD).

Threats

In 2008 the FMOH, and in 2014 the WHO Regional Office, showed that NCD such as CVD, diabetes mellitus and cancer were contributors to the high level of mortality and morbidity.^{33,55} Other increasing threatening risk factors are raised BP, unhealthy diets, air pollution, high low-density lipoprotein cholesterol levels, high fasting plasma glucose levels, overweight, physical inactivity and tobacco use.^{7,55} In 2017, CVD accounted for almost 11% of the mortality rate,⁹ while the diabetes prevalence among 15- to 69-year-old adults was 5.8% in 2015, which is higher than the 4.3% recently reported for the country by the IDF.^{13,18} The prevalence of raised BP in Ethiopia for men and women is higher than that of the global data (22.1%) and most of the other sub-Saharan countries included in this project.⁶ Although slightly lower compared to the global figure (1.65%), deaths caused by HHD were 1.1% in 2017.⁹

As mentioned, overweight and obesity, as in most African countries, tend to be a problem, although these figures are lower than the global data at 38.9 and 13.1%, respectively.⁶ Less than 15% of the adult population is insufficiently physically active.⁶

As per the NSAP/HSTP-II 2020–2025,³⁶ the following threats have been identified by the core committee:

- unregulated transnational (global) trade leading to imported products and behaviours
- proliferation of industrial/commercial food processing and brewery
- globalisation with resultant lifestyle changes (smoking, alcohol, physical inactivity, foods with added salt, sugar and saturated or trans fats)
- poor health-seeking behaviour among the public
- economic gain by the government from the booming industry, which predisposes to NCD risk factors (alcohol, khat, soft drinks)
- rapidly expanding urban centres and industries related to urbanisation.

Weaknesses

In Ethiopia, no comprehensive, nationally representative study had been done before the nationwide step-wise survey in 2014,⁵⁵ however, raised BP was found to be the most prevalent CVD risk factor in a few urban and rural studies.²² Data on NCD and their risk factors were lacking, while there is also a lack of comprehensive management at health facilities.³⁴ Although the mean TC level among all STEPS participants, including those on current medication for increased TC was 130.9 mg/dl (> 7.2 mmol/l) in 2015,¹⁷ country data for raised TC were not available.

While the new tobacco law should make a difference in protecting the public against its devastating effects, its enforcement in main cities of the country is far from the expected, except for the Tigray region.⁴¹ Although improved taxation of tobacco-control products is being implemented, Ethiopia is not yet making use of tax income to fund a national plan for a tobacco-control and CVD programme.⁵⁶

Although the WHO supports countries such as Ethiopia in developing health-finance policies, no policy exists specifically for CVD.⁵⁵ Another weakness is the lack of sustainable funding for CVD, and the triple burden of diseases is still consuming the resources with little left for NCD. The little global funding for NCD, with enormous out-of-pocket expenditures, is widening the gap between the rich and poor. Furthermore, low awareness of NCD could have catastrophic effects on the health and economy of the country. Policies and legislation banning the marketing of unhealthy foods to minors and mandating clear and visible warnings on foods, similar to most countries, are not yet endorsed, nor are those promoting diets and PA to reduce CVD risk. There are also no policies for screening individuals at high risk of CVD. However, new initiatives on PA by the prime minister are underway, and the new HSTP (2020–2024/25) has indicated CVD risk stratification.³⁶

Some of the CVD targets to be achieved by the year 2025 are far from being realised. The prevalence of diabetes and obesity has increased, and the availability of essential drugs is low.⁵⁷ Mainly, however, there is no adequate budget allocation for the CVD programme.

In summary, the following weaknesses have been identified by the core committee for the NSAP development:


- poor prioritisation of the CVD programme at all levels of the health system, especially in regions and woredas (districts)
- inadequate high-level advocacy for political leaders on CVD and risk factors

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Status of Cardiovascular Disease (CVD) and Non-communicable diseases (NCD)

Country Demographics

World Bank Classification
Low income




79%
of population living in rural areas
60% (Sub-Sahara Africa)





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0.19%
of total mortality caused by RHD
Global data: 0.51%



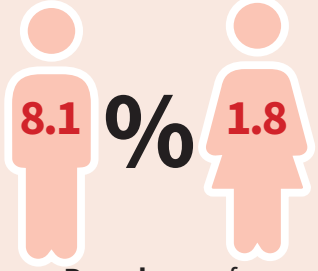
1.4%
Prevalence of rheumatic heart disease (RHD)
Global data: 0.53%




2%
of premature CVD mortality attributable to tobacco
Global data: 10%



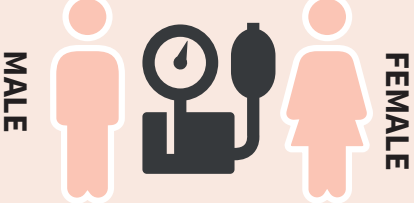
8.1% MALE **1.8% FEMALE**
Prevalence of tobacco use age ≥15
Global data: 36.1% (male) 6.8% (female)



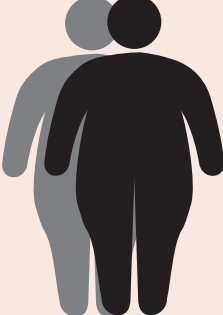
1.1%
of deaths caused by hypertensive heart disease
Global data: 1.65%



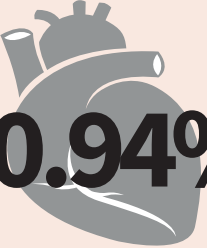
15.5% MALE **16.3% FEMALE**
of population with raised blood pressure (SBP ≥140 or DBP ≥90)
Global data: 24.1% (male) 20.1% (female)




4.5%
Prevalence of obese adults (BMI of ≥30 kg/m²)
Global data: 13.1%



10.94%
of deaths caused by CVD
Global data: 31.8%



5.2%
of population with raised total cholesterol (≥5.0 mmol/L)
Global data: 38.9%



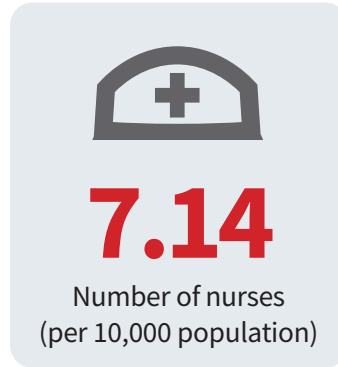
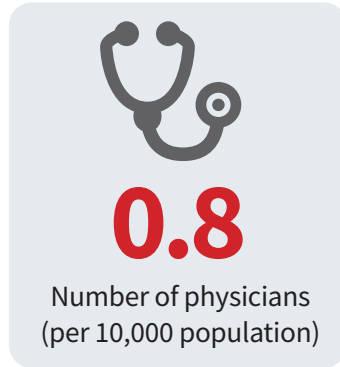
4.3%
Prevalence of diabetes (ages 20-79)
3.9% (Africa)





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Health System Capacity



KEY: No data Not in place In process/ partially implemented In place

Clinical Practice and Guidelines

Locally-relevant (national or subnational level):

Clinical tool to assess CVD risk

Guidelines for treatment of tobacco dependence

Clinical Guidelines for:

The detection and management of atrial fibrillation

The detection and management of acute rheumatic fever

The detection and management of rheumatic heart disease

The detection and management of diabetes

CVD prevention (within the last 5 years)

A system to measure the quality of care provided to people who have suffered acute cardiac events

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Cardiovascular Disease Governance

A national strategy or plan that addresses:

CVDs and their specific risk factors

NCD and their risk factors

Rheumatic heart disease prevention and control as a priority

A national surveillance system that includes CVDs and their risk factors

Stakeholder action

Non-governmental organizations' advocacy for CVD policies and programmes

Civil society involved in developing and implementing of national CVD prevention and control plan

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- lack of financial and technical resources for programme implementation
- poor recording of CVD-related indicators in the health-management information system with the resultant paucity of planning data
- low awareness and misconceptions about the burden and consequences of CVD of the community, healthcare providers and political leaders
- limited availability and affordability of high-quality, safe and effective basic technologies and medicines for screening, diagnosis, treatment and monitoring of CVD
- inadequate mix and capacity of the health workforce
- inadequately staffed regional health bureaux
- poor partnership between the public and private health systems
- poor or no regulation on khat, oils and fats, sugar, salt and environmental pollution
- non-existent multi-sectoral co-ordination mechanism for prevention and control of CVD
- inadequate resources for CVD (competing priorities of major infectious diseases).

Table 2. Indicators for Ethiopia to reach a reduction in premature CVD and related mortality by 2025

Indicators	Baseline	Target by 2025
Reduce overall premature mortality from CVD		25% relative reduction
Reduce prevalence of current tobacco use in persons ≥ 15 years	5%	30% relative reduction
Reduce harmful use of alcohol in persons ≥ 15 years	12.5% NCD STEPS in 2015*	10% relative reduction
Reduce prevalence of current khat use in persons ≥ 15 years	16% NCD STEPS in 2015*	20% relative reduction
Reduce prevalence of insufficient PA in persons ≥ 15 years	5.8% NCD STEPS in 2015*	10% relative reduction
Reduce mean population salt intake to < 5 g per day in persons ≥ 15 years	8.3 g NCD STEPS in 2015*	30% relative reduction
Reduce insufficient fruit and vegetable consumption in persons ≥ 15 years	97.6% STEPS in 2015*	25% relative reduction
Reduce the percentage of people who are obese or overweight	6.3% STEPS in 2015*	15% relative reduction
Reduce the age-standardised prevalence of raised TC among persons ≥ 18 years	5.6% STEPS in 2015*	10% relative reduction
Reduce prevalence of raised BP in persons ≥ 15 years	16% STEPS in 2015*	25% relative reduction
Reduction in the prevalence of ARF/RHD in the 4–24-year-old age group	17/1 000 school children and young adults**	25% relative reduction
Increase treatment (pharmacological and non-pharmacological) coverage for patients with hypertension	Baseline 28% of diagnosed based on the NCDI commission report**	50%
Increase the proportion of people with hypertension with controlled BP	26% based on the NCDI commission report**	60%
Halt increase in prevalence of raised blood sugar in persons ≥ 15 years	3.2% STEPS in 2015*	0% increase
Increase the proportion of people with diabetes with controlled blood glucose level	24% based on the NCDI commission report**	60%
Increase treatment coverage for patients with diabetes (pharmacological and non-pharmacological)	3% STEPS 2015*	50%
Increase availability of basic technologies and essential medicines (including generics) required to treat CVD in public and private facilities	Availability based on the SARA 2018 report [†]	80%
Decrease household air pollution from biomass fuel use	Baseline > 90% households use biomass fuel	< 60%

CVD, cardiovascular diseases; NCD, non-communicable diseases; STEPS, step-wise survey; PA, physical activity; TC, total cholesterol; BP, blood pressure; ARF/RHD, acute rheumatic fever/rheumatic heart disease.
*STEPS report;¹² **NCDI commission report;⁴⁹ †SARA 2018 report.²⁵

Priorities

According to the NSAP,³⁴ four priority areas guide the implementation of NCD activities, which have also been incorporated into the HSTP-II.³⁶ These are to:

- strengthen the national response through policy, governance and leadership
- intensify health promotion and disease prevention, targeting behavioural and environmental risk factors
- develop comprehensive and integrated clinical interventions for NCD and their risk factors, and CVD in particular
- determine progress in the prevention and control of NCD through monitoring, evaluation and research.

Comprehensive interventions or programmes are needed to address unhealthy diets, physical inactivity, alcohol, obesity and air pollution among adults and children, as has been done for tobacco control.⁴¹ Also, addressing the mentioned weaknesses through specific actions and stakeholders in the fight against NCD and CVD, such as RHD, HHD, heart failure and atherosclerotic CVD, which are emerging and will probably flood the country in a decade or so.

Total annual government expenditure should set a percentage apart for cardiovascular healthcare, and sustainable funding for CVD (for example, from taxation of tobacco and or other 'sin' products).

Recommendations by the Ethiopia NCDI commission to combat the NCD-related burden of disease include policy, planning and oversight; finance; service integration; strategic information, target setting, monitoring and evaluation; and education and advocacy. By attending to these and to achieve a 25% reduction in CVD by 2025 (Table 2), prominence should be given to:

- improving and implementing the WHO's best buys
- strengthening the primary healthcare system
- improving access to and affordability of essential drugs and technology
- strengthening community screening to commence drug therapy early
- increasing the health taskforce capacity.

This publication was reviewed by the PASCAR governing council and approved by the president of the Society of Cardiac Professionals in Ethiopia.

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Yale study adds to evidence of diabetes drug's link to heart risk

Rosiglitazone was associated with a 33% increased risk of a composite cardiovascular event (heart attack, heart failure, cardiovascular and non-cardiovascular related death) compared with controls, found a Yale analysis of 130 trials involving 48,000 patients.

This study is the most comprehensive evaluation of the cardiovascular risk of rosiglitazone ever done. Rosiglitazone belongs to a class of drugs called thiazolidinediones. It helps control blood sugar levels in patients with type 2 diabetes, but it can also increase the risk of serious heart problems. This has led to suspension of the drug in Europe and previous restrictions on its use in the US.

However, since 2007, studies have reported conflicting findings about whether rosiglitazone increases the risk of heart attacks. But these studies didn't have access to the raw data, also known as individual patient level data (IPD), from clinical trials and mostly relied on summary level data (results reported in publications and clinical trial registries), which are not as reliable when estimating the true safety profile of drugs.

Recent efforts by GlaxoSmithKline (GSK) – the maker of rosiglitazone – to make IPD available to external investigators, prompted a team of US researchers at Yale School of Public Health and the Yale-New Haven Health System, to re-analyse the data and clarify some of the uncertainties about rosiglitazone's cardiovascular risk. They analysed the results of more than 130 trials involving over 48,000 adult patients that compared rosiglitazone with any control for at least 24 weeks. IPD were available for 33 trials, which included 21,156 patients; the remaining trials only had

summary level data available.

When the researchers analysed the IPD from trials made available by GSK, they found rosiglitazone was associated with a 33% increased risk of a composite cardiovascular event (heart attack, heart failure, cardiovascular and non-cardiovascular related death) compared with controls. This was estimated from the 274 events among 11,837 rosiglitazone patients and 219 events among 9,319 control patients.

When examining cardiovascular events independently, the analyses of the 33 GSK trials with IPD resulted in higher estimates of the risk of heart attacks than the analyses of trials with IPD and summary level data.

These findings highlight the potential for different results derived from different data sources, and demonstrate the need for greater clinical trial transparency and data sharing to accurately assess the safety of drugs, say the researchers.

“Our study suggests that when evaluating drug safety and performing meta-analyses focused on safety, IPD might be necessary to accurately classify all adverse events,” they write. “By including these data in research, patients, clinicians, and researchers would be able to make more informed decisions about the safety of interventions.”

They add: “Our study highlights the need for independent evidence assessment to promote transparency and ensure confidence in approved therapeutics, and post-market surveillance that tracks known and unknown risks and benefits.”

Source: Medical Brief 2020