



Federal Democratic Republic of Ethiopia
Ministry of Health



The Ethiopia Noncommunicable Diseases and Injuries (NCDI) Commission Report Summary

*Addressing the Impact of
Noncommunicable Diseases
and Injuries in Ethiopia*

November 2018

ETHIOPIA
NCDI
COMMISSION





TABLE OF CONTENTS

Foreword	2
Acronyms	4
The Ethiopia Noncommunicable Diseases and Injuries (NCDI) Commission	5
Acknowledgements	9
1. Background	11
2. Health Policy and NCDIs	12
3. Burden of Diseases in Ethiopia	12
4. Existing NCDI Health Services in Ethiopia	17
5. Economic Impact of NCDIs	19
6. Essential Interventions for NCDIs	21
7. Fiscal Space, Resource Generation and Mobilization, and Financing	26
8. Key Findings and Recommendations	27
8.1 Key Findings	27
8.2 Recommendations	29
9. References	32

The complete report of the Ethiopia NCDI Commission is available for download at:
<http://www.ncdipoverty.org/ethiopia-report/>



FOREWORD

Ethiopia is one of the fast-growing economies in Africa with a vision to reach middle-income status by 2035. Realization of this vision will require a healthy and productive population. Improving the health status of the population is among the key priorities of the Government of Ethiopia. As a result of its robust health policy and innovative strategies, the country has made huge strides in increasing universal access to health services through rapid expansion of primary health care that resulted in impressive gains in health status of the population. Most of these health gains are related to achievements in communicable, maternal, childhood and nutritional disorders.

Despite substantial strides made in improving population health status in Ethiopia, still a lot is required in creating a health system that can withstand all adversities. Ethiopia is still one of the countries with a very high morbidity and mortality from triple burden of diseases consisting of Group I diseases: Communicable, maternal, neonatal and nutritional diseases (unfinished MDG agendas); Group II Diseases: Noncommunicable diseases, mental, neurological and substance use disorders; and Group III conditions: Injuries. According to 2016 estimates, noncommunicable diseases and injuries represented 46% of the total disease burden in Ethiopia, which is expected to rise rapidly in the coming decades along with economic development, urbanization and life style changes. There are ongoing efforts to curtail the epidemic of noncommunicable diseases and injuries (NCDI) in the country but the magnitude of the problem calls for a multi-sectoral mechanism and a considerable increase in our effort to control and avert these conditions.

The Federal Ministry of Health (FMOH) of Ethiopia was supported by The Lancet NCDI Poverty Commission to form a national NCDI Commission to 1) review the major NCDs, mental health, and injury epidemiologic situation in the country from the perspective of policy, burden of disease, access to services, quality of care, and financing, 2) identify cost-effective priority interventions and 3) recommend policy directions and financing mechanisms for expanding NCDI services. The Ethiopian NCDI Commission was established in August 2016. The Commission conducted an extensive review of available literatures and consultations that led to the production of this report.

The recommendations included in this report call for actions from several sectors emphasizing the importance of multi-sectoral collaboration in



the fight against NCDIs. It is my sincere belief that all the stakeholders including the health sector, other sectors and partners will find this report very useful in understanding the burden of NCDIs in the country and will take the necessary steps to tackle the formidable health challenge that the country is facing. I would like to thank all who have contributed to the successful completion of this report.

Kebede Worku (MD, MPH)
State Minister of Health,
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Acronyms & Abbreviations

AAU	Addis Ababa University
AIDS	Acquired Immuno-deficiency Syndrome
COPD	Chronic Obstructive Pulmonary Disease
CMNN	Communicable, Maternal, Neonatal and Nutritional
CVDs	Cardio-vascular Diseases
DALYs	Disability-adjusted Life Years
DCP	Disease Control Priorities
DM	Diabetes Mellitus
EDHS	Ethiopia Demographic and Health Survey
FMoH	Federal Ministry of Health
GBD	Global Burden of Disease
GDP	Gross Domestic Product
HIV	Human Immuno-deficiency Virus
HPV	Human Papilloma Virus
HSDP	Health Sector Development Program
HSTP	Health Sector Transformation Plan
ICU	Intensive Care Unit
IHD	Ischemic Heart Disease
IHME	Institute of Health Metrics and Evaluation
LMICs	Low-and Middle-Income Countries
MDG	Millennium Development Goals
MNS	Mental, Neurological and Substance Use
MoH	Ministry of Health
NCDs	Noncommunicable Diseases
NCDIs	Non-communicable Diseases and Injuries
NGOs	Non-governmental Organizations
NHA	National Health Accounts
NHL	Non-Hodgkins Lymphoma
OOP	Out-of-Pocket
PHC	Primary Health Care
RHD	Rheumatic Heart Disease
RMNCH	Reproductive Maternal Neonatal Child Health
RTI	Road Traffic Injury
SARA	Service Availability and Readiness Assessment
SDG	Sustainable Development Goals
TB	Tuberculosis
UHC	Universal Health Coverage
USD	US Dollars
WHO	World Health Organization
WHR	World Health Report
YLD	Years Lived with Disability



The Ethiopia Noncommunicable Diseases and Injuries (NCDI) Commission

The global *Lancet* Commission on Reframing Noncommunicable Diseases and Injuries for the Poorest Billion (*Lancet* NCDI Poverty Commission) was launched in 2015, aiming to achieve a better understanding of how NCDIs affect those living in extreme poverty, how NCDIs can be addressed in low-income settings, and provide recommendations that can be applied to both international and national settings. The *Lancet* NCDI Poverty Commission is working with a group of low- and lower-middle-income countries with heavy concentrations of people living in extreme poverty.¹

With the support of the *Lancet* NCDI Poverty Commission, national NCDI Commissions and Groups were established in eleven low- and lower-middle-income countries (Afghanistan, Ethiopia, Haiti, India, Kenya, Liberia, Malawi, Mozambique, Nepal, Rwanda, and Tanzania) in order to obtain real world experience that can inform how NCDIs can systematically be addressed so that the poor are not left behind, and to learn from differences and similarities between the countries' approaches to the burden of NCDIs.

GOALS OF THE NATIONAL COMMISSION

The Ethiopia NCDI Commission was established in August 2016 and aimed to generate local evidence on the epidemiology of NCDIs, suggest a package of NCDI interventions that should be prioritized for scale-up or implementation in Ethiopia, document best practices in integrating NCDI interventions with primary health care and develop pro-poor pathways for NCDI services that can inform national and health sector strategic and operational planning. Further, it aimed to inform global partnerships and investments by development partners. Currently, the Ethiopian Federal Ministry of Health's Strategic Action Plan for NCDs for the coming five years is under development, making this exercise a timely endeavor.

OBJECTIVES OF THE ETHIOPIA NCDI COMMISSION

The general objectives of the Ethiopia NCDI Commission are as follows:

1. Provide baseline epidemiological and socioeconomic situational analysis of NCDIs in relation to poverty.
2. Explore priorities, delivery platforms and integration of services for NCDIs.
3. Determine fiscal space, resource needs and financing for programs targeting NCDIs.
4. Critically examine current policy, advocacy and communication environment in the context of NCDIs.



COMPOSITION AND STRUCTURE OF THE NCDI COMMISSION

The National Commission Chair was from the Federal Ministry of Health of Ethiopia (FMOH). Membership of the Commission was comprised of key stakeholders representing the FMOH, specialized agencies on health research, faculty from local universities, individual experts, and patient advocates from civil society organizations. Under the National Commission, four working groups were established to address the following four thematic areas:

Group 1: Poverty, Disease Burden, and Risk Factors;

Group 2: Impact of Integrated Interventions on Health, Poverty, and Priority Setting;

Group 3: Financing, Medicines, and Technologies and;

Group 4: History, Advocacy, and Governance.



Picture 1: Partial View of the First Meeting of the Ethiopia NCDI Commission, August 9, 2016.

Members of the global *Lancet* NCDI Poverty Commission closely supported the national team. The National NCDI Commission of Ethiopia was composed of the following individuals:



ETHIOPIA NCDI COMMISSION MEMBERSHIP

Commissioner Name	Affiliation and/or Expertise	Responsibility
Dr. Mahlet Kifle	Former Director General, Minister's Office, FMOH	Chair-person and Co-Writer
Prof. Abraham Haileamlak	Consultant Pediatrician, Jimma University and Senior Advisor, Minister's Office, FMOH	Chair-person and Co-Writer
Dr. Wubaye Walelgne	Internist, Senior Advisor, Minister's Office, FMOH	Secretary, Research Coordinator and Co-Writer
Dr. Molla Gedefaw	Former NCD Case Team Coordinator, FMOH	Co-Chair and Contributor
Dr. Solomon Tessema	Pediatrician, Health Economist, Addis Ababa University (AAU)	Principal Writer and Contributor
Dr. Dejuma Yadeta	Consultant Internist and Cardiologist, AAU	Contributor
Dr. Mathewos Assefa	Consultant Internist and Oncologist, AAU	Contributor
Dr. Abebaw Fekadu	Consultant Psychiatrist, AAU	Contributor
Prof. Aklilu Azazh	Consultant Internist and Emergency Medicine, AAU	Contributor
Dr. Amsalu Bekele	Consultant Internist and Pulmonologist, AAU	Contributor
Mr. Wondu Bekele	Mathiwos Wondu Ye-Ethiopia Cancer Society	Contributor and Advocacy Expert
Mrs. Misrak Tarekegn	Ethiopian Diabetes Association	Advocacy Expert
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Dr. Alemayehu Bekele	Public health specialist, Ethiopian Public Health Association	Contributor
Dr. Taye Tolera	Director General, Armauer Hansen Research Institute	Member
Dr. Yoseph Mamo	Internist, Jimma University, THET Project	Member
Prof. Mengesha Admassu	International Institute of Primary Health Care, EPHI	Member
Dr. Meiraf Tadesse	Health Economist, Consultant	Member



Picture 2: Members of the Ethiopia NCDI Commission, August 9, 2016.

SUMMARY OF THE KEY ACTIVITIES OF THE COMMISSION

The Ethiopia NCDI Commission (“the Commission”) was established on August 9, 2016. The Commission has a secretariat (Chairperson, Co-Chair, and a Secretary) all from Ministry of Health and selected members as shown above. The secretariat was based at the Ministry of Health, Ethiopia, and it was financially and technically supported by the University of Bergen, Norway, and by the Department of Global Health and Social Medicine, Harvard University, USA. The Commission assigned working groups and identified core team members. The Commission met five times while the working groups and core team members met more frequently based on need. The Commission reviewed the progress of working groups regularly. Feedbacks and comments were sought from commissioners and other selected experts and were incorporated in the draft report. Furthermore, the final report was widely circulated, and a validation workshop was conducted and enriched before publication and launching.



ACKNOWLEDGEMENTS

The Ethiopia NCDI Commission report is a combined effort of the Federal Ministry of Health (FMOH) of Ethiopia, local academic institutions, individual experts, and local patient and professional associations. The FMOH gratefully acknowledges all members of the Ethiopia NCDI Commission and collaborators who volunteered their time and knowledge for the development of this report. The overall coordination provided by the Office of the Minister, the secretariat of the commission and the NCDs Case Team of the Diseases Prevention and Control Directorate are also highly appreciated.

Specifically, the Ministry of Health would like to acknowledge the following:

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- Dr. Gene Bukhman – Department of Global Health and Social Medicine, Harvard University, USA, for supporting the commission
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- Dr. Stephane Verguet – Department of Global Health and Population, Harvard T.H. Chan School of Public Health, USA, for participating in the launching meeting
- Professor Kjell Arne Johansson – Department of Global Public Health and Primary Care, University of Bergen, Norway, for supporting the commission
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The Commission would like to recognize the following experts for their in-depth review of the manuscripts and contributions on content:

- Dr. Dereje Assefa, Psychiatrist (Mental Health Team, FMOH)
- Dr. Kunuz Abdela, MPH (Cancer Control Team, FMOH)
- Professor Markos Tesfaye (Psychiatrist, St. Paul Hospital Millennium Medical College)
- Dr. Fissehaye Alemseged (Epidemiologist, Jimma University)
- Dr. Helen Yifter (Endocrinologist, AAU)
- Dr. Tedla Kebede (Endocrinologist, AAU)
- Tsehaynesh Tiruneh, Cataract Surgeon, MPH (Eye Health Team, FMOH).



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Professor Abraham Haileamlak
Chairperson, Ethiopia NCDI Commission
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1. BACKGROUND

Ethiopia has an estimated population of more than 105 million in 2017.² It is a low-income country with GNI per capita of \$740 USD in 2017, and the poverty headcount ratio of \$1.90 USD a day (2011 PPP) was 26.7%.³ Using the multi-dimensional poverty index (MPI), which includes education, health and living standards in addition to income, 79.2% of the population is classified as impoverished.⁴ In urban areas, 4.4 million people (27% of urban population) were among the global poorest billion, however in rural areas, 66.4 million people (90% of rural population) were among the poorest billion. Ethiopia is one of the fastest growing economies in Africa, and the nation is undergoing a rapid economic transformation. If the current trend is maintained, the country is expected to become a lower-middle-income country by 2025.⁵ The major driver of the economy is agriculture, which employs more than 80% of the population.⁵ The literacy rate stands at a national average of 50%.⁶

Health services are mainly delivered by the government, particularly in the rural part of the country, where an estimated 82% of the total population resides.^{7,8} In the past couple of decades, major health care reforms were introduced, resulting in exponential expansion of infrastructure and human resources that led to a significant improvement of the health status of the people. Primary health coverage has now reached 95%.⁹ By the end of 2015, the country had achieved most of the MDGs except for the reduction of gender inequality and maternal mortality ratio. Life expectancy at birth increased from 51 years in 2000 to 65 years in 2015, and over the same period, the child mortality rate before the age of five years decreased from 145 to 59 deaths per 1000 live births.¹⁰

Despite the above achievements, according to the 6th National Health Accounts, the 2013/2014 total health expenditure as a percentage of total government budget lies at 6.7%, far below the Abuja declaration of 15%, and the per-capita health expenditure was \$29 USD, which was far less than the recommended \$86 USD required to deliver a package of basic services in low-income countries.⁷ Health care remains mainly financed by international aid (36%), followed by out-of-pocket (OOP) expenditure (33%), and government expenditure (30%). HIV/AIDS, TB and malaria contribute to 10% of the total disease burden in 2016 in Ethiopia, however, 21% of the national health expenditure was allocated for these conditions.¹¹ This is in sharp contrast to NCDIs, which contributed to 46% of the disease burden but received only 15% of the total health spending in 2013/14. Almost all spending for non-communicable diseases and injuries (96% and 95%, respectively) was on curative care services in contrast to curative care services spending proportions for infectious and parasitic diseases (49%), HIV/AIDS (60%), and STD (57%). The National Health Accounts 2013/2014 Statistical Report also indicated that most of the OOP expenditure for health is for non-exempted services like NCDIs.



The Sustainable Development Goals, and particularly the Goal for Health (SDG3), now presents new challenges to the country to achieve Universal Health Coverage.

2. HEALTH POLICY AND NCDIs

The Health Policy of the Transitional government of Ethiopia developed in early 1993 placed promotive and preventive health care as the main priority through democratization and decentralization of health care delivery as its pillars. Mental health and prevention of chronic conditions were mentioned in the policy as secondary priorities to communicable, maternal, neonatal, and nutritional (CMNN) disorders.¹²

The prevention and control of NCDs first appeared in the Health Sector Development Programs (HSDP) III from 2005-2010, though there was no meaningful implementation of the NCD Program at that time, and in the subsequent HSDP IV from 2010-2015 some NCD prevention and control efforts were initiated at national level.^{13,14}

NCDs were considered as one of the major disease control priorities in the Health Sector Transformation Plan 2015/16-2019/20, with elaborate strategies and costed interventions.¹⁵ It addressed four major NCDs (namely cardiovascular disease [CVD], chronic respiratory disease [CRD], diabetes mellitus [DM]) and cancer) and four main risk factors for NCDs (namely physical inactivity, unhealthy diet, harmful use of alcohol, and tobacco use) as the main strategy. Twelve out of 176 indicators were included to monitor the epidemiology and service coverage of NCDs.

3. BURDEN OF DISEASES IN ETHIOPIA

Data from the Global Burden of Disease (GBD) Study shows that 52% of the total mortality was due to NCDIs in 2016 in Ethiopia (Figure 1).¹¹ Cardiovascular diseases and cancer contribute to an estimated 54% of the NCDs and injury mortality. More than half (51%) of the NCDI mortality occurs before age 40, and 63% occurs before age 50.



The majority of deaths in Ethiopia are due to NCDIs

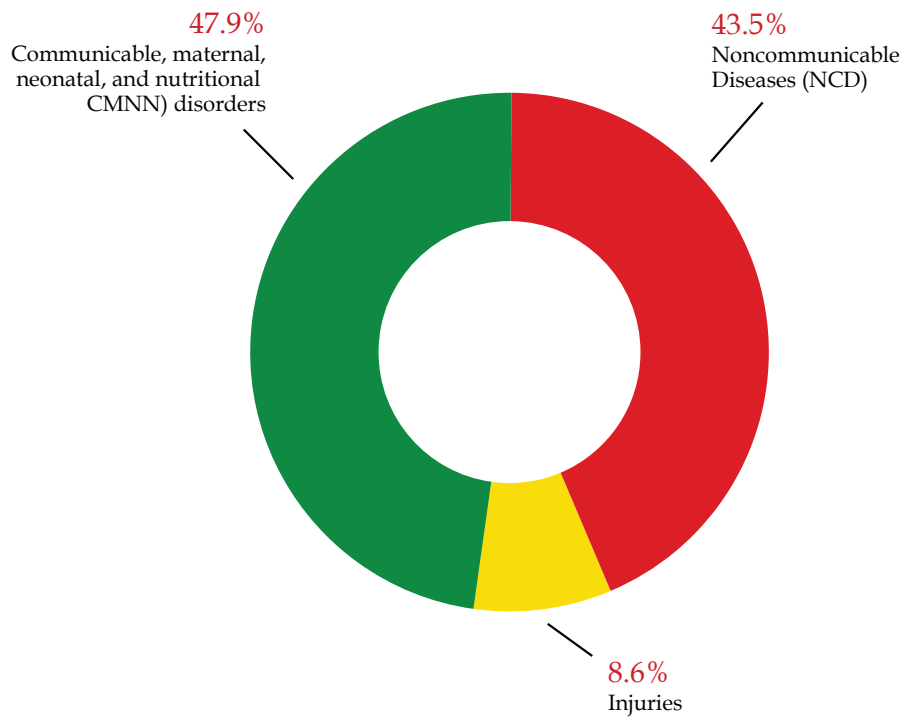


Figure 1: Causes of death in Ethiopia 2016, all ages and both sexes (Source: GBD 2016)

The same GBD Study showed that NCDIs contribute to a substantial amount of the total Disability-Adjusted Life Years (DALYs) lost in Ethiopia (46%) in 2016 (Figure 2). Among the NCDIs, injuries (19%), cardiovascular diseases (17%), mental and neurological illness (16%) and cancer (11%) contribute to the highest loss of DALYs.



46.1% of DALYs in Ethiopia are from NCDIs

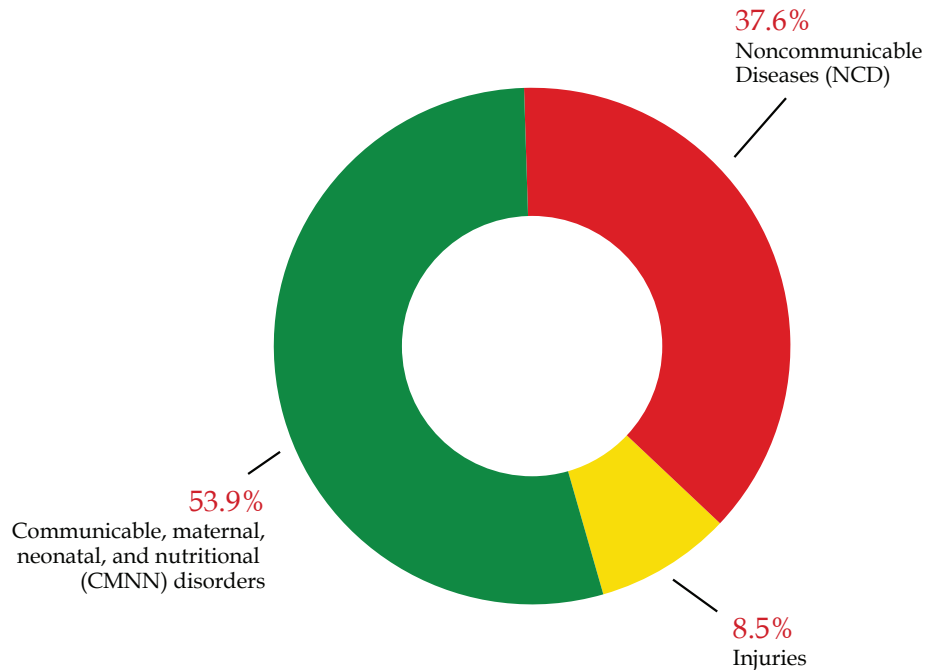


Figure 2: Disease burden (deaths and disability combined = DALYs) for all major conditions and injuries for all ages in Ethiopia, 2016 (Source: GBD 2016)

This Commission conducted a comprehensive review of the literature on NCDs in Ethiopia between 2006-2018 and found comparable results to the 2016 GBD estimates.^{11,16} Based on weighted averages from three demographic surveillance sites representing both rural and urban communities and burial mortality surveillance data from Addis Ababa, the proportion of deaths due to NCDs was higher in urban (58.2%) than rural (45.4%) areas.¹⁷⁻²²

Review of the studies on risk factors for NCDs in Ethiopia showed mixed findings (see Main Report for full details and references). According to the 2016 STEP Survey, the rates of current tobacco use, current alcohol consumption, low physical activity, and overweight or obesity among men were 7.3%, 46.6%, 8.6%, and 4.4%, respectively, while the respective rates in women were 0.4%, 33.5%, 19.4%, and 8.8%.²³ Though there is no consensus on the evidence associating khat use with NCDs, evidences suggest that its consumption is often accompanied by alcohol use, tobacco use, and risky behaviors such as unsafe sex and reckless driving leading to road traffic injuries (RTIs).^{24,25} Fruit and vegetable consumptions were reported to be low in Ethiopia, with > 98% of individuals with inadequate consumption.²³ According to GBD Study, dietary factors were the leading NCD risks for both sexes accounting for 11.7% of the total NCD DALYs for both sexes in 2016.¹¹ The GBD Study showed that 34% of DALYs related to NCDs were



attributable to identifiable risk factors in Ethiopia (see Main Report for details).

Exposure to indoor air pollution in Ethiopia is very high, increasing the risk of acute and chronic respiratory conditions particularly for women, girls and children in Ethiopia.²⁶⁻²⁸ Based on review of six studies conducted in urban and rural communities in Ethiopia, the prevalence of household biomass fuel use ranges from 60% in Addis Ababa (urban) to 100% in rural communities.²⁹⁻³¹ According to GBD 2016, household air pollution is the third leading risk factor for NCD burden in Ethiopia.¹¹

Disaggregation of risk factor prevalence by wealth quintiles of the 2016 Demographic Health Survey revealed that current tobacco and khat use and indoor air pollution were higher among poorer socioeconomic groups in Ethiopia.³² Higher rates of daily tobacco use were also reported among poorer quintiles. In contrast, higher rates of current alcohol consumption were reported among wealthier quintiles. Additionally, low physical activity, overweight/obesity and raised total cholesterol rates were much higher in the wealthiest quintile, with overweight/obese rate in the wealthiest quintile 6.6 times higher than the average rates for the other four quintiles. Even though the overall rate of overweight/obesity in Ethiopia in 2015 is low (6.3%), even when compared to other neighboring African countries, it is important to highlight the increasing trend especially among women in general and young children in urban areas calling for timely interventions.²³

The STEPS Survey also showed the proportion of the population with raised total cholesterol level of $\geq 190\text{mg/dl}$ (5.6 %) was relatively low in Ethiopia compared to a neighboring Kenya the same year (10%).²² The prevalence of low HDL cholesterol level (defined as $<40\text{mg/dl}$ for men and $<50\text{mg/dl}$ for women) was reported in 64.8% and 73.5% of men and women respectively, however the prevalence of raised fasting triglyceride level defined as $>150\text{mg/dl}$ was reported in 20.5% of the adult population.

The mean salt intake in the Ethiopian population to be high at 8.3g/day. Overall, 96.2% of the study participants had high salt intake ($\geq 5\text{g/day}$). The prevalence of hypertension in Ethiopia is reported as 16%, with higher prevalence among urban dwellers (22% urban versus 13% rural) and older adults.²³ This is consistent with the GBD Risk Factors Study, which reported hypertension as a leading risk factor for NCDs.¹¹ There was no marked difference between the sexes or between income quintiles. Approximately 60% of patients with high blood pressure in Ethiopia were never diagnosed and among those identified cases, only 28% were taking medications.²³ Of those on treatment 74% had poorly controlled hypertension. Notably, 3.4% of reported adults ever having had a heart attack or chest pain from heart disease (angina) or a stroke.²³ Hospital-based studies from 1985-2000 and 1988-1997 of intensive care unit (ICU) admissions



noted a rise in the rates of stroke and myocardial infarction in Ethiopia in these years.³³⁻³⁴ Forty-four percent of the strokes in Ethiopia were hemorrhagic stroke in contrast to that seen in western countries (<15%).^{35,36} Besides behavioral risk preventive measures, rigorous systolic blood-pressure control measures through intensive-treatment could significantly reduce risk of death and nonfatal cardiovascular events.

The prevalence of rheumatic heart disease ranges from 17 to 37.5 per 1000 school children and young adults aged 4-24 years.³⁷⁻⁴⁰ Hospital-based studies show that RHD contributes >40% of the cardiovascular morbidity in Ethiopia.⁴¹⁻⁴³ The high rate of this largely preventable disease requires an effective control strategy, especially targeting the poor in Ethiopia.

The nationally-representative STEPS survey demonstrated a prevalence of diabetes in adults as 3.2%.²³ A systematic review of other studies reported prevalence of diabetes from 0.3% to 7.0% in the general population, and up to 8.5% in patients with HIV or TB.⁴⁴ The review also showed poor adherence, poor glycemic and low blood pressure control rates as well as high rates of diabetic complications.⁴⁴

Cancer, especially breast and cervical cancers, is a staggering public health problem in Ethiopia. An estimated 65,000 people develop cancer annually in Ethiopia based on Addis Ababa Cancer Registry Projections.⁴⁵ The most common cancers in women were breast and cervix followed by ovary, colorectal, leukemia, thyroid, Non-Hodgkins lymphoma (NHL), skin, uterus and liver while the top ten cancers in men were colorectal, NHL, prostate, leukemia, lung and bronchus, urinary bladder, stomach, liver, skin and connective & soft tissue. Most patients with cancer in Ethiopia present at a very late stage, which results in poor outcomes. Scale-up of cost-effective preventive, screening, and treatment approaches targeting the most common cancers in Ethiopia could ameliorate morbidity and improve cancer survival.

The burden of mental, neurological and substance use disorders is high in Ethiopia, accounting for 28% of all years lived with a disability (YLD) in 2016.¹¹ According to a 1998 study in urban and rural areas of Ethiopia, mental disorders (schizophrenia and depression included among the top ten causes) accounted for over 11% of the burden of diseases.⁴⁶ The prevalence of depression ranged between 2.2% to 9.1%.⁴⁷⁻⁴⁹ Prevalence of bipolar disorders and schizophrenia in Ethiopia were 0.50% and 0.47%, respectively.⁵⁰⁻⁵¹ Patients with severe mental illness not only suffer from disabilities but also have excess mortality risk, dying about three decades prematurely.⁵² Similarly, the prevalence of epilepsy in Ethiopia is high (0.52%).⁵³ Mental health services in Ethiopia are poorly resourced and generally accessible to only the most severely ill. Most mental health facilities, especially inpatient settings, are located in urban areas and mental health care



provided at primary health care (PHC) facilities and social workers based in the community are scarcely available in Ethiopia.

Asthma is a fairly common health problem in Ethiopia, affecting 1.5-3% of the population.⁵⁴⁻⁵⁶ The prevalence of COPD is unknown in Ethiopia even though hospital-based studies showed the problem to be fairly common.⁵⁷⁻⁵⁸ The majority of households use biomass fuel which exposes women and children to excessive amounts of particulate matter. Indoor air pollution in Ethiopia is a known cause of COPD and other respiratory and cardiovascular diseases.⁵⁸

Eye health problems are also major causes of disability in Ethiopia. Cataracts are responsible for nearly 640 thousand cases of blindness and for an additional 1.25 million people with low vision in the country.⁵⁹

Surgical conditions are among the most common causes of admissions to secondary and tertiary hospitals. According to global estimates, East Africa has one of the highest needs for surgical procedures with a reported 6,145 procedures per 100,000 population.⁶⁰ Most surgeries were related to injuries, malignancies and acute abdominal emergencies for adults, and congenital abnormalities and acute abdominal emergencies in children (see Main Report for details). Injuries also contribute to a significant morbidity and mortality in Ethiopia. The most prevalent form of injuries are RTIs (3.2% annually) and interpersonal violence (2.6% annually), both of which are largely preventable.²³

Additional NCDIs, such as peptic ulcer diseases, liver disease and cirrhosis, chronic kidney diseases, musculoskeletal disorders, and congenital conditions also played a large role in morbidity and mortality associated with NCDIs¹¹ and are described in further detail in the Main Report.

4. EXISTING NCDI HEALTH SERVICES IN ETHIOPIA

Ethiopia has a three-tiered health system, with a tremendous increase in the number of public and private health facilities in the past two decades. In 2014, more than 16,440 health posts, 3,547 health centers and 311 hospitals (including private facilities) were available.⁶¹ Effective health service delivery requires more than increasing mere access to health facilities; high quality performance is also needed.

The 2016 Ethiopian Service Availability and Readiness Assessment Survey (SARA, 2016) provides information on the availability of essential medicines, diagnostic and infrastructure resources, and the readiness of health facilities to provide basic health-care interventions for NCDs.⁶² The survey found that only 54% of all health facilities, including public and private, were ready to provide general NCDs health services. As Figure 3 depicts, reported availability of diag-



nosis, treatment, and management for these NCD conditions was 22% for diabetes, 41% for cardiovascular disease, 45% for chronic respiratory disease, 2% for cervical cancer, 52% for basic surgical services, and 35% for blood transfusions.

Availability of NCDI services is limited

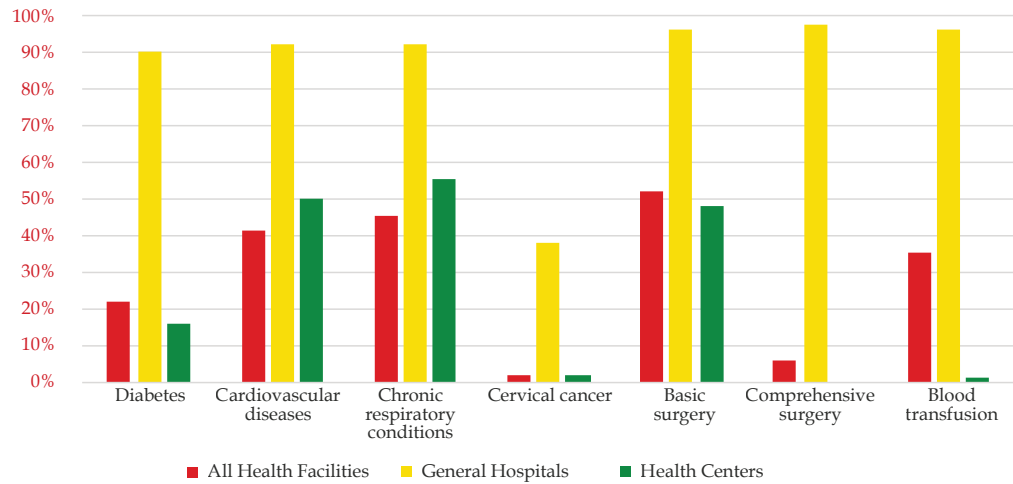


Figure 3: Reported NCDI service availability by facility type (Source: Ethiopia SARA Report 2016)

Among the facilities that reported to have services, the average observed readiness for the services was 53% for diabetes, 41% for cardiovascular diseases, 45% for chronic respiratory disease, 72% for cervical cancer, 41% for basic surgical services, and 56% for blood transfusions. The 2016 SARA found trained staff availability was generally low, with 10% of facilities with staff trained on diabetes, 7% with staff trained in cardiovascular disease, 8% in chronic respiratory disease, and with higher proportions for cervical cancer at 61%. (Figure 4).

Service readiness is low for many NCDI conditions

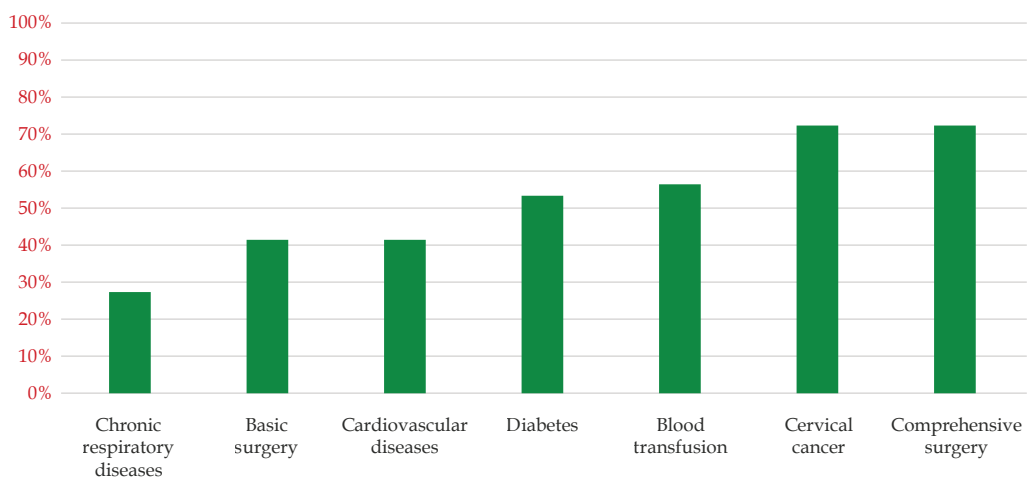


Figure 4: Average observed readiness of NCDI services in health facilities reporting to provide those services (Source: Ethiopia SARA Report 2016).



As expected, health facilities in bigger cities like Addis Ababa, Dire-Dawa, and Harar were found to have better amenities for delivering general health services. Referral hospitals had a higher general health service readiness index.⁶²

In summary, when service readiness was considered, availability of trained staff, guidelines, basic equipment, and essential medicines were very low for NCDI services. Recent assessments have shown that access to quality health services and utilization of services are significantly below appropriate minimum standards and population estimated need. The low quality of available services, poor access to health facilities, financial hurdles in access to care, and lack of awareness by the community are important contributors for low utilization of NCDI services in Ethiopia. The Commission estimates average effective coverage for NCDI services to be below 10%, acknowledging that there may be substantial variation between urban and rural settings and between service types.

5. ECONOMIC IMPACT OF NCDIs

The 2015/16 Ethiopian National Household Health Service Utilization and Expenditure Survey found that 10% of individuals reported being ill in the four weeks preceding the survey.⁶³ Among those who reported illness, 10% were due to NCDs and 11% had at least one chronic condition, such as cancer, diabetes, kidney disease, or a mental disorder. However, only 53% of those reporting illnesses sought care in health facilities. The following four main reasons were reported as barriers for seeking healthcare: lack of money, considering illness not serious, self-medication at home, and long distance to facility.

Government healthcare providers were responsible for the majority of outpatient services provided in the country, at a reported 77% in rural and 63% in urban areas. Rural residents were more likely to use health centers and health posts, while urban residents were more likely to use government hospitals, private hospitals, and private clinics. More than 60% of individuals living in both rural and urban areas received inpatient care from government hospitals.

According to NHA 6th report, 68% of NCDI services in Ethiopia were financed by OOP expenditures from households (Figure 5). Government was responsible for nearly 30% of NCDIs expenditure, while the contribution of donors for such services was negligible at only 1%.^{7,63}

Overall, 23% of total OOP expenditures in Ethiopian households are due to NCDs. Renal failure accounted for 10% of all OOP expenditures, the second highest proportion of all conditions, and significant household spending goes to other NCDs, such as mental disorders (6%), cancers (5%), diabetes (2%), and injuries (2%).⁶³ Among patients with cardiovascular diseases in Addis Ababa who sought care in health facilities, 27% had experienced catastrophic health expenditures, and was even higher in low-income households of patients residing outside Addis Ababa.⁶⁴



The majority of NCDI services are financed by household (out of pocket) payments

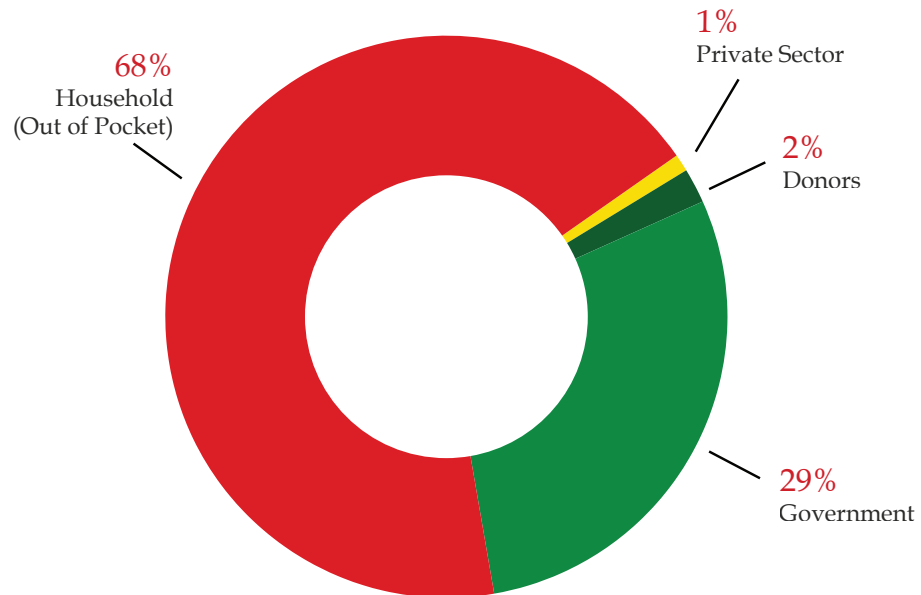


Figure 5: Financing for NCDI services in Ethiopia (Source: NHA VI, 2013/2014)



6. ESSENTIAL INTERVENTIONS FOR NCDIS

The Commission aimed to recommend interventions for NCDIs that should be prioritized for implementation or scale-up over the next five years. The Commission prioritized NCDI interventions in a four-step process (see Main Report for details). Briefly, priority-relevant evidence from national and international studies through Disease Control Priorities 3 (DCP3) was first collected, critically reviewed, and supplemented with expert judgements.⁶⁵⁻⁶⁶ Secondly, the Commission used this evidence, along with WHO's criteria for priority setting (including cost-effectiveness, priority to the worse-off, and financial risk protection), to rank interventions into three categories according to their priority.⁶⁷ Third, the Commission Technical Secretariat costed the interventions categorized by the Commission as highest priority interventions with the OneHealth Tool.⁶⁸ Fourth, based on cost estimates, fiscal space analysis, and budget scenarios, the Commission revised the list to fit within the budget, using the WHO principles. For example, the Commission realized early-on that scale-up to target levels of 80% was unrealistic given fiscal constraints and availability of health personnel. Targets were therefore set to 30% effective coverage over the first five-year period, with further scale up to 80% by 2030.

An initial list of 235 interventions were identified as relevant for the Commission to consider for implementation or scale-up. Of these interventions, evidence on cost effectiveness was available for 80 interventions. Screening for cervical cancer and treatment of pharyngitis in children to prevent rheumatic heart disease are examples of very cost-effective interventions with cost effectiveness ratios below \$100 USD (2012) per DALY averted. In contrast, acute management of stroke and peritoneal dialysis were placed among the least cost effective of the considered interventions, with cost effectiveness ratios above \$30,000 USD (2012) per DALY averted.

A total of 90 interventions (including essential surgery) were identified as highest priority NCDI interventions that should be scaled-up or implemented in the next five-year period (2019-2023). (Table 1) Seventy interventions were classified as high priority interventions that should be scaled-up later but before 2030, and sixty interventions were classified as interventions to be implemented at an even later stage. The remaining interventions were classified as not relevant, either because they were not considered relevant in the Ethiopian context, or because they were covered by another intervention.

The additional annual cost for scaling up these interventions is estimated to be roughly \$550 million USD, corresponding to approximately \$4.7 USD per capita (Table 2).



Table 1: Recommended essential NCDI services, by disease area and delivery platform

Interventions	Delivery Platform
Cancer	
HPV vaccine to prevent cervical and anal cancer	Community
Basic palliative care, breast cancer	Community
Basic palliative care, cervical cancer	Community
Basic palliative care, colon cancer	Community
Hep B vaccine to prevent liver cancer	Health centre
Visual inspection with acetic acid (VIA) and cryotherapy for precancerous lesions	Health centre
Diagnosis without screening for breast cancer	District hospital
Emergency surgery for obstruction, colon cancer	District hospital
Breast cancer treatment: Stage I	Referral/specialized hospital
Cervical cancer treatment: Stage I	Referral/specialized hospital
Treat selected cancers in paediatric cancer units/hospitals (Leukaemia, retinoblastoma)	Referral/specialized hospital
Cardiovascular Disease & Respiratory Disorders	
Encourage adherence to medications	Community
Community based opportunistic screening for CVD	Community
Primary prevention for those with absolute risk of CVD>10%	Health center
Treatment of cases with established ischaemic heart disease (secondary prevention)	Health center
Treatment of cases with established cerebrovascular disease (secondary prevention)	Health center
Treatment of cases with acute pharyngitis to prevent rheumatic fever	Health center
Treatment of cases with rheumatic heart disease (with benzathine penicillin)	Health center
Management of diabetes mellitus type 2	Health center
Revascularization or amputation for limb ischemia	District hospital
Management of acute heart failure with diuretics and non-invasive positive pressure ventilation	District hospital
Insulin management of diabetes mellitus type 1	District hospital
Asthma: Low-dose inhaled beclometasone + SABA	District hospital
COPD: Exacerbation treatment with antibiotics	District hospital
Cardiac surgery for rheumatic heart disease	Referral/specialized hospital
<i>Table continued on next page</i>	



Interventions	Delivery Platform
Mental, Neurological, and Substance Use Disorders	
Dietary supplement of folic acid and iron to pregnant women	Community
Identification of children with MNS disorders in schools	Community
Safer storage of pesticides in the community/households	Community
Home visits to reduce the risk of postpartum depression	Community
Psychosocial care for peri-natal depression	Health center
Depression: Basic psychosocial care and anti-depressant medication for first episode of moderate-severe cases and episodic and/or maintenance treatment for recurrent cases	Health center
Anxiety: Basic psychosocial treatment and anti-depressant medication for anxiety disorders (moderate-severe cases)	Health center
Psychosis: Psychosocial support and anti-psychotic medication	Health center
Bipolar disorder: Psychosocial support, advice, and follow-up for bipolar disorder, plus mood-stabilizing medication	Health center
Pesticide intoxication management	Health center
Epilepsy: Follow-up and anti-epileptic medication	Health center
Alcohol use disorders: Diagnosis, management of withdrawal, relapse prevention with medication	District hospital
Management of opioid withdrawal	District hospital
Electroconvulsive therapy for severe or refractory depression	Referral/specialized hospital
Surgical	
Pre-hospital care of injuries	Community
Management of injuries	District hospital
Management of general emergency surgical conditions	District hospital
Management of obstetric and gynecologic surgical emergencies	District hospital
Cataract surgery	District hospital
Management of congenital surgical problems	Referral/specialized hospital



Table 2: Incremental costs by major category, 2019-2023.
Costs are reported in \$1,000 USD.

Interventions	2019	2020	2021	2022	2023
Cancer	\$7,494	\$15,406	\$23,748	\$32,496	\$41,649
Cardiovascular diseases, diabetes and respiratory disorders	\$46,438	\$95,429	\$147,017	\$201,292	\$258,307
Mental, neurological and substance use disorders	\$12,231	\$25,773	\$40,708	\$57,106	\$75,025
Surgery	\$22,377	\$45,865	\$70,526	\$96,424	\$123,622
Other interventions: e.g., provision of glasses for severe refractive disorders	\$127	\$258	\$392	\$529	\$668
Total intervention cost	\$88,667	\$182,731	\$282,392	\$387,846	\$499,271
Programme cost	\$8,867	\$18,273	\$28,239	\$38,785	\$49,927
TOTAL COSTS	\$97,533	\$201,004	\$310,631	\$426,631	\$549,198
Cost per capita (USD per capita)	\$0.9	\$1.8	\$2.8	\$3.7	\$4.7

If fully implemented, the Commission estimates that the Highest Priority Package for NCDI services could improve life expectancy at birth from 64.4 to 65.2 (or 0.8 years), and avert approximately 41,000 premature deaths.⁶⁹⁻⁷⁰ This amounts to a 6.4% reduction of all premature deaths by 2030. Implementation up to target coverage of 30% would avert an estimated approximate 13,000 deaths by 2023 (2% of all premature deaths). These results should be seen as part of the bigger picture and long-term strategies for intersectoral action and complete scale-up of CMNN interventions, in which full implementation of all essential UHC packages could provide substantial health gains and contribute to the achievement of the SDG targets for health.

Multi-sectoral interventions that are designed to reduce population-level behavioral and environmental risk factors (e.g. tobacco and alcohol use, air pollution, excessive sugar consumption, and others) are presented in Table 3. Many of these are policy interventions, which fall into four broad categories: taxes and subsidies; regulations and related enforcement mechanisms; built environment; and informational. Some of these intersectoral interventions could be cost saving, and others could potentially generate more resources for health. Therefore, we have not included the cost of implementing these interventions in this report.



Table 3: Multi-sectoral and policy interventions for prevention of NCDIs

Interventions	Policy Category	Responsible sectors in Ethiopia
Tobacco use		
Bans on tobacco advertisement, promotion and sponsorship	Regulation and enforcement	FMHACA, EBA
Health information and warnings	Health education and information (HEI)	MoH, Media, Education
Raise taxes on tobacco	Tax and subsidies	Finance
Smoke free indoor work places and public spaces	Regulation and enforcement	FMHACA, Law enforcement
Implement a population-based public health program to increase physical activity	HEI and built environment	MoYS, MoH, Education, Media
Unhealthy diet and physical inactivity		
Impose regulations to reduce salt in manufactured food products	Regulation and enforcement	Trade, Industry, FMHACA
Increase taxation of sugar sweetened beverage	Tax and subsidies	Finance, FMHACA
Provide consumer education against excess use of salt and sugar, including product labelling	HEI	MoH, Education, Media
Replace trans-fat and saturated fats with polyunsaturated fats	Regulation and enforcement	Trade, Industry, FMHACA
Air Pollution		
Emission: regulate transport, industrial and power generation emission	Regulation and enforcement	Transport, EPA
Indoor air pollution: expand access to electricity	Built environment	Mines and energy
Indoor air pollution: halt the use of unprocessed coal and kerosene as a household fuel	Regulation and enforcement	Education, Media, MoH
Indoor air pollution: promote the use of low-emission household devices	HEI	Mines and energy
Public transportation: build and strengthen affordable public transportation system in urban areas	Built environment	Transport
Alcohol Use		
Bans on alcohol advertising	Regulation and enforcement	FMHACA, EBA
Raise taxes on alcoholic beverages and enforce restrictions on availability of retailed alcohol	Tax and subsidies	Finance
Injury		
Control the sale and distributions of means of suicide	Regulation and enforcement	Law enforcement
Decriminalize suicide	Regulation and enforcement	Law enforcement
Enforce construction standard safety rules	Regulation and enforcement	Construction
Enforcing laws on speed limit, seatbelt use, helmet use, number of people on a motorbike, alcohol testing of drivers	Regulation and enforcement	Transport
Include traffic calming mechanisms into road construction	Built environment	Transport
Occupational safety and health training in hazard recognition and control relevant to the work performed (e.g. task-based training for hazardous tasks)	HEI	MoLSA
Stronger legal framework on occupational health, enforcement of legal framework	Regulation and enforcement	MoLSA
<p><i>FMHACA (Food, Medicine, Health Administration and Control Authority), EBA (Ethiopia Broadcast Authority), MoLSA (Ministry of Labour and Social Affairs), EPA (Ethiopian Environmental Protection Authority), MoH (Ministry of Health), MoYS (Ministry of Youth and Sports)</i></p>		



7. FISCAL SPACE, RESOURCE GENERATION AND MOBILIZATION, & FINANCING

The fiscal space for expanding the public financing of NCDI services will be determined by economic growth and policy choices. In line with HSTP projections, the burden of NCDIs, and experiences from other countries, the Commission assumed that under a “best case” scenario that the relative fraction of public NCDI expenditure should increase to 30% of total public expenditure on health by 2030 (including external resources). Note that 30% spending on NCDI may seem high, but the Commission also presupposed that funding for CMNN also increases substantially (70% funding of CMNN in the best case amounts to more than \$80 USD per capita). With conservative assumptions and targets, the Commission estimated that at the end of the first five-year period (2023), there is \$2.4 USD extra per capita for NCDI services from the government budget. However, in the best case (optimistic) scenario, there would be \$4.5 USD for the highest priority package of NCDI services, which approximates the estimated extra per capita cost of \$4.7 USD (needed in the year 2023) for the recommended highest priority NCDI services. Please see Main Report for full details.

In addition to economic growth, other ways to increase fiscal space for government expenditures up to 5-6% of GDP are possible. These include increased mobilization of domestic resources, intersectoral reallocations, and efficiency gains. As for increased mobilization of domestic resources, one particularly important option for countries to consider is improved taxation and other forms of revenue collection. This could include increased taxation of tobacco and alcohol. Such an increase is likely not only to increase revenue, although only to a degree for tobacco since consumption is low, but also to improve future population health. With respect to intersectoral reallocations, a related strategy is to reduce or eliminate energy subsidies and other unwarranted subsidies. This can, among other things, increase the fiscal space for public spending on high-priority health services. Other types of innovative financing should also be explored. As for efficiency gains, there are many promising strategies to be pursued. The 2010 World Health Report lists ten leading causes of inefficiencies that could be addressed: underuse of generic drugs (instead of brand-name drugs) and higher than necessary prices for medicines; use of substandard and counterfeit medicines; inappropriate and ineffective use of medicines; overuse or supply of equipment, investigations, and procedures; inappropriate or costly staff mix and unmotivated workers; inappropriate hospital admissions and length of stay; inappropriate hospital size (low use of infrastructure); medical errors and suboptimal quality of care; waste, corruption, and fraud; and inefficient mix or inappropriate level of strategies.⁷¹

Finally, the commencement of community-based health insurance in Ethiopia and the government’s endeavor to launch social health insurance could serve



as an important platform for health system strengthening and improve delivery of quality care for NCDs including injuries.⁷²⁻⁷³ Expansion of such a platform could not only provide needed financial protection to the population and shield against healthcare-related impoverishment, but also provide additional fiscal space with which to expand the essential package of services.

8. KEY FINDINGS AND RECOMMENDATIONS

A summary of the key findings and recommendation by the National NCDI Commission of Ethiopia is presented below.

8.1 KEY FINDINGS:

- **NCDIs comprise a large burden of disease in Ethiopia.** NCDs and Injuries are major public health problems in Ethiopia, particularly affecting children, women, the population's productive age group, the poor, and the underprivileged. Approximately half of all deaths and disability are now attributable to NCDs in Ethiopia. The proportion of deaths due to NCDs is roughly similar in both urban and rural settings. NCDs in Ethiopia tend occur at younger age.
- **Ethiopia has a large and diverse burden of NCDI risk factors, which may vary by socioeconomic factors.** Risk factors such as tobacco, alcohol, and Khat use are on the rise in Ethiopia, and may lead to a substantial portion of NCDs. While the overall rate of obesity is low in Ethiopia, it is over six times higher in the wealthiest quintile as compared other socioeconomic groups. Hypertension, low physical activity, raised total cholesterol, and high fasting plasma glucose were also associated with wealthier socioeconomic groups. The environmental risk factor of indoor air pollution was the second most important risk factor, and was more prevalent in rural populations. GBD 2016 review showed only 34% of NCDs disease burden (DALYs) were attributable to risk factors included in the GBD study in Ethiopia.
- **There is a high burden of common NCDIs, such as hypertension and diabetes.** The national prevalence of hypertension is now 16%; there has also been an increase in prevalence rates of stroke and myocardial infarction. The prevalence of raised blood glucose now ranges from 3.2-8%. Lifestyle factors play a key role in the prevention and management of these two conditions.
- **There is also a high burden of other NCDIs, which requires increased attention.** The rate of rheumatic heart disease, 17.0-37.5 cases per 1,000 school children and young adults, is much higher than African regional estimates, and disproportionately affects the poor. There are an estimated 65,000 new cancers each year, affecting females twice as often than males,



and predominantly breast and cervical cancers. Mental health disorders, injuries, digestive diseases like cirrhosis of the liver, eye health problems like cataract, surgical conditions, and musculoskeletal disorders also play a large role in morbidity and mortality from NCDs.

- **NCDI services and their utilization are limited in Ethiopia.** Only 54% of all health facilities (combined public and private) are ready to provide general NCD health services. Availability is even lower for specific NCD conditions, including diabetes (22%), cardiovascular disease (41%), chronic respiratory disease (45%), and cervical cancer (2%). Readiness of trained staff and guidelines are extremely scarce, and the availability of essential diagnostics and medications are also major limitations. The availability of services in rural areas and primary levels of the health care system were lower than urban cities and referral centers, which indicates the risk of diminished service access for the poorest quintiles of the population. This is further aggravated by the low awareness on the burden of NCDs and their risk factors by the community, health workers, and policy makers.
- **NCDs have a dramatic impact on out-of-pocket expenditures in Ethiopia.** Overall, 23% of total OOP expenditures were due to NCDs. Kidney failure accounted for 10% of all OOP expenditures, which was the second highest proportion of all conditions measured – only intestinal worms comprised a higher share of OOP expenditures. Mental disorders (6%), cancers (5%), diabetes (2%), and injuries (2%) were other large drivers of overall OOP expenditures for Ethiopian households.
- **Current investment in NCDs is low.** Despite the large burden of disease (approximately half of morbidity and mortality) and economic impact comprised by NCDs, the National Health Account demonstrates that only 15% of total health expenditure is currently allocated to NCDs. Overall, total government expenditure on health is 6.7% of the total budget, which is far short of Abuja Declaration.
- **There are proven interventions that can address these NCDs.** The Commission initially considered 230 interventions for implementation or scale-up, and evidence on cost effectiveness, severity of the disease on affected individuals, and inequity in mortality between Ethiopia and higher-income countries for each intervention was reviewed and categorized. The interventions were then ranked in three priority-categories after application of general principles proposed by the World Health Organization and deliberation within the Commission. The annual additional cost after scaling-up 90 interventions classified in the highest priority group by 2023 was estimated to be \$550 million USD, corresponding to \$4.70 USD per person in Ethiopia.



- **These interventions would require integration into existing services.** Health system strengthening is key to ensure UHC for NCDs in Ethiopia, including in the areas of leadership and governance, health financing, health workforce, medical products/vaccines/technologies, information, and service delivery. Of the prioritized NCDI interventions, 9 could be integrated at the community level, 17 at health center level, 10 at primary hospital level, and 9 at referral hospital level. Less than one-third (31%) of these interventions are included in the 2005 EHSP and most (84%) would require new guidelines and training. Very few (8%) of the facility-based interventions are cost exempt for the patient. Most of the intersectoral interventions would require either new regulations or improved enforcement. (See Full Report for details.)
- **However, resources may still be limited.** A growth in total health expenditures (including external funding) of up to \$120 USD per capita by 2030 is not unreasonable, if aggressively pursued; this would be the minimum of what would be required to fund essential health care packages under UHC. A majority of this expansion would be from actual government expenditure for health. Assuming 20% allocation to NCDs with conservative estimates of GDP growth, government total health expenditure, external funding, and OOP spending reductions, there would be only \$2.40 USD extra per capita for NCDI services at the end of the first five-year period (2023). This is far less than the estimated per capita cost of \$4.70 USD (needed in the year 2022) for the highest priority NCDI services. However, with more aggressive targets for the above parameters, an additional \$4.50 USD could be feasible. The work performed by the Commission demonstrates that it is possible to approach priority setting in a systematic way and achieve substantial health gains also in resource constraint settings.
- **NCDI policies are emerging in Ethiopia, though may require more focus.** The National Strategic Framework for the Prevention and Control of NCDs (2010) and the HSDP IV were the first to emphasize the role of NCDs, and the HSTP accelerated these efforts. However, lack of regional-level governance and accountability, lack of multi-sectoral engagement, overdependence on global normative guidance, pervasive misconceptions about NCDs, slow mobilization of resources, and an unfinished MDG agenda have slowed the national response to NCDs.
- **Available data for NCDIs is poor.** Routine monitoring of NCDI data, including service coverage, in Ethiopia is weak, with poor capacity to generate and use locally available data. Furthermore, research on NCDIs is still in its early development with descriptive studies dominating the research output. To date very few clinical trials are conducted on NCDIs.



8.2 RECOMMENDATIONS:

The Commission agrees on the following key forward-looking recommendations, which could lead to substantial improvements for the health and well-being of Ethiopians who currently, or in the future, may suffer from the burden of NCDs and injuries:

1. Policy, planning and oversight:

- Establish a national multi-sectoral committee on NCDIs, chaired by the Prime Minister or Deputy Prime Minister to guide and organize NCDI prevention and control efforts.
- Multisectoral steering committees need also to be established at all levels of the government.
- Strengthen the NCDs Prevention and Control Unit at the federal level
- Establish NCDs Prevention and Control Units at regional, zonal and woreda levels
- Revise the Essential Health Service Package by the end of 2018. Move high priority NCDI services from cost-recovery to cost-sharing and/or cost-exemption funding schemes commensurate with available resources and expand NCDI services towards realization of UHC.
- Protect the implementation of public health policies for NCDI prevention and control from interference by vested interests through comprehensive legislation and enforcement of national laws and regulations.

2. Finance:

- Allocate an increased percentage of gains from economic growth to health; move government spending on health rapidly towards 15% of total government spending.
- Mobilize additional resources, from improved efficiency on financial utilization, improved taxation, increase on sin taxes (tobacco, alcohol), and consideration of sugar-sweetened beverage and unhealthy diet tax.
- Move towards allocating 30% of total government spending on health (GHE) for NCDIs by 2030.
- Plan for reduced external funding (at least in relative terms) as the country develops economically and transitions to lower-middle-income country status.
- Reduce OOP to a maximum of 20% of total health expenditures.
- Harmonize community-based health insurance, and introduce social health insurance, with public health sector priorities.
- Development partners need to engage in generating evidence and supporting the implementation of cost-effective and equitable interventions for NCDIs, based on country needs, in order to maximize aid effectiveness.



3. Service integration

- Strengthen the health system at all levels, emphasizing primary care, and finance the national set of NCDI services, interventions, and health promotion activities focusing on prevention, early detection, curative, rehabilitative, and palliative care.
- Low-resource countries like Ethiopia can prevent and manage NCDIs by integrating a high-priority package of interventions into existing platforms. The package's interventions should be cost-effective, target the worse off, and provide financial risk protection.
- Implement scale-up of health personnel as planned in HSTP, with special emphasis on resource needs for NCDI services.
- Strengthen the training of the health workforces and the scientific basis for decision-making through NCD-related research and partnerships.
- Develop, train, and implement the top eleven clinical guidelines for NCDI services: 1) treatment of childhood cancer, 2) early treatment of breast cancer, 3) basic palliative care, 4) treatment of acute pharyngitis in children to prevent rheumatic fever, 5) psychosocial support and treatment for psychosis, 6) psychosocial support and treatment for depression, 7) follow-up and treatment for epilepsy, 8) treatment for substance use disorder (alcohol and tobacco), 9) primary prevention for cardiovascular disease, 10) management of acute heart failure, and 11) detection and treatment of asthma. (See Full Report for details.)

4. Strategic Information, Target setting, monitoring and evaluation

- Strengthen integrated national surveillance systems for NCDIs, including vital registration systems capable of reporting cause of death, cancer registries, and risk factor monitoring.
- Refine existing NCDI indicators and expand to include other priority NCDIs in future revisions of HIS in order to monitor the epidemiology and service coverage of NCDIs.
- Track results of NCDIs interventions through monitoring and reporting on the attainment of the 9 national targets (based on the 9 global targets). (See Main Report, Section 5, for more details.)
- Mobilize and track domestic and external resources for NCDI prevention and control, including the improvement of NCDI subaccounts in the next round of National Health Accounts report.

5. Education and advocacy

- Strengthen public education and awareness on NCDIs and their risk factors
- Advocate for improved NCDI resources and services



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