

Financing of Non-Communicable Disease Prevention in LMICs: Zambia Case Study

Ammar Rashid, Kassim Nishtar, Saba Amjad

Objective:

Prevention programs are increasingly seen as critical for tackling the rising burden of non-communicable diseases (NCDs), but tend to be under-prioritized and under-funded, particularly in low- and middle income countries. The objective of this study is to estimate spending on NCD prevention in Zambia and identify the enablers, challenges and dynamics underpinning population-level NCD prevention spending, with particular focus on tobacco use, harmful use of alcohol, unhealthy diets and physical inactivity.

Methods:

Primary and secondary data collection was used to examine processes and organizational contexts that shape the formulation of policy and financial frameworks for NCD prevention. The methodology was categorized into three tiers; an academic literature review, scrutiny and analysis of official policy documents and budgetary data on health and NCDs, and in-depth stakeholder interviews with key government officials leading NCD programs. Government and government-routed donor spending on population level prevention was gauged to estimate NCD prevention spending. Where possible, impact of prevention programs on disease incidence and risk factors was gauged through available outcome indicators.

Results:

Zambia spent an estimated ZMK 47.06 million (US\$2.62 million) on population-level preventive healthcare in 2016, almost exclusively allocated to infectious diseases. Spending on NCD prevention is not separately budgeted in health budgets, reflecting its low prioritization. Zambia's low focus on NCDs reflects its historical infectious disease burden, particularly the HIV/AIDS epidemic. Despite entering an epidemiological transition towards NCDs, there is still inadequate focus on NCD prevention and control. Challenges include a lack of NCD prevention in primary care, donor dependent health budgets, no institutional coordination mechanism for NCDs, low budgetary utilization and government concerns about public opposition to taxation and threat to domestic tobacco growers.

Conclusion:

Zambia's health system remains predominantly dedicated to fighting infectious disease, with limited focus on NCDs and even less so on NCD prevention. Zambia needs to build on its successes against IDs and devise an integrated strategy for surveillance, prevention and control for ID and NCDs.

1. Introduction

Zambia, a landlocked lower middle-income country (LMIC) of 17.35 million people, has made considerable economic and social progress in the past decade, averaging 6.7% GDP growth between 2004 to 2014. However, in the years since, growth has slowed due to fluctuations in world commodity markets, particularly for its main export copper. Widespread poverty and unemployment remain serious development challenges, compounded by a high HIV/AIDS burden and large levels of public debt.¹

Zambia has made progress in reduction of infectious diseases and maternal and child death rates, with the average life expectancy at birth increasing from 40.5 years in 1998 to 58 years in 2014, whilst the fertility rate is now at 4.72 children per woman.² The country has also made enormous progress in controlling its HIV/AIDS epidemic, with new annual infections having gone down and life expectancy among people living with HIV/AIDS significantly increased as a result of scaled-up treatment programs.

Economic growth has also meant Zambia has experienced rapid urbanization with the number of people living in cities rising from 3.5 million in 2000 to over 8.5 million in 2019. The related changes in lifestyle habits are also contributing to a changing disease burden. While communicable diseases remain the predominant causes for mortality and morbidity in Zambia (accounting for 67% of deaths), non-communicable diseases (NCDs) are on the rise. Zambia, these NCDs include cardiovascular diseases (like heart attacks and stroke), cancers, diabetes, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma), epilepsy, mental illnesses, oral health, eye diseases, sickle cell anaemia, and injuries. As in other parts of the world, NCDs are being fuelled by forces of globalization and urbanization, which contribute to lifestyle changes like rising tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity.

Consequently, NCDs are now estimated to account for 23% of total deaths in Zambia. Cardiovascular diseases accounted for 8.0%, cancers 4.0%, chronic respiratory diseases 1.0%, diabetes 1.0% and other NCDs accounted for 8.0%. An individual in Zambia now has an 18% probability of dying from NCDs before the age of 70.³ Left unchecked, this problem will get worse and put additional stress on Zambia's chronically underfunded health system.

The link between NCDs and household productivity and income is now well-established. Although ill health nearly always lowers household income, households affected by NCDs experience greater income loss relative to households reporting general infectious diseases. This is because expenditure associated with the acute and long-term effects of NCDs is high, resulting in catastrophic health expenditure for households. Care and treatment cost studies have shown that NCDs reduce disposable incomes, leaving families with less money to use on other vital needs and also negatively affects the future productivity of the patients. People hospitalized with chronic diseases usually end up poorer, and in many cases end up with huge debts.

Zambia has begun to adapt its health system to its epidemiological transition and changing disease burden. It has taken some initial steps including its first NCD Strategic Plan, the establishment of a Health Promotion Directorate in the Ministry of Health and steps to tax tobacco, alcohol and non-alcoholic beverages. However, much remains to be done in terms for re-orienting the health system to address the NCD threat and organizing a systemic and inter-sectoral response to NCDs that focuses on prevention and health promotion.

Limited availability and allocation of funds for financing NCD control and prevention are an important part of the reason for the continued persistence of chronic NCDs around the world. There is an established tendency for governments to provide more funding for treatment than prevention, almost in inverse proportion to potential impact – that is, while prevention is clearly the best use of limited resources it is often easier to secure resources for treatment instead. This is also the case in Zambia and will require evidence, will and innovation to address.

This study will investigate the dynamics of NCD prevention financing in Zambia to identify the key lessons, challenges and barriers from Zambia experience with implementing and financing NCD prevention and control. It will do so by first examining the socio-economic and institutional context of NCDs in Zambia, outlining the key policy responses and interventions of the Zambian government to the NCD crisis, and understanding how, if any, financing for NCD prevention is raised and spent, and what kind of economic, social, political and institutional barriers stand in the way of its effective mobilization. The key lessons and challenges emerging from Zambia's experience will then be discussed and summarized, and a set of actionable outcomes and recommendations will be presented.

2. Methodology

The methodology for this assessment consisted of two parts: a review of academic and grey literature and budgetary data and data collection in the form of interviews with key informants. The study adopts the critical theory approach, which acknowledges reality as contextualized and shaped by various social, cultural, economic and political factors and sees the research process as a means to bring about change and transformation. In this study, the critical theory approach was employed to question existing frameworks, organizational hierarchies and red-tape, identify impediments arising from political, economic, systemic and bureaucratic, and largely regional and global contexts, before proceeding to present a set of actionable outcomes and recommendations.

Public financing was defined as resources allocated/mobilized indigenously (revenues) at the country level. This also includes the use of catalytic official development assistance as grants/loans and/or monies from philanthropic sources predicated on the understanding that these are meant to build country capacity and are a stop gap arrangement. This implies that funds from ODA loans and grants, as well as from philanthropic sources, need to go first into the government's resources. The World Bank definition of prevention was employed, as those preventative and "public health services ... designed to enhance the health status of the population as distinct from the curative services which repair health dysfunction."

The investigators used a search strategy involving Medline, Google Scholar, Embase, JStor and Web of Knowledge, databases to identify peer-reviewed articles that examined NCD prevention and financing. In addition, the first 20 pages of Google searches were examined to identify articles from the grey literature. The main search terms were 'NCD', 'prevention', 'financing' and 'Zambia'. Additional search terms related to the topic were: 'health promotion', 'non-communicable disease', and 'budget'. Additional search terms related to policy were: tax, legislation, ban, intervention, labelling, law, and standards. An additional search was also carried out for policies related to risk factors using the terms 'alcohol', 'tobacco', 'diet', 'nutrition', and 'physical activity'. Based on the information in the abstracts, those studies were selected for review that: a) were of an empirical nature; b) examined NCD prevention and its financing; and c) dated from late 20th century onward, when concerted policy efforts to counter NCDs began in the region.

The selected studies were reviewed and organized into categories of analysis that were refined based on the evidence emerging from the literature. Bibliographies of selected studies were also reviewed for relevant literature to NCD or risk factor prevention policies. Later, a specific search was undertaken for broader literature, including policy frameworks on NCDs in Zambia and the region.

The investigators then reached out to the governments and relevant departments/bodies to procure reports, budget plans, policy guidelines and similar material. This data was analysed thematically, to further refine research questions and thoroughly revise interview guides. At the end of the second tier, the investigators shortlisted potential participants to be recruited for in-depth interviews. These included key stakeholders such as officials from the Ministry of Health, Ministry of Finance, planning ministry or staff from the office of the head of state.

3. The NCD burden in Zambia

In Zambia, NCDs have become four of the top 10 causes of mortality over the last decade. Two major causes of death have to do with cardiovascular disease, including ischemic heart disease and stroke, while liver cirrhosis has also become among the major causes of death since 2007. Ischemic heart disease, stroke, liver cirrhosis and hypertensive heart disease are the most rapidly increasing causes of disability and death in the country.⁴ Though population level data on NCDs is not available in Zambia, routine data collected from hospitals have shown a 22% increase in the total number of NCD cases between 2010 and 2012 in all age groups. In the same period, cases of hypertension seen in the outpatient department (OPD) increased by 39% for all age groups. Cancer cases seen at the country’s only Cancer Diseases Hospital (CDH) increased from 1282 in 2010 to 3021 in 2014, exhibiting an increase of over 50%.⁵ According to WHO’s Zambia NCD profile, NCDs now account for 29.0% of total deaths. Cardiovascular diseases accounted for 10.0%, cancers 6.0%, chronic respiratory diseases 2.0%, diabetes 1.0% and other NCDs accounted for 10.0%.²

What causes the most deaths?

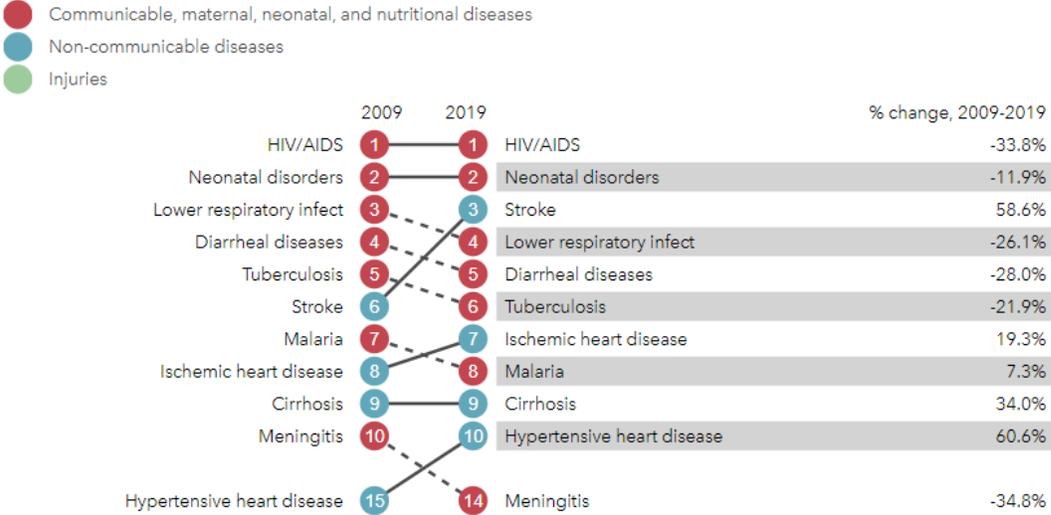


Figure 1 Top 10 causes of death in 2019 and percent change in Zambia, 2009-2019⁴

4. NCD risk factors in Zambia

While the predominant risk factors for death and disability in Zambia are malnutrition, unsafe sex (related to HIV/AIDS transmission) and water, sanitation and hygiene (WaSH) shortcomings, these risk factors are gradually decreasing in their contribution to mortality. Death and disability from NCDs in Zambia is driven by harmful use of alcohol, unhealthy diets, tobacco use and overweight/obesity, among others. In 2017, the Zambian Ministry of Health and its development partners undertook the first ever national STEP wise survey on NCD risk factors to establish a surveillance platform for Zambia that collects baseline and future indicators for policy and planning purposes.

What risk factors drive the most death and disability combined?

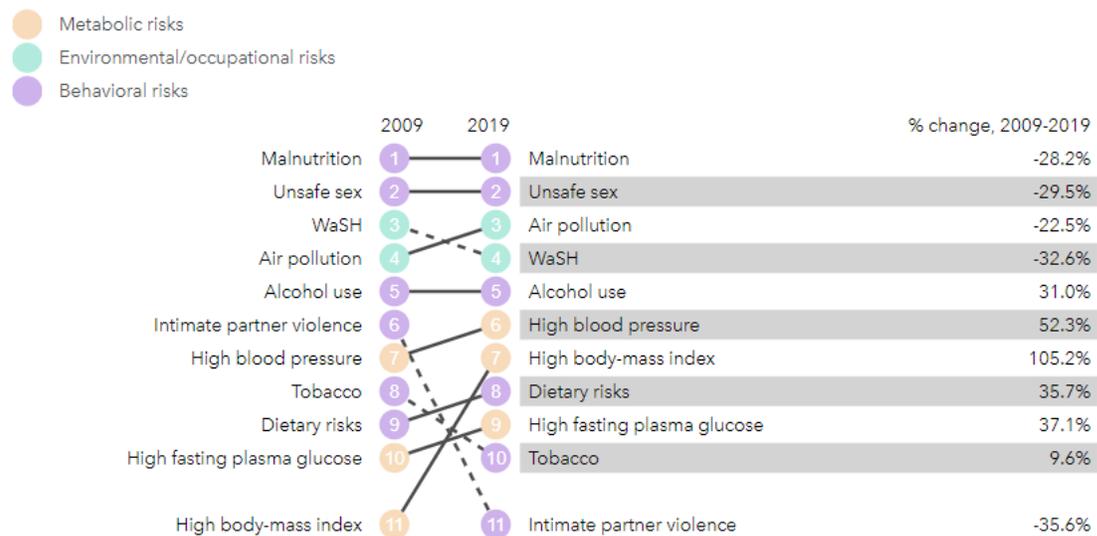


Figure 2 Top 10 risks contributing to DALYs in 2019 and percent change in Zambia⁴

4.1. Alcohol use:

Approximately 21.7% of Zambians currently drink alcohol with 10.9% engaged in heavy episodic drinking of six or more standard drinks; males significantly contributed more to this proportion at 16.8% versus 5.1% in females. The overall mean number of standard drinks per drinking occasion among individuals who currently drink is 5.8 standard drinks with a significant difference among males than females (6.3 versus 4.3). Over 63.0% of Zambians reported to be lifetime abstainers with the percentage of abstinence among women being higher (74.7) than that among men (52.1).³

4.2. Unhealthy diet:

On average, fruit is consumed on 2.1 days a week and vegetables on 6.3 days a week among Zambians. The World Health Organization (WHO) recommends fruit daily and at least 5 servings of vegetables a day. The survey results show that 90.4% of Zambians are consuming less than 5 servings of fruits and vegetables per day. The mean daily intake of salt was at 9.5 grams per day, which is nearly double the WHO recommended limit of 5 grams. Up to 39.8% of Zambians always add salt often before eating or when eating and 6.0% admitted to always or often consuming processed food high in salt. Only 15.4% of Zambians said they thought that they consumed too much salt. The vast majority at 83.8% of Zambians reported use of vegetable oil and 14.5% reported actively avoiding foods prepared outside their homes.³

4.3. Overweight/obesity:

The STEPS survey indicates that 16.2% of Zambians were either overweight or obese with no significant difference between men (16.2%) and women (20.2%). Overall, 7.5% of Zambians are obese while 16.7% were overweight. The percentage of women who were overweight or obese was significantly higher than of men. Obesity was highest in the 45 to 59 years age group.³ High body mass index is the most rapidly rising risk factor for death and disease in the country (rising by over 100% between 2009 and 2019).⁴

4.4. Tobacco use:

Nearly 16.0% of Zambians currently consume some form of tobacco products with a significantly higher prevalence among men (24.0%) than women (7.8%). 12.3% of Zambians are currently using smoked tobacco products that include manufactured cigarettes, hand rolled cigarettes, pipes and shisha. The largest proportion of current smokers are were in the 60 to 69 age group. 9.0% of Zambians are daily tobacco smokers (the vast majority being males at 17.1 against females at 1.3%) with the mean age for starting to smoke being 15.7 years. Up to 4.5% reported being current use of smokeless tobacco, and of these 6.8% were women and 2.2% were men.³

4.5. Physical inactivity:

Overall, physical activity levels are relatively high in Zambia, mainly because of work or modes of transport requiring exertion. This is especially so in rural areas, but levels of physical inactivity have been shown to rise with urbanization. More women (15.1%) than men (5.7%) reported insufficient physical activity. WHO recommends that adults should do at least 150 minutes of moderate-intensity physical activity throughout the week, or do at least 75 minutes of vigorous-intensity physical activity throughout the week. The median minutes of total physical activity per day was 188.6. It was established that the median time spent in work-related activity per day was 120 minutes and the median for transport-related activity was 30.0 minutes per day. More women (45.5%) than men (23.9%) reported no vigorous activity at all; and both sexes reported a similar amount of time per day that is spent on sedentary activities at a median of 180 minutes.³

4.6. Hypertension:

Raised blood pressure (defined as having SBP \geq 140 mmHg and/or DBP \geq 90 mmHg or on medication for raised blood pressure) was found in 19.1% of the respondents. About 7.1% Zambians had severe hypertension (defined as having SBP \geq 160 mmHg and/or DBP \geq 100 mmHg or on medication). There was no difference between men and women in the prevalence of hypertension. However, gender differences were clear in terms of who had ever been screened for high blood with two thirds of the men never ever screened for raised blood and one third of the women.³

4.7. Air pollution:

Indoor air pollution from Solid Fuel Use (SFU) continues to be a problem with a high 87% of households using SFU, which causes 8,700 deaths per year. Outdoor air pollution also continues to be at unsafe levels, with annual average fine particulate matter (PM_{2.5}) concentrations at 71 μ g/m³, far higher than the WHO guideline of 10 μ g/m³.⁶

5. Zambia health system and financing context

Healthcare in Zambia is delivered through a three-tier system with primary health care (PHC) delivered through health posts, health centres and district hospitals. The second tier has secondary level hospitals and the third tier has tertiary level hospitals. A significant share of the health budget goes to personal emoluments with 55% in 2019, marginally higher than the 2018 allocation of 54%. Operationally, Zambia's health system is centralized, with delegated responsibilities from the centre to lower levels of the health care delivery system. The share of the sector budget going to subnational level (provincial and districts) declined from 67% in 2018 to 66% in 2019.⁷ However, greater decentralization to subnational levels is one of the policy objectives of the Zambian government.

Table 1 Health Financing in Zambia - A snapshot⁸

	Year		
	2005	2011	2017
GDP per capita(US\$ constant 2017)	1,025	1,388	1,513
CHE per capita(US\$ constant 2017)	70	48	68
Public spending in % of GDP	6.9%	3.5%	4.5%
GGHED in % of CHE	26.7%	34.8%	38.6%
GGHED in % of GDP	1.8%	1.2%	1.7%
OOPS in % of CHE	31.5%	21.6%	11.8%
GGHED in % of GGE	8.2%	6.2%	6.9%
Population	12,052,156	14,264,756	17,094,130

Gross Domestic Product (GDP); Current Health Expenditure (CHE); Domestic Public Health Expenditure (GGHED); Out-of-pocket payments (OOPS); Total General Government Expenditure (GGE)

Government and donor spending are the two biggest sources of health expenditure in Zambia, together accounting for about 80% of total health expenditure. In 2016, donor current health expenditure (CHE) constituted 43% of the total health expenditure, while government CHE accounted for 38% of total CHE, and households through out-of-pocket (OOP) expenditure were responsible for 12 percent of total CHE. The contribution from private companies through medical and insurance schemes was about 9% in 2016.⁹

Between 2006 and 2018, a number of institutional and health financing reforms have been implemented in the health sector in Zambia. Zambia has tried to reduce user fees over time - first in rural areas in April 2006, peri-urban areas in mid-2007 and the entire PHC level – including health posts, health centres and district hospitals - in January 2012. Further, patients referred from the PHC facilities to secondary and tertiary level hospitals are supposed to be treated free of charge in line with the user fees removal guidelines. Over time, this has led to a relative reduction in out-of-pocket payments (OOP) and

catastrophic health expenditure. Further, the Central Board of Health (CBoH) — which operated as an autonomous public organization responsible for provision of health services through a provider-purchaser arrangement for 11 years - was abolished in 2006 and its functions taken over by the Ministry of Health.⁹

The health sector continues to face serious Human Resource challenges. There is a large unmet staffing gap, for example in 2013, the total staffing gap stood at 23,362 representing 39% of the approved staff establishment. In addition, there are inequities in the geographical distribution of core health workers.¹⁰

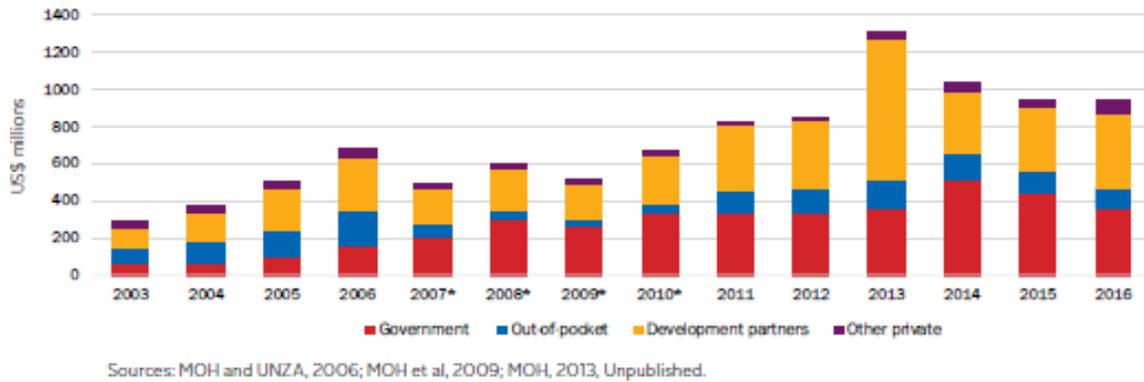


Figure 3 Sources of Health Financing in Zambia

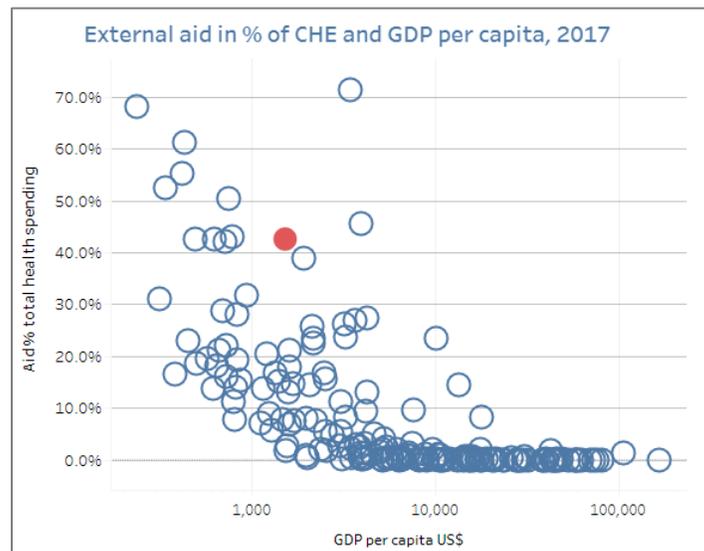


Figure 4 External aid as % of CHE and GDP per capita in Zambia (in Red)

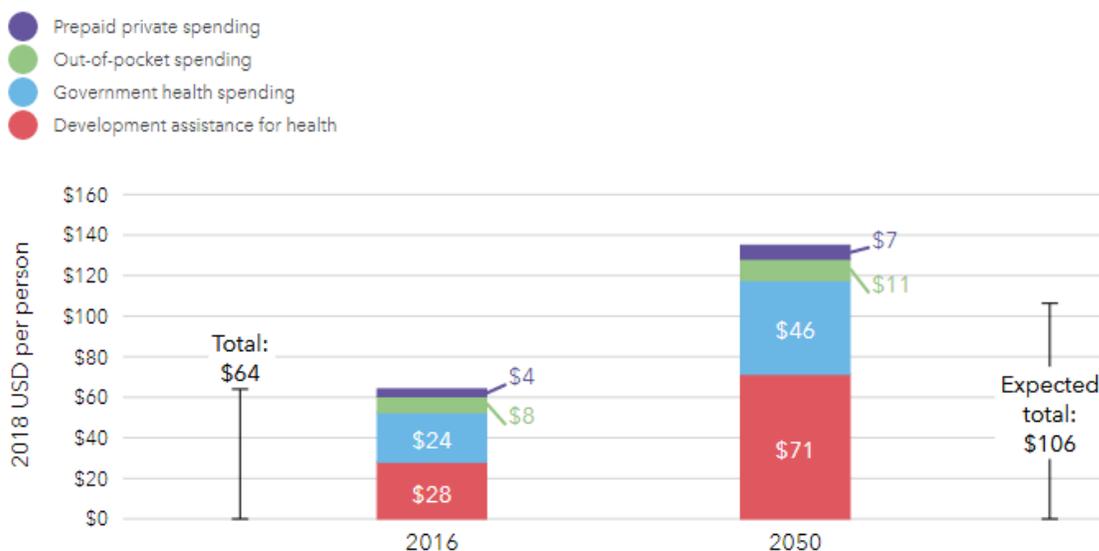
One major policy issue from this data is the fact that donor funding flows have stagnated since 2014 at about US\$23 per capita (in nominal terms) and become increasingly verticalized. Further, about 30 percent of the total CHE in Zambia is channelled through aid agencies and nongovernmental organizations (NGOs) while government institutions contribute about 50 percent of the total CHE.⁹ About 70% of donor funding in Zambia is earmarked for HIV/AIDS and sexually transmitted infections (STIs), owing to the scale of the HIV/AIDS epidemic in the country.

There is considerable need for increased government financing in healthcare. In 2016, government health expenditure (GHE) as a total of total government spending was 7.1% - about ZMW 3.1 billion (US\$302

million). Furthermore, total health spending as a share of GDP stood at 4.5%, which is lower than what many countries with similar income levels in the region spend. Zambia’s government spending on health as a share of total public spending is comparable to Ghana, Zimbabwe, and Mozambique, but is lower than countries with much lower GDP per capita such as Tanzania, Ethiopia, and Malawi.⁹

Given that a lot of the progress on health in Zambia in recent years has been partly a result of high levels of donor funding, the stagnation in external financing is a cause for concern about sustainability of financing. Verticalization also makes it difficult to capture and account for health funds, which makes it more difficult to plan and forecast for health. Excessive reliance on external funding for health service provision is unsustainable, particularly in light of the global financial slowdown.

How much is spent on health -- now, and in the future -- and from which sources?



Source: Financing Global Health Database 2018

Figure 5 Current and future (projected) sources of health expenditure in Zambia

6. NCD prevention in Zambian government policies and plans

While the Zambian government has enacted a number of policies to address the growing NCD burden, according to Zambian health officials, “NCD policymaking in the country has historically largely been formulated in response to global strategies emanating from the WHO.” Zambia was a signatory to the 2011 Political Declaration on NCDs during the 66th General Assembly meeting of the United Nations. The Declaration, among other matters, encouraged countries to establish or support and strengthen multisectoral national policies that help reduce risk factors and create health promoting environments. Similarly, the WHO Global Action Plan for NCDs 2013-2020 was also instrumental in the establishment of Zambia’s first NCD Plan.

6.1. National NCD Strategic Plan 2013-2016

Zambia's first plan for management and control of NCDs was promulgated in 2013 with the objective of reducing mortality from NCDs in Zambia by 25% by 2025 and to attain the other 8 targets listed in the Global Action Plan 2013-20 for the prevention and control of NCDs. The common NCDs in Zambia listed in the NCD strategic plan included chronic respiratory diseases, CVD, type 2 diabetes mellitus, cancers, epilepsy, mental illnesses, oral health, eye diseases, injuries (mostly due to road traffic accidents and burns), and sickle cell anaemia.¹¹

The plan aimed to scale up prevention of NCDs, through promotion of behaviour change and systems strengthening at all levels of care, while also strengthening and scaling up the early diagnosis, treatment and care for people suffering from NCDs using a chronic diseases integrated approach. The key policy measures in the Plan included strengthening the evidence base to inform the appropriate design of programs addressing NCDs; strengthening prevention, treatment, care and support services for NCDs; strengthening and scale-up of public awareness on NCDs at all levels; and strengthening ambulatory and referral systems. Building on the key policy measures, the strategic direction was system oriented with focus on prevention of NCDs and capacity building of the six building blocks of the health system to increase the access and quality of services of emerging and existing NCDs. The plan also recommended interventions for the reduction of the four common behavioural risk factors with focus on healthy lifestyles, primary prevention, screening and early diagnosis.¹¹

Later reviews of the Plan found it to be strong in terms of health stakeholders' participation and political will from the government behind its development. However, it was found to lack sufficient baseline data to guide its policy content and had insufficient domestication of guidelines (including inadequate focus on local NCDs like mental health and sickle cell disease in the Plan's Results framework).¹² According to current Zambian Health officials, *"the plan was found to have been under-utilized and focused more on curative as opposed to preventive measures."*

6.2. National Health Strategic Plan 2017-21:

While the NCD Strategic Plan 2013-2016 has expired, the Government of Zambia has a section on NCDs as part of its National Health Strategic Plan which aims to reduce premature mortality from NCDs to 15% by 2021. It further sets targets of reducing cancer incidence from 58/100,000 to 52.3/100,000, reducing prevalence of childhood obesity from 23% to 17%, and increasing knowledge level about healthy lifestyles to 30%.¹³ However, the emphasis of the plan and its targets mostly remains on curative care, and only one target – development of IEC materials for cancers – relates to prevention.

The broader National Health Strategic Plan 2017-2021 also emphasizes strengthening prevention, health promotion and education in the continuum of care using the primary health care approach and promotion of the Health in All Policies (HiAP) framework, ensuring harmonised and strengthened inter-sectoral action on health using the Whole Government and Whole Society approach.

An evaluation of the Health Strategic Plan found that the plan's targets seem largely unattainable, with an estimated resource requirement of US\$9 billion for 2019-21, while current budget allocation trends would only mobilize US\$1.8 billion in the same period. The Health Strategic Plan calls for an increase in the share of the budget for health to 15% by 2021 – which would match the Abuja Target. However, this too, would only mobilize \$US2.5 billion over 2019-21, far below the requirements of the plan.¹⁴

6.3. Directorate of Health Promotion:

The National Health Strategic Plan 2017-2021 signalled its prioritization of health promotion through the establishment of a Directorate of Health Promotion, Environment and Social Determinants within the Ministry of Health.¹⁵ The new directorate's mandate includes promoting good health, preventing and controlling disease, coordinating environmental health, occupational health and food safety, fostering inter-sectoral collaboration within the framework of the Whole Government and Whole Society approach, spearheading legislation and policy formulation, standards and guidelines and health communication.¹⁶ However, according to a parliamentary review on NCDs, the bulk of the focus of the Health Promotion Directorate remains on communicable diseases.

6.4. Reducing alcohol use:

At the beginning of 2019, the government announced a KMW 0.3 per litre tax—approximately equivalent to a 3% excise tax—on alcoholic beverages, which was aimed at reducing the burden of NCDs by increasing prices and disincentivizing the consumption of alcohol, while also raising additional resources for health. However, the raise has been far from sufficient - the 3% tax rate has been shown to be ineffective both at reducing consumption and in raising significant revenues in Zambia. To be effective in either regard, the rate would have to be closer to 25%, a rate that has been used many other countries (Manyema et al., 2014). Earmarking of these tax revenues for health has also yet to be formalized in law.¹⁴ The Zambian government also approved a comprehensive National Alcohol Policy in 2018. The NAP is a public health framework for the government and other stakeholders to prevent and manage alcohol related harm. While the policy aims to regulate and limit harmful alcohol use, it stops short of prescribing sanctions for its misuse and implementation of alcohol regulations remains a significant problem.

6.5. Reducing tobacco use:

In April 2017, the government formed a multi-sectoral committee on the implementation of the WHO-Framework Convention on Tobacco Control (WHO-FCTC) to mainstream tobacco control policies across government. The Ministry of Health and Convention Secretariat completed a joint needs assessment for tobacco control in November 2017 and is undertaking an investment case for tobacco control in Zambia with UNDP. A draft Tobacco Products Control Bill aligned with the WHO-FCTC is currently undergoing a lengthy consultative process and expected to be presented to Parliament this year. The government increased the excise tax on imports of cigarettes by 400% in 2017, causing a sharp increase in the retail price of cigarettes. This increase is executed year on year in order to reach the recommended level of at least 70% of the retail package price, in line with Article 6 of the WHO FCTC.¹⁷ Further, the government has also instituted tax on cigars, cheroots, cigarillos and tobacco substitutes at ZMW 200/mille.

Table 2 Taxes on alcohol and tobacco in Zambia¹⁸

Items	Taxes
Clear beer	40%
Opaque beer	ZMW 0.15 per lt.
All type of wines	60%
Un-denatured ethyl alcohol of an alcoholic strength by volume of less than 80%, spirits, liqueurs and other spirituous beverage	60%
Cigars, cheroots, cigarillos, and cigarettes of tobacco substitutes	145% or ZMW 200/mille

Other manufactured tobacco substitutes “homogenized” or reconstituted tobacco extracts and essences.	145% or ZMW 200/mille
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6.6. Community awareness and health promotion

As part of its country program, the World Health Organization (WHO) has extended technical assistance for NCDs aimed at reducing the demand for tobacco as contained in the WHO Framework Convention on Tobacco Control (FCTC), scaling-up cardiovascular disease management in primary health care, reduce population salt intake, integrate essential NCDs interventions into primary health care and to reduce childhood obesity. In partnership, the Ministry of Health carries out sensitization through commemoration of international events such as World Health Day, World Mental Health Day, and World Epilepsy Day. It has also introduced wellness days at workplaces, and has trained community volunteers in the prevention, control, care and support as well as importance of regular examination for NCDs.¹⁹

7. Spending on preventive healthcare

According to the latest available National Health Accounts for Zambia (2016), 53.38% of total expenditure on health in the country is for curative care activities, while preventive health – for all diseases - accounts for 25.5%. This amounted to about 2,340 million ZMK (US\$128 million) in 2016 (Table 3). The government itself contributes about 14% of total spending on preventive health (ZMK 329 million of about ZMK 2,340 million), which amounts to less than 1% of total state health budget expenditure per annum of around 3,750 million. Donors account for the bulk of preventive health expenditure (78%). Population level prevention expenditure (IEC programmes), accounts for less than 2% of the preventive health budget and less than 0.5% of total healthcare expenditure. **Nearly all preventive healthcare funds are spent on infectious diseases.**

In terms of overall healthcare expenditure by disease and condition (Table 4), NCDs still account for less than 10% of total healthcare expenditure in Zambia (though this has increase from 8% in 2013), with infectious diseases accounting for nearly 60% of expenditure. **Spending on NCD prevention is negligible, is not yet separated in budgets,** and is subsumed within broader spending on preventive healthcare and health promotion activities.

Table 3 Zambia preventive health spending (Calculated from Zambia Health Accounts 2013-2016)²⁰

<i>Spending area</i>	Government	Corporations	Households	NPISH	Donors	Total (ZMK million)
<i>Information, Education and Counselling (IEC programs)</i>	1.32			1.61	44.12	47.06
<i>Immunization programmes</i>	100.27		8.00		71.72	179.99
<i>Early disease detection programs</i>	116.39			0.02	11.44	127.86
<i>Healthy condition monitoring programmes</i>	61.00				3.34	64.34

<i>Epidemiological surveillance and risk and disease control programs</i>	5.96			0.11	1,194	1200.16
<i>Unspecified preventive care</i>	44.96	6.33	163.55		504.54	1119.51
<i>Total dedicated spending on prevention</i>	329.90	6.33	171.55	1.75	1830.57	2340.11

Table 4 Zambia health expenditure by disease and condition²⁰

Disease	Expenditure 2014 (ZMK million)	%	Expenditure 2015 (ZMK million)	%	Expenditure 2016 (ZMK million)	%
Infectious diseases	3685	68%	5161	63.5%	5725	59.2%
Reproductive Health	720	11%	622	7.64%	892	9.22%
Maternal conditions	436	6.8%	412	5.06%	498	5.15%
Nutritional deficiencies	56.5	0.9%	57.7	0.71%	105.67	1.09%
Non-communicable diseases	708	11%	787	9.67%	942.93	9.75%
Injuries	241	3.8%	301	3.7%	300	3.1%
Non-disease specific	787	12%	964	12%	1311	13.6%
Other conditions	200	3.1%	241	2.97%	398.4	4.12%
Total Current Health Expenditure	6397	100%	8133	100%	9675	100%

8. Discussion

Zambia's NCD response needs to be viewed in light of its huge historical challenges with infectious diseases (which remain the dominant cause of mortality and morbidity), severe public financing constraints and dependence on external financing. In particular, Zambia's massive HIV/AIDS epidemic has remained the focus of much of government health policy and donor financing in recent decades, and presents both challenges and opportunities for adapting the health system to the evolving NCD burden and investing in effective prevention. Despite this, Zambia has begun to devise a policy framework for NCDs and is beginning to tackle NCD risk factors, particularly tobacco with which it has achieved creditable success in reducing consumption. However, as the country undergoes socioeconomic change and enters its own epidemiological transition, conditions like hypertension, overweight/obesity are gradually on the rise. Zambia continues to lack the required focus on prevention and control of NCDs in primary care or a national institutional framework or coordination mechanism for NCDs. While NCD policies have been put in place, they have scarcely been implemented and economic and employment considerations continue to outweigh established preventive measures like tobacco and alcohol taxation.

8.1 Integrating infectious disease and NCD response:

Zambia's health services and internal and external health funding has long been oriented toward combating priority infectious diseases (IDs) particularly HIV and AIDS, malaria, TB and STIs. This is reflected in its budgets as well; there has been little or no significant improvements in the funding to NCDs, and projected budgetary allocation for NCDs constituted less than 10% of allocation to the health sector in

2016.²⁰ While subsequently funding to NCDs has been included in the health sector's plans and budgets, funding levels remain far below needs, despite the growing NCD disease burden. Further, the institutions, experts, and policies that support prevention and control of these two overarching disease categories have limited interaction and alignment. Given resource constraints and convergence of social determinants, there is an urgent need for a combined, integrated strategy for disease surveillance, prevention and control for IDs and NCDs, an approach for which there is an increasing body of evidence.²¹

Infectious disease and NCD comorbidity often overlap; yet, surveillance systems rarely address these conditions simultaneously, limiting our understanding of their overlap. Enhanced simultaneous surveillance of NCD and ID morbidity (e.g. diabetes and TB) in countries with double burdens would generate the empirical data needed to better understand the disease burden and to target coordinated care and prevention where both diseases are common.²¹ In Zambia's case, the country's extensive experience with conversion of its **emergency HIV/AIDS program into a chronic care program can be built upon for integrating NCD prevention and control** into its health system.

Strategies for intervention could also consider aligning efforts for prevention, health education and health promotion, currently severely neglected financially and administratively (particularly for NCDs). This could be done through the new Directorate of Health Promotion, Environment and Social Determinants. This could be particularly relevant in case of common underlying risk factors for both IDs and NCDs; these include demographic and environmental factors, tobacco use, improved dietary intake and harmful use of alcohol. As Zambia adapts its systems and financing to tackle NCDs, it must plan strategically such that **efforts and resources for ID prevention and treatment are supplemented by efforts and resources for NCD prevention and management.**

8.2. Donor dependence and public financial management:

The health sector in Zambia remains donor-dependent and a slowdown of external financing for health means that sustainable future sources of health expenditure remain a serious concern, particularly as the NCD burden rises. There is also a **high proportion of external financing that goes through non-government sources**, with weak public financial management in government institutions cited as the reason.

Considering that donor support will still be required in the interim as the government increases budgetary and insurance-based financing, there is a need for government to strengthen its public financial management system to build trust and encourage donors to channel their funds through the government budget. For this to happen, the MOH needs to **increase accountability and transparency with respect to accounting and financial reporting** especially at district level. The Ministry of Finance also needs to come up with a user-friendly format of reporting income and expenditure as the current government financial reports (blue books) are not considered to be user-friendly.²² Health officials interviewed believe that the *“rollout of the Integrated Financial Management Information System (IFMIS) will close many loopholes and ensure integration and transparency in budget execution and reporting.”*

Although officials in the Zambian Health Ministry acknowledge the *“need for innovative domestic financing schemes from social insurance to taxes on unhealthy consumption, they stressed that donor financing still remains critical in the short-term considering the tight macroeconomic conditions for domestic resource mobilization.”* They emphasized the need to identify and work with non-traditional donors like China and India to offset the declining funding from traditional donors.

8.3. Improving utilization of budgeted resources:

According to reviews of the government's financial reports, fiscal constraints are accompanied by concerns of utilization of budgeted resources. The Ministry of Health's **expenditure has consistently remained below disbursement** in most years. In 2016 and 2017, there was a huge variance between budgetary allocations and actual disbursements, with actual expenditure falling half or less than half below budgeted amounts (Figure 5).

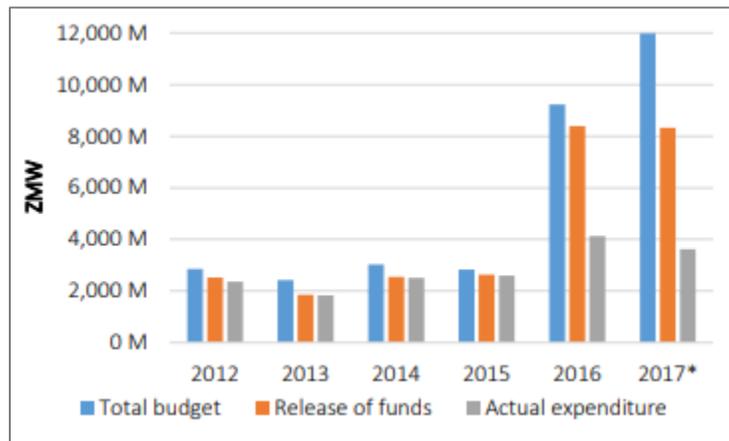


Figure 6 Health budget utilization in Zambia (2012-2017)⁹

According to health officials interviewed, *“a key contributor to poor budget execution is erratic financial flows from the Ministry of Finance which often either fails to remit the full budgeted funds or remits budgeted funds with delays.”* And while personnel emoluments tend to be predictable and are released in full, releases for operational grants are inconsistent, which affects service delivery negatively. Further, delays in transfer of funds from District Health Offices (DHOs) to hospitals, health centres and health posts can often be more prolonged than delays from the Ministry of Finance to DHOs. This often tends to affect programmatic activities, including prevention related activities and more.

8.4. Institutional framework and stewardship for NCD response

While multi-sectoral action is part of its NCD strategies, **Zambia still lacks a multi-sectoral coordinating body for ensuring stewardship, ownership and progress on NCDs**. Recently, a multi-sectoral committee on Implementation of the WHO-FCTC was formed in 2017, and TORs have been prepared for a high level national NCD Committee with representation from all major ministries. Stewardship and political ownership of NCD policies and multi-stakeholder engagement for their implementation have been critical components of successful NCD prevention policy in most other countries. This needs to be accompanied by the **formation of a broader multi-stakeholder NCD forum** to strengthen coordination and action across government and its partners, possibly by expanding the tobacco control working group. The forum should include NGOs, donors and academia. A key activity of this forum should be to convene regular national meetings between NGOs, academia and professional societies in order to encourage action from these groups in support of Zambia's NCD response.

8.5. Strengthening NCD focus in primary care:

A recent parliamentary review of Zambia's NCD response found that there was little evidence of development of NCD care services at primary level facilities, despite reports from doctors that secondary

and tertiary level facilities were overburdened with treating complications in NCD cases that could have been prevented through appropriate patient monitoring and treatment in primary healthcare facilities. At present, NCD care skills are not part of the training curriculum for community health workers; there are no NCD care refresher courses for nurses and doctors; and there are no standardized protocols for simple screening activities such as blood pressure measurement in health centres.

A Service Availability and Readiness Assessment (SARA) survey conducted by Ministry of Health in 2015 showed that only 25% of health facilities offer services for diabetes while the readiness score was at 58%. Availability of guidelines for diabetes diagnosis and treatment was at a lower level (33%), with training of at least one staff for diabetes diagnosis and treatment even lower (13%). There has also been an upward trend in CHE proportions allocated to hospitals from 23% of the total CHE in 2013 to 33 percent in 2016, which implies increasing neglect of primary health care.¹⁴

The evidence suggests that an integrated primary care strategy to address NCDs that recognizes the epidemiological transition towards NCDs is critical to address the disease burden in a cost-effective way. There is an urgent need to **re-orient the primary health care delivery system** in Zambia to one that prioritizes **health promotion and integrated long-term continuum of care** for patients of both IDs and NCDs. This requires investment effort and sufficient recurrent budget to ensure that the required human resources and other inputs are in place. Currently, primary health services are excluded from the new National Health Insurance design. However, as primary healthcare is currently underfinanced—and given the stated objectives of the government to achieve universal health coverage and of NHI to “provide sound financing for the health system”—the future role of NHI in the financing of primary care must also be considered.

8.6. Policies for nutritious diets:

Much of the historical focus of agriculture and nutrition policies in Zambia has been on averting hunger, addressing nutrition and ensuring sufficient caloric intake, which has remained low in the country. However, as important as overall calorie availability is for hunger, availability of nutrient-dense non-staple foods is central to diet quality, and the availability of many of these foods has declined compared to the population over time. Per capita supply of vegetables, fruits, pulses, meat, fish and milk all declined overall between 1961 and 2011 and fruit and vegetable availability has steadily declined from 33 and 13 kg/c/year (1961–63) to 27 and 10 kg/c/year (2011–2013) respectively, translating into a daily availability of 101 g per capita per day of fruit and vegetables, far below the WHO/FAO recommendation of 400 g. At the same time, as declines have been seen in the availability per capita of many nutrient-dense foods, availability of sugars, fats and oils has increased.²³ These trends are reflected in the country’s rising rates of obesity (Figure 7).

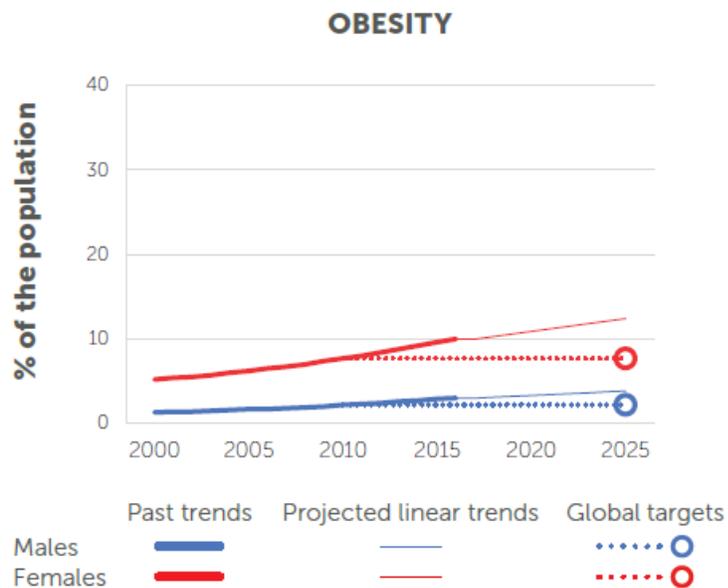


Figure 7 Obesity prevalence in Zambia over time (WHO 2018: NCD Country Profiles Zambia)

Fortunately, the actions needed for averting under-nutrition, overweight, micronutrient deficiencies and NCDs are similar – they involve enhancing the availability, affordability and desirability of diverse nutritious diets. Diet quality in Zambia needs to be tackled at both ends of the spectrum, **increasing access to nutrient-rich foods and limiting consumption of nutrient-poor and ultra-processed foods**. An aligned food and nutrition policy that tackles both is necessary to limit the detrimental sides of Zambia’s nutrition transition.

Officials interviewed indicate that the government is moving toward taking some of these measures. The National Food and Nutrition Commission (NFNC) in conjunction with Ministry of Health (MOH) have engaged a team of experts to explore regulations, laws and multi-sectoral policies that have the potential to improve nutrition across Zambia. Based on Zambia stakeholder insights, literature review, and WHO recommendations, NFNC has prioritized 3 reforms for further analysis: 1) Introduction of 20% excise tax on sugar-sweetened beverages (SSBs); 2) Regulation on marketing of unhealthy foods to young children; 3) Regulation on product placement in specific settings such as schools.¹⁷ The MOH is developing Position Papers on these reforms for action.

However, broader action is needed, particularly on the supply side, to tackle the growing problem of unhealthy diets. A recent assessment of Zambia’s policy options for improving diet and nutrition concluded that as a low-income country with high urbanization and high market liberalization, the country should place high policy priority on incentivizing fruit and vegetable production, reducing ultra-processed foods, and tackling food safety issues; a medium priority on addressing the calorie shortfall and hunger issues, incentivizing animal source food production, and reducing sugar and salt intakes; and a lower priority on reducing intake of red meats and excess calories.²⁴

As a priority, on the supply side, action is needed to **promote and incentivize diversity in the production of nutrient-rich foods such as fruits, vegetables and pulses** (beyond soya for animal feed or export), and supporting supply chains which make these accessible and affordable. On the demand side, in addition to

the proposed tax on SSB, **public health messages and increasing nutrition literacy among all sections of the population** needs to be a policy priority for which funds should be allocated.

8.7. Curbing alcohol, tobacco and sugar:

Zambia has taken steps to address unhealthy consumption practices in recent years, with increases in excise taxes on alcohol and tobacco and is considering the imposition of a tax on sugar sweetened beverages (SSBs). However, while imposition of taxes on unhealthy consumption remain a central priority in NCD policies on paper, taxes still remain lower than WHO recommended levels and Zambia has been reluctant to take further public health measures against these risk factors because of economic and employment concerns and industry lobbying.

Zambia has enacted a 0.3 ZMW/litre tax on alcoholic beverages – equivalent to a 3% excise tax – but it was found to have been insufficient to curb consumption, as opposed to the recommended 25% imposed in many other countries. *Zambian health officials interviewed say that “policymakers have been reluctant to raise alcoholic beverage prices and strong alcohol industry lobbying has also played a role in ensuring taxes are not further increased.”*

While Zambia is a signatory to the WHO FCTC and has taken some steps towards the implementation of the Convention, (including sensitizing small-scale farmers on alternative crops to tobacco growing, training health care workers on management of tobacco cessation and dependence, training law enforcement agents on how to use the manual on the smoking ban in public places and learning materials for schools targeting primary prevention for young people), it has not yet enacted comprehensive Tobacco legislation which is compliant with the FCTC. The main reasons for this continue to be normative understandings of tobacco’s importance to the economy. Zambia is a tobacco growing country and there are over 10,000 farmers who use it as a cash crop. Zambia’s export of tobacco leaf grew from US\$ 1.7 million in 1995 to US\$ 157 million in 2013 and over 10,000 farmers using it as a cash crop.²⁵

Similarly, the sugar industry contributes 3% to GDP, 6% to national exports and contributes over 10,000 jobs.²⁶ While Zambia introduced an equivalent 3% tax on non-alcoholic beverages, its small magnitude has not had much of an effect on consumption and policy makers in ministries outside health have been reluctant to tax may lead to job losses across various stages of the sugar value chain due a reduction in the demand for SSBs.

These examples are a reminder that a consensus-based multi-sectoral approach is critical, in which all relevant ministries from health to finance to agriculture to trade and others develop a **consensus-based strategy to reduce unhealthy consumption**, encompassing taxation. This approach would need to build consensus on the economic benefits of reducing consumption of these goods and devise a concerted strategy to address livelihoods issues that could arise in case of additional taxes (such as, in the case of tobacco, by **enabling production and export of alternative crops** like Soya) that affect the alcohol, tobacco and sugar supply chains.

8.8. Use of research for prevention of NCDs:

Research on NCDs specific to the local context remains very limited in Zambia despite agreement by all stakeholders that research and development should be the core driver of public health interventions and policies. This is again partly a question of disease priorities, as most financial resources for health research are targeted at infectious diseases like HIV/AIDs, TB and malaria. According to *Zambian Ministry of Health*

officials, *“this had contributed to the low demand for NCD research among academics and the civil society in general.”*

Furthermore, mechanisms to channel NCD research efforts to feed into national policies – such a national coordination committee - were still missing, which made translation of evidence into policy challenging. A number of institutions such as the University of Zambia, School of Public Health and Medicine had continued to undertake research on NCDs. However, that had mostly been funded by cooperating partners like WHO and National Institute of Health (NIH). There is a **need to expand and publicly fund health research on NCDs in Zambia** in order to arrive at a more informed national contextualization of the NCD epidemic and how to get it under control.

9. Conclusion

Zambia’s progress in generating economic growth and combating infectious diseases to improve life expectancy and reduce poverty are heartening and provide a foundation for future development and progress. Despite this, massive chronic challenges of poverty, under-funded healthcare and debilitating infectious diseases (IDs) persist. In addition to these existing challenges, urbanization, lifestyle changes and market forces are contributing to a shifting disease burden and epidemiological transition in the country, with an increasing double burden of both IDs and NCDs. The country’s policymakers need to adapt accordingly in order to prevent the country’s health systems from becoming overwhelmed and generate further economic consequences from increased mortality, morbidity and loss of productivity.

Zambia’s health system and the bulk of health financing remains predominantly dedicated to combating infectious disease like HIV/AIDS, malaria, TB and STIs. While the government has enacted plans for NCDs, they remain chronically under-funded. The bulk of Zambia’s financing for both curative and preventive care is focused on IDs with NCDs receiving just 10% of overall funds and a negligible level of prevention funds. This is in part justified by the degree of threat posed by IDs, but also reflects an inability to adapt to a shifting disease burden. Without compromising on the quality of care needed for IDs, Zambia needs to build on its successes against IDs and devise a combined strategy for disease surveillance, prevention and control for both IDs and NCDs. This needs to involve both data generation for surveillance and analysis and aligned prevention and health promotion strategies for IDs and NCDs, given a common set of risk factors and social determinants. The new Health Promotion Directorate can become the fulcrum of health promotion efforts and for that its capacity for NCD prevention needs to be strengthened.

Zambia’s longstanding domestic resources mobilization challenges have meant that it has long relied on external financing to meet its health expenditure needs. In recent years, the stream of donor funding has stagnated and stands to further decrease in the coming years amid a global economic slowdown. Therefore, the urgency of mobilizing alternative sources for health expenditure, including for NCD prevention and treatment, has never been more critical. Domestically, this needs to involve increased budgeting for healthcare to match the commitments of the Abuja targets (15% of total government expenditure) and a phased expansion of national health insurance. However, in the interim, improving public financial management and increased transparency and accountability in reporting will be important to ensure external financing can be routed through the government to meet health planning needs.

A crucial element in improving the state of health financing is budgetary utilization, which has deteriorated in recent years, even as budgets have increased, suggesting a shortage of capacity to utilize

a greater quantum of funding. Addressing this will have to involve a reform of disbursement procedures both from the Ministry of Finance to districts and from districts to service delivery units.

Furthermore, in accordance with best practices for NCD response around the world, Zambia needs an inter-sectoral response and institutions that can ensure collaborative decision-making and implementation of NCD policies. The formation of a national NCD committee with representation from all relevant ministries, as well as participation from civil society, donors and other stakeholders will be important for ensuring a coherent and sustainable response.

Zambia's primary health care network is still largely unequipped to manage NCD prevention and care, leading to the over-burdening of tertiary care hospitals with advanced-level NCD cases, a situation that is likely to exacerbate in the coming years unless remedial measures are taken. This will need to involve a reorganization of protocols to incorporate screening and prevention, overhaul of training curricula for health workers (including community health workers) to incorporate prevention and care, and investment in a recurrent budget for NCD prevention and control at the primary healthcare level.

Among the most concrete measures taken by Zambia for NCD prevention thus far are measures to regulate and control alcohol and tobacco through increased taxation. However, most experts agree that current taxation rates are far too low to affect consumption and will have to be increased (to 70% of retail price in the case of cigarettes and 25% in the case of alcoholic beverages). However, perceptions of the economic importance of tobacco and alcohol industries deter policymakers from taking more concrete steps to enact and implement further taxes. Addressing these significant risk factors will have to involve an all-of-government approach in which inter-sectoral consensus is built on reducing their use through taxation and other measures, while mitigating the impact on employment through a transition to alternative crop production and employment for those involved in these supply chains. Furthermore, revenue from these taxes should be earmarked through legislation to utilize in health promotion and NCD prevention activities (potentially directing it to the Directorate of Health Promotion).

Zambia's increasingly unhealthy diet is partly a result of a decline in supply of nutritious foods (like fruits, vegetables and pulses) accompanied by a rise in the supply of fats, oils and sugars. Addressing this will have to involve both supply side measures to increase production of nutrient-rich foods and limiting consumption of ultra-processed and nutrient-poor food products. On the demand side, a 20% excise tax on SSBs is under consideration alongside limits on advertising of unhealthy foods to children and product placement in schools. This needs to be accompanied by well-funded health promotion campaigns that encourage healthy eating habits and increase nutrition literacy, including the link between unhealthy eating habits and NCDs.

Finally, Zambia faces a paucity of locally-contextualized research on NCDs in the Zambia, owing to the fact that much of its academic and financial resources for R & D remain dedicated to infectious diseases, which needs to be rectified to reflect the shifting disease burden in the country. This means ensuring greater allocations for NCD research and efforts to link generation of evidence with institutions to translate it into policy (such as the proposed national NCD Committee). In tandem, NCD indicators need to be integrated in national health surveys to provide a solid baseline for research, policies and budgets.

10. Recommendations:

1. Integrate resources and systems for disease surveillance, prevention and control for infectious diseases with NCDs.
2. Gradually increase budgeting for healthcare to match the commitments of the Abuja targets (15% of total government expenditure) in order to overcome donor dependence.
3. Strengthen public financial management in healthcare and increase financial accountability and transparency with respect to reporting to ensure government can direct donor priorities according to local needs.
4. Reform budget disbursement procedures to improve health budgetary utilization.
5. Establish multi-sectoral coordinating body for ensuring stewardship, ownership and progress on NCDs, with inclusion of civil society, donors and academia.
6. Strengthen Health Promotion Directorate as fulcrum of health promotion and NCD prevention efforts.
7. Re-orient the primary health care delivery system to one that prioritizes health promotion and integrated long-term continuum of care for patients of both IDs and NCDs.
8. Explore incorporation of primary health care in national health insurance coverage.
9. Formulate a comprehensive food and nutrition policy that enables access to healthy nutrient-rich food and reduces consumption of ultra-processed unhealthy food products.
10. Promote and incentivize diversity in production of nutrient-rich foods such as fruits, vegetables and pulses.
11. Introduce 20% excise tax on sugar-sweetened beverages.
12. Implement comprehensive regulations restricting advertising and marketing of unhealthy foods to young children and product placement in specific settings such as schools.
13. Initiate and finance public health campaign focused on increasing nutrition literacy among all sections of the population.
14. Raise tax on alcoholic beverages to at least 25% of retail price and increase in line with alcoholic content of drinks.
15. Increase excise tax on tobacco to the WHO recommended 70% of retail price.
16. Develop multi-sectoral approach to reduce unhealthy consumption that includes a strategy to address livelihoods issues from additional taxation and regulation of tobacco and other products (encompassing alternative crop production and export)
17. Expand and publicly fund research on NCDs in the Zambian context.

We are grateful to the advisory committee and the co-investigators of this study for reviewing the papers and for their comments: Sir George Alleyne, Beatriz Champagne, Douglas Bettcher, Robert Beaglehole, Rachel Nugent, Greg Hallen, Johanna Ralston, Yasser Bhatti, Ali Islam Ghauri and Ammar Rashid.

Funding and note: support from the International Development Research Centre (IDRC) Canada is gratefully acknowledged. This paper is part of a country case series. Details about the methodology adopted for the country selection and approach to case studies can be accessed here:
<http://www.heartfile.org/pdf/Methods-section-for-the-case-studies.pdf>

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